A32A

SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FROM: TLMA - Transportation Department

SUBMITTAL DATE: October 6, 2010

SUBJECT: Goetz Road and Newport Road Completion of Improvements including the construction of a new bridge over Salt Creek in the Cities of Menifee and Canyon Lake.

RECOMMENDED MOTION: That the Board of Supervisors:

1. Approve three Addenda to plans and specifications, issued prior to the September 8, 2010 bid opening; and

2. Accept the low bid of SEMA Construction, Inc. of Lake Forest, CA in the amount of $6,492,256; and

Juan C. Perez
Director of Transportation

JCP:jrj:sb
(Continued On Attached Page)

FINANCIAL DATA				
	Current F.Y. Total Cost:	$ 6,492,256	**In Current Year Budget:**	Yes
	Current F.Y. Net County Cost:	$ 0	**Budget Adjustment:**	No
	Annual Net County Cost:	$ 0	**For Fiscal Year:**	2010/2011

SOURCE OF FUNDS: Developer Performance Bond Fund (71.68%), Menifee Road and Bridge Benefit District (9.13%), Eastern Municipal Water District (5.35%), Miscellaneous [Developer Deposit IP 030057] (6.46%), Transportation Uniform Mitigation Fee Central Zone (WRCOG) (7.38%)

Positions To Be Deleted Per A-30 ☐

Requires 4/5 Vote ☐

C.E.O. RECOMMENDATION:

APPROVE
BY: Tina Grande

County Executive Office Signature

FORM APPROVED COUNTY COUNSEL
BY: NEAL R. KIPNIS DATE 10/4/10

Departmental Concurrence

☒ Policy ☐ Policy
☐ Consent ☐ Consent
Dep't Recomm.: Per Exec. Ofc.:

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Stone, seconded by Supervisor Tavaglione and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes:	Buster, Tavaglione, Stone, Benoit and Ashley
Nays:	None
Absent:	None
Date:	October 19, 2010
xc:	Transp.

Kecia Harper-Ihem
Clerk of the Board
By: _____ Deputy

Prev. Agn. Ref. 2/9/10, Item 3.59, 7/27/10, Item 3.81 | **District:** 3 | **Agenda Number:** 3.51

ATTACHMENTS FILED
WITH THE CLERK OF THE BOARD

Form 11 (Rev 07/2007)

RECOMMENDED MOTION (continued):

3. Award the contract to SEMA Construction, Inc. and authorize the Chairman of the Board to execute the contract documents; and

4. Approve the project's proposed budget as shown on Attachment "A".

BACKGROUND:

By Minute Order dated July 27, 2010 (agenda item 3.81), the Board authorized the Clerk of the Board to advertise for the completion of improvements on Goetz Road between Railroad Canyon Road and North of Normandy Road, including the construction of a new bridge over Salt Creek in the Audie Murphy Ranch area within the Cities of Menifee and Canyon Lake. Additionally, the plans and specifications were approved by the Board within this agenda item.

During the advertisement period, three addenda were issued to all registered plan holders as a supplement to the specifications and special provisions. Bidders are required to acknowledge the addenda on their Contractor's Proposal, and are also required to take all addenda into account, to be considered for award. The addenda were issued to clarify and modify the approved contract documents. The addenda are attached as Addendum No. 1, Addendum No. 2, and Addendum No. 3.

Bids for the project were opened in the office of the Director of Transportation at 2:00 PM, Wednesday, September 8, 2010. Eleven bids were received. The basis for the selection of a contractor is the lowest responsive and responsible bid for all schedules of work. The lowest responsive and responsible bid was submitted by SEMA Construction Inc. (SEMA) of Lake Forest, CA, in the amount of $6,492,256 which is $426,013 (6.16%) below the Engineer's Estimate.

During the bid review process, the Transportation Department requested additional information in regards to SEMA's Proposal subcontractor listing. SEMA submitted a letter and list, dated September 21, 2010, to clarify this listing. The document is now a supplement to the construction contract Agreement and identified as Exhibit "A", 'Items of work Breakdown and Designation of Subcontractors.'

The Transportation Improvement Program provides for the completion of improvements on Goetz Road and Newport Road in the "Audie Murphy Ranch" development, in the Cities of Menifee and Canyon Lake. The master developer of the "Audie Murphy Ranch" filed for bankruptcy and left various roads within this development incomplete. These roads need to be completed in order to open them for public use. Strong interest has been expressed by the public and by officials of the City of Menifee and the City of Canyon Lake to complete the improvements on Goetz Road and Newport Road.

This is the second and final phase of Audie Murphy Ranch area completion of improvements. This phase consists of widening of Goetz Road to four lanes, constructing a new bridge over Salt Creek, raised median, sidewalk, curb and gutter, trail, drainage facilities, sound wall, traffic signal modification at Canyon Lake Drive, and road improvements on Newport Road from Goetz

Road to Railroad Canyon Road, including the construction of a traffic signal at the intersection of Goetz Road and Newport Road, and associated work.

By minute order dated February 9, 2010 (Agenda Item 3.59) the Board awarded of the Newport Road and Berea Road construction project as part of the first phase of the overall project. The first phase of this project has been completed.

The County negotiated a settlement with the bonding company of Audie Murphy Ranch development in the amount of $6.3 million to partially fund the completion of improvements for Newport Road and Goetz Road. The Transportation Department has also secured an agreement for $3.88 million of WRCOG TUMF funds towards improvements. Since the County entered into the Bonds and Securities Agreement prior to the incorporation of Menifee, the County is taking the lead on utilizing the proceeds of the settlement agreement to build these improvements on behalf of the two Cities.

The contract award documents include the following construction items and work schedules:

Base Bid Primary items of work.

Alternate Bid Schedule 1 The extension of a 24" waterline owned by the Eastern Municipal Water District (EMWD) is included in the award package as an alternate bid schedule 1. The District has approved the award of this alternate bid schedule as bid by the apparent low bidder. The cost for the work will be funded by EMWD, under the terms of a funding agreement which will be submitted for execution by the Board subsequent to execution by EMWD.

Alternate Bid Schedule 2 Course of Construction Insurance.

The construction items under Alternate Bid Schedule 1 and 2 are recommended for award.

The Contractor has executed the contract and provided bonds and Insurance documents.

The contractor is qualified.

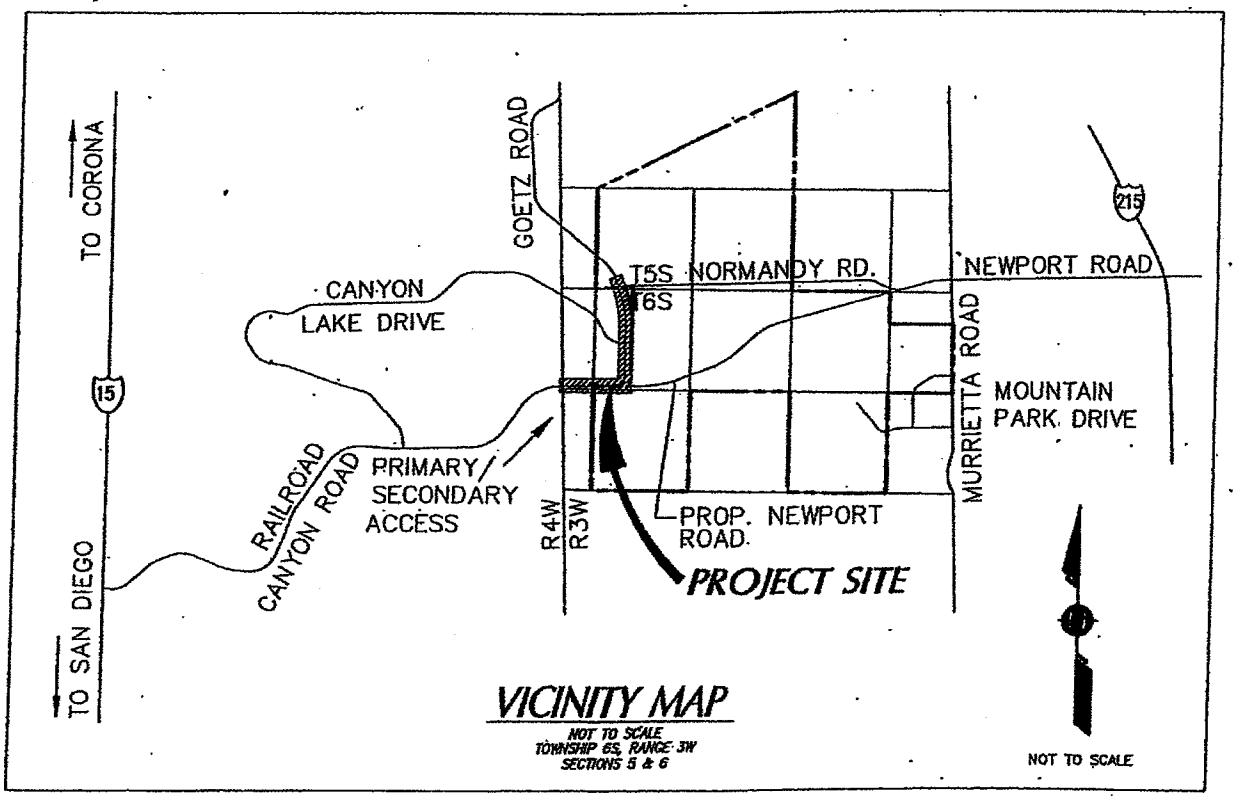
Project No. B8-0643

COUNTY OF RIVERSIDE

DEPARTMENT OF TRANSPORTATION

GOETZ ROAD & NEWPORT ROAD COMPLETION PLANS

STREET, BRIDGE, STREET WIDENING, DRAINAGE, WATERLINE, RECLAIMED WATERLINE
RECYCLED WATER, GRADING, AND COMPLETION OF IMPROVEMENTS
LIMITS – "NEW" NEWPORT ROAD TO APPROX. 900' NORTH OF
"OLD" NEWPORT ROAD (NORMANDY ROAD)
PROJECT NO. B8 – 0643



Attachment "A"

Riverside County Transportation Department

Project: Goetz Road Completion Project including Newport Road West of Goetz Road

Project No.(s): **B8-0643**

Project Costs and Budget

Activity		Incurred Costs	Projected Costs	Total Costs	Existing Budget	Proposed Budget
Preliminary Survey						
Environmental		96,000	104,000	200,000	67,000	200,000
Design		275,000	165,000	440,000	252,000	440,000
Right-of-way					6,000	
Utilities			15,000	15,000	12,000	15,000
Construction			6,492,256	6,492,256	5,000,000	7,142,000
Construction Contingency	10.0%		649,226	649,226		
Construction Engineering & Inspection		26,000	587,000	613,000	407,000	613,000
Construction Survey		5,000	95,000	100,000	100,000	100,000
	Totals:	**402,000**	**8,107,482**	**8,509,482**	**5,844,000**	**8,510,000**

Project Funding

Code	Name	Existing Budget	Proposed Budget
603	Developer Performance - Bond Fund	5,844,000	6,100,000
427	Menifee Road and Bridge Benefit District		777,000
839	Eastern Municipal Water District		455,000
990	Miscellaneous (Developer Deposit IP 030057)		550,000
346	Transportation Uniform Mitigation Fee Central Zone (WRCOG)		628,000
	Totals	**5,844,000**	**8,510,000**

Comments

Remaining balance for Goetz Rd/Newport Rd Project = ($3,880,000 - $3,251,800) = $628,200

Printed: September 27,10 9:01 AM

Form 11 Attachment

Contract/Lease/Purchase Summary Data

☒ **Contract (for Services)**
- G Approval/Renewal
- G Sole Source
- G Personal Services
- G Independent Contractor
- G Other than Low Bid
- G Change Order
- ☒ Public Works

G **Lease**
- G Approval/Renewal
- G Multi-Year Lease
- G Equipment
- G Real Property
- G Change Order

G **Purchase (for Materials)**
- G Sole Source
- G Other than Low Bid
- G Change Order

Selection Committee Member Names (RFP=s Only)

User Department:	**Transportation Department**

N/A

Vendor/Lessor Name:	**SEMA Construction Inc.**
Vendor/Lessor Location:	**Lake Forest, CA**

Minority Status: ☐ M ☐ W ☐ DV ☒ None

Local Preference Applied: G Yes G No ☒ N/A

Local Preference Award Cost $
(5% maximum preference)

Local Preference FYTD: Cost $ # of Orders

Applicable Board Policy #

Comments:

RFQ/RFP Process:

Date Mailed:
Response Date:
# of Responses:
# of Qualified Responses:

Bidding Process:

Bid Range: $ 6,492,256.01 to $ 9,107,486.96
Local Bid Range: N/A
Responsive and Responsible Bid Range: $ 6,492,256.01 to $ 9,107,486.96

Contract/Lease Renewals Only

Existing Agreement Items

Proposed Agreement Items

1. Rates
2. Terms
3. Conditions
4. Legal Issues
5. Accountability
6. Utilities

(Continue on blank sheet if necessary)

NOTE: COMPETITIVELY BID PUBLIC WORKS CONTRACT

ADDENDA

for the

CONSTRUCTION

of

Goetz Road and Newport Road
Completion of Improvements

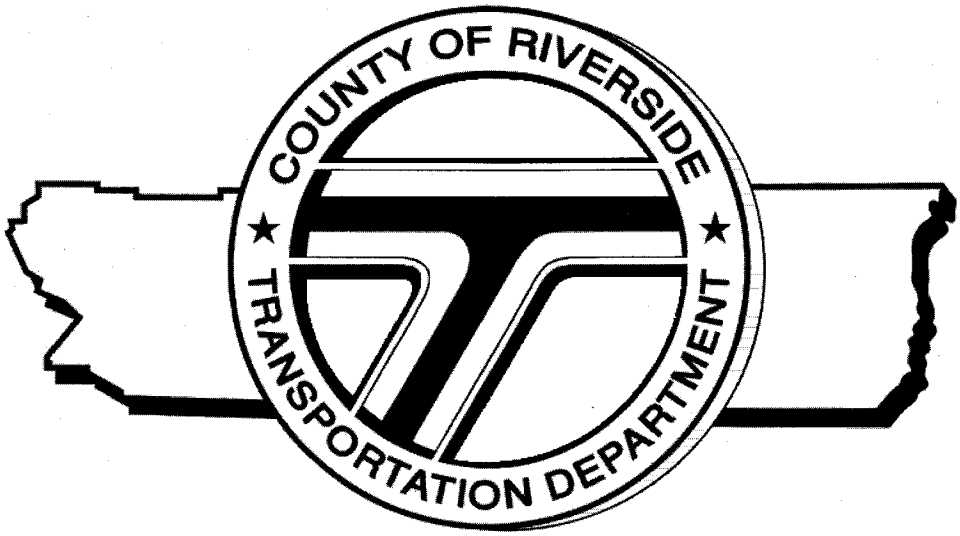
Project No. B8-0643

Book 1 of 1

Addendum #1, dated 8/19/2010

Addendum #2, dated 8/26/2010

Addendum #3, dated 9/01/2010



TRANSPORTATION DEPARTMENT

GOETZ ROAD AND NEWPORT ROAD
COMPLETION OF IMPROVEMENTS
PROJECT NO. B8-0643
BOOK 2, ISSUED BY ADDENDUM 1

TABLE OF CONTENTS

COUNTY OF RIVERSIDE

TRANSPORTATION AND LAND MANAGEMENT AGENCY

Transportation Department

Juan C. Perez, P.E., T.E.
Director of Transportation

ADDENDUM NUMBER 1

Dated August 19, 2010

to the
Specifications and Contract Documents
for the construction of

Goetz Road and Newport Road
Completion of Improvements

Project No. B8-0643

Bids Due: **Wednesday, September 1, 2010; 2:00 PM**
14th Street Transportation Annex
3525 14th Street; Riverside, CA 92501
(951) 955-6780

This Addendum is issued pursuant to the Instructions to Bidders, Item No. 8, of the Contract Documents for the reference project. This Addendum is issued as a supplement to the plans, specifications, and special provisions for the referenced project. The revisions to the plans and specifications shall become a part of the Contract Documents, and each bidder shall acknowledge receipt thereof on the Contractor's Proposal. Bidders are directed to sign this addendum as acknowledged, and **attach the signed addendum page to the contractor's submitted proposal**.

Item 1: **Project Information.** The following information is available as a free download for use by the Contractor at the following County website:

http://www.rctlma.org/trans/con_bid_advertisements.html

- Geotechnical Report

MODIFICATIONS / CLARIFICATIONS TO SPECIAL PROVISIONS:

Item 2: **Revised Proposal.**
Delete Proposal (pages B3 through B6) and replace with **Attachment "A"** which is made a part hereof. The following changes have been made to the Proposal:

a. The following bid item has been removed from Base Bid and added as Alternate Bid Schedule 2:

- Item 8, "COURSE OF CONSTRUCTION INSURANCE"

b. "Estimated Quantities" are changed for the following bid items:

- Item 9, "EARTHWORK/ROADWAY EXCAVATION/OVER EXCAVATION"
- Item 11, "IMPORT BORROW [EARTHWORK FILL-IN PLACE]"-
- Item 21, "MINOR CONCRETE V-DITCH INCLUDING DISSIPATER"
- Item 40, "ROCK SLOPE PROTECTION (1/2-TON, METHOD B)"
- Item 41, "ROCK SLOPE PROTECTION (1/2-TON METHOD A)"
- Item 42, "THERMOPLASTIC CROSSAWALK AND PAVEMENT MARKINGS"
- Item 43, "PAINT TRAFFIC STRIPE (2 COAT)
- Item 50, "ERROSION CONTROL (HYDRO SEED) [LANDSCAPE SLOPE AREAS]"
- Item 74, "SOUND WALL (MASONRY BLOCK WALL)"

c. The following bid items have been deleted:

- Item 98, " DELETED BY ADDEMNUM"
- Item 101, " DELETED BY ADDENDUM"

d. The following bid items have description modification/revision:

- Item 9, "EARTHWORK / ROADWAY EXCAVATION / OVER EXCAVATION
- Item 11, "IMPORT BORROW [EARTH FILL IN PLACE]"
- Item 40, "ROCK SLOPE PROTECTION (1/2-TON, METHOD B)"
- Item 71, "WELDED STEEL PIPECASING (BRIDGE) (34" DIA")
- Item 73, "WELDED STEEL PIPECASING (BRIDGE) (22" DIA")
- Item 93, "FURNISH AND INSTALL 20 INCH ID STEEL CASING PER EVMWD STD. DWG. NO. W-6"
- Item 99, "CONNECTION TO EXISTING PIPELINES, COMPLETE IN PLACE"
- Item 100, "CONNECTION OF NEW PIPELINES TO EXISTING WATER METER, COMPLETE IN PLACE"
- Item 102, "PREPARE, MAINTAIN AND SUPPLY AS BUILT DRAWINGS AND NOTES AT COMPLETION OF WATER MAIN INSTALLATION PROJECT IN ACCORDANCE WITH EVMWD SECTION 01770, COMPLETE IN PLACE"

e. The following bid items have been added:

- Item 103, "PCC OVERFLOW DEVICE [PER SHEET 1&6 OF EARTHWORK PLANS]"
- Item 104, "16" CAST-IN-DRILLED HOLE CONCRETE PILING [FOR SOUND WALL]"
- Item 105, "MINOR CONCRETE [FOR SOUND WALL]"
- Item 106, "ARCHITECTURAL TREATMENT [FOR SOUND WALL]"
- Item 107, "STONE VENEER [FOR SOUND WALL]"
- Item 108, "ADJUST MAINTENANCE MANHOLE TO GRADE [INCLUDING FRAME, 7 STORM DRAIN AND 1 FIBEROPTIC]"

See Attachment "A"

Item 3: **Clarification of Supplemental Project Information.**

Refer to section, "Supplemental Project Information on page 50. Eastern Municipal Water District (EMWD) and Elsinore Valley Municipal Water District (EVMWD) specifications are being provided with this addendum and made part hereof.

See Appendix "1" (Special provisions for EMWD work)
See Appendix "2" (Special provisions for EVMWD work)

Item 4: **Clarification of Order of Work.**

Refer to section "Order of Work," fifth paragraph on page 52. The following clarification is added to Special Provisions:

"The fifth paragraph of the Special Provision entitled "order of work" shall mean that the approach slabs shall not be constructed until all intended utility installations are completed, by the contractor and by the owners of the utility facilities."

The following is added to the Special Provision entitled "order of work":

"Seventy two (72) hours prior to completion Milestone 1 below, notify various utility companies such as Verizon Communications, Time-Warner Communications, Southern California Edison Company and Southern California Gas Company, in order to give them advance notice to prepare for their non-exclusive "window" to commence their work in Goetz Road-Bridge approach fills. Each of these utility companies intend to install utility facilities north and south of the bridge to connect to their existing systems.

"Utility conduits, pipes and casings shall be installed in the Goetz Road bridge as described herein and as shown on the construction plans. Said work shall be coordinated by the Contractor with each respective utility owner.

Seventy two (72) hours prior to completion of Milestone 2 below, notify various utility companies in order to give them advance notice to prepare for their non-exclusive "window" to commence their work in Goetz Road Bridge. Verizon Communications shall be allowed **56 non-exclusive calendar days** from that milestone date for the necessary work of that utility owner to relocate their facilities. Said work shall consist of the installation of conduit and vaults, the installation of fiber-optic and copper cables, splicing, and removal/abandonment of existing facilities. All other utilities, such as Time-Warner Communications, Southern California Edison Company and Southern California Gas Company, shall be allowed access to the bridge and approach areas concurrent with the Verizon window for the installation of gas lines, conduits, cable, wiring and other appurtenances as may be necessary for their facilities.

Completion of the utility relocation/installation work described above shall be understood to be required before certain work may be performed by the Contractor, including paving on Goetz and the remedial grading work in the vicinity of the existing curve connecting Goetz Road to Railroad Canyon Road."

Upon completion of the above described work of Verizon Communications, Contractor shall commence with the remedial grading work, as described elsewhere in the plans and special provisions.

Seventy two (72) hours before completion of the remedial grading work and construction of the fills required for the major waterline relocations, Milestone 3 below, notify the Eastern Municipal Water District to prepare for commencement of their work. Eastern Municipal Water District shall be allowed **63 calendar days** for the necessary work of that utility owner to relocate their facilities, consisting of one 30" water pipeline and one 54" water pipeline.

Contract specific dates allowed shall be in accordance with the executed agreement. The Contract time allowed shall include the above designated calendar days for the exclusive access to portions of the construction site by the affected utility companies (Verizon Communications and Eastern Municipal Water District, respectively) to perform utility relocation work. Attention is also directed to the calendar days allowed for various utility work, as described in the Special Provision entitled "Cooperation".

The following four milestones are set forth for contractor's compliance to the construction schedule, and anticipated to commence on October 11, 2010 (Notice to Proceed). There will be no adjustment in the milestone dates due to non productive working days caused by weather. The dates below will be adjusted on a day-for-day basis due to any change in the anticipated commencement date (NTP):

Milestone 1: Completion of the grading and compaction of Goetz Road and Bridge approach fills and installation of PCC Curb in Goetz Road from Canyon Lake Drive to Newport Road (except the Bridge, structure backfill and approach slabs) and provide access to the various utility companies to install their facilities in Goetz Road.

Completion Date: January 23, 2011.

Contractor's attention is directed to the Liquidated Damages set forth below for milestone 1.

Milestone 2: Completion of the Installation of conduits and casings through the bridge deck and provide access to the various utility companies to install their facilities, conductors and cables as they may require.

Completion Date: February 20, 2011

Contractor's attention is directed to the Liquidated Damages set forth below for milestone 2.

Milestone 3: Completion of the remedial grading and construction of fills required for the major waterline relocation and provide access to the EMWD to install their conductors and cables as they may require.

Completion Date: April 24, 2011

Contractor's attention is directed to the Liquidated Damages set forth below for milestone 3.

Milestone 4: Project completion Date: August 31, 2011.

Contractor's attention is directed to the Liquidated Damages set forth below for milestone 4.

Item 5: **Clarification of Liquidated Damages.**

Refer to section, "Liquidated damages "page 52, delete the first sentence of the first paragraph and replaced with the following:

"The Contractor shall diligently prosecute the work to completion before August 31, 2011 except as may be adjusted as outlined above. The working days stated in section 17 "Hours of Work" on page A6 are revised from "Monday through Friday" to "Monday through Saturday"

Milestone 1: The Contractor shall pay to the County of Riverside the sum of $10,000 per calendar day for each and every day's delay in completion of milestone No.1, set forth above.

Milestone 2: The Contractor shall pay to the County of Riverside the sum of $10,000 per calendar day for each and every day's delay in completion of milestone No.2, set forth above.

Milestone 3: The Contractor shall pay to the County of Riverside the sum of $10,000 per calendar day for each and every day's delay in completion of milestone No.3, set forth above.

Milestone 4: The Contractor shall pay to the County of Riverside the sum of $30,000 per calendar day for each and every day's delay in completion of milestone No.4, set forth above.

Following is the list of required immediate submittals and the various timeframes to adhere to in calendar days:

Item	Due By	Page Reference
Traffic Control Phasing, Update	7 Days After Board of Supervisors Approval/Award	Page 60 of Spec Book
Stormwater Pollution Prevention Plan and Monitoring Program (SWPPP/MP)	7 Days After Board of Supervisors Approval/Award 2 Days County Review 2 Days for Contractor to Resubmit SWPPP/MP for the corrections/comments	Page 70 of Spec Book
Precast Concrete Quality Control Plan	7 Days After Board of Supervisors Approval/Award	Page 101 of Spec Book
Bridge Stone Veneer Sample	14 Days After Board of Supervisors Approval/Award	Page 125 of Spec Book
Resident Engineer Office	7 Days After Board of Supervisors Approval/Award	Page 95 of Spec Book
Import Borrow Site	14 Day After Board of Supervisors Approval/Award	Page 70 of Spec Book
Bridge Girder Shop Dwg	7 Days After Board of Supervisors Approval/Award	Page 117 of Spec Book
Girder Erection Plan	14 Day After Board of Supervisors Approval/Award	Page 117 of Spec Book
Sound wall's texture, color, and stone veneer sample	14 Day After Board of Supervisors Approval/Award	Page 125 of Spec Book
North Abutment Pressure Grouting Detail Sheet	7 Days After Board of Supervisors Approval/Award	Appendix A of Spec Book

Liquidated damages in the amount of $1000 per calendar day shall apply for each day delay past the above prescribed timeframes. The liquidated damage amount is separate and cumulative for each item in the above list.

Item 6: **Clarification to Cooperation:**

Refer to section **"Cooperation"** on page 54. The following additional requirement is added to Special Provisions and made part thereof:

Contractor shall coordinate with Elsinore Valley Municipal Water District for shut down existing water line and installation of a 10-inch temporary highline.

Full compensation for all labor, equipment, materials and incidentals will be at the contract prices paid for the various items of work under Alternate Bid Schedule 1 (Bid items 91 through 102), and no additional compensation will be allowed therefor.

Item 7: **Clarification of Traffic Control System.**

Refer to section "Traffic Control System," on page 60. The following additional information is added to special provision:

Existing traffic control devices shall be removed and salvaged. Salvaged material shall be delivered to the County Maintenance Yard located at 2950 Washington Street, Riverside, CA 92504 or as directed by the Engineer.

Full compensation for removing and salvaging existing traffic control devices as directed by Engineer shall be considered as included in Lump Sum price paid for "Traffic Control System" and no additional compensation will be allowed therefor.

Item 8: **Clarification of Earthwork/Roadway Excavation (Including Grading).**

Refer to section "Earthwork/Roadway Excavation (Including Grading)," on page 65. The following additional information is added to special provision:

"Over Excavation of 14,000 CY shall be considered as included in-place Earthwork quantities for item No 9 shown on the bid proposal."

And following additional requirement is added to Special Provisions:

Structure Excavation (Bridge) (Type D).

Full compensation for Leveling Slab is considered as included in the contract unit price paid for Structure Excavation (Type D), and no additional compensation is allowed therefor.

Item 9: **Clarification of Import Borrow.**

Refer to section "Import Borrow," on page 70. The following additional requirement is added to special provision:

"Contractor is required to provide certificate of source of borrow material and its location.

Refer to Bid item 11 on bid proposal; the estimated quantity shall be considered as in- place earthwork fill quantity."

Item 10: Clarification of Water Pollution Control.

Refer to section "Water Pollution Control," starting on page 70. Delete this section and replace with the following:

WATER POLLUTION CONTROL:

Throughout the term of this contract, the total land disturbance area of the project site is more than 1 acre. County has submitted a Notice of Intent (NOI) to the California Regional Water Quality Board – Santa Ana Region (WDID: 833CN600412) for compliance with the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (hereafter referred to as the Construction General Permit), which is available at:

(http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml).

Contractor's Stormwater Pollution Prevention Plan and Monitoring Program (SWPPP/MP) shall be prepared in accordance with Section 2, "Preparing a Stormwater Pollution Prevention Plan (SWPPP)", of the *Caltrans Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual (March 2007)*, which is available as a free download from:

http://www.dot.ca.gov/hq/construc/stormwater/SWPPP_WPCP_PreparationManual_2007.pdf.

This project is a Risk Level 1 project under the Construction General Permit. Therefore, Contractor's SWPPP/MP shall also conform to Attachment C, Risk Level 1 Requirements of the Construction General Permit.

WATER POLLUTION CONTROL MEASURES

A. Work having the potential to cause water pollution shall not commence until the Contractor's Stormwater Pollution Prevention Plan and Monitoring Program (SWPPP/MP) has been reviewed and approved by the Engineer. The Engineer's review and approval of the Contractor's SWPPP/MP shall not waive any contractual requirements and shall not relieve the Contractor from achieving and maintaining compliance with all federal, state, and local laws, ordinances, statues, rules, and regulations. A copy of Contractor's SWPPP/MP shall be maintained onsite. When the SWPPP/MP or access to the construction site is requested by a representative of a federal, state, or local regulatory agency, Contractor shall make the SWPPP/MP available and Contractor shall immediately contact the Engineer. Requests from the public for the Contractor's SWPPP/MP shall be directed to the Engineer.

B. Contractor's SWPPP/MP shall describe the Contractor's plan for managing runoff during each construction phase. Contractor's SWPPP/MP shall describe the Best Management Practices (BMPs) that will be implemented to control erosion, sediment, tracking, construction materials, construction wastes, and non-stormwater flows. BMP details shall be based upon California Stormwater Quality Association's 2009 California Stormwater Quality BMP Handbook Portal or the Caltrans Construction Site BMP Manual (http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm). Contractor's SWPPP/MP shall describe installation, operation, inspection, maintenance, and monitoring activities that will be implemented for compliance with California's General Permit for Stormwater Discharges Associated with Construction and

Land Disturbance Activities (http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml) and all applicable federal, state, and local laws, ordinances, statutes, rules, and regulations related to the protection of water quality.

C. Contractor's SWPPP/MP shall be submitted to Engineer for review and approval within seven (7) calendar days following after the award of contract. If revision is necessary to address Engineer's comments, Contractor shall revise and resubmit the Contractor's SWPPP/MP within two (2) working days. The Engineer may provide a letter of conditional approval of the Contractor's SWPPP/MP while minor revisions are made and may allow the Contractor to begin only those certain construction activities identified in the letter of conditional approval. In no case will the conditional approval extend beyond twenty-one (21) calendar days. The Engineer may suspend construction operations, but not extend the contract time, until the Contractor submits a revised SWPPP/MP that is reviewed and approved by the Engineer.

