

**SANTA BARBARA COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT**



**NOTICE TO BIDDERS
AND
SPECIAL PROVISIONS**

FOR

MUD LAKE BASIN SIPHON IMPROVEMENT PROJECT - PHASE II

FIN PROJECT NO. OR8206

BID OPENING LOCATIONS:

Attention: Front Counter

**Santa Barbara County Flood Control and Water Conservation District Offices:
Naomi Swartz Building, 130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101
North County Public Works Office, 620 West Foster Road, Santa Maria, CA 93455**

BIDS OPEN: 2:00 P.M.

AUGUST 26, 2014

Electronic Advertising Contract

**SCOTT D. MCGOLPIN
DIRECTOR OF PUBLIC WORKS**

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**SANTA BARBARA COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
NOTICE TO BIDDERS**

Sealed bids will be received until 2:00 PM, August 26, 2014, for the MUD LAKE BASIN SIPHON IMPROVEMENT PROJECT - PHASE II at the front counter of the;

Santa Barbara County Flood Control and
Water Conservation District office
Naomi Schwartz Building
130 E. Victoria Street, Suite 200
Santa Barbara, CA 93101
Tel. (805) 568-3440

or

North County Public Works office
620 West Foster Road
Santa Maria, CA 93455
Tel. (805) 739-8750

Each bid will be publicly opened and read at or about that time.

GENERAL WORK DESCRIPTION: The Project generally consists of providing water pollution control; traffic control; removal of existing drainage facilities; installation of approximately 1100 linear feet of 12" diameter HDPE pipe by the Horizontal Directional Drilling method, installation of approximately 180 linear feet of 12" diameter HDPE pipe by the open trench method; construction of concrete drainage facilities; protection and relocation of existing facilities and utilities; and the replacement of asphalt concrete pavement.

PROJECT LOCATION DESCRIPTION: The WORK occurs in the unincorporated area of Santa Barbara County near Orcutt, California, within Public Road Right of Way and Flood Control District owned property.

Complete the work within **35 working days**.

Dodge Green Sheet Value Code E.

A non-mandatory pre-bid job walk is scheduled for August 19, 2014 at 10:00 AM. Bidders interested in attending are to meet at the project site located at the intersection Via Santa Maria and Valley Drive.

The Plans, Specifications, Bid Book and other Contract Documents are available at no charge at:

<http://www.countyofsb.org/pwd/pwwater.aspx?id=3600>.

For each bid all forms must be filled out as indicated in the bid documents. The entire Bid Book must be submitted. Proposals by Bidder(s) not listed as a holder of plans and specifications on the Plan Holders of Record Sheets will be returned unopened.

Submit your bid with bidder's security equal to at least 10 percent of the Bid.

Pursuant to the provisions of Section 1770 et seq. of the California Labor Code, the Prime Contractor shall pay not less than the prevailing rate of per diem wages as determined by the Director of the Department of Industrial (Relations). A copy of the prevailing rate of per diem wages is on file at the office of the Santa Barbara County Flood Control and Water Conservation District. In addition, the Prime Contractor shall be responsible for compliance with the requirements of Section 1777.5 of the California Labor Code relating to use of apprentice labor on public works contracts. The OWNER policy is to encourage the employment and training of apprentices on its construction contracts as may be permitted under local apprenticeship standards.

Pursuant to Section 22300 of the Public Contract Code, and the project specifications, the Contractor may substitute securities for monies withheld to ensure contract performance.

The Contractor shall be subject to the provisions of Article XIII, Chapter 2, of the Santa Barbara County Code, prohibiting unlawful discrimination of employment practices.

The Bidder shall possess a Class A General Engineering Contractor license or a combination of Class C licenses which constitute the majority of the work in accordance with the provisions of Chapter 9, Division III of the

Business and Professions Code at the time that the Bid is submitted. Failure to possess the required license(s) shall render the Bid as non-responsive and shall act as a bar to award of the Contract to any bidder not possessing said license.

Inquiries or questions based on alleged patent ambiguity of the plans, specifications or estimate must be submitted as a bidder inquiry prior to 2:00 p.m. on the Friday of the week preceding bid opening. Submittals after this date will not be addressed. Questions pertaining to this Project prior to Award of the Contract shall be directed to:

mgriff@cosbpw.net or (805) 884-8074

Include "Project No. OR8206" in the subject field.

Bidders (Plan Holders of Record) will be notified by electronic mail if addendums are issued. The addendums, if issued, will only be available on the County Website:

<http://www.countyofsb.org/pwd/pwwater.aspx?id=3600>

Bidders must notify the OWNER, via email, acknowledging receipt of the notification of addendum. Bidders are also required to acknowledge receipt of all addendums where noted on the Bid Form.

The OWNER reserves the right to reject any or all bids, to waive any informalities and/or inconsistencies in a bid, and to make awards to the lowest responsive, responsible bidder as it may best serve the interest of the OWNER.

Date: 8-1-2014

OWNER: The Santa Barbara County Flood Control and Water Conservation District

By: 
Thomas D. Fayram
Deputy Director, Public Works
Water Resources Division

**SPECIAL PROVISIONS
FOR
MUD LAKE BASIN SIPHON IMPROVEMENT
PROJECT - PHASE II**


FIN PROJECT NO. OR8206

The special provisions contained herein have been prepared under the direction of the following Registered Persons.


REGISTERED CIVIL ENGINEER

8/01/14
DATE




APPROVAL RECOMMENDED - ENGINEERING MANAGER

8-4-14
DATE


APPROVED BY DEPUTY DIRECTOR OF PUBLIC WORKS,
WATER RESOURCES

8/1/14
DATE

COPY OF BID ITEM LIST

Item No.	F ¹	Item Code	Description	Unit	Quantity	Unit Price	Item Total
1		120090	Construction Area Signs	LS	1		
2		120100	Traffic Control System	LS	1		
3		130100	Job Site Management	LS	1		
4		130200	Prepare Water Pollution Control Program	LS	1		
5		150776A	Remove Catch Basin	LS	1		
6		150812A	Remove 12" Dia. Transite Pipe	LF	190		
7		192001A	Additional Subgrade Overexcavation	CY	5		
8		374002	Asphaltic Emulsion (Fog Seal Coat)	SY	850		
9		390095	Replace Asphalt Concrete Surfacing	SF	990		
10		510502A	Concrete Collar (SPPWC 380-4, D=12")	EA	1		
11		641101A	12" Dia. HDPE DR11 Pipe (HDD Method)	LF	1100		
12		641101B	12" Dia. HDPE DR11 Pipe (Open Trench Method)	LF	180		
13		705509A	12" Dia. Gate Valve	EA	1		
14		707117A	Basin Outlet Structure	EA	1		
15		707217A	Manhole (SPPWC 321-2)	EA	1		
16		770010A	Reconstruct Sewer Lateral (SPPWC 223-2)	EA	3		
17		999990	Mobilization	LS	1		
CONTRACTOR'S BID ITEMS SUBTOTAL							
18			Supplemental Work (Additional Traffic Control)	LS	1		\$1,000
19			Supplemental Work (Additional Water Pollution Control)	LS	1		\$1,000
20			Supplemental Work (Work Associated with Biological Monitoring)	LS	1		\$1,000
SUPPLEMENTAL WORK BID ITEMS SUBTOTAL							\$3,000
TOTAL BID							

¹ "F" denotes Final Pay Item

FLOOD CONTROL DISTRICT PROVISIONS

The work provided herein must be performed in accordance with the Caltrans Standard Specifications 2010 edition (Standard Specifications). The Standard Specifications is incorporated herein by reference.

MODIFICATIONS TO STANDARD SPECIFICATIONS

DIVISION I GENERAL PROVISIONS

1 GENERAL

Add to the 1st table in section 1-1.06:

AA	Aluminum Association
AMS	Aerospace Material Specifications
APWA	The American Public Works Association
SAE	Society of Automotive Engineers

Replace or add the following terms to section 1-1.07B:

Acceptance: The formal written approval by the Agency of a project which has been completed in all respects in accordance with the plans and specifications and any modifications thereof.

Agency: The Santa Barbara County (CA) Flood Control and Water Conservation District.

APWA Standard Plans: Standard Plans for Public Works Construction, promulgated by the American Public Works Association (Southern California Chapter)/Associated General Contractors of California (Southern California Districts) Joint Cooperative Committee, published by Building News Inc., 3055 Overland Avenue, Los Angeles, California 90034, 2009 edition.

Board: The Governing Board of Directors of the Santa Barbara County (CA) Flood Control and Water Conservation District.

Caltrans: State of California, Business & Transportation Agency, Department of Transportation

business day: Day on the calendar except Saturday, Sunday or holiday.

County: The County of Santa Barbara, a political subdivision of the State of California.

County Clerk: The County Clerk of the County of Santa Barbara.

County Standard Details: Standard Details of the County of Santa Barbara Department of Public Works Roads Division, dated September, 2011.

Department: The Santa Barbara County Flood Control District acting by and through its Department of Public Works; its authorized representatives.

Department of Transportation: The Santa Barbara County (CA) Flood Control and Water Conservation District

District: The Santa Barbara County (CA) Flood Control and Water Conservation District

District Office: The Santa Barbara County (CA) Flood Control and Water Conservation District Office

Director: Director of Public Works of the County of Santa Barbara, or the Director's duly authorized representative.

Engineer: The Flood Control District Engineer acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.

Flood Control: The Santa Barbara County (CA) Flood Control and Water Conservation District

Green Book: Standard Specifications for Public Works Construction, 2006 edition, including supplements published by Building News, Inc., Los Angeles, CA.

High Risk Facilities: Facilities conducting the following materials, whether encased or not, are considered to be High Risk facilities:

1. Petroleum Products,
2. Oxygen,
3. Chlorine,
4. Toxic or flammable gases,
5. Natural gas in pipelines greater than 150 mm (6 inches) nominal pipe diameter, or pipelines with normal operating pressures greater than 415 kPa gauge (60 p.s.i.g.),
6. Underground electric supply lines, conductors or cables that have a potential to ground of more than 300 volts, either directly buried or in duct or conduit, which do not have concentric grounded or other effectively grounded metal shields or sheaths.

holiday: Holiday shown in the following table:

Holidays

Holiday	Date observed
Every Sunday	Every Sunday
New Year's Day	January 1st
Birthday of Martin Luther King, Jr.	3rd Monday in January
Washington's Birthday	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4th
Labor Day	1st Monday in September
Veterans Day	November 11th
Thanksgiving Day	4th Thursday in November
Day after Thanksgiving Day	Day after Thanksgiving Day
Christmas Day	December 25th

If January 1st, February 12th, March 31st, July 4th, November 11th, or December 25th falls on a Sunday, the Monday following is a holiday. If November 11th falls on a Saturday, the preceding Friday is a holiday.

Low Risk Facilities: Facilities conducting the following materials are considered to be Low Risk facilities:

1. Natural gas in pipelines 150 mm (6 inches) or smaller (nominal pipe diameter) with normal operating pressures of 415 kPa gauge (60 p.s.i.g.) or less.
2. Underground electric supply lines, conductors or cables with a potential to ground of more than 300 volts, either directly buried or in duct or conduit, which do have concentric grounded or other effectively grounded metal shields or sheaths, and for which the utility owner furnished location information in conformance with the requirements of Article 17.7, "Location Information" of General Order No. 128 of the California Public Utility Commission, or electrical underground conductors with a potential to ground of 300 volts or less.

Owner: Same meaning as Agency.

Prompt: The briefest interval of time required for a considered reply, including time required for approval by governing body.

State: The State of California and its political subdivisions; The Santa Barbara County (CA) Flood Control and Water Conservation District

State Highway Engineer: The Santa Barbara County (CA) Flood Control and Water Conservation District

State Standard Plans: Standard plans prepared by State of California, Business & Transportation Agency, Department of Transportation (Caltrans).

Supplemental Work: Change Order Work.

Replace section 1-1.12 with:

1-1.12 MISCELLANY

Make checks and bonds payable to the Santa Barbara County Flood Control and Water Conservation District.

AA

2 BIDDING

Add to section 2-1.02:

Section 10285.1 of the Public Contract Code applies.

More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. If the OWNER has reasonable grounds for believing that any Bidder is interested in more than one Bid for the WORK contemplated, all Bids in which such Bidder is interested will be rejected. If the OWNER believes that collusion exists among the Bidders, all Bids will be rejected and collusion participants shall be restricted from submitting further proposals. A party who has quoted prices to a Bidder is not hereby disqualified from quoting prices to other Bidders, or from submitting a Bid directly for the WORK.

Each Bidder (including the Bidder's Superintendent assigned to the Project) shall be skilled, experienced, regularly engaged in and qualified to perform the type of work called for in the Bid documents.

If you are found to be not qualified to bid, your bid will be rejected.

Replace the 2nd through 4th sentences of the 2-1.06A with:

The *Notice to Bidders and Special Provisions, Bid Book*, and project plans are available on the County's website at <http://www.countyofsb.org/pwd/pwwater.aspx?id=3600>

Revised Standard Specifications are available at State of California, Department of Transportation (Caltrans) website at: http://www.dot.ca.gov/hq/esc/oe/construction_standards.html

Add to section 2-1.07of the RSS:

The failure or neglect of the Bidder to receive or examine any of the bid documents shall in no way relieve the Bidder from any obligations required by the bid documents. No claims for additional compensation will be allowed which is based upon lack of knowledge of any bid documents.

Add to section 2-1.10 of the RSS:

If you make a clerical error in listing subcontractors, submit a written notice to the Director of Public Works within 24 hours after the time of the bid opening with copies of the notice also being sent to the subcontractors involved.

Delete section 2-1.15 to 2-1.27

Replace section 2-1.33 with:

Complete forms in the Bid Book. Submit the forms with your bid.

On the Subcontractor List you may either submit the percentage of each bid item subcontracted with your bid or E-Mail the percentage to: mgriff@cosbpw.net or deliver to Spec Administrator, at: 130 E. Victoria Street, Suite 200, Santa Barbara, Ca. 93101, within 24 hours after bid opening. You are solely responsible for correcting any inadvertent errors in the license numbers within 24 hours of bid opening. Failure to correct the

license numbers in compliance with instructions and Public Contract Code § 4104 will cause the bid to be nonresponsive.

Except for the percentage of each bid item subcontracted, do not E-Mail submittals.

Include all applicable federal, state and local taxes in your bid amount. Unauthorized conditions, limitations, or provisos attached to the Bid shall render it informal and may cause its rejection as being non-responsive. The Bid forms shall be completed without interlineations, alterations, or erasures in the printed text. Alternative Bids will not be considered unless called for. Oral, telephonic, or faxed Bids or modifications will not be considered.

Failure to submit the forms and information as specified results in a nonresponsive bid.

If an agent other than the authorized corporation officer or a partnership member signs the bid, file a Power of Attorney with the Department either before opening bids or with the bid. Otherwise, the bid may be nonresponsive.

The Board of Directors reserves the right to waive technical errors and discrepancies if it determines it is in the public interest to do so.

Add to section 2-1.34:

If the bid schedule includes alternative or additive items or additive groups, the bid bond must equal to at least 10% of the bid plus all alternatives and additives.

Replace the first paragraph in section 2-1.50 with:

If reasonable cause exists to believe collusion exists among bidders, or that prices bid are unbalanced between bid items, any or all proposals may be rejected.

3 CONTRACT AWARD AND EXECUTION

Replace section 3-1.04 with:

3-1.04 CONTRACT AWARD

In the event you wish to protest the award of the contract, the procedure must be as follows:

- a. Any bid protest must be submitted in writing to the Santa Barbara County Flood Control District, 130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101, before 5 p.m. of the 10th business day following the bid opening.
- b. The initial protest document shall contain a complete statement of the basis for the protest.
- c. The protest shall refer to the specific portion of the document which forms the basis for the protest.
- d. The protest shall include the name, address and telephone number of the person representing the protesting party.
- e. The party filing the protest shall concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest which may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

Failure to file a Notice of Protest shall constitute a waiver of proceedings under this rule.

In its discretion, the Santa Barbara County Flood Control District may accept or reject any bids. The decision of the Board of Directors shall be final in accepting or rejecting the bid protest, awarding the bid to the next lowest responsive, responsible bidder, or rejecting any or all bids.

If the District awards the contract, the award is made to the lowest responsible bidder within 65 days.

If the lowest responsible bidder refuses or fails to execute the contract, the Director may award the contract to the second lowest responsible bidder. Such award, if made, will be made within 80 days after the opening of bids. If the second lowest responsible bidder refuses or fails to execute the contract, the Director may award the contract to the third lowest responsible bidder. Such award, if made, will be made within 95 days after the opening of the proposals. The periods of time specified above within which the award of contract may be made shall be subject to extension for such further period as may be agreed upon in writing between the Department and the bidder concerned.

Replace section 3-1.05 with:

3-1.05 CONTRACT BONDS (PUB CONT CODE §§ 10221 AND 10222)

The successful bidder must furnish 2 bonds:

1. Payment bond to secure the claim payments of laborers, workers, mechanics, or materialmen providing goods, labor, or services under the Contract. This bond must be equal to at least 100 percent of the total bid. The payment bond must also contain provisions which automatically increase amounts thereof and/or time of completion or both for all change orders, extensions and additions to the work provided pursuant to this Agreement.
2. Performance bond to guarantee the faithful performance of the Contract. This bond must be equal to at least 100 percent of the total bid.

You may provide alternative securities for monies withheld to ensure performance per the terms of Public Contract Code § 22300.

The District furnishes the successful bidder with bond forms.

Both the payment and performance bonds must be executed by one and only one surety. That Surety must be admitted and listed in the Insurance Organizations Authorized By The Insurance Commissioner To Transact Business Of Insurance In The State Of California for the current year, and must be further authorized by the commissioner to issue surety insurance.

Replace section 3-1.18 with:

The successful bidder must sign the District Agreement (Contract).

Deliver to the District:

1. Three (3) copies of the District Agreement (Contract) bearing original signatures.
2. Two (2) copies of the Performance and Payment Bonds.
3. Certificate of Insurance Transmittal form.
4. Insurance Certificates.
5. Taxpayer identification and certification (IRS Form W-9).
6. For a federal-aid contract, Caltrans Bidder - DBE Information form.
7. A copy of your company's policy on drugs and alcohol.
8. A copy of your Injury and Illness Prevention Program.

The District must receive these documents before the 8th business day after the bidder receives the Contract and Certificate of Insurance Transmittal form.

Replace the 4th paragraph of section 3-1.18 with:

For all other contracts, these documents must be received before the 8th business day after the bidder receives the contract.

4 SCOPE OF WORK

Add to list in the 1st paragraph of section 4-1.06B:

- 3. Material differing from that represented in the Contract which you believe may be hazardous waste;
- 4. Subsurface or latent physical conditions at the site differing from those described by and shown in information available to bidders prior to submitting bids;

Add to end of section 4-1.06B:

The local public entity will promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in your cost of, or the time required for performance of any part of the work will issue a change order under the procedures described in the Contract.

^^

5 CONTROL OF WORK

Add to section 5-1.01:

Before starting Work, you must contact all jurisdictional agencies and determine from each: 1) scope of work to be inspected and by whom, 2) scope of testing, and 3) advance notice required.

During the course of work, you must be responsible for calling for testing and inspection as required by the jurisdictional agencies. Work not properly tested and inspected will be subject to rejection.

If any work that is to be inspected, tested or approved is covered by you without written concurrence of the Engineer, it must, if requested by the Engineer, be uncovered for observation. Uncovering work will be at the your expense unless you have given Engineer timely notice of your intention to cover the same and Engineer has not acted with reasonable promptness to such notice.

Any plan or method of work suggested by the Owner or the Engineer to you but not specified or required, if adopted or followed by you in whole or in part, must be used at the risk and responsibility of you; and the Owner and the Engineer must assume no responsibility therefor and in no way be held liable for any defects in the work which may result from or be caused by use of such plan or method of work.

Replace the 2nd paragraph of section 5-1.02 with:

If a discrepancy exists:

- 1. The governing ranking of Contract parts in descending order is:
 - 1.1. Permits from other agencies as may be required by law
 - 1.2. Addendums
 - 1.3. Technical provisions
 - 1.4. Flood Control District provisions
 - 1.5. Project plans
 - 1.6. Revised standard specifications
 - 1.7. Standard specifications
 - 1.8. Revised standard plans
 - 1.9. Standard plans
 - 1.10. Supplemental project information (except where supplemental project information is designated as not a contract document).
- 2. Written numbers and notes on a drawing govern over graphics
- 3. A detail drawing governs over a general drawing
- 4. A detail specification governs over a general specification
- 5. A specification in a section governs over a specification referenced by that section

Except, when there is a conflict of working hours the more stringent requirement will apply. Change Orders, Supplemental Agreements, and approved revisions to Plans and Specifications will take precedence over Items 2) through 6) above. Detailed plans will have precedence over general plans.

Add to section 5-1.03:

If you and the District are unable to reach agreement on disputed work, the District may order you to proceed with the work. Payment will be as later determined by arbitration, if the District and you agree thereto, or as fixed in a court of law.

Although not to be construed as proceeding under extra work provisions, you must proceed as provided in Section 9-1.04, Force Account.

Add to section 5-1.09:

Section 5-1.09 applies if there is a bid item for Partnering.

Add to section 5-1.16:

You must notify the Owner, in writing, when you desire to change the Project Manager and Superintendent for the Project, and must provide in writing the name, qualifications, and experience statements of the personnel proposed by you to be used.

Add to section 5-1.17:

You must implement a policy on drugs and alcohol conforming to 49 CFR 40.

Submit a copy of your policy at the preconstruction meeting.

Add to section 5-1.23:

Make all submittals to the Engineer.

Materials must not be furnished or fabricated, nor any work done for which shop drawings or submittals are required, before those shop drawings or submittals have been reviewed, as provided herein. Neither review nor approval of shop drawings or submittals by the Engineer will relieve you from responsibility for errors, omissions, or deviations from the Bid Documents, unless such deviations were specifically called to the attention of the Engineer in the letter of transmittal. You will be responsible for the correctness of the submittals and shop drawings, including shop fits, field connections, and results obtained by use of such drawings.

You must pay Flood Control for review of any submission that varies from what the plans and specifications have called for, and/or for the review of any submission that is redundant (for example, submitting similar portland cement concrete mix designs from more than one supplier).

Add to list under the 3rd paragraph of section 5-1.23A:

5. Federal Project Number, if any

Add section 5-1.23B(2)(a):

5-1.23B(2)(a) Record Drawings

You must maintain a complete and accurate record of all changes of construction from that shown in these plans and specifications for the purpose of providing a basis for construction record drawings. No changes must be made without prior written approval of the Engineer.

Upon completion of the project, you must deliver a reproducible print record of all of the approved construction changes to the Engineer along with a separate letter certifying that other than the noted changes on this record, the project was constructed in conformance with the Bid Documents. Failure to submit the final record drawing may result in final payment request not being processed.

Add to section 5-1.23C:

Where the manufacturer of any material or equipment provides written recommendations or instructions for its use or method in installation (including labels, tags, manuals, or trade literature), such recommendations or instructions must be complied with except where the contract documents specifically require deviations. Copies of such manufacturer's recommendations must be provided by you to the Engineer.

Replace "3" in the second paragraph of section 5-1.27B with "4"

Add to section 5-1.30

The Agency will not be precluded or stopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment therefor from showing the true quantity and

discriminatory practices, County shall pay all costs and expenses of such hearing, including reasonable attorneys' fees, to Contractor in accordance with current Santa Barbara County Superior Court schedule of attorneys' fees for civil trials. If Contractor is found to have engaged in such unlawful discriminatory employment practices, Contractor shall pay all such costs, expenses and attorneys' fees.

