CONTRACT

32508

THIS CONTRACT is made and entered, in duplicate, as of March 7, 2012 for reference purposes only, pursuant to a minute order adopted by the City Council of the City of Long Beach at its meeting held on March 6, 2012, by and between ARB, INC., a California corporation ("Contractor"), whose address is 26000 Commercentre Drive, Lake Forest, California 92630, and the CITY OF LONG BEACH, a municipal corporation ("City").

WHEREAS, pursuant to a "Notice Inviting Bids for Remediation and Relocation of Natural Gas Pipelines and Facilities in the City of Long Beach, California," dated December 20, 2011, and published by City, bids were received, publicly opened and declared on the date specified in said Notice; and

WHEREAS, the City Manager accepted the bid of Contractor; and

WHEREAS, the City Council authorized the City Manager to enter a contract with Contractor for the work described in Project Specifications No. G-291;

NOW, THEREFORE, in consideration of the mutual terms and conditions herein, the parties agree as follows:

1. SCOPE OF WORK. Contractor shall furnish all necessary labor, supervision, tools, materials, supplies, appliances, equipment and transportation for the work described in "Project Specifications No. G-291 for Remediation and Relocation of Natural Gas Pipelines and Facilities in the City of Long Beach, California," said work to be performed according to the Contract Documents identified below. However, this Contract is intended to provide to City complete and finished work and, to that end, Contractor shall do everything necessary to complete the work, whether or not specifically described in the Contract Documents.

2. PRICE AND PAYMENT.

A. City shall pay to Contractor the amount(s) for materials and work identified in Contractor's "Bid for Remediation and Relocation of Natural Gas

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

Pipelines and Facilities in the City of Long Beach, California," attached hereto as Exhibit "A".

B. Contractor shall submit requests for progress payments and City will make payments in due course of payments in accordance with Section 9 of the Standard Specifications for Public Works Construction (latest edition).

3. CONTRACT DOCUMENTS.

A. The Contract Documents include: The Notice Inviting Bids, Project Specifications No. G-291 (which may include by reference the Standard Specifications for Public Works Construction, latest edition, and any supplements thereto, collectively the "Standard Specifications"); the City of Long Beach Standard Plans; the California Code of Regulations; the various Uniform Codes applicable to trades; the prevailing wage rates; Instructions to Bidders; the Bid; the bid security; the City of Long Beach Disadvantaged, Minority and Women-Owned Business Enterprise Program; this Contract and all documents attached hereto or referenced herein including but not limited to insurance; Bond for Faithful Performance; Payment Bond; Notice to Proceed; Notice of Completion; any addenda or change orders issued in accordance with the Standard Specifications; any permits required and issued for the work; approved final design drawings and documents; and the Information Sheet. These Contract Documents are incorporated herein by the above reference and form a part of this Contract.

B. Notwithstanding Section 2-5.2 of the Standard Specifications, if any conflict or inconsistency exists or develops among or between Contract Documents, the following priority shall govern: 1) Permit(s) from other public agencies; 2) Change Orders; 3) this Contract (including any and all amendments hereto); 4) Addenda (which shall include written clarifications, corrections and changes to the bid documents and other types of written notices issued prior to bid opening; 5) Project Specifications; 6) Project Plans (including drawings); 7) the City of Long Beach Standard Plans; 8) Standard Specifications (as identified in

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

Section 3.A. hereof, the "Greenbook"); 9) other reference specifications; 10) other reference plans; 11) the bid; and 12) the Notice Inviting Bids.

4. TIME FOR CONTRACT. Contractor shall commence work on a date to be specified in a written "Notice to Proceed" from City and shall complete all work prior to December 31, 2012, subject to strikes, lockouts and events beyond the control of Contractor. Time is of the essence hereunder. City will suffer damage if the work is not completed within the time stated, but those damages would be difficult or impractical to determine. So, Contractor shall pay to City, as liquidated damages, the amount stated in the Contract Documents.

5. ACCEPTANCE OF WORK NOT TO CONSTITUTE A WAIVER. The acceptance of any work or the payment of any money by City shall not operate as a waiver of any provision of any Contract Document, of any power reserved to City, or of any right to damages or indemnity hereunder. The waiver of any breach or any default hereunder shall not be deemed a waiver of any other or subsequent breach or default.

6. WORKERS' COMPENSATION CERTIFICATION. Concurrently herewith, Contractor shall submit certification of Workers' Compensation coverage in accordance with California Labor Code Sections 1860 and 3700, a copy of which is attached hereto as Exhibit "B".

7. CLAIMS FOR EXTRA WORK. No claim shall be made at any time upon City by Contractor for and on account of any extra or additional work performed or materials furnished, unless such extra or additional work or materials shall have been expressly required by the City Manager and the quantities and price thereof shall have been first agreed upon, in writing, by the parties hereto.

8. CLAIMS. Contractor shall, upon completion of the work, deliver possession thereof to City ready for use and free and discharged from all claims for labor and materials in doing the work and shall assume and be responsible for, and shall protect, defend, indemnify and hold harmless City from and against any and all claims, demands, causes of action, liability, loss, costs or expenses for injuries to or death of

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

B. If Contractor is prevented, in any manner, from strict compliance with the Plans and Specifications due to any Federal or State law, rule or regulation, in addition to all other rights and remedies reserved to the parties City may by resolution of the City Council suspend performance hereunder until the cause of disability is removed, extend the time for performance, make changes in the character of the work or materials, or terminate this Contract without liability to either party.

13. NOTICES.

A. Any notice required hereunder shall be in writing and personally delivered or deposited in the U.S. Postal Service, first class, postage prepaid, to Contractor at the address first stated herein, and to the City at 333 West Ocean Boulevard, Long Beach, California 90802, Attn: City Manager. Notice of change of address shall be given in the same manner as stated herein for other notices. Notice shall be deemed given on the date deposited in the mail or on the date personal delivery is made, whichever first occurs.

B. Except for stop notices and claims made under the Labor Code, City will notify Contractor when City receives any third party claims relating to this Contract in accordance with Section 9201 of the Public Contract Code.

14. BONDS. Contractor shall, simultaneously with the execution of this Contract, execute and deliver to City a good and sufficient corporate surety bond, in the form attached hereto and in the amount specified therein, conditioned upon the faithful performance of this Contract by Contractor, and a good and sufficient corporate surety bond, in the form attached hereto and in the amount specified therein, conditioned upon the payment of all labor and material claims incurred in connection with this Contract.

15. COVENANT AGAINST ASSIGNMENT. Neither this Contract nor any of the moneys that may become due Contractor hereunder may be assigned by Contractor without the written consent of City first had and obtained, nor will City recognize any subcontractor as such, and all persons engaged in the work of

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

construction will be considered as independent contractors or agents of Contractor and will be held directly responsible to Contractor.

16. CERTIFIED PAYROLL RECORDS.

A. Contractor shall keep and shall cause each subcontractor performing any portion of the work under this Contract to keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by Contractor or subcontractor in connection with the work, all in accordance with Division 2, Part 7, Article 2 of the California Labor Code. Such payroll records for Contractor and all subcontractors shall be certified and shall be available for inspection at all reasonable hours at the principal office of Contractor pursuant to the provisions of Section 1776 of the Labor Code. Contractor's failure to furnish such records to City in the manner provided herein for notices shall entitle City to withhold the penalty prescribed by law from progress payments due to Contractor.

B. Upon completion of the work, Contractor shall submit to the City certified payroll records for Contractor and all subcontractors performing any portion of the work under this Contract. Certified payroll records for Contractor and all subcontractors shall be maintained during the course of the work and shall be kept by Contractor for up to three (3) years after completion of the work.

C. The foregoing is in addition to, and not in lieu of, any other requirements or obligations established and imposed by any department of the City with regard to submission and retention of certified payroll records for Contractor and subcontractors.

17. RESPONSIBILITY OF CONTRACTOR. Notwithstanding anything to the contrary in the Standard Specifications, Contractor shall have the responsibility, care and custody of the work. If any loss or damage occurs to the work that is not covered by

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

collectible commercial insurance, excluding loss or damage caused by earthquake or flood or the negligence or willful misconduct of City, then Contractor shall immediately make the City whole for any such loss or pay for any damage. If Contractor fails or refuses to make the City whole or pay, then City may do so and the cost and expense of doing so shall be deducted from the amount due Contractor from City hereunder.

18. CONTINUATION. Termination or expiration of this Contract shall not terminate the rights or liabilities of either party which rights or liabilities accrued or existed prior to termination or expiration of this Contract.

19. TAXES AND TAX REPORTING.

A. As required by federal and state law, City is obligated to and will report the payment of compensation to Contractor on Form 1099-Misc. Contractor shall be solely responsible for payment of all federal and state taxes resulting from payments under this Contract. Contractor shall submit Contractor's Employer Identification Number (EIN), or Contractor's Social Security Number if Contractor does not have an EIN, in writing to City's Accounts Payable, Department of Financial Management. Contractor acknowledges and agrees that City has no obligation to pay Contractor until Contractor provides one of these numbers.

B. Contractor shall cooperate with City in all matters relating to taxation and the collection of taxes, particularly with respect to the self-accrual of use tax. Contractor shall cooperate as follows: (i) for all leases and purchases of materials, equipment, supplies, or other tangible personal property totaling over $100,000 shipped from outside California, a qualified Contractor shall complete and submit to the appropriate governmental entity the form in Appendix "A" attached hereto; and (ii) for construction contracts and subcontracts totaling $5,000,000 or more, Contractor shall obtain a sub-permit from the California Board of Equalization for the Work site. "Qualified" means that the Contractor purchased at least $500,000 in tangible personal property that was subject to sales or use tax

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

persons, or damages to property, including property of City, which arises from or is connected with the performance of the work.

9. INSURANCE. Prior to commencement of work, and as a condition precedent to the effectiveness of this Contract, Contractor shall provide to City evidence of all insurance required in the Contract Documents.

In addition, Contractor shall complete and deliver to City the form ("Information Sheet") attached as Exhibit "C" and incorporated by reference, to comply with Labor Code Section 2810.

10. WORK DAY. Contractor shall comply with Sections 1810 through 1815 of the California Labor Code regarding hours of work. Contractor shall forfeit, as a penalty to City, the sum of Twenty-five Dollars ($25) for each worker employed by Contractor or any subcontractor for each calendar day such worker is required or permitted to work more than eight (8) hours unless that worker receives compensation in accordance with Section 1815.

11. PREVAILING WAGE RATES. Contractor is directed to the prevailing wage rates. Contractor shall forfeit, as a penalty to the City, Two Hundred Dollars ($200) for each laborer, worker or mechanic employed for each calendar day, or portion thereof, that such laborer, worker or mechanic is paid less than the prevailing wage rates for any work done by Contractor, or any subcontractor, under this Contract.

12. COORDINATION WITH GOVERNMENTAL REGULATIONS.

A. If the work is terminated pursuant to an order of any Federal or State authority, Contractor shall accept as full and complete compensation under this Contract such amount of money as will equal the product of multiplying the Contract price stated herein by the percentage of work completed by Contractor as of the date of such termination, and for which Contractor has not been paid. If the work is so terminated, the City Engineer, after consultation with Contractor, shall determine the percentage of work completed and the determination of the City Engineer shall be final.

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

in the previous calendar year.

C. Contractor shall create and operate a buying company, as defined in State of California Board of Equalization Regulation 1699, subpart (h), in City if Contractor will purchase over $10,000 in tangible personal property subject to California sales and use tax.

D. In completing the form and obtaining the permit(s), Contractor shall use the address of the Work site as its business address and may use any address for its mailing address. Copies of the form and permit(s) shall also be delivered to the City Engineer. The form must be submitted and the permit(s) obtained as soon as Contractor receives a Notice to Proceed. Contractor shall not order any materials or equipment over $100,000 from vendors outside California until the form is submitted and the permit(s) obtained and, if Contractor does so, it shall be a material breach of this Contract. In addition, Contractor shall make all purchases from the Long Beach sales office of its vendors if those vendors have a Long Beach office and all purchases made by Contractor under this Contract which are subject to use tax of $500,000 or more shall be allocated to the City of Long Beach. Contractor shall require the same cooperation with City, with regards to subsections B, C and D under this section (including forms and permits), from its subcontractors and any other subcontractors who work directly or indirectly under the overall authority of this Contract.

E. Contractor shall not be entitled to and by signing this Contract waives any claim or damages for delay against City if Contractor does not timely submit these forms to the appropriate governmental entity. Contractor may contact the City Controller at (562) 570-6450 for assistance with the form.

20. ADVERTISING. Contractor shall not use the name of City, its officials or employees in any advertising or solicitation for business, nor as a reference, without the prior approval of the City Manager, City Engineer or designee.

21. AUDIT. If payment of any part of the consideration for this Contract

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

is made with federal, state or county funds and a condition to the use of those funds by City is a requirement that City render an accounting or otherwise account for said funds, then City shall have the right at all reasonable times to examine, audit, inspect, review, extract information from, and copy all books, records, accounts and other information relating to this Contract.

22. NO PECULIAR RISK. Contractor acknowledges and agrees that the work to be performed hereunder does not constitute a peculiar risk of bodily harm and that no special precautions are required to perform said work.

23. THIRD PARTY BENEFICIARY. This Contract is intended by the parties to benefit themselves only and is not in any way intended or designed to or entered for the purpose of creating any benefit or right of any kind for any person or entity that is not a party to this Contract.

24. SUBCONTRACTORS. Contractor agrees to and shall bind every subcontractor to the terms of this Contract; provided, however, that nothing herein shall create any obligation on the part of City to pay any subcontractor except in accordance with a court order in an action to foreclose a stop notice. Failure of Contractor to comply with this Section shall be deemed a material breach of this Contract. A list of subcontractor(s) submitted by Contractor in compliance with Public Contract Code Sections 4100 et seq. is attached hereto as Exhibit "D" and incorporated herein by this reference.