D. Preparer of Contractor's SWPPP/MP shall have one of the following certifications:
1. A California registered professional civil engineer;
2. A California registered professional geologist or engineering geologist;
3. A California registered landscape architect;
4. A professional hydrologist registered through the American Institute of Hydrology;
5. A Certified Professional in Erosion and Sediment Control™ (CPESC®) registered through EnviroCert International, Inc.;
6. A Certified Professional in Storm Water Quality™ (CPSWQ®) registered through EnviroCert International, Inc.; or
7. A professional in erosion and sediment control registered through the National Institute for Certification in Engineering Technologies (NICET);

E. Contractor shall designate a Water Pollution Control Manager that shall have one of the certifications in Section 01020.D or one of the following certifications:
1. A certified erosion, sediment and storm water inspector registered through EnviroCert International, Inc.; or
2. A certified inspector of sediment and erosion control registered through Certified Inspector of Sediment and Erosion Control, Inc.

F. Contractor's Water Pollution Control Manager shall:
1. Be responsible for all water pollution control work.
2. Be the Engineer's primary contact for all water pollution control work.
3. Have the authority to mobilize resources (crews, supplies, equipment, etc.) to make immediate repairs of water pollution control measures or to supplement water pollution control measures to maintain compliance with all federal, state, and local laws, ordinances, and regulations related to the protection of water quality, including the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.

G. Water Pollution Control Training: Contractor shall provide water pollution control training to Contractor's employees and subcontractors prior to their performing work on the work site. Contractor shall provide copies of training records to

Engineer on a weekly basis. The water pollution control training shall be appropriate to the employee or subcontractor function and area of responsibility and shall address (as applicable):

1. Erosion Control (water and wind)
2. Sediment Control
3. Tracking Control
4. Materials & Waste Management
5. Non-Stormwater Discharge Management

H. Monitoring and Reporting: Observations and inspections conducted by the Contractor's Water Pollution Control Manager shall be documented on the Construction Site Inspection Checklist included in Contractor's SWPPP/MP. A copy of each completed Construction Site Inspection Checklist shall be submitted to the Engineer within 24 hours of conducting the inspection.

General Requirements:

The Contractor shall be responsible for all costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in "Water Pollution Control", including but not limited to, compliance with the applicable provisions of the Caltrans Handbooks, Construction General Permit, Federal, State, and local regulations. For the purpose of this paragraph, costs and liabilities include, but not limited to, fines, penalties, damages, and costs (legal, engineering and otherwise) associated with defending against enforcement actions whether taken against the County or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Act.

Within seven (7) calendar days after the award of contract, the Contractor shall submit two (2) copies of the SWPPP/MP to the Engineer for review and approval. The Contractor shall allow two (2) working days for the Engineer to review the SWPPP/MP. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the SWPPP/MP within two (2) working days of receipt of the Engineer's comments and shall allow two (2) working days for the Engineer to review the revisions. The Contractor shall submit four (4) copies of the approved SWPPP/MP to the Engineer.

Unless otherwise directed by the Engineer or specified in these Special Provisions, the Contractor's responsibility for SWPPP/MP implementation shall continue throughout any temporary suspension of work ordered in accordance with Section 8-1.05, "Temporary Suspension of the Work", of the Standard Specifications.

The Engineer may order the suspension of construction operations, but not extend the contract time, if the Contractor fails to comply with the requirements of "Water Pollution Control" as determined by the Engineer.

The Contractor will not be compensated for sampling and analysis work due to the Contractor's failure to properly implement, inspect, maintain, and repair BMPs in conformance with the approved SWPPP/MP and any amendments thereto, or for failing to store construction materials or wastes in watertight conditions.

Payment for Water Pollution Control shall be on a lump sum basis and shall include full compensation for the work performed, including developing, preparing, revising,

obtaining approval of, and amending the SWPPP/MP, and implementing, installing, constructing, operating, maintaining, and removing and disposing of temporary BMPs, and performing the observations, inspections, sampling, analysis, and reporting described in the SWPPP/MP, street sweeping, and as specified in the Caltrans Handbooks, General Permit and these Special Provisions, and as directed by the Engineer.

See Attachment "B"

Item 11: Clarification Erosion Control [Hydroseed Landscape Slope Area].

Refer to section "Erosion Control [Hydroseed Landscape Slope Area]," on page 78. This special provision is deleted and replaced with the following:

Erosion Control (Hydroseeding and Mitigation measures)

Hydroseeding shall conform to Section 20-3 "Erosion Control" of the Standard Specifications, these Special Provisions, and as directed by the Engineer.

Hydroseeding

Seed mix for hydroseeding shall consist of native plants only and shall be approved by the County prior to application. All hydroseeding shall be carried out during the rainy season, preferably in December through mid March.

Seed mix shall be premixed with tags guaranteeing the weight per acre of each seed in the mix. No substitutions will be allowed. All seed tags shall be supplied at the job site to verify correct usage.

The hydroseeding shall be applied in the form of a slurry consisting of organic soil amendments, commercial fertilizer, and other chemicals. When hydraulically sprayed onto the soil, the mulch shall form a blotter like material. The spray operation shall be directed so that the slurry spray will also penetrate the soil surface.

The hydroseeding slurry components shall not be allowed to remain in hydroseeding machine for more than 2 hours. An additional 50% of the originally specified seed mix quantity shall be added to any slurry mixture which has not been applied within the 2 hours after mixing. An additional 75% quantity of the specified seed mix shall be added to any mixture that has not been applied within 8 hours after mixing. All mixtures disposed off-site shall be at the Contractor's expense.

The area shall be sprayed with a uniform visible guide. The slurry shall be applied in a downward drilling motion via a fan stream nozzle. The Contractor shall ensure that all of the slurry components enter and mix with the soil uniformly and shall avoid mix build up.

The Contractor shall exercise special care to prevent any of the slurry from being sprayed onto any hardscape areas. Any overspray shall be removed at the Contractor's expense.

Slurry Medium

Slurry medium for hydroseeding mixture shall be of industry standard or better, shall be suitable for the germination and growth of the specified seed mixture, and shall include the following components

1. Wood Fiber Mulch	2,000 lbs/acre min.
2. Controlled Release Hydrogen	
3. Stabilizing Emulsion	120 lbs/acre min.
4. Soil conditioner	1,000 lbs/acre min.
5. Seed mix as specified	

Soil conditioner shall contain Mycorrhizal fungi with Endo and Ecto Inoculum Mycorrhizal fungi [14,330 propagules/kg (6,500 propagules/lb min.)], Humus (65% min), Humic Acid (25% min) and Soil Bacteria, and shall not contain animal or human waste products, pathogenic viruses, fly larvae, insecticides, herbicides, fungicides, or chemicals that would inhibit plant growth.

General Preparation

1. Commence work as directed by the Engineer and conduct operations continually to completion unless weather conditions are unfavorable. All work shall conform to high standards of practice within the trade.
2. If underground utilities, construction or solid rock ledges are encountered, other locations for planting may be selected by the Engineer. Damage to utility lines shall be repaired at the Contractor's expense.

Inspection of Work in Progress

Installation and operations in progress must be approved at various stages by the Engineer. In no event shall the Contractor proceed from one stage to another of the work, without prior approval of the Engineer.

Maintenance

1. Maintenance operations shall begin immediately after hydroseeding and shall be continued satisfactorily for a period of 90 days after the time all items of work have been completed as specified herein and to the satisfaction of the Engineer.
2. During the 90 days maintenance, the Contractor shall maintain the area free of weeds, reconstruct and re-seed the area, if it is damaged by rain and erosion.
3. A written notice requesting a pre-maintenance or a final inspection shall be received by the Engineer at least 5 working days in advance.

The contract price paid per square foot for erosion control (hydroseeding) includes full compensation for furnishing all labor, tools, equipment, and incidentals, and for doing all the work involved including applying water, and maintaining for 90 days complete in place, as shown on the plans, as specified in the Standard Specifications and these Special Provisions, and as directed by the Engineer.

Item 12: Portland Cement Concrete.

Refer to section "Portland Cement Concrete," on page 101. The following additional requirement is added to special provision:

Portland cement concrete at Abutments and Abutment Footings, Retaining Walls and Footings, and Cut-Off Walls and Footings, is considered to be in a corrosive environment and shall conform to the provisions in Section 90, "Portland Cement Concrete," of the Standard Specifications and these special provisions.

Cementitious material to be used in Portland cement concrete shall conform to the provisions in Section 90-2, "Materials," of the Standard Specifications, and shall be Type V Portland cement.

Concrete in a corrosive environment shall contain not less than 675 pounds of cementitious material per cubic yard.

Reduction in the cementitious material content specified or ordered in conformance with the provisions in Section 90-4.05, "Optional Use of Chemical Admixtures," of the Standard Specifications, is not permitted for concrete in a corrosive environment.

For concrete in a corrosive environment, the cementitious material shall be comprised of 25 percent by weight of either fly ash or natural pozzolan with a CaO content of up to 10 percent, and 75 percent by weight of Portland cement.

The ratio of the amount of free water to the amount of cementitious material used in concrete in a corrosive environment shall not exceed 0.45.

Full compensation for conforming to the above requirements shall be considered as included in the contract prices paid for the various contract items of work, and no additional compensation will be allowed therefore.

Item 13: Clarification of Telephone and Electrical Conduit.

Refer to section "Telephone and Electrical Conduit," on page 135. The following additional special provision is added and made part hereof.

"Conduit shall be installed in the bridge for future Time-Warner Communications use, as shown on the construction plans, in accordance with the requirements of the owner, in accordance with these Special Provisions and as directed by the Engineer. Conduit for Time-Warner CATV to be capped at each end, two feet beyond the approach slab limits.

Conduit for future Verizon use, on the east side of the bridge, shall be extended to the south (estimated at 75') to connect to existing Verizon conduit. Contractor shall pothole and locate the existing conduit. The north end of conduit shall be capped, two feet beyond the approach slab limits.

Conduit for immediate use by Verizon, on the west side of the bridge, shall be extended to the south (estimated at 75') to connect to existing Verizon conduit.

Contractor shall pothole and locate the existing conduit. The north end of conduit shall be capped, two feet beyond the approach slab limits. Verizon forces will connect to and extend this conduit on the north side of the bridge, during the construction window as described in these Special Provisions."

Conduit shall be schedule 80 unless otherwise indicated.

In addition to above, all other utility Conduits shall be installed in bridge as shown on the plans and as directed by the Engineer.

Delete paragraph entitled "Measurement and Payment" and replace with the following:

"Full compensation for conforming to the requirement of this article shall be considered as included in the "Structural Concrete (Bridge)" and no additional compensation will be allowed therfore."

Item 14: **Clarification of Signal and Lighting.**

Refer to sub-section "Equipment Order" of section "Signal and Lighting," on page 140 & 141. The following additional special provision is added to this sub-section and made part hereof.

"In addition to the liquidated damages set forth elsewhere in contract document, the Contractor shall pay to the County of Riverside the sum of **$1,500** per day for each and every calendar day's delay in receiving all of the below listed equipment, onto the job site or the contractors storage facility, and available for installation, within 100 calendar days of the award of the contract by the County of Riverside Board of Supervisors:

1. *Signal Poles*
2. *Traffic Signal Controller Assemblies*
3. *Service Equipment Enclosures*
4. *LED Modules*

Item 15: **Clarification of Obstruction.**

Refer to section "Obstruction," on page 181. The following additional paragraph is added to the special provision.

"**Weight restriction on EMWD 54' and 30 "water line**"

Contractor shall avoid the use of any equipment and machinery that exceeds 8000 lbs on front axle and 32000 lbs on the rear axle during all construction activities over the referenced pipelines.

Item 16: Street Sweeping.

The following special provision regarding "Street Sweeping" is being added to the contract document.

GENERAL

Summary
This work includes street sweeping.

The SWPPP/MP must describe and include the use of street sweeping as a water pollution control practice for sediment control and tracking control.

Submittals
At least 5 working days before starting clearing and grubbing, earthwork, or other activities with the potential for tracking sediment or debris, submit for review and approval:

A. The number of street sweepers that will be used as described in the SWPPP/MP.
B. Type of sweeper technology (or technologies).

Quality Control and Assurance
Retain and submit records of street sweeping including:

A. Tracking Inspection Log
B. Log of Sweeping times and locations.
C. Quantity of sweeping waste disposal not limited to estimate, truck scale slip weight-records and others.

CONSTRUCTION

Street Sweepers

Sweepers must use one of these technologies:

A. Mechanical sweeper followed by a vacuum-assisted sweeper.
B. Vacuum-assisted dry (waterless) sweeper.
C. Regenerative-air sweeper.

Operation
Street sweeping must be done at:

A. Paved roads at job site entrance and exit locations.
B. Paved areas within the job site that flow to storm drains or water bodies.

Street sweeping must be done, and Sweeper(s) shall be available to operate at all times, for the following:

A. During clearing and grubbing activities.

B. During earthwork activities.
C. During trenching activities.
D. During roadway structural section activities.
E. When vehicles are entering and leaving the job site.
F. After soil disturbing activities.
G. After observing offsite tracking of material.

Contractor's Water Pollution Control Manager shall inspect adjacent paved areas at job site entrances and exits and paved roadways within the job site on a minimum daily basis, and more frequently when activities that require street sweeping are being performed. Contractor's Water Pollution Control Manager shall maintain a "Tracking Inspection Log." Street sweeping shall be conducted:

Within 1 hour, if sediment or debris is observed during activities that require sweeping.

At least 1 sweeper must be on the job site at all times when sweeping work is required. The sweeper must be in good working order.

Perform street sweeping to minimize dust. If dust generation is excessive or sediment pickup is ineffective, water may be used but shall be contained, collected (e.g. vacuum), and properly disposed.

Material collected during street sweeping must be removed and disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way" of the Standard Specifications.

Full compensation to conform with the requirements of this article shall be considered as included the contract lump sum price paid for Water Pollution Control including furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in street sweeping, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these Special Provisions, and as directed by the Engineer. No additional compensation will be allowed therefor.

Item 17: **Reference specific brands or products.**

Although the Special Provisions and construction plans reference specific brands or products, the intent of these references is as a guideline only, and products from alternate manufacturers will be accepted, provided that the product and its performance are a close approximation of the specified product. The Contractor shall submit information and specifications of the proposed alternate product to the Engineer for evaluation and approval prior to placing an order with the vendor.

Item 18: **Southern California Gas Company carrier pipe.**

It is anticipated that the Southern California Gas Company will install carrier pipe in Goetz Road, and through the casing which is included in the contract scope of work. The Contractor shall coordinate and cooperate with the Gas Company in this matter. Said work is anticipated to be performed during and after Milestones 1 & 2. Plans will be provided to the successful Contractor upon receipt.

Item 19 : Existing underground utility facilities.

It shall be the responsibility of the Contractor to positively locate (pothole) all existing underground utility facilities that are in close proximity to any and all construction activities that are included in the Contractor's scope of work, and as directed by the Engineer, including but not limited to:

Existing utility pipes and conduits on both the north and south side of the Goetz Road (Audie Murphy) bridge, which facilities will be extended through the bridge. For those utility facilities that are capped for future extension by the Contractor or by the Utility owner, the capped end of the facility shall be exposed and surveyed for use by the utility owner. Said capped conduits and pipes on the south side of the bridge are located approximately 75 feet south of the approach slab.

All utility main, trunk, laterals and services that are either marked by DigAlert, or which are evidenced by the presence of visible utility related features, which are within 4 feet of any planned excavation.

Elsinore Valley Municipal Water District pipelines which are believed to be capped, and which capped pipes are located at the following approximate locations:

Sta. 9+63, 5' left (12" water pipeline)
Sta. 14+55, 5' left (8" water pipeline)

The Contractor shall coordinate with the Engineer and the County Survey crew with respect to the required potholing of existing utilities.

Extraction of soil to expose the underground utility facilities shall be performed in a damage prevention manner, and the Contractor is responsible to fully protect the utility facilities.

Attention is directed to Section 8-1.10 "Utility and Non-Highway Facilities" of the Standard Specifications, and these Special Provisions, with respect to existing utility facilities.

Full compensation for compliance with the requirements of this Addendum Item shall be considered as included in the various items of work, and no additional compensation will be allowed therefor.

Item 20: Piling.

The following Special Provisions regarding "Piling" are added and made part hereof.

Piling:

GENERAL
Piling shall conform to the provisions in Section 49, "Piling," of the Standard Specifications, and these special provisions.

Unless otherwise specified, welding of any work performed in conformance with the

provisions in Section 49, "Piling," of the Standard Specifications, shall be in conformance with the requirements in AWS D1.1.

CAST-IN-DRILLED-HOLE CONCRETE PILES

GENERAL

Summary

Cast-in-drilled-hole (CIDH) concrete piling shall conform to the provisions in Section 49-4, "Cast-In-Place Concrete Piles," of the Standard Specifications and these special provisions.
The provisions of "Welding" of these special provisions shall not apply to temporary steel casings.

SUBMITTALS

Pile Installation Plan

The Contractor shall submit a pile installation plan to the Engineer for approval for all CIDH concrete piling. The pile installation plan shall be submitted at least 15 days before the planned construction of the CIDH concrete piling and shall include complete descriptions, details, and supporting calculations for the following:

A. Concrete mix design, certified test data, and trial batch reports.
B. Drilling or coring methods and equipment.
C. Proposed method for casing installation and removal when necessary.
D. Plan view drawing of pile showing reinforcement. Include inspection pipes on the drawing if inspection pipes are required.
E. Methods for placing, positioning, and supporting bar reinforcement.
F. Methods and equipment for determining the depth of concrete and actual and theoretical volume placed, including effects on volume of concrete when any casings are withdrawn.
G. Methods and equipment for verifying that the bottom of the drilled hole is clean before placing concrete.
H. Methods and equipment for preventing upward movement of reinforcement, including the Contractor's means of detecting and measuring upward movement during concrete placement operations.

MATERIALS

Concrete

Aggregate Grading

The combined aggregate grading shall be either the 1-inch maximum grading, the 1/2-inch maximum grading, or the 3/8-inch maximum grading and shall conform to the requirements in Section 90-3, "Aggregate Gradings," of the Standard Specifications.

CONSTRUCTION

General

Portions of CIDH concrete piling shown on the plans to be formed shall be formed and finished in conformance with the provisions for concrete structures in Section 51, "Concrete Structures," of the Standard Specifications.

MEASUREMENT AND PAYMENT (PILING)

Measurement and payment for the various types and classes of piles shall conform to the provisions in Sections 49-6.01, "Measurement," and 49-6.02, "Payment," of the Standard Specifications and these special provisions.

Full compensation for slurry, depositing concrete under slurry, test batches, inspection pipes, filling inspection holes and pipes with grout, drilling oversized cast-in-drilled-hole concrete piling, filling cave-ins and oversized piles with concrete, and re-drilling through concrete shall be considered as included in the contract prices paid per linear foot for cast-in-drilled-hole concrete piling of the types and sizes listed in the bid proposal, and no additional compensation will be allowed therefor.

Item 21: **Sound Wall.**

The following Special Provisions regarding "Sound Wall" are added and made part hereof.

DESCRIPTION

This work shall consist of constructing sound walls of masonry block. Sound walls shall be supported on piles, pile caps, grade beams as shown on the plans.

SOUND WALL (MASONRY BLOCK)
Sound wall (masonry block), consisting of a reinforced hollow unit masonry block stem, shall be constructed in conformance with the provisions in Section 19, "Earthwork," Section 52, "Reinforcement," and Section 90, "Portland Cement Concrete," of the Standard Specifications and these special provisions.

Sound wall masonry unit stems shall be constructed with joints of mortar. Wall stems shall be constructed with hand laid block. Wall stems shall not be constructed with preassembled panels.

Concrete for sound wall footings, pile caps, and grade beams, if required, shall be minor concrete.

The angle of internal friction (ϕ) to be used with Standard Plan drawings for the soils at sound wall shown on the plans is 30.

Concrete masonry units shall be hollow, load bearing, lightweight or medium weight class units conforming to the requirements in ASTM Designation: C 90. Standard or open-end units may be used. Open-end units, if used, shall not reduce the spacing of the bar reinforcement as shown on the plans.

The masonry units shall be nominal size and texture and of uniform color. The color shall be gray selected from the manufacturer's standards.

When high strength concrete masonry units with f'm=2500 psi are shown on the plans, the high strength masonry units shall have a minimum compressive strength of 3750 psi based on net area. When high strength concrete masonry units with f'm=2000 psi are shown on the plans, the high strength masonry units shall have a minimum compressive strength of 2800 psi based on net area. Each high strength concrete masonry unit shall be identified with a groove embedded in an interior corner. The groove shall extend from a mortar surface for a length of about 2 inches and shall have a depth of about 3/16 inch. When regular strength concrete masonry units with f'm=1500 psi are shown on the plans, the regular strength masonry units shall have a minimum compressive strength of 1900 psi based on net area.

Expansion joint filler shall conform to the requirements in ASTM Designation: D 1751 or ASTM Designation: D 2000 M2AA 805.

Mortar shall be colored to match the units. Coloring shall be chemically inert, fade resistant mineral oxide or synthetic type.

Cementitious material for wall stems shall conform to the provisions in Section 90-2.01, "Cementitious Materials," of the Standard Specifications.
Hydrated lime shall conform to the requirements in ASTM Designation: C 207, Type S.

Mortar sand shall be commercial quality.
Mortar for laying masonry units shall consist, by volume, of one part cementitious material, zero to 0.5 part hydrated lime, and 2.25 to 3 parts mortar sand. Sufficient water shall be added to make a workable mortar. Each batch of mortar shall be accurately measured and thoroughly mixed. Mortar shall be freshly mixed as required. Mortar shall not be retempered more than one hour after mixing.

Prepackaged mortar materials and mortar containing admixtures may be used when approved in writing by the Engineer, provided the mortar shall not contain more than 0.05 percent soluble chlorides when tested in conformance with California Test 422 or more than 0.25 percent soluble sulfates, as SO_4, when tested in conformance with California Test 417.

Before laying masonry units using prepackaged mortar materials or mortar containing admixtures, the Contractor shall submit to the Engineer the proposed sources of the materials together with test data from an independent testing laboratory for mortar tested in conformance with California Test 551. The test data shall be from specimens having a moist cure, except that the sample shall not be immersed in lime water. The average 28-day compressive strength of the mortar shall be not less than 2500 psi.

Aggregate for grout used to fill masonry units shall consist of fine aggregate and coarse aggregate conforming to the provisions in Section 90-2.02, "Aggregates," of the Standard Specifications. At least 20 percent of the aggregate shall be coarse aggregate. The Contractor shall determine the grading except that 100 percent of the combined grading shall pass the 1/2-inch sieve.

At the option of the Contractor, grout for filling masonry units may be proportioned either by volume or weight. Grout shall contain only enough water to cause the grout to flow and fill the voids without segregation. The maximum amount of free water shall not exceed 0.7 times the weight of the cementitious material for regular strength masonry. The maximum amount of free water shall not exceed 0.6 times the weight of the cementitious material for high strength masonry.

Grout proportioned by volume for regular strength masonry shall consist of at least one part cementitious material and 4.5 parts aggregate. Grout proportioned by volume for high strength masonry shall consist of at least one part cementitious material and 3.5 parts aggregate. Aggregate volumes shall be based on a loose, air-dry condition.

Grout proportioned by weight for regular strength masonry shall contain not less than 550 pounds of cementitious material per cubic yard. Grout proportioned by weight for high strength masonry shall contain not less than 675 pounds of cementitious material per cubic yard.

Reinforced concrete masonry unit wall stems shall be constructed with mortar joints in conformance with the following:

A. Concrete masonry unit construction shall be true and plumb in the lateral direction and shall conform to the grade shown on the plans in the longitudinal direction. Bond beam units or recesses for horizontal reinforcement shall be provided.
B. Mortar joints shall be approximately 3/8 inch wide. Walls and cross webs forming cells to be filled with grout shall be full bedded in mortar to prevent leakage of grout. All head and bed joints shall be solidly filled with mortar for a distance in from the face of the wall or unit not less than the thickness of the longitudinal face shells. Head joints shall be shoved tight.
C. Mortared joints around cells to be filled shall be placed so as to preserve the unobstructed vertical continuity of the grout filling. Any overhanging mortar or other obstruction or debris shall be removed from the inside of such cells.
D. Reinforcement shall be securely held in position at top and bottom with either wire ties or spacing devices and at intervals not exceeding 192 bar diameters before placing any grout. Wire shall be 16 gage or heavier. Wooden, aluminum, or plastic spacing devices shall not be used.
E. Splices in vertical reinforcement shall be made only at the locations shown on the plans.
F. Only those cells containing reinforcement shall be filled solidly with grout. All grout in the cells shall be consolidated at the time of placement by vibrating and reconsolidated after excess moisture has been absorbed but before plasticity is lost. Grout shall not be sliced with a trowel.
G. Walls shall be constructed in 4-foot maximum height lifts. Grouting of each lift shall be completed before beginning masonry unit construction for the next lift. The top course of each lift shall consist of a bond beam.
H. A construction joint shall be constructed at the top of the top course to permit placement of the precast cap.
I. Construction joints shall be made when the placing of grout, in grout filled cells, is stopped for more than one hour. The construction joint shall be approximately 1/2 inch below the top of the last course filled with grout.

J. Bond beams shall be continuous. The top of unfilled cells under horizontal bond beams shall be covered with metal or plastic lath.

K. When fresh masonry joins masonry that is partially or totally set, the contact surface shall be cleaned, roughened, and lightly wetted.

L. Surfaces of concrete on which the masonry walls are to be constructed shall be roughened and cleaned, exposing the aggregate, and shall be flushed with water and allowed to dry to a surface dry condition immediately before laying the masonry units.

M. Where cutting of masonry units is necessary, all cuts shall be made with a masonry saw to neat and true lines. Masonry units with cracking or chipping of the finished exposed surfaces will not be acceptable.

N. Masonry shall be protected in the same manner specified for concrete structures in Section 90-8, "Protecting Concrete," of the Standard Specifications and these special provisions.

O. During erection, all cells shall be kept dry in inclement weather by covering partially completed walls. The covering shall be waterproof fabric, plastic or paper sheeting, or other approved material. Wooden boards and planks shall not be used as covering materials. The covering shall extend down each side of masonry walls approximately 2 feet.

P. Splashes, stains, or spots on the exposed faces of the wall shall be removed.

MEASUREMENT AND PAYMENT
Sound walls of the types designated in the Engineer's Estimate will be measured by the square foot of the area of wall projected on a vertical plane between the elevation lines shown on the plans and length of wall (including the precast cap).

The contract price paid per square foot for sound wall of the types designated in the bid proposal shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the sound wall, complete in place, including all anchorages, and reinforcement, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer. Sound wall supports will be measured and paid for as separate items of work.

CONCRETE:

GENERAL
Concrete shall conform to the provisions in Section 51 of the Standard Specifications.

Sound wall footings, pile caps, and grade beams will be measured and paid for as minor concrete (sound wall).

The contract price paid per cubic yard for minor concrete (sound wall) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the footings, pile caps, and grade beams, complete in place, including excavation, backfill, and reinforcement, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

ARCHITECTURAL TREATMENT

Architectural texture for concrete surfaces shall conform to the details shown on the plans, the provisions in Section 51, "Concrete Structures," of the Standard Specifications, and these special provisions.

REFEREE SAMPLE

The architectural texture shall match the texture, color, and pattern of the existing wall located at the project site, available for inspection by bidders.

TEST PANEL

A test panel at least 4' x 4' in size shall be successfully completed at a location approved by the Engineer before beginning work on architectural textures. The test panel shall be constructed and finished with the materials, tools, equipment, and methods to be used in constructing the architectural texture. If ordered by the Engineer, additional test panels shall be constructed and finished until the specified finish, texture, and color are obtained, as determined by the Engineer. The test panel approved by the Engineer shall be used as the standard of comparison in determining acceptability of architectural texture for concrete surfaces.

CURING

Concrete surfaces with architectural texture shall be cured only by the forms-in-place or water methods. Seals and curing compounds shall not be used.

MEASUREMENT AND PAYMENT

Architectural Treatment will be measured and paid for by the square foot. The contract price paid per square foot for architectural treatment of the types listed in the Engineer's Estimate shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in architectural texture, complete in place, including test panels, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

ARCHITECTURAL FINISH (STONE VENEER)

Stone Veneer architectural finish shall be applied to concrete surfaces with a mortar bond coat either directly to the surface or to a mortar bedding on the surface as shown on the plans and in conformance with these special provisions.

MATERIALS

Stone Veneer product shall be selected by the Engineer.

REFEREE SAMPLE

The architectural Finish shall match the texture, color and pattern of the referee

sample located with the County.
Coronado Stone Products 11191 Calabash Avenue Fontana CA 92337, Phone: 800-847-8663; Fax: 909-357-7362 or equivalent from any other vendor.

TEST PANEL

A test panel at least 4' x 4' in size shall be successfully completed at a location approved by the Engineer before beginning work on architectural textures. The test panel shall be constructed and finished with the materials, tools, equipment, and methods to be used in constructing the architectural texture. If ordered by the Engineer, additional test panels shall be constructed and finished until the specified finish, texture, and color are obtained, as determined by the Engineer.

The test panel approved by the Engineer shall be used as the standard of comparison in determining acceptability of architectural texture for concrete surfaces.
Mortar shall be a proprietary, premixed packaged blend of cement, lime, and sand, without color, that requires only water to prepare for use as stone veneer mortar. Packages of premix shall bear the manufacturer's name, brand, weight, and color identification. The manufacturer's recommended mixing proportions and procedures shall be furnished to the Engineer.

PREPARING SURFACES

Surfaces of concrete against which stone or bedding is to be placed shall be roughened and cleaned, exposing the stone aggregate, and shall be flushed with water and allowed to dry to a surface dry condition immediately prior to laying the stone.
Stone shall be mechanically anchored to the concrete backing with corrosion protected metal ties consisting of at least 16 gage sheet metal anchors and at least 12 gage wire placed in the middle third of the stone. Metal ties shall be of standard manufacture for stone masonry.
Mortar bedding shall be used where necessary to straighten the concrete substrate. Mortar bedding shall be not less than 3/4 inch thick.

BOND COAT

A bond coat of mortar shall be floated onto concrete surfaces with sufficient pressure to cover the surface evenly with no bare spots and to fill anchor grooves. Organic adhesive shall not be used for bond coat. The surface area to be covered with bond coat shall be no greater than the area that can be covered with stone while the bond coat is still plastic. Bond coat mortar shall be combed with a notched trowel within 10 minutes before installing stone. Stone shall not be installed on a skinned over mortar bond coat.

LAYING STONE

Stone shall be thoroughly wetted before laying. Wetted stone shall be drained adequately to prevent floating of the stone on the mortar bed. Sprinkling the water onto stone is not an acceptable method for wetting.

The stone shall be back buttered immediately before installing the units and shall be firmly pressed into the freshly notched bond coat. Stone shall be tapped to a true

surface and to obtain 100 percent coverage by mortar on the back of each unit. All head and bed joints shall be filled solid with mortar. Head joints shall be shoved tight. Joints shall be straight and of uniform and equal width. Exposed joints shall be tooled concave.

The finished surface shall not vary more than 1/8 inch in 8 feet from the finished surface shown on the plans. There shall be no offsets in adjoining units.
The facing shall be cured by keeping the stone continuously damp for at least 72 hours after laying. Curing materials shall not stain the stone, mortared joints, or surrounding concrete surfaces.

Surfaces of concrete, completed masonry, and other such materials exposed to view shall be protected from spillage, splatters, and other deposits of cementitious materials from masonry construction. All such deposits shall be removed without damage to the materials or exposed surfaces. Stains, efflorescence, laitance, splashes, or spots on the faces of masonry exposed to view shall be removed. Cleaning agents shall conform to the stone manufacturer's recommendations. Abrasive blast cleaning methods will not be permitted on surfaces of stone.

MEASUREMENT AND PAYMENT

Architectural finish (stone veneer) will be measured and paid for by the square foot. The contract price paid per square foot for architectural finish (stone veneer) of the types listed in the bid proposal shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in stone veneer, complete in place, including mortar bedding and bond coat, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Item 22: **Removal of Hazardous Material.**

The following Special Provisions regarding "Removal of Hazardous Material" are added and made part hereof.

"When the presence of hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe. The Contractor shall immediately cease work in the affected area and report the condition to the Engineer in formal writing.