Whether or not a contract or agreement is still in existence at the time of final determination of such unlawful discrimination, the Contractor shall forthwith reimburse the County for all damages directly stemming from such discrimination; however, those damages shall not exceed and are not reimburseable in an amount which exceeds amounts paid to Contractor under the terms of the contract or agreement.

Nothing in this section 2-95 shall directly or by interpretation give a private cause of action to any third party (not a signatory to the contract or agreement) including employees past or present, or applicants for employment to Contractor, it being the sole purpose of this clause to administratively assure compliance with the nondiscrimination clauses contained herein.

With respect to employment discrimination, employment practices shall include, but are not limited to, employment, promotion, demotion, transfer, recruitment and advertising for recruitment, layoff or other termination, rate of pay, employee benefits and all other forms of compensation or selection for training and apprenticeship and probationary periods.

Contractor shall permit access at all reasonable times and places to all of its records of employment, advertising, application forms, tests and all other pertinent employment data and records, to the County of Santa Barbara, its officers, employees and agents for the purpose of investigation to ascertain if any unlawful discrimination as described herein has occurred or is being practiced, provided that such records are relevant to a complaint of an unlawful discriminatory practice which has been forwarded to Contractor reasonably prior to the time Contractor is asked to make such records available. In addition, all such records shall be deemed "Confidential" by the officers, employees and agents of the County. No records or copies of such records may be removed from the premises of Contractor, and no disclosure, oral or written, of such record may be made to third parties except as provided within the agreement. Provided, however, that in the event of a hearing to determine whether or not Contractor is engaging in unlawful discrimination in employment practices as defined herein, the Board of Supervisors of Santa Barbara County may issue subpoenas to require that certified copies of such records be made available to the hearing.

Failure to fully comply with any of the foregoing provisions shall be deemed to be a material breach of any contract or agreement with the County of Santa Barbara. All persons contracting with or who have contracts for goods or services with the County shall be notified that this chapter applies to their contract or agreement with the County of Santa Barbara.

Sec. 2-95.5. - Exceptions.

Notwithstanding any other provisions in this article, any party contracting with the County of Santa Barbara having an affirmative action program which has been approved within twelve months from the date of the contract by an agency of the federal government shall be deemed to be in compliance with the provisions of this article upon furnishing documentary evidence of such approval satisfactory to the County Affirmative Action Officer. Loss of such approval shall be immediately reported by such party to the County Affirmative Action Officer.

Sec. 2-96. - Purchase orders.

Purchase orders shall contain the following clause as grounds for termination of such purchase order.

"If complaint is made that seller is engaging in discriminatory employment practices made unlawful by applicable state and federal laws, rules or regulations, and the State Fair Employment Practice Commission or the Federal Equal Employment Opportunities Commission determines that such unlawful discrimination exists, then the County of Santa Barbara may forthwith terminate this order."

Sec. 2-97. - Affirmative Action Officer.

At the discretion of the County Affirmative Action Officer, he or she shall promptly and thoroughly investigate, or cause to be investigated reports and complaints from whatever source, that any party contracting with the County of Santa Barbara is engaging, or during the term of a contract or agreement with the County of Santa Barbara has engaged, in any unlawful discriminatory employment practices as described in section 2-95 of this Code. If the investigation discloses reason to believe such unlawful discrimination does exist or has existed and the conditions giving rise thereto have not been changed so as to prevent further such unlawful discrimination, and the said party shall not forthwith terminate such unlawful discrimination, take all appropriate steps to prevent a recurrence of such or other unlawful practices, and compensate the person or persons unlawfully discriminated against for any and all loss incurred by reason of such unlawful discrimination, all to the satisfaction of the Affirmative Action Officer, then the Affirmative Action Officer shall cause the matter to be presented for action to the State Fair Employment Practices Commission or the Federal Equal Employment Opportunities Commission, or both, and to any other concerned state or federal agencies or officers.

If and when it has been finally determined by the Affirmative Action Officer, County Counsel, or state or federal regulatory agencies that such unlawful discriminatory employment practice has in fact so occurred or are being carried on, then the Affirmative Action Officer shall forthwith present the entire matter to the Board of Supervisors of the County, together with all damages, costs and expenses related thereto and incurred by County, for appropriate action by the Board of Supervisors in accord with the intent and purposes of this article and of the affirmative action program of the County of Santa Barbara.

Sec. 2-98. - Youth group anti-discrimination.

- (a) Neither the County of Santa Barbara, nor any of its agencies, departments, affiliates, or political subdivisions over which it exercises jurisdiction, shall:
 - (1) Deny any youth group equal access to, or fair opportunity to conduct meetings or other events at, or otherwise utilize any public facility;
 - (2) Deny any youth group use permits or licenses regarding, or otherwise withhold from any youth group permission to use, any public facility; or
 - (3) Otherwise discriminate against any youth group; on the basis of the membership or leadership criteria of such youth group.
- (b) For purposes of this section, a public facility shall include any public forum, limited public forum, public property, or public area including any public building, park, beach, campground, or any other area controlled or operated by the County of Santa Barbara.
- (c) For purposes of this section, a youth group means any group or organization intended to serve young people under the age of twenty-one.

Add to section 7-1.02K(1):

7-1.02K(1)(a) Joint Labor Compliance Monitoring Program

The Joint Labor Compliance Monitoring Program monitors labor compliance by conducting interviews with construction workers at the job site. You, and all subcontractors, must cooperate in allowing approved Compliance Group Representatives along with a County employee access to the project employees and work site for the purpose of conducting worker interview to ensure compliance with the requirement to pay prevailing wages on County projects. This will be done in order to comply with the Board of Supervisors July 10, 2012 adoption of a Joint Labor Compliance Monitoring Program.

Each Compliance Group Representative will always be accompanied with a County employee for a joint contractor worker interview. The Compliance Group Representative will be issued an identification card by the County at the job site. Compliance Group Representatives must restrict their actions to interviewing workers employed on the project. A copy of the Joint Labor Compliance Monitoring Program and Board Letter adoption from July 10, 2012 is available on request.

Add to section 7-1.02K(5):

Working hours on working days, will be from 7:00 a.m. to 5:00 p.m. No work will be done or noise generated outside those hours except such work as is necessary for the proper care and protection of the work already performed or in case of an emergency.

You must be responsible for overtime compensation of inspection personnel for their work that occurs outside the above stated hours. The actual costs will be deducted from your payment.

Add to section 7-1.02K(6)(a):

Your Injury and Illness Prevention Program must include:

1. Safety manual
2. Jobsite checklist
3. Equipment safety checklist
4. Tailgate safety meetings
5. Permit application and job notification form (Construction, Demolition, Trenches, Excavation, Building, Structures, Falsework, Scaffolding) Form Cal/OSHA S-691, latest edition

Add to section 7-1.02K(6)(b):

You must obtain a State Division of Industrial Safety Permit for excavations and trenches prior to commencement of any excavation or trench of 5 feet or more in depth per California Code of Regulations, Title 8, Chapter 3.2, Article 2, Section 341 and Title 8, Division 1, Chapter 4, Subchapter 4 of the California Occupational Safety and Health Regulations (Cal/OSHA). A copy of the permit must be submitted to the Engineer. All excavations must be completed and maintained in a safe and stable condition throughout the total construction phase in order to protect persons, property, trees and improvements. Structure and trench excavations must be completed to the specified elevations and to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work and/or protection of existing features. Excavations outside of the lines and limits shown on the drawings or specified herein required to meet safety requirements must be your responsibility in constructing and maintaining a safe and stable excavation.

Replace section 7-1.02P with:

7-1.02P County Ordinance

7-1.02P(1) General

Comply with County Ordinances.

Copies of County Ordinances are available at http://www.municode.com/library/CA/Santa_Barbara_County, and at County offices located at 123 East Anapamu Street, Santa Barbara, CA 93101.

Any references in State Standard Specifications to statutory provisions applicable only to state contracts or which are inconsistent with statutory provisions applicable to County or local agency contracts, will not prevail over, and will be superseded by, any statutory provisions applicable to County or local agency contracts.

7-1.02P(2) Grading

Comply with section 13.

Santa Barbara County Grading Ordinance and Santa Barbara Flood Control and Water Conservation District Ordinance No. 35 prohibits the dumping of debris or other materials in a watercourse so as to obstruct or impede normal flow of water therein.

7-1.02P(3) Preservation of Monuments

Comply with Ordinance 1491, in particular, County Code Chapter 28, Article I, Section 49.

Replace section 7-1.05 with:

7-1.05 INDEMNIFICATION

Indemnification and liability coverage in this section, Indemnification and Insurance, will mean the County of Santa Barbara, the Santa Barbara County Flood Control District, Designated Representative, Architect/Engineer, and their officials, agents and employees.

To the maximum extent permitted by law, you must fully defend, indemnify and hold harmless the County and its board, departments, officers, officials, employees, agents and volunteers (collectively, "INDEMNITEE"), from and against any and all third party claims, allegations, suits, actions, legal or administrative proceedings, judgments, debts, demands, damages, including those involving injury or death to any person or persons, and damage to any property including loss of use resulting therefrom, incidental and consequential damages,

liabilities, interest, costs, attorneys' fees and expenses of whatsoever kind of nature whether arising before, during or after commencement or completion of this Contract, whether against you or the INDEMNITEE which are in any manner, directly, indirectly, in whole or in part, arising from breach of any provision of the Contract, or any act, omission, fault or negligence, whether active or passive, of you, a subcontractor or anyone directly or indirectly employed by them or anyone for whose acts they may be liable in connection with or incident to the Contract, even though the same may have resulted from the joint, concurring or contributory negligence, or from the passive negligence, of the INDEMNITEE or any other person or persons, unless the same be caused by the sole negligence or willful misconduct of the INDEMNITEE, or except to the extent caused by the active negligence of INDEMNITEE. In instances where the INDEMNITEE'S active negligence accounts for a percentage of the liability involved, the obligation of you to defend, indemnify and hold harmless must be for the entire percentage of liability not attributable to that active negligence.

You must notify the County immediately in the event of any accident or injury arising out of or in connection with this Agreement.

Replace section 7-1.06 with:

7-1.06 INSURANCE

Additional Insured – All policies, except for the Workers' Compensation, Errors and Omissions and Professional Liability and Automobile Liability policies, must contain endorsements naming the County and its officers, employees, agents and volunteers as additional insureds with respect to liabilities arising out of the performance of services hereunder. The additional insured endorsements must not limit the scope of coverage for the County to vicarious liability but must allow coverage for the County to the full extent provided by the policy. Such additional insured coverage must be at least as broad as Additional Insured (Form B) endorsement form ISO, CG 2010.11 85.

Waiver of Subrogation Rights – You must require the carriers of required coverages to waive all rights of subrogation against the County, its officers, employees, agents, volunteers, contractors and subcontractors. All general or auto liability insurance coverage provided must not prohibit you and your employees or agents from waiving the right of subrogation prior to a loss or claim. You hereby waives all rights of subrogation against the County.

Policies Primary and Non-Contributory – All policies required herein are to be primary and non-contributory with any insurance or self-insurance programs carried or administered by the County.

Severability of Interests – You agree to ensure that coverage provided to meet these requirements is applicable separately to each insured and there will be no cross liability exclusions that preclude coverage for suits between you and the County or between the County and any other insured or additional insured under the policy.

Proof of Coverage – You must furnish Certificates of Insurance to the County Department administering the Agreement evidencing the insurance coverage, including Additional Insured Endorsements and Waiver of Subrogation Endorsements (a.k.a.: Waiver of Transfer Rights of Recovery Against Other, Waiver of Our Right to Recover from Others), as required, prior to the commencement of performance of services hereunder, which certificates must provide that such insurance must not be terminated or expire without thirty (30) days written notice to the Department, you must maintain such insurance from the time you commence performance of services hereunder until the completion of such services. Within fifteen (15) days of the commencement of this Agreement, You must furnish a copy of the Declaration page for all applicable policies and will provide complete copies of the policies and endorsements immediately upon request.

Acceptability of Insurance Carrier – Unless otherwise approved by Risk Management, insurance shall be written by insurers authorized to do business in the State of California and with a minimum A.M. Best's Insurance Guide rating of "A- VII".

Deductibles and Self-Insured Retention – Any and all self-insured retentions of any limit or deductibles exceeding \$10,000 must be declared to and approved by Risk Management.

Failure to Procure Coverage – In the event that any policy of insurance required under this Agreement does not comply with the requirements, is not procured, or is canceled and not replaced, the County has the right but not the obligation or duty to cancel the Agreement or obtain insurance if it deems necessary and any

premiums paid by the County will be promptly reimbursed by you or the County payments you will be reduced to pay for the County purchased insurance.

Insurance Review – Insurance requirements are subject to periodic review by the County. The Risk Manager or designee is authorized, but not required, to reduce, waive or suspend any insurance requirements whenever Risk Management determines that any of the required insurance is not available, is unreasonably priced, or is not needed to protect the interests of the County. In addition, if the Division of Risk Management determines that heretofore unreasonably priced or unavailable types of insurance coverage or coverage limits become reasonably priced or available, the Risk Manager or designee is authorized, but not required, to change the above insurance requirements to require additional types of insurance coverage or higher coverage limits, provided that any such change is reasonable in light of past claims against the County, inflation, or any other item reasonably related to the County's risk.

Any change requiring additional types of insurance coverage or higher coverage limits must be made by amendment to this Agreement. You agree to execute any such amendment within thirty (30) days of receipt.

Any failure, actual or alleged, on the part of the County to monitor or enforce compliance with any of the insurance and indemnification requirements will not be deemed as a waiver of any rights on the part of the County.

Insurance Specifications – You agree to provide insurance set forth in accordance with the requirements herein. If you use existing coverage to comply with these requirements and that coverage does not meet the specified requirements, you agree to amend, supplement or endorse the existing coverage to do so. The type(s) of insurance required is determined by the scope of the contract services.

Without in any way affecting the indemnity herein provided and in addition thereto, you must secure and maintain throughout the Agreement term the following types of insurance with limits as shown:

7-1.06A Workers' Compensation/Employers Liability

A program of Workers' Compensation insurance or a state-approved, self-insurance program in an amount and form to meet all applicable requirements of the Labor Code of the State of California, including Employer's Liability with one million dollar (\$1,000,000) limits covering all persons including volunteers providing services on your behalf and all risks to such persons under this Agreement.

If you have no employees, you may certify or warrant to the County that you do not currently have any employees or individuals who are defined as "employees" under the Labor Code and the requirement for Workers' Compensation coverage will be waived by the County's Risk Manager.

With respect to the Contractors that are non-profit corporations organized under California or Federal law, volunteers for such entities are required to be covered by Workers' Compensation insurance.

7-1.06B. Commercial/General Liability Insurance

You must carry General Liability Insurance on an "occurrence" basis, covering all operations performed by or on your behalf providing coverage for bodily injury and property damage, including products and completed operations, with a combined single limit of not less than one million dollars (\$1,000,000) per occurrence and two million dollars (\$2,000,000) in the aggregate.

7-1.06C. Automobile Liability Insurance

Primary insurance coverage must be written on ISO Business Auto coverage form for all owned, hired and non-owned automobiles or symbol 1 (any auto). The policy must have a combined single limit of not less than one million dollars (\$1,000,000) for bodily injury and property damage, per occurrence.

If you do not own any autos, a non-owned auto endorsement to the General Liability policy described above is acceptable.

7-1.06D. Umbrella/Excess Liability Insurance

You must carry an umbrella (over primary) or excess policy of five million dollars (\$5,000,000). The umbrella policy shall apply to bodily injury/property damage, personal injury/advertising injury and must include a "dropdown" provision providing primary coverage for any liability not covered by the primary policy. The coverage must also apply to automobile liability. An Additional Insured Endorsement must be provided on the Umbrella policy as it relates to the primary policies requiring an Additional Insured Endorsement.

Comply with the National Discharge Elimination System General Permit for *Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2012-0006-DWQ NPDES NO. CAS000002) referred to herein as Permit. The Permit governs stormwater and nonstormwater discharges from construction sites. The Permit may be viewed at the State Water Resources Control Board website.

Replace the 4th paragraph in section 13-3.01A with:

Discharges of stormwater from the project must comply with NPDES General Permit for *Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2012-0006-DWQ NPDES NO. CAS000002) referred to herein as Permit.

Replace the 1st sentence of the second paragraph of section 13-3.01B(2)(a) with:

The SWPPP must comply with the California Stormwater Quality Association (CASQA) Construction BMP Handbook/Portal at <http://www.cabmphandbooks.com/>

Replace "not used" in Section 14-1.02C with:

You must notify the Engineer immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or your records pertaining to water pollution control work. You and the Department must provide copies of correspondence, notices of violation, enforcement actions, or proposed fines by regulatory agencies to the requesting regulatory agency.

Delete the last paragraph in Section 15-3.01 of the RSS

AA

DIVISION III GRADING

19 EARTHWORK

Add section 19-3.03D(1):

Section 19-3.03D(1) Additional Subgrade Overexcavation

If, during the progress of excavation, material is encountered which, in the opinion of the Engineer, is unsuitable for subgrade for the structure to be constructed thereon, you must excavate beyond the limits shown on the Plans to a depth ordered by the Engineer and replace the overexcavated material with foundation material suitably densified. The suitability of subgrade will be determined by the Engineer on the basis of its ability to withstand the load of the proposed improvements and not upon the capacity to withstand the loads which may be placed thereon by your equipment. Additional overexcavation so ordered, over the amount required by the Plans or special provisions, will be paid for as provided in the Bid Item List.

If the necessity for such additional subgrade overexcavation has been caused by an act or failure to act on your part or is required for the control of groundwater, you must bear the expense of the additional excavation and foundation stabilization material. Materials used or work performed by you beyond the District's requirements for stabilization of the subgrade, so that it will withstand the loads which may be placed upon it by your equipment, must also be at your expense.

Foundation stabilization material, when required and ordered by the Engineer to provide suitable subgrade, must be gravel, crushed aggregate or other free-draining cohesionless material, must be suitable for the field conditions to which it is to be applied and must be approved by the Engineer.

Foundation stabilization material must be wrapped in a geotextile fabric, if, in the opinion of the Engineer, the foundation stabilization material approved for use is subject to piping. Geotextile fabric material and installation must conform to the provisions of Section 88-1.02B.

The quantity of additional overexcavation to be paid for will be the amount of compacted in-place cubic yards as ordered by the Engineer. No payment will be made for additional overexcavation unless removed as ordered by the Engineer. The quantity shown on the Bid Item List is a nominal allowance since no additional

overexcavation is shown on the plans, and no adjustment of the unit bid price will be made for a variation in the actual versus the bid quantity.

Replace the 1st paragraph of section 19-5.03B with:

Obtain a relative compaction of at least 95 percent for at least a depth of 0.75 foot below the grading plane for widths between the outer edges of shoulder, or between existing curbs or curb and gutter.

TECHNICAL PROVISIONS

DIVISION I GENERAL PROVISIONS 2 BIDDING

Add to section 2-1.06B:

The District makes the following supplemental project information available:

Supplemental Project Information

Means	Description
Available as specified in the <i>Standard Specifications</i> or special provisions	County of Santa Barbara Public Works Department, Transportation Division, Encroachment Permit – General Permit Requirements
Available as specified in the <i>Standard Specifications</i> or special provisions	Geotechnical Report; Mud Lake Siphon Improvement Project; Orcutt, California (Fugro Consultants, Inc. - October 2013)
Available as specified in the <i>Standard Specifications</i> or special provisions	Laguna County Sanitation District Standard Specifications for the Construction of Sanitary Sewers

Geotechnical reports are only available from OWNER’S website: <http://www.countyofsb.org/pwd/pwwater.aspx?id=3600>. Geotechnical reports are not part of the Contract Documents. The Bidder may rely upon the accuracy of the technical data contained in such information, however, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained in such information or the completeness thereof is the responsibility of the Bidder.

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5 CONTROL OF WORK

Add section 5-1.201A:

5-1.01A WORKING HOURS

Working hours within public road right of way (residential streets) must only occur between 8:00 AM and 5:00 PM, unless otherwise approved.

Working hours within the Mud Lake Basin must only occur between 7:00 AM and 5:00 PM, unless otherwise approved.

Working hours may be extended by the Engineer during the Pipe Pullback Installation road closure.

Add to section 5-1.20B(1):

The County of Santa Barbara Public Works Department, Transportation Division, will be issuing an encroachment permit for this project. General permit requirements are available from OWNER’S website: <http://www.countyofsb.org/pwd/pwwater.aspx?id=3600>.

Revise section 5-1.26 to read:

The location and elevation of benchmarks and horizontal control points are shown on the plans. The Contractor must furnish all the necessary labor, equipment, and materials to accurately layout the work and set the required elevations from the information provided. All survey services must be performed by a professional surveyor who is licensed by the State of California or by personnel under the Licensed Surveyor’s direct supervision. Review and approval of the surveyor’s qualifications will be at the discretion

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Add section 7-1.03A:

7-1.03A STANDARD NOTIFICATIONS

You must deliver notices to each residence adjacent to the Work two weeks minimum prior to commencement of project activities. The format and content of each notice must be approved by the Engineer (see example below).

The limits of distribution for notices prior to the commencement of project activities must include all residents on Via Santa Maria, between Boardwalk Lane and Shady Glen Drive, all residences on Valley Drive, between Via Santa Maria and Woodmere Road, all residences on Kit Way, between Village Drive and Valley Dive, and all residences on Village Drive, east of Village Knoll.

Such notice must at minimum give the name of the Project, the duration of the Contract period, daily work hours for the proposed work, typical parking and access restrictions anticipated for the work the Contractor's representative and phone number, the County representative and phone number, along with any other information requested by the Engineer. All notices shall be approved by the Engineer for content and delivery schedule prior to actual delivery.

You must deliver notices to residences as required by the County of Santa Barbara Public Works Department, Transportation Division, Encroachment Permit for each Road Closure stage shown on the plans. Notices must be approved by the Permit officer.

The limits of distribution for notices for the road closure associated with the "Pilot Hole Drilling and Open Cut Trench Installation" staging area must include all residents on Via Santa Maria, between Boardwalk Lane and Shady Glen Drive, all residences on Valley Drive, between Via Santa Maria and Woodmere Road, all residences on Kit Way, between Village Drive and Valley Dive, and all residences on Village Drive, east of Village Knoll.

The limits of distribution for notices for the road closure associated with the "Pipe pullback Installation" staging area must include all residents in the area bounded by Union Valley Parkway, S. Bradley Rd, Broadwalk Lane, and Village Drive (both sides of the street) as well as all residences on Via Santa Maria, between Boardwalk Lane and Shady Glen Drive.

All notices must be in the format of door hangers (14 inches by 4 inches, 110 Springhill Index or approved equal) and be hung at the main door of each residence or business affected. The text of such notices must have one side printed in English with the reverse side printed in Spanish.

The following is an example of language required:

NOTICE

TO AREA RESIDENCES

The Santa Barbara County Flood Control District hereby informs you that (Contractor) will be constructing the Name of Project. The contract period is from (date) to (date).

Work on the Project will typically be performed between the hours of 8:00 AM and 5:00 PM.

We appreciate your patience and cooperation during this Project. If you have any questions, or require additional information please contact the following:

Contractor, Contact's Name and Telephone Number

Santa Barbara County Flood Control District, Contact's Name and Telephone Number

properly abbreviated with three to four letters; date or dates of restriction shall be listed completely; the beginning and ending times shall be clearly listed on the sign. The Contractor's name and telephone number shall also be printed on the sign.

Signs must be mounted such that the words "No Parking" are at an elevation at least three feet and not more than seven feet above the adjacent flowline. Signs may be tied with string to trees and power poles, taped to existing sign poles, or mounted to stakes or barricades that you provide. The must shall be placed as needed to control the parking of cars within the construction zone; signs must be placed at intervals of 75 feet or less along each side of the roadway.