25. NO DUTY TO INSPECT. No language in this Contract shall create and City shall not have any duty to inspect, correct, warn of or investigate any condition arising from Contractor's work hereunder, or to insure compliance with laws, rules or regulations relating to said work. If City does inspect or investigate, the results thereof shall not be deemed compliance with or a waiver of any requirements of the Contract Documents.

26. GOVERNING LAW. This Contract shall be governed by and construed pursuant to the laws of the State of California (except those provisions of

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

California law pertaining to conflicts of laws).

27. INTEGRATION. This Contract, including the Contract Documents identified in Section 3 hereof, constitutes the entire understanding between the parties and supersedes all other agreements, oral or written, with respect to the subject matter herein.

28. COSTS. If there is any legal proceeding between the parties to enforce or interpret this Contract or to protect or establish any rights or remedies hereunder, the prevailing party shall be entitled to its costs, including reasonable attorney's fees.

29. NONDISCRIMINATION. In connection with performance of this Contract and subject to federal laws, rules and regulations, Contractor shall not discriminate in employment or in the performance of this Contract on the basis of race, religion, national origin, color, age, sex, sexual orientation, gender identity, AIDS, HIV status, handicap or disability. It is the policy of the City to encourage the participation of Disadvantaged, Minority and Women-Owned Business Enterprises, and the City encourages Contractor to use its best efforts to carry out this policy in the award of all subcontracts.

30. EQUAL BENEFITS ORDINANCE. Unless otherwise exempted in accordance with the provisions of the Ordinance, this Contract is subject to the applicable provisions of the Equal Benefits Ordinance ("EBO"), section 2.73 et seq. of the Long Beach Municipal Code, as amended from time to time.

A. During the performance of this Contract, the Contractor certifies and represents that the Contractor will comply with the EBO. The Contractor agrees to post the following statement in conspicuous places at its place of business available to employees and applicants for employment:

"During the performance of a Contract with the City of Long Beach, the Contractor will provide equal benefits to employees with spouses and its employees with domestic partners. Additional information about the City of

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

Long Beach's Equal Benefits Ordinance may be obtained from the City of Long Beach Business Services Division at 562-570-6200."

B. The failure of the Contractor to comply with the EBO will be deemed to be a material breach of the Contract by the City.

C. If the Contractor fails to comply with the EBO, the City may cancel, terminate or suspend the Contract, in whole or in part, and monies due or to become due under the Contract may be retained by the City. The City may also pursue any and all other remedies at law or in equity for any breach.

D. Failure to comply with the EBO may be used as evidence against the Contractor in actions taken pursuant to the provisions of Long Beach Municipal Code 2.93 et seq., Contractor Responsibility.

E. If the City determines that the Contractor has set up or used its contracting entity for the purpose of evading the intent of the EBO, the City may terminate the Contract on behalf of the City. Violation of this provision may be used as evidence against the Contractor in actions taken pursuant to the provisions of Long Beach Municipal Code section 2.93 et seq., Contractor Responsibility.

31. DEFAULT. Default shall include but not be limited to Contractor's failure to perform in accordance with the Plans and Specifications, failure to comply with any Contract Document, failure to pay any penalties, fines or charges assessed against Contractor by any public agency, failure to pay any charges or fees for services performed by the City, and if Contractor has substituted any security in lieu of retention, then default shall also include City's receipt of a stop notice. If default occurs and Contractor has substituted any security in lieu of retention, then in addition to City's other legal remedies, City shall have the right to draw on the security in accordance with Public Contract Code Section 22300 and without further notice to Contractor. If default occurs and Contractor has not substituted any security in lieu of retention, then City shall have all legal remedies available to it.

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

IN WITNESS WHEREOF, the parties have caused this document to be duly executed with all formalities required by law as of the date first stated above.

ARB, INC., a California corporation

March 5, 2012

By _____
President

SCOTT E. SUMMERS
Type or Print Name

March 5, 2012

By _____
Secretary

John M. Perisich
Type or Print Name

"Contractor"

CITY OF LONG BEACH, a municipal corporation

3.29, 2012

By _____
Assistant City Manager
City Manager

EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER.

"City"

This Contract is approved as to form on March 12, 2012.

ROBERT E. SHANNON, City Attorney

By _____
Deputy

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

EXHIBIT "A"

Contractor's Bid

BID
FOR THE REMEDIATION and RELOCATION OF
NATURAL GAS PIPELINES and FACILITIES

FOR LONG BEACH GAS AND OIL
LONG BEACH, CALIFORNIA
REVISED 12/30/2011

In accordance with the Notice Inviting Bids for the above titled work for the City of Long Beach, California, a copy of which is attached hereto and is made a part hereof, to be opened on Wednesday, January 11, 2011 at 2:00 p.m., we propose to furnish all necessary labor, tools, appliances, equipment and engineering services for and perform all work mentioned in said Notice Inviting Bids, in full compliance with the Plans and Specification No. G-291 at the following prices:

DESCRIPTION	UNIT	ITEM TOTAL
WO.11-0034 – PIER D ST – INSTALL& ABANDON	LS	$.143,595.00.....
T-14298 – POLB – PIER D ST – PIPE REMOVAL	LS	$.328,930.00.....
WO.9831 – PICO AVE	LS	$.555,100.00.....
WO.9831 – POTHOLING	LS	$...28,500.00.....
WO.11-0016 – BROADWAY – INSTALL & ABANDON	LS	$.268,058.00.....
WO.11-0016 – 16" PC INCL. TAP/STOP	LS	$...33,670.00.....
WO.11-0016 – POTHOLING	LS	$...14,390.00.....
T-14299 – POLB – BROADWAY – PIPE REMOVAL	LS	$.340,442.00.....
WO.11-0027 – MIDDLE HARBOR – INSTALL & ABANDON	LS	$.508,860.00.....
WO.11-0027 – 14" PC INCL. TAP/STOP	LS	$...32,050.00.....
WO.11-0027 – 16" PC INCL. TAP/STOP	LS	$...33,670.00.....
WO.11-0027 – POTHOLING	LS	$...10,000.00.....
T-14300 – POLB – PIER D/E 12" REMOVE & SALVAGE	LS	$.427,288.00.....
T-14295 – PIPE REMOVAL - PIER D, E & F – POLB	LS	$.678,620.00.....

DESCRIPTION	UNIT	ITEM TOTAL
T-14301 – PIPE REMOVAL - PIER F AVENUE – POLB	LS	$...22,186.00....
WO.11-0044 – VAULTS – ANAHEIM STREET	LS	$.225,767.00.....
WO.11-0045 – VAULTS – OREGON AVENUE	LS	$.228,380.00.....
WO.11-0045 – (2) 16" PC INCL. TAP/STOP	LS	$...67,340.00.....
WO.11-0045 – 20" PC INCL. TAP/STOP	LS	$...49,058.00.....

NAME OF BIDDER ARB, Inc.

BUSINESS ADDRESS 26000 Commercentre Drive

CITY AND ZIP CODE Lake Forest, CA 92630

TELEPHONE 949.598.9242

EXHIBIT B

WORKERS' COMPENSATION CERTIFICATION

In accordance with California Labor Code Sections 1860 and 3700, I certify that I am aware of the provisions of Section 3700 which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with said provisions before commencing the performance of the Work of this contract.

Contractor's Name:

ARB, Inc.

Signature of Contractor, or a corporate officer of Contractor, or a general partner of Contractor

Earl Eldridge

Title: Vice President

Date: January 11, 2012

EXHIBIT C

INFORMATION TO COMPLY WITH LABOR CODE SEC. 2810

To comply with Labor Code Sec. 2810, Contractor shall complete and submit this Information Sheet which shall be incorporated into and be a part of the Contract:

1) Workers' Compensation Insurance:

   A. Policy Number: XWC0898907 CA

   B. Name of Insurer (**NOT** Broker) National Union Fire Ins Co of Pittsburgh PA

   C. Address of Insurer: 175 Water Street 18th Floor, New York City NY 10038

   D. Telephone Number of Insurer: (212)458-7000

2) For vehicles owned by Contractor and used in performing work under this Contract:

   A. VIN (Vehicle Identification Number): Multiple VINs - TBD

   B. Automobile Liability Insurance Policy Number: CA0948575

   C. Name of Insurer (**NOT** Broker) National Union Fire Ins Co of Pittsburgh PA

   D. Address of Insurer: 175 Water Street 18th Floor, New York City NY 10038

   E. Telephone Number of Insurer: (212)458-7000

3) Address of Property used to house workers on this Contract, if any:

   None

4) Estimated total number of workers to be employed on this Contract: 15

5) Estimated total wages to be paid those workers: $1,300,000

6) Dates (or schedule) when those wages will be paid:

   Weekly

   (Describe schedule: For example, weekly or every other week or monthly)

7) Estimated total number of independent contractors to be used on this Contract:

   3

8) Taxpayer's Identification Number: [redacted]

EXHIBIT D

LIST OF SUBCONTRACTORS

ARB, Inc.

In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" Division 2 Part 1, Chapter 4 of the California Public Contract Code, the Bidder shall set forth hereon the name and location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor's total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor's total bid or ten thousand dollars ($10,000), whichever is greater. The prime contractor shall set forth thereon the portion of the work (type and dollar value) that will be done by each subcontractor. The prime contractor shall list only one subcontractor for each portion as defined by the prime contractor in his or her bid. Information requested, other than the sub contractor's name and location of business and the portion of work that will be done by each subcontractor may be submitted by the prime contractor within 24 hours after the deadline for submission of bids.

Name	Keep It Moving	Type of Work	Trucking and Materials
Address	6709 La Tijera Blvd # 139		
City	Los Angeles	Dollar Value of Subcontract	$230,000.00
Phone No.	213.216.1443		
License No.			

Name	Koppl Pipeline Services	Type of Work	Taps and Stops
Address	1228 West Date Street		Gas Handling
City	Montebello	Dollar Value of Subcontract	$142,000.00
Phone No.	323.888.2211		
License No.	844802		

Name	Miller Environmental, Inc.	Type of Work	Asbestos Abatement
Address	2210 South Dupont Drive		
City	Anaheim	Dollar Value of Subcontract	$ 42,000.00
Phone No.	714.385.0099		
License No.	772797		

Name	Alenco	Type of Work	Mud Jacking
Address	2109 Gundry Avenue		
City	Signal Hill	Dollar Value of Subcontract	$ 16,000.00
Phone No.			
License No.	704111		

Name	Allstate Boring	Type of Work	Directional Boring
Address	7553 Jenica Road		
City	Bakersfield	Dollar Value of Subcontract	$ 12,725.00
Phone No.	661.399.5000		
License No.	872946		

BID NO: G-291
BOND NO: 8161-61-67/92954280 0

BOND FOR FAITHFUL PERFORMANCE Premium: $24,389.00

KNOW ALL MEN BY THESE PRESENTS: That we, ARB, Inc.
as PRINCIPAL, and Federal Insurance Company & Western Surety Company, located at
(*)see bottom of page, a corporation, incorporated under the laws of the State of IN & SD, admitted as a surety in the State of California and authorized to transact business in the State of California, as SURETY, are held and firmly bound unto the CITY OF LONG BEACH, CALIFORNIA, a municipal corporation, in the sum of Three Million Nine Hundred Ninety-Five Thousand Nine Hundred Four & 00/100 DOLLARS ($ 3,995,904.00) lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves, our respective heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, said Principal has been awarded and is about to enter the annexed contract (incorporated herein by this reference) with said City of Long Beach for the LBGO Specification G-291-Remediation & Relocation of Natural Gas Pipelines and Facilities and is required by said City to give this bond in connection with the execution of said contract;

NOW, THEREFORE, if said Principal shall well and truly keep and faithfully perform all of the covenants, conditions, agreements and obligations of said contract on said Principal's part to be kept, done and performed, at the times and in the manner specified therein, then this obligation shall be null and void, otherwise it shall be and remain in full force and effect;

PROVIDED, that any modifications, alterations, or changes which may be made in said contract, or in the work to be done, or in the services to be rendered, or in any materials or articles to be furnished pursuant to said contract, or the giving by the City of any extension of time for the performance of said contract, or the giving of any other forbearance upon the part of either the City or the Principal to the other, shall not in any way release the Principal or the Surety, or either of them, or their respective heirs, administrators, executors, successors or assigns, from any liability arising hereunder, and notice to the Surety of any such modifications, alterations, changes, extensions or forbearances is hereby waived. No premature payment by said City to said Principal shall release or exonerate the Surety, unless the officer of said City ordering the payment shall have actual notice at the time the order is made that such payment is in fact premature, and then only to the extent that such payment shall result in actual loss to the Surety, but in no event in an amount more than the amount of such premature payment.

IN WITNESS WHEREOF, the above named Principal and Surety have executed, or caused to be executed, this instrument with all of the formalities required by law on this 30th day of January, 2012.

ARB, Inc.
CONTRACTOR / PRINCIPAL

By: Gregory S. Dahl
Name: Gregory S. Dahl
Title: Vice President

By:
Name: John M. Perisich
Title: Sr. VP, Secretary, Treasurer

Federal Insurance Company and Western Surety Company
Co- SURETY

By: Debbie L. Welsh
Name: Debbie L. Welsh
Title: Attorney-in-Fact
Telephone: 415-892-1080

Approved as to form this 14 day of February, 2012
ROBERT E. SHANNON, City Attorney
By: Deputy

EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER.

Approved as to sufficiency this 29th day of March, 2012
By: Assistant City Manager
City Manager ~~/ City Engineer~~

NOTE: 1. Execution of this bond must be acknowledged by both PRINCIPAL and SURETY before a Notary Public and a Notary's certificate of acknowledgment must be attached.
2. A corporation must execute the bond by 2 authorized officers and, if executed by a person not listed in Sec. 313, Calif. Corp. Code, then a certified copy of a resolution of its Board of Directors authorizing execution must be attached.