In conformance with Section 25914.1 of the Health and Safety Code, removal of hazardous substances including exploratory work to identify and determine the extent of the hazardous substance will be performed as an "Extra Work".

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing, transporting and disposing of hazardous material, shall be paid per section 11 of General Conditions "Payment for Extra Work (Force Account Basis)" as specified in these special provisions, and as directed by the Engineer.

Item 23: **Adjust maintenance manhole to grade (Including Frame).**

The following Special Provisions regarding "adjust Maintenance Manhole to grade (including frame)" are added and made part hereof:

Adjust maintenance manhole to grade (Including frame).

"Existing storm drain and utility (Fiber optic) manholes and their frames shall be adjusted to grade with materials similar in quality to those in the original structure in accordance with the applicable provisions of Sections 15-2 of the Standard Specifications and these Special Provisions.

After the maintenance frame has been removed, the top of the structure shall be carefully trimmed to provide a suitable foundation for the new material.

Nothing in these Special Provisions shall relieve the Contractor from his responsibilities as provided in Section 7-1.09, "Public Safety" of the Standard Specifications.

The contract unit bid price paid per each for adjusting maintenance manholes to grade including frame shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, for doing all the work involved and no additional compensation will be allowed therefor.

Item 24: **Clarification of Alternate Bid Schedule 1 (EMWD).**

Following clarification is provided for Alternate Bid Schedule No.1 and made part hereof.

Extension of EMWD 24" Water Pipeline

If awarded, Construction of the EMWD 24" Water Pipeline shall be performed in accordance with the specifications of the Eastern Municipal Water District (EMWD), which are designated as **Appendix 1** made a part hereof, and as directed by the Engineer.

Technical inspection will be performed by a representative of EMWD, in coordination with the Engineer. In the event that the Contractor determines that any instructions of the EMWD inspector are beyond the scope of the Contract, or if there are any other concerns about the instructions, the Contractor will so inform the Engineer and provide any relevant information necessary for the Engineer to evaluate the matter.

In the event that there are any EMWD specifications that conflict with the requirements of the General Conditions, or with the Special Provisions, the requirements of the General Conditions and Special Provisions shall take precedence.

With regard to any Eastern Municipal Water District facilities that are damaged by the Contractor, attention is directed to Section 7-1.11, "Preservation of Property" of the Standard Specifications.

Full compensation for all labor, equipment, materials and incidentals will be at the contract prices paid for the various items of work under Alternate Bid Schedule 1 (Bid items 103 through 117), and no additional compensation will be allowed therefor.

MODIFICATIONS / CLARIFICATIONS TO PLANS:

Item 25: Standard drawings. The following drawing standards are included as Attachment "C", pages 1-4, which are made a part hereof:

- Sound Wall – Caltrans Standard Plan B15-3.
- Sound Wall – Caltrans Standard Plan B15-4
- Sound Wall – Caltrans Standard Plan B15-5
- Sound Wall – Caltrans Standard Plan B15-9

See Attachment "C"

Item 26: **Sound Wall.**

Sound Wall Plans are provided and made part hereof.

See Attachment "D"

Item 27: **Clarification Plan sheet 13 of 96.**

Refer to plan sheet 13 of 96 and note following changes.

The HWL elevation shown in Section C-C on sheet 89 of 96 (13 of 13 the Earthwork Plans) shows a ground water HWL = 1376, shall be disregarded for the purposes of this project. The contractor shall assume that the Water Surface Elevation is no more than 12-inches below the existing Salt Creek flowline and the Contractor shall be prepared to employ de-watering measures for the construction of the facilities of this project.

Item 28: **Clarification Plan sheet 34 of 96.**

Refer to plan sheet 34 of 96 and construction note "B" following changes.

That waterline line is to be removed in accordance with the construction note No.B. There was a comment on the plans "abandon in-place" that was put on that sheet adjacent to the construction Note B in error. The contractor shall remove that pipeline.

Item 29: **Clarification Plan sheet 35 of 96.**

Refer to plan sheet 35 of 96 and construction note "B" at Sta. 18+61.63

"At this station the current line was ended and caped temporarily. The existing line is not in service yet. Contractor shall remove the cap connect the pipeline and continue laying water pipe."

Item 30: **Clarification Plan sheet 54 of 96.**

Refer to plan sheet 54 of 96, bidders shall remove this sheet and replace with the revised "Goetz Road Existing Utilities sheet 2 of 2".

See Attachment "E"

Item 31: **Clarification Plan sheet 80 of 96.**

Refer to plan sheet 80 of 96 and note following changes.

"Sheet 80 of 96, (also labeled as Earthwork plan sheet 4 of 13), call-out on the plans currently labeled STATION 10+29.13, BEGIN WALL REMOVAL shall be relocated on the plans to station 9+72.13 and shall be modified to read STATION 9 + 72.13, BEGIN WALL REMOVAL . This modification adds to the existing call-out at station 9+72.13 and in no way removes the current call-out at station 9+72.13 which calls for the Begin Sound Wall construction and joining the existing wall."

Engineering Certification:

This addendum for Goetz Road and Newport Road project has been prepared under the direction of the following registered Civil Engineer:
(Items other than bridge structure)

Amir H. Fallahi,
No. 55534

Engineering Certification:

This addendum for Goetz Road and Newport Road project has been prepared under the direction of the following registered Civil Engineer:
(for Bridge structural items only)

Mohan Char
C 057894

This addendum has been prepared under the direction of the following registered Civil Engineer:

Neil A. Nilchian, PE
Project Manager

Concurrence:

Khalid Nasim, PE
Engineering Division Manager

Acknowledged: _____ Date: _____
(Contractor)

JRJ:jrj:sb

ATTACHMENT "A" TO ADDENDUM 1
AUGUST 19, 2010

Goetz Road and Newport Road
Completion of Improvements

Project No. B8-0643

PROPOSAL (Revised)

BASE BID

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	999990	MOBILIZATION	LS	1		
2	066102	DUST ABATEMENT	LS	1		
3	074020	WATER POLLUTION CONTROL	LS	1		
4	120100	TRAFFIC CONTROL SYSTEM	LS	1		
5	066105	RESIDENT ENGINEERS OFFICE	LS	1		
6	170101	DEVELOP WATER SUPPLY	LS	1		
7	160101	CLEARING AND GRUBBING	LS	1		
8	----------	**REVISED, SEE ALTERNATE BID SCHEDULE 2**	-------	----------	----------	----------
9	190101	**EARTHWORK / ROADWAY EXCAVATION /OVER EXCAVATION**	CY	**36,000**		
10	000003	DEMOLISHING EXISTING BLOCK WALL	LS	1		
11	198001	IMPORT BORROW [EARTHWORK FILL, **IN PLACE]**	CY	**26,400**		
12	000003	MISCELLANEOUS DIRECTED WORK	FA	1	25,000.00	25,000.00
13	510501	MINOR CONCRETE [PAVEMET (8" THICK) OVER CEMENT TREATED BASE (12" THICK), CRS 814 FOR BUS TURN OUT]	SQFT	1,700		
14	510501	MINOR CONCRETE (CURB AND GUTTER) (CRS 200)	LF	5,560		
15	510501	MINOR CONCRETE (TYPE "D" CURB) (CRS 204) [6"]	LF	3,980		
16	510501	MINOR CONCRETE (TYPE "D" CURB) (CRS 204) [8"]	LF	2,950		
17	510501	MINOR CONCRETE (CROSS-GUTTER) (CRS 209)	SQFT	2,740		
18	510501	MINOR CONCRETE SIDEWALK (CRS401)	SQFT	20,700		
19	510501	MINOR CONCRETE (CURB RAMP) (CRS 403 - CASE A)	EA	5		
20	510501	MINOR CONCRETE (COMMERCIAL DRIVE APPROACH (CRS 207A W=30' R=15')	SQFT	780		
21	510501	MINOR CONCRETE V-DITCH **INCLUDING DISSIPATER**	LF	**640**		
22	013903	PLACE ASPHALT CONCRETE DIKE (CRS 212) (6")	LF	1,400		
23	260201	CLASS 2 AGGREGATE BASE	CY	12,200		
24	390130	HOT MIX ASPHALT	TON	10,100		
25	018031	GUARD RAILING (BARRICADE) (CRS 810)	LF	54		
26	000003	METAL HAND RAILING PER A.P.W.A. 606-1 TYPE B	LF	125		
27	832001	METAL BEAM GUARD RAILING	**LF**	63		
28	839565	TERMINAL SYSTEM(TYPE SRT)	**EA**	1		
29	017003	CATCH BASIN (RIV. CO. STD. 311)	EA	12		
30	000003	FLO-GARD PLUS FILTER	EA	13		
31	650014	18" REINFORCED CONCRETE PIPE	LF	235		
32	650017	24" REINFORCED CONCRETE PIPE	LF	130		
33	800300	CHAIN LINK FENCE [RCFC&WCD STD. DWG. NO. M-801]	LF	25		
34	000003	JUNCTION STRUCTURE PER RCFCD STD.NO. JS227 (BREAK INTO EXISTING 18" RCP)	EA	1		
35	000003	MEDIAN DRAIN INLET (CALTRANS STD. DWG. D73, TYPE G1)	EA	1		
36	665016	18" CORRUGATED METAL PIPE	LF	225		
37	703220	18" CORRUGATED METAL PIPE RISER	EA	2		

BASE BID

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
38	705001	END SECTION PER CAL TRANS D94A	EA	2		
39	721025	ROCK SLOPE PROTECTION (2-TON, METHOD B)	CY	40		
40	**721007**	**ROCK SLOPE PROTECTION (1/2-TON, METHOD B)**	**CY**	**1,515**		
41	721007	ROCK SLOPE PROTECTION (1/2-TON METHOD A)	CY	**340**		
42	840519	THERMOPLASTIC CROSSWALK AND PAVEMENT MARKING	SQFT	**2,815**		
43	840656	PAINT TRAFFIC STRIPE (2 COAT)	LF	**22,410**		
44	850102	PAVEMENT MARKER (REFLECTIVE)	EA	1,100		
45	566011	ROADSIDE SIGN - ONE POST	EA	28		
46	820107	DELINEATOR (CLASS 1) [TYPE Q]	EA	13		
47	860811	DETECTOR LOOP	EA	15		
48	860201	TRAFFIC SIGNAL AND LIGHTING [NEWPORT ROAD & GOETZ ROAD INTERSECTION]	LS	1		
49	861502	TRAFFIC SIGNAL MODIFICATION[GOETZ ROAD & CANYON LAKE DRIVE]	LS	1		
50	203031	ERROSION CONTROL (HYDRO SEED) [LANDSCAPE SLOPE AREAS]	SQFT	**28,210**		
51	150740	REMOVE AND SALVAGE SIGN [EXISTING]	EA	17		
52	861349	REMOVE EXISTING TRAFFIC SIGNAL [GOETZ ROAD & NORMANDY ROAD]	LS	1		
53	071325	TEMPORARY FENCE (TYPE ESA)	LF	1,200		
54	000003	PRESSURE GROUTING (NORTH ABUTMENT)	LS	1		
55	192003(F)	STRUCTURE EXCAVATION (BRIDGE) TYPE (D)	CY	1,964		
56	193003(F)	STRUCTURE BACKFILL (BRIDGE)	CY	1,612		
57	512253(F)	FURNISH PRECAST/PRESTRESSED CONCRETE "BULB TEE" GIRDER	EA	12		
58	512500(F)	ERECT PRECAST/PRESTRESSED CONCRETE "BULB TEE" GIRDER	EA	12		
59	510051(F)	STRUCTURAL CONCRETE (BRIDGE FOOTING)	CY	452		
60	510053(F)	STRUCTURAL CONCRETE (BRIDGE)	CY	717		
61	510086(F)	STRUCTURAL CONCRETE, APPROACH SLAB TYPE N(S)	CY	180		
62	519088(F)	JOINT SEAL TYPE B (MR=1")	LF	202		
63	520102 (P-F-S)	BAR REINFORCING STEEL (BRIDGE)	LB	250,800		
64	839541	TRANSITION RAILING (TYPE WB)	EA	1		
65	000003	SEISMIC EXPANSION JOINTS	EA	4		
66	833140(F)	CONCRETE BARRIER TYPE 26	LF	360		
67	833088(F)	TUBULAR HANDRAILING	LF	360		
68	750501(P-F)	MISCELLANEOUS METAL (BRIDGE)	LB	2,240		
69	511035	ARCHITECTURAL FINISH (STONE VENEER)	SQFT	995		
70	721810(F)	SLOPE PAVING (CONCRETE) [SLOPE PROTECTION]	SQFT	10,000		
71	703450(P-F)	WELDED STEEL PIPE CASING (BRIDGE) **(34" DIA)**	LF	65		
72	703450(P-F)	WELDED STEEL PIPE CASING (BRIDGE) (12" DIA)	LF	186		
73	703450(P-F)	WELDED STEEL PIPE CASING (BRIDGE) **(22" DIA)**	LF	186		
74	**518002**	**SOUND WALL (MASONRY BLOCK WALL)**	**SQFT**	**15,412**		
75	000003	FURNISH & INSTALL 24"CML&P WATER INCLUDING FULL WELD DOUBLE PASS JOINTS [EMWD]	LF	126		
76	000003	FURNISH & INSTALL 24"CML&C WATER INCLUDING FULL WELD DOUBLE PASS [EMWD]	LF	45		
77	000003	FURNISH & INSTALL 24"PVC, CL-235 WATERLINE INCLUDING RESTRAIN JOINTS [EMWD]	LF	99		

BASE BID

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
78	000003	FURNISH & INSTALL 2" AV&AR PER B-367 AND PER DETAIL D-34066 [EMWD]	EA	1		
79	000003	FURNISH & INSTALL FLEX TEND [EMWD]	EA	2		
80	000003	FURNISH & INSTALL 6" BLOWOFF PER B-568 [EMWD]	EA	1		
81	000003	REMOVE CAP AND JOIN EXISTING 24" WATERLINE	EA	1		
82	000003	PROVIDE CONCRETE CAP PER B-408 [EMWD]	CY	120		
83	000003	PROVIDE AND INSTALL CORROSION PROTECTION PER DETAIL 2 [EMWD]	LS	2		
84	000003	FURNISH & INSTALL 6" PVC, C-900, DR-18 RECYCLED WATER PIPELINES WITHOUT RESTRAINT [EMWD]	LF	351		
85	000003	FURNISH & INSTALL 6" PVC, C-900, DR-18 RECYCLED WATER PIPELINES INCLUDING RESTRAINTS [EMWD]	LF	141		
86	000003	FURNISH & INSTALL 12" PVC, C-900, DR-18 RECYCLED WATER PIPELINES INCLUDING RESTRAINTS [EMWD]	LF	200		
87	000003	FURNISH & INSTALL 12" PVC, C-900, DR-18 RECYCLED WATER PIPELINES WITHOUT RESTRAINT [EMWD]	LF	325		
88	000003	REMOVE 6" END CAP AND JOIN EXISTING 6" RECYCLED WATER PIPELINE [EMWD]	EA	1		
89	000003	REMOVE 12" END CAP AND JOIN EXISTING 12" RECYCLED WATER PIPELINE [EMWD]	EA	2		
90	000003	FURNISH AND INSTALL 12" FXH RSGV PER B-255 [EMWD]	EA	1		
91	000003	FURNISH AND INSTALL 12-INCH DIAMETER DUCTILE IRON PIPE, CLASS 350, CEMENT MORTAR LINED AND POLYETHYLENE WRAP COMPLETE IN PLACE [EVMWD]	LF	829		
92	000003	FURNISH AND INSTALL 8-INCH DIAMETER DUCTILE IRON PIPE, CLASS 350, CEMENT MORTAR LINED AND POLYETHYLENE WRAP COMPLETE IN PLACE. [EVMWD]	LF	87		
93	000003	FURNISH AND INSTALL 20-INCH ID STEEL CASING **PER EVMWD STANDARD DRAWING NO W-6**	LF	32		
94	000003	FURNISH AND INSTALL 6-INCH BLOW OFF ASSEMBLY PER EVMWD STD. DWG. NO. W-19, COMPLETE IN PLACE	EA	1		
95	000003	FURNISH AND INSTALL 8-INCH BLOW OFF ASSEMBLY PER EVMWD STD. DWG. NO. W-19, COMPLETE IN PLACE	EA	1		
96	000003	FURNISH AND INSTALL 8-INCH RESILIENT WEDGE GATE VALVE PER EVMWD SPECIFICATIONS AND STD. DWG. NO. W-13, COMPLETE IN PLACE	EA	2		
97	000003	FURNISH AND INSTALL 12-INCH RESILIENT WEDGE GATE VALVE PER EVMWD SPECIFICATIONS AND STD. DWG. NO. W-13, COMPLETE IN PLACE	EA	2		
98	----------	**DELETED BY ADDENDUM**	----------	----------	----------	----------
99	000003	**CONNECTIONS TO EXISTING PIPELINES, COMPLETE IN PLACE**	LS	1		
100	000003	**CONNECTION OF NEW PIPELINES TO EXISTING WATER METER, COMPLETE IN PLACE**	LS	1		
101	----------	**DELETED BY ADDENDUM**	----------	----------	----------	----------
102	000003	**PREPARE, MAINTAIN AND SUPPLY AS-BUILT DRAWINGS AND NOTES AT COMPLETION OF WATER MAIN INSTALLATION PROJECT IN ACCORDANCE WITH EVMWD SECTION 01770, COMPLETE IN PLACE**	LS	1		
103	**000003**	**PCC OVERFLOW DEVICE [PER SHEET 1&6 OF EARTHWORK PLANS]**	**SQFT**	**630**		
104	**498016**	**16" CAST-IN-DRILLED-HOLE CONCRETE PILING (FOR SOUND WALL)**	LF	**2,616**		
105	**510524**	**MINOR CONCRETE (FOR SOUND WALL)**	CY	**147**		

PROPOSAL (Revised)

BASE BID

ITEM No.	ITEM CODE	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
106	511035	ARCHITECTURAL TREATMENT (FOR SOUND WALL)	SQFT	29,307		
107	000003	STONE VENEER (FOR SOUND WALL)	SQFT	1,517		
108	000003	ADJUST MAINTENANCE MANHOLE TO GRADE [INCLUDING FRAME, 7 STORM DRAIN AND 1 FIBER OPTIC]	EA	8		

SUB-TOTAL: _____ $_____

ITEMS 1-108 "WORDS"

Alternate Bid Schedule 1 (EMWD, Extension of 24" line)

109	000003	FURNISH & INSTALL 24"PVC, CL-235 WATERLINE WITHOUT RESTRAINT	LF	1,349		
110	000003	FURNISH & INSTALL 24"PVC, CL-235 WATERLINE INCLUDING RESTRAINTS	LF	1,051		
111	000003	FURNISH & INSTALL 6" FIRE HYDRANT PER B-362	EA	5		
112	000003	FURNISH & INSTALL 42" HDPE CASING	LF	35		
113	000003	REMOVE 24" END CAP	EA	1		
114	000003	JOIN EXISTING 24" WATERLINE	EA	2		
115	000003	FURNISH & INSTALL 12" PVC, C-900, CL-200 INCLUDING RESTRAINTS	LF	25		
116	000003	FURNISH & INSTALL 12" PVC, C-900, DR-18 INCLUDING RESTRAINTS	LF	101		
117	000003	FURNISH & INSTALL 1" AV&AR PER B-598	EA	1		
118	000003	FURNISH & INSTALL 6" BLOWOFF PER B-568	EA	1		
119	000003	FURNISH & INSTALL 12" RSGV PER B-255	EA	1		
120	000003	FURNISH & INSTALL 24" RSGV PER B-255	EA	2		
121	000003	REMOVE 18" BLIND FLANGE	EA	1		
122	000003	REMOVE 18" FXF BFV	EA	1		
123	000003	REMOVE EXISTING BLOWOFF AND INSTALL BLIND FLANGE	EA	2		

SUB-TOTAL: _____ $_____

ITEM 109-123 "WORDS"

Alternate Bid Schedule 2 (COC INSURANCE)

124	000003	COURSE OF CONSTRUCTION INSURANCE	LS	1		

SUB-TOTAL: _____ $_____

ITEM 124 "WORDS"

PROJECT TOTAL: _____ $_____

ITEMS 1-124 "WORDS"

RISK LEVEL 1 REQUIREMENTS

A. Effluent Standards

[These requirements are the same as those in the General Permit order.]

1. Narrative – Risk Level 1 dischargers shall comply with the narrative effluent standards listed below:

   a. Storm water discharges and authorized non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

   b. Dischargers shall minimize or prevent pollutants in storm water discharges and authorized non-storm water discharges through the use of controls, structures, and management practices that achieve BAT for toxic and non-conventional pollutants and BCT for conventional pollutants.

2. Numeric – Risk Level 1 dischargers are not subject to a numeric effluent standard.

B. Good Site Management "Housekeeping"

1. Risk Level 1 dischargers shall implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, Risk Level 1 dischargers shall implement the following good housekeeping measures:

   a. Conduct an inventory of the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

   b. Cover and berm loose stockpiled construction materials that are not actively being used (i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).

c. Store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

d. Minimize exposure of construction materials to precipitation. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions (i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

e. Implement BMPs to prevent the off-site tracking of loose construction and landscape materials.

2. Risk Level 1 dischargers shall implement good housekeeping measures for waste management, which, at a minimum, shall consist of the following:

a. Prevent disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

b. Ensure the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the storm water drainage system or receiving water.

c. Clean or replace sanitation facilities and inspecting them regularly for leaks and spills.

d. Cover waste disposal containers at the end of every business day and during a rain event.

e. Prevent discharges from waste disposal containers to the storm water drainage system or receiving water.

f. Contain and securely protect stockpiled waste material from wind and rain at all times unless actively being used.

g. Implement procedures that effectively address hazardous and non-hazardous spills.

h. Develop a spill response and implementation element of the SWPPP prior to commencement of construction activities. The SWPPP shall require that:

i. Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly; and

ii. Appropriate spill response personnel are assigned and trained.

i. Ensure the containment of concrete washout areas and other washout areas that may contain additional pollutants so there is no discharge into the underlying soil and onto the surrounding areas.

3. Risk Level 1 dischargers shall implement good housekeeping for vehicle storage and maintenance, which, at a minimum, shall consist of the following:

   a. Prevent oil, grease, or fuel to leak in to the ground, storm drains or surface waters.

   b. Place all equipment or vehicles, which are to be fueled, maintained and stored in a designated area fitted with appropriate BMPs.

   c. Clean leaks immediately and disposing of leaked materials properly.

4. Risk Level 1 dischargers shall implement good housekeeping for landscape materials, which, at a minimum, shall consist of the following:

   a. Contain stockpiled materials such as mulches and topsoil when they are not actively being used.

   b. Contain fertilizers and other landscape materials when they are not actively being used.

   c. Discontinue the application of any erodible landscape material within 2 days before a forecasted rain event or during periods of precipitation.

   d. Apply erodible landscape material at quantities and application rates according to manufacture recommendations or based on written specifications by knowledgeable and experienced field personnel.

   e. Stack erodible landscape material on pallets and covering or storing such materials when not being used or applied.

5. Risk Level 1 dischargers shall conduct an assessment and create a list of potential pollutant sources and identify any areas of the site where additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. This potential pollutant list shall be kept with the SWPPP and shall identify

all non-visible pollutants which are known, or should be known, to occur on the construction site. At a minimum, when developing BMPs, Risk Level 1 dischargers shall do the following:

a. Consider the quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

b. Consider the degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

c. Consider the direct and indirect pathways that pollutants may be exposed to storm water or authorized non-storm water discharges. This shall include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

d. Ensure retention of sampling, visual observation, and inspection records.

e. Ensure effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

6. Risk Level 1 dischargers shall implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients, trash, metals, bacteria, oil and grease and organics.

C. Non-Storm Water Management

1. Risk Level 1 dischargers shall implement measures to control all non-storm water discharges during construction.

2. Risk Level 1 dischargers shall wash vehicles in such a manner as to prevent non-storm water discharges to surface waters or MS4 drainage systems.

3. Risk Level 1 dischargers shall clean streets in such a manner as to prevent unauthorized non-storm water discharges from reaching surface water or MS4 drainage systems.

D. Erosion Control

1. Risk Level 1 dischargers shall implement effective wind erosion control.

2. Risk Level 1 dischargers shall provide effective soil cover for inactive[1] areas and all finished slopes, open space, utility backfill, and completed lots.

3. Risk Level 1 dischargers shall limit the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, the discharger shall consider the use of plastic materials resistant to solar degradation.

E. Sediment Controls

1. Risk Level 1 dischargers shall establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

2. On sites where sediment basins are to be used, Risk Level 1 dischargers shall, at minimum, design sediment basins according to the method provided in CASQA's Construction BMP Guidance Handbook.

F. Run-on and Runoff Controls

Risk Level 1 dischargers shall effectively manage all run-on, all runoff within the site and all runoff that discharges off the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance with the effluent limitations in this General Permit.

G. Inspection, Maintenance and Repair

1. Risk Level 1 dischargers shall ensure that all inspection, maintenance repair and sampling activities at the project location shall be performed or supervised by a Qualified SWPPP Practitioner (QSP) representing the discharger. The QSP may delegate any or all of these activities to an employee trained to do the task(s) appropriately, but shall ensure adequate deployment.

2. Risk Level 1 dischargers shall perform weekly inspections and observations, and at least once each 24-hour period during extended

[1] Inactive areas of construction are areas of construction activity that have been disturbed and are not scheduled to be re-disturbed for at least 14 days.

storm events, to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Inspectors shall be the QSP or be trained by the QSP.

3. Upon identifying failures or other shortcomings, as directed by the QSP, Risk Level 1 dischargers shall begin implementing repairs or design changes to BMPs within 72 hours of identification and complete the changes as soon as possible.

4. For each inspection required, Risk Level 1 dischargers shall complete an inspection checklist, using a form provided by the State Water Board or Regional Water Board or in an alternative format.

5. Risk Level 1 dischargers shall ensure that checklists shall remain onsite with the SWPPP and at a minimum, shall include:

   a. Inspection date and date the inspection report was written.

   b. Weather information, including presence or absence of precipitation, estimate of beginning of qualifying storm event, duration of event, time elapsed since last storm, and approximate amount of rainfall in inches.

   c. Site information, including stage of construction, activities completed, and approximate area of the site exposed.

   d. A description of any BMPs evaluated and any deficiencies noted.

   e. If the construction site is safely accessible during inclement weather, list the observations of all BMPs: erosion controls, sediment controls, chemical and waste controls, and non-storm water controls. Otherwise, list the results of visual inspections at all relevant outfalls, discharge points, downstream locations and any projected maintenance activities.

   f. Report the presence of noticeable odors or of any visible sheen on the surface of any discharges.

   g. Any corrective actions required, including any necessary changes to the SWPPP and the associated implementation dates.

   h. Photographs taken during the inspection, if any.

   i. Inspector's name, title, and signature.

H. Rain Event Action Plan

Not required for Risk Level 1 dischargers.

I. Risk Level 1 Monitoring and Reporting Requirements

Table 1- Summary of Monitoring Requirements

Risk Level	Visual Inspections					Sample Collection	
	Quarterly Non-storm Water Discharge	Pre-storm Event		Daily Storm BMP	Post Storm	Storm Water Discharge	Receiving Water
		Baseline	REAP				
1	X	X		X	X		

1. **Construction Site Monitoring Program Requirements**

   a. Pursuant to Water Code Sections 13383 and 13267, all dischargers subject to this General Permit shall develop and implement a written site-specific Construction Site Monitoring Program (CSMP) in accordance with the requirements of this Section. The CSMP shall include all monitoring procedures and instructions, location maps, forms, and checklists as required in this section. The CSMP shall be developed prior to the commencement of construction activities, and revised as necessary to reflect project revisions. The CSMP shall be a part of the Storm Water Pollution Prevention Plan (SWPPP), included as an appendix or separate SWPPP chapter.

   b. Existing dischargers registered under the State Water Board Order No. 99-08-DWQ shall make and implement necessary revisions to their Monitoring Programs to reflect the changes in this General Permit in a timely manner, but no later than July 1, 2010. Existing dischargers shall continue to implement their existing Monitoring Programs in compliance with State Water Board Order No. 99-08-DWQ until the necessary revisions are completed according to the schedule above.

   c. When a change of ownership occurs for all or any portion of the construction site prior to completion or final stabilization, the new discharger shall comply with these requirements as of the date the ownership change occurs.

2. **Objectives**

   The CSMP shall be developed and implemented to address the following objectives:

   a. To demonstrate that the site is in compliance with the Discharge Prohibitions;

b. To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;

c. To determine whether immediate corrective actions, additional Best Management Practice (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in storm water discharges and authorized non-storm water discharges; and

d. To determine whether BMPs included in the SWPPP are effective in preventing or reducing pollutants in storm water discharges and authorized non-storm water discharges.

3. **Risk Level 1 - Visual Monitoring (Inspection) Requirements for Qualifying Rain Events**

a. Risk Level 1 dischargers shall visually observe (inspect) storm water discharges at all discharge locations within two business days (48 hours) after each qualifying rain event.

b. Risk Level 1 dischargers shall visually observe (inspect) the discharge of stored or contained storm water that is derived from and discharged subsequent to a qualifying rain event producing precipitation of ½ inch or more at the time of discharge. Stored or contained storm water that will likely discharge after operating hours due to anticipated precipitation shall be observed prior to the discharge during operating hours.

c. Risk Level 1 dischargers shall conduct visual observations (inspections) during business hours only.

d. Risk Level 1 dischargers shall record the time, date and rain gauge reading of all qualifying rain events.

e. Within 2 business days (48 hours) prior to each qualifying rain event, Risk Level 1 dischargers shall visually observe (inspect):

i. All storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources. If needed, the discharger shall implement appropriate corrective actions.

ii. All BMPs to identify whether they have been properly implemented in accordance with the SWPPP. If needed, the discharger shall implement appropriate corrective actions.

iii. Any storm water storage and containment areas to detect leaks and ensure maintenance of adequate freeboard.

f. For the visual observations (inspections) described in e.i and e.iii above, Risk Level 1 dischargers shall observe the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.

g. Within two business days (48 hours) after each qualifying rain event, Risk Level 1 dischargers shall conduct post rain event visual observations (inspections) to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify additional BMPs and revise the SWPPP accordingly.

h. Risk Level 1 dischargers shall maintain on-site records of all visual observations (inspections), personnel performing the observations, observation dates, weather conditions, locations observed, and corrective actions taken in response to the observations.

4. **Risk Level 1 – Visual Observation Exemptions**

a. Risk Level 1 dischargers shall be prepared to conduct visual observation (inspections) until the minimum requirements of Section I.3 above are completed. Risk Level 1 dischargers are not required to conduct visual observation (inspections) under the following conditions:

i. During dangerous weather conditions such as flooding and electrical storms.

ii. Outside of scheduled site business hours.

b. If no required visual observations (inspections) are collected due to these exceptions, Risk Level 1 dischargers shall include an explanation in their SWPPP and in the Annual Report documenting why the visual observations (inspections) were not conducted.

5. **Risk Level 1 – Monitoring Methods**

Risk Level 1 dischargers shall include a description of the visual observation locations, visual observation procedures, and visual observation follow-up and tracking procedures in the CSMP.

6. **Risk Level 1 – Non-Storm Water Discharge Monitoring Requirements**

a. Visual Monitoring Requirements:

i. Risk Level 1 dischargers shall visually observe (inspect) each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources.

ii. Risk Level 1 dischargers shall conduct one visual observation (inspection) quarterly in each of the following periods: January-March, April-June, July-September, and October-December. Visual observation (inspections) are only required during daylight hours (sunrise to sunset).

iii. Risk Level 1 dischargers shall ensure that visual observations (inspections) document the presence or evidence of any non-storm water discharge (authorized or unauthorized), pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.), and source. Risk Level 1 dischargers shall maintain on-site records indicating the personnel performing the visual observation (inspections), the dates and approximate time each drainage area and non-storm water discharge was observed, and the response taken to eliminate unauthorized non-storm water discharges and to reduce or prevent pollutants from contacting non-storm water discharges.