You must post and maintain signs for a period of 72 hours prior to the restrictions becoming effective. If it is not possible to work on the day posted, you must remove signs and post new signs no less than 72 hours prior to the restrictions. Upon completion of the work, all signs, stakes, and barricades shall be promptly and completely removed and disposed of.

You must be fully responsible for the adequate removal of all parked cars. All vehicle removals must be coordinated by the Contractor with local law enforcement. You must notify local law enforcement upon posting of the parking restrictions. For removal of parked vehicles, you must notify local law enforcement not less than two hours prior to the needed removal with the address nearest the parked vehicle, make, model, color and license number. The Santa Barbara County Flood Control District will not be responsible for any delay or additional cost associated with the removal of parked cars which obstruct the construction operation.

If a vehicle owner successfully contests a towing citation in court, and the citation is dismissed for causes related to the Contractors failure to perform the requirements of this section, you must reimburse the Agency for the cost of any claims associated with the towing citation.

Replace 'reserved' in section 12-5 with:

Lane closures may be necessary to complete the proposed work. Traffic control systems for lane closures must comply with Caltrans Standard Plan T13 and the Santa Barbara Public Works Department, Transportation Division, Encroachment Permit.

Traffic Control System for Lane Closure is paid for as Traffic Control System.

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13 WATER POLLUTION CONTROL

Add section 13-1.01A:

You may be directed to perform additional Water Pollution Control. This only applies in the event that change order work that requires additional Water Pollution Control is ordered by the Engineer. This work is Supplemental Work and will be paid in accordance with section 9-1.04. In no case will additional Water Pollution Control be paid for unless the project scope has changed.

Add section 13-1.03A(1):

13-1.03A(1) Drainage Control

The proposed project is located within urbanized residential streets and within the Mud Lake Retention Basin that receives both nuisance water and storm water from surrounding residential neighborhood drainage facilities. You are fully responsible for continually accepting and discharging water from any source in a manner that causes no damage to existing or partially completed proposed improvements, in a manner that causes no ponded water to accumulate at low points, and in a manner which poses no potential hazard to persons or property and is conformance with all permits required for this project. You will not be allowed to divert stormwater to surface streets. Damage to existing or partially completed proposed improvements caused by lack of drainage control shall be repaired, or removed and replaced, at your expense.

and tolerances in accordance with ASTM D3350. All pipe shall be made from virgin grade material. The pipe shall be of the diameter and class shown or specified and shall be furnished complete with all fabricated fittings, flanged joints and other appurtenances as necessary for a complete and functional system.

- D. Acceptance of materials will be subject to strength and quality testing, in addition to inspection of the completed product. Acceptance of installed piping system will be based on inspection and leakage tests.

64-1.02B Backfill

Structure backfill material for Plastic Pipe installed by the open cut trench method and HDD receiving pits must comply with section 19-3.

64-1.02C Piping Material

- A. Pipe and fittings shall be high density, high molecular weight polyethylene, as defined in ASTM D 3350 and shall be colored white or light gray. In addition, the material shall be listed by the Plastic Pipe Institute with a designation of PE 3608 and shall meet the following cell classification and material code designation for PE3608: PE445574E.
- B. Fittings shall be of the same material and class as the pipe. Identification of pipe and fittings shall be in accordance with ASTM D 3350. Pipe and fittings shall be made from virgin material. No rework compound, except that obtained from the manufacturer's own production of the same formulation, shall be used. Pipe and fittings shall be homogeneous throughout and shall be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.
- C. Dimensions of pipe and fittings shall be in accordance with ASTM F 714. The pipe and fittings shall be DR 11 or as approved by the Engineer, with a minimum pressure rating of 160 psi at 73.4degrees F, and shall be Iron Pipe Size (IPS)
- D. The physical properties of the pipe and fittings material shall be as follows:

PROPERTY	TEST METHOD	VALUE
Density	ASTM D 1505	0.940- 0.955 gm/cc
Melt Index	ASTM D 1238	< 0.15 gm/10 min
Environmental Stress-Cracking Resistance ^a	ASTM D 1693	> 5,000 hr > 800 hr
Tensile Strength, Yield ^b	ASTM D 638	3500-4000 psi
Elongation at Break ^c	ASTM D 638	> 750 percent
Vicat Softening Temperature	ASTM D 1525	256 degrees F
Brittleness Temperature	ASTM D 746	< -180 degrees F
Flexural Modulus	ASTM D 3350	>125,000 psi
Modulus of Elasticity	ASTM D 638	105,000 psi
Hardness	ASTM D 2240	65 Shore D
Coefficient of Linear Thermal Expansion ^d	ASTM D 696	8.3x10 ⁻⁵ in/in/ degrees F 1.2x10 ⁻⁴ in/in/ degrees F
Long Term Strength ^e	ASTM D 2837	1,600 psi/ 800 psi

a, Condition A, B & C @ 0 degrees F; Compressed Ring @ 50 degrees F

- b, Type IV specimen c, Type IV specimen
- d, Molded specimen; Extruded pipe
- e, @ 73degrees F; @ 140 degrees F

- E. The pipe and fittings shall have a white or light gray coloring on the interior.
- F. The high-density polyethylene pipe and fittings shall be provided by the following manufacturer, or approved equal:
 - 1. **DriscoPlex**, Division of Chevron Phillips Chemical Co., Piano, TX, 4600 Series pipe for Industrial and Municipal Sewer Trenchless application.

64-1.02D Joints

- A. Joints in HDPE pipe shall be made using thermal butt-fusion welding equipment designed for the specific purpose of permanently connecting HDPE pipes. This equipment shall be capable of squarely facing the pipe ends to be joined, properly heating each pipe end to the temperature range specified by the pipe manufacturer, and applying and sustaining the appropriate pressure, as recommended by the pipe manufacturer.
- B. The butt-fusion welding machine shall be outfitted with a measuring and recording unit that documents the conditions existing during the fusion of each individual weld. A printout that includes the date and time each joint was made, the joint number, the initials of the machine operator, the platen temperature at the time of mating, the pressure during the heating cycle, the time period for the heating cycle, the pressure during the soak cycle, and the time period of the soak cycle shall be machine-generated and delivered to the Engineer at the end of each work shift. The recording unit shall be a **DataLogger, as manufactured by McElroy Manufacturing, Inc., or approved equal.**
- C. Fusion equipment shall be operated by technicians who have been certified by a major gas public utility such as Pacific Gas and Electric or Southern California-Edison for operation of such equipment. Furthermore, all technicians performing butt-fusion welding on this project shall have a minimum of two (2) years experience operating the same equipment used hereon.
- D. Butt-fusion welding equipment shall be as follows, or approved equal:
 - 1. **McElroy No. 412 Hydraulic Fusion Machine**, McElroy Manufacturing, Tulsa, Oklahoma
 - 2. **Proweld Field 12 (315)-R**, Asahi/America, Malden, Massachusetts

64-1.02E Fittings

- A. The Contractor shall provide fabricated fittings where required. Fabricated fittings shall be of the same material as, and shall have a minimum pressure rating equal to, the pipeline material. If the fitting is in-line with the pipeline (i.e., a flange adapter), then the I.D. of the fitting shall be the same as the pipe. If the fitting is off-line (i.e., a tee), then the fitting shall have an I.D. in accordance with the Project Documents. Unless otherwise required, all fittings shall be butt-fusion welded.
- B. Terminations to pipe or fittings made of other pipe materials shall be made by using flanges. Flanges shall consist of flange adapters butt-fusion welded to the HDPE pipe end, ductile iron back-up rings with a pressure rating of at least 150 pounds, Type 316 stainless steel bolts, nuts, and washers, and 1/8 inch thick, black-reinforced rubber gaskets. In no case shall threaded fittings or adapters be used to connect plastic materials.

64-1.03 CONSTRUCTION

64-1.03A Handling and Storage

- A. All pipe, fittings, etc., shall be carefully handled and protected against damage, impact shock, free fall, and scoring. All pipe handling equipment shall be acceptable to the Engineer. Pipe shall be stored in a manner that protects the pipe against injury or damage. Stacking of polyethylene pipe will not be allowed.

- B. The Contractor shall inspect each pipe and fitting prior to butt-fusion welding and again prior to installation. Any damaged pipe or fittings shall be repaired or replaced by the Contractor, at no additional expense to the District and to the satisfaction of the Engineer. Damage shall include, but not be limited to, gouges, cuts, or scratches of a depth greater than five percent (5%) of the pipe wall.
- C. Prior to butt-fusion welding or installation, each pipe or fitting shall be thoroughly cleaned of any foreign substance that may have collected thereon and shall be kept clean at all times thereafter. The material used to clean the pipe and fittings shall be as recommended by the pipe manufacturer.

64-1.03B Butt-Fusion Welding

- A. Only technicians who have been certified in accordance with the requirements of paragraph 2.3.C shall be allowed to operate the butt-fusion welding equipment.
- B. Butt-fusion welds shall be performed in accordance with manufacturer's instructions. The butt-fusion welding procedures are summarized below:
 - 1. Clean each pipe end with a clean cotton cloth to remove dirt, oil, grease, and other foreign materials.
 - 2. Square (face) the mating surfaces of each of the pipes to be fused.
 - 3. Bring the two (2) pipe ends together and adjust the pipe locations to ensure proper alignment.
 - 4. Verify that the surface temperature of the heater plate is between 375 and 400 degrees F and then clean the heater surface with a clean cotton cloth.
 - 5. Insert the heater plate between the pipe ends, bring the ends into firm contact with the heater plate without applying pressure, and achieve a proper melt pattern.
 - 6. After achieving the proper melt bead, remove the heater plate and quickly examine the pipe ends for complete melt.
 - 7. Once complete melt has been accomplished, rapidly bring the pipe ends together and apply pressure as recommended by the pipe manufacturer.
 - 8. Hold the pressure constant and at the proper level throughout the cooling period, for the minimum time period recommended by the pipe manufacturer or as necessary to achieve proper cooling.
- C. The Contractor shall mark each joint with the individual joint number, corresponding to the joint identification number appearing on the printout of the data logger attached to the butt-fusion welding machine. The printout shall be attached to the pipe near the joint for collection by the Engineer.
- D. The Contractor shall remove both the internal and external melt bead from the welded joint. Bead removal shall be accomplished in a manner that does not score or gouge the pipe.

64-1.03C Earthwork

Excavation, backfill and shaped bedding material for Plastic Pipe installed by the open cut trench method and HDD receiving pits must comply with section 19-3.

64-1.03D Installation

- A. Provide the necessary facilities for lowering and properly placing pipe sections in the trench. Lay plastic pipe to line and grade.
- B. For HDD installation the Contractor shall insert the pipe into the horizontal boring through properly prepared insertion and receiving pits, in accordance with the requirements of ASTM F 585.
- C. For HDD installation the maximum pulling force that may be applied to any pipe shall be calculated as follows:
 $F = SA$
 where: F = maximum pulling force on pipe (lb.)

$$S = \text{maximum allowable stress (1,000 psi)}$$

A = cross-sectional area of pipe wall (square inches)

The cross-sectional area of the pipe wall shall be calculated as follows: $A = (D-t)t$

where: D = outside diameter (in)

t = minimum wall thickness (in)

- D. The HDPE pipe shall have the nominal outside diameter as noted on the Plans. The pipe shall have a minimum wall thickness and strength to withstand operation and installation loads as a result of the installation method, procedure, equipment and practices used by the Contractor. The DR shown on the plans is a maximum allowable. See Section 64-2.01B. Design calculations shall state installation requirements including fluid inside of the pipe, filling rate of the pipe, and slurry density. Pipe shall be installed to meet the hydraulic design requirements.
- E. The Contractor shall take care not to drag the pipe over rocks or rough surfaces that may damage the pipe. An appropriate pulling head shall be attached to the end of the pipe and shall be used for pulling the pipe at all times. Pulling the pipe by the flanged end will not be allowed.
- F. Rubber gaskets or water stops supplied by the HDPE pipe manufacturer must be placed around the exterior of the HDPE pipe where connecting to concrete structures. Rubber gaskets or water stops must be of the type or kind that ensures the connection between the concrete structure and the HDPE pipe is watertight.

64-1.03E Field Couplings

- A. Fittings/Joints that are to be assembled after directional drilling has been completed shall be butt fused where accessible. The electrofusion couplings shall be used on inaccessible locations. Electrofusion couplings shall be **Frialen Electrofusion couplings**, as manufactured by Friatec, Inc., or approved equal.

64-1.03F Testing

- B. The contractor must conduct mandrel and water exfiltration testing of the installed HDPE pipe in conformance with Greenbook Sections 306-1.2.12 and 306-1.4, respectively.

64-1.04 PAYMENT

Plastic pipe is measured along the centerline of the pipe and parallel with the slope line. The payment quantity includes the length of elbows, wyes, tees, and other branches to the point of intersection. The payment quantity is the length designated by the Engineer. If the pipe is cut to fit a structure or slope, the payment quantity is the length of pipe necessary to be placed before cutting, measured in 2-foot increments.

64-2 HORIZONTAL DIRECTIONAL DRILLING

64-2.01 GENERAL

64-2.01A Summary

The Contractor shall furnish and install, complete and in place, high-density polyethylene pipe (HDPE) by the horizontal directional drill method as indicated in the Project Documents. The Contractor shall provide all materials, labor, equipment, and services necessary for installation of HDPE pipe, and testing of completed pipe system.

64-2.01B Submittals

- A. Shop Drawings
 - 1. The Contractor shall submit catalog cuts, specifications, dimensional drawings (including maximum over-cut dimensions), installation details/sketches, Material Safety Data Sheets (MSDS) for all drilling fluids and lubricants, and other pertinent information for the horizontal directional drill and HDPE pipe installation work. The Contractor **shall**

include site maps indicating all locations where butt-fusion welding work will occur, laydown areas, pipe storage areas, insertion pits, and pulling pits. All materials provided shall be fully in accordance with the requirements of the Project Documents.

2. The Contractor shall obtain and submit the pipe manufacturer's written approval of all connection details.
3. The Contractor shall submit **detailed drawings and written description** of the construction procedure, schedule and sequence to install the pipe, including plan and profile drawings of the bore path showing all horizontal and vertical curve radii and entry and exit angles.
4. The Contractor shall submit calculations of installation loading on the HDPE pipe during pull back. Determine the maximum anticipated installation loads and ensure that the anticipated loads are implemented in the design of the pipe. Design calculations shall be completed using an industry accepted method such as ASTM, API or other standard acceptable to the Engineer. All calculations shall be completed with conservative assumptions. Incremental filling of the carrier pipe during pullback will be permitted, although filling is not required to minimize pullback forces on the pipe.
5. The Contractor shall submit technical data of equipment, drilling slurry compound, method of installation, and proposed sequence of construction a minimum of two (2) weeks prior to commencement of work.
6. The Contractor shall submit a contingency plan concerning the potential for drilling fluids that may escape to the ground surface (i.e. through hydrofractures) during drilling. The Contractor shall submit a Drilling Fluid Management Plan that includes the following as a minimum:
 - a. Rapid response procedures - directional drilling shall be performed by a Contractor who has the expertise required to perform the related work. The Contractor shall designate qualified personnel and equipment on the site during directional drilling operations responsible for monitoring drilling fluid pressure, and watching surface conditions for visual signs of frac-out. Contractor shall provide immediate response and initiate containment procedures in the event of an occurrence of a drilling fluid spill. In the event of a drilling fluid spill or frac-out all drilling activities shall be stopped. Drill stem shall be removed from the bore hole and the hole abandoned.
 - b. Containment procedures - sediment control systems such as: silt fence or earth berms on uplands, and floating silt barriers or other aquatic barriers in water, and other means necessary to prevent the spread of the drilling fluid spill shall be installed immediately.
 - c. Timely cleanup capability - remediation of the lost drilling fluid shall begin immediately. Cleanup shall include removal of the material from the site by an approved method, and disposal of the material by an approved method in an appropriate location as approved by the Engineer.

B. Certification

1. The Contractor shall furnish a certified affidavit of compliance for all HDPE pipe and fittings furnished confirming that the materials supplied fully conform to the requirements of High-Density Polyethylene Pipe.
2. The Contractor shall submit the qualifications of the foreman, local operator, and crew who are to be responsible for directional boring work. No substitution of personnel will be allowed without the written acceptance of the Engineer. Directional Drilling and pipe installation shall be done only by an experienced Contractor specializing in directional drilling and whose key personnel have at least five (5) years experience in this work. Furthermore, the Contractor shall have installed directionally drilled pipe at least as large as 20 inches in diameter, have performed installations at 2,000 feet in length, and successfully installed at least 100,000 feet in length.

- C.** The Contractor shall perform trial fusion welds and submit samples to the Engineer for review prior to installation of the pipe. Full penetration welds shall provide a homogeneous material

across the cross-section of the weld. The fusion machine and the operator employed for the trial welds shall be the same as for the installation work.

- D. Fusion equipment shall be operated only by technicians who have been certified by the pipe manufacturer or supplier and who have a minimum of two (2) years of experience fusion welding pipelines. The technician's experience shall be documented in the HDPE pipe submittal.
- E. The Contractor shall submit detailed information describing the horizontal directional drill equipment and drilling procedures.
 - 1. All drilling equipment shall have a permanent, inherent alarm system capable of detecting an electrical current. The equipment shall be grounded and shall be equipped with an audible alarm to warn the operator when the drill head nears electrified cable.
 - 2. All crews shall be provided with grounded safety mats, heavy gauge ground cables with connectors, and hot boots and gloves.

64-2.01C Quality Assurance

- A. Fusion joining and other procedures necessary for correct assembly of the polyethylene pipe shall be done only by personnel trained in those skills to the satisfaction of the Engineer and the pipe supplier.
- B. Only those tools designed for the aforementioned procedures, approved by the pipe manufacturer or supplier, and acceptable to the Engineer shall be used for assembly of pipe fittings to ensure proper installation. The heater plate shall be equipped with suitable means to measure the temperature of plate surfaces and to assure uniform heating such as thermometers or pyrometers.
- C. The Contractor shall control drilling practices to prevent damage to existing utilities.

64-2.02 MATERIALS AND EQUIPMENT

- A. The Contractor shall provide polyethylene pipe as specified in Section 64-1.
- B. Drill Unit: The drill unit shall be a remote-steerable tunneling system that is designed specifically for use in the installation of gravity sewer pipelines and is capable of accurately drilling (true to line and grade as specified on the drawings) through the geologic conditions identified in the geotechnical report and in bedrock and in mixed bedrock and soil face conditions. The drilling system shall utilize a high-pressure, low-volume, liquid-assisted, mechanical excavation technology that is capable of installing pipelines of the diameter and length required in ground conditions as identified in the geotechnical report.
- C. Electronic Detection System: The Contractor shall provide and use an electronic detection system that is capable of continuously locating the position of the drilling head complying with section 64-2.03D. Walkover Tracking Systems are allowable.

64-2.03 CONSTRUCTION

64-2.03A General

- A. The Contractor shall protect all facilities from damage by forces generated by horizontal directional drill equipment.

64-2.03B Preparation

- A. All work shall be performed as indicated in the Project Documents and shall be supervised by personnel experienced in horizontal directional drill installation pipe.

64-2.03C Pipe Installation

- A. Pipe installation shall be by horizontal directional drill in accordance with the requirements of the Project Documents.
- B. The Contractor shall locate, design, construct, dewater, maintain, and restore starting and termination pits. The proposed Drill Rig staging area and entrance pit are located within the

Mud Lake Basin where saturated sub-soils may be encountered. The contractor is fully responsible for evaluating the site conditions and providing any necessary excavation or backfill and constructing a working platform for equipment, shoring, stabilization or dewatering, as needed to construct the proposed improvements .

- C. Horizontal directional drill shall be performed by a high-pressure, low-volume, liquid- assisted, mechanical excavation process utilizing a drilling slurry compound. The drilling slurry compound shall maintain boring stability and provide lubrication in order to reduce frictional drag while the pipe is being installed. In addition, the drilling slurry compound shall be totally inert and contain no environmental risk. The Contractor shall have a mobile vacuum spoils recovery vehicle on site to remove the drilling spoils from the access pits. The Contractor shall be responsible for collecting, transporting, and disposing of the spoils from the job site. Under no circumstances will the drilling spoils be permitted to be disposed of into sanitary, storm, or other public or private drainage systems or waterways. Any leakage or spillage of drilling fluids shall be immediately cleaned up by the Contractor.
- D. Surface settlement or heave of utilities and other features above the HDD centerlines and within the zone influenced by the HDD construction shall be limited to values that avoid damage. The Contractor shall repair any damage resulting from settlement or heave caused by HDD activities at no additional cost to the District. The Contractor shall grout any voids caused by or encountered during drilling.
- E. Mechanical, pneumatic, or water-jetting methods will be considered unacceptable due to the possibility of surface subsidence.
- F. After an initial bore has been completed, a reamer shall be installed at the termination pit and the bore shall be prereamed at least twice, or if more than twice, as many times as deemed required by the Contractor, before the pipe is pulled back to the starting pit. The reamer shall be capable of discharging drilling slurry compound to facilitate the installation of the pipe into a stabilized and lubricated tunnel.
- G. During insertion, the HDPE shall be supported on roller supports to isolate the pipe from the ground or pavement and avoid damage to the pipe. Pipe rollers shall be used and of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull-back operations. Sufficient number of rollers shall be used to prevent excess sagging of pipe. Rollers shall be used as necessary to assist in pull back operations and in layout/fusing of material.
- H. The Contractor shall fill the new pipe with water as ballast prior to pull-back.
- I. A swivel shall be used to connect the pipeline to the drill pipe to prevent torsional stresses from occurring in the pipe.
- J. Upon completion of boring and pipe installation, the Contractor shall remove all spoils from the starting and termination pits. All pits shall be backfilled in accordance with the requirements of the Project Documents to match preexisting drainage.

64-2.03D Control of Line and Grade

- A. Construction Control: Contractor shall check baselines and benchmarks shown on the Contract Documents at the beginning of the Work and report any errors or discrepancies to the Engineer. The Contractor shall use the baselines and benchmarks to establish and maintain construction control points, reference lines and grades for locating, boring, reaming, and in relationship to existing pipelines, utilities and structures. Establish construction control points sufficiently far from the work to avoid being affected by any ground movements caused by HDD operations.
- B. Temporary Bench Mark Movement: The Contractor shall ensure that if settlement of the ground surface occurs during construction which affects the accuracy of the temporary benchmarks, the Contractor shall detect and report to the Engineer such movement and reestablish temporary bench marks.
- C. Line and Grade:

Specifications for the Construction of Sanitary Sewers are available from OWNER'S website:
<http://www.countyofsb.org/pwd/pwwater.aspx?id=3600>.

Sewer laterals are owned by the residences that they serve but you must coordinate sewer lateral reconstructions with the Laguna County Sanitation District, Robyn Smith at (805) 739-8456 or Marty Wilder at 739-8755. Sewer infrastructure that is not reconstructed must be protected to the satisfaction of the Laguna County Sanitation District. You must submit a detailed description of the proposed methods of protection, when requested by the Engineer.

77-1.01B PAYMENT

Reconstruct sewer laterals are paid for as units.

STANDARD DETAILS AND PLANS LIST

Description	Standard Number
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STATE DEPARTMENT OF TRANSPORTATION

The Standard Plan sheets (dated 2010) applicable to this contract include, but are not limited to those indicated below.

Abbreviations	A10A and A10B
Lines and Symbols	A10C - A10E
Traffic Control System For Lane Closure On	T13
Two Lane Conventional Highways	
Concrete Pipe Inlets	D75B
Pipe Inlets Ladder and Trash Rack Details	D75C

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

The Standard Plan sheets (2009 Edition) applicable to this contract include, but are not limited to those indicated below.