DFG:mb(12-18-01)
BONDFAITHFUL.3-02

(*)Federal Insurance Company
2603 Camino Ramon, Suite 300
San Ramon, CA 94583-9136

Western Surety Company
555 Mission St., Suite 200
San Francisco, CA 94105

Bond #8161-61-67/929542800

Premium: Included

LABOR AND MATERIAL BOND

KNOW ALL MEN BY THESE PRESENTS: That we, ARB, Inc., as PRINCIPAL, and Federal Insurance Company & Western Surety Company, located at (*) see bottom of page, a corporation, incorporated under the laws of the State of IN & SD, admitted as a surety in the State of California, and authorized to transact business in the State of California, as SURETY, are held and firmly bound unto the **CITY OF LONG BEACH, CALIFORNIA**, a municipal corporation, in the sum of Three Million Nine Hundred Ninety-Five Thousand Nine Hundred Four & 00/100 DOLLARS ($ (*)), lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves, our respective heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

(*) $3,995,904.00

THE CONDITION OF THIS OBLIGATION IS SUCH THAT:

WHEREAS, said Principal has been awarded and is about to enter the annexed contract (incorporated herein by this reference) with said City of Long Beach for the LBGO Specification G-291-Remediation & Relocation of Natural Gas Pipelines and Facilities and is required by law and by said City to give this bond in connection with the execution of said contract;

NOW, THEREFORE, if said Principal, as Contractor of said contract, or any subcontractor of said Principal, fails to pay for any materials, provisions, equipment, or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Act, during the original term of said contract and any extensions thereof, and during the life of any guaranty required under the contract, or shall fail to pay for any materials, provisions, equipment, or other supplies, used in, upon, for or about the performance of the work to be done under any authorized modifications of said contract that may hereafter be made, or for any work or labor done of any kind, or for amounts due under the Unemployment Insurance Act, under said modification, said Surety will pay the same in an amount not exceeding the sum of money hereinabove specified and, in case suit is brought upon this bond, a reasonable attorney's fee, to be fixed by the court; otherwise this obligation shall be void;

PROVIDED, that any modifications, alterations, or changes which may be made in said contract, or in any of the work or labor required to be done thereunder, or in any of the materials, provisions, equipment, or other supplies required to be furnished pursuant to said contract, or the giving by the City of any extension of time for the performance of said contract, or the giving of any other forbearance upon the part of either the City or the Principal to the other, shall not in any way release the Principal or the Surety, or either of them, or their respective heirs, administrators, executors, successors or assigns, from any liability arising hereunder, and notice to the Surety of any such modifications, alterations, changes, extensions or forbearances is hereby waived. No premature payment by said City to said Principal shall release or exonerate the Surety, unless the officer of the City ordering the payment shall have actual notice at the time the order is made that the payment is in fact premature, and then only to the extent that such payment shall result in actual loss to the Surety, but in no event in an amount more than the amount of such premature payment.

This bond shall inure to the benefit of any and all persons, companies and corporations entitled by law to file claims so as to give a right of action to them or their assigns in any suit brought upon this bond.

IN WITNESS WHEREOF, the above named Principal and Surety have executed, or caused to be executed, this instrument with all of the formalities required by law on this 30th day of January, ~~2006~~ 2012.

ARB, Inc.
CONTRACTOR/PRINCIPAL

By: _____

Name: Gregory S. Dahl

Title: Vice President

By: _____

Name: John M. Perisich

Title: Sr. VP, Secretary, Treasurer

Federal Insurance Company and Western Surety Company
Co-SURETY, admitted in California

By: _____

Name: Debbie L. Welsh

Title: Attorney-in-Fact

Telephone: 415-892-1080

Approved as to form this 14 day of February, 2012.

ROBERT E. SHANNON, City Attorney

By: _____
~~Senior~~ Deputy

Approved as to sufficiency this 29th day of March, ~~2006~~ 2012.

EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER

By _____
City Manager/~~City Engineer~~ Assistant City Manager

NOTE: 1. Execution the bond must be acknowledged by both PRINCIPAL and SURETY before a Notary Public and a Notary's certificate of acknowledgment must be attached.

2. A corporation must execute the bond by 2 authorized officers and, if executed by a person not listed in Sec. 313, Calif. Corp. Code, then a certified copy of a resolution of its Board of Directors authorizing execution must be atta

DFG:rmb(12-18-01);rev 05/24/04 (H:\AGR\ENG\BONDLABOR.BOI.WPD)
BONDLABOR'BOI.WPD*

(*) Federal Insurance Company
2603 Camino Ramon, Suite 300
San Ramon, CA 94583-9136

Western Surety Company
555 Mission St., Suite 200
San Francisco, CA 94105

(To Be Filled In When Surety Is A Corporation)

BIDDER' S BOND

CITY OF LONG BEACH

KNOW ALL MEN BY THESE PRESENTS: That we, ARB, Inc., as Principal, and Federal Insurance Company, a corporation, organized and existing under and by virtue of the laws of the State of Indiana, with its principal place of business in the City of Warren, State of New Jersey, with a paid up capital of not less than Two Hundred Fifty Thousand Dollars ($250,000.00), incorporated, as aforesaid, for the purpose of making, guaranteeing or becoming a surety upon bonds and undertakings required or authorized by law, and having heretofore complied with all of the requirements of law of the State of California regulating the formation of admission of such corporation to transact business in this State, as Surety, are held firmly bound unto the City of Long Beach, a municipal corporation, organized under the laws of the State of California, and situated in the County of Los Angeles, in the sum of Ten Percent of Bid Amount ----- Dollars ($ 10% of Bid Amount), lawful money of the United States of America, for the payment whereof the Principal and sureties bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of the above obligation is such that:
Remediation & Relocation of Natural Gas Pipelines & Facilities for 2012
Specification G-291

If the bid of said Principal hereto attached shall be accepted by the City of Long Beach and the contract for delivery of goods, material, equipment or supplies, or for the furnishing of services, materials, supplies, labor and performing work, all as specified in the specifications, notice inviting bids and bid, be awarded to the Principal, and if Principal shall enter into a contract therefore with the City of Long Beach within ten (10) days after the contract is delivered to Principal for signature, and Principal shall, in connection with said contract, furnish and deliver to the City of Long Beach a good and sufficient faithful performance bond, if required in the notice inviting bids, and a good and sufficient labor and material (payment) bond, if required in the notice inviting bids, with surety or sureties, then this obligation shall be void; otherwise it shall remain in full force and effect.

ARB, Inc.
Name of Principal - Typed

By: _____
Signature of Principal's Officer - Earl Eldridge
Vice President

Federal Insurance Company
Name of Surety

By: _____
Signature of Surety's Attorney-in-Fact - Debbie L. Welsh

(Principal and Surety Shall Attach Notary's Certificate of Acknowledgement of Execution)

DFG:mlb;4/29/96:BIDDOND.PUR

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California)
)SS.
County of Orange)

On January 30, 2012 (Date) before me, Paula Shimmin, Notary Public (Name and Title of Officer),

personally appeared Gregory S. Dahl and John M. Perisich (Name(s) of Signer(s)),

who proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Paula Shimmin
Signature of Notary Public

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of MARIN

On January 30, 2012 before me, Donna J. Frowd, Notary Public, personally appeared Debbie L. Welsh who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(seal) Signature Donna J. Frowd

APO1 DONNA J. FROWD COMM. #1866131 NOTARY PUBLIC-CALIFORNIA MARIN COUNTY My Comm. Expires October 22, 2013 APO1

Chubb Surety

POWER OF ATTORNEY

Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company

Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint **Donna J. Frowd, Michael Brophy McGowan, Susan J. McGowan, Debbie L. Welsh and Donna L. Welsh of Novato, California** ----------

each as their true and lawful Attorney- in- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY**, and **PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this **23rd** day of **November, 2011.**

Kenneth C. Wendel, Assistant Secretary

David B. Norris, Jr., Vice President

STATE OF NEW JERSEY
County of Somerset ss.

On this **23rd** day of **November, 2011** before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal

KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316685
Commission Expires July 16, 2014

Notary Public

CERTIFICATION

Extract from the By- Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- In- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

(i) the foregoing extract of the By- Laws of the Companies is true and correct,
(ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
(iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 30th day of January, 2012

Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656
e-mail: surety@chubb.com

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Michael Brophy Mc Gowan, Donna L Welsh, Donna J Frowd, Debbie L Welsh, Jessica L Nowlin, Michelle L Sweeney, Individually

of Novato, CA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Senior Vice President and its corporate seal to be hereto affixed on this 17th day of March, 2011.

WESTERN SURETY COMPANY

Paul T. Bruflat, Senior Vice President

State of South Dakota
County of Minnehaha } ss

On this 17th day of March, 2011, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Senior Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
November 30, 2012

D. KRELL
NOTARY PUBLIC
SOUTH DAKOTA

D. Krell, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 30th day of January, 2012.

WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Form F4280-09-06

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

SPECIFICATION FOR THE REMEDIATION and RELOCATION OF NATURAL GAS PIPELINES and FACILITIES FOR 2012

FOR LONG BEACH GAS & OIL DEPARTMENT

LONG BEACH, CALIFORNIA

CITY OF LONG BEACH

Gas & Oil

DEPARTMENT

SPECIFICATION NUMBER G-291

SPECIFICATION FOR THE REMEDIATION and RELOCATION OF NATURAL GAS PIPELINES and FACILITIES

FOR LONG BEACH GAS & OIL DEPARTMENT
LONG BEACH, CALIFORNIA

APPROVED: _____
Manager, Engineering & Construction Bureau

APPROVED: _____
Director, Long Beach Gas & Oil Department

APPROVED AS TO FORM ON: November 17, 2011

ROBERT E. SHANNON, CITY ATTORNEY

BY: _____
Deputy City Attorney

TABLE OF CONTENTS

PRE-BID CONFERENCE 1
DESCRIPTION OF WORK TO BE DONE 1
GENERAL REQUIREMENTS 5
Definitions: 5
Terms 5
Information Provided During the Bid Period: 5
Bonds: 6
Pipeline Construction Regulatory Compliance – Drug and Alcohol Testing: 6
Pipeline Construction Regulatory Compliance – Operator Qualification: 7
Licenses 7
Bids 7
Method of Construction: 7
Examination of Site and Work: 7
Changes Initiated by the Agency: 8
Extra Work: 8
Interpretation of Plans and Specifications: 8
Pre-Construction Conference: 8
Cooperation: 8
Time of Completion: 9
Apprentice Employment 9
Water Pollution Control and Best Management Practices: 9
Public Convenience and Safety: 10
Protection of Work and Materials: 11
Damage to Existing Structures and Improvements: 11
Methods Used in the Progress of Work: 12
Worker Protection: 12
Temporary Suspension of Work: 13
Obstructions: 13
Removal, Protection and Restoration of Existing Improvements: 13
Estimated Quantities: 13
Record Drawings: 14
Indemnity: 14
Construction Area Information Sign: 14
Removal of Existing Official Signs: 14
Asbestos Coating: 15
Standards: 15
Materials Furnished by Long Beach Gas and Oil: 15
Installation and Retirement Procedures: 15
Excavation, Backfill and Street Pavement Restoration: 16
Policy for Removal of USA Markings 16
Work in the Area Under the Authority of the Long Beach Harbor Department 17
Attachments and Specifications: 17

BID SUBMITTAL REQUIREMENTS

1. Bid
2. Additional Work Unit Prices
3. Certification of Site Examination
4. Bidders Bond
5. Proof of a Drug and Alcohol Program - 49 C.F.R. 199
6. Proof of an Operator Qualification Program - 49 C.F.R. 192, Subpart N
7. State Contractors License
8. Method of Construction Document
9. Equal Benefits Disclosure
10. List of Subcontractors
11. Labor Code 2810 Information Sheet
12. Noncollusion Affadavit
13. Workers Compensation Certification

LIST OF ATTACHMENTS

1 INSTRUCTIONS TO BIDDERS
2 NOTICE INVITING BIDS
3 BID
4 CERTIFICATION OF SITE EXAMINATION
5 SPECIFICATIONS G-228A FOR THE CONSTRUCTION OF GAS MAIN AND SERVICES
6 SPECIFICATIONS G-228P FOR THE INSTALLATION OF P.E. GAS MAIN AND SERVICES
7 SPECIFICATIONS G-228S FOR THE INSTALLATION OF STEEL GAS MAIN
8 BEST MANAGEMENT PRACTICES

Water Conservation Practices	**NS-1**
Vehicle and Equipment Cleaning	**NS-8**
Vehicle and Equipment Fueling	**NS-9**
Vehicle and Equipment Maintenance	**NS-10**
Material Delivery and Storage	**WM-1**
Material Use	**WM-2**
Spill Prevention and Control	**WM-4**
Solid Waste Management	**WM-5**
Hazardous Waste Management	**WM-6**
Concrete Waste Management	**WM-8**
Storm Drain Inlet Protection	**SE-10**

9 UTILITIES DESIGN CRITERIA AND STANDARD PLANS – LONG BEACH HARBOR DEPARTMENT
10 LBGO STANDARD PLAN A-979
11 BIDDERS BOND FORM
12 CITY OF LONG BEACH EQUAL BENEFITS ORDINANCE, DISCLOSURE AND CERTIFICATION
13 BID PROTEST PROCEDURES
14. LIST OF SUBCONTRACTORS
15 INFORMATION TO COMPLY WITH LABOR CODE SEC. 2810

LIST OF ATTACHMENTS (continued)

16. NON-COLLUSION AFFIDAVIT
17 WORKERS' COMPENSATION CERTIFICATION
18 SAMPLE FORMS

SPECIFICATION FOR THE REMEDIATION and RELOCATION OF NATURAL GAS PIPELINES and FACILITIES

FOR LONG BEACH GAS AND OIL DEPARTMENT LONG BEACH, CALIFORNIA

PRE-BID CONFERENCE

Bidders are hereby instructed that the City will conduct a Pre Bid Conference on Wednesday, December 20, 2011 at 8:30 am at the Long Beach Gas & Oil Facility, located at 2400 East Spring Street in Long Beach. No additional meetings will be conducted.