7. **Risk Level 1 – Non-Visible Pollutant Monitoring Requirements**

a. Risk Level 1 dischargers shall collect one or more samples during any breach, malfunction, leakage, or spill observed during a visual inspection which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water.

b. Risk Level 1 dischargers shall ensure that water samples are large enough to characterize the site conditions.

c. Risk Level 1 dischargers shall collect samples at all discharge locations that can be safely accessed.

d. Risk Level 1 dischargers shall collect samples during the first two hours of discharge from rain events that occur during business hours and which generate runoff.

e. Risk Level 1 dischargers shall analyze samples for all non-visible pollutant parameters (if applicable) - parameters indicating the

presence of pollutants identified in the pollutant source assessment required (Risk Level 1 dischargers shall modify their CSMPs to address these additional parameters in accordance with any updated SWPPP pollutant source assessment).

f. Risk Level 1 dischargers shall collect a sample of storm water that has not come in contact with the disturbed soil or the materials stored or used on-site (uncontaminated sample) for comparison with the discharge sample.

g. Risk Level 1 dischargers shall compare the uncontaminated sample to the samples of discharge using field analysis or through laboratory analysis.[2]

h. Risk Level 1 dischargers shall keep all field /or analytical data in the SWPPP document.

8. **Risk Level 1 – Particle Size Analysis for Project Risk Justification**

Risk Level 1 dischargers justifying an alternative project risk shall report a soil particle size analysis used to determine the RUSLE K-Factor. ASTM D-422 (Standard Test Method for Particle-Size Analysis of Soils), as revised, shall be used to determine the percentages of sand, very fine sand, silt, and clay on the site.

9. **Risk Level 1 – Records**

Risk Level 1 dischargers shall retain records of all storm water monitoring information and copies of all reports (including Annual Reports) for a period of at least three years. Risk Level 1 dischargers shall retain all records on-site while construction is ongoing. These records include:

a. The date, place, time of facility inspections, sampling, visual observation (inspections), and/or measurements, including precipitation.

b. The individual(s) who performed the facility inspections, sampling, visual observation (inspections), and or measurements.

c. The date and approximate time of analyses.

d. The individual(s) who performed the analyses.

[2] For laboratory analysis, all sampling, sample preservation, and analyses must be conducted according to test procedures under 40 CFR Part 136. Field discharge samples shall be collected and analyzed according to the specifications of the manufacturer of the sampling devices employed.

e. A summary of all analytical results from the last three years, the method detection limits and reporting units, and the analytical techniques or methods used.

f. Rain gauge readings from site inspections.

g. Quality assurance/quality control records and results.

h. Non-storm water discharge inspections and visual observation (inspections) and storm water discharge visual observation records (see Sections I.3 and I.6 above).

i. Visual observation and sample collection exception records (see Section I.4 above).

j. The records of any corrective actions and follow-up activities that resulted from analytical results, visual observation (inspections), or inspections.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL CIVIL ENGINEER — James J. Burns — No. C47240 — Exp. 12-31-07 — CIVIL — STATE OF CALIFORNIA

To accompany plans dated _____

GENERAL NOTES:

A. For type of block and joint finish, see other sheets.

B. When blocks are laid in stacked bond, ladder type, galvanized joint reinforcement shall be provided. A minimum of 2-9 gauge wires continuous at 4'-0" maximum to be used. Locate reinforcement in joints that are at the approximate midpoint between bond beams.

C. Horizontal joints shall be tooled concave or may be weathered. Vertical joints shall be tooled concave or may be raked.

D. For intermediate wall heights that are between the "H's" given, use the tabular information for the next higher "H".

E. Masonry strengths are listed in the "SOUND WALL REINFORCEMENT TABLE". See Standard Plan B15-3.

DESIGN NOTES:

DESIGN

Uniform Building Code, 1997 Edition
and the Bridge Design Specifications.

DESIGN WIND LOAD

20 psf

DESIGN SEISMIC LOAD

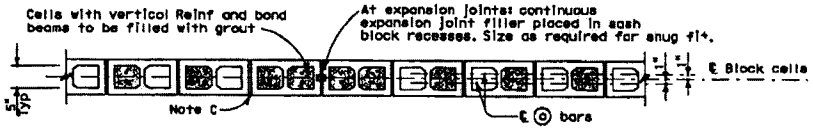
0.57 Dead load

REINFORCED CONCRETE

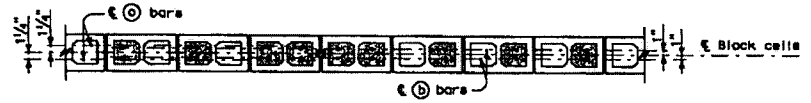
f'c = 3.6 ksi
fy = 60 ksi

CONCRETE MASONRY

REGULAR STRENGTH	HIGH STRENGTH	
f'm = 1500 psi	f'm = 2000 psi	f'm = 2500 psi
fb = 495 psi	fb = 660 psi	fb = 830 psi
fs = 24,000 psi	fs = 24,000 psi	fs = 24,000 psi
n = 25.8	n = 19.3	n = 15.5



SECTION A-A
For details not shown, see other sections.
H=6'-0" THRU H=10'-0"



SECTION A-A SECTION B-B
For details not shown, see other sections.
H=12'-0" THRU H=16'-0"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SOUND WALL
MASONRY BLOCK ON PILE CAP
DETAILS (2)

NO SCALE

RSP B15-4 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-4
DATED MAY 1, 2006 - PAGE 294 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B15-4

7-5-07

294

2006 REVISED STANDARD PLAN RSP B15-4

APPENDIX 1

EMWD SPECIFICATIONS

EASTERN MUNICIPAL
WATER DISTRICT
SINCE 1950

Riverside County

Goetz Rd Bridge & Newport Rd Improvements

Construction Order #66804

A PUBLIC WORKS PROJECT

Contents:

Conditions of the Contract
Specifications

Anthony J. Pack - General Manager

Safety is of paramount and overriding importance to Eastern Municipal Water District

TABLE OF CONTENTS

Revised 09/22/95

GENERAL CONDITIONS
Section E - Inspection and Tests

E-01. This section of the specifications supplements that paragraph of the General Conditions of this specification entitled "Inspection and Testing of Materials".

A. Progress Reports. The Contractor shall furnish the District full information as to the progress of the work in its various parts and shall give the District timely notice of the Contractor's readiness for inspection. The District reserves the right to charge to the Contractor any additional cost of inspection and test when articles or materials are not ready at the time inspection is requested by the Contractor.

B. Inspection at Mill. Inspection will be made during manufacture of material. If the inspection or test, whether preliminary or final, is made on the premises of the Contractor, the Contractor shall furnish, without additional charge, all reasonable facilities and assistance for the safe and convenient inspection and test required by the Engineer.

C. Mill Test Reports. Whenever required by the Engineer the District shall be furnished promptly with complete certified copies of mill test reports showing chemical and physical properties of the materials to be furnished under the contract and also copies of rolling mill reports.

D. Samples or Test Specimens. Samples or test specimens of all materials, appliances, and fittings for delivery under these specifications or for incorporation in the products manufactured or fabricated hereunder shall be prepared at the Contractor's expense, except as otherwise specified herein, and shall be furnished to the Engineer, carriage prepaid, in such quantities and sizes as may be required by him for proper examination and in ample time for completion of all necessary tests or analyses before the time in which the Contractor desires to deliver or make use of same. Chemical tests and analyses, except those furnished by the Contractor under sub-paragraph (c) hereof, will be made by, or at the expense of, the District.

E. Inspection of Materials Not Locally Produced. When the Contractor intends to purchase materials, fabricated products, or equipment from sources located more than 100 miles outside the geographical limits of EMWD's main office, the contractor will be responsible for the actual costs incurred for one inspector (EMWD staff or consultant employed by EMWD) to inspect the materials, equipment or process. Assume $600/day per production day run. This approval shall be obtained before producing any material or equipment. The inspector shall judge the materials by the requirements of the plans and specifications. The Contractor shall forward reports required by the Engineer. No materials or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection. Approval shall not relieve the Contractor of responsibility for complying with the contract requirements.

END OF SECTION E

EASTERN MUNICIPAL WATER DISTRICT
CONSTRUCTION ORDER NO. 66804
GOETZ RD BRIDGE & NEWPORT RD IMPROVEMENTS

SECTION SC - SPECIAL CONDITIONS
SPECIAL PROVISIONS

~~**SC-01. Section F – General Conditions. This project is being bid and administered by the Riverside County Transportation Department. Any reference to the word DISTRICT in Section F – General Conditions of these specifications shall mean Riverside County Transportation Department. Eastern Municipal Water District shall not be considered the OWNER of this project during the bidding and construction phases.**~~

SC-02. Specification Precedence. All the requirements contained within the main bid specification and within Riverside County Transportation Department Standards and Specifications shall supersede all requirements ~~within EMWD Section F~~.

SC-03. Scope of Work. Under these Specifications the Contractor will furnish and install 24-inch diameter steel domestic pipeline through the bridge, 12-inch & 6-inch diameter plastic recycled pipeline, including labor and all fittings, appurtenances, and all other items necessary for the completion of work. All work shall be performed in accordance with these specifications and contract drawings.

SC-04. Location of Contract Work Site. The contract work site is located in the County of Riverside just west and north of Goetz Rd and Newport Rd intersection.

SC-07. Or Equal Substitutions. Products of manufacturers listed as equals to those specified must be submitted for review and approval by the District not later than the tenth (10th) day preceding the date for receipt of bids.

SC-08. Control Density Fill (CDF): The Contractor will be required to use CDF, in accordance with Section 02252 as backfill in areas under and around existing mainline utilities and from the bottom of new water mainline trench to support the utility. All costs associated with furnishing and placing CDF shall be included in the respective bid item.

SC-09. Pipeline Connection and Disinfection. The Contractor shall notify the District one (1) week in advance of the planned pipeline connections and also provide 48 hour and 24 hour advance confirmation of when the work will be performed. The Contractor shall be responsible for dewatering the trench excavations as necessary. Contractor shall be responsible for dewatering, de-chlorination, and disposal of all water

from pipeline testing/flushing activities. Discharge of all water must abide by the District's NPDES permit which limits total residual chlorine to a maximum concentration of 0.1 mg/l. Contractor shall also protect existing water pipelines from contamination during connection procedures. Contractor shall disinfect all new pipelines, pipeline connection closure materials and the existing pipeline at connection points per AWWA Section C-651. All costs associated with connections to existing water pipelines shall be included in the appropriate bid item.

SC-10. **Reference to District's Standard Drawings and Detailed Provisions**. Any and all referenced Standard Drawings and Detailed Provisions shall be considered part of the contract drawings and specifications. All referenced Standard Drawings and Detailed Provisions of the District are available from the District upon request. The Contractor shall not be entitled to any compensation due to referenced documents not included in the Specifications and Contract Drawings.

SC-11. **Provisions for Securing of Trenches**. All trenches within the street right – of-way with pavement cut/removal shall be backfilled and temporary pavement (2-inch minimum) at the end of each workday. Trenches in the unpaved street must be backfilled and compacted to 95% relative compaction minimum at the end of each word day an in accordance with the jurisdictional agencies encroachment permit. The Contractor shall provide complete unobstructed access to each driveway at all times. Cost associated with securing of trenches shall be included in the bid and no additional compensation will be allowed.

SC-12. **Coordination**. The Contractor should take note that other work may be taking place simultaneously at the jobsite. It shall be the Contractor's responsibility to coordinate his activities with all the other contractors performing work in the project area and to cooperate with all other contractors within reasonable and professional norms so that all construction may be completed in a timely manner. No additional compensation will be allowed due to conflicts with other construction in the area.

SC- 13. **Existing Underground Utilities and Potholing for Existing Utilities.** Unless otherwise indicated on the plans or directly by the utility owner, all utilities shall be protected in place and service maintained as described in Section 02201 Part 1.02 of the Specifications. Utilities crossing the proposed water pipeline alignment are plotted on the plan view of the plans. The utilities were plotted based on information provided from the respective utility owners. The accuracy of plotted utilities is not guaranteed as indicated in Section F-25 of the General Conditions.

Existing utilities have been identified and located on the plans based on the best information available. The Contractor is responsible for performing exploratory excavations (potholing) along the alignment of the project to confirm location of existing utilities and to establish connection requirements to existing pipelines. **All Contractors under contract with EMWD are hereby granted permission to use vacuum excavation on EMWD**

facilities. Vacuum excavations may not be used on any other facilities unless written permission is obtained from the owner of the facility in accordance with State Law 4216. The Contractor shall field survey the elevation and location of utilities, including tie-in points, and provide the information to the District's inspector a minimum of two weeks ahead of construction to permit design revisions should a conflict arise. All damages attributed to potholing by Contractor will be Contractor's sole responsibility. All associated costs with potholing shall be included in the unit bid price per lineal foot of pipe stated in the Schedule of Values and no additional compensation will be allowed.

SC-14. Fugitive Dust and Overspray. The Contractor shall comply with all requirements of the South Coast Air Quality Management District (SCAQMD) Rule 403. Contractor is responsible for and shall employ an approved method for dust control monitoring on the job site and shall comply with Part 3.02A, "Dust Abatement" of Section 02201-7, "Construction Method & Earthwork" of these specification.

SC-15. Emergency Vehicles, Businesses and/or Residents Access. Contractor shall provide unobstructed access at all time to businesses and/or resident's driveway within the project limit. The Contractor will be responsible for notifying the businesses and/or residents 72 hours in advance that construction activity will occur in front of their businesses and/or residences and that their driveways will be blocked by these construction activities.

The contractor shall be responsible for providing emergency vehicles access to all businesses and/or residents and around the worksite at all times. The contractor will be required to notify the local fire department and ambulance service and provide them with access routes through the construction area and a schedule indicating when access through any street will be obstructed by construction traffic. Costs associated with providing emergency vehicles, businesses and/or residences access shall be included in the bid and no additional compensation will be allowed therefore.

~~**SC-16. Traffic Control.** The Contractor shall prepare a traffic control plan, and obtain necessary approvals from, Riverside County Transportation Department, prior to start of construction. It is the responsibility of the Contractor to implement traffic control. Throughout each work period the Contractor shall inspect traffic control measures (signs, barricades, arrowboards, delineators, etc.) and maintain traffic warning signs, barricades, flagmen, and other traffic control devices as required to maintain traffic flow, as required by agencies having jurisdiction over the roadways in the work area. This may require an engineered design.~~

~~All cost associated with traffic control shall be included in the bid and no additional compensation will be allowed.~~

SC-17. Records of Construction. Contractor shall keep and maintain, at the job site, one record set of Construction Drawings as specified in the General Conditions, Section F-Labor and Construction, F-08 "Reports, Records, and Data".

SC-18. **Disposal of Excess Excavated or Removed Material.** All excess excavation or removed material shall be the property of the Contractor and shall be removed and disposed away from the project site to an approved disposal area through the County or City. In no instance shall these soils become a public nuisance or threat to public safety. All cost associated with disposal of excess excavated or removed material shall be included in the bid and no additional compensation will be allowed.

SC-19. **Removal and Restoration of Existing Improvements.** All existing improvements including, but not limited to, curbs, gutters, cross gutter, spandrels, driveways, sidewalks, walls, fences, sprinklers systems, lawns, shrubs, trees, storm drains, traffic signs and traffic detector loops which are damaged or removed during the course of construction of the project shall be restored or replaced to a condition equal to or better than the existing improvements.
The removal and restoration of existing improvements shall be in accordance with the applicable provisions of these specifications, Standard Specifications, Standard Drawings, Contract Drawings, and the permitting authority's or utility's requirements.

SC-20. **RSGV for Recycled Water.** All recycled water Resilient Seat Gate Valves requires EPDM seats.

End of Section SC

EASTERN MUNICIPAL WATER DISTRICT
CONSTRUCTION ORDER NO. 66804
GOETZ RD BRIDGE & NEWPORT RD IMPROVEMENTS

SECTION P - CONTRACT DRAWINGS

P-01. **General.** The location of the work, its general nature and extent, the outline of the land owned or controlled by the District and the form and general dimensions of the facilities (ie. pipelines, appurtenances, etc.) are as shown on the drawings attached and made a part of this Specification as listed below.

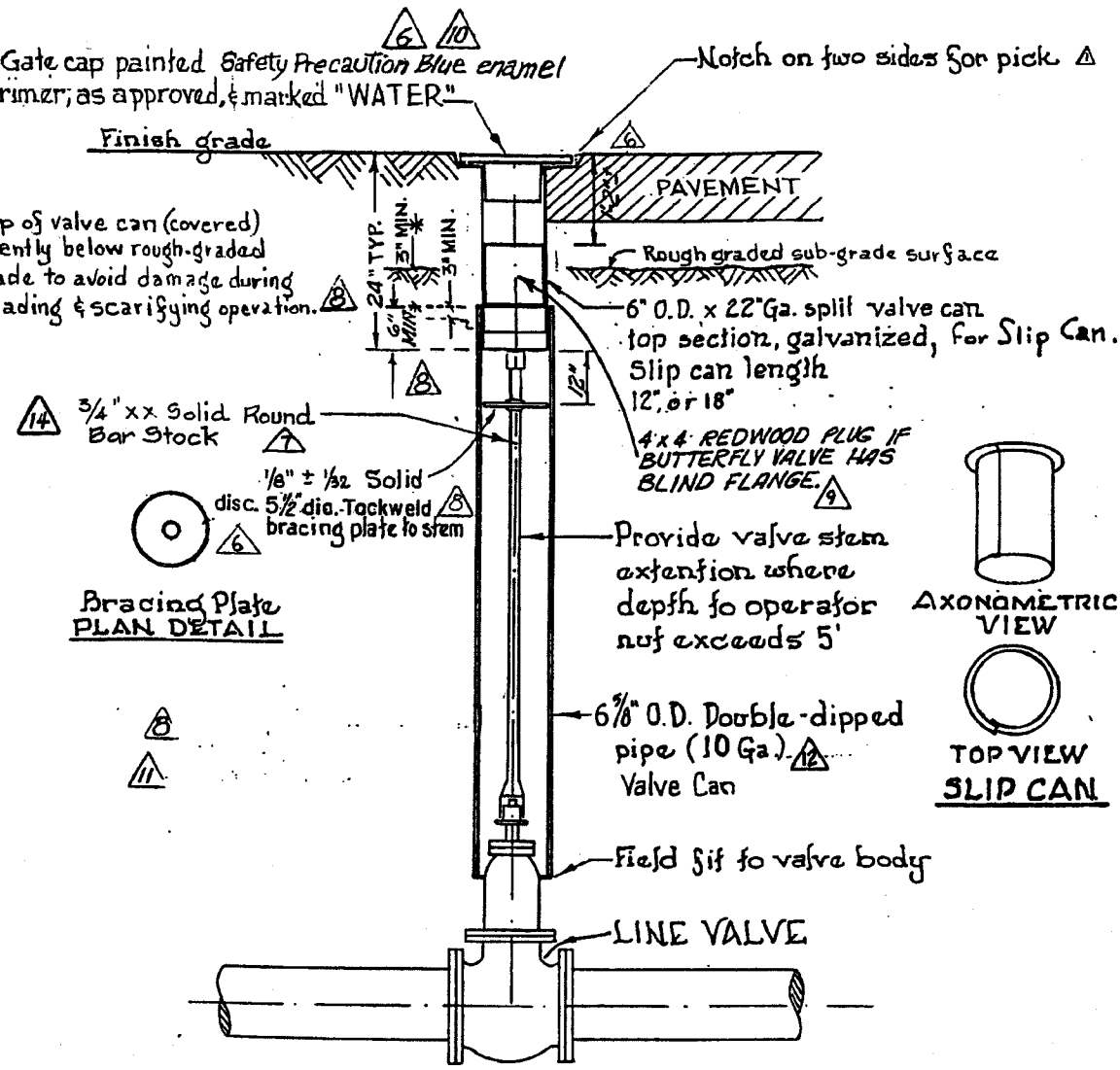
P-02. **Standard Drawings.**

Drawing Number	Drawing Title
A-492	Valve Cap and Riser
B-271	Saddled Outlets Connection
B-286B	Trench Backfill
B-288	Steel Flanges
B-342	1-1/2" Copper Service Connection
B-351	6"x1-2 ½" Blow-off Installation – Steel Pipe
B-356	6"x1-2 ½"x1-4" Fire Hydrant Installation – Steel Pipe
B-357	6"x1-2 ½" Blow-off Installation for AC, PVC, & DI Pipe
B-362	6"x1-2 ½"x1-4" Fire Hydrant Installation-AC, PVC, DI Pipe
B-590	5/8" Meter Service Connection -1" Copper Tubing
B-598	1"Air Valve Installation, 1"Copper Tubing
B-656	Locator Wire Installation
B-662	Test Stations: Insulated Joint and Insulated Joint at Valve
B-665	Guard and Marker Posts
B-934	Recesses Trench Plate Detail
PA-1	6" Recycled Water Blow off
PA-2	Recycled Water Valve Cap and Riser Detail
PB-8	1" Air Valve Installation – Recycled Water

P-03. **Construction Drawings.**

Refer to Riverside County plans

~~D-34066 thru D-34068~~	Goetz Rd Sewer & Water Improvement Plans
~~D-34840 thru D-34841~~	Newport Rd 6" & 12" Recycled Water Improvement Plans



NOTES

EXCEPT OTHERWISE SPECIFIED:

1. CONTRACTOR SHALL RAISE SLIP CAN TO GRADE AFTER STREET IS PAVED, WHERE PAVING IS PROPOSED.
2. IN UNPAVED AREAS, CONT'R. SHALL LEAVE CAP AND SLIP CAN 18" BELOW FINISH GRADE. (I.E. GRADED SHOULDERS).
3. IN NEW SUBDIVISIONS WHERE IT IS SPECIFICALLY GIVEN TO OTHERS (AS SPECIFIED) TO RAISE CAP AND CAN TO FINISH GRADE UPON COMPLETION OF PAVING, WATER CONTRACTOR SHALL FURNISH STEM EXTENSION, SLIP CAN AND CAP TO DISTRICT STORAGE YARD, AND LEAVE VALVE CANS PROPERLY COVERED WITH 2"x8"x8" REDWOOD PLATE.

14 REVISE VALVE STEM MATERIAL 06/06/01 VJB 6/6/01

12 REVISE VALVE CAN TO 10 GA. PER 02/06/01 WJB 2/6/01

13 DELETE PLASTIC CAN AS AN ALTERNATE WJB 2/9/01

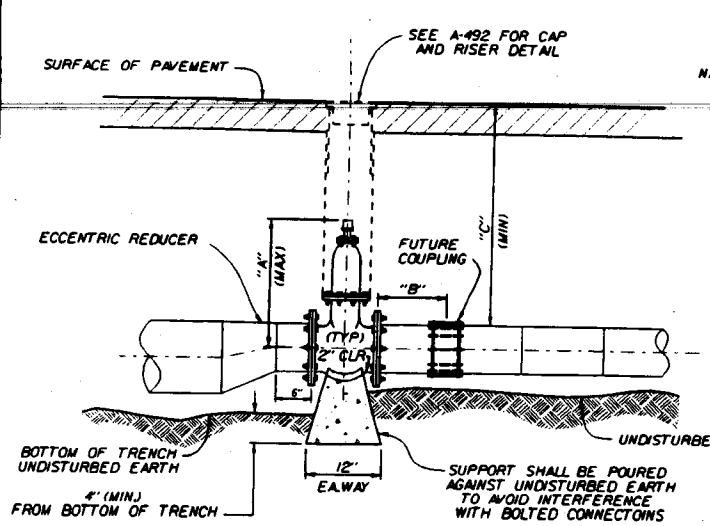
REVISIONS	SCALE NONE	INITIAL	DATE
1 & REDRAWN	DESIGNED		8-20-69
6-12-70	DRAWN	H.S.&S.W	6-12-70
2 REVISED 10-5-70	CHECKED		
	RECOMMENDED		
3 Revised 9-27-71	APPROVED 4		
4 3-23-77	DATE	GEN. MGR. & CHIEF ENG.	

EASTERN MUNICIPAL WATER DISTRICT
RIVERSIDE COUNTY, CALIFORNIA

STANDARD DRAWING

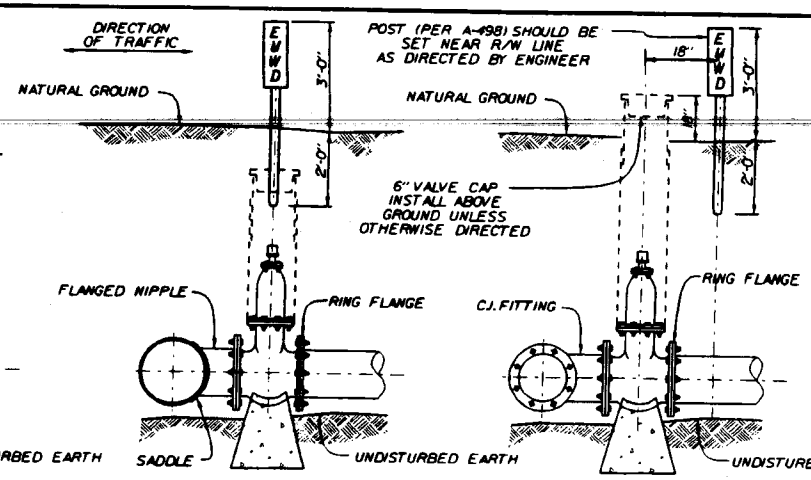
VALVE CAP & RISER DETAIL

A-492



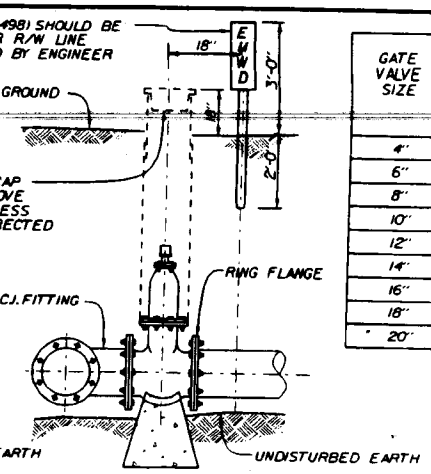
IN-LINE VALVE INSTALLATION

PAVED STREET
(PIPE COATING NOT SHOWN)



SADDLE OUTLET INSTALLATION

UNIMPROVED ROADWAY



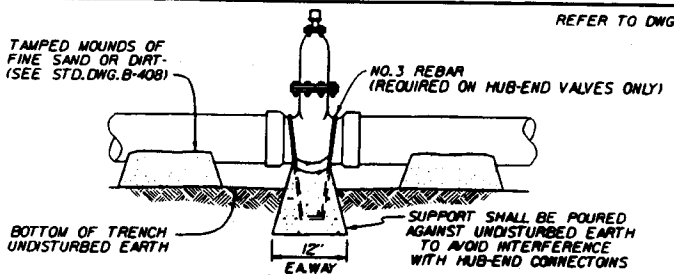
C.J. FITTING INSTALLATION

OPEN FIELD

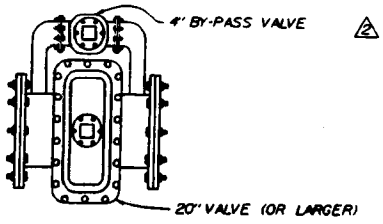
GATE VALVE SIZE	TABULATED DIMENSIONS		
	DIMENSIONS		
	VALVE HEIGHT "A"	COUPLING NIPPLE "B"	ABS. MIN. COVER "C"
4"	19"	1'-6"	1'-7"
6"	23"	1'-6"	1'-9"
8"	28"	1'-6"	2'-0"
10"	31"	1'-6"	2'-4"
12"	36"	2'-0"	2'-8"
14"	41"	2'-0"	3'-0"
16"	47"	2'-0"	3'-5"
18"	51"	2'-0"	3'-8"
20"	56"	2'-0"	3'-11"

STEEL PIPELINE INSTALLATION - 14" DIAMETER AND LARGER

REFER TO DWG. B-563 FOR 12" DIAMETER AND SMALLER



A.C., P.V.C. & D.I.P. PIPELINE INSTALLATION FOR 4" DIAMETER AND LARGER



• VALVES 20" & LARGER (W/4" BY-PASS)

NOTES

1. ALL FLEXIBLE JOINTS IN PIPELINES UPSTREAM FROM VALVES OR IN BRANCH LINE SHALL BE WELDED OR RESTRAINED IN ACCORDANCE WITH THE SPECIFICATIONS AND CONTRACT DRAWINGS TO PROVIDE ANCHORAGE FOR UNBALANCED FORCES.
2. ALL STEEL FLANGES SHALL BE COATED IN FIELD WITH AN APPROVED COATING PER E.M.W.D. SPECIFICATIONS.
3. ALL STEEL PIPE AND FITTINGS SHALL BE COATED WITH THE SAME MATERIAL AS SUPPLIED ON THE PIPE.
4. VALVES 20" & LARGER REQUIRE ENGINEERS APPROVAL

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	8/6/96	KER	REDRAWN W/CADD ON MYLAR	VAB	8/7/96
2	7/29/97	KER	REVISED NOTE NO. 1	VAB	8/13/97

APPROVALS		
	INITIAL	DATE
DESIGN	[illegible]	11/20/72
CONSTRUCTION		
INSPECTION		
OPERATIONS		
SUBMITTED	[illegible]	11/21/72

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

INSTALLATION OF VERTICAL GATE VALVES

STEEL PIPE 14" & LARGER / A.C., P.V.C., & D.I. 4" & LARGER

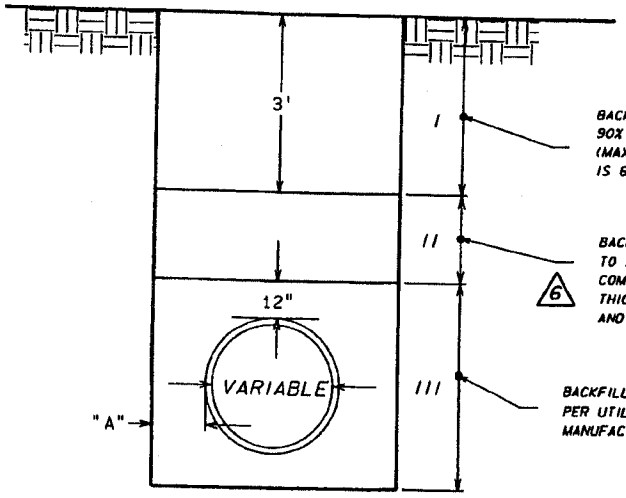
REFERENCES: ORIGINAL STD. DWG. B-255, DRAWN 11/20/72 | SCALE: NONE
FILE I.D.: D_STANDARDS/B255.DGN | DRAWN BY K.E.R.

RECOMMENDED _____ DIRECTOR OF ENGINEERING DATE

APPROVED Doyle J. Boen CHIEF ENGINEER 11/72 DATE

B-255 2

UNSURFACED MEDIANS, ROADSIDE STRIPS, & EASEMENTS

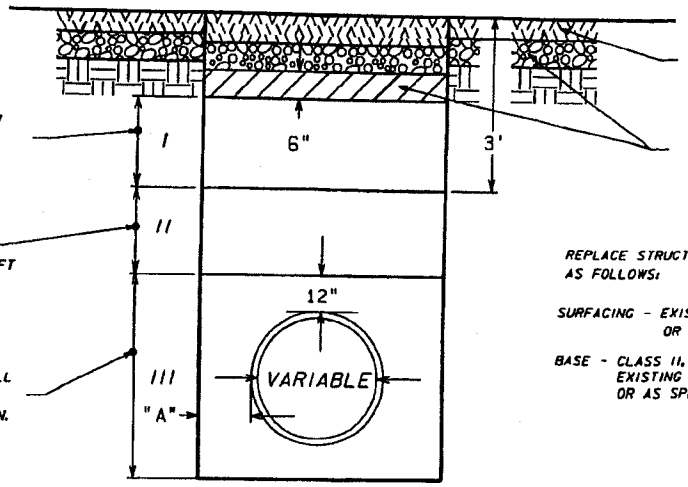


BACKFILL COMPACTED TO 90% RELATIVE COMPACTION (MAXIMUM LIFT THICKNESS IS 6 INCHES).