House Connection Remodeling	223-2
Manhole - Pipe to Pipe (One or Both Main Line ID's 33" or smaller)	321-2
Manhole Shaft with Eccentric Reducer	324-2
Concrete Collar for RCP (12" through 72")	380-4
Manhole Frame and Cover	630-3
Steel Step	635-3

SANTA BARBARA COUNTY DEPARTMENT OF PUBLIC WORKS CONSTRUCTION

The Construction Standard Detail sheets (dated 2011) applicable to this contract include, but are not limited to those indicated below.

Storm Drain Manholes	3-080
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CITY OF SANTA MARIA DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION STANDARD DRAWINGS

The Standard Drawings sheets (dated 2007) applicable to this contract include, but are not limited to those indicated below.

Valve Stem Extension	B-367
Valve Box & Riser	W-21A

A

AB AGGREGATE BASE
 ABBC ASBESTOS BONDED BITUMINOUS COATED
 ABM AIR-BLOWN MORTAR
 Abn ABANDON
 Abut ABUTMENT
 AC ASPHALT CONCRETE
 ACB ASPHALT CONCRETE BASE
 ACP ASBESTOS CEMENT PIPE
 ADL ADDED DEAD LOAD
 Adj ADJUST
 AFES ALTERNATIVE FLARED END SECTION
 Ahd AHEAD
 Alt ALTERNATE
 AM TIME FROM MIDNIGHT TO NOON
 AP ALTERNATIVE PIPE
 APC ALTERNATIVE PIPE CULVERT
 Approx APPROXIMATE
 APU ALTERNATIVE PIPE UNDERDRAIN
 ARS ACCELERATION RESPONSE SPECTRUM
 AS AGGREGATE SUBBASE
 ASP ALTERNATIVE SLOTTED PIPE
 ASRP ALUMINUM SPIRAL RIB PIPE
 Assy ASSEMBLY
 ATPB ASPHALT TREATED PERMEABLE BASE
 ATPM ASPHALT TREATED PERMEABLE MATERIAL
 Ave AVENUE
 Avg AVERAGE
 a AT

B

BAGR BRIDGE APPROACH GUARD RAILING
 BB BEGINNING OF BRIDGE
 B-B BACK-TO-BACK
 BC BEGIN HORIZONTAL CURVE
 BCR BEGIN CURB RETURN
 Beg BEGIN
 Blt Ctd BITUMINOUS COATED
 Bk BACK
 Bkf BACKFILL
 Bldg BUILDING
 BLM BRIDGE-LOG MILE
 Blvd BOULEVARD
 BM BENCH MARK
 BMP BEST MANAGEMENT PRACTICE
 Bot BOTTOM
 Br BRIDGE
 Brg BEARING
 BTU BRITISH THERMAL UNIT
 BVC BEGIN VERTICAL CURVE
 BW BARBED WIRE

C

CAA CABLE ANCHOR ASSEMBLY
 CAP CORRUGATED ALUMINUM PIPE
 CAPA CORRUGATED ALUMINUM PIPE ARCH
 CAS CONSTRUCTION AREA SIGN
 CB CONCRETE BARRIER
 CBW CONCRETE BLOCK WALL
 C-C CENTER TO CENTER

C continued

CG CENTER OF GRAVITY
 Chnl CHANNEL
 CI CAST IRON
 CIDH CAST-IN-DRILLED-HOLE
 CIP CAST-IN-PLACE,
 CAST IRON PIPE
 CIPCP CAST IN PLACE CONCRETE PIPE
 CISS CAST-IN-STEEL-SHELL
 CJP COMPLETE JOINT PENETRATION
 CL CHAIN LINK
 CL-6 CHAIN LINK FENCE (6 FT)
 CI CLASS
 Cir CLEAR,
 CLEARANCE
 CM CORRUGATED METAL
 CMP CORRUGATED METAL PIPE
 CMS CHANGEABLE MESSAGE SIGN
 Co COUNTY
 Col COLUMN
 Conc CONCRETE
 Cond CONDUIT
 Conn CONNECTOR
 Conat CONSTRUCT,
 CONSTRUCTION
 Cont CONTINUOUS
 Coord COORDINATE
 CP CANDELPPOWER, CATCH POINT
 Cr CREEK
 CRCP CONTINUOUSLY REINFORCED CONCRETE PAVEMENT
 CRSP CONCRETED ROCK SLOPE PROTECTION
 CSP CORRUGATED STEEL PIPE
 CSPA CORRUGATED STEEL PIPE ARCH
 Ct COURT
 CTB CEMENT TREATED BASE
 CTPB CEMENT TREATED PERMEABLE BASE
 CTPM CEMENT TREATED PERMEABLE MATERIAL
 Ctrs CENTERS
 Culv CULVERT
 c CENTERLINE

D

D DEPTH
 DD DOWNDRAIN
 Dbl DOUBLE
 Deg DEGREE
 Del DELINEATOR
 Det DETAIL,
 DETOUR
 DF DOUGLAS FIR
 DI DRAINAGE INLET,
 DROP INLET
 DIP DUCTILE IRON PIPE
 Dia DIAMETER
 Diaph DIAPHRAGM
 Dist DISTANCE,
 DISTRICT
 DMBB DOUBLE METAL BEAM BARRIER
 Dr DRIVE
 DTBB DOUBLE THRIE BEAM BARRIER
 Dwy DRIVEWAY

E

E EAST
 Ease EASEMENT
 EB END OF BRIDGE,
 EASTBOUND
 EC END HORIZONTAL CURVE
 ECR END CURB RETURN
 ED EDGE DRAIN
 EDC EDGE DRAIN CLEANOUT
 EDO EDGE DRAIN OUTLET
 EDV EDGE DRAIN VENT
 Elec ELECTROLIER
 Elect ELECTRIC
 Elev ELEVATION
 Emb EMBANKMENT
 Engr ENGINEER
 EOD EDGE OF DECK
 EP EDGE OF PAVEMENT
 Eq EQUATION
 ERS EARTH RETAINING STRUCTURE
 ES EDGE OF SHOULDER
 ESA ENVIRONMENTALLY SENSITIVE AREA
 ETW EDGE OF TRAVELED WAY
 EVC END VERTICAL CURVE
 EW ENDWALL
 Exc EXCAVATION
 Exlet EXISTING
 Exp EXPANSION,
 EXPRESSWAY
 Exp Jt EXPANSION JOINT
 Ext EXTERIOR

F

F & C FRAME AND COVER
 F & G FRAME AND GRATE
 FB FLOOR BEAM
 Fdn FOUNDATION
 FEBT FACING EASTBOUND TRAFFIC
 FES FLARED END SECTION
 FF FILTER FABRIC
 FG FINISHED GRADE
 FH FIRE HYDRANT
 Fig FIGURE
 FL FLOW LINE
 FNBT FACING NORTHBOUND TRAFFIC
 FOB FREE ON BOARD
 FOC FACE OF CONCRETE
 Fr Rd FRONTAGE ROAD
 FS FAR SIDE, FINISHED SURFACE
 FSBT FACING SOUTHBOUND TRAFFIC
 Ftg FOOTING
 FWBT FACING WESTBOUND TRAFFIC
 Fwy FREEWAY

G

g ACCELERATION DUE TO GRAVITY
 Ga GAUGE
 Galv GALVANIZED
 GP GRADING PLANE
 GR GUARD RAILING
 GSP GALVANIZED STEEL PIPE

G continued

Gtr GUTTER

H

H HEIGHT
 h, hr HOUR
 HD HORIZONTAL DRAIN
 HDPE HIGH DENSITY POLYETHYLENE
 Hdwl HEADWALL
 Hex Hd HEXAGONAL HEAD
 HMA HOT MIX ASPHALT
 Horiz HORIZONTAL
 HOV HIGH OCCUPANCY VEHICLE
 HP HINGE POINT,
 HORSEPOWER
 HPS HIGH PERFORMANCE STEEL
 HS HIGH STRENGTH
 HSS HOLLOW STRUCTURAL SECTION
 HW HEADWALL,
 HIGH WATER
 HWM HIGH WATER MARK
 Hwy HIGHWAY

I

IB IMPORTED BORROW
 ID INSIDE DIAMETER
 IF INSIDE FACE
 Int INTERIOR
 Inv INVERT
 Irr IRRIGATION

J

Jct JUNCTION
 JP JOINT POLE
 JPCP JOINTED PLAIN CONCRETE PAVEMENT
 JS JUNCTION STRUCTURE
 Jt JOINT

K

L

L LENGTH,
 ANGLE (STRUCTURAL STEEL SHAPE)
 Lat LATITUDE
 LCB LEAN CONCRETE BASE
 Ln LANE
 Loc LOCATION
 LOL LAYOUT LINE
 Long LONGITUDE
 LongIt LONGITUDINAL
 LS LUMP SUM
 Lt LEFT

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

REGISTERED CIVIL ENGINEER
 Sante Hong
 No. 58698
 Exp. 12-31-12
 CHIL
 STATE OF CALIFORNIA

May 20, 2011
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

- GENERAL RULES:**
- Words are preferred over abbreviations and acronyms.
 - Use words in notes, except where space is limited on the plan sheet.
 - Do not use abbreviations or acronyms where the meaning may be in doubt.
 - Abbreviations and acronyms may be used in callouts, dimensions, and tables.
 - Use upper and lower case letters for abbreviation of a single word.
 e.g., Misc = miscellaneous
 and Bit Ctd = bituminous coated
 - Use all upper case letters for acronyms.
 e.g., BCR = begin curb return

- UNIT OF MEASUREMENT SYMBOLS:**
- Symbols for measurement units are not part of abbreviations nor acronyms. The above abbreviation and acronym general rules do not apply to symbols.
 - See Tables A and B on Standard Plan A10B.

- NOTES:**
- For Landscape and Erosion Control plan abbreviations, see Standard Plan H1.
 - For Bridge plan abbreviations, see Standard Plan B0-1.
 - For Electrical System plan abbreviations, see Standard Plans ES-1A, ES-1B and ES-1C.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ABBREVIATIONS
 (SHEET 1 OF 2)**

NO SCALE

A10A

2010 STANDARD PLAN A10A

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

Shree N. Luchina
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA BY ITS OFFICERS OF HIGHWAYS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
Exp. 12/31/14
CIVIL
No. 49814
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED _____

UNIT OF MEASUREMENT SYMBOLS:

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

TABLE A	
SYMBOL USED	DEFINITIONS
ACRE	ACRE
CF	CUBIC FOOT
CY	CUBIC YARD
EA	EACH
GAL	GALLON
LB	POUND
LF	LINEAR FOOT
SOFT	SQUARE FOOT
SOYD	SQUARE YARD
STA	100 FEET
TAB	TABLET
TON	2,000 POUNDS

Some of the symbols used in the plans other than in the project plan quantity tables are:

TABLE B	
SYMBOL USED	DEFINITIONS
kef	KIPS PER SQUARE INCH
kef	KIPS PER SQUARE FOOT
pef	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft ³ , pcf	POUNDS PER CUBIC FOOT
taf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
φ	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kip	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A10B

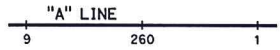
M		P continued		S		T continued	
MaInt	MAINTENANCE	PG	PROFILE GRADE	S	SOUTH, SUPPLEMENT	TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL
Max	MAXIMUM	PI	POINT OF INTERSECTION	SAE	STRUCTURE APPROACH EMBANKMENT	Typ	TYPICAL
MB	METAL BEAM	PJP	PARTIAL JOINT PENETRATION	Salv	SALVAGE	U	UNDERCROSSING
MBBR	METAL BEAM BARRIER	Pkwy	PARKWAY	SAPP	STRUCTURAL ALUMINUM PLATE PIPE	UD	UNDERDRAIN
MBGR	METAL BEAM GUARD RAILING	PL	PLATE	SB	SOUTHBOUND	UG	UNDERGROUND
Med	MEDIAN	P/L	PROPERTY LINE	SC	SAND CUSHION	UON	UNLESS OTHERWISE NOTED
MGS	MIDWEST GUARDRAIL SYSTEM	PM	POST MILE,	SCSP	SLOTTED CORRUGATED STEEL PIPE	UP	UNDERPASS
MH	MANHOLE		POST MILE,	SD	STORM DRAIN		
MIn	MINIMUM	PN	PAVING NOTCH	Sec	SECOND, SECTION		
Misc	MISCELLANEOUS	POC	POINT OF HORIZONTAL CURVE	Sep	SEPARATION		
Misc I & S	MISCELLANEOUS IRON AND STEEL	POT	POINT OF TANGENT	SG	SUBGRADE		
Mkr	MARKER	POV	POINT OF VERTICAL CURVE	Shld	SHOULDER		
Mod	MODIFIED, MODIFY	PP	PIPE PILE,	Sht	SHEET		
Mon	MONUMENT		PLASTIC PIPE,	SIm	SIMILAR		
MP	METAL PLATE		POWER POLE	Stn	STATION LINE		
MPGR	METAL PLATE GUARD RAILING	PPL	PERFORMED PERMEABLE LINER	St	STREET		
MR	MOVEMENT RATING	PPP	PERFORATED PLASTIC PIPE	Stb	SINGLE THRIE BEAM BARRIER		
MSE	MECHANICALLY STABILIZED EMBANKMENT	PRC	POINT OF REVERSE CURVE	Std	STANDARD		
Mt	MOUNTAIN, MOUNT	PRF	PAVEMENT REINFORCING FABRIC	Str	STRUCTURE		
MHI	MATERIAL	PRVC	POINT OF REVERSE VERTICAL CURVE	Surf	SURFACING		
MVP	MAINTENANCE VEHICLE PULLOUT	PS&E	PLANS, SPECIFICATIONS AND ESTIMATES	SW	SIDEWALK, SOUND WALL		
		PS, P/S	PRESTRESSED	Swr	SEWER		
N	NORTH	PSP	PERFORATED STEEL PIPE	Sym	SYMMETRICAL		
NB	NORTHBOUND	PT	POINT OF TANGENCY	S4S	SURFACE 4 SIDES		
No.	NUMBER (MUST HAVE PERIOD)	PVC	POLYVINYL CHLORIDE	T	SEMI-TANGENT		
Nos.	NUMBERS (MUST HAVE PERIOD)	Pvmt	PAVEMENT	Tan	TANGENT		
NPS	NOMINAL PIPE SIZE			TBB	THRIE BEAM BARRIER		
NS	NEAR SIDE	Qty	QUANTITY	Tbr	TIMBER		
NSP	NEW STANDARD PLAN			TC	TOP OF CURB		
NTS	NOT TO SCALE			TCB	TRAFFIC CONTROL BOX		
		R	RADIUS	TCE	TEMPORARY CONSTRUCTION EASEMENT		
		R & D	REMOVE AND DISPOSE	TeI	TELEPHONE		
		R & S	REMOVE AND SALVAGE	Temp	TEMPORARY		
		R/C	RATE OF CHANGE	TG	TOP OF GRADE		
		RCA	REINFORCED CONCRETE ARCH	ToT	TOTAL		
		RCB	REINFORCED CONCRETE BOX	TP	TELEPHONE POLE		
		RCP	REINFORCED CONCRETE PIPE	TPB	TREATED PERMEABLE BASE		
		RCPA	REINFORCED CONCRETE PIPE ARCH	TPM	TREATED PERMEABLE MATERIAL		
		Rd	ROAD	Trans	TRANSITION		
		ReInf	REINFORCED, REINFORCEMENT, REINFORCING				
		Rel	RELOCATE				
		Repl	REPLACEMENT				
		Ret	RETAINING				
		Rev	REVISED, REVISION				
		Rdwy	ROADWAY				
		RHMA	RUBBERIZED HOT MIX ASPHALT				
		Rlv	RIVER				
		RM	ROAD-MIXED				
		RP	RADIUS POINT, REFERENCE POINT				
		RR	RAILROAD				
		RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN				
		Rt	RIGHT				
		Rto	ROUTE				
		RW	REDWOOD, RETAINING WALL				
		R/W	RIGHT OF WAY				
		Rwy	RAILWAY				

SYMBOLY FOR DESIGN FEATURES

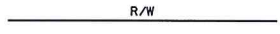
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Jeff C. Kopylov
 REGISTERED CIVIL ENGINEER
 No. 53561
 Exp. 6-30-11
 CIVIL
 STATE OF CALIFORNIA

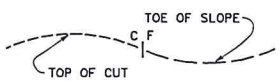
May 20, 2011
 PLANS APPROVAL DATE
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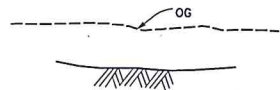
ALIGNMENT LINE (STATION LINE)



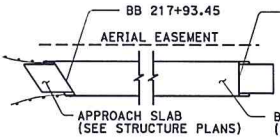
RIGHT OF WAY LINE



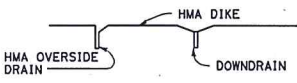
CATCH LINE FOR CUT AND FILL SLOPES



ORIGINAL GROUND LINE



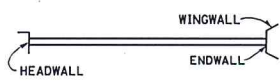
STRUCTURE (BRIDGE)



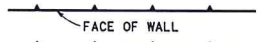
DIKE, DOWNDRAIN AND OVERSIDE DRAIN



PIPE CULVERT - SINGLE LINE (36" OR LESS IN DIAMETER) (PLUS - OTHER DRAINAGE FEATURES)



PIPE CULVERT - TWO LINES (GREATER THAN 36" TO 6' IN DIAMETER PLUS - OTHER DRAINAGE FEATURES) (OVER 6' IN DIAMETER, DRAW TO SCALE)



WALL



WALL ON BARRIER



WALL ON RETAINING WALL



CONCRETE (MEDIAN) BARRIER



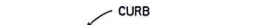
NEW GUARD RAILING



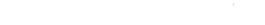
DOUBLE THRIE BEAM BARRIER



TEMPORARY RAILING (TYPE K)



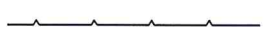
CURB WITHOUT GUTTER



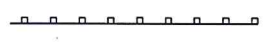
CURB WITH GUTTER (CURB-LIP, FLOW LINE, BACK-TOP OF CURB)



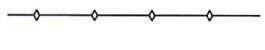
FENCE



EXISTING WALL - USE ONLY WHEN WORK IS TO BE PERFORMED ON EXISTING WALL (DO NOT DROP OUT)



EXISTING GUARD RAILING - USE ONLY WHEN WORK IS TO BE PERFORMED ON EXISTING RAILING (DO NOT DROP OUT)



EXISTING CONCRETE BARRIER - USE ONLY WHEN WORK IS TO BE PERFORMED ON EXISTING BARRIER (DO NOT DROP OUT)



DITCH FLOW LINE



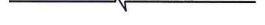
SOLID TRAFFIC LINE



BROKEN TRAFFIC LINE



MATCH LINE



BREAK LINE



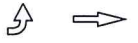
WHEELCHAIR RAMP



ROADSIDE SIGN - ONE POST, TWO POSTS (EMBEDDED)



ROADSIDE SIGN - ATTACHED TO ELECTROLIER, SIGNAL STANDARD, SIGN STRUCTURE POST OR BARRIER



DIRECTION OF TRAFFIC (ARROWS ARE TO BE HOLLOW)



PAVEMENT MARKING ARROWS (ARROWS ARE TO BE HATCHED)



SYMBOL FOR ROADSIDE SIGN NUMBER



SYMBOL FOR TRAFFIC LINE DETAIL

WATER POLLUTION CONTROL/EROSION CONTROL



Temp FENCE FOR ESA



Temp SILT FENCE



Temp FIBER ROLL



Temp GRAVEL BAG BARRIER



Temp STRAW BALE BARRIER



Temp SLOPE DRAIN FLEX PIPE



Temp EARTH BERM



Temp DITCH/SWALE



FIBER ROLL



Temp CONCRETE WASHOUT



Temp DRAIN INLET PROTECTION



Temp DRAIN OUTLET PROTECTION



Temp CHECK DAM



Temp CONSTRUCTION ENTRANCE



Temp STOCKPILE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
LINES AND SYMBOLS
(SHEET 1 OF 3)

NO SCALE

A10C

2010 STANDARD PLAN A10C

3



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

Jeff C. Kopley
 REGISTERED CIVIL ENGINEER
 No. 53561
 May 20, 2011
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

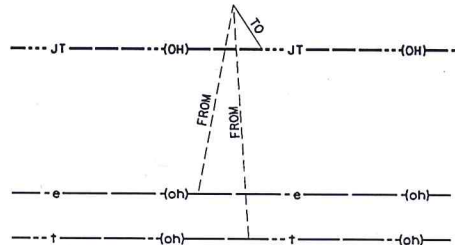
SUBSURFACE FACILITIES

- W-----W-----W----- NEW WATER
- w-----w-----w----- Exist WATER
- G-----G-----G----- NEW NATURAL GAS
- g-----g-----g----- Exist NATURAL GAS
- S-----S-----S----- NEW SEWER
- s-----s-----s----- Exist SEWER
- E-----E-----E----- NEW ELECTRICAL
- e-----e-----e----- Exist ELECTRICAL
- T-----T-----T----- NEW TELEPHONE
- t-----t-----t----- Exist TELEPHONE
- GS-----GS-----GS----- NEW GASOLINE
- gs-----gs-----gs----- Exist GASOLINE
- O-----O-----O----- NEW OIL
- o-----o-----o----- Exist OIL
- TV-----TV-----TV----- NEW TELEVISION
- tv-----tv-----tv----- Exist TELEVISION
- ST-----ST-----ST----- NEW STEAM
- st-----st-----st----- Exist STEAM
- TC-----TC-----TC----- NEW TELEMETER CABLE
- tc-----tc-----tc----- Exist TELEMETER CABLE
- SD-----SD-----SD----- NEW STORM DRAIN
- sd-----sd-----sd----- Exist STORM DRAIN
- FO-----FO-----FO----- NEW FIBER OPTIC
- fo-----fo-----fo----- Exist FIBER OPTIC
- JT-----JT-----JT----- NEW JOINT TRENCH
- jt-----jt-----jt----- Exist JOINT TRENCH

OVERHEAD FACILITIES

- E------(OH)-----E----- NEW ELECTRICAL
- e------(oh)-----e----- Exist ELECTRICAL
- TC------(OH)-----TC----- NEW TELEMETER CABLE
- tc------(oh)-----tc----- Exist TELEMETER CABLE
- T------(OH)-----T----- NEW TELEPHONE
- t------(oh)-----t----- Exist TELEPHONE
- TV------(OH)-----TV----- NEW TELEVISION
- tv------(oh)-----tv----- Exist TELEVISION
- FO------(OH)-----FO----- NEW FIBER OPTIC
- fo------(oh)-----fo----- Exist FIBER OPTIC
- JT------(OH)-----JT----- NEW JOINT OVERHEAD
- jt------(oh)-----jt----- Exist JOINT OVERHEAD

SHOWING THE RELOCATION OF EXISTING FACILITIES TO THE NEW LOCATION



ABANDONED FACILITY

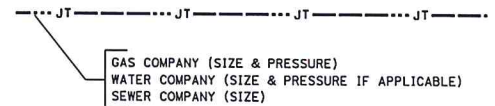
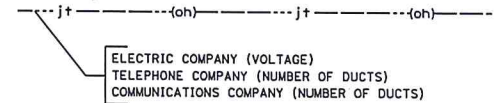


NOTE:

IDENTIFY (LABEL) THE OWNER OF EACH FACILITY PLUS THE SIZE, PRESSURE AND VOLTAGE (IF APPLICABLE) FOR ALL FACILITIES (WHETHER PART OF A JOINT OVERHEAD, JOINT TRENCH OR SOLO INSTALLATION).

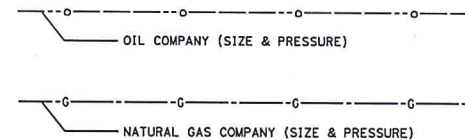
THE TYPE OF FACILITY IS IDENTIFIED BY THE SYMOLOGY OF THE LINE STYLE CHOSEN (SEE LINE STYLES ON THIS STANDARD PLAN SHEET).