DESCRIPTION OF WORK TO BE DONE

The work to be done hereunder consists primarily of constructing and abandoning portions of an underground natural gas pipeline distribution system and appurtenances together with all related fittings and connections, installing or replacing natural gas service lines for associated customers as detailed in this specification and furnishing all labor, equipment and tools required in connection with such construction as described below.

WO 11-0034 – POLB – GERALD DESMOND BRIDGE – PIER D ST

Install and tie-in approximately 150 feet of 4" steel pipe and fittings on Pier D Street; pothole known substructures to validate depth and alignment of installation (approximately 5 potholes required); abandon approximately 2,560 feet of 16", 14", 12", 6" and 4" steel main along Pier D Street; slurry fill approximately 420 feet of 12" pipe; develop and submit stamped traffic control plans for all work to be performed on Pier D Street.

T-14298 – POLB – PIER D ST – PIPE REMOVAL

Remove approximately 580 feet of 16" pipe, 100 feet of 14" pipe, 1280 feet of 12" pipe, 70 feet of 6" pipe and 110 feet of 4" pipe; remove aboveground valve set at Pier D Street; develop and submit stamped traffic control plans for all work to be performed on Pier D Street. Assume pipe cover to be 4-1/2 feet.

WO.9831 – POLB – GERALD DESMOND BRIDGE – PICO AVE

Bore and install approximately 145 feet of 20" casing; install approximately 2,035 feet of 16" steel pipe, 350 feet of 8" steel pipe, valves and fittings along Pico Avenue, through Terminal area and tie-in on Pier D Street and Pier C Street; tie-over or replace services to three existing customers; pothole known substructures to validate depth and alignment of installation (approximately 78 potholes required); develop and submit

stamped traffic control plans for all work to be performed on Pico Avenue and all work to be performed on Pier D Street.

WO 110016 – POLB – GERALD DESMOND BRIDGE – BROADWAY

Install and tie-in approximately 620 feet of 10" steel pipe and fittings on Broadway; pothole known substructures to validate depth and alignment of installation (approximately 43 potholes required); purchase, install, tap and stop 16" pressure control fitting for tie-in on east end of Broadway; abandon approximately 2,185 feet of 16" steel main, 835 feet of 12" steel main and 885 feet of 3" steel main; slurry fill approximately 1510 feet of 16" pipe and 400 feet of 12" pipe; develop and submit stamped traffic control plans for all work to be performed crossing Pico Avenue, along Broadway, and I-710 Harbor Scenic Drive at Point E. Through Pacific Harbor Lines, provide rail flagman for all work along rail between Point A and Point I.

T-14299 – POLB – BROADWAY – PIPE REMOVAL

Excavate, remove and dispose of approximately 675 feet of 16" pipe, 435 feet of 12" pipe and 885 feet of 3" pipe; develop and submit stamped traffic control plans for all work to be performed along and crossing Pico Avenue and I-710 Harbor Scenic Drive at Point E. Through Pacific Harbor Lines, provide rail flagman for all work along rail between Point A and Point H. Assume pipe cover to be 4-1/2 feet.

WO 110027 – POLB – MIDDLE HARBOR

Install and tie-in approximately 2,810 feet of 16" steel pipe, valves and fittings across Pier D and Pier E; pothole known substructures to validate depth and alignment of installation (approximately 10 potholes required); purchase, install, tap and stop 16" pressure control fitting for tie-in on west end at Pier D; purchase, install, tap and stop 14" pressure control fitting for tie-in on east end at Pier E Street and Pico Avenue; abandon approximately 2,635 feet of 12" steel main; develop and submit stamped traffic control plans for all work to be performed at intersection of Pico Avenue and Pier E Street.

T-14300 – POLB – PIER D/E 12" PIPE REMOVAL & SALVAGE

Excavate, remove and salvage for reuse approximately 2,635 feet of 12" steel main on Pier D/E Middle Harbor; develop and submit stamped traffic control plans for all work to be performed at intersection of Pico Avenue and Pier E Street. Assume pipe cover to be 5 feet.

T-14295 – POLB – PIER D, PIER E and PIER F PIPE REMOVAL

Excavate, remove and dispose of approximately 5,180 feet of 4" steel pipe, 1,460 feet of 3" steel pipe, 735 feet of 2" PE pipe and 330 feet of 1-1/4" steel pipe on Pier D, Pier E

and Pier F within the POLB Middle Harbor Project area. Assume pipe cover to be 4-1/2 feet.

T-14301– POLB – PIER F AVENUE PIPE REMOVAL

Excavate, remove and dispose of approximately 350 feet of 4" steel pipe along Pier F Avenue within the POLB Middle Harbor Project area. Assume pipe cover to be 2 feet and pipe is slurry filled. Pipe to be removed is approximately 17 feet deep, POLB contractor will excavate to 2 feet above pipe and provide all shoring necessary.

WO 11-0044 – VAULTS – ANAHEIM & LOMA/ANAHEIM & XIMENO

Abandon two existing underground vaults, Anaheim Street at Loma Avenue and Anaheim Street at Ximeno Avenue per LBGO standard plans; install pipe, valves and isolator fittings; recover existing valves; develop and submit stamped traffic control plans for all work to be performed at intersections on Anaheim Street.

WO.11-0045 – VAULTS – OREGON AVE

Abandon two existing underground vaults, in Oregon Avenue at 14th Street and Oregon Avenue at alley north of 14th Street per LBGO procedures and salvage existing valves; purchase, install, tap and stop 16" pressure control fittings; install pipe, valves and isolator fittings; recover existing valves; develop and submit stamped traffic control plans for all work to be performed at intersections on Anaheim Street.

SPECIAL CONDITIONS

The installation of the natural gas mains and service lines includes all necessary trenching or boring through paved or non-paved areas, retiring, purging, bypassing to maintain service, removing or abandoning existing pipelines, service lines, valves and curb boxes, replacing valves as shown on the Plans and installing new piping, tracing wire (if necessary), installation of all pressure control fittings, including all necessary tapping and stopping, purging, system testing, backfilling and restoration of all surface areas disturbed by the construction operations and removing or filling the abandoned pipe with slurry mix where shown on the Plans.

Vaults shall be abandoned per LBGO Standard Plan A-979.

LBGO will furnish all pipe, fittings and miscellaneous pipeline materials unless otherwise specified. Contractor shall furnish 16" pressure control fitting for WO 11-0016, 14" and 16" pressure control fittings for WO 11-0027 and 16" pressure control fittings for WO 11-0045, subject to approval by LBGO Engineer.

All replacement service lines including branch lines shall be of the same size as of existing services and branches unless otherwise noted on the Plans or pre-approved by authorized LBGO representative.

Contractor shall obtain hot work permit from the Port of Long Beach for all hot work performed within the Harbor District.

The work is located in various streets in the City of Long Beach and in the Port of Long Beach.

Long Beach Gas & Oil Department reserves the right to delete from this Specification any portion of the work if funding becomes insufficient for the completion of the work or if conditions materially change.

GENERAL REQUIREMENTS

Definitions:

The term "City" shall refer to the City of Long Beach.

The term "Contractor" shall refer to the party entering into the contract for the performance of the work covered by this specification.

The term "Director" as used herein shall refer to the Director of Long Beach Gas and Oil or his designated representative.

The term "Inspector" or "Long Beach Gas and Oil Department (LBGO) Inspector" shall refer to the City's Construction Inspector or his duly authorized assistant.

The term "Long Beach Gas & Oil Department" or "LBGO" as used herein shall refer to the City's Gas and Oil Department.

The term "Standard Specifications" shall refer to "Standard Specifications for Public Works Construction, 2003 Edition."

The term the "WATCH Handbook" shall refer to the most recent version, as of the date hereof, of the "Work Area Traffic Control Handbook".

Terms:

Any term used herein, whether or not capitalized that is defined in Part 1 of the Standard Specifications shall have the meaning stated in said Section.

Information Provided During the Bid Period:

The bidder may request in writing from the Engineer, clarification of the plans and specifications. Such a request must be submitted via email to Steve Bateman at steve.bateman@longbeach.gov by December 30, 2011 at 4:00 pm PST. Answers will be available online as an addendum on January 4 at 5:00 pm. If the Engineer, in his sole discretion, believes there is a need for clarification, the Engineer will issue an Addendum to all prospective bidders.

It is the intent and purpose of Long Beach Gas and Oil Department, under these plans and specifications, to secure work which is complete in every detail and respect. The Contractor shall furnish all equipment, and labor to do all work required to accomplish this purpose. The Contractor shall not omit any work or fail to furnish any element, component or part, whether or not such is specifically called for herein, which is necessary to complete the work described herein. Any work that is not specifically covered in the specifications or on the plans shall be pre-approved by Long Beach Gas and Oil and shall be executed in accordance with the highest standard practices.

It will be assumed that the bidders have investigated and are satisfied as to the conditions to be encountered, as to the character, quality and quantities of work to be

performed and as to the requirements of these specifications. The cost of all necessary work will be considered as included in the price bid and no extra payment will be made unless specifically indicated otherwise.

The construction shall conform to the quality and workmanship standards acceptable for facilities of similar type. However, in any case, workmanship shall be satisfactory to Long Beach Gas and Oil.

All dimensions and conditions must be verified at the work site; therefore, it shall be the responsibility of each bidder to inspect said site and ascertain the conditions to be encountered.

Bonds:

Each bid shall be accompanied by a certified check or bank draft payable to the City Auditor of the City of Long Beach, and drawn on a solvent bank in the United States of America, or a satisfactory bond of an amount not less than ten percent (10%) of such bid, as a guarantee that the bidder, if awarded a contract, will execute and deliver to the Director of Long Beach Gas & Oil, within fifteen (15) calendar days after such contract is tendered, a contract for furnishing all necessary labor, tools, appliances and equipment for, and doing the work called for herein, together with a good and sufficient corporate surety bond in favor of the City of Long Beach, for an amount of not less than one hundred percent (100%) of such contract price for the faithful performance of such contract (Performance Bond), and a good and sufficient corporate surety bond in an amount of not less than one hundred percent (100%) of such contract price for the payment of all labor and material claims (Labor and Materials Bond), as specified in Section 2-4, "Contract Bonds", of the Standard Specifications. Sureties that are not listed in the latest revision of the United States Department of the Treasury Circular 570 shall nevertheless be admitted to issue bonds in the state of California.

If the bidder to whom the contract is awarded fails or neglects to sign a contract with the City, including the filing of any required bonds and insurance documents, within fifteen (15) calendar days after the contract is tendered to him/her for signature, the City may, in its sole discretion, declare the bid security to be forfeited, and the money or bond for the bid security shall be deposited into the City Treasury.

Pipeline Construction Regulatory Compliance – Drug and Alcohol Testing:

Pursuant to U.S. Department of Transportation Pipeline Safety Regulations, any contractor or subcontractor performing work on an LBGO-owned or operated pipeline must test covered employees for the presence of prohibited drugs and alcohol. All contractors submitting bids must submit, with their bid, proof of a Drug and Alcohol Program that meets the requirements and complies with 49 C.F.R. 199, Drug and Alcohol Testing. LBGO, at its sole discretion, will determine whether the program submitted is compliant with 49 C.F.R. 199.

Pipeline Construction Regulatory Compliance – Operator Qualification:

Pursuant to U.S. Department of Transportation Pipeline Safety Regulations, any contractor or subcontractor performing work on an LBGO-owned or operated pipeline must qualify employees before performing covered tasks on the pipeline. All contractors submitting bids must submit, with their bid, proof of an Operator Qualification Program that meets the requirements and complies with 49 C.F.R. 192, Subpart N, Qualification of Pipeline Personnel. LBGO, at its sole discretion, will determine whether the program submitted is compliant with 49 C.F.R. 192.

Licenses

All contractors submitting bids must submit, with their bid, proof that contractor possesses the appropriate State license(s) to perform the work described herein.

Bids

Bids are required for the entire work described herein.

Method of Construction

All contractors submitting bids must submit, with their bid, a short concise statement describing the Contractors preferred method of construction for each Bid Item that describes the installation of pipe.

Examination of Site and Work:

In supplement to Subsection 2-5.1, "General" of the Standard Specifications the following shall apply:

Bidders must examine the location, physical conditions and surroundings of the proposed work and judge for themselves the extent to which these factors will influence the performance of the work.

The plans for the work depict conditions as believed by LBGO to exist. It is not intended nor is it to be inferred that the conditions as shown thereon constitute a representation, expressed or implied by the City or its officers, that such conditions actually exist. The City or any of its officers shall not be liable for any loss sustained by the Contractor as a result of any variance between conditions as shown on the plans or referred to in the specifications and the actual conditions revealed during the progress of the work.

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all equipment, tools and labor necessary to carry out the provisions of his contract.

Changes Initiated by the Agency:

Replace the second paragraph of Subsection 3-2.2.1, "Contract Unit Prices," of the Standard Specifications with the following:

In the case of an increase or decrease in a Major Bid Item, the use of this basis for the adjustment of payment will be limited to that portion of the change, which together with all previous changes to that item, is not in excess of 25 percent of the total cost of such item based on the original quantity and Contract unit price.