BACKFILL COMPACTED TO 90% RELATIVE COMPACTION. MAXIMUM LIFT THICKNESS WHEN PONDING AND JETTING IS 2 FEET. (6)

BACKFILL AND UTILITY BACKFILL PER UTILITY COMPANY OR MANUFACTURER'S SPECIFICATION.

UNSURFACED ROADWAYS, AND SURFACED STREETS & EASEMENTS



SURFACING (EXCLUDING GRAVEL ROADS).

BASE MATERIAL AND SUB-GRADE, COMPACTED TO 95% RELATIVE COMPACTION.

REPLACE STRUCTURAL SECTION AS FOLLOWS:

SURFACING - EXISTING THICKNESS PLUS 1" OR 3" MINIMUM

BASE - CLASS II, THICKNESS SHALL EQUAL EXISTING BASE MATERIAL, 4" MIN. OR AS SPECIFIED

CLEARANCE "A"

1. PIPE SIZES THROUGH 12" : "A" = 6" - 9"
2. PIPE SIZES OVER 12" : "A" = 1' - 0" MIN.

I. STRUCTURAL ZONE
II. INTERMEDIATE ZONE
III. PIPE AND UTILITY ZONE

NOTE: WHEN A FIRM FOUNDATION IS NOT ENCOUNTERED, DUE TO SOFT, SPONGY, OR OTHER UNSUITABLE MATERIAL, SUCH MATERIAL SHALL BE REMOVED TO THE LIMITS DIRECTED BY THE ENGINEER, AND THE RESULTING EXCAVATION BACKFILLED WITH PIPE BEDDING MATERIAL COMPACTED TO 90% RELATIVE COMPACTION.

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
(5)	7/9/98	KER	REVISED TO INCLUDE ALL PREVIOUS REVISIONS		10/15/98
(6)	9/25/03	CM	REVISED COMPACTION REQUIREMENT		

APPROVALS		
	INITIAL	DATE
DESIGN	JJW	12/29/94
CONSTRUCTION		
INSPECTION	JCW	12/30/94
OPERATIONS		
SUBMITTED		

REFERENCES: REFERENCE SA-408
FILE I.D.: \\nlagra opl\eng\std drgs\b286b.dgn
SCALE: NTS
DRAWN BY JJW

EASTERN MUNICIPAL WATER DISTRICT

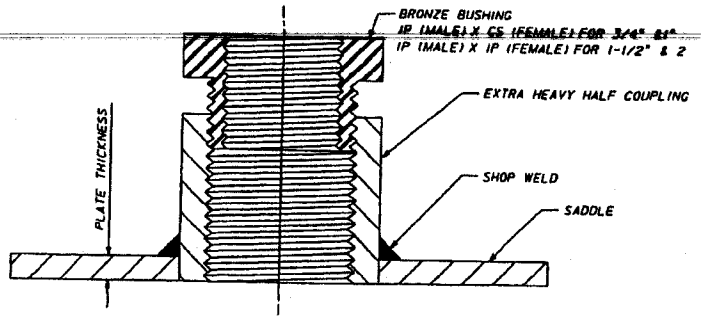
EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

TRENCH BACKFILL

RECOMMENDED Joseph D. Van Sichle 12/29/94
DIRECTOR OF ENGINEERING DATE

APPROVED G. Hoole Rugge 12/30/94
ASST GENERAL MANAGER, ENGINEERING DATE

B-286B (6)



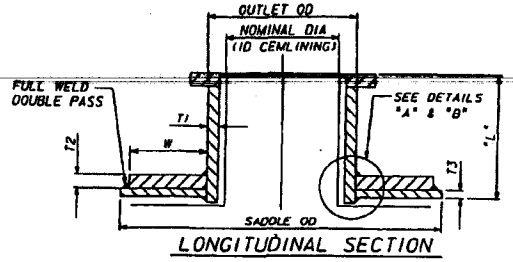
NOTES:

1. SADDLE CURVATURE TO BE SHOP FORMED TO MEET OUTSIDE STEEL DIAMETER OF PIPE.
2. AFTER SHOP WELDING OF HALF COUPLING TO CURVED SADDLE, SHOP GRIND HALF COUPLING TO MEET DIAMETER OF PIPE.

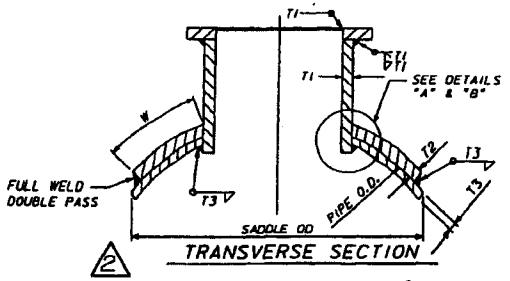
SERVICE SADDLE OUTLETS			
CORPORATION STOPS	EXTRA HEAVY HALF COUPLING SIZE	SADDLE OUTSIDE DIA	SADDLE PLATE THICKNESS
3/4" (CS)	1-1/4" (IP)	4-1/2" (OD)	3/16"
1" (CS)	1-1/4" (IP)	4-1/2" (OD)	3/16"
1-1/2" (IP)	2-1/2" (IP)	6-1/2" (OD)	1/4"
2" (IP)	2-1/2" (IP)	6-1/2" (OD)	1/4"

WELDED SERVICE SADDLE OUTLETS SHOWING BRONZE BUSHING FOR 3/4" THRU 2" CORPORATION STOPS

OUTLET DIMENSIONS		SADDLE SIZE	SADDLE O.D.
NOM DIA	T1 (MIN)	T2 X W	OD
4"	12 GA	5/16" X 2"	10"
6"	12 GA	5/16" X 3"	13"
8"	12 GA	3/8" X 4"	17"
12"	3/16"	3/8" X 6"	25"
14"	1/4"	3/8" X 7"	29"
16"	1/4"	1/2" X 7"	31"
18"	1/4"	1/2" X 8"	36"
20"	1/4"	1/2" X 9"	40"
24"	5/16"	1/2" X 10"	46"
30"	5/16"	1/2" X 12"	56"
36"	5/16"	1/2" X 14"	66"



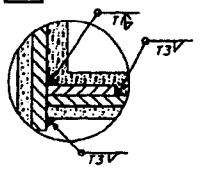
LONGITUDINAL SECTION



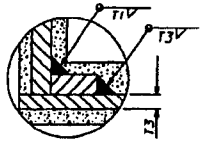
2 TRANSVERSE SECTION

NOTES:

1. OUTLETS ARE DESIGNED FOR A MAXIMUM TEST PRESSURE OF 225 PSI.
2. FABRICATION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE LATEST REVISION OF THE API - ASME CODE FOR UNIFIRED PRESSURE VESSELS.
3. ALL OUTLETS SHALL BE CEMENT MORTAR LINED AND COATED. ALL OTHER BARE METAL SHALL BE COATED WITH AN APPROVED BITUMASTIC.
4. REFER TO B-288 FOR FLANGE DIMENSIONS.
5. L = 12" FOR SHOP FABRICATED OUTLETS. L= 5" MIN/6" MAX FOR FIELD INSTALLED WET TAPPED OUTLETS.
6. T3 IS THE PIPE CYLINDER THICKNESS.



DETAIL "A"
SIZES 24" & LARGER



DETAIL "B"
SIZES 4" THRU 20"

PIPE OUTLETS SADDLE REINFORCEMENT

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	8/11/97	CRD	A-297, B-271 REDRAWN ON CAD. ADDED NOTE 6.	VJ	8/12/97
2	10/15/03	CM	ADDED SADDLE O.D.	LVJ	10/15/03

APPROVALS		
	INITIAL	DATE
DESIGN	LVJ	
CONSTRUCTION		
INSPECTION		
OPERATIONS		
SUBMITTED	LVJ	

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

SADDLE OUTLETS 3/4" TO 36" DIAMETERS

REFERENCES: SUPERCEDES A-297
FILE I.D.: \\niagra apl\eng\sld dwgs\b271.dgn
SCALE: NTS
DRAWN BY CRD

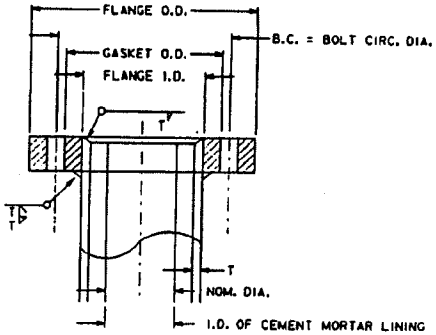
RECOMMENDED D.C. Stewart DATE

APPROVED Doyle F. Boen GENERAL MANAGER & CHIEF ENGINEER DATE

B-271 2

FLANGE DIMENSIONS

PIPE DIA.	FLANGE O.D.	FLANGE THICKNESS	GASKET O.D.	BOLTS REQ'D	BOLTS DIA.	BOLTS (NOTE 9) LENGTH	BOLT HOLE DIA.	B.C. DIA.
4	9	5/8	6-7/8	8	5/8	2-1/2	3/4	7-1/2
6	11	11/16	8-3/4	8	3/4	3	7/8	9-1/2
8	13-1/2	11/16	11	8	3/4	3	7/8	11-3/4
10	16	11/16	13-3/8	12	7/8	3-1/2	1	14-1/4
12	19	13/16	16-1/8	12	7/8	3-1/2	1	17
14	21	15/16	17-3/4	12	1	4	1-1/8	18-3/4
15	22-1/2	1	19-1/4	12	1	4	1-1/8	20-1/4
16	23-1/2	1	20-1/4	16	1	4	1-1/8	21-1/4
18	25	1-1/16	21-5/8	16	1-1/8	4-1/2	1-1/4	22-3/4
20	27-1/2	1-1/8	23-7/8	20	1-1/8	4-1/2	1-1/4	25
21	28-1/2	1-3/16	24-3/4	20	1-1/4	5	1-3/8	26-1/4
24	32	1-1/4	28-1/4	20	1-1/4	5	1-3/8	29-1/2
27	35-1/2	1-5/16	35-1/2	28	1-1/4	5-1/2	1-3/8	33
28	36-1/2	1-5/16	36-1/2	28	1-1/4	5-1/2	1-3/8	34
30	38-3/4	1-3/8	38-3/4	28	1-1/4	5-1/2	1-3/8	36
33	43-3/4	1-1/2	43-3/4	32	1-1/2	6	1-5/8	40-1/2
36	46	1-5/8	46	32	1-1/2	6	1-5/8	42-3/4
39	49-1/2	1-5/8	49-1/2	36	1-1/2	6-1/2	1-5/8	46-1/4
42	53	1-3/4	53	36	1-1/2	6-1/2	1-5/8	49-1/2
45	56-1/2	1-3/4	56-1/4	44	1-1/2	6-1/2	1-5/8	52-3/4
48	59-1/2	1-3/4	59-1/2	44	1-1/2	6-1/2	1-5/8	56
51	63	2	63	44	1-1/2	7	1-5/8	59-1/2
54	66-1/4	2-1/4	66-1/4	44	1-3/4	7-1/2	2	62-3/4



GENERAL NOTES

1. BOLT HOLES STRADDLE CENTER LINES AND ARE DRILLED PER A.S.A. CLASS 125 DRILLING AND TO SPECIFICATIONS FOR A.W.W.A. STANDARD STEEL HUB FLANGES, EXCEPT AS NOTED.
2. FLANGES SHALL NOT HAVE RAISED FACES. FLANGES SHALL BE FULL FACED AND HAVE SPIRAL OR CONCENTRIC SERRATIONS OVER THE ENTIRE FLANGE FACE OF APPROXIMATELY 32 SERRATIONS PER INCH APPROXIMATELY 1/64" DEEP.
3. HOLES SHALL BE DRILLED AFTER SERRATING FACES.
4. ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
   FLANGE O.D. +/- 1/8
   BOLT CIRCLE DIA. +/- 1/16
   FLANGE I.D. + 3/16" + 1/16
   FLANGE THICKNESS +1/8 - 0
   FLANGE I.D. NOTED ON PURCHASE ORDER.
5. FLANGES ARE DESIGNED FOR 175 P.S.I. (COLD WATER) WORKING PRESSURE FOR SIZES THROUGH 12" AND 150 P.S.I. FOR SIZES LARGER THAN 12".
6. FLANGES SHALL BE MADE AS SHOWN HEREIN AND FROM THE FOLLOWING TYPE OF STEEL PLATE UNLESS OTHERWISE STATED IN THE SPECIFICATIONS.
   A.S.T.M. A 283C
   A.S.T.M. A 283D
   A.S.T.M. A-36
7. SCREWED FLANGES, WHERE REQUIRED, SHALL BE CRANE NO. 556 OR APPROVED EQUAL.
8. GASKETS FOR 27" DIA. PIPE AND LARGER SHALL BE STANDARD FULL FACE GASKETS.
9. FOR STEEL FLANGES BOLTED TO CAST IRON FLANGES, USE BOLTS 1/2" LONGER THAN SHOWN.
10. BOLTS AND NUTS SHALL BE SAE J429 GRADE 5 OR ASTM A449 THROUGH 1-1/2" DIAMETER.
11. EACH FITTING TO HAVE A MINIMUM OF 2 ZINC CAP ANODES FOR UP TO 1" DIA. BOLTS AND 4 ZINC CAP ANODES FOR BOLTS OVER 1".

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	5-6-97	CRD	REVISED NOTES 10,11; UPDATED W/CAD ON MYLAR.	VJB	5/7/97

APPROVALS		
	INITIAL	DATE
DESIGN	SJD	7—2—64
CONSTRUCTION		
INSPECTION		
OPERATIONS		
SUBMITTED	D. C. Stewart	7—2—64

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

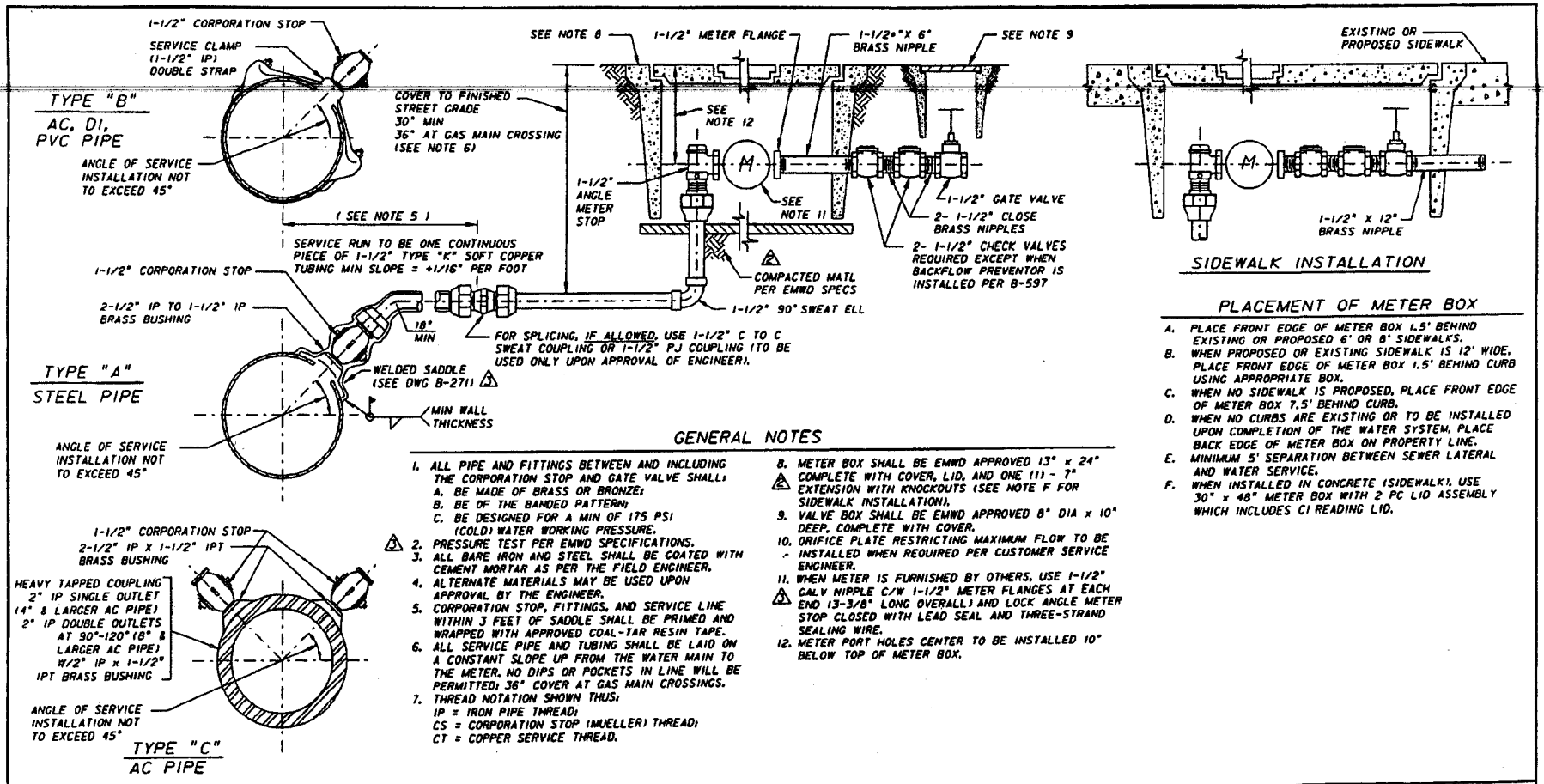
STEEL FLANGES
4" - 54"

REFERENCES:
FILE I.D.: d_standards\ b288.dgn

SCALE: NONE
DRAWN BY CRD

APPROVED Doyle J. Boen 7—2—64
GENERAL MANAGER & CHIEF ENGINEER DATE

B-288 1



GENERAL NOTES

1. ALL PIPE AND FITTINGS BETWEEN AND INCLUDING THE CORPORATION STOP AND GATE VALVE SHALL:
   A. BE MADE OF BRASS OR BRONZE;
   B. BE OF THE BANDED PATTERN;
   C. BE DESIGNED FOR A MIN OF 175 PSI (COLD) WATER WORKING PRESSURE.
2. PRESSURE TEST PER EMWD SPECIFICATIONS.
3. ALL BARE IRON AND STEEL SHALL BE COATED WITH CEMENT MORTAR AS PER THE FIELD ENGINEER.
4. ALTERNATE MATERIALS MAY BE USED UPON APPROVAL BY THE ENGINEER.
5. CORPORATION STOP, FITTINGS, AND SERVICE LINE WITHIN 3 FEET OF SADDLE SHALL BE PRIMED AND WRAPPED WITH APPROVED COAL-TAR RESIN TAPE.
6. ALL SERVICE PIPE AND TUBING SHALL BE LAID ON A CONSTANT SLOPE UP FROM THE WATER MAIN TO THE METER. NO DIPS OR POCKETS IN LINE WILL BE PERMITTED; 36" COVER AT GAS MAIN CROSSINGS.
7. THREAD NOTATION SHOWN THUS:
   IP = IRON PIPE THREAD;
   CS = CORPORATION STOP (MUELLER) THREAD;
   CT = COPPER SERVICE THREAD.
8. METER BOX SHALL BE EMWD APPROVED 13" x 24"
   △2 COMPLETE WITH COVER, LID, AND ONE (1) - 7" EXTENSION WITH KNOCKOUTS (SEE NOTE F FOR SIDEWALK INSTALLATION).
9. VALVE BOX SHALL BE EMWD APPROVED 8" DIA x 10" DEEP. COMPLETE WITH COVER.
10. ORIFICE PLATE RESTRICTING MAXIMUM FLOW TO BE INSTALLED WHEN REQUIRED PER CUSTOMER SERVICE ENGINEER.
11. WHEN METER IS FURNISHED BY OTHERS, USE 1-1/2" △2 GALV NIPPLE C/W 1-1/2" METER FLANGES AT EACH END 13-3/8" LONG OVERALL) AND LOCK ANGLE METER STOP CLOSED WITH LEAD SEAL AND THREE-STRAND SEALING WIRE.
12. METER PORT HOLES CENTER TO BE INSTALLED 10" BELOW TOP OF METER BOX.

PLACEMENT OF METER BOX

A. PLACE FRONT EDGE OF METER BOX 1.5' BEHIND EXISTING OR PROPOSED 6' OR 8' SIDEWALKS.
B. WHEN PROPOSED OR EXISTING SIDEWALK IS 12' WIDE, PLACE FRONT EDGE OF METER BOX 1.5' BEHIND CURB USING APPROPRIATE BOX.
C. WHEN NO SIDEWALK IS PROPOSED, PLACE FRONT EDGE OF METER BOX 7.5' BEHIND CURB.
D. WHEN NO CURBS ARE EXISTING OR TO BE INSTALLED UPON COMPLETION OF THE WATER SYSTEM, PLACE BACK EDGE OF METER BOX ON PROPERTY LINE.
E. MINIMUM 5' SEPARATION BETWEEN SEWER LATERAL AND WATER SERVICE.
F. WHEN INSTALLED IN CONCRETE (SIDEWALK), USE 30" x 48" METER BOX WITH 2 PC LID ASSEMBLY WHICH INCLUDES CI READING LID.

REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
△1	8/18/95	KER	REDRAWN W/CADD ON MYLAR	VJB	10/95
△2	2/6/97	CRD	REVISED NOTE 8	VJB	4/9/97
△3	5/22/00	GR	REVISED NOTE 2, 11 & DWG NO IN CALLOUT	MB	5/24/00

REFERENCES: ORIG DRAWN 10/70
FILE I.D.: D_STANDARDS/B342.DGN

SCALE: NONE
DRAWN BY KER

APPROVALS

	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	ML	10/23/95
SUBMITTED		

RECOMMENDED Joseph D. Van Sickle 10/20/95
DIRECTOR OF ENGINEERING — DATE

EASTERN MUNICIPAL WATER DISTRICT

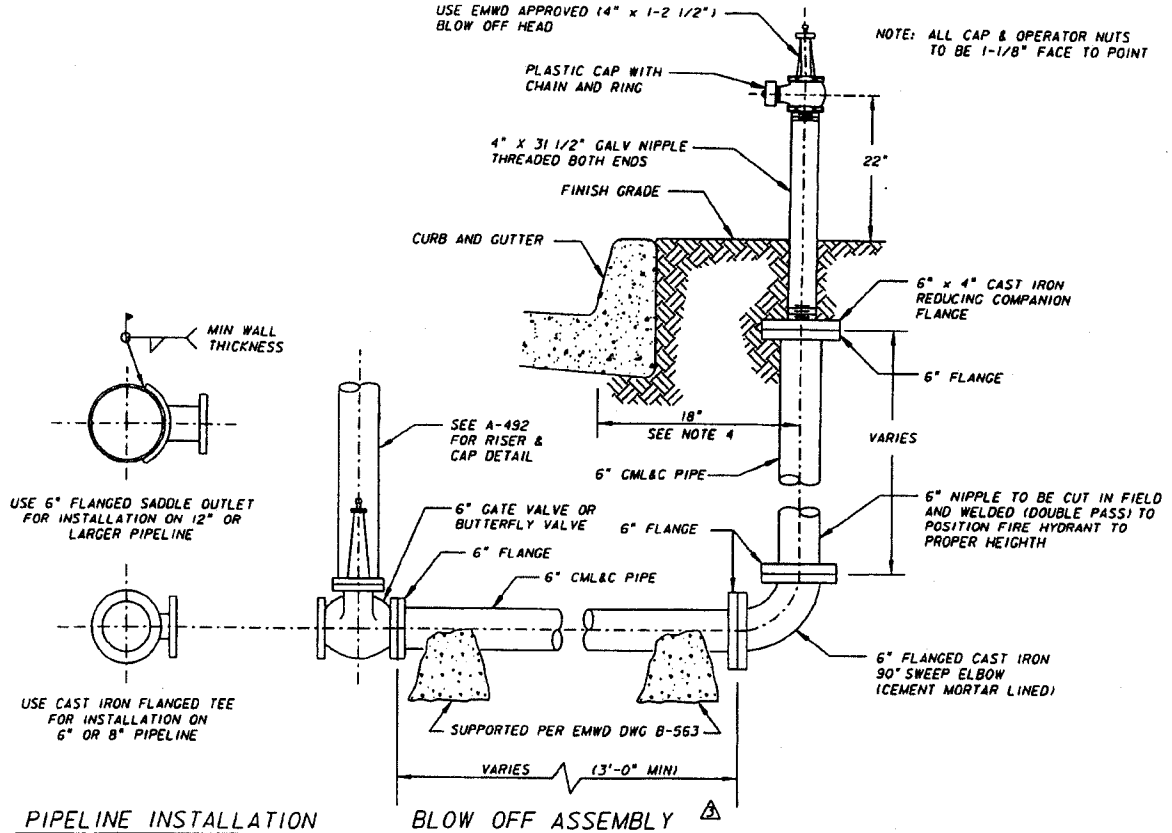
EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

1-1/2" COPPER SERVICE CONNECTION— 1-1/2" MULTI-JET METER

APPROVED G. Hoaite Rugge 10/20/95
CHIEF ENGINEER — DATE

B-342 △3



PIPELINE INSTALLATION

BLOW OFF ASSEMBLY 3

GENERAL NOTES 3

1. PAINTS:
   BLOWOFF TO BE PAINTED APPROVED YELLOW.
2. ALL FLANGES SHALL BE FULL WELDED (DOUBLE PASS) AND COATED IN THE FIELD AS DIRECTED BY THE ENGINEER PER NOTE 5.
3. ALTERNATE MATERIALS MAY BE USED WHEN SPECIFIED.
4. BLOW OFF LOCATIONS:
   A. BLOW OFF SHALL BE PLACED
      1. 1'-6" BEHIND CURB FACE WHEN THE WIDTH OF SIDEWALK IS 8' OR WIDER.
      2. 7'-6" BEHIND CURB FACE WHEN THE WIDTH OF SIDEWALK IS 6' WIDE.
      3. 7'-6" BEHIND CURB FACE WHEN THERE IS NO SIDEWALK.
      4. 1'-6" WITHIN ROAD RIGHT-OF-WAY WHEN NO CURBS OR SIDEWALKS ARE PROPOSED.
   B. BLOW OFF TO BE 1' BACK FROM INTERSECTION OF SIDEWALK WITH CORNER APRON.
   C. AT OTHER THAN STREET INTERSECTIONS BLOW OFF TO BE ON LOT LINES.
5. FIELD COATING FOR EXPOSED PIPE SHALL BE PER EMWD SPECIFICATIONS AND APPROVED MATERIALS.
6. 2 A MINIMUM 3 FT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE BLOW OFF.

RIVERSIDE COUNTY WHARFHEAD FIRE HYDRANT

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	4/6/93		REDRAWN W/CADD ON MYLAR	VJB	5/19/93
2	5/18/00	GR	REVISED ALL FONT & ADDED NOTE 6	VJB	5/19/00
3	10/14/05	cm	CHANGE F.H. TITLE & NOTES TO BLOWOFF	VJB	10/14/05

APPROVALS		
	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	PR	5/18/93
SUBMITTED	VJB	5/19/93

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

6" x 1-2 1/2" BLOW-OFF INSTALLATION—STEEL PIPE 3

REFERENCES: SUPERCEDES B-349 ORIG DRAWN 5/69
FILE I.D.:kouol\eng\std drwgs\b351.dgn
SCALE: NONE
DRAWN BY

RECOMMENDED Joseph D. Van Sickle, DIRECTOR OF ENGINEERING, 6/3/93 DATE

APPROVED G. Monte Rugg, CHIEF ENGINEER, 7/2/93 DATE

B-351 3

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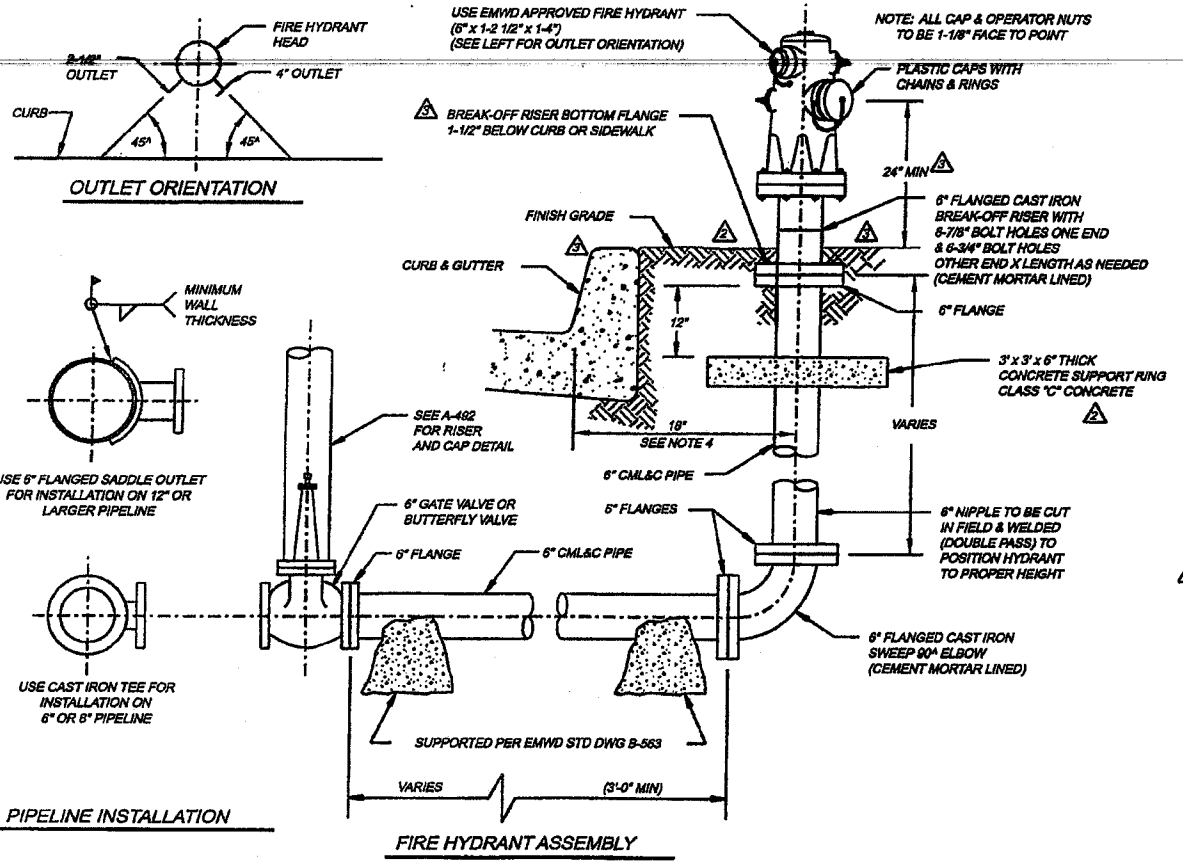


GENERAL NOTES

1. ~~PAINT:~~
   HYDRANT TOPS AND NOZZLE CAPS, 1500 gpm OR GREATER, TO BE LIGHT BLUE.
   HYDRANT TOPS AND NOZZLE CAPS, 1000 gpm TO 1499 gpm, TO BE GREEN.
   HYDRANT TOPS AND NOZZLE CAPS, 500 gpm TO 999 gpm, TO BE ORANGE.
   HYDRANT TOPS AND NOZZLE CAPS, LESS THAN 500 gpm, TO BE RED.
2. ALL FLANGES SHALL BE FULL WELDED (DOUBLE PASS) AND COATED IN THE FIELD AS DIRECTED BY ENGINEER PER NOTE 5.
3. ALTERNATE MATERIALS MAY BE USED WHEN SPECIFIED.
4. FIRE HYDRANT LOCATIONS:
   A. FIRE HYDRANT SHALL BE PLACED
      1. 1'-6" BEHIND CURB FACE WHEN WIDTH OF SIDEWALK IS 6' OR WIDER.
      2. 7'-6" BEHIND CURB FACE WHEN WIDTH OF SIDEWALK IS 6' WIDE.
      3. 7'-6" BEHIND CURB FACE WHEN THERE IS NO SIDEWALK.
      4. 1'-6" WITHIN ROAD RIGHT-OF-WAY WHEN NO CURBS OR SIDEWALKS ARE PROPOSED.
   B. FIRE HYDRANT TO BE 1' BACK FROM INTERSECTION OF SIDEWALK WITH CORNER APRON.
   C. AT OTHER THAN STREET INTERSECTIONS FIRE HYDRANTS TO BE ON LOT LINES.
5. FIELD COATING FOR EXPOSED PIPE SHALL BE PER EMWD SPECS AND APPROVED MATERIALS.
6. A MINIMUM 3 FT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANT.