JOINT OVERHEAD/TRENCH



WHEN USING THE JOINT OVERHEAD OR JOINT TRENCH SYMOLOGY (SEE THE CALTRANS LINE STYLES ON THIS PAGE), USE A BRACKET TO GROUP AND LABEL ALL THE FACILITIES ASSOCIATED WITH THE JOINT OVERHEAD OR TRENCH (SEE THE EXAMPLES ABOVE).

SOLO FACILITY



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LINES AND SYMBOLS
(SHEET 2 OF 3)

NO SCALE

A10D

2010 STANDARD PLAN A10D

PHOTOGRAMMETRIC MAPPING LINES AND SYMBOLS
PHOTOGRAMMETRIC MAPPING IS DROPPED OUT ON FINAL CONTRACT PLANS

- CURB
- LANE STRIPE
- EDGE OF TRAVELED WAY (STATE HIGHWAY)
- EDGE OF TRAVELED WAY (OTHER)
- EDGE OF ASPHALT (SHOULDER)
- CONCRETE
- GUARD RAILING
- MEDIAN BARRIER
- FENCE
- MASONRY WALL
- MASONRY WALL AND FENCE
- RETAINING WALL
- RETAINING WALL AND FENCE
- RETAINING WALL AND MASONRY WALL
- FLOWLINE (NATURAL AND MANMADE)
- EDGE OF BODY OF WATER, SURFACE HATCHED AND SPOT ELEVATION ON SURFACE
- DECK
BUILDING
COVERED PORCH OR PARKING
- DP R
- DIRT PILE, ROCK
- (POOL) (P) (SPA) (S)
- POOL, SPA
- TREES, BRUSH, OR VEGETATION OVER 1/2 CONTOUR INTERVAL IN HEIGHT
- VINEYARD ROW
- CATTLE GUARD
- OVERHEAD SIGN - SINGLE POST
- OVERHEAD SIGN - TWO POST
- TRAIL
- DIRT ROAD

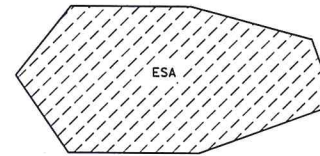
SYMBOLS
ENLARGED FOR CLARITY

- ↩ LEFT TURN LANE ARROW
- ◇ HOV LANE (HIGH OCCUPANCY VEHICLE)
- ≡ ⊕ DROP INLET, ROUND DROP INLET
- ⊙ MANHOLE
- ⊕ FIRE HYDRANT
- VC ○ SP ○ WELL □ UB □ RS VALVE COVER, STAND PIPE, WELL, UTILITY BOX, RAILROAD CROSSING STANDARD
- ⊙ ⊙ ⊙ ⊙ ⊙ UTILITY POLE, POLE AND WIRES, POLE WITH WIRES AND ANCHOR
- ⊠ TRANSMISSION TOWER
- ⊙ ⊙ ⊙ ⊙ ⊙ ELECTROLIER, ELECTROLIER ON POLE
- ⊙ ⊙ ⊙ ⊙ ⊙ TRAFFIC SIGNAL, RAILROAD SIGNAL
- ⊙ ⊙ ⊙ ⊙ ⊙ CALL BOX
- ⊕ ⊕ SIGNS - SINGLE POST, TWO POSTS
- ⊙ ⊙ SINGLE TREE, PALM
- ↓ ↓ ↓ MARSH OR SWAMP
- ⊙ ⊙ ⊙ ⊙ ⊙ CC CRASH CUSHION
- TANK T TANK

TOPOGRAPHY

- INDEX CONTOUR
- INTERMEDIATE CONTOURS
- INDEX CONTOUR (SCALE 1"=50')
- GNV CONTOUR (GROUND NOT VISIBLE)
- DEPRESSION CONTOUR
- GNV DEPRESSION CONTOUR
- 657.2 SPOT ELEVATION (AT DECIMAL POINT)

ENVIRONMENTALLY SENSITIVE AREA (ESA)



RAILROAD

- SCALE 1"=100'
- SCALE 1"=50', 1"=20'

CONTROL POINTS

- ⊙ ⊙ HORIZONTAL AND VERTICAL CONTROL POINT
- ⊙ HORIZONTAL CONTROL POINT
- ⊙ VERTICAL CONTROL POINT

BOUNDARY LINE

- STATE OR COUNTRY
- COUNTY OR RESERVATION BOUNDARY
- CITY OR MILITARY BOUNDARY
- FOREST
- SUBDIVISION, SECTION, GRANT
- RANCHO

WATER WAYS

- RIVERS, STREAMS AND CREEKS - SMALL (ONE LINE)
- RIVERS, STREAMS AND CREEKS - LARGE (TWO LINES) (WHICH DEFINES THE WATER EDGE)
- OCEAN - (GRADUATED LINE WEIGHTS)
- WATER EDGE, LAKE, POND, SWAMP

DRAINAGE

- DIRECTION FLOW OF WATER
- ⬡ DRAINAGE SYSTEM SYMBOL
- DRAINAGE UNIT SYMBOL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LINES AND SYMBOLS
(SHEET 3 OF 3)
 NO SCALE

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

Jeffrey C. Kopylov
 REGISTERED CIVIL ENGINEER

May 20, 2011
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 Jeff C. Kopylov
 No. 53961
 Exp. 6-30-11
 CIVIL
 STATE OF CALIFORNIA

2010 STANDARD PLAN A10E

A10E

NOTES:

See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

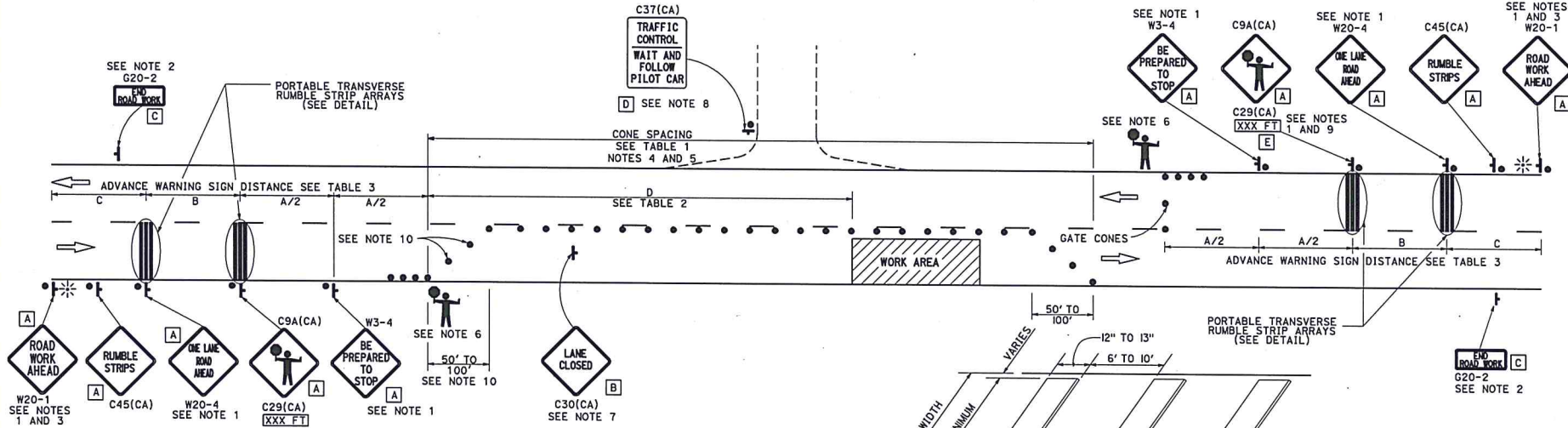
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

July 18, 2014
 PLANS APPROVAL DATE

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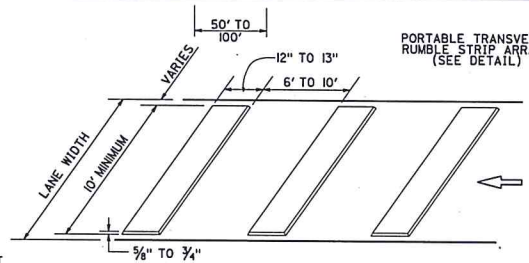
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED _____



NOTES:

- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT" MILES, use a W20-4 sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.



PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 30" x 30"
- C 36" x 18"
- D 36" x 42"
- E 20" x 7"

LEGEND

- TRAFFIC CONE
- TEMPORARY TRAFFIC CONTROL SIGN
- PORTABLE FLASHING BEACON
- FLAGGER

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURE ON
 TWO LANE CONVENTIONAL
 HIGHWAYS**
 NO SCALE

RSP T13 DATED JULY 18, 2014 SUPERSEDES RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T13

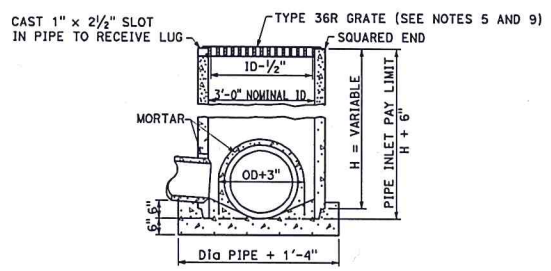
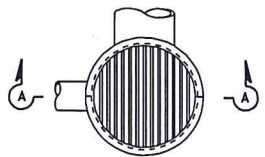
2010 REVISED STANDARD PLAN RSP T13

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

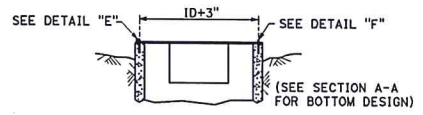
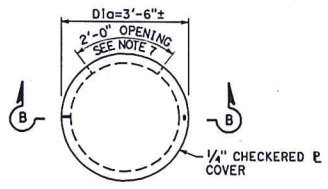
Raymond O. Jester
 REGISTERED CIVIL ENGINEER
 No. 152100
 C37332
 May 20, 2011
 PLANS APPROVAL DATE

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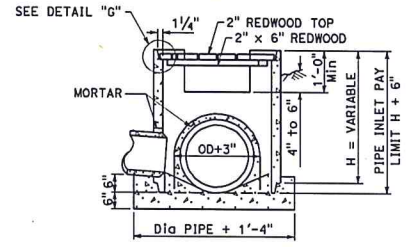
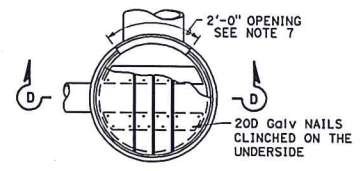
REGISTERED PROFESSIONAL ENGINEER
 Raymond
 No. 152100
 C37332
 Exp. 6-30-12
 CIVIL
 STATE OF CALIFORNIA



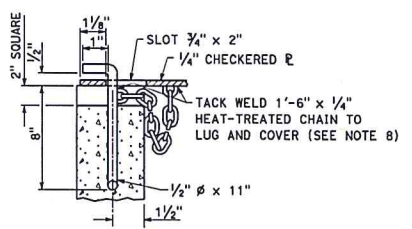
SECTION A-A
TYPE GCP
Concrete pipe Inlet with grate



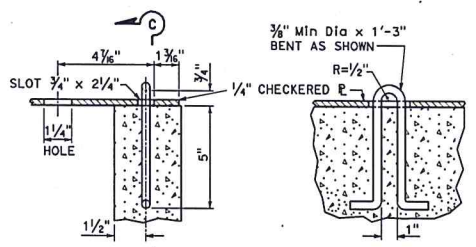
SECTION B-B
TYPE OCP or OCPI
Concrete pipe Inlet with steel cover
(See Note 6)



SECTION D-D
TYPE OCP or OCPI
Concrete pipe Inlet with redwood cover
(See Notes 6 and 10)

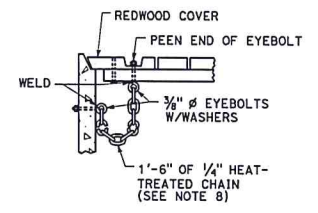


DETAIL "E"



DETAIL "F"

SECTION C-C



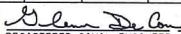
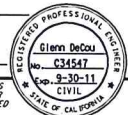
DETAIL "G"

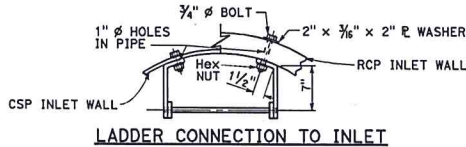
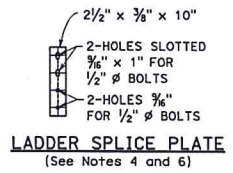
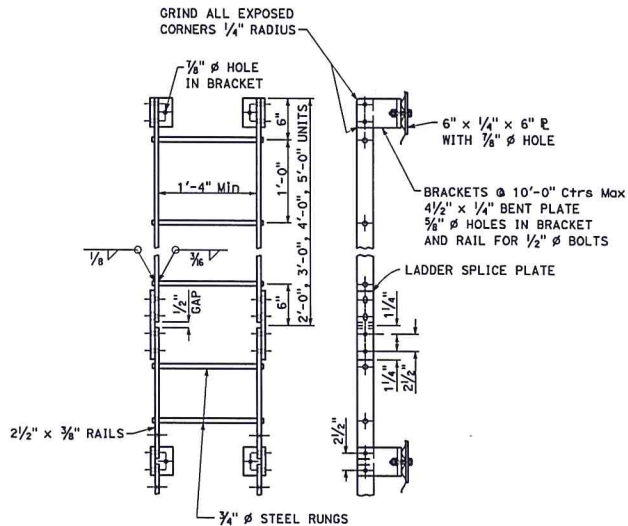
NOTES:

- For details of steel pipe inlets, see Standard Plan D75A.
- For details of ladder and steps and when ladder or steps are required, see Standard Plan D75C.
- Inlet pipes shall not protrude into basin.
- Except for inlets used for junction boxes, basin floors shall have minimum slope of 4:1 from all directions toward outlet pipe, and a wood trowel finish.
- See Standard Plan D77A and Standard Plan D77B for Grate and Frame Details and Weights of Miscellaneous Iron and Steel.
- Designation of Type OCPI pipe inlets on plans indicates trash racks are to be furnished and installed on all side openings. See Standard Plan D75C for Trash Rack details.
- More than one side opening may be required. Location and number as ordered by the Engineer. Opening may be cast in pipe.
- Chain to be provided when specified.
- Place pipe so bars of grate will be parallel with main surface flow.
- Redwood covers shall only be placed at locations designated on the plans.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONCRETE PIPE INLETS
NO SCALE

D75B

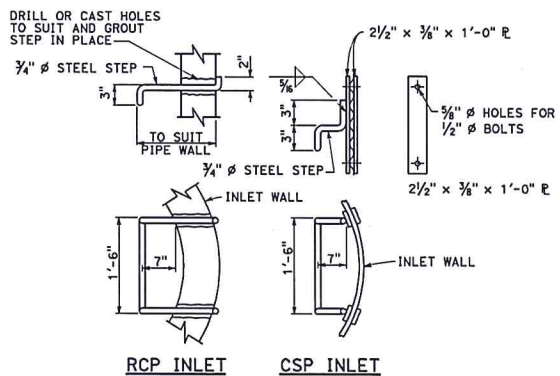
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
 REGISTERED CIVIL ENGINEER					
May 20, 2011 PLANS APPROVAL DATE					
					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



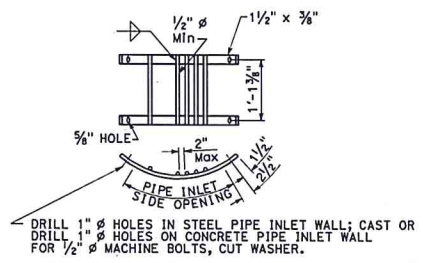
LADDER DETAILS
See Notes 1, 2, 3, 4 and 6

NOTES:

- Ladders and Steps - None required where "H" dimension of pipe inlet is less than 2'-6". Where "H" is 2'-6" or more, install steps or ladder with lowest rung not more than 1'-0" above the floor and highest rung not more than 1'-0" below top of inlet. The distance between steps or rungs shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps or ladder in the wall without an opening.
- Ladder may be constructed in one length at contractor's option on RCP Inlet.
- On CSP inlet, connect ladder splice plate so joint can compress 1/2".
- Ladder splice plate to be connected with 1/2" bolts with double nuts.
- Trash racks used on Type OCPI and OMPI inlets. Trash racks required for pumping installations.
- All steel hardware to be galvanized after fabrication. All hardware to be aluminum if installed in aluminum pipe inlet. See Standard Specifications or Special Provisions.



STEP DETAILS
(See Notes 1 and 6)

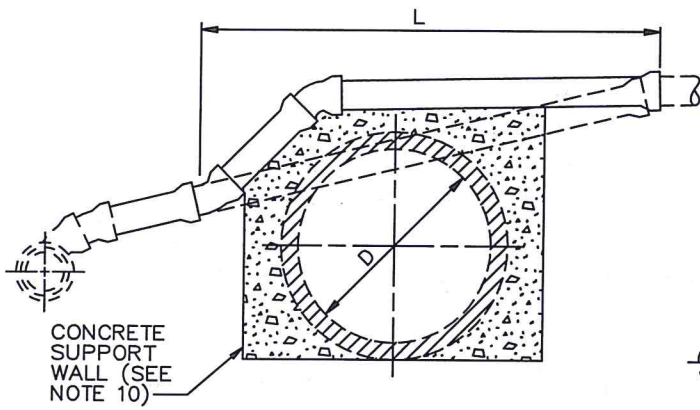


TRASH RACK DETAILS
(See Notes 5 and 6)

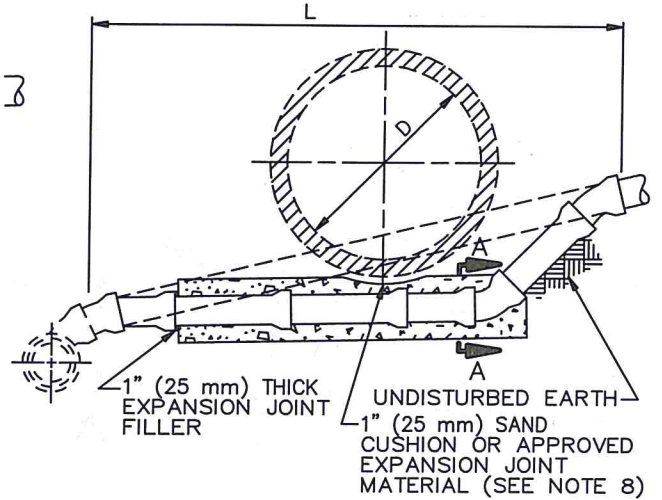
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PIPE INLETS
LADDER AND TRASH
RACK DETAILS**
NO SCALE

D75C

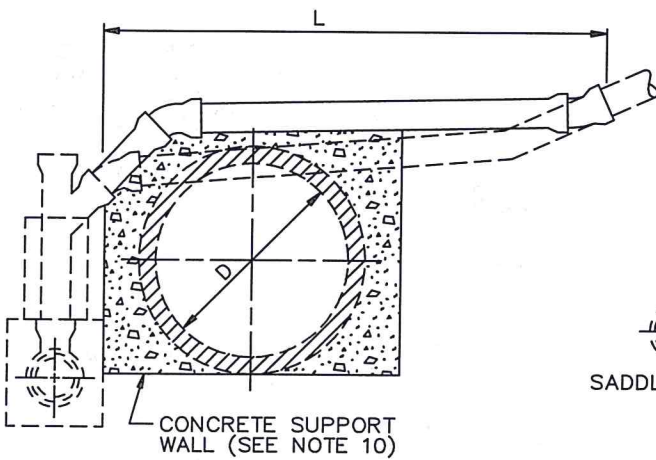
2010 STANDARD PLAN D75C



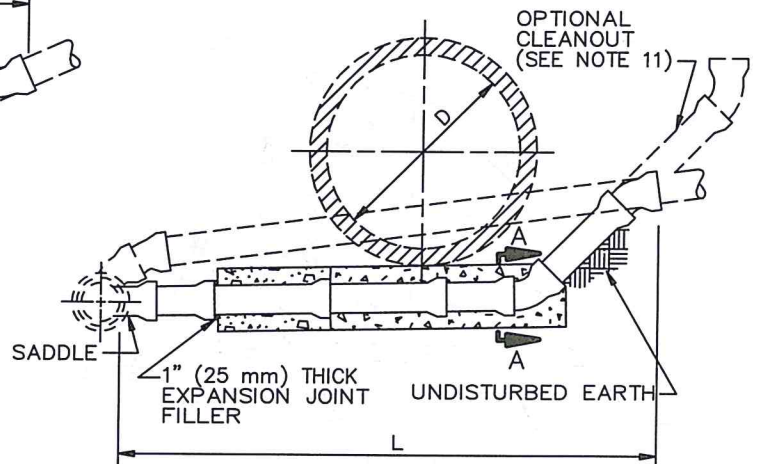
CASE A



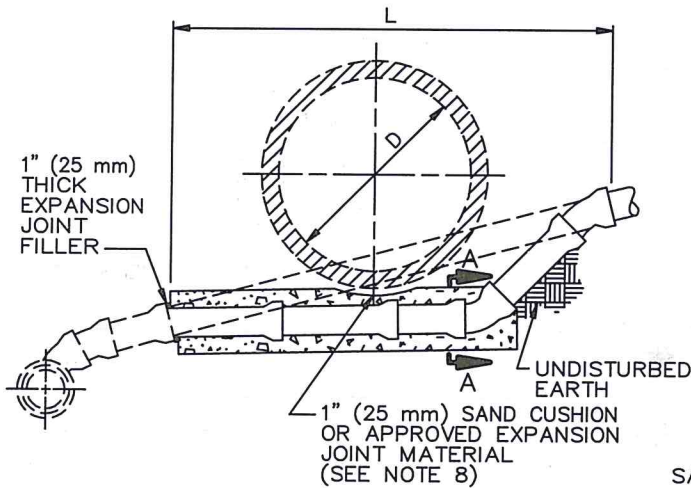
CASE D



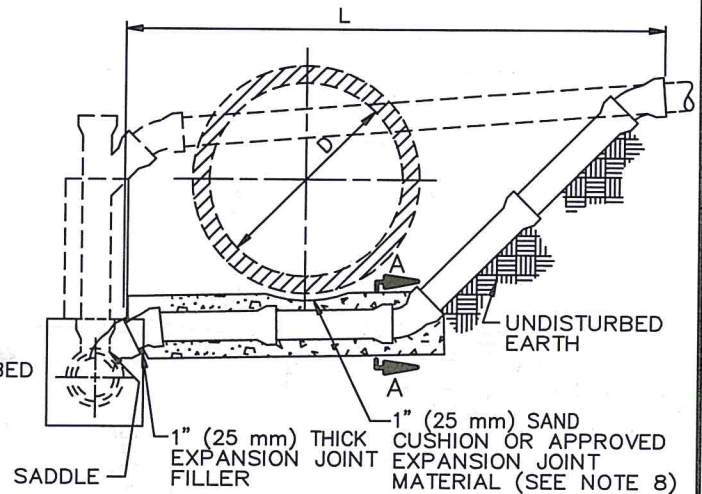
CASE B



CASE E



CASE C



CASE F

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE
PUBLIC WORKS STANDARD, INC.
GREENBOOK COMMITTEE
1984
REV. 1996, 2009