Extra Work:

Delete the first sentence of Subsection 3-3.2.2, "Basis for Establishing Costs," of the Standard Specifications and substitute the following:

The cost basis for extra work will be calculated using the "Supplemental Work Cost Basis" worksheet attached to the Bid. Claim for any additional work that is not indicated on the worksheet must be approved by LBGO prior to the work being performed.

Interpretation of Plans and Specifications:

LBGO will interpret the meaning of any part of the plans and specifications about which any misunderstanding may arise and its decision will be final.

Should there appear to be any error or discrepancy in or between the plans and specifications, the Contractor shall refer the matter to LBGO for adjustment before proceeding with the work. Should the Contractor proceed with the work without so referring the matter, he does so on his own responsibility and must bear any additional cost incurred as a result of failure to so refer.

Pre-Construction Conference:

Prior to the commencement of the project and after execution of the contract, Contractor must contact Stephen C. Bateman, LBGO Senior Mechanical Engineer at (562) 570-2034 to make arrangements for a pre-construction conference with all interested parties.

Cooperation:

Certain manholes, vaults, valve boxes or other appurtenances belonging to utility companies or others may need resetting to grade. No guarantee can be made that all such items are shown on the plans. The Contractor is not required to do the work of resetting such to grade, except sewer and storm drain manholes and Long Beach Gas and Oil Department and Long Beach Water Department valve boxes and meter boxes; however, the Contractor shall notify the parties involved at least one week in advance of construction to give them opportunity to perform the necessary work in conjunction with work performed by the Contractor.

Time of Completion:

Contractor shall be provided with a written "Notice to Proceed" from the City for each Project or portion thereof. Each "Notice to Proceed" shall contain a Project Start Date. The Contractor and the City shall mutually agree to the Project Completion Date in writing within ten (10) days following the issuance of the "Notice to Proceed." Failure of the Contractor to complete the work within such time period shall result in damages being sustained by LBGO. For each consecutive calendar day in excess of the time specified, as adjusted in accordance with the Standard Specifications, Subsection 6-6, for completion of work, the Contractor shall pay LBGO, or have withheld from monies due Contractor, the sum of $500.00 per day. This payment shall not be considered a waiver or release of any liability or limitation on other remedies, rights or obligations between the Contractor and the City.

In supplement to the provisions contained under Subsection 6-1,"Construction Schedule and Commencement of Work", of the Standard Specifications the following shall apply:

The City expects to perform all work during normal working hours. Any work performed outside of normal working hours must be pre-approved by the Project Engineer. The City expects to all work identified in this Specification to be completed by December 31, 2012.

Apprentice Employment.

The Contractor shall comply with Section 1777.5 of the Labor Code concerning the employment of apprentices by the Contractor or any subcontractor under the Contractor and, by submitting a Bid and executing a contract, the Contractor stipulates that it shall so comply.

Section 1777.5, as amended, requires the Contractor or subcontractor employing tradesmen in any apprenticeable occupation to apply to the joint apprenticeship committee nearest the site which administers the apprenticeship program in that trade for a certificate of approval. The certificate will also fix the ratio of apprentices to journeymen that will be used in the performance of the Contract. The ratio of apprentices to journeymen in such cases shall be not less than one to five except as specified by law.

The Contractor shall contribute to funds established for the administration of apprenticeship programs if the Contractor employs registered apprentices, or journeymen in an apprenticeable trade, and if other contractors on the site are making such contributions.

Information on apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of Industrial Relations, ex officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards branch office, located at 320 West 4th Street, Suite 830, Los Angeles, California.

Water Pollution Control and Best Management Practices:

Add the following to Subsection 7-8.6, "Water Pollution Control," of the Standard Specifications:

Best Management Practices (BMPs) shall be defined as any program, technology, process, operating method, measure or device which controls, prevents, removes, or reduces pollution.

At a minimum, the Contractor shall implement the BMPs in the Attachments. BMPs shall be continuously implemented throughout the duration of this Contract. BMPs for erosion control and sedimentation shall be implemented during the period from October 1st to April 15th and whenever the National Weather Service predicts rain within 24 hours or prior to restarting work after a weekend or holiday.

All aspects of the Work performed pursuant to these Plans and Specifications must be conducted in accordance with all state and federal laws and regulations, including but not limited to all environmental laws and regulations, Order No. 99-060 of the California Regional Water Quality Control Board, Los Angeles Region ("Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the City of Long Beach"), and related BMPs. The City will deduct from the money due or to become due to the Contractor the total amount of any fines levied on the City, plus legal and staff costs, as a result of the Contractor's failure to comply with these provisions or less than complete implementation of the specified BMPs. In addition, the Contractor shall defend, indemnify, and hold the City harmless for any liability related to the Contractor's (or its subcontractors) failure to comply with these laws and regulations.

Full payment for the implementation of BMPs, including the construction, removal, and furnishing of all necessary labor, equipment and materials, shall be considered as included in the prices bid for the various items of Work, and no additional payment will be made therefor.

Public Convenience and Safety:

All removed or stockpiled material shall be stored in such a manner as not to obstruct residential or commercial access or emergency response or drainage.

The Contractor shall maintain continuous access to all streets and alleys.

The following requirements are hereby made in supplement to Subsection 7-10, "Public Convenience and Safety," of the Standard Specifications.

The Contractor shall give one-week advance notice prior to the start of construction to all residents and businesses facing or siding on the construction area. Said notice shall be in writing on the Contractor's letterhead and shall explain in concise terms the extent and nature of the project, the anticipated schedule, and office and emergency telephone numbers where the Contractor's representative can be reached. The letter must be approved by LBGO prior to release.

All gas mains and service lines are to remain in service during construction unless otherwise specified.

When vehicular access to driveways cannot be maintained due to the nature of the work, the Contractor shall notify occupants of affected properties, in writing, two working days in advance of the time access to the property will be cut off. When driveway access is cut off the Contractor shall schedule work in such a manner as to re-establish access with the least possible delay.

Where traffic is directed around or adjacent to the construction area, the Contractor shall provide, install, maintain and remove delineators, barricades, lights, signs, flagmen and other devices required for the control of traffic as required by the applicable City and State traffic regulations and the latest edition of the "Manual on Uniform Traffic Control Devices" Handbook. The City shall have the right to relocate traffic control devices.

Reflector type temporary road signs will be allowed, if they are maintained in good condition at all times.

After the devices have been installed, the Contractor shall, at his own expense, maintain and keep them in good repair until acceptance of the work. The Contractor shall also, during the term of the contract, pay the cost of repair or replacement of such devices that are lost or damaged to such an extent as to require repair or replacement, regardless of the circumstances or cause of such loss or damage. Minimum charges for after hours response by the City to adjust, move, repair, or replace traffic and safety devices will be $500.00 per occurrence and subsequent responses will be charged at $800.00 per occurrence.

Full payment for furnishing, installing, maintaining and removing said devices and giving advance notices as specified herein shall be considered as included in the price bid for the work.

Protection of Work and Materials:

In supplement to the provisions contained under Subsection 4-1.2 "Protection of Work and Materials" of the Standard Specifications, the following shall apply:

The Contractor shall be entirely responsible for all materials, appliances, fittings, fixtures, assemblages and parts upon issuance to the Contractor by LBGO or delivered to the site and shall provide for their maintenance and protection during storage, during and after installation, and until final acceptance of the construction. Materials damaged by the Contractor's operation shall be removed and replaced at the Contractor's expense before final inspection and acceptance.

Damage to Existing Structures and Improvements:

The Contractor shall familiarize itself with all existing underground and surface installations, both public and private, on the site and shall provide adequate safeguards to prevent damage to existing structures and improvements, including sprinkler system, shrubs, lawns and trees.

Contractor is responsible to maintain a safe work site at all times. Any damage to property from any cause shall be repaired at the Contractor's own cost and expense. The

Contractor shall be held responsible for reimbursement of all costs incurred by the City due to the involvement of City employees in resolving and responding to such incidents. Minimum charges for after hours construction and gas services response by the City will be in accordance with the City Council approved fee structure. Failure to have such damages repaired will result in Long Beach Gas and Oil deducting from the Contractor's payment the cost of such damages. If the damage was caused by a third party, it will be the responsibility of the Contractor to secure reimbursements from that party.

Long Beach Gas and Oil Department will give the Contractor ten (10) days prior notice of its intention to retain funds from any partial payment which may become due to the Contractor prior to acceptance of the work.

Methods Used in the Progress of Work:

The Contractor shall use such methods and/or appliances for the performance of all operations connected with the work and maintained under the contract as will ensure a satisfactory rate of progress which, in the opinion of LBGO, will secure the completion of the work within the time provided under the Contact. If at any time before the commencement, or during the progress of the work, such methods and/or appliances appear to LBGO to be inadequate, it may order the Contractor to improve such methods and/or appliances and the Contractor must conform to such order whether it is verbal or in writing. At all times, LBGO reserves the right to adjust, alter, suspend, or cease work to preserve public and worker safety or maintain the integrity of its natural gas distribution system.

Worker Protection:

The second paragraph in Subsection 7-10.4.1, "Safety Orders," of the Standard Specifications is amended to read:

Before constructing any trench or excavation five feet (5') or more in depth, the Contractor shall submit to the Project Engineer evidence that he has a valid permit from the California Division of Industrial Safety along with one of the following:

A. A statement that standard practices and methods approved by the Division of Industrial Safety and specified by the State Construction Safety Orders are to be used.

B. If methods other than standard practices are to be used, the Contractor shall provide plans prepared by a registered Civil Engineer showing the reaches, design criteria, calculations, and sequence of placement and removal of shoring.

The term "shoring and bracing" when used in connection with the shoring plan or requirements shall mean any plan or requirement made for worker protection.

Payment for shoring, bracing, sloping or other provisions required for protection of workers and existing structures from the hazard of caving ground, for excavation depths five feet (5') or less, shall be included in the base price bid for the pipeline construction. Shoring and bracing for excavation depths in excess of five feet (5') will be paid for at the unit price per lineal foot of excavation wall included in the bid proposal for that portion that exceeds five feet (5').

Temporary Suspension of Work:

The LBGO Inspector shall have the authority, but not the obligation, to suspend the work wholly or in part for such period as he may deem necessary due to (1) unsuitable weather or other conditions or (2) the failure on the part of the Contractor to carry out orders given to it or to satisfactorily perform work required by any provisions of the contract.

Obstructions:

The Contractor shall not move or perform any work on any obstruction except in the presence of an authorized representative of LBGO.

Removal, Protection and Restoration of Existing Improvements:

All existing improvements which are removed or damaged during the course of the contract shall be restored by the Contractor to a condition equal to or better than, in all respects, the original condition of such improvements prior to their removal or damage, unless otherwise specified. Payment for such restitution or damages shall be considered as included in the prices bid for the various contract items of work.

Section 7-9, "Protection and Restoration of Existing Improvements," of the Standard Specifications is supplemented by the following:

The Contractor shall become familiarized with all existing improvements and facilities, both public and private, on the Work site and shall provide adequate safeguards to prevent damage to existing structures and improvements. Any damage to property from any cause which might have been prevented by the Contractor, the Contractor's employees, agents or subcontractors shall be repaired within 10 calendar days after such damage at the Contractor's sole cost and expense. Water and sewer line breaks shall be repaired the same day. In the event that the Contractor fails to repair such damages, the City will make the repairs, or cause them to be made, and the cost of repairs shall be deducted from the money due or to become due the Contractor.

Prior to constructing asphalt or concrete pavement, the Contractor shall mark on the curb face, based on actual field measurements, the location of all manhole and utility covers, valve and meter boxes, and monuments. No guarantee is made that all such items are shown on the Plans and, if shown on the Plans, may not be shown at the correct location.

The Contractor shall protect walks and masonry paving by installing only chalk-based temporary markings in those areas.

The Contractor shall remove utility identification and other temporary markings after completion of the related Work. The City will not accept the Work until this removal is done.

Estimated Quantities:

Section 9-3.1, "General" of the Standard Specifications, is supplemented by the following:

The quantities stated herein are only estimates. Contractor agrees to install mains and services as shown on the Plans and whatever quantities are actually needed to complete the work, whether the quantities are more or less than the estimates, at the price bid, unless specific provisions are made in these specifications to pay for additional work in accordance with unit prices included in the bid proposal.

Record Drawings:

LBGO, through its Construction Inspector shall keep and maintain a set of construction as-built drawings as the work proceeds. The Contractor shall notify the LBGO Inspector of all construction changes and variations from the Plans, including all underground and surface improvements installed in locations other than those indicated on the Plans. Where a Plan does not exist, the Contractor shall submit an accurate and detailed sketch.

The Contractor shall keep one complete set of the Plans at the work site at all times.

Indemnity:

With respect to any premises or equipment of the City made use of in the performance of the Contract, the Contractor shall have inspected same prior to use, accepted them in good and safe condition and agree to maintain them in a safe condition for the protection of its employees while using them during the performance of the Work.

Construction Area Information Sign:

If required, the Contractor shall furnish and install construction area information signs per the enclosed plan. The type of work, estimated date of completion, and contact telephone number shall be attached to each sign by aluminum overlay plates as shown on the Standard Plan. The signs shall be posted along each street under construction; one at each end of construction, and one at each side street entering each street under construction. The signs shall also be posted along streets where traffic controls will impose traffic disruptions or delays or as shown on the plans. The signs shall be posted whenever traffic controls will be in place for two weeks or longer.

When traffic controls have been removed, the Contractor shall deliver the signs to a site specified by the LBGO Inspector.

Payment for the construction area information signs shall be considered as included in the lump sum price bid and no additional payment will be made therefore.

Removal of Existing Official Signs:

In accordance with the requirements of Section 21464 of the Vehicle Code of the State of California, no person shall without lawful authority remove any official traffic control device, guidepost or signpost placed or erected as authorized or required by law. Therefore, any such existing traffic control device, guidepost or signpost located within the alignment of or interfering with the new construction work required herein shall not be removed or relocated

without first obtaining permission to do so from the Police Department of the City of Long Beach.