RIVERSIDE COUNTY STANDARD FIRE HYDRANT

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	4/1/93		REDRAWN BY CADD ON MYLAR	VJB	7/2/93
2	5/18/00	GR	REV NOTES 1,4,6,ADD CONC SUPPORT& DIMS	VJB	5/22/00
3	10/2/06	RE	REVISED F.H. DIMENSION, GRADE & BREAK-OFF NOTES		10/10/06

APPROVALS		
	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	DR	5/18/93
SUBMITTED	VJB	5/19/93

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

6" x 1-2 1/2" x 1-4" FIRE HYDRANT INSTALLATION—STEEL PIPE

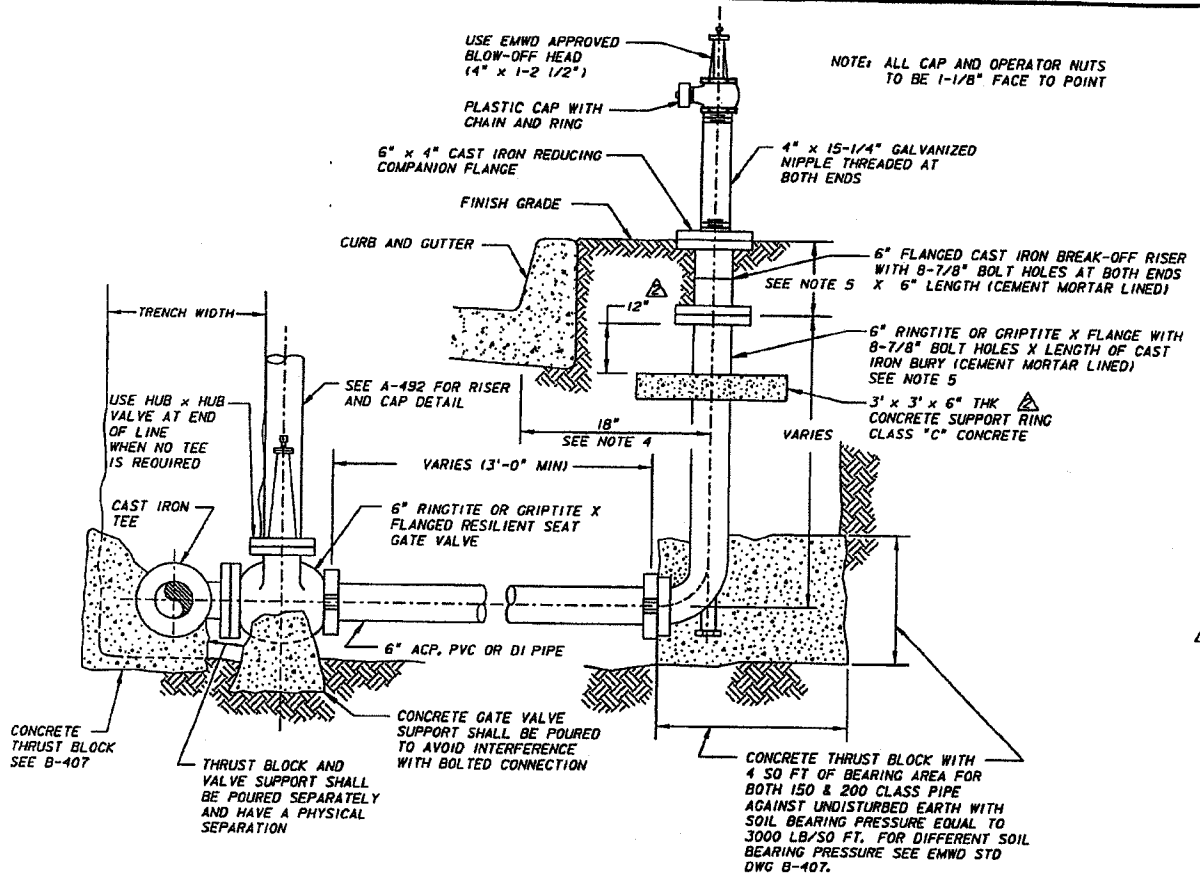
REFERENCES: ORIG DRAWN BY McM 6/89
FILE I.D.: KAUAI/ENGINEERING/STD/DWG

SCALE: NONE
DRAWN BY

RECOMMENDED Joseph D. Van Sichle, DIRECTOR OF ENGINEERING 6/3/93 DATE

APPROVED G. Hoyte Rugge, CHIEF ENGINEER 7/2/93 DATE

B-356 3



GENERAL NOTES 3

2 1. PAINTS: BLOW-OFF TO BE PAINTED APPROVED YELLOW.

2. USE THRUST BLOCKS PER B-407 FOR ACP. USE RESTRAINED JOINTS PER B-663 FOR PVC AND DUCTILE IRON. CONCRETE FOR THRUST BLOCKS AND SUPPORTS TO BE CLASS "C" (2000 PSI CONCRETE.

2 3. ALTERNATE MATERIALS MAY BE USED WHEN SPECIFIED.

4. BLOW-OFF LOCATIONS:
   - A. BLOW-OFF SHALL BE PLACED
     1. 1'-6" BEHIND CURB FACE WHEN THE WIDTH OF SIDEWALK IS 8' OR WIDER.
     2. 7'-6" BEHIND CURB FACE WHEN THE WIDTH OF SIDEWALK IS 6' WIDE.
     3. 7'-6" BEHIND CURB FACE WHEN THERE IS NO SIDEWALK.
     2 4. 1'-6" WITHIN ROAD RIGHT-OF-WAY WHEN NO CURBS OR SIDEWALKS ARE PROPOSED.
   - B. BLOW-OFF TO BE 1' BACK FROM INTERSECTION OF SIDEWALK WITH CORNER APRON.
   - C. AT OTHER THAN STREET INTERSECTIONS BLOW-OFF TO BE ON LOT LINES.

5. LENGTH OF BREAK-OFF RISER TO BE DETERMINED BY THE DIFFERENCE IN ELEVATION BETWEEN THE CENTER GRADE OF THE PIPELINE OUTLET AND THE TOP OF THE CURB, LESS THE LENGTH FOR THE BURY. FOR PLACEMENT UNDER NOTE 4B ABOVE, ADD 2" TO ALLOW FOR SIDEWALK SLOPE.

6. FIELD COATING FOR EXPOSED PIPE SHALL BE PER EMWD SPECIFICATIONS AND APPROVED MATERIALS.

2 7. A MINIMUM 3 FT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE BLOW-OFF.

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	2/10/93		REDRAWN W/CADD ON MYLAR	VJB	5/19/93
2	4/12/00	GR	REV NOTES 1-4, 8, ADD CONC SUPPORT RING	VJB	5/19/00
3	3/6/03	CM	CHANGED TITLE TO BLOW-OFF	WB	10/15/03

APPROVALS		
	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	PR	5/18/93
SUBMITTED	VJB	5/19/93

REFERENCES: SUPERCEDES B-350 ORIG DRAWN 5/69
FILE I.D.: \\niagra ap1\eng\std dwgs\b357.dgn
SCALE: NONE
DRAWN BY

RECOMMENDED Joseph D. Van Sickle 6/1/93
DIRECTOR OF ENGINEERING — DATE

EASTERN MUNICIPAL WATER DISTRICT

RIVERSIDE COUNTY WHARFHEAD FIRE HYDRANT
EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

6" x 1-2 1/2" BLOW-OFF 3 INSTALLATION – AC, PVC, DI PIPE

APPROVED G. Hoyte Rugge 7/2/93
CHIEF ENGINEER — DATE

B-357 3

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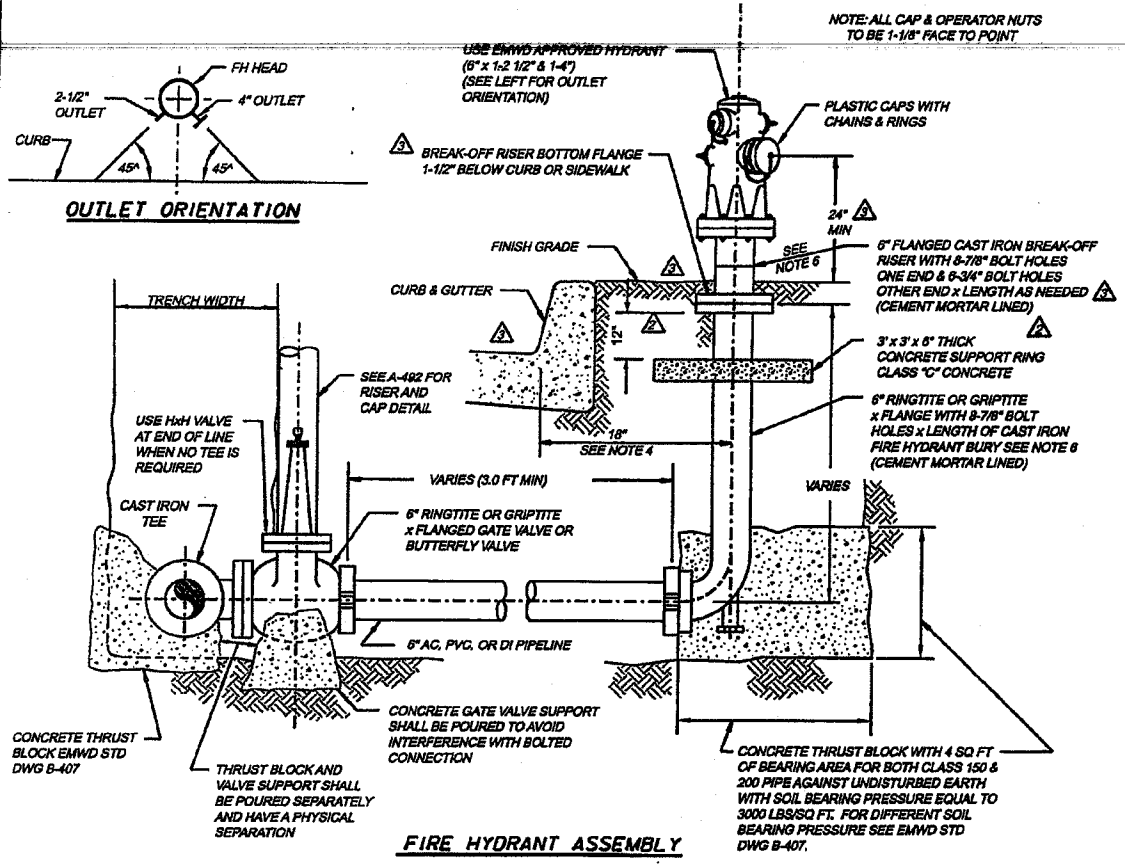


GENERAL NOTES

2 1. PAINTS:
HYDRANT TOPS AND NOZZLE CAPS, 1500 GPM OR GREATER, TO BE LIGHT BLUE.
HYDRANT TOPS AND NOZZLE CAPS, 1000 GPM TO 1499 GPM, TO BE GREEN.
HYDRANT TOPS AND NOZZLE CAPS, 500 GPM TO 999 GPM, TO BE ORANGE.
HYDRANT TOPS AND NOZZLE CAPS, LESS THAN 500 GPM, TO BE RED.

2 2. USE THRUST BLOCKS PER B-407 FOR ACP. USE RESTRAINED JOINTS PER B-883 FOR PVC AND DUCTILE IRON. CONCRETE FOR THRUST BLOCKS AND SUPPORTS TO BE CLASS "C" (2000 PSI) CONCRETE.

3. ALTERNATE MATERIALS MAY BE USED WHEN SPECIFIED.

4. FIRE HYDRANT LOCATIONS:
A. FIRE HYDRANT SHALL BE PLACED:
1. 1'6" BEHIND CURB FACE WHEN WIDTH OF SIDEWALK IS 8' OR WIDER.
2. 7'6" BEHIND CURB FACE WHEN WIDTH OF SIDEWALK IS 6' WIDE.
3. 7' 6" BEHIND CURB FACE WHEN THERE IS NO SIDEWALK.
2 4. 1'-6" WITHIN ROAD RIGHT-OF-WAY WHEN NO CURBS OR SIDEWALKS ARE PROPOSED.
B. FIRE HYDRANT TO BE 1 FT BACK FROM INTERSECTION OF SIDEWALK WITH CORNER APRON.
C. AT OTHER THAN STREET INTERSECTIONS FIRE HYDRANTS TO BE ON LOT LINES.

5. FIELD COATING FOR EXPOSED PIPE SHALL BE PER EMWD SPECIFICATIONS AND APPROVED MATERIALS.

6. LENGTH OF BREAK-OFF RISER TO BE DETERMINED BY THE DIFFERENCE IN ELEVATION BETWEEN THE CENTER GRADE OF THE PIPELINE OUTLET AND THE TOP OF THE CURB, LESS THE LENGTH FOR THE FIRE HYDRANT BURY. IF THE BREAK-OFF 3 RISER EXCEEDS 24", USE THE NEXT ONE FOOT LONGER BURY. UNDER NOTE 4B ABOVE, ADD 2" RISER TO ALLOW FOR SIDEWALK SLOPE.

2 7. A MINIMUM OF 3 FT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE FIRE HYDRANT.

RIVERSIDE COUNTY STANDARD FIRE HYDRANT

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	2/10/93		REDRAWN W/CADD ON MYLAR	VJB	7/2/93
2	5/18/00	GR	REV NOTES 1,2,4,7, ADD SUPPORT RING & DIMS	VJB	5/19/00
3	10/2/06	RE	REVISED F.H. DIMENSION, GRADE & BREAK-OFF NOTES	XM	10/10/06

APPROVALS		
	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	DR	5/18/93
SUBMITTED	VJB	5/19/93

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

6" x 1-2 1/2" x 1-4" FIRE HYDRANT INSTALLATION—AC, PVC, DI PIPE

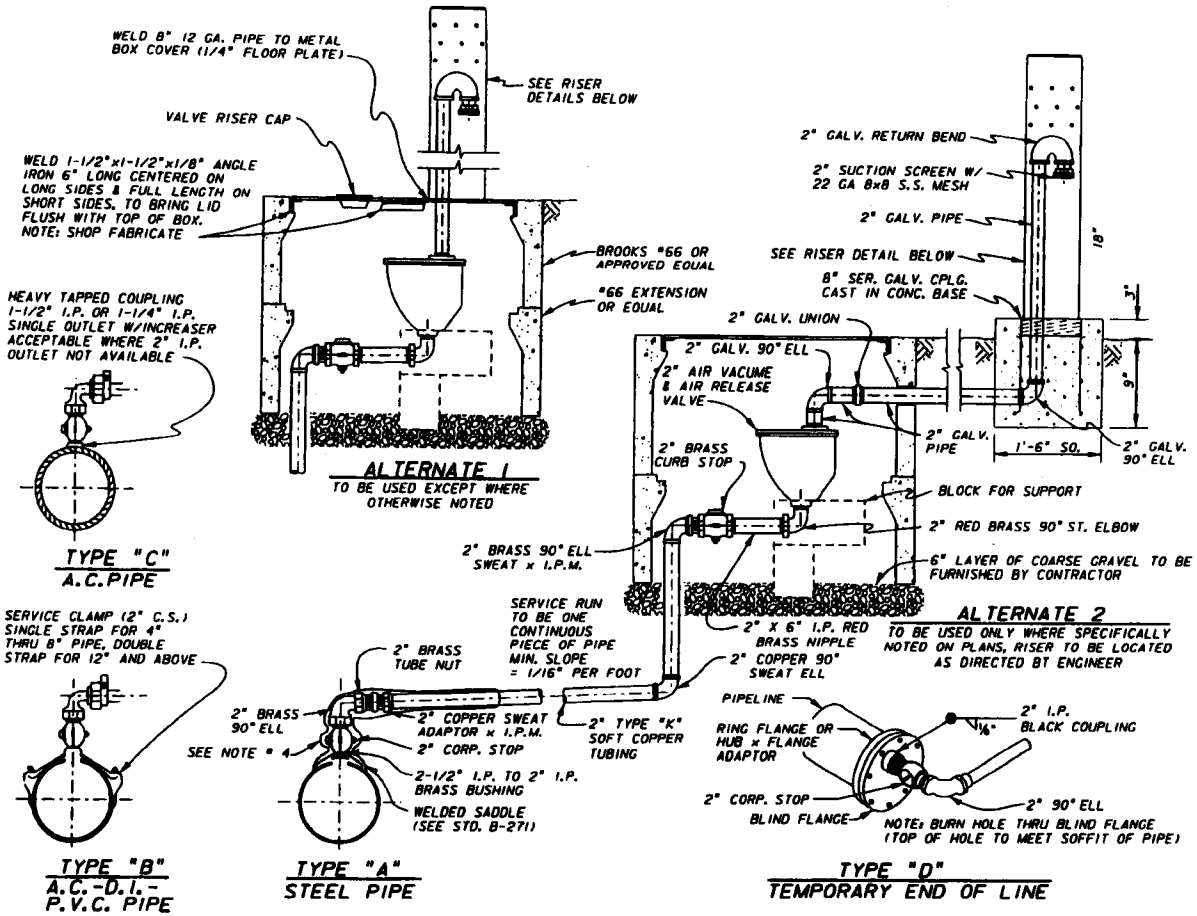
REFERENCES: ORIG DRAWN 5/69
FILE I.D.: KAUAI/ENGINEERING/STD/DWG

SCALE: NONE
DRAWN BY

RECOMMENDED Joseph D. Van Sickle 6/1/93
DIRECTOR OF ENGINEERING DATE

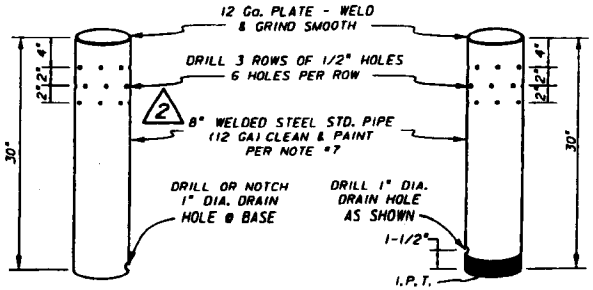
APPROVED G. Hoote Ruggs 7/2/93
CHIEF ENGINEER DATE

B-362 3



NOTES:

1. ALL FITTINGS BETWEEN THE CORP. STOP AND AIR VALVE SHALL BE:
   A. MADE OF BRASS OR BRONZE;
   B. MADE OF THE BANDED PATTERN;
   C. DESIGNED FOR A MIN. OF 175 PSI (COLD) WATER WORKING PRESSURE
2. PRESSURE TEST PRIOR TO WRAPPING AND BACK-FILLING.
3. ALTERNATE MATERIALS MAY BE USED UPON APPROVAL BY THE ENGINEER.
4. CORPORATION STOP AND FITTINGS AT THE PIPELINE SHALL BE PRIMED AND WRAPPED WITH APPROVED COAL TAR RESIN TAPE.
5. ALL SERVICE PIPE AND TUBING SHALL BE LAID ON A CONSTANT SLOPE UP FROM THE WATER MAIN TO THE METER. NO DIPS OR POCKETS WILL BE PERMITTED.
6. THREAD NOTATION SHOWN THUS:
   I.P. = IRON PIPE THREAD;
   C.S. = CORPORATION STOP (MUELLER) THREAD;
7. VALVE BOX COVER AND RISER TO BE PAINTED WITH APPROVED TAN.
8. ALL BARE IRON AND STEEL SHALL BE COATED WITH CEMENT MORTAR.
9. PLACEMENT OF VALVE BOX:
   A. PLACE FRONT OF VALVE BOX 6" MAX. BEHIND EXISTING OR PROPOSED 6' OR 8' SIDEWALKS.
   B. WHEN EXISTING OR PROPOSED SIDEWALK IS 12' WIDE, PLACE FRONT EDGE OF BOX 6" MAX BEHIND CURB USING APPROPRIATE BOX.
   C. WHEN NO SIDEWALK IS PROPOSED, PLACE FRONT EDGE OF BOX 6.5' BEHIND CURB FACE.
   D. WHEN NO CURBS ARE EXISTING OR PROPOSED, PLACE BACK EDGE OF VALVE BOX ON PROPERTY LINE.



RISER DETAILS
N.T.S.

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	4/10/97	KER	REDRAWN W/ CADD ON MYLAR & ADD RISER DET.	VJB	4/28/97
2	8/29/03	CM	REVISED DIA. & GA. OF RISER	VJB	10/15/03

APPROVALS		
	INITIAL	DATE
DESIGN	LM	
CONSTRUCTION		
INSPECTION		
OPERATIONS		
SUBMITTED		

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

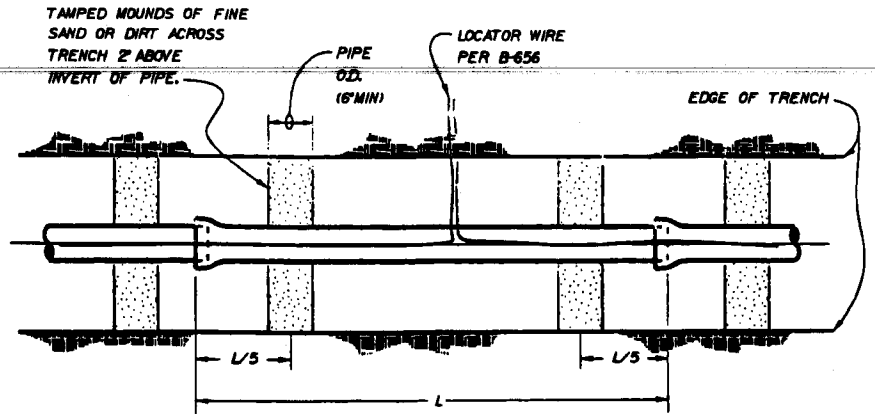
2" AIR VALVE INSTALLATION

REFERENCES: INCORPORATES B-386
FILE I.D.: \\niagra apl\eng\std dwgs\b367.dgn
SCALE: NONE
DRAWN BY KER

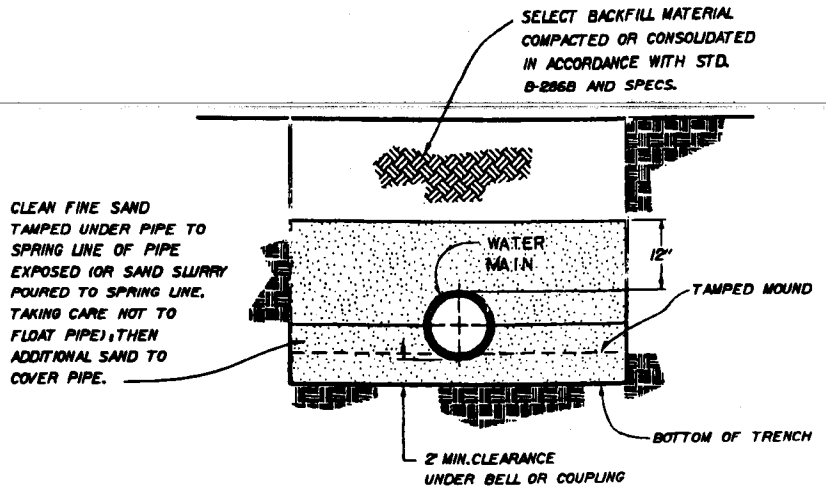
RECOMMENDED D. C. Stewart 1/70 DATE

APPROVED Doyle F. Boen 1/70 DATE
CHIEF ENGINEER

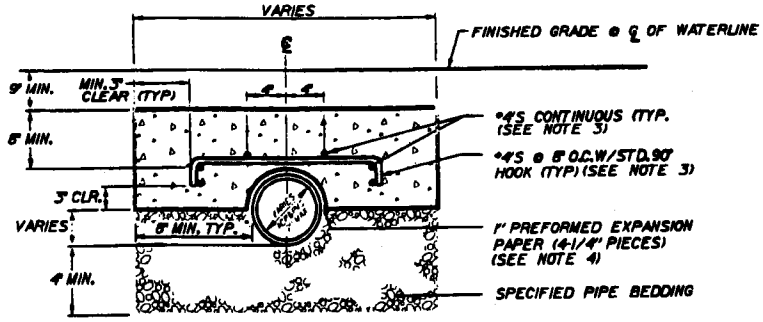
B-367 2



PLAN VIEW
TYPICAL PIPE INSTALLATION



TYPICAL TRENCH SECTION



CONCRETE CAP DETAIL

NOTES:

PIPE ZONE BACKFILL

1. THE BACKFILL MATERIAL IN THE PIPE ZONE MAY CONSIST OF MATERIAL FROM THE EXCAVATION WHERE THAT MATERIAL IS A UNIFORMLY GRADED SUITABLE SOIL FREE FROM STONES OR LUMPS EXCEEDING ¾ INCHES IN GREATEST DIMENSION, VEGETABLE MATTER, OR OTHER UNSATISFACTORY MATERIAL AS APPROVED BY THE ENGINEER, HAVING A SAND EQUIVALENT VALUE OF 20 OR BETTER AND COMPACTED TO A RELATIVE COMPACTION AS RECOMMENDED BY THE MANUFACTURER OF THE PIPE.

CONCRETE CAP (FOR SHALLOW WATERLINE WHEN APPROVED BY ENGINEER)

2. CAP SHALL BE OF CLASS 'A' CONCRETE
3. REBAR SHALL HAVE A YIELD STRENGTH = 60 KSI
4. PREFORMED EXPANSION PAPER PER ASTM 1751

REVISIONS					APPROVALS		
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE		INITIAL	DATE
1	11/21/95	KER	REDRAWN W/CAD ON MYLAR			DESIGN	VJB	5/8/96
2	5/20/02	JLG	REVISED NOTE 1	VJB	5/24/02	CONSTRUCTION		
						INSPECTION	JCW	6/11/96
						OPERATIONS	ML	5/9/96
						SUBMITTED		

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

WATER PIPE INSTALLATION FOR A.C.P., P.V.C., & D.I.P.

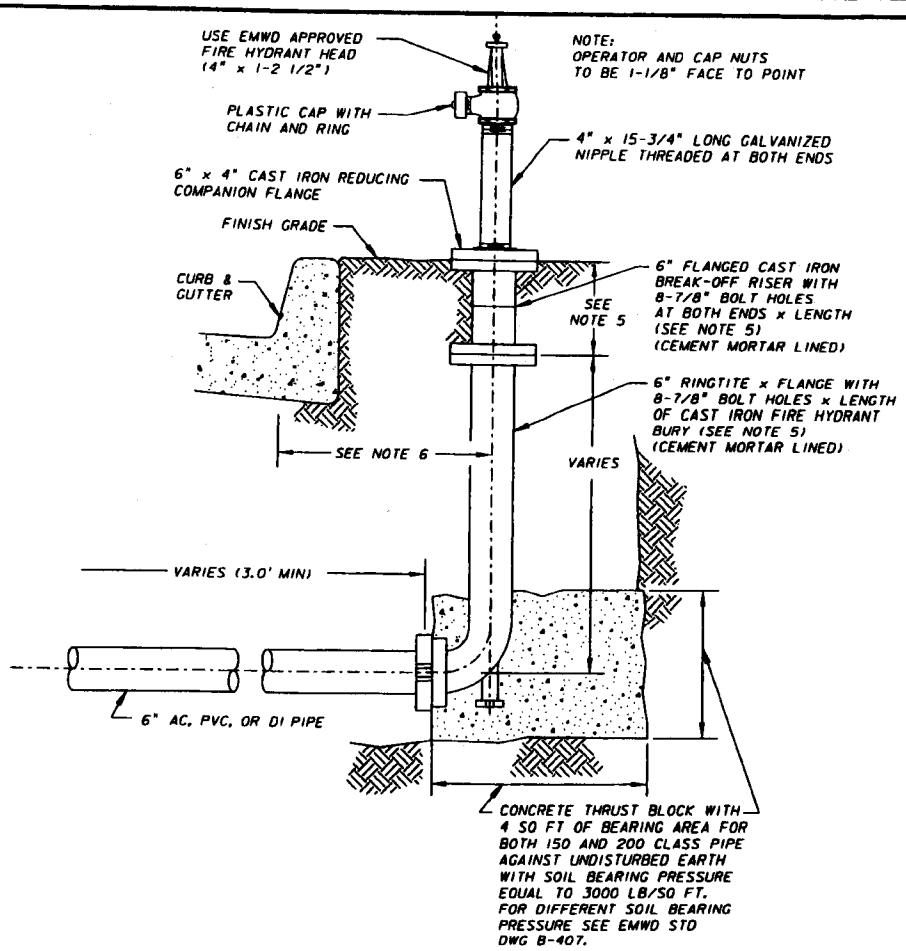
REFERENCES: SUPERCEDES A-537
FILE I.D.: STNDRDS/B408.DGN

SCALE: NONE
DRAWN BY K.E.R.

RECOMMENDED Charles J. Bachmann, DIRECTOR OF ENGINEERING 6/11/96 DATE

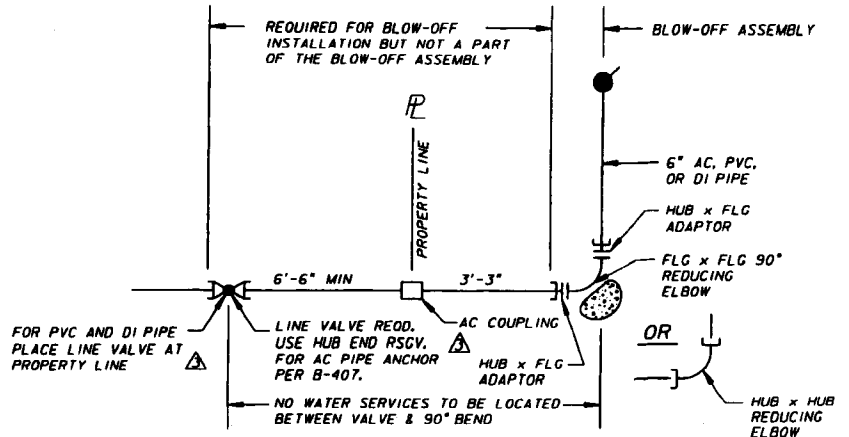
APPROVED G. Hoolis Ruggo, CHIEF ENGINEER 6/11/96 DATE

B-408 2



GENERAL NOTES

1. PAINTS: HYDRANTS TO BE PAINTED WITH APPROVED YELLOW.
2. USE THRUST BLOCKS PER B-407 FOR ACP. USE RESTRAINED JOINTS PER B-663 FOR PVC AND DUCTILE IRON. CONCRETE FOR THRUST BLOCKS AND SUPPORTS TO BE CLASS "C" (2000 PSI) CONCRETE.
3. ALTERNATE MATERIALS MAY BE USED WHEN SPECIFIED.
4. FIELD COATING FOR EXPOSED PIPE SHALL BE PER EMWD SPECIFICATIONS AND APPROVED MATERIALS.
5. LENGTH OF BREAK-OFF RISER TO BE DETERMINED BY THE DIFFERENCE IN ELEVATION BETWEEN THE CENTER GRADE OF THE PIPELINE OUTLET AND THE TOP OF THE CURB OR PROPOSED GRADE, LESS THE LENGTH FOR THE FIRE HYDRANT BURY. IF BREAK-OFF RISER EXCEEDS 18", USE NEXT 1 FT LONGER BURY.
6. BLOW-OFF LOCATION: TEMPORARY BLOW-OFFS SHALL BE LOCATED SO THEY DO NOT INTERFERE WITH FUTFURE IMPROVEMENTS THAT WILL BE INSTALLED PRIOR TO THE WATER MAIN EXTENSION.
7. WHEN NO CURBS OR SIDEWALKS ARE PROPOSED BLOW-OFF IS TO BE PLACED 18" WITHIN THE ROAD RIGHT-OF-WAY.