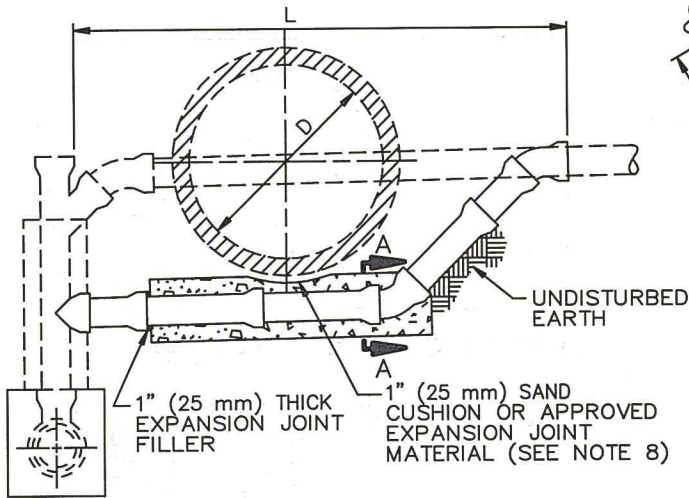
HOUSE CONNECTION REMODELING

STANDARD PLAN

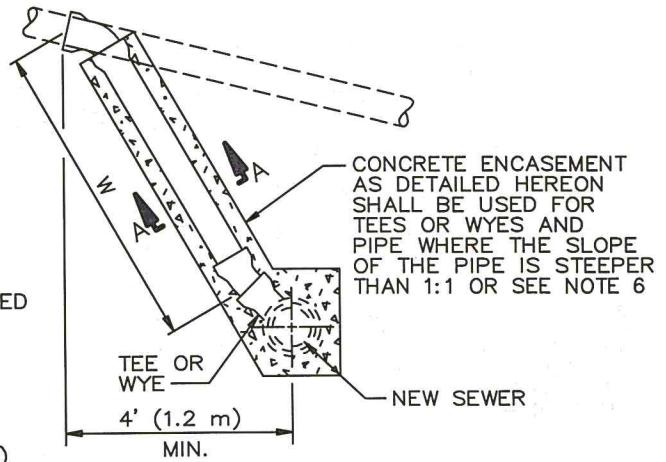
223-2

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

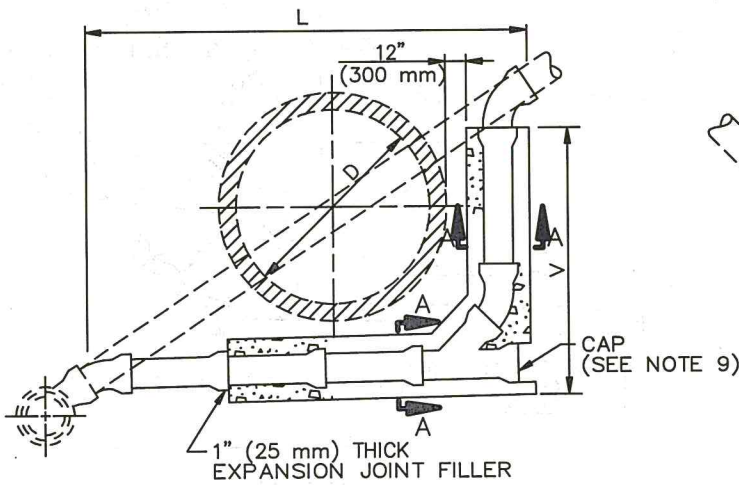
SHEET 1 OF 3



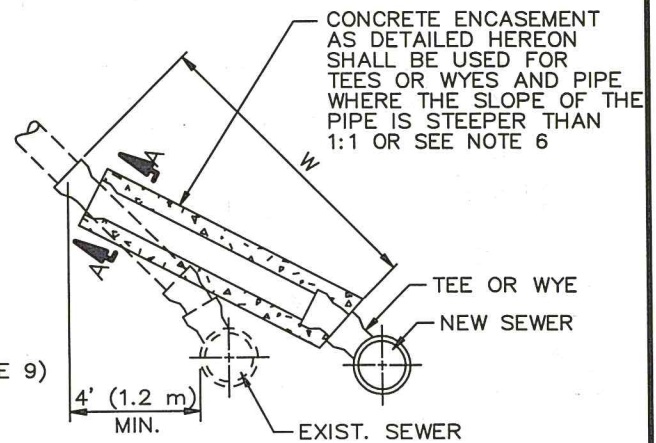
CASE G



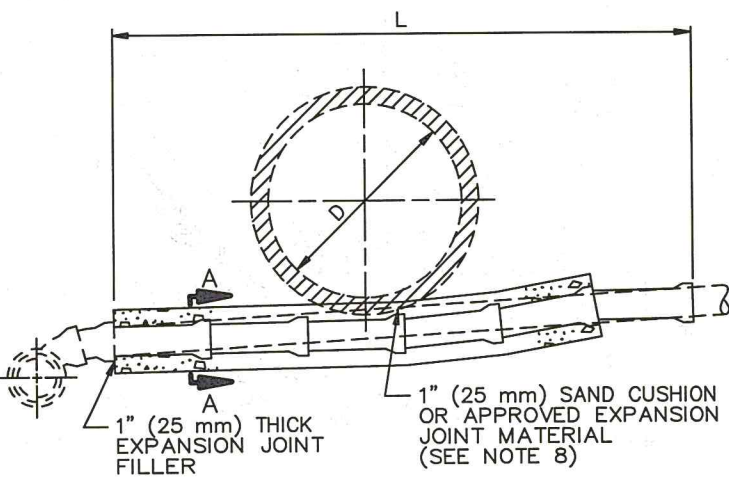
CASE R



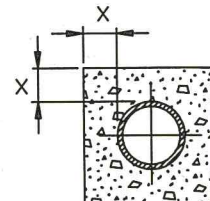
CASE H



CASE S



CASE K



NOMINAL DIAMETER OF PIPE INCHES (mm)	MINIMUM DIMENSIONS X INCHES (mm)
6 (150)	3 (75)
8 (200)	4 (100)
10 (250)	5 (125)
12 (300)	6 (150)

SECTION A-A
CONCRETE ENCASEMENT DETAIL
(SEE NOTE 5)

NOTES

1. EXCEPT AS OTHERWISE INDICATED HEREON OR ON THE PLANS, ALL HOUSE CONNECTION REMODELING SHALL CONFORM TO THE APPLICABLE PORTIONS OF SPPWC 222, HOUSE CONNECTION SEWER.
2. SEE PROJECT PLANS FOR VALUES OF D, L, V, AND W. (DIMENSION L IS THE HORIZONTAL LENGTH OF THE HOUSE CONNECTION REMODELING).
3. EXISTING SEWERS ARE INDICATED BY DASHED LINES. HOUSE CONNECTION SEWERS TO BE CONSTRUCTED ARE INDICATED BY SOLID LINES AND SHALL BE OF THE SAME MATERIAL AS THE EXISTING SEWER. THE CONTRACTOR MAY CONSTRUCT THE SEWER WITH OTHER MATERIALS ALLOWED BY SPPWC 222 PROVIDED APPROVED ADAPTORS ARE UTILIZED.
4. 1/16 (22.5°) OR 1/8 (45°) BENDS SHALL BE USED TO REMODEL OR CONSTRUCT ANY SEWER ON A CURVE OR AT ANY CHANGE IN ALIGNMENT. WHERE PHYSICAL OR GEOMETRIC LIMITATIONS PRECLUDE THE USE OF 1/16 (22.5°) OR 1/8 (45°) BENDS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE PROPOSED METHOD OF REMODELING OR CONSTRUCTION.
5. ALL HOUSE CONNECTION SEWERS TO BE CONSTRUCTED UNDER A PROPOSED CONDUIT SHALL BE ENCASED IN CONCRETE AS SHOWN HEREON. WHEN THE HOUSE CONNECTION SEWER SLOPE EXCEEDS 1:1 THE CONTRACTOR MAY, AT ITS OPTION, PLACE A CIRCULAR CROSS SECTION WITH MINIMUM COVER EQUAL TO DIMENSION "X" AS SHOWN ON SECTION A-A HEREON IN LIEU OF A SQUARE CROSS SECTION OF CONCRETE. CONCRETE BEDDING AND ENCASEMENT SHALL BE CLASS 450-C-2000 (250-C-14) AND SHALL EXTEND TO THE FIRST PIPE JOINT AT LEAST 1' (300 mm) BEYOND THE OD OF EACH SIDE OF THE PROPOSED CONDUIT.
6. FOR CASE R AND S, WHEN THE SLOPE OF THE PIPE EXCEEDS 1:1, THE CONTRACTOR MAY, AT ITS OPTION, CONSTRUCT A CHIMNEY CONFORMING TO SPPWC 220 ON THE NEW SEWER IN LIEU OF CONSTRUCTING THE ENCASEMENT SHOWN HEREON.
7. FOR CASES E AND F, SADDLES SHALL BE CONNECTED EITHER TO THE LENGTH OF PIPE CONTAINING THE EXISTING TEE OR WYE OR TO THE ADJACENT DOWNSTREAM PIPE LENGTH.
8. CONDUITS TO BE INSTALLED OVER OR WITHIN 1" (25 mm) OF ANY CONCRETE ENCASEMENT OR STRUCTURE, WHETHER EXISTING OR TO BE PLACED IN CONFORMITY WITH THE REQUIREMENTS HEREIN, SHALL BE INSTALLED ON A 1" (25 mm) SAND CUSHION OR APPROVED EXPANSION JOINT MATERIAL. CONCRETE ENCASEMENT INSTALLED PURSUANT TO THIS STANDARD PLAN SHALL BE SEPARATED FROM EXISTING CONDUIT WITH 1" (25 mm) THICK EXPANSION JOINT MATERIAL.
9. THOSE PORTIONS OF AN ABANDONED PIPE LOCATED BENEATH OR WITHIN 6" (150 mm) OF A RELOCATED HOUSE CONNECTION SEWER SHALL BE REMOVED. THE EXCAVATION SHALL BE REFILLED TO THE GRADE OF THE NEW PIPE INVERT WITH CLASS 100-E-100 (60-E-0.7) CONCRETE. THE CONTRACTOR MAY, AT ITS OPTION, SUBSTITUTE MECHANICALLY COMPACTED BACKFILL IN LIEU OF THE CLASS 100-E-100 (60-E-0.7) CONCRETE. THOSE PORTIONS OF ABANDONED PIPE NOT REMOVED SHALL BE SEALED. WHERE CAPS ARE USED, THEY SHALL BE SEALED BY FILLING THE SPACE ABOVE THE CAP WITH SAND AND A 1" (25 mm) THICK COATING OF TYPE "F" MORTAR.
10. SUPPORT WALLS SHALL CONFORM TO SPPWC 224.
11. WHEN INDICATED ON THE PLANS OR THE SPECIAL PROVISIONS, A CLEANOUT SHALL BE CONSTRUCTED IN CONJUNCTION WITH CASE E AS FOLLOWS:
 - A. SUBSTITUTE A "Y" FOR THE 45° BEND.
 - B. PLACE A 45° BEND ON THE UPPER END OF THE "Y".
 - C. CAP TOP OF 45° BEND WITH A CAP AND SEAL WITH 1" (25 mm) THICK TYPE "F" MORTAR AROUND THE CIRCUMFERENCE OF THE CAP.

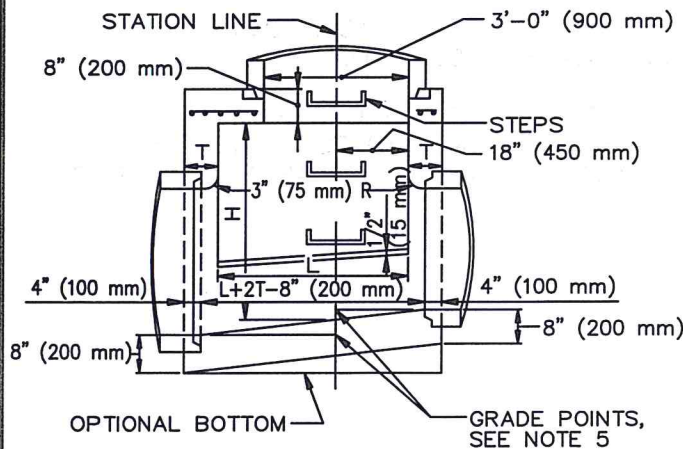
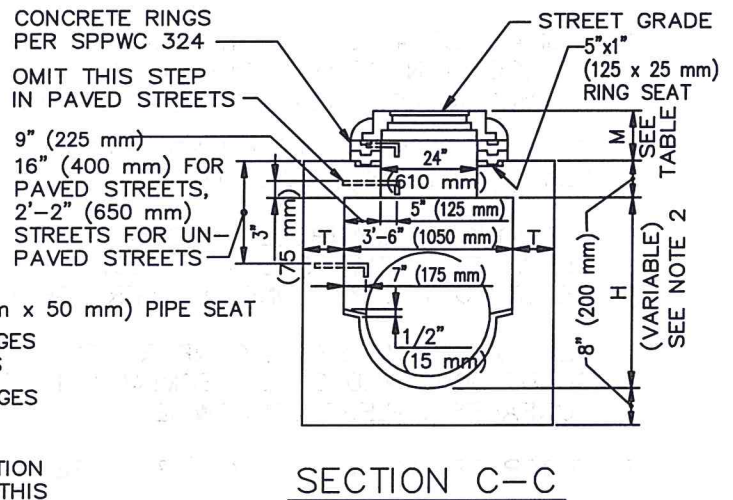
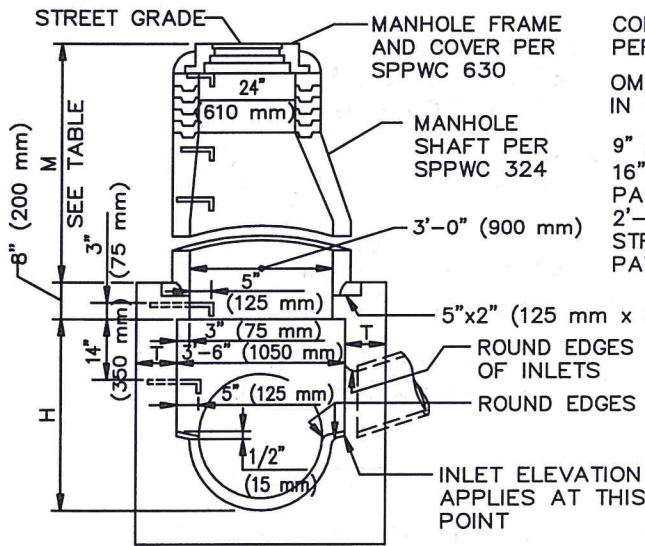
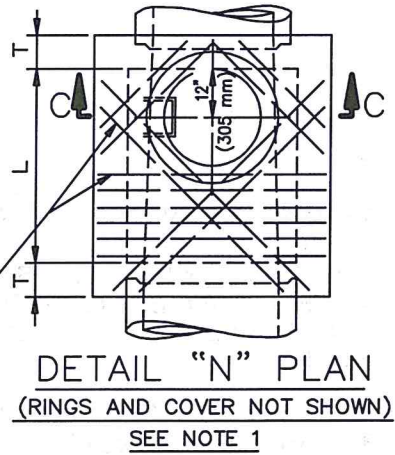
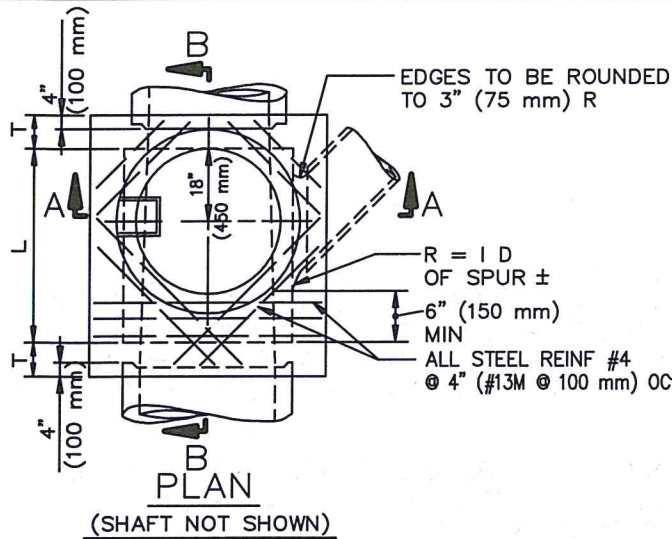


TABLE OF VALUES FOR M (SEE NOTE 1)				
SECTION	PAVED STREET		UNPAVED STREET	
	MAX	MIN	MAX	MIN
A-A		2'-10 1/2" (867 mm)	3'-6" (1060 mm)	
C-C	11" (282 mm)	8 1/2" (217 mm)	16" (410 mm)	15" (380 mm)

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE
PUBLIC WORKS STANDARDS INC.
GREENBOOK COMMITTEE
1992
REV. 1996, 2009

**MANHOLE PIPE-TO-PIPE (ONE OR BOTH
MAIN LINE IDS 33" (825 mm) OR SMALLER)**

STANDARD PLAN

321-2

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SHEET 1 OF 3

NOTES

1. WHEN DEPTH M FROM STREET GRADE TO THE TOP OF THE BOX IS LESS THAN 2'-10 1/2" (867 mm) FOR PAVED STREETS OR 3'-6" (1060 mm) FOR UNPAVED STREETS, CONSTRUCT SHAFT PER SECTION C-C AND DETAIL "N". DEPTH M MAY BE REDUCED TO AN ABSOLUTE LIMIT OF 6" (150 mm) WHEN LARGER VALUES OF M WOULD REDUCE H IN SECTION C-C TO 3'-6" (1060 mm) OR LESS.
2. H (IN SECTION A-A AND B-B) SHALL NOT BE LESS THAN 4'-0" (1.2 m), BUT MAY BE INCREASED PROVIDED THAT THE VALUE OF M SHALL NOT BE LESS THAN THE MINIMUM SPECIFIED AND THAT THE REDUCER SHALL BE USED. FOR H (IN SECTION C-C) SEE NOTE 1.
3. L SHALL BE 4'-0" (1.2 m) UNLESS OTHERWISE SHOWN. L MAY BE INCREASED OR LOCATION OF MANHOLE SHIFTED TO MEET PIPE ENDS, BUT ANY CHANGE IN LOCATION OF THE SPUR MUST BE APPROVED BY THE ENGINEER.
4. T SHALL BE 8" (200 mm) FOR VALUES OF H UP TO AND INCLUDING 8'-0" (2.4 m) AND 10" (250 mm) FOR VALUES OF H OVER 8'-0" (2.4 m).
5. STATIONS OF MANHOLES SHOWN ON PLANS APPLY AT CENTERLINE OF SHAFT. ELEVATIONS ARE SHOWN AT CENTERLINE OF SHAFT AND REFER TO THE PROLONGED INVERT GRADE LINES. SEE NOTE 3.
6. REINFORCEMENT SHALL CONFORM TO ASTM A 615, GRADE 40 (ASTM A 615M, GRADE 300), AND SHALL TERMINATE 1 1/2" (40 mm) CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN.
7. FLOOR OF MANHOLE SHALL BE STEEL TROWELED TO SPRING LINE.
8. BODY OF MANHOLE SHALL BE POURED IN ONE CONTINUOUS OPERATION EXCEPT THAT A CONSTRUCTION JOINT WITH A LONGITUDINAL KEYWAY MAY BE PLACED AT SPRING LINE.
9. THICKNESS OF THE DECK SHALL VARY WHEN NECESSARY TO PROVIDE A LEVEL SEAT BUT SHALL NOT BE LESS THAN 8" (200 mm).
10. STEPS SHALL CONFORM TO SPPWC 635 OR 636. UNLESS OTHERWISE SHOWN, STEPS SHALL BE UNIFORMLY SPACED 14" (350 mm) TO 15" (375 mm) OC. THE LOWEST STEP SHALL NOT BE MORE THAN 24" (600 mm) ABOVE THE LEDGE AT THE SIDE OF THE MANHOLE.

11. THE FOLLOWING CRITERIA SHALL BE USED FOR THIS MANHOLE:

- A. MAIN LINE = 33" (825 mm) INSIDE DIAMETER OR LESS. (EXCEPTION – IF THE MAIN LINE RCP DOWNSTREAM OF THE MANHOLE IS 36" (900 mm) TO 42" (1050 mm) INSIDE DIAMETER AND THE MAIN LINE RCP UPSTREAM IS 33" (825 mm) OR LESS.) SPPWC 320 OR 322 IS NOT APPLICABLE WHERE THE MAIN LINE CONDUIT IS LESS THAN 36" (900 mm) IN DIAMETER.
- B. SEE SECTION A – A. THE MAXIMUM SIZE LATERAL THAT MAY BE CONNECTED TO THIS MANHOLE IS SUCH THAT THE DISTANCE FROM THE OUTSIDE (TOP) OF THE LATERAL TO THE BOTTOM OF THE 8" (200 mm) THICK TOP OF THE MANHOLE CHAMBER, MEASURED VERTICALLY FROM THE END OF THE RCP, SHALL BE A MINIMUM OF 6" (150 mm).
- C. IF THE SIZE OF THE LATERAL IS SUCH THAT THE ABOVE-SPECIFIED MINIMUM DISTANCES CANNOT BE MAINTAINED, THEN ONE OF THE FOLLOWING ALTERNATE SOLUTIONS MUST BE USED.
 - 1. PROVIDE A SPECIAL STRUCTURE.
 - 2. PROVIDE TWO STANDARD STRUCTURES, CONSISTING OF THIS MANHOLE PLACED UPSTREAM OR DOWNSTREAM FROM THE APPLICABLE JUNCTION STRUCTURE OR TRANSITION STRUCTURE.

12. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630 UNLESS OTHERWISE SHOWN.