Asbestos Coating:

The coating on the existing steel main pipelines in all project streets may contain asbestos. Where it is necessary to cut into existing coated pipes or to remove existing coating the work shall be performed by properly trained personnel using the correct techniques, and all resulting contaminated material shall be removed from the site and dropped at LBGO yard legally and in complete accordance with all applicable City, State and Federal rules and regulations. Payment for any asbestos removal and proper disposal shall be included in the bids for the main and service line construction.

Standards:

Reference to published standards shall be construed to mean the latest edition, including amendments, in effect and published at the time of advertising of these plans and specifications unless otherwise indicated.

Materials Furnished by Long Beach Gas and Oil

LBGO will furnish all piping materials and related appurtenances, unless otherwise specified. The Contractor shall supply all consumable materials, including but not limited to welding materials, nitrogen, pipe slurry and other such items.

The above material must be picked up and signed for by the Contractor at the LBGO warehouse, 2400 E. Spring Street. Arrangements for pick-up must be made with the Inspector at least 48 hours prior to pick up. All material must be inspected by both the Contractor's representative and the Inspector when it is picked up and upon acceptance by the Contractor's representative it shall become the complete responsibility of the Contractor. Any material subsequently lost, stolen or rendered unusable in any way shall be replaced in kind by the Contractor at its own expense.

Installation and Retirement Procedures:

All tie-ins and replacement of existing services shall be performed under the supervision of the construction foreman, and subject to the approval of the LBGO Inspector.

Unless otherwise noted, each pipeline abandoned in place must be disconnected from all sources and supplies of gas, purged of gas and filled with inert materials. Unless otherwise indicated, long pipelines shall be cut at each 200 feet of pipe length and a steel plate shall be welded at each end. Contractor shall remove and dispose of all valves, valve boxes and curb boxes from the retired pipe. Pipelines 8" or greater shall be abandoned by filling with slurry as per the City standards.

Excavation, Backfill and Street Pavement Restoration

In all cases, the aesthetic appearance of the paving restoration shall be considered prior to start of excavation. All pavement restoration shall be completed to satisfaction of the Project Engineer.

Unless instructed otherwise:

A. All work shall be done in accordance with the Standard Specifications, City of Long Beach Public Works, City of Signal Hill or Harbor Department requirements, as applicable.

B. Excavation backfill material shall be one sack slurry in accordance with the paragraph entitled "Bedding, Backfill and Street Surface Restoration" of the specification G-228A from six inches (6") above the top of pipe to not less than one-inch (1") below the bottom surface of the existing paving.

C. Permanent concrete pavement or asphalt restoration shall match the thickness of existing pavement plus one-inch (1").

D. Where the edge of the excavation occurs within two feet (2') or less from the toe of gutter, face of curb, or any other joint or edge, the pavement between the trench and the curb or gutter or joint shall be removed and replaced in kind along with the excavation paving.

E. All concrete or concrete overlaid streets and alleys shall be saw cut to full depth of pavement.

F. During construction when temporary asphalt is used it shall be placed four inches (4") thick and thoroughly compacted.

Policy for the Removal of USA Markings

The City's policy applies to street and sidewalk markings used to identify the location of utility services under the USA Program and construction related markings, including but not limited to horizontal and vertical grade markings, survey stationing, offsets, curb lines, and other layout lines.

A. Street & Sidewalk Markings

The facilities shall not be marked more than 14 calendar days in advance of the work performed. The contractor must outline their excavation area and include their name or initials in white spray chalk. Marking of brick pavers or concrete shall be in chalk-based or other naturally weathering materials that allow removal as specified below, but contractors and utility companies are encouraged to avoid marking in these areas by using offset markings.

B. Removal Of Street & Sidewalk Markings

It is the responsibility of the permit holder/contractor to remove all utility identification and construction related markings after the completion of the work or as determined by the City Inspector and to the satisfaction of the City. Permit holders/contractors are responsible for removal of any markings within two (2) months of the date the markings are no longer needed, or upon completion of the work, whichever is occurs first. The City will accept natural weathering of markings if the markings disappear within the two-month period. If the markings are in brick pavers or concrete areas and if by natural weathering the markings still remain after two months, the contractor must replace the concrete or the brick pavers in-kind. The contractors and utility companies are encouraged to avoid marking in these areas by using offset markings.

C. Compliance With NPDES

Removal of markings shall comply with the federal, state and local requirements of the National Pollutant Discharge Elimination System (NPDES).

D. Failure To Remove Markings

Street and sidewalk markings not removed by the required time lines, may be removed and the sidewalk or street repaired/replaced by the City at its discretion. The City will charge the permit holder/contractor a service fee equal to the actual costs of removal, plus an administrative fee of 20 percent for removing the markings, and making any repairs and/or replacements. This fee will include the cost to comply with NPDES.

Work in the Area Under the Authority of the City of Long Beach Harbor Department

All work in the area under the authority of the City of Long Beach Harbor Department Harbor Area shall be performed pursuant to a valid Harbor Development Permit (HDP). LBGO shall obtain HDP(s) necessary to perform the work.

In the Harbor Area only, the Contractor shall submit a formal traffic control plan for approval by the Project Engineer and City of Long Beach Harbor Department. All traffic control devices shown on said plans shall be implemented. The Contractor must first obtain written authorization from LBGO before performing work under this paragraph.

In the Harbor Area only, excavation backfill material shall be one sack slurry in accordance with the paragraph entitled "Bedding, Backfill and Street Surface Restoration" of the specification G-228A from six inches (6") above the top of pipe to not less than one-inch (1") below the bottom surface of the existing paving.

Attachments and Specifications:

The attachments and specifications are intended to be complementary and anything mentioned in the specifications and not in the attachments, or mentioned in the attachments and not in the specifications, shall be of like effect as if shown in both. In the event of conflict between specifications and attachments, the Contractor in all cases shall accept the LBGO

Project Engineer's interpretation of both attachments and specifications. It is understood that some deviation or departure from the attachments might be necessary, but such deviation shall be made only if authorized by the LBGO Project Engineer.

BIDDER'S NAME: _____

IMPORTANT

READ CAREFULLY
BEFORE MAKING OUT YOUR BID
INSTRUCTIONS TO BIDDERS

Do not remove any documents from, or add any documents to, this file. Any such removal or addition may invalidate your Bid.

DO NOT MAKE ANY ALTERATIONS OF ANY KIND IN THE BID FORM. The only figures to be placed on said Bid form are those necessary to appropriately fill in the blank spaces provided thereon.

The bidder shall set forth for each item of work, in clearly legible figures, a unit price and an item total for each item of work in the respective spaces provided for this purpose. The amount set forth under the "ITEM TOTAL" column shall be the extension of the unit price bid multiplied by the estimated quantity for the item. If the bidder fails to enter a unit price and enters only an item total, then the City will divide the item total by the estimated quantity to arrive at a unit price, and the bidder shall be bound by that unit price. If the unit price is less than one cent, be sure to include the proper number of zeros. If there is a discrepancy between the unit price and the item total, the unit price shall prevail over the item total, and the City will correct the item total.

The summation of all items in the "ITEM TOTAL" column shall be placed at the caption "TOTAL AMOUNT BID". The "TOTAL AMOUNT BID" is informational only and may be used for comparison in determining the apparent low Bid at time of Bid opening. The summation of the mathematically correct extended totals for each item under the "ITEM TOTAL" column is the intended bid. Any errors shall, at the option of the City, constitute grounds for the rejection of the Bid.

Each Bid shall be accompanied either by a certified check or bank draft payable to the City of Long Beach, and drawn on a solvent bank of the United States of America, or by a bidder's bond in an amount of not less than 10 percent of the total bid. In the event a bidder's bond is submitted, such bond must be on the form contained in this file.

Certified checks or bank drafts accompanying all Bids will be retained by the City until an award of contract has been made. Checks or bank drafts submitted with the Bid of the bidder to whom an award of contract is made, and with the next higher Bid, will be retained until a contract has been executed.

Each bidder shall guarantee its Bid for a period of 60 working days following the opening of Bids. If, within 60 working days following the opening of Bids, the City has not awarded a

contract for the work, then the bidder may, upon request, withdraw its Bid without forfeiture of Bid security.

Each bidder shall record on its Bid the number and termination dates of all necessary licenses. A valid state license, sufficient to qualify the bidder to perform as prime contractor, is a pre-requisite for award of contract. Necessary City licenses may be secured after the Bids are opened, but prior to executing the contract.

It is absolutely essential that your Bid be properly signed.

All bids must be sealed within the self-addressed envelope provided, and filed in the office of the Director of Gas and Oil Department, 2400 East Spring Street, Long Beach, California 90806.

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2003, Edition, referred to herein, are on file in the City Engineer's Office, where prospective bidders may inspect them. Copies of said Standard Specifications may be purchased from the publisher, Building News, Inc., 1612 S. Clementine Street, Anaheim, California 92802, telephone (714) 517-0970.

CITY OF LONG BEACH STANDARD PLANS, JANUARY, 2003 Edition, referred to herein, may be inspected at the Engineering Records Section of the office of the City Engineer, 10th Floor, City Hall, 333 West Ocean Boulevard, Long Beach, California 90802. Copies of said Standard Plans may be purchased at that office for $30.00.

NOTICE INVITING BIDS

Sealed bids are invited by the City of Long Beach Gas and Oil Department to provide:

SPECIFICATION NO. G-291
REMEDIATION and RELOCATION OF
NATURAL GAS PIPELINES and FACILITIES

Bidders **must** register at www.longbeach.gov/purchasing to receive and download all bid documents and official notices.

Bids are due on **JANUARY 11, 2012 @ 2 PM PST** to the Long Beach Gas & Oil Department, to the office of the Director 2400 East Spring Street, Long Beach, CA 90806 at which time said bids will be publicly opened.

PRE-BID CONFERENCE

A Pre-bid Conference shall be held for the purpose of answering questions. Due to the nature of the scope of work and the specific standards required by the City. No additional meetings will be conducted.

Pre-Bid Conference

Date:	Wednesday, December 20, 2011
Time:	8:30 AM
Location:	Long Beach Gas & Oil Facility 2400 Spring Street, Long Beach, CA 90806
Contact:	Steve Bateman 562-570-2034

Copies of said plans and specifications may be obtained by prior arrangement on or after the following publication of this notice at LBGO, telephone (562) 570-2034, 2400 East Spring Street, Long Beach, California 90806, upon payment of $200.00 for each hard copy set, which must be paid at the time the set is picked up. Electronic versions of the plans and specifications are available at no cost at 2400 East Spring Street, Long Beach, California 90806. Plans and specifications cannot be requested by mail.

BID
FOR THE REMEDIATION and RELOCATION OF
NATURAL GAS PIPELINES and FACILITIES

FOR LONG BEACH GAS AND OIL
LONG BEACH, CALIFORNIA

In accordance with the Notice Inviting Bids for the above titled work for the City of Long Beach, California, a copy of which is attached hereto and is made a part hereof, to be opened on Wednesday, January 11, 2011 at 2:00 p.m., we propose to furnish all necessary labor, tools, appliances, equipment and engineering services for and perform all work mentioned in said Notice Inviting Bids, in full compliance with the Plans and Specification No. G-291 at the following prices:

DESCRIPTION	UNIT	ITEM TOTAL
WO.11-0034 – PIER D ST – INSTALL& ABANDON	LS	$.....
T-14298 – POLB – PIER D ST – PIPE REMOVAL	LS	$.....
WO.9831 – PICO AVE	LS	$.....
WO.9831 – POTHOLING	LS	$.....
WO.11-0016 – BROADWAY – INSTALL & ABANDON	LS	$.....
WO.11-0016 – 16" PC INCL. TAP/STOP	LS	$.....
WO.11-0016 – POTHOLING	LS	$.....
T-14299 – POLB – BROADWAY – PIPE REMOVAL	LS	$.....
WO.11-0027 – MIDDLE HARBOR – INSTALL & ABANDON	LS	$.....
WO.11-0027 – 14" PC INCL. TAP/STOP	LS	$.....
WO.11-0027 – 16" PC INCL. TAP/STOP	LS	$.....
WO.11-0027 – POTHOLING	LS	$.....
T-14300 – POLB – PIER D/E 12" REMOVE & SALVAGE	LS	$.....
T-14295 – PIPE REMOVAL - PIER D, E & F – POLB	LS	$.....

DESCRIPTION	UNIT	ITEM TOTAL
T-14301 – PIPE REMOVAL - PIER F AVENUE – POLB	LS	$.....
WO.11-0044 – VAULTS – ANAHEIM STREET	LS	$.....
WO.11-0045 – VAULTS – OREGON AVENUE	LS	$.....
WO.11-0045 – (2) 16" PC INCL. TAP/STOP	LS	$.....

NAME OF BIDDER_____

BUSINESS ADDRESS_____

CITY AND ZIP CODE_____

TELEPHONE_____

ADDITIONAL WORK UNIT PRICES

The following unit prices will not be considered in determining the lowest responsible bidder but will be utilized for the sole purpose of reimbursing the Contractor for additional work necessitated by unforeseen circumstances that arise during the course of construction if the actual scope of work differs from these Plans and Specifications.