PLAN VIEW

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	4/19/93		REDRAWN W/CADD ON MYLAR	VJB	5/19/93
2	4/17/00	GR	REV ALL FONT, NOTE 2 & ADDED NOTE 7	VJB	5/19/00
3	10/28/03	CM	REV. NOTES FOR AC PIPE & VALVE LOCATION	VJB	10/21/03

APPROVALS		
	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	PR	5/18/93
SUBMITTED	VJB	5/19/93

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

6" x 1-2 1/2" BLOW-OFF TEMPORARY END INSTALLATION - AC, PVC, DI PIPE

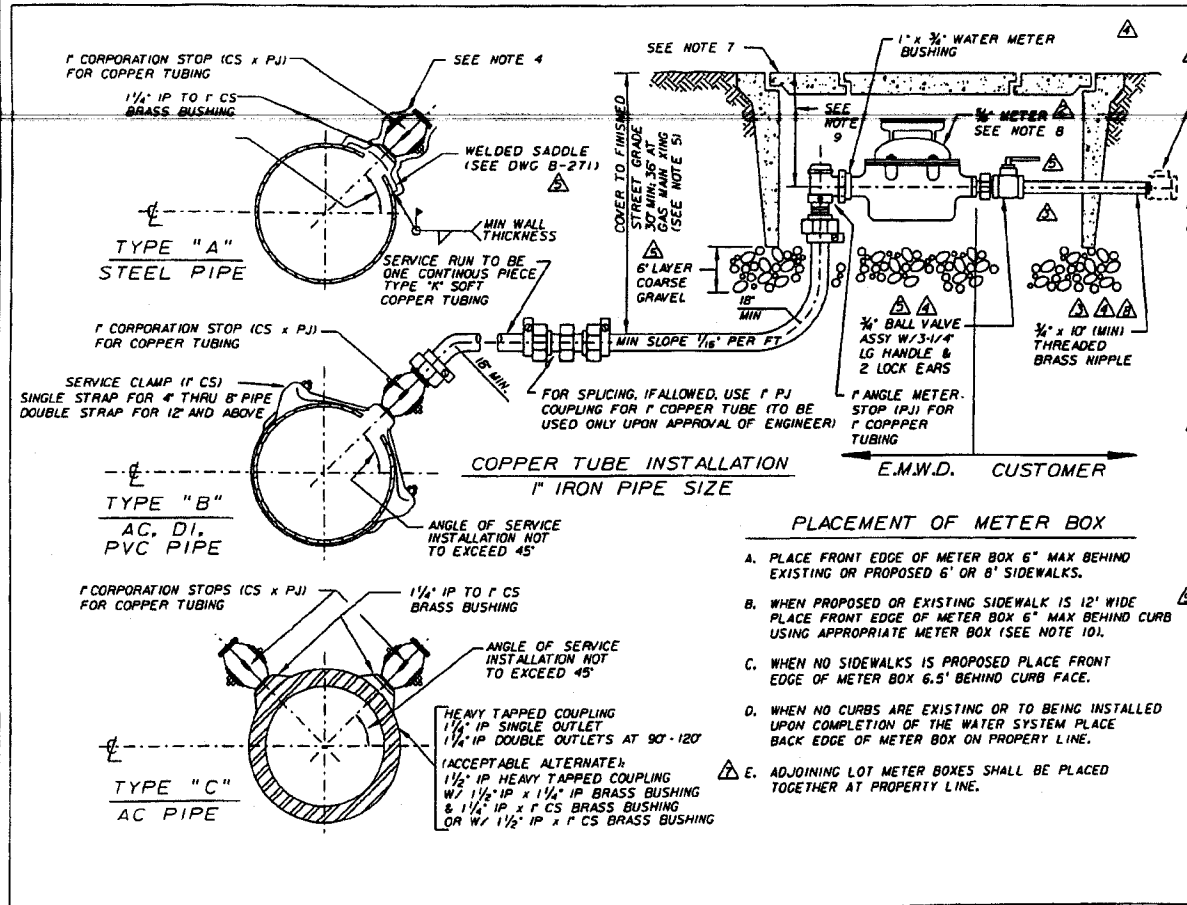
REFERENCES: ORIG DRAWN BY JMA 11/77
FILE I.D.: D_STANDARDS/B568.DGN

SCALE: NONE
DRAWN BY

RECOMMENDED Joseph D. Van Sichle, DIRECTOR OF ENGINEERING, 6/1/93 DATE

APPROVED G. Hoaite Rugge, CHIEF ENGINEER, 7/2/93 DATE

B-568 3



COPPER TUBE INSTALLATION
1" IRON PIPE SIZE

PLACEMENT OF METER BOX

A. PLACE FRONT EDGE OF METER BOX 6" MAX BEHIND EXISTING OR PROPOSED 6' OR 8' SIDEWALKS.

B. WHEN PROPOSED OR EXISTING SIDEWALK IS 12' WIDE PLACE FRONT EDGE OF METER BOX 6" MAX BEHIND CURB USING APPROPRIATE METER BOX (SEE NOTE 10).

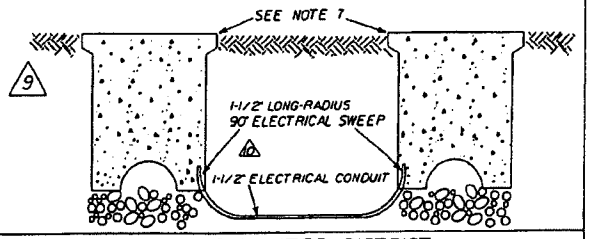
C. WHEN NO SIDEWALKS IS PROPOSED PLACE FRONT EDGE OF METER BOX 6.5' BEHIND CURB FACE.

D. WHEN NO CURBS ARE EXISTING OR TO BEING INSTALLED UPON COMPLETION OF THE WATER SYSTEM PLACE BACK EDGE OF METER BOX ON PROPERY LINE.

△E. ADJOINING LOT METER BOXES SHALL BE PLACED TOGETHER AT PROPERTY LINE.

GENERAL NOTES

1. ALL FITTINGS BETWEEN AND INCLUDING THE CORPORATION STOP AND GATE VALVE SHALL :
   A. BE MADE OF BRASS OR BRONZE ;
   B. BE OF THE BANDED PATTERN ;
   C. BE DESIGNED FOR A MIN OF 175 PSI (COLD) WATER WORKING PRESSURE.
2. PRESSURE TEST PER EMWD SPECIFICATIONS.
3. ALL LISTED MATERIALS TO BE PER EMWD APPROVED MATERIAL LIST.
4. CORPORATION STOP AND FITTINGS AT THE PIPELINE SHALL BE PRIMED AND WRAPPED WITH APPROVED COAL TAR RESIN TAPE.
5. ALL SERVICE PIPE AND TUBING SHALL BE LAID ON A CONSTANT SLOPE UP FROM THE WATER MAIN TO THE METER. NO DIPS OR POCKETS WILL BE PERMITTED 36" COVER AT GAS MAIN CROSSINGS.
6. THREAD NOTATION SHOWN THUS :
   IP = IRON PIPE THREAD
   CS = CORPORATION STOP (MUELLER) THREAD ;
   PJ = PACK JOINT
7. METER BOXES SHALL BE EMWD APPROVED 12" x 20" COMPLETE WITH COVER AND LID (SEE NOTE 10 FOR SIDEWALK INSTALLATION)
   WHEN METER IS FURNISHED BY OTHERS, USE 7-1/2" PVC NIPPLE
8. CONSISTING OF (2) 1" MIP x S ADAPTERS CL 200 FOR METER SPACING. LOCK ANGLE METER STOP CLOSED WITH LEAD SEAL AND 3- STRAND WIRE.
9. METER PORT HOLES CENTER TO BE INSTALLED 9½" BELOW TOP OF METER BOX.
10. WHEN INSTALLED IN CONCRETE (SIDEWALK) USE EMWD APPROVED 17"x 30" METER BOX COMPLETE WITH COVER AND LID.
11. INSTALL 1-1/2" PVC SCH. 40 ELECTRICAL CONDUIT BETWEEN ALL METER BOXES THAT ARE LOCATED NEAR PL WITHIN 10' OF EA. OTHER. TAPE END OF SWEEPS PREVENTING DEBRIS FROM ENTERING CONDUIT.
△A. PLACE SWEEPS INSIDE AND AGAINST SIDE OF METER BOX.



BACKFLOW DEVICE PER B-597 REQUIRED W/ COMMERCIAL BLDG. SECOND SOURCE OF WATER IS ON-SITE OR METER IS REMOTE.

REVISIONS

NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
△8	1/22/03	CM	REVISED MATERIALS TO BRASS & BACKFLOW REQ.	VJB	10/15/03
△9	1/06/04	CM	ADD DETAIL METER BOX, 1/2" CONDUIT FOR MXU.	VJB	1/14/04
△10	9/19/05	CM	CHANGED CONDUIT TO 1-1/2" & PLACEMENT		

APPROVALS

	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	ML	10/19/95
SUBMITTED	VJB	9/21/95

REFERENCES: (SUPERCEDES B-340) ORIG DRAWN 6/68
FILE I.D.: \\cou\eng\std dwgs\b590.dgn

SCALE: NONE
DRAWN BY KER

RECOMMENDED Joseph D. Van Sickle 10/19/95
DIRECTOR OF ENGINEERING — DATE

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

5/8" METER SERVICE CONNECTION
△4 1" COPPER TUBING

APPROVED C. Hoaile Rugge 10/20/95
CHIEF ENGINEER — DATE

B-590 △10

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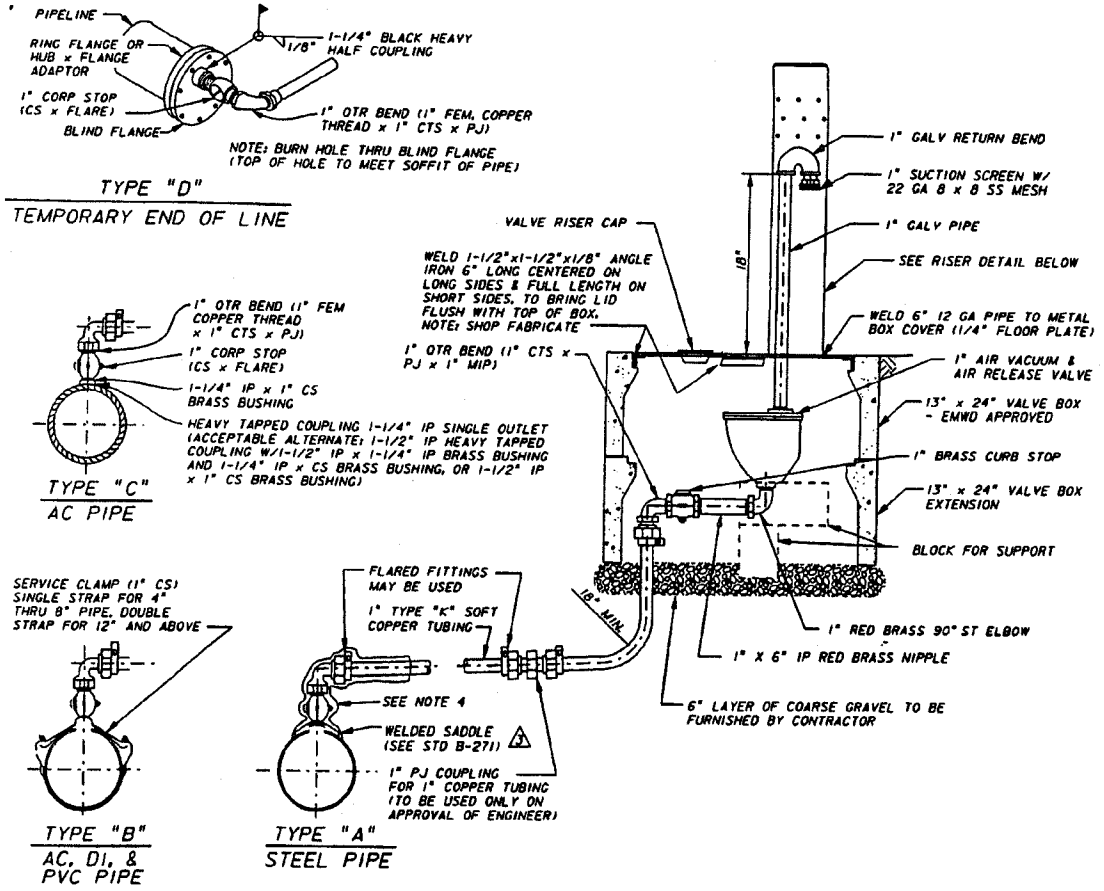
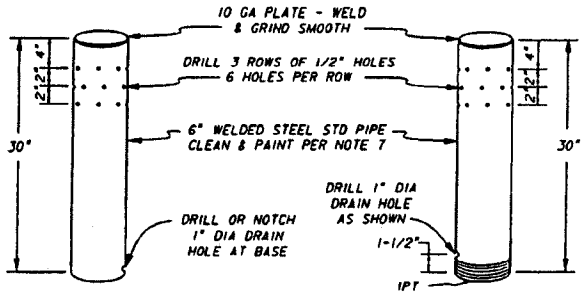


NOTES:

1. ALL FITTINGS BETWEEN THE CORP. STOP AND AIR VALVE SHALL BE:
   A. MADE OF BRASS OR BRONZE;
   B. MADE OF THE BANDED PATTERN;
   C. DESIGNED FOR A MIN. OF 175 PSI (COLD) WATER WORKING PRESSURE
2. PRESSURE TEST PER EMWD SPECIFICATIONS. 3
3. ALTERNATE MATERIALS MAY BE USED UPON APPROVAL BY THE ENGINEER.
4. CORPORATION STOP AND FITTINGS AT THE PIPELINE SHALL BE PRIMED AND WRAPPED WITH APPROVED COAL TAR RESIN TAPE.
5. ALL SERVICE PIPE AND TUBING SHALL BE LAID ON A CONSTANT SLOPE UP FROM THE WATER MAIN TO THE METER. NO DIPS OR POCKETS WILL BE PERMITTED.
6. THREAD NOTATION SHOWN THUS:
   IP = IRON PIPE THREAD;
   CS = CORPORATION STOP (MUELLER) THREAD;
   PJ = PACK JOINT.
7. VALVE BOX COVER AND RISER TO BE PAINTED WITH APPROVED TAN.
8. PLACEMENT OF VALVE BOX:
   A. PLACE FRONT OF VALVE BOX 6" MAX BEHIND EXISTING OR PROPOSED 6' OR 8' SIDEWALKS.
   B. WHEN EXISTING OR PROPOSED SIDEWALK IS 12' WIDE, PLACE FRONT EDGE OF BOX 6" MAX BEHIND CURB USING APPROPRIATE BOX.
   C. WHEN NO SIDEWALK IS PROPOSED, PLACE FRONT EDGE OF BOX 6.5' BEHIND CURB FACE.
   D. WHEN NO CURBS ARE EXISTING OR PROPOSED, PLACE BACK EDGE OF VALVE BOX ON PROPERTY LINE.



RISER DETAILS 2
NOT TO SCALE

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	7/15/95	KER	REDRAWN W/ CADD ON MYLAR	VJB	9/95
2	4/10/97	KER	ADDED RISER DETAILS	VJB	4/23/95
3	5/23/00	GR	REVISED NOTE 2 & DWG NO IN CALLOUT	ML	5/24/00

APPROVALS		
	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS	ML	10/9/95
SUBMITTED	VJB	9/21/95

REFERENCES: INCORPORATES B-386
FILE I.D.: D_STANDARDS/B598.DGN
SCALE: NONE
DRAWN BY KER

RECOMMENDED Joseph D. Van Sickle, DIRECTOR OF ENGINEERING 10/19/95 DATE

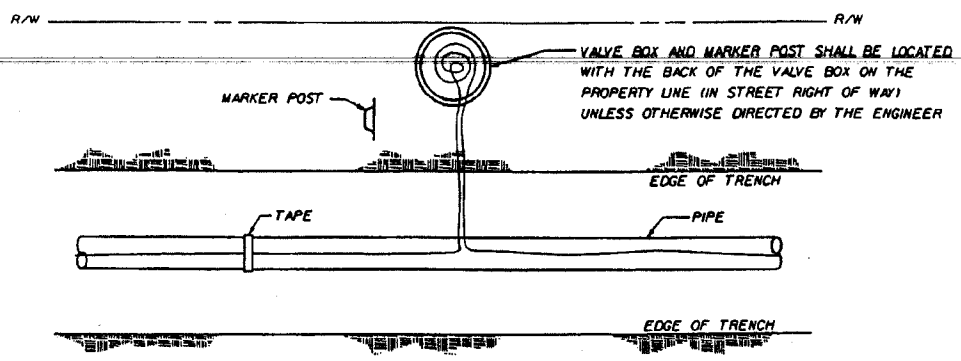
EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

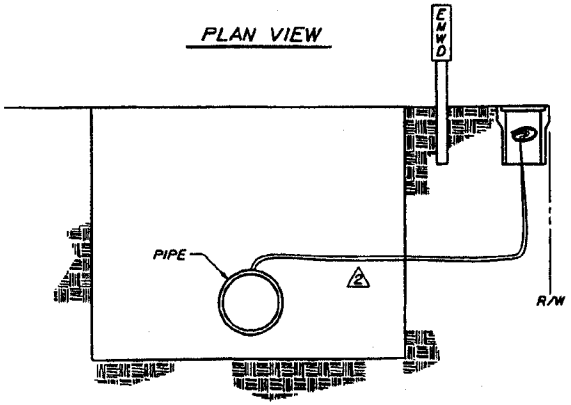
1" AIR VALVE INSTALLATION
1" COPPER TUBING

APPROVED G. Hoole Rugge, DATE 10/20/95 DATE

B-598 3



PLAN VIEW



TYPICAL TRENCH SECTION

NOTES:

1. LOCATOR WIRE TO BE 14 GAUGE SOLID COPPER WIRE UF, THWN, OR THHN.
2. LOCATOR WIRE SHALL BE BROUGHT TO THE SURFACE AT 660 FT OC MAX BY FIRE HYDRANTS OR INSTALL EMWD MARKER POSTS (B-665). GIVE STATIONS AT VALVE BOXES. (FOR TRACT CONSTRUCTION CHISEL "LW" IN FACE OF CURB IN LIEU OF MARKER POSTS).
3. LOOP 2 FEET OF WIRE IN VALVE BOX WITHIN 2 FEET OF FIRE HYDRANT OR EMWD MARKER POST.
4. WIRE TO BE CONTINUOUS STRAND.
5. LOCATOR WIRE SHALL BE INSTALLED OVER ALL WATERLINES. RECLAIMED WATERLINES AND FORCE MAINS WHETHER OR NOT TELEMETRY WIRE IS BURIED WITH THE PIPE.
6. USE CAST IRON COVER LABELED WATER, SEWER, OR RECLAIMED (RECLAIMED TO BE PAINTED LAVENDER).
7. FOR PIPE DEPTHS GREATER THAN 8 FT LOCATOR WIRE SHALL BE PLACED ABOVE PIPE AT MAX 8 FT DEPTH. MARKER TAPE SHALL BE PLACED 1 FT ABOVE THE LOCATOR WIRE.
3. 8. A LOCATIBILITY TEST IS TO BE PERFORMED ON ALL LOCATOR WIRES.
9. SPLICES TO BE DONE WITH A CRIMPABLE BUTT CONNECTOR.

REVISIONS						APPROVALS		
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE		INITIAL	DATE
1	5/6/96	KER	REDRAWN W/CAD ON MYLAR	VJB	5/8/96	DESIGN	VJB	8/90
2	8/5/96	KER	REVISED WIRE LOCATION	VJB	8/6/96	CONSTRUCTION		
3	5/4/99	GR	REVISED NOTE 8	VJB	5/6/99	INSPECTION		
						OPERATIONS	MWA	8/90
						SUBMITTED		

REFERENCES: ORIGINAL B-656 CREATED 7/18/90 (JJW)
FILE I.D.: /USR/KARL/STNDRDS/B656.DGN

SCALE: NONE
DRAWN BY K.E.R.

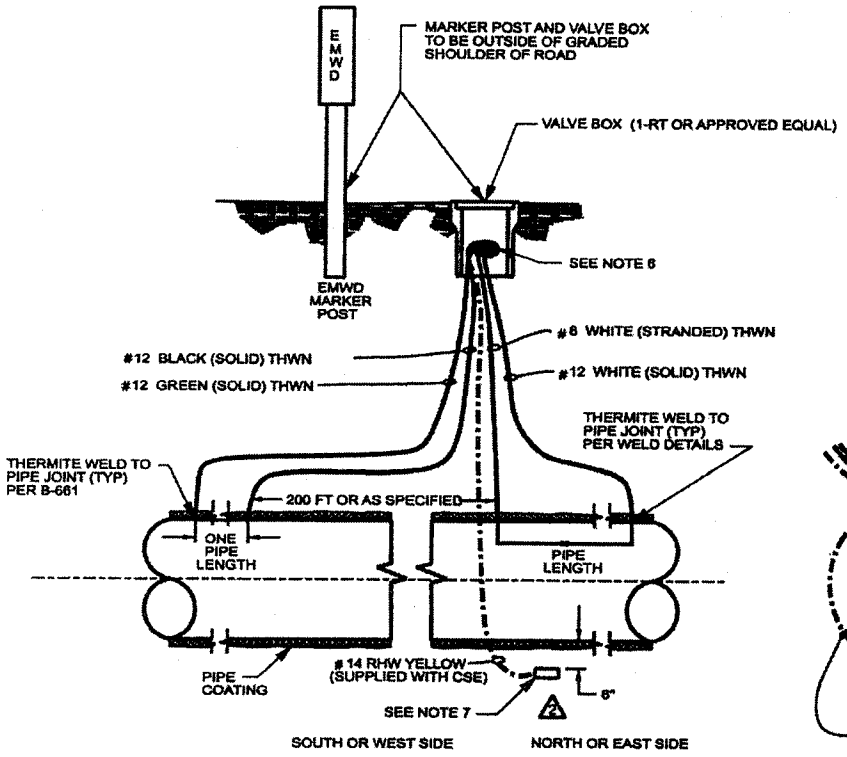
RECOMMENDED Joseph Van Sichle 8/28/90
DIRECTOR OF ENGINEERING DATE

EASTERN MUNICIPAL WATER DISTRICT

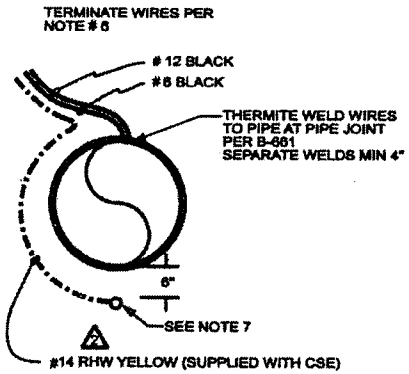
EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

LOCATOR WIRE INSTALLATION

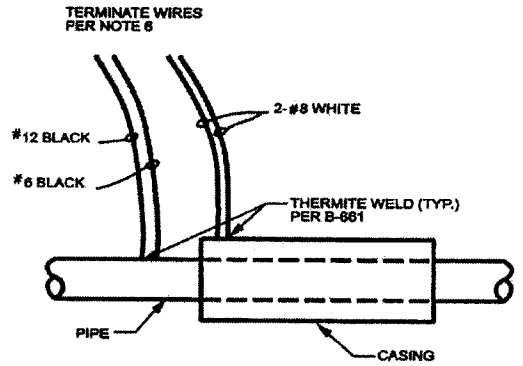
APPROVED William P. Plummer 8/31/90 B-656 3
CHIEF ENGINEER DATE



LINE CURRENT TEST STATION



BASIC TEST STATION



PIPE W/CASING TEST STATION

NOTES:

1. LEAD WIRES SHALL BE 36" DEEP THROUGH ROAD SHOULDER AND 24" OTHERWISE.
2. THE VALVE BOX SHALL BE LOCATED JUST OUTSIDE THE PROPERTY LINE (IN STREET R/W) EXCEPT AS OTHERWISE DIRECTED BY THE ENGINEER.
3. WHITE WIRES SHALL ALWAYS BE PLACED BELOW AND ON THE NORTH AND EAST SIDE OF THE TEST STATION.
4. PIPELINE SHALL BE ASSEMBLED IN TRENCH PRIOR TO THERMITE WELDING.
5. WIRE AND BONDED CONNECTIONS SHALL BE PROTECTED DURING FIELD MORTARING OF PIPE JOINTS.
6. TERMINATE ALL WIRES A MINIMUM OF 1 FT ABOVE GROUND LEVEL AND COIL EXCESS WIRE IN BOX.
7. COPPER-COPPER SULFATE ELECTRODE (CSE) INSTALLED ONLY WHEN SPECIFIED ON PLANS.
3. 8. FOR WIRES ABOVE GROUND, TAG INDIVIDUAL WIRES FOR IDENTIFICATION PURPOSES, FOR BURIED WIRES, PLACE MARKER TAPE.

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	5/4/99	GR	SUPERCEDES B-582	VJB	5/6/99
2	5/4/99	GR	REVISED #14 RHW COLOR	VJB	5/6/99
3	10/29/07	RE	ADDED NOTE # 8	[illegible]	12/18/07

APPROVALS		
	INITIAL	DATE
DESIGN	GLJ	1/23/97
CONSTRUCTION		
INSPECTION	JCW	4/23/97
OPERATIONS	LMc	1/28/97
SUBMITTED		

REFERENCES: B-661

FILE I.D.: \kaus\lang\std dwg\B662.dgn

SCALE: NONE

DRAWN BY KER

RECOMMENDED Michael G. Meyerpeter PROJECT MANAGER 1/24/97 DATE

APPROVED Charles J. Bachmann DIRECTOR OF ENGINEERING 4/25/97 DATE

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT

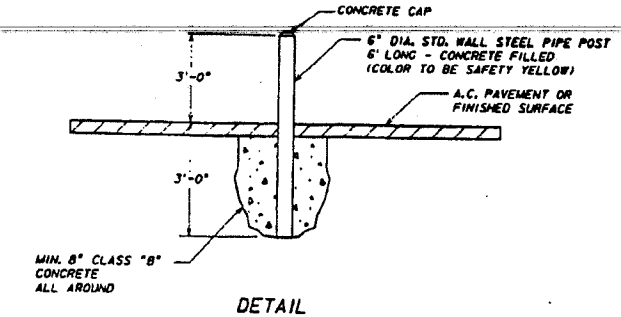
STANDARD DRAWING

TEST STATIONS: LINE CURRENT, BASIC AND PIPE WITH CASING

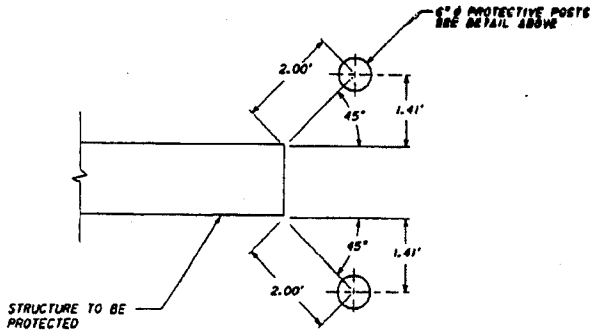
B-662

3

b662.dgn 12/4/2007 4:05:16 PM

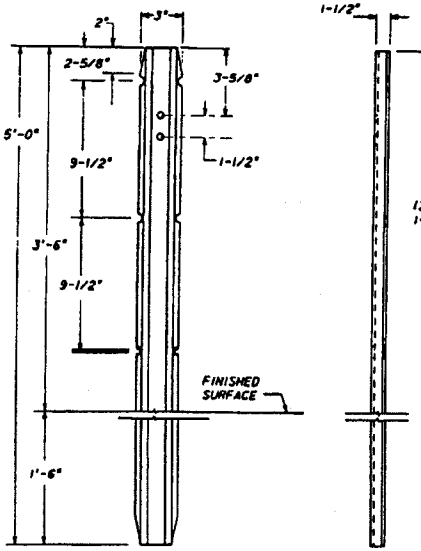


DETAIL



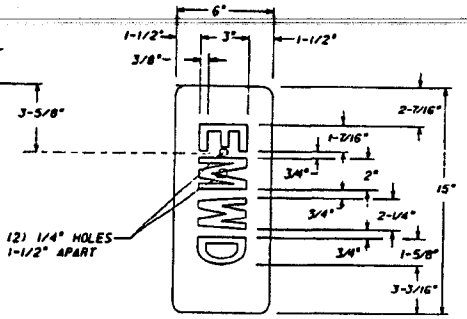
TYPICAL PLAN LOCATION

GUARD POSTS

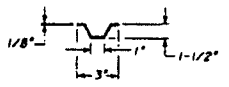


FRONT

SIDE



SIGN



TOP

NOTES:

1. POST MATERIAL, 2.0 LBS PER FOOT; FINISH ON POST, GALVANIZED.
2. SIGN MATERIAL, .062 ALUMINUM TO BE PAINTED WHITE WITH BLACK LETTERS.
3. SIGN TO BE PRE-PUNCHED FOR BOLT HOLES TO MATCH THOSE IN POST.
4. POST CAN BE DRIVEN.
5. SIGN TO BE ATTACHED WITH 2 - 2"X1/8" BOLT & NUT AFTER INSTALLATION OF POST.

5 FOOT STEEL MARKER POST

REVISIONS						APPROVALS		
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE		INITIAL	DATE
1	8/1/97	CRD	COMBINED A-498 AND A-504 REDRAWN ON CADD	[illegible]	12-19-00	DESIGN		
						CONSTRUCTION		
						INSPECTION		
						OPERATIONS		
						SUBMITTED	KER	12/19/00

REFERENCES: SUPERCEDES A-498 & A-504
FILE I.D.: d_standards\ b665.dgn

SCALE: NONE
DRAWN BY CRD

RECOMMENDED _____ DIRECTOR OF ENGINEERING DATE

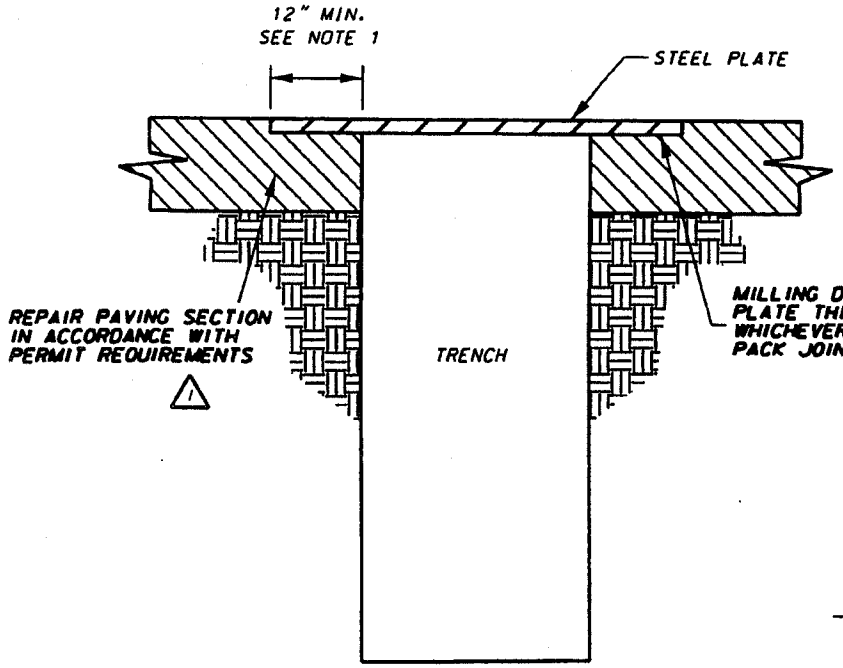
EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

GUARD AND MARKER POSTS

APPROVED [signature] ASSISTANT GENERAL MANAGER ENGINEERING 4/25/01 DATE

B-665



NOTES:

1. THE CONTRACTOR SHALL PROVIDE A MINIMUM 12" LAP OF STEEL PLATE ON EACH SIDE OF TRENCH TO ASSURE NO SLIPPING OF PLATE OR COLLAPSING OF TRENCH WALL. WHERE 12" LAP CANNOT BE MET, ENGINEER DESIGN REQUIRED.
2. MULTIPLE PLATES MUST BE TACK WELDED AS NEEDED TO SECURE PLATES, 6" MIN.
3. ALL PLATES MUST MEET REQUIRED TRAFFIC LOADS.