13. MANHOLE SHAFT SHALL CONFORM TO SPPWC 324 UNLESS OTHERWISE SHOWN.

14. WHERE A MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 336.

15. WHERE A PRESSURE MANHOLE SHAFT – WITH ECCENTRIC REDUCER IS SPECIFIED REFER TO SPPWC 328.

16. WHERE A PRESSURE MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 329.

17. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:

- 324 MANHOLE SHAFT – WITH ECCENTRIC REDUCER
- 326 MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER
- 328 PRESSURE MANHOLE SHAFT – WITH ECCENTRIC
- 329 PRESSURE MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER
- 630 24" (610 mm) MANHOLE FRAME AND COVER
- 633 36" (900 mm) MANHOLE FRAME AND COVER
- 635 STEEL STEP
- 636 POLYPROPYLENE PLASTIC STEP

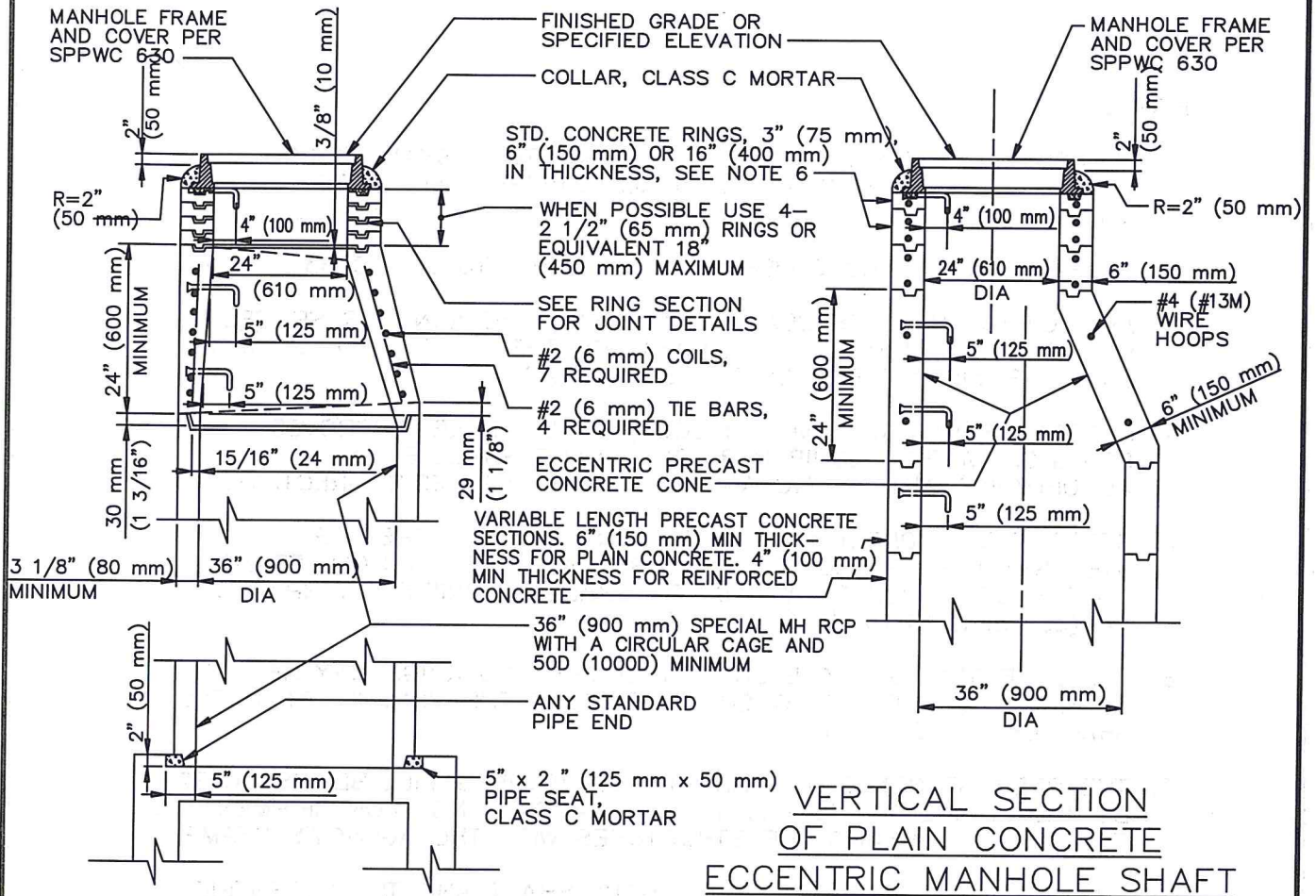
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

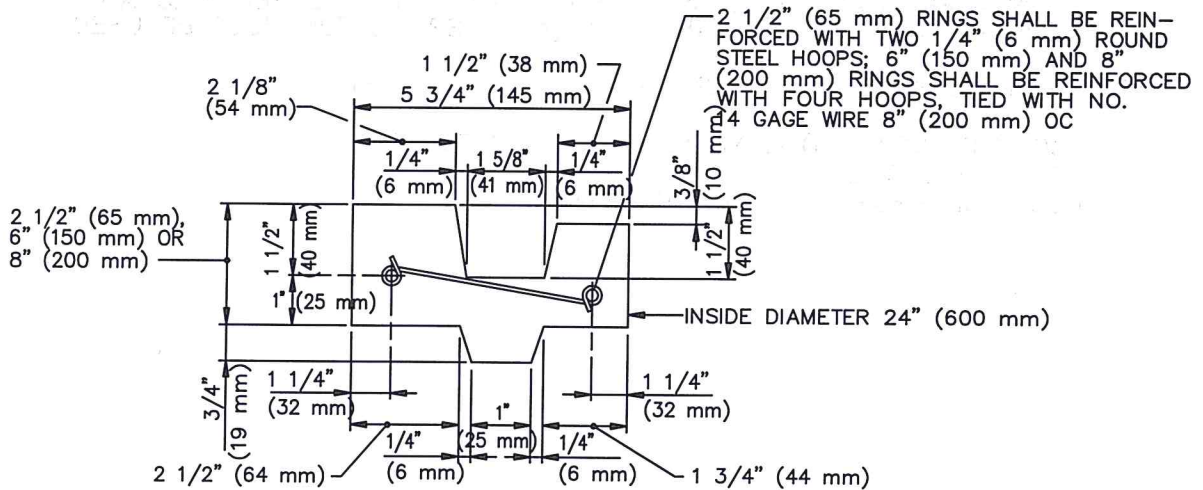
**MANHOLE PIPE-TO-PIPE (ONE OR BOTH
MAIN LINE IDS 33" (825 mm) OR SMALLER)**

321-2

SHEET 3 OF 3



VERTICAL SECTION OF REINFORCED CONCRETE ECCENTRIC MANHOLE SHAFT



STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE
PUBLIC WORKS STANDARDS INC.
GREENBOOK COMMITTEE
1992
REV. 1996, 2009

**MANHOLE SHAFT WITH
ECCENTRIC REDUCER**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

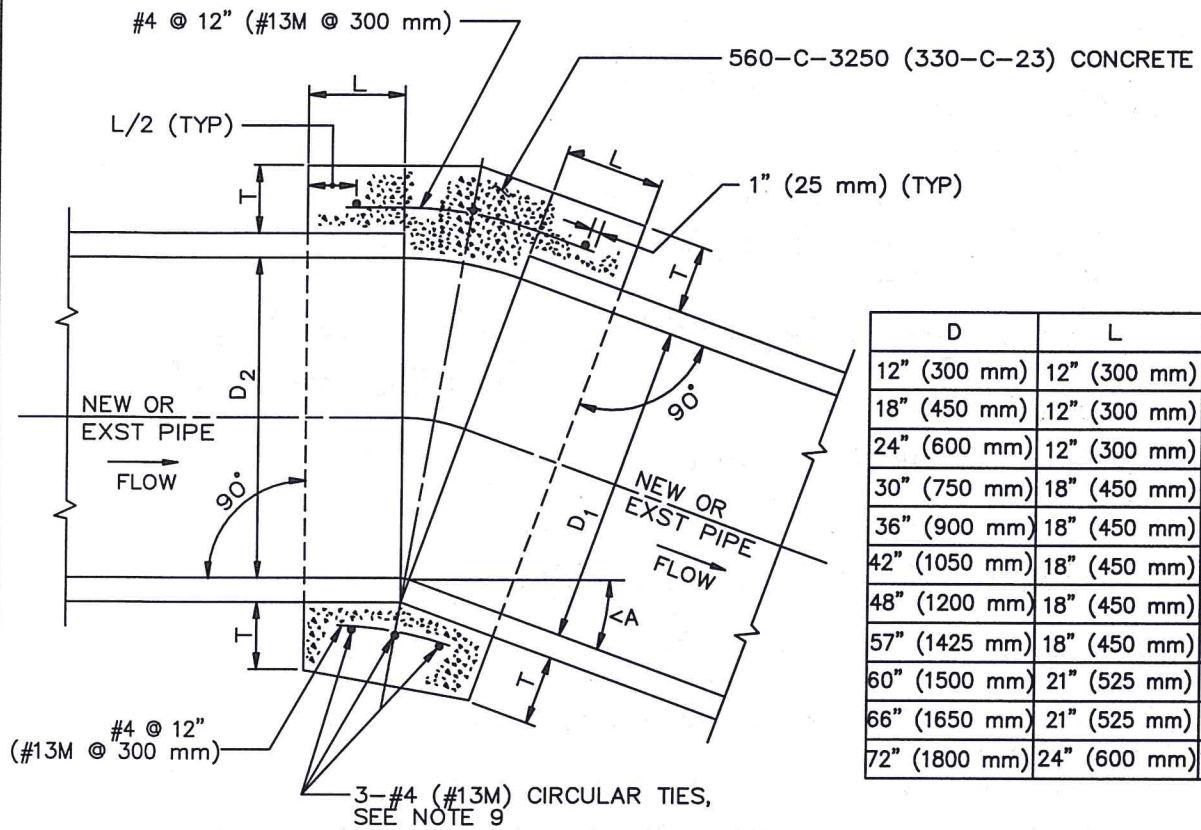
STANDARD PLAN

324-2

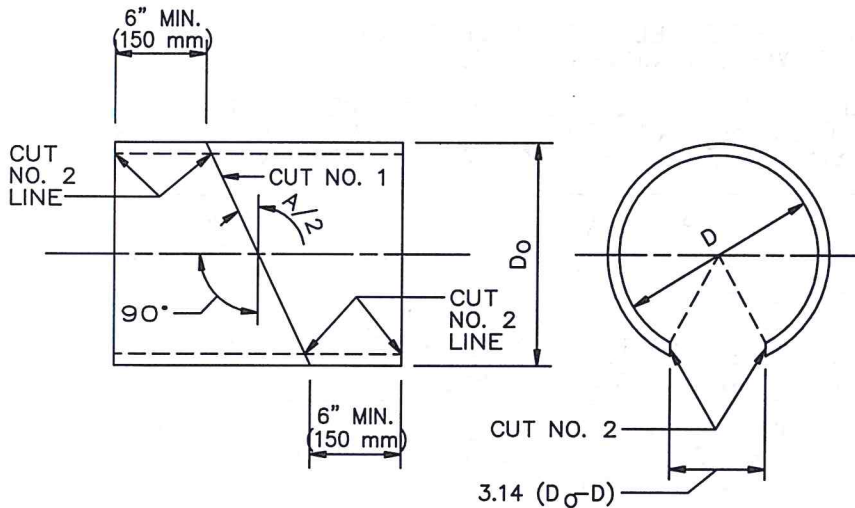
SHEET 1 OF 2

NOTES

1. UNLESS OTHERWISE INDICATED THIS STRUCTURE SHALL CONFORM TO ASTM C 478M (ASTM C 478) AND ALL CONCRETE SHALL BE PER SSPWC 201-1.2.
2. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630.
3. ALL JOINTS SHALL BE SEALED BY FILLING THE ANNULAR SPACES WITH CLASS C MORTAR. THE INSIDE OF THE SHAFT AT EACH JOINT SHALL BE WIPED CLEAN OF EXCESS MORTAR.
4. PROTECTIVE PLASTIC LINER (T LOCK) OR ENGINEER-APPROVED COATINGS WHERE REQUIRED BY THE PLANS SHALL BE IN ACCORDANCE WITH SSPWC AND THE MANUFACTURER'S DIRECTIONS.
5. STEPS SHALL CONFORM TO SPPWC 635 OR 636. THE TOP STEP SHALL BE PLACED DIRECTLY BENEATH THE MANHOLE FRAME. UNLESS OTHERWISE SHOWN, STEPS SHALL BE UNIFORMLY SPACED 14" (350 mm) TO 15" (375 mm) OC.
6. THE ECCENTRIC MANHOLE SHAFT REDUCER AND RINGS MAY BE PLAIN CONCRETE. FOR PLAIN CONCRETE SECTIONS THE MINIMUM THICKNESS SHALL BE 6" (150 mm).
7. THE PRECAST CONCRETE MANHOLE STRUCTURES WILL BE INSPECTED BY THE ENGINEER WHO WILL INDICATE ACCEPTANCE FOR SHIPMENT TO THE JOB BY MARKING THE STRUCTURES WITH THE AGENCY'S STAMP.
8. THE VERTICAL SIDES OF THE MANHOLE SHAFT AND THE ECCENTRIC REDUCER SHALL BE LOCATED ABOVE AND IN LINE WITH THE SIDE OF THE STORM DRAIN CONDUIT.
9. CONSTRUCT MANHOLE SAFETY LEDGE PER SPPWC 330 IF DEPTH OF MANHOLE TO INVERT IS GREATER THAN 20' (6 m) AND MANHOLE SHAFT IS GREATER THAN 10' (3 m). WHEN SAFETY LEDGE IS REQUIRED AND MANHOLE SHAFT IS LESS THAN 12' (4 m) SPPWC 326 MUST BE USED.
10. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
 - 630 24" (600 mm) MANHOLE FRAME AND COVER
 - 635 STEEL STEP
 - 636 POLYPROPYLENE PLASTIC STEP

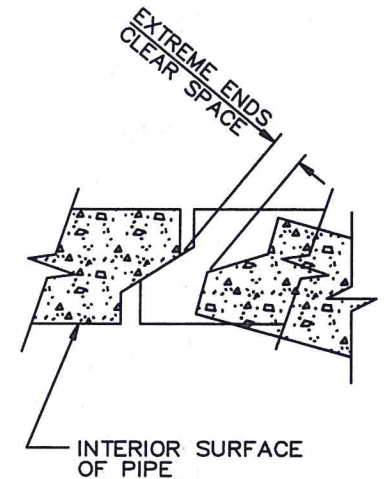


D	L	T
12" (300 mm)	12" (300 mm)	4" (100 mm)
18" (450 mm)	12" (300 mm)	5" (125 mm)
24" (600 mm)	12" (300 mm)	6" (150 mm)
30" (750 mm)	18" (450 mm)	7" (175 mm)
36" (900 mm)	18" (450 mm)	9" (225 mm)
42" (1050 mm)	18" (450 mm)	9" (225 mm)
48" (1200 mm)	18" (450 mm)	10" (250 mm)
57" (1425 mm)	18" (450 mm)	10" (250 mm)
60" (1500 mm)	21" (525 mm)	11" (275 mm)
66" (1650 mm)	21" (525 mm)	11" (275 mm)
72" (1800 mm)	24" (600 mm)	12" (300 mm)



DETAIL "A" (SEE NOTE 10)
SONO-TUBE, OR EQUAL, INTERIOR FORM

CUT NO. 1: SAW THE TUBE AT AN ANGLE OF A/2 WITH THE TRANSVERSE PLANE. REVERSE ONE SECTION AND TAPE BOTH SECTIONS TOGETHER FORMING THE DEFLECTION ANGLE A.
CUT NO. 2: SAW THE TUBE LONGITUDINALLY REMOVING A STRIP 3.14 (D₀ - D) WIDE ON THE SIDE OPPOSITE THE OPEN JOINT. BEND THE ENDS OF THE CUT TOGETHER AND INSERT THE TUBE IN THE PIPE.



DETAIL "B"
TYPICAL JOINT FOR
REINFORCED CONCRETE PIPE

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE
PUBLIC WORKS STANDARDS INC.
GREENBOOK COMMITTEE
1992
REV. 1996, 1997, 1999, 2009

CONCRETE COLLAR FOR RCP
12" (300 mm) THROUGH 72" (1800 mm)

STANDARD PLAN

380-4

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SHEET 1 OF 2

NOTES

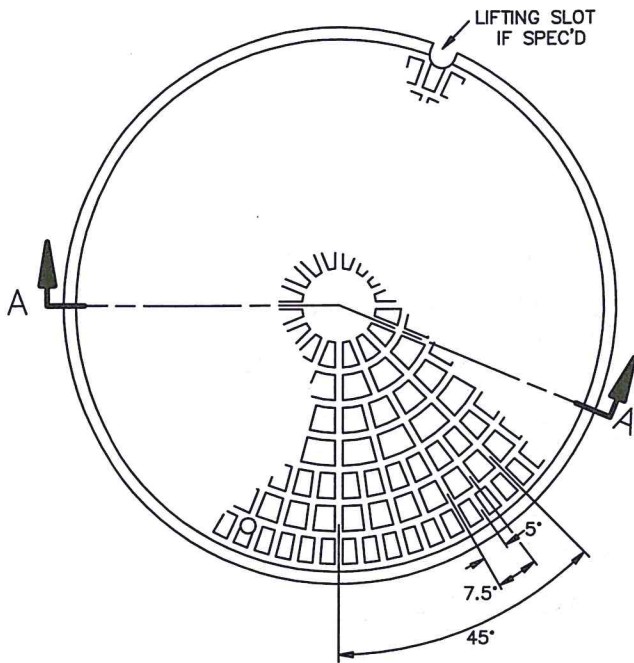
1. A CONCRETE COLLAR IS REQUIRED WHERE THE CHANGE IN GRADE EXCEEDS 10%.
2. FOR CURVE JOINTS (SEE DETAIL B, SHEET 1)
 IF THE EXTREME ENDS OF THE PIPE LEAVE A CLEAR SPACE THAT IS GREATER THAN 1" (25 mm), BUT IS LESS THAN 3" (75 mm) A CONCRETE COVER IS REQUIRED IN ACCORDANCE WITH SSPWC 306-1.2.4.
 IF THE EXTREME ENDS OF THE PIPE LEAVE A CLEAR SPACE THAT IS EQUAL TO OR GREATER THAN 3" (75 mm), BUT LESS THAN 6" (150 mm), A CONCRETE COLLAR IS REQUIRED. IF THE CLEAR SPACE IS 6" (150 mm) OR GREATER, A TRANSITION STRUCTURE IS REQUIRED.
3. CONCRETE COLLAR SHALL NOT BE USED FOR A SIZE CHANGE ON THE MAIN LINE.
4. CONNECTOR PIPES
 - A. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L AND T SHALL BE THOSE OF THE LARGER PIPE. $D = D_1$ OR D_2 , WHICHEVER IS GREATER.
 - B. WHEN D_1 IS EQUAL TO OR LESS THAN D_2 , JOIN INVERTS AND WHEN D_1 IS GREATER THAN D_2 , JOIN SOFFITS.
5. FOR PIPE LARGER THAN 72" (1800 mm) SPECIAL COLLAR DETAILS ARE REQUIRED.
6. FOR PIPE SIZE NOT LISTED USE NEXT SIZE LARGER.
7. REINFORCEMENT SHALL CONFORM TO ASTM A 615 (A 615 M) GRADE 40 (300).
8. WHERE REINFORCING IS REQUIRED THE DIAMETER OF THE CIRCULAR TIES SHALL BE $D + (2X \text{ WALL THICKNESS}) + T$.
9. REINFORCING SHALL BE USED WHERE THE PIPE DIAMETER IS GREATER THAN 21" (525 mm) AND ON ALL PIPES WHERE THE SPACES BETWEEN THE EXTREME OUTER ENDS IS 3" (75 mm) OR LARGER.

CIRCULAR TIES:

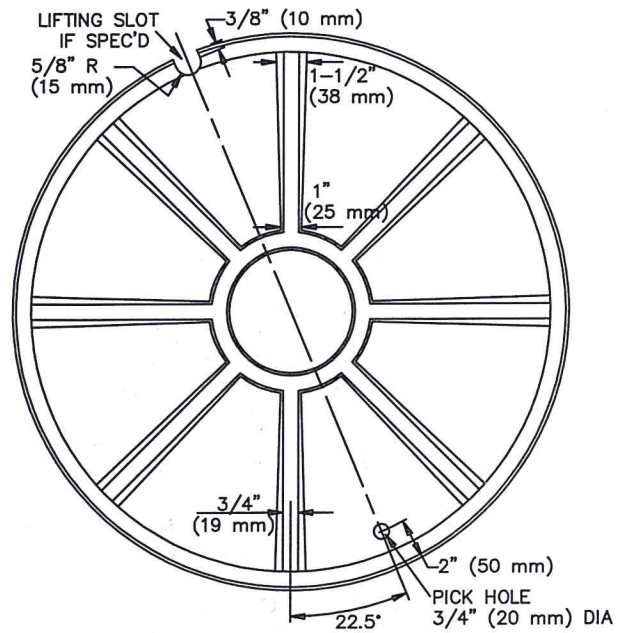
PIPE DIAMETER	NO. OF CIRCULAR TIES
21" (525 mm) OR LESS	3
24" (600 mm) TO 30" (750 mm)	3
33" (825 mm) TO 57" (1425 mm)	4
60" (1500 mm) TO 72" (1800 mm)	5

WHERE THE SPACE BETWEEN PIPE ENDS EXCEEDS 3" (75 mm), THE NUMBER OF CIRCULAR TIES SHALL BE INCREASED TO MAINTAIN AN APPROXIMATE SPACING OF 6" (150 mm) O.C.

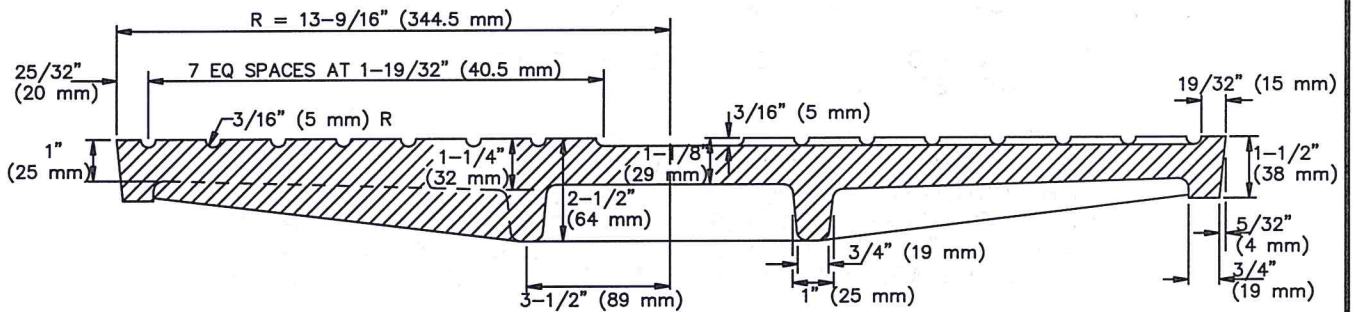
10. WHERE THE PIPE IS 21" (525 mm) OR LESS IN DIAMETER AN INTERIOR FORM OF UNSEALED SONO-TUBE OR EQUAL SHALL BE USED TO PROVIDE A SMOOTH INTERIOR JOINT. THE PAPER FORM MAY BE LEFT IN PLACE (SEE DETAIL A). WHEN THE PIPE IS 24" (600 mm) OR LARGER A REMOVABLE INTERIOR FORM SHALL BE USED OR THE INTERIOR JOINT SHALL BE COMPLETELY FILLED WITH MORTAR AND NEATLY POINTED.