ITEM	UNIT	UNIT PRICE
Installation of additional 16" steel pipe & fittings including trenching, backfill and pavement	LF	
Installation of additional 10" steel pipe & fittings including trenching and backfill and pavement	LF	
Installation of additional 8" steel pipe & fittings including trenching and backfill and pavement	LF	
Installation of additional 4" steel pipe & fittings including trenching and backfill and pavement	LF	
Installation of additional 2" PE pipe & fittings including trenching and backfill and pavement	LF	
Installation of additional 1-1/4" PE pipe & fittings including trenching and backfill and pavement	LF	
Installation of additional 3/4" PE pipe & fittings including trenching and backfill and pavement	LF	
Installation of 16" steel pipe offset & fittings including trenching and backfill (Per Offset)	Each	
Installation of 16" steel pipe offset length including trenching and backfill (Per length of each Offset)	LF	
Installation of 10" steel pipe offset & fittings including trenching and backfill (Per Offset)	Each	
Installation of 10" steel pipe offset length including trenching and backfill (Per length of each Offset)	LF	
Installation of 8" steel pipe offset & fittings including trenching and backfill (Per Offset)	Each	
Installation of 8" steel pipe offset length including trenching and backfill (Per length of each Offset)	LF	
Installation of 4" steel pipe offset & fittings including trenching and backfill (Per Offset)	Each	
Installation of 4" steel pipe offset length including trenching and backfill (Per length of each Offset)	LF	
Installation, tapping and stopping of 12" pressure control fittings.	Each	
Installation, tapping and stopping of 8" pressure control fittings.	Each	
Installation, tapping and stopping of 4" pressure control fittings.	Each	
Excess Depth – beyond 5' - excavation to maximum of 10 feet including shoring	Per Cu Yd	

SPECIFICATION FOR THE REMEDIATION and RELOCATION OF NATURAL GAS PIPELINES and FACILITIES

FOR LONG BEACH GAS & OIL DEPARTMENT

LONG BEACH, CALIFORNIA

CERTIFICATION OF SITE EXAMINATION

Each bidder shall be fully informed of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of this obligation to furnish all labor, equipment and tools necessary to carry out the provisions of this Contract. Each bidder shall examine the site for the work described herein.

This is to certify that I have examined the subject construction site and the bid is complete and there will be no additional payment for failure to examine the site thoroughly.

_____
Date of Site Examination

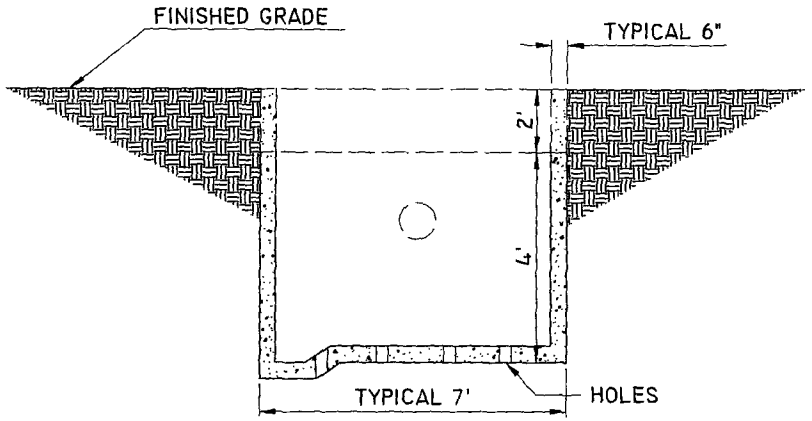
_____
Company

_____
Printed Name of Company Representative

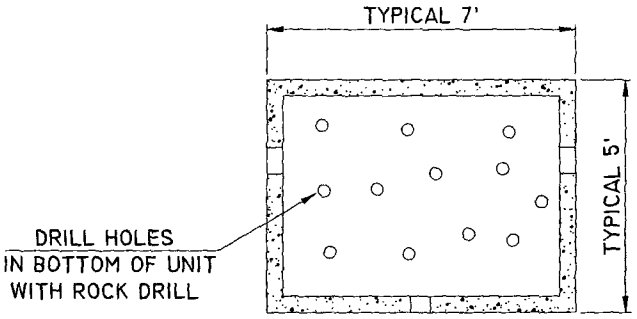
_____
Signature of Representative

_____
Date

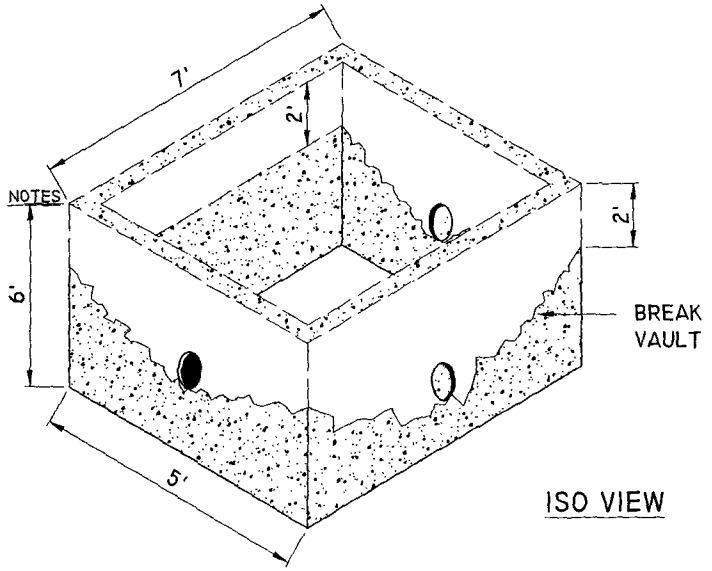
ATTACHMENT 10



ELEVATION VIEW



PLAN VIEW



ISO VIEW

1. ALL PIPING SHALL BE REMOVED FROM VAULT.
2. VAULT LID AND TOP 2 FEET OF VAULT SHALL BE REMOVED.
3. SIDEWALLS HAVING PIPE PENETRATIONS SHALL BE DEMOLISHED TO BOTTOM OF PIPE PENETRATION HOLE.
4. HOLES SHALL BE DRILLED IN BOTTOM OF VAULT ON RANDOM BASIS - APPROXIMATELY 10 HOLES - SPACED - 2" DIAMETER.
5. REMAINING VAULT SHALL BE FILLED WITH SAND TO LEVEL OF CONCRETE.
6. REMAINING BACKFILL AND PAVING SHALL MEET PUBLIC WORKS SPECIFICATIONS.

DESIGNED BY: S. BATEMAN
DRAWN BY: J. VELASCO
DATE: JANUARY 2011
DRAWING NUMBER: A-979

VAULT
ABANDONMENT PROCEDURE
CITY OF LONG BEACH GAS & OIL DEPARTMENT

CITY OF LONG BEACH Gas & Oil DEPARTMENT

(To Be Filled In When Surety Is A Corporation)

BIDDER' S BOND

CITY OF LONG BEACH

KNOW ALL MEN BY THESE PRESENTS: That we, _____

_____, as Principal, and _____

_____, a corporation, organized and existing under and by virtue of the laws of the State of _____, with its principal place of business in the City of _____ _____, State of _____, with a paid up capital of not less than Two Hundred Fifty Thousand Dollars ($250,000.00), incorporated, as aforesaid, for the purpose of making, guaranteeing or becoming a surety upon bonds and undertakings required or authorized by law, and having heretofore complied with all of the requirements of law of the State of California regulating the formation of admission of such corporation to transact business in this State, as Surety, are held firmly bound unto the City of Long Beach, a municipal corporation, organized under the laws of the State of California, and situated in the County of Los Angeles, in the sum of _____

_____ Dollars ($ _____), lawful money of the United States of America, for the payment whereof the Principal and sureties bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of the above obligation is such that:

_____

_____

If the bid of said Principal hereto attached shall be accepted by the City of Long Beach and the contract for delivery of goods, material, equipment or supplies, or for the furnishing of services, materials, supplies, labor and performing work, all as specified in the specifications, notice inviting bids and bid, be awarded to the Principal, and if Principal shall enter into a contract therefore with the City of Long Beach within ten (10) days after the contract is delivered to Principal for signature, and Principal shall, in connection with said contract, furnish and deliver to the City of Long Beach a good and sufficient faithful performance bond, if required in the notice inviting bids, and a good and sufficient labor and material (payment) bond, if required in the notice inviting bids, with surety or sureties, then this obligation shall be void; otherwise it shall remain in full force and effect.

_____
Name of Principal – Typed

By: _____
Signature of Principal's Officer

_____
Name of Surety

By: _____
Signature of Surety's
Attorney-in-Fact

(Principal and Surety Shall Attach Notary's Certificate of Acknowledgement of Execution)

DFG:rmb;4/29/96:BIDDOND.PUR

ORDINANCE NO. ORD-09-0036

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LONG BEACH AMENDING THE LONG BEACH MUNICIPAL CODE BY ADDING CHAPTER 2.73 ESTABLISHING AN "EQUAL BENEFITS ORDINANCE" REQUIRING CONTRACTORS ON CITY CONTRACTS TO PROVIDE EMPLOYEE BENEFITS TO THEIR EMPLOYEES WITH DOMESTIC PARTNERS EQUIVALENT TO THOSE PROVIDED TO THEIR EMPLOYEES WITH SPOUSES

WHEREAS, employee benefits comprise a significant portion of total employee compensation; and

WHEREAS, discrimination in the provision of employee benefits between employees with domestic partners and employees with spouses results in unequal pay for equal work; and

WHEREAS, the City of Long Beach prohibits discrimination based on marital status and/or sexual orientation; and

WHEREAS, contractors with the City of Long Beach are required to comply with the City's nondiscrimination laws; and

WHEREAS, the City Council finds and determines that the public, health, safety and welfare will be furthered by requiring that public funds be expended in such a manner as to prohibit discrimination in the provision of employee benefits by City contractors between employees with spouses and employees with domestic partners, and between domestic partners and spouses of such employees;

NOW, THEREFORE, the City Council of the City of Long Beach ordains as follows:

///

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

Section 1. Chapter 2.73 is added to the Long Beach Municipal Code to read as follows:

Chapter 2.73

EQUAL BENEFITS TO EMPLOYEES OF CITY CONTRACTORS

2.73.010 Title and purpose.

This ordinance shall be known as the "Long Beach Equal Benefits Ordinance". The purpose of this Chapter is to protect the public health, safety and welfare by requiring that public funds be expended in such a manner as to prohibit discrimination in the provision of employee benefits by City contractors between employees with spouses and employees with domestic partners, and/or between domestic partners and spouses of such employees.

2.73.020 Definitions.

A. "Contractor" shall mean any person or persons, firm, partnership, corporation, or combination thereof, who enters into a contract with the City.

B. "Domestic partner" shall mean any person who has a currently registered domestic partnership with a governmental body pursuant to state or local law authorizing such registration or with his or her employer or his or her domestic partner's employer.

C. "Non-profit" shall mean a non-profit organization described in Section 501(c)(3) of the Internal Revenue Code of 1954 which is exempt from taxation under Section 501(c)(3) of that Code, or any nonprofit educational organization qualified under Section 23701(d) of the Revenue and Taxation Code.

///

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

2.73.030 Contractors subject to requirements.

A. The following contractors are subject to this Chapter:

1. For-profit entities which enter into an agreement with the City for public works or improvements to be performed, or for goods or services to be purchased, for an amount of One Hundred Thousand Dollars ($100,000) or more; and

2. For-profit entities which generate Three Hundred Fifty Thousand Dollars ($350,000) or more in annual gross receipts and which occupy City property pursuant to a written agreement for the exclusive use or occupancy of said property for a term exceeding twenty-nine (29) days in any calendar year.

B. The requirements of this Chapter shall only apply to those portions of a contractor's operations that occur (i) within the City; (ii) on real property outside the City if the property is owned by the City or if the City has a right to occupy the property, and if the contractor's presence at that location is connected to a contract with the City; and (iii) elsewhere in the United States where work related to a City contract is being performed. The requirements of this Chapter shall not apply to subcontracts or subcontractors of any contract or contractor.

C. The City Manager or designee will provide a report to the City Council regarding the implementation of this ordinance no later than one year following the effective date of this Ordinance, and will consider among other items, whether the dollar thresholds set forth in subsections (A) and (B) should be modified.

2.73.040 Non-discrimination in provision of benefits.

A. No contractor subject to this Chapter pursuant to Section 2.73.030 shall discriminate in the provision of bereavement leave, family

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

medical leave, health benefits, membership or membership discounts, moving expenses, pensions and retirement benefits or travel benefits or in the provision of any benefits other than bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pensions and retirement benefits or travel benefits between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of such employees except as set forth in Subsections 2.73.040.A.1 and 2 below;

1. In the event that the contractor's actual cost of providing a particular benefit for the domestic partner of an employee exceeds that of providing it for the spouse of an employee, or the contractor's actual cost of providing a particular benefit for the spouse of an employee exceeds that of providing it for the domestic partner of an employee, the contractor shall not be deemed to discriminate in the provision of employee benefits if the contractor conditions providing such benefit upon the employee agreeing to pay the excess costs.

2. The contractor shall not be deemed to discriminate in the provision of employee benefits if, despite taking reasonable measure to do so, the contractor is unable to extend a particular employee benefit to domestic partners, so long as the contractor provides the employee with a cash equivalent.

B. Provided that a contractor does not discriminate in the provision of benefits between employees with spouses and employees with domestic partners, a contractor may:

1. Elect to provide benefits to individuals in addition to employees' spouses and employees' domestic partners;

2. Allow each employee to designate a legally domiciled member of the employee's household as being eligible for spousal

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

equivalent benefits; or

3. Provide benefits neither to employees' spouses nor to employees' domestic partners.

C. A contractor will not be deemed to be discriminating in the provision of benefits where the implementation of policies ending discrimination in benefits is delayed following the first award of a City contract to a contractor after the effective date of this Chapter:

1. Until the first effective date after the first open enrollment process following the date the contract with the City is executed, provided that the contractor submits evidence that it is making reasonable efforts to end discrimination in benefits. This delay may not exceed two (2) years from the date the contract with the City is executed and only applies to benefits for which an open enrollment process in applicable.