TYPICAL TRENCH PLATE DETAIL

N.T.S.

TO BE IMPLEMENTED ON ALL EMWD PROJECTS

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
1	8/25/05	CM	CHANGE FONT OF TEXT	VJB	9/26/05

APPROVALS		
	INITIAL	DATE
DESIGN	CM	8/17/05
CONSTRUCTION		
INSPECTION	CSD	8/17/05
OPERATIONS		
SUBMITTED	VJB	8/17/05

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT STANDARD DRAWING

RECESSED TRENCH PLATE DETAIL

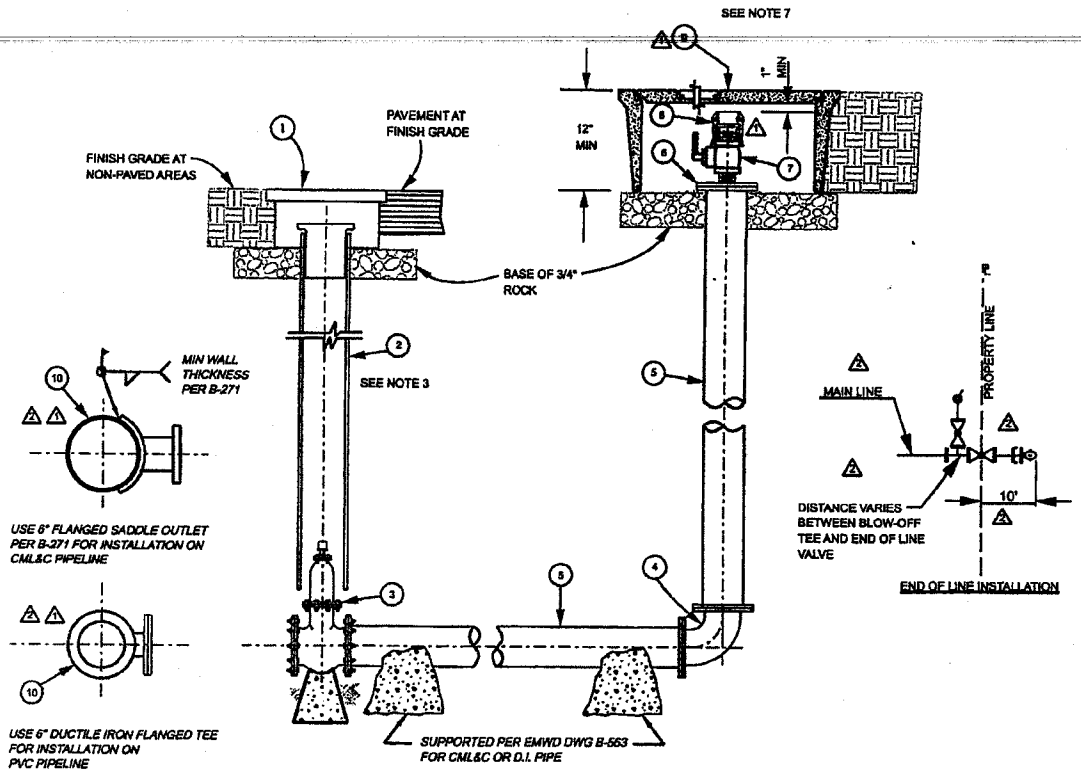
REFERENCES:
FILE I.D.: \roush\engineering\stddwgs\b934.dgn

SCALE: NTS
DRAWN BY KER

APPROVED C.J. Buchmann ASST. GENERAL MANAGER, ENGINEERING 8/24/05 DATE

B-934 1

NewB-934Trench Plate.dgn 08/25/2005 01:01:08 PM



⚠ GENERAL NOTES

1. ~~ALL CML&C PIPE SHALL MEET EMWD SPEC. SECT. 15061.~~
2. ALL D.I. PIPE SHALL MEET EMWD SPEC. SECT. 15057.
3. PROVIDE VALVE EXTENSION IF DEPTH TO VALVE NUT EXCEEDS 5 FEET.
4. VALVE BOX AND METER BOX LIDS TO BE PAINTED PURPLE PANTONE 522C. PER PA-2 VALVE DETAIL
5. BALL VALVE AND CAM LOCK TO BE PAINTED PURPLE PANTONE 522C.
6. RESTRAIN D.I. PIPE PER PIPE MANUFACTURER.
7. BLOW OFF LOCATIONS:
   - A. BLOW OFF SHALL BE PLACED
     1. 1'-6" BEHIND CURB FACE WHEN THE WIDTH OF SIDEWALK IS 8' OR WIDER.
     2. 7'-6" BEHIND CURB FACE WHEN THE WIDTH OF SIDEWALK IS 6' WIDE.
     3. 7'-6" BEHIND CURB FACE WHEN THERE IS NO SIDEWALK.
     4. 1'-6" WITHIN ROAD RIGHT-OF-WAY WHEN NO CURBS OR SIDEWALKS ARE PROPOSED.
   - B. BLOW OFF TO BE 1' BACK FROM INTERSECTION OF SIDEWALK WITH CORNER APRON.
   - C. AT OTHER THAN STREET INTERSECTIONS BLOW OFF TO BE ON LOT LINES.
8. FIELD COATING FOR EXPOSED STEEL PIPE SHALL BE PER EMWD SPECIFICATIONS AND APPROVED MATERIALS.
9. FOR MAINLINE;
   - A. 36" & LARGER USE 4" S.S. BALL VALVE WITH TEFLON SEAT AND 4" CAMLOCK (FEMALE COUPLER X MALE NPT)
   - B. SMALLER THAN 36" USE MIN. 1-1/2" S.S. BALL VALVE WITH TEFLON SEAT AND 1-1/2" CAMLOCK (FEMALE COUPLER X MALE NPT)

⚠ MATERIAL LIST (PER EMWD APPROVED MATERIAL LIST)

1. EISEL ENTERPRISE NO. 4TT VALVE BOX OR APPROVED EQUAL.
2. VALVE CAP & RISER PER PA-2
3. 6" FXF RSGV.
4. 6" FXF 90° ELBOW.
5. 6" FLANGED OR MJ D.I. PIPE OR CML&C PIPE.
6. 6"X 4" COMPANION FLANGE FOR MAINLINE 36" & LARGER. 6"X4"COMPANION FLANGE W/4"X1-1/2"BRASS BUSHING FOR MAINLINE SMALLER THAN 36".
7. BALL VALVE WITH CLOSE NIPPLE (SEE NOTE 9).
8. CAMLOCK (SEE NOTE 9).
9. METER BOX (MINIMUM SIZE) J&R CONCRETE NO. 4-1/2(NO.37) OR APPROVED EQUAL, SIZED TO ACCOMODATE FITTINGS.
10. ⚠ LINE SIZE BY 6" CONNECTION

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
⚠1	7/7/05	CM	REDRAWN & UPDATED W/CADD ON MYLAR	VJB	7/18/05
⚠2	8/9/07	RE	REVISED MATERIAL LIST & ADDED END OF LINE	[illegible]	8/9/07

APPROVALS	INITIAL	DATE
DESIGN	CM	7/14/05
ELEC.SERV.		
MECH.SERV.	CD	7/14/05
OPERATIONS	K.C.	7/15/05
FIELD SERV.	VJB	7/18/05

REFERENCES:
FILE I.D.: \kauai\eng\stddrwgs\pa1.dgn

SCALE: NONE
DRAWN BY CM

EASTERN MUNICIPAL WATER DISTRICT

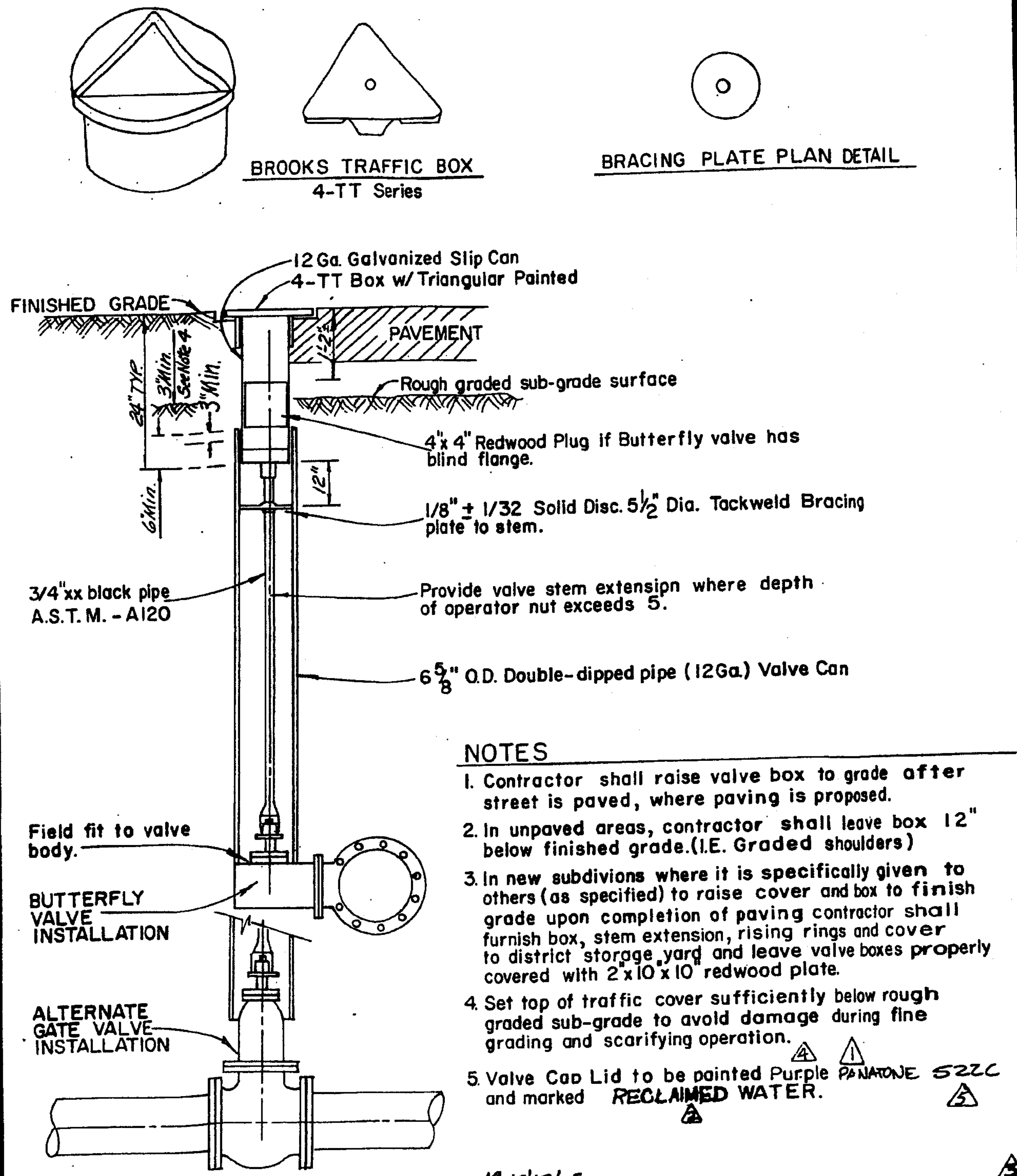
EASTERN MUNICIPAL WATER DISTRICT
RIVERSIDE COUNTY, CALIFORNIA

6" RECYCLED WATER BLOW OFF

APPROVED Charles J. Bachmann 7/18/05
ASST. GENERAL MANAGER ENGINEERING DATE

PA-1

2



NOTES

1. Contractor shall raise valve box to grade after street is paved, where paving is proposed.
2. In unpaved areas, contractor shall leave box 12" below finished grade.(I.E. Graded shoulders)
3. In new subdivions where it is specifically given to others (as specified) to raise cover and box to finish grade upon completion of paving contractor shall furnish box, stem extension, rising rings and cover to district storage yard and leave valve boxes properly covered with 2"x 10"x 10" redwood plate.
4. Set top of traffic cover sufficiently below rough graded sub-grade to avoid damage during fine grading and scarifying operation. ⚠4 ⚠1
5. Valve Cap Lid to be painted Purple PANTONE 522C and marked RECLAIMED WATER. ⚠5 ⚠2

⚠3

⚠6 Plastic riser not allowed, Delete Note 6. VJB 10/17/05

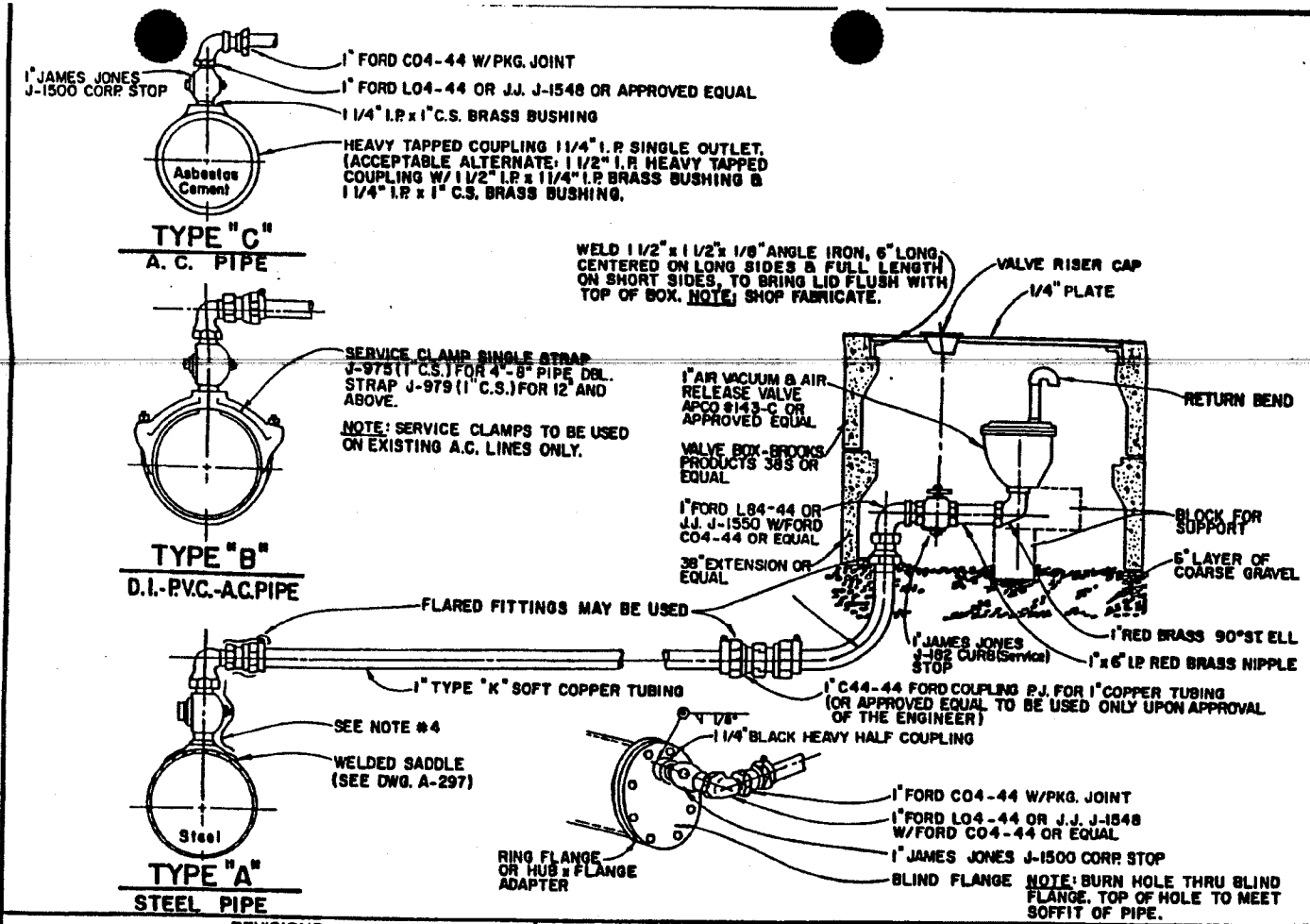
REVISIONS	SCALE	INITIAL	DATE
⚠1 [illegible]	DESIGNED		
⚠2 REVISED [illegible]	DRAWN	S.K.D.	7/88
⚠3 ADDED NOTE [illegible]	CHECKED		
⚠4 REVISED [illegible]	RECOMMENDED		
⚠5 REVISE NOTE 5 [illegible]	APPROVED [illegible]		8/23/88
	DATE [illegible]	CHIEF ENG.	

EASTERN MUNICIPAL WATER DISTRICT
RIVERSIDE COUNTY, CALIFORNIA

STANDARD DRAWING

RECYCLED WATER VALVE CAP & RISER DETAIL

PA-2 ⚠6 ⚠5



NOTES

1. All fittings between the corporation stop and air valve shall:
   a. Be made of brass or bronze;
   b. Be made of the banded pattern;
   c. Be designed for a minimum of 175 P.S.I. (cold) water working pressure.
2. Pressure test prior to wrapping and back-filling.
3. Alternate materials may be used upon approval of the engineer.
4. Corporation stop and fittings of the pipeline shall be primed and wrapped with protecto-wrap No. 200 coal tar resin tape.
5. All service pipe and tubing shall be laid on a constant slope up from the reclaimed water main to the meter. No dips or pockets will be permitted.
6. Thread notation shown as follows:
   I. P. = Iron pipe thread
   C.S. = Corporation stop (Mueller) thread
   P.J. = Point joint
7. Valve box cover to be painted PURPLE and marked "RECLAIMED WATER" per PA-2. ⚠
8. Placement of valve box: ⚠
   a. Place front edge of valve box 6" maximum behind existing or proposed 6' or 8' sidewalks.
   b. When proposed or existing sidewalk is 12' wide, place front edge of box 6' maximum behind curb using appropriate box.
   c. When no side walk is proposed, place front edge of box 6.5 behind curb face.
   d. When no curbs are existing or to be installed upon completion of the water system, place back edge of valve box on property line.

REVISIONS				
NO.	DATE	INITIAL	DESCRIPTION	APP'D
⚠1	1-30-95	KER	REVISED DWG # FROM EB-8 TO PB-8 & NOTES	

REFERENCES

APPROVALS: DESIGN — OPER. — CONST. — R/W

		DATE
SCALE	NONE	
DESIGNED		
DRAWN	S.K.D.	4/89
TRACED		
CHECKED		
SUBMITTED		4/6/89
RECOMMENDED		4/28/89

EASTERN MUNICIPAL WATER DISTRICT
RIVERSIDE COUNTY, CALIFORNIA

STANDARD DRAWING
RECLAIMED WATER
1" AIR VALVE INSTALLATION

APPROVED — CHIEF ENGINEER — 5-28-89 DATE

W.O.
C.O.
COORD:
SHT. 1 OF 1
PB-8 ⚠

Revised 082508

SPECIFICATIONS - DETAILED PROVISIONS
Section 02201 - Construction Methods & Earthwork

CONTENTS

SECTION 02201
CONSTRUCTION METHODS & EARTHWORK

PART 1 - GENERAL

1.01 REQUIREMENT

A. Verification of Existing Conditions
It shall be the responsibility of the Contractor to examine the site of the work and to make all investigation necessary, both surface and sub-surface, to determine the character of materials to be encountered and all other existing conditions affecting the work.

B. Site Grading
The entire site within the area affected by construction shall be cleared and bladed. All surfaces to receive compacted fill shall be cleared of existing vegetation, debris, or other unsuitable material. Surfaces shall be cut or filled to the extent indicated by finish grade stakes set by the Engineer. Finish surfaces shall slope uniformly between spot elevations or finish contour lines shown on the drawings and away from structures. Subgrade for finished surfaces, concrete, asphalt, etc., the grading tolerance will be plus or minus .05 feet from surface elevations indicated.

Rough Site Grading. All requirements of Site Grading shall be adhered to, with the exception that in unpaved areas and areas which do not have gradient restraints to allow for proper drainage, the grading tolerance will be plus or minus 0.20 feet from surface elevations indicated.

Rough site grading in areas of future pavement shall have grading tolerance of plus or minus 0.10 feet from surface elevations.

C. Lines, Grades and Measures
All lines and grades will be established by the Engineer, and the Contractor shall provide him with such assistance and materials as may be required. The Contractor shall carefully preserve all survey stakes and reference points. SHOULD ANY STAKES OR POINTS BE REMOVED OR DESTROYED BY ANY ACT OF THE CONTRACTOR OR HIS EMPLOYEES THEY MAY BE RESET AT THE CONTRACTOR'S EXPENSE.

All work shall conform to lines, elevations and grades shown on the construction plans. Three consecutive points set on the same slope shall be used together so that any variation from a straight grade can be detected. Any such variations shall be reported to the District Engineer or Inspector. In the absence of such report, the contractor shall be responsible for any error in the grade of the finished work.

Stakes for video taping of project alignment will be provided by the District at 300' intervals and angle points.

Grade stakes for buildings, sidewalks, pump bases, engine bases, utility services and paving shall be furnished by the Contractor.

Grade stakes for water system construction will be at 100' stations except as directed by the Engineer for specific applications, and at fire hydrant, blow-off, air valve, water meter locations, and valves.

Grade stakes for sewer system construction will be furnished at 25' stations and at locations of appurtenances.

D. Compliance with Regulations
The Contractor shall familiarize himself, and comply with all applicable federal, state, county and municipal rules and regulations pertaining to sanitation, fire protection, and safety.

E. Contractor's Equipment
The Contractor shall provide such modern plant and equipment as may be necessary in the opinion of the Engineer to perform in a satisfactory and acceptable manner, and in accordance with the specifications, all the work required of the Contractor.

F. Representatives for Emergencies
The Contractor shall file with the District a written list giving the names, addresses, and telephone numbers of at least two (2) of his representatives who can be contacted at any time in case of emergency. The representatives shall be fully authorized and equipped to correct unsafe or inconvenient conditions on short notice. The Contractor shall promptly notify the District of all changes in the listing.

G. Power and Water Supply
The Contractor shall provide at his own expense all necessary power required for his operations under the contract. The Contractor shall provide and maintain in good order such modern power equipment as shall be adequate in the opinion of the Engineer to perform in a safe and satisfactory manner the work required by the contract.

The Contractor may obtain water for work under this specification from the sources as stated in the Special Provisions and Requirements of this specification.

The Contractor may obtain water for work under this specification from the sources as stated in the Special Provisions and Requirements of this specification.

1.02 STRUCTURE PROTECTION

A. Contract Drawings

The drawings identify the various pipes, conduits, and other existing utility structures as they are supposed to exist in construction areas, but no error or omission on said drawings shall be construed to relieve the Contractor from the responsibility of protecting any such pipe, conduit, or other existing utility structures.

When deemed necessary by the Engineer, revisions of the contract drawings and additional detailed drawings will be issued to the Contractor during the progress of the work.

B. Notification of Underground Service Alert of Southern California

When performing underground work, the Contractor shall call Underground Service Alert (USA), the one-call underground facility locating service two (2) working days prior to making an excavation. Contractor shall be responsible for such notification of sub-contractor's work, or shall require sub-contractor to assume this responsibility.

C. Operation of Utilities

No District valves or appurtenances of other utility facilities shall be operated by the Contractor without approval and/or instruction from the District or the utility, as appropriate.

D. Maintenance of Utilities

Insofar as practical during the progress of the work, the property of any owner of a public utility pipeline or conduit, sewer, culvert, storm drain, drainage ditch, flood control channel, overhead wires or cables, or underground wires or cables, or any other structure or facility shall not be disturbed but shall be supported and protected against injury and maintained in good operating condition at the expense of the Contractor. In no case shall any such property be disturbed or removed without the consent of the owner and approval of the Engineer. The Contractor shall be responsible for making good all damage due to his operations and the provisions of this section shall not be abated even in the event such damage occurs after backfilling, or is not discovered until after completion of backfilling.

The Contractor shall explore the location and depth of underground facilities, sewers, and storm drains sufficiently in advance of pipe laying or other construction operations so that changes in line or grade, or both, can be made in the pipeline without delay of the Contractor's construction schedule, without relaying or reconstructing previously installed pipe or other facilities and to avoid wherever possible moving, altering, or reconstruction of the obstructing underground facilities, sewers, or storm drains.

The locations of existing underground utilities and structures, insofar as they are known from information furnished by the respective utility companies and agencies and other sources, have been shown on the drawings.

It shall be the responsibility of the Contractor to verify the location of these obstructions and to locate any other underground utilities and structures which might necessitate a change in the line and grade of the new work. If the Contractor, while performing the work of construction, discovers utility facilities not identified by the District in contract plans or specifications, he shall immediately notify the District in writing.

In no case shall any utility that has been damaged, whether shown or not shown on the plans, be backfilled without the Contractor notifying the utility company of the damage.

Pursuant to Section 4215 of the Government Code, the District shall compensate the Contractor for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating main or trunkline utility facilities not indicated in the plans and specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work. The Contractor shall not be assessed liquidated damages for delay in completion of the project, when such delay was caused by the failure of the District or the owner of the utility to provide for said removal or relocation of such utility facilities. Nothing herein shall be deemed to require the District to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of the construction.

E. Utility Construction

If the work requires, as shown on the drawings or as specified, or as required for the Contractor's convenience, that the surface and overhead facilities, underground facilities, sewers and storm drains should be moved, altered, relocated, reconstructed, or temporarily supported, in order that the facilities included in the contract can be constructed, the Contractor shall make all arrangements therefore with the respective owners and shall bear all expenses for moving, altering, relocating, or temporarily supporting the facilities.

In addition, the District may require the moving, altering, or reconstructing of obstructing underground facilities, sewers, or storm drains, and compensation therefore will come under extra work where such work is ordered in writing by the Engineer.

Pipelines determined to be abandoned may be destroyed if conflicting with the contract work and properly disposed of. Exposed ends of abandoned pipelines shall be plugged for watertightness as approved by the Engineer.

1.03 JOB CONDITIONS

A. Rights-of-Way

The District will provide right-of-way for the pipelines to be constructed under the contract. Neither the terms hereof nor anything shown on the drawings in connection with the right-of-way provided by the District shall be construed to entitle the Contractor to conduct operations in said right-of-way in violation of any public agency ordinance or regulation restricting interference with water courses and drainage channels, road, alley, or street, until he has obtained permits therefore from the proper authorities.

In all of the streets in which his work may interfere with ingress or egress of the occupants of the abutting property or of their vehicles, the Contractor shall maintain temporary practical means of ingress and egress or shall make satisfactory arrangements with the occupants for the obstructing of ways to their properties for the duration of the interference. Such arrangements shall be made in writing and a copy submitted to the Engineer.

Nothing herein shall be construed to entitle the Contractor to the exclusive use of any public street or way during performance of the contract work, and he shall so conduct his operations as not to interfere unnecessarily with the authorized work of other agencies in such streets and ways.

Fences on the right-of-way shall be removed by the Contractor where necessary for the performance of the work, but, where required, shall be maintained until the work is completed or their removal is authorized. Where the Contractor removes existing fences to facilitate the work, temporary fence protection for lands adjacent to the right-of-way shall be provided at all times during the continuation of the contract. Such temporary fence protection shall be adequate to prevent livestock from straying from or onto adjacent lands and shall be constructed complete with gates and/or cattle guards. The cost of all work described in this paragraph shall be included in the prices bid for other items of work and no separate payment shall be made therefore. Where pipelines are to be constructed through and adjacent to tracts of improved property, the Contractor shall, where practical, confine his operations within a 30-foot wide right-of-way or such other width right-of-way as may be designated on the drawings or in the Special Provisions. If the Contractor's operations are such as

to require additional space, the Contractor shall arrange for and secure at his own expense any additional right-of-way required. The Contractor shall enter into written agreements with the landowners and copies of the agreements shall be furnished to the Engineer.

Where the pipeline is to be constructed through cultivated fields not in public road rights-of-way, the District will obtain and pay for damage to crops over a total overall width of 30' or such other width as may be designated. Any damage to crops outside of the designated right-of-way shall be paid for by the Contractor.

B. Safeguarding Excavations and Property

Excavations shall be adequately shored and braced so that the earth will not slide or settle and so that all existing improvements of any kind will be fully protected from damage. Any damage resulting from a lack of adequate shoring and bracing shall be the responsibility of the Contractor. The Contractor shall effect all necessary repairs or reconstructions at the Contractor's own expense as directed by the Engineer and shall bear all other expenses resulting from such damage.

C. Safety Measures

Each bid proposal submitted under these specifications for the construction of a pipeline, sewer, sewage disposal system, boring and jacking pits, or similar trenches or open excavations, or the use of such a trench or open excavation, shall include in appropriate bid items for such work the costs necessary to provide adequate sheeting, shoring, and bracing, or equivalent method for the protection of life or limb, which shall conform to applicable safety orders, including the Construction Safety Orders of the California Division of Occupational Safety and Health, in accordance with the requirements of the California Occupational Safety and Health Act.

When working in, or connecting to, existing systems in operation, the required safety provisions for work in an operating system will be enforced, including provisions for working in confined air spaces when appropriate.

Nothing in this requirement shall be construed to impose tort liability on the awarding body or any of its employees.

D. Trench Shoring Approval

Any contract for public works involving an estimated expenditure in excess of twenty-five thousand dollars ($25,000) for the excavation of any trench or trenches 5' or more in depth, shall require submission by the Contractor and acceptance by the awarding body or by a registered civil or structural engineer to

whom authority to accept has been delegated, in advance of excavation, of a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.

Nothing in this section shall be deemed to allow the use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders.

Nothing in this section shall be construed to impose tort liability on the awarding body or any of its employees.

E. Trench Permit
Prior to commencing any work in the construction or use of trenches or excavations which are 5' or deeper and into which a person will be required to descend, the Contractor shall apply to the California Division of Occupational Safety and Health, and secure a permit therefore, and shall furnish the District with a copy thereof prior to commencing any excavation.

F. Safety Officer
The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of hazards and accidents. This person shall be the Contractor's Superintendent unless otherwise designated in writing by the Contractor to the District.

G. Right to Occupy Completed Portions of Work
The District may wish to occupy or place in service portions of the completed work before final completion of the contract work and shall be at liberty to do so, but such occupancy or placing in service of any completed portion of the work shall not void the contract nor relieve the Contractor of his responsibility of protection and care of all work until final completion and acceptance of the entire work, provided, however, that expense directly attributable to operation and placing in service the portions of the work shall not be chargeable to the Contractor.

1.04 GUARANTEE
The Contractor hereby guarantees that the entire work constructed by him under the contract will fully meet all the requirements thereof as to quality of workmanship, and of materials furnished by him. The Contractor hereby agrees to make at his own expense any repairs or replacements made necessary by defective materials or workmanship supplied by him which have become evident within one (1) year, or other guarantee period elsewhere specified, after