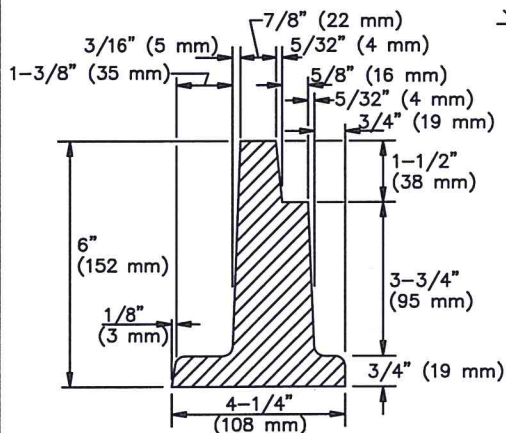
TOP OF COVER



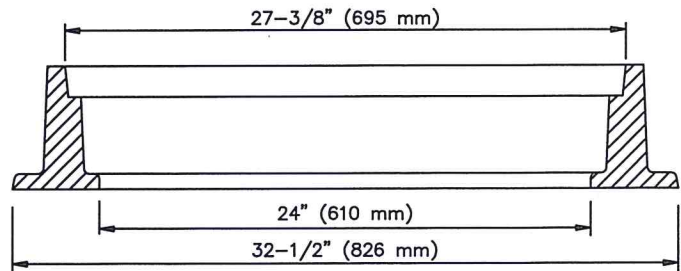
BOTTOM OF COVER



SECTION A-A



FRAME DETAIL



SECTION THRU FRAME

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE
PUBLIC WORKS STANDARDS INC.
GREENBOOK COMMITTEE
1984
REV. 1996, 2009

**24" (610 mm) MANHOLE FRAME
AND COVER**

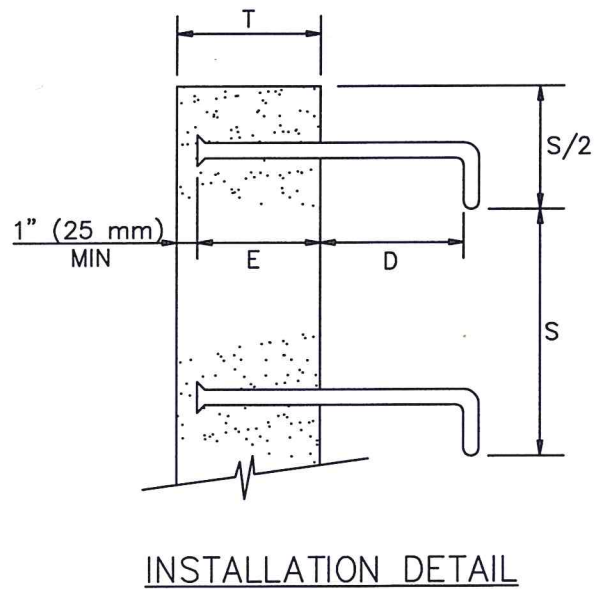
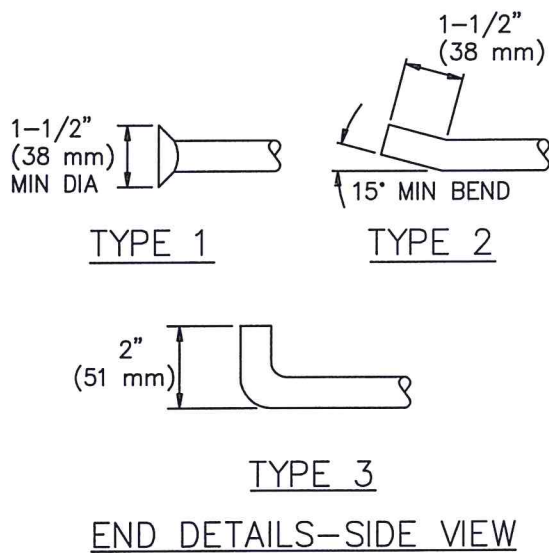
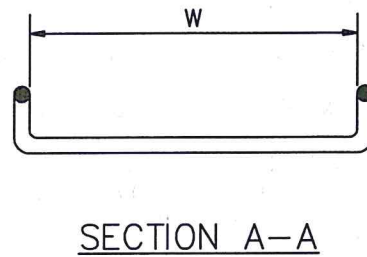
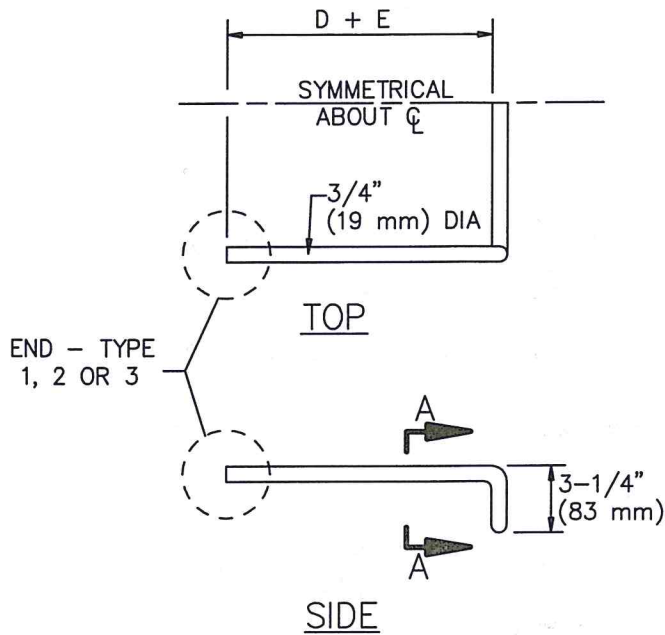
STANDARD PLAN
630-3

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

SHEET 1 OF 2

NOTES:

1. THE CAST IRON USED SHALL CONFORM TO ASTM A-48 CLASS 35B.
2. COVERS SHALL BE CAST WITH THE LETTER "D" FOR STORM DRAINS AND "S" FOR SEWERS, AND THE AGENCY'S IDENTIFICATION IN ACCORDANCE WITH INSTRUCTIONS FURNISHED BY THE AGENCY. THE LETTER "D" OR "S" SHALL BE APPROXIMATELY 2-1/2" (65 mm) HIGH WITH 1/2" (15 mm) LINE WIDTH, AND PLACED IN THE CENTER OF THE COVER. ALL LETTERS SHALL BE FLUSH WITH THE FINISHED SURFACE OF THE COVER.
3. FOUNDRY IDENTIFYING MARK, HEAT AND DATE SHALL BE CAST ON THE BOTTOM OF THE COVER AND ON THE INSIDE OF THE FRAME.
4. IMPORTED COVERS AND FRAMES SHALL HAVE THE COUNTRY OF ORIGIN MARKING IN COMPLIANCE WITH FEDERAL REGULATIONS.
5. WEIGHT OF FRAME SHALL BE 260 LBS (118 kg). WEIGHT OF COVER SHALL BE 175 LBS (79 kg). ACTUAL WEIGHTS SHALL BE WITHIN A RANGE OF 95% TO 110%.
6. THE MANHOLE FRAME AND COVER SHALL BE INSPECTED BY THE ENGINEER PRIOR TO SHIPMENT TO THE JOBSITE. ACCEPTANCE WILL BE INDICATED BY THE AGENCY'S MARK.
7. THE PROOF-LOAD FOR TEST METHOD B OF SSPWC 206-3.2 IS 40,700 LBS (180 kN).
8. COVERS FOR MANHOLES LOCATED IN EASEMENTS, ALLEYS, PARKWAYS AND ALL PLACES OTHER THAN PAVED STREETS SHALL BE PROVIDED WITH SOCKET-SET SCREW LOCKING DEVICES. DRILL AND TAP TWO HOLES TO A DEPTH OF 1" (25 mm) AT 90 DEGREES TO PICK HOLE AND INSTALL 3/4" x 3/4" (20 x 20 mm) STAINLESS STEEL SOCKET-SET SCREWS WITH 3/8" (10 mm) RECESSED HEX HEAD. ALL THREADS SHALL BE N.C.



UNLESS OTHERWISE NOTED:

D = 7" (175 mm)

E = 6" (150 mm) OR T - 1" (25 mm), WHICHEVER IS LESS
MINIMUM E IS 3" (75 mm)

S = 12" (300 mm) MAX, EVENLY SPACED

W = 16" (400 mm) MIN

FOR MANHOLES AND UNDERGROUND VAULTS:

S = 16" (400 mm) MAX, EVENLY SPACED

W = 14" (350 mm) MIN

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE
PUBLIC WORKS STANDARDS INC.
GREENBOOK COMMITTEE
1984
REV. 1992, 1996, 2009

STEEL STEP

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

635-3

SHEET 1 OF 2

NOTES:

1. STEPS SHALL BE STEEL CONFORMING TO ASTM A307 AND SHALL BE GALVANIZED AFTER FABRICATION. UNLESS OTHERWISE NOTED, STEPS MAY ALSO BE POLYPROPYLENE STEPS, STEEL REINFORCED, CONFORMING TO SPPWC 636.
2. IF STAINLESS STEEL STEPS ARE REQUIRED, THE MATERIAL SHALL CONFORM TO ASTM A276, 300 SERIES.
3. STEP ENDS MAY BE TYPE 1, 2 OR 3, AS SHOWN.
4. BOTTOM STEP SHALL BE A MAXIMUM OF 2' (600 mm) ABOVE FLOOR OR SHELF.
5. STEPS WITH TYPE 1 OR 2 ENDS MAY BE CAST IN PLACE, OR PLACED IN THE CENTER OF 1-1/2" (40 mm) MIN DIA DRILLED OR FORMED HOLES AND SET WITH HIGH STRENGTH NON-SHRINK GROUT, 6000 PSI (40 MPa) MIN. STEPS WITH TYPE 3 ENDS SHALL BE CAST-IN-PLACE.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

STEEL STEP

STANDARD PLAN

635-3

SHEET 2 OF 2

NOTES: (REFER TO 3-010 FOR ADDITIONAL NOTES)

1. STRUCTURAL DETAILS SHALL FOLLOW APWA STANDARD PLANS, SECTION 3 AS APPROPRIATE FOR THE DEPTH AND LINE SIZES. CERTIFIED PRE-CAST ELEMENTS MAY BE USED WITH AN APPROVED SUBMITTAL. FOR ELEMENTS TO BE CAST IN PLACE, ALL CONCRETE SHALL BE CALTRANS CLASS 2 WITH 25% FLYASH.

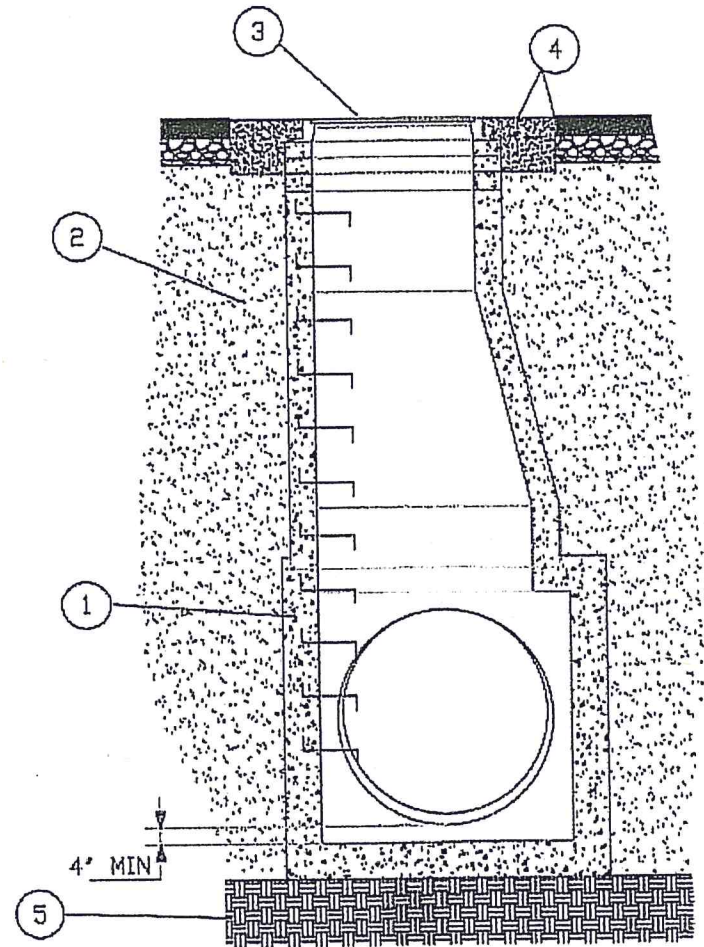
2. TRENCH BACKFILL COMPACTED TO 95% OF MAXIMUM DENSITY MAY BE USED FOR FOUNDATIONS IN SHOULDER AREAS AND WHERE ALUMINUM STRUCTURES ARE PRESENT. WHERE SPACE WILL NOT ALLOW STANDARD COMPACTION EQUIPMENT TO OPERATE, THE TRENCH SHALL BE FILLED WITH A 1-SACK SLURRY CEMENT BACKFILL PER CALTRANS STANDARD SPECIFICATIONS, SECTION 19.

3. MANHOLE FRAME AND COVER SHALL BE 24" AND SET 1/8" BELOW STREET GRADE OVER A SERIES OF RINGS FOR LATER ADJUSTMENT.

4. A CONCRETE COLLAR SHALL BE PROVIDED ALSO BELOW STREET GRADE TO ENCIRCLE THE MANHOLE FRAME. IT SHALL BE 1' DEEP AND EXTEND 1' BEYOND THE FRAME AND SET 1/8" BELOW STREET GRADE.

5. THE FOUNDATION SHALL BE 3/4" WASHED CRUSHED ROCK AND AT LEAST 1' THICK.

6. FOR PIPE CONNECTIONS, REFER TO STANDARD 3-115.



ELEVATION

COUNTY OF SANTA BARBARA, CA - DEPARTMENT OF PUBLIC WORKS - TRANSPORTATION

APPROVED BY:

3-080

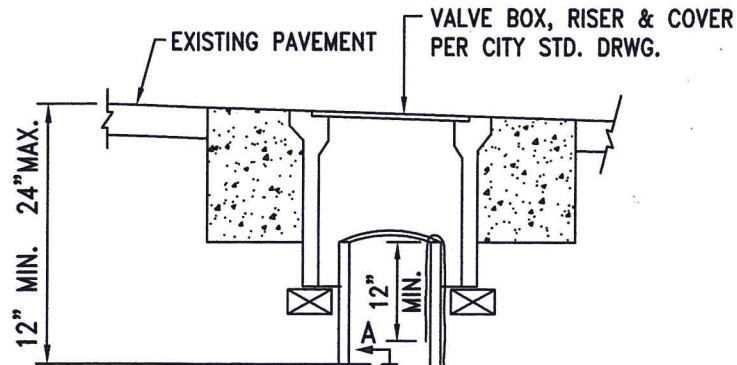
STORM DRAIN MANHOLE

REVISION BOX

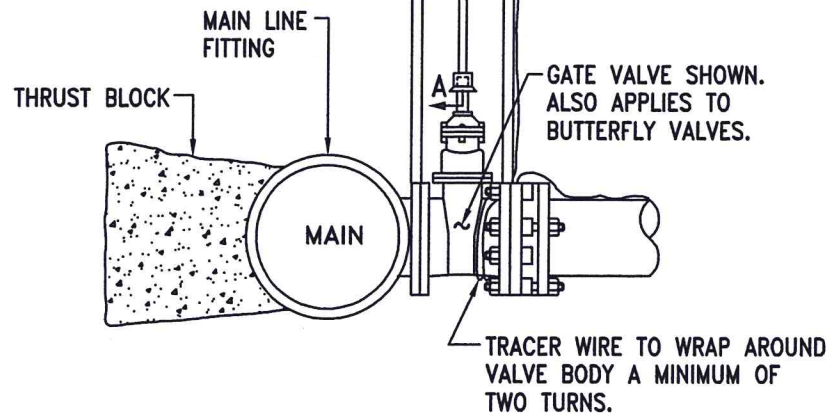
DIRECTOR OF PUBLIC WORKS

DATE

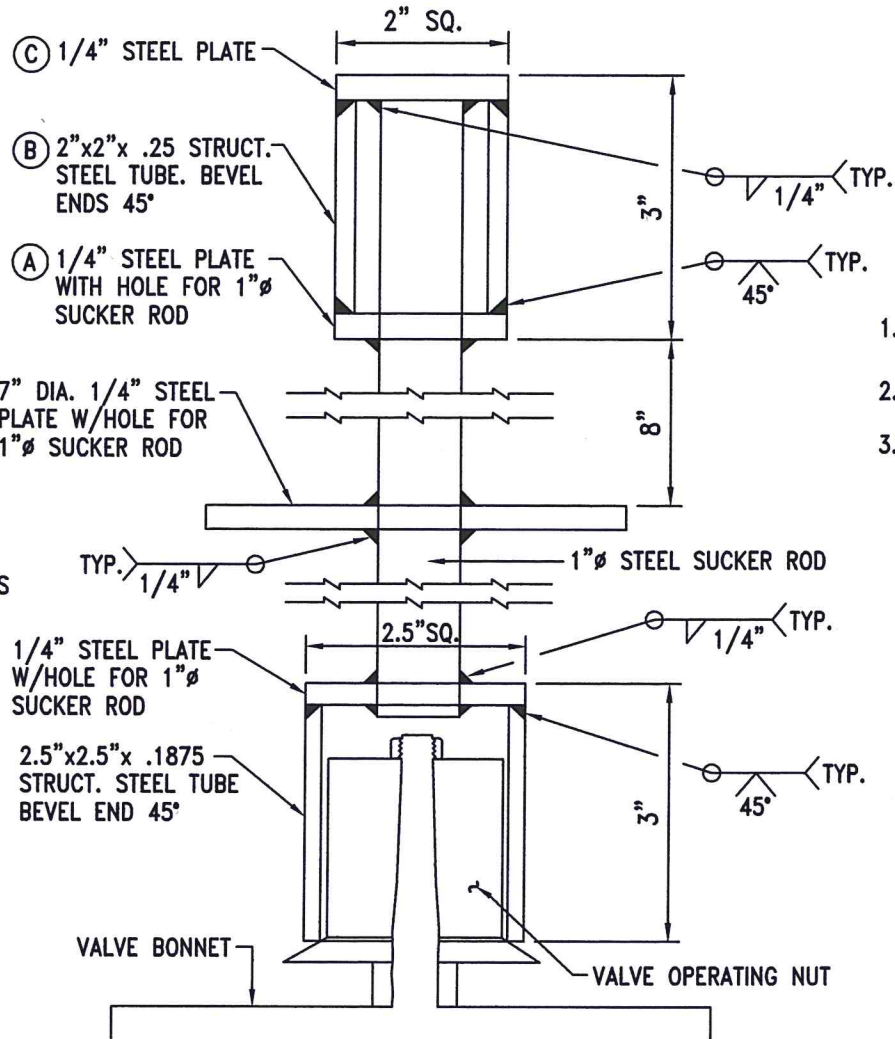
[Signature] 1/6/2011



NOTE: ALL VALVES SHALL HAVE A TWO INCH (2") OPERATING NUT. IF THE OPERATING NUT IS OVER FORTY-EIGHT (48") BENEATH FINISH GRADE, A VALVE STEM EXTENSION SHALL BE REQUIRED.



SECTIONAL ELEVATION



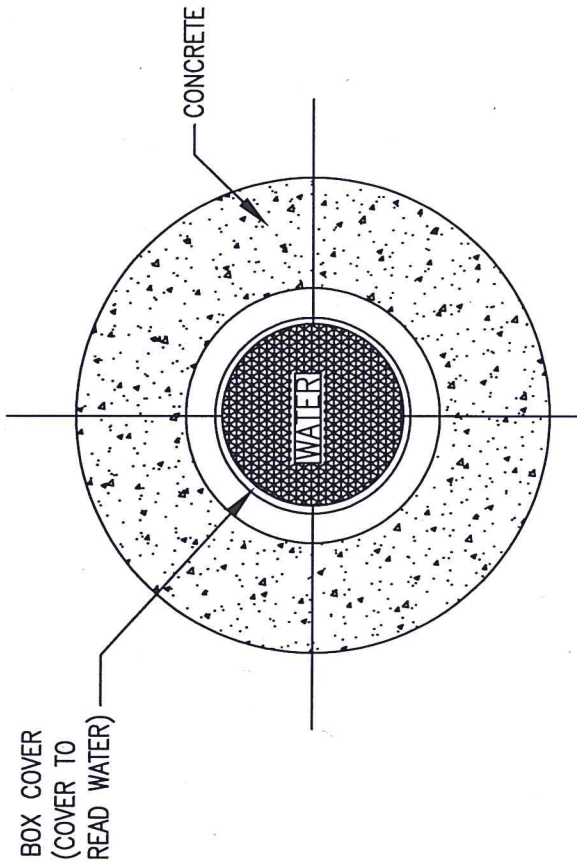
- TOP ASSEMBLY ORDER OF FABRICATION**
1. SLIP (A) AND (B) OVER 1" SUCKER ROD.
 2. WELD (C) TO 1" SUCKER ROD.
 3. MOVE (A) AND (B) UP TO (C) AND COMPLETE WELDS INDICATED.

NOTE: AFTER FABRICATION COAT ENTIRE ASSEMBLY WITH TWO COATS RUSTOLEUM PRIMER.

SECTION A-A
N.T.S.

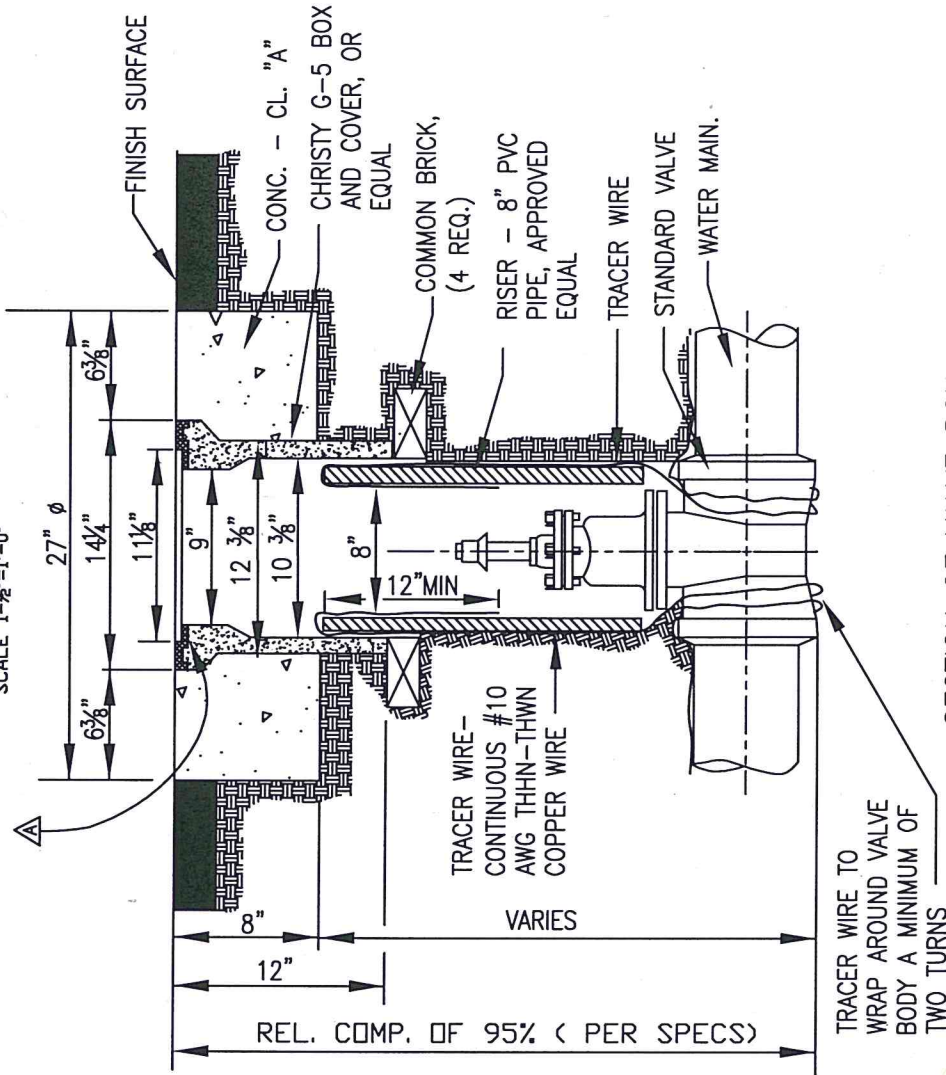
RICHARD G. SWEET R.C.E. 44,213 EXP. 6/30/07 REVISIONS		7/18/05 DATE	City of Santa Maria Standard Drawing	
		BY APP DATE	DESCRIPTION: VALVE STEM EXTENSION	
			STANDARD NUMBER B-367	
DRAWN BY: MK		DATE DRAWN: 1/81	SCALE: NONE	
				SHEET 1 OF 1





PLAN OF VALVE BOX

SCALE 1-1/2"=1'-0"



SECTION OF VALVE BOX

SCALE 1-1/2"=1'-0"

NOTE 1
 IF OPERATING NUT IS OVER 48" BELOW FINISH GRADE, A 1" DIAMETER STEEL EXTENSION SHAFT SHALL BE PROVIDED AND INSTALLED. SEE STD. SPEC. FOR WATER MAINS AND MATERIALS AND STD. DWG. FOR VALVE STEM EXTENSION.

▲ INSTALL RAP-O MANHOLE COVER CUSHION AROUND BOX LID BY MUNICIPAL SERVICES INC.; 420 BOSTON TURNPIKE; SHREWSBURY MASS.; 01545 OR APPROVED EQUAL.

RICHARD C. SWEET R.C.E. 44,213 EXP. 6/30/07		11/22/04		City of Santa Maria	
REVISIONS		BY	APP	DATE	Standard Drawing
▲	REVISION INDICATED	MK		8/06	DESCRIPTION: VALVE BOX & RISER
DRAWN BY: R.L.B.				DATE DRAWN: 11/66	SCALE: NONE
					STANDARD NUMBER WA-21A
					SHEET 1 OF 1

WA-21A
 R.L.B.