2. Until administrative steps can be taken to incorporate nondiscrimination in benefits in the contractor's infrastructure. The timer allotted for these administrative steps shall apply only to those benefits for which administrative steps are necessary and may not exceed three (3) months. An extension of this time may be granted at the discretion of the City Manager upon the written request of a contractor, setting forth the reasons that additional time is required.

3. Until the expiration of a contractor's current collective bargaining agreement(s) where all of the following conditions have been met:

a. The provision of benefits is governed by one or more collective bargaining agreement(s); and

b. The contractor takes all reasonable measures to end discrimination in benefits by either requesting that the union(s) involved agree to reopen the agreement(s) in order for the contractor to take

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

whatever steps are necessary to end discrimination in benefits or by ending discrimination in benefits without reopening the collective bargaining agreement(s); and

c. In the event that the contractor cannot end discrimination in benefits despite taking all reasonable measure to do so, the contractor provides a cash equivalent to eligible employees for whom benefits are not available. Unless otherwise authorized, in writing by the City Manager, this cash equivalent payment must begin at the time the union(s) refuse to allow the collective bargaining agreement(s) to be reopened, or in any case no longer than three (3) months from the date the contract with the City was executed. This cash equivalent payment shall not be required where it is prohibited by federal labor law.

D. Employers subject to this Chapter pursuant to Section 2.73.030 shall give written notification to each current and new employee of his or her potential rights under this Chapter in a form specified by the City. Such notice shall also be posted prominently in areas where it may be seen by all employees.

2.73.050 Required contract provisions.

Every contract subject to this Chapter shall contain provisions requiring it to comply with the provisions of this Chapter as they exist on the date when the contractor entered the contract with the City or when such contract is amended. Such contract provisions may include but need not be limited to the contractor's duty to promptly provide to the City documents and information verifying its compliance with the requirements of this Chapter and sanctions for noncompliance.

///

///

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

2.73.060 Waivers and exemptions.

A. The City may waive the requirements of this Chapter where the City Manager makes one or more of the following findings:

1. Award of a contract or amendment is necessary to respond to an emergency;

2. The contractor is a sole source;

3. The contractor is a non-profit entity as defined in Section 2.73.020, above;

4. Non compliant contractors are capable of providing goods or services that respond to the City's requirements;

5. The contractor is a public entity;

6. The requirements of this Chapter are inconsistent with a grant, subvention or agreement with a public agency;

7. The City is purchasing through a cooperative or joint purchasing agreement;

8. The contract involves specialized legal services such that it would be in the best interests of the City to waive the requirements of this Chapter, as determined by the City Attorney;

9. The contract involves investment of trust moneys or agreements relating to the management of trust assets, City moneys invested in U.S. government securities or under pre-existing investment agreements, or the investment of City moneys where no person, entity or financial institution doing business with the City which is in compliance with this Chapter is capable of performing the desired transactions or the City will incur financial loss if the requirements of this Chapter are enforced;

10. After taking all reasonable measures to find an entity that complies with this Chapter, the City may waive any or all requirements of this Chapter for any contract or bid package advertised and made

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

available to the public, or any competitive or sealed bids received by the City as of the effective date of this Chapter under the following circumstances:

a. There are no qualified responsive bidders or prospective contractors who comply with this Chapter and the contract is for goods, a service or a project that is essential to the City or City residents; or

b. The requirements of this Chapter would result in the City's entering into a contract with an entity that was set up, or is being used for the purpose of evading the intent of this Chapter.

B. The requirements of this Chapter shall not be applicable to contracts executed or amended prior to the effective date of this Chapter, or to bid packages advertised and made available to the public, or any competitive or sealed bids received by the City prior to the effective date of this Chapter, unless and until such contracts are amended after the effective date of this Chapter and would otherwise be subject to this Chapter.

C. The City Manager or designee may issue regulations from time to time implementing the provisions of this ordinance.

D. The City Manager shall report to the City Council annually on the status of waivers and exemptions.

2.73.070 Retaliation and discrimination prohibited.

A. No employer shall retaliate or discriminate against an employee in his or her terms and conditions of employment by reason of the person's status as an employee protected by the requirements of this Chapter.

B. No employer shall retaliate or discriminate against a person in his or her terms and conditions of employment by reason of the person reporting a violation of this Chapter or for prosecuting an action for

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

enforcement of this Chapter.

2.73.080 Employee complaints to City.

A. An employee who alleges violation of any provision of the requirements of this Chapter may report such acts to the City. The City Manager may establish a procedure for receiving and investigating such complaints and take appropriate enforcement action.

B. The City shall have the power to examine contractors' benefit programs covered by this Chapter.

C. Any complaints received shall be treated as confidential matters, to the extent permitted by law. Any complaints received and all investigation documents related thereto shall be deemed exempt from disclosure pursuant to California Government Code Sections 6254 and 6255.

2.73.090 Remedies.

A. Upon a finding by the City Manager that a contractor has violated the requirements of this Chapter, the City shall have the rights and remedies described in this Section, in addition to any rights and remedies provided at law or in equity.

1. The City Manager shall be authorized to terminate said contract and bar the contractor from bidding on future contracts with the City for three (3) years from the effective date of the contract termination.

2. In the City Manager's sole discretion, a contractor found to have willfully violated the requirements of this Chapter may be required to pay liquidated damages.

3. The City may seek recovery of reasonable attorneys' fees and costs necessary for enforcement of this Chapter.

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

B. Notwithstanding any provision of this Chapter or any other Chapter to the contrary, no criminal penalties shall attach for any violation of this Chapter.

C. No remedy set forth in this Chapter is intended to be exclusive or a prerequisite for asserting a cause of action to enforce any rights hereunder in a court of law. This Chapter shall not be construed to limit an employee's right to bring a common law cause of action for wrongful termination.

D. Nothing in this Chapter shall be interpreted to authorize a right of action against the City.

Section 2. The City Clerk shall certify to the passage of this ordinance by the City Council and cause it to be posted in three (3) conspicuous places in the City of Long Beach, and it shall take effect on the thirty-first (31st) day after it is approved by the Mayor.

///

///

///

///

///

///

///

///

///

///

///

///

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

I hereby certify that the foregoing ordinance was adopted by the City Council of the City of Long Beach at its meeting of December 8, 2009, by the following vote:

Ayes: Councilmembers: Garcia, Lowenthal, DeLong, O'Donnell, Schipske, Andrews, Reyes Uranga, Gabelich, Lerch.

Noes: Councilmembers: None.

Absent: Councilmembers: None.

City Clerk

Approved: 12/11/09 (Date)

Mayor

OFFICE OF THE CITY ATTORNEY
ROBERT E. SHANNON, City Attorney
333 West Ocean Boulevard, 11th Floor
Long Beach, CA 90802-4664

ARB:bg A09-01827
L:\Apps\CityLaw32\WPDocs\D023\P009\00171620.DOC

ATTACHMENT 12

EQUAL BENEFITS ORDINANCE DISCLOSURE

As a condition of being awarded a contract with the City of Long Beach ("City"), the selected Contractor/Vendor ("Contractor") may be required during the performance of the Contract, to comply with the City's nondiscrimination provisions of the Equal Benefits Ordinance ("EBO") set forth in the Long Beach Municipal Code section 2.73 et seq. The EBO requires that during the performance f the contract, the Contractor shall provide equal benefits to its employees with spouses and employees with domestic partners. Benefits include but are not limited to, health benefits, bereavement leave, family medical leave, member ship and membership discounts, moving expenses, retirement benefits and travel benefits. A cash equivalent payment is permitted if an employer has made all reasonable efforts to provide domestic partners with access to benefits but is unable to do so. A situation in which a cash equivalent payment might be used if where the employer has difficulty finding an insurance provider that is willing to provide domestic partner benefits.

The EBO is applicable to the following employers:

- For-profit employers that have a contract with the City for the purchase of goods, services, public works or improvements and other construction projects in the amount of $100,000 or more

- For-profit entities that generate $350,000 or more in annual gross receipts leasing City property pursuant to a written agreement for a term exceeding 29 days in any calendar year

Contractors who are subject to the EBO must certify to the City before execution of the contract that they are in compliance with the EBO by completing the EBO Certification Form, attached, or that they have been issued a waiver by the City. Contractors must also allow authorized City representatives access to records so the City can verify compliance with the EBO.
The EBO includes provisions that address difficulties associated with implementing procedures to comply with the EBO. Contractors can delay implementation of procedures to comply with the EBO in the following circumstances:

1) By the first effective date after the first open enrollment process following the contract start date, not to exceed two years, if the Contractor/vendor submits evidence of taking reasonable measures to comply with the EBO; or
2) At such time that the administrative steps can be taken to incorporate nondiscrimination in benefits in the Contractor/vendor's infrastructure, not to exceed three months; or
3) Upon expiration of the contractor's current collective bargaining agreement(s).

Compliance with the EBO

If a contractor has not received a waiver from complying with the EBO and the timeframe within which it can delay implementation has expired but it has failed to comply with the EBO, the Contractor may be deemed to be in material breach of the Contract. In the event of a material breach, the City may cancel, terminate or suspend the City agreement, in whole or in part. The City also may deem the Contractor an irresponsible bidder and disqualify the Contractor from contracting with the City for a period of three years. In addition, the City may assess liquidated damages against the Contractor which may be deducted from money otherwise due the Contractor. The City may also pursue any other remedies available at law or in equity.

By my signature below, I acknowledge that the Contractor understands that to the extent it is subject to the provisions of the Long Beach Municipal Code section 2.73, the Contractor shall comply with this provision.

Printed Name:_____ Title:_____

Signature:_____ Date:_____

Business Entity Name:_____

EQUAL BENEFITS ORDINANCE
CERTIFICATION OF COMPLIANCE

Section 1. CONTRACTOR/VENDOR INFORMATION

Name: _____ Federal Tax ID No. _____
Address: _____
City: _____ State: _____ ZIP: _____
Contact Person: _____ Telephone: _____
Email: _____ Fax: _____

Section 2. COMPLIANCE QUESTIONS

A. The EBO is inapplicable to this Contract because the Contractor/Vendor has no employees. _____Yes _____No

B. Does your company provide (or make available at the employees' expense) any employee benefits? _____Yes _____No
(If "yes," proceed to Question C. If "no," proceed to section 5, as the EBO does not apply to you.)

C. Does your company provide (or make available at the employees' expense) any benefits to the spouse of an employee?
_____Yes _____No

D. Does your company provide (or make available at the employees' expense) any benefits to the domestic partner of an employee?
_____Yes _____No (If you answered "no" to both questions C and D, proceed to section 5, as the EBO is not applicable to this contract. If you answered "yes" to both Questions C and D, please continue to Question E. If you answered "yes" to Question C and "no" to Question D, please continue to section 3.)

E. Are the benefits that are available to the spouse of an employee identical to the benefits that are available to the domestic partner of an employee?
_____Yes _____No
(If "yes," proceed to section 4, as you are in compliance with the EBO. If "no," continue to section 3.)

Section 3. PROVISIONAL COMPLIANCE

A. Contractor/vendor is not in compliance with the EBO now but will comply by the following date:

_____ By the first effective date after the first open enrollment process following the contract start date, not to exceed two years, if the Contractor/vendor submits evidence of taking reasonable measures to comply with the EBO; or

_____ At such time that the administrative steps can be taken to incorporate nondiscrimination in benefits in the Contractor/vendor's infrastructure, not to exceed three months; or

_____ Upon expiration of the contractor's current collective bargaining agreement(s).

B. If you have taken all reasonable measures to comply with the EBO but are unable to do so, do you agree to provide employees with a cash equivalent? (The cash equivalent is the amount of money your company pays for spousal benefits that are unavailable for domestic partners.)
____Yes ____ No

Section 4. REQUIRED DOCUMENTATION

At time of issuance of purchase order or contract award, you may be required by the City to provide documentation (copy of employee handbook, eligibility statement from your plans, insurance provider statement, etc.) to verify that you do not discriminate in the provision of benefits.

Section 5. CERTIFICATION

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I am authorized to bind this entity contractually. By signing this certification, I further agree to comply with all additional obligations of the Equal Benefits Ordinance that are set forth in the Long Beach Municipal Code and in the terms of the contract of purchase order with the City.

Executed this ____ day of _____, 20__, at _____, _____

Name_____ Signature_____

Title_____ Federal Tax ID No._____

Bid Protest Procedures

Section 1: Who May Protest

Only a bidder who has actually submitted a bid proposal is eligible to protest a bid. The City will not accept or entertain bid protests from manufacturers, vendors, suppliers, subcontractors or the like. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.

Section 2: Time for Protest

A bidder desiring to protest a bid shall file the protest within five (5) business days following the date on which bids were opened. The City Engineer must receive the protest by the close of business on the fifth (5^{th}) business day following the bid opening.

Section 3: Form of Protest

The protest must be in writing and signed by the individual who signed the bid or, if the bidder is a corporation, by an officer of the corporation, and addressed to the City Engineer. A protest shall not be made by e-mail or fax and the City will not accept such. A protest must set forth a complete and detailed statement of the grounds for the protest and include all relevant information to support the grounds stated, must refer to the specific portion(s) of the Contract Documents upon which the protest is based, and shall include a valid e-mail address, street address and phone number sufficient to ensure the City's response will be received.

Section 4: Additional Information

Once the protest is received by the City Engineer, the City will not accept additional information on the protest unless the City itself requests it. In that case, the additional information must be submitted within three (3) business days after the request is made and must be received by the City Engineer by the close of business on the third (3^{rd}) business day.

Section 5: City Response to Protest

The City Engineer or designee will respond, by e-mail and regular mail to the addresses provided in the protest, with a decision regarding the protest within ten (10) business days following receipt of the protest or, if applicable, the receipt of requested additional information. This decision shall be final.

Section 6: Limitation of Remedy

The procedure and time limits set forth herein are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. The bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue a bid protest, including filing a Government Code Claim or initiation of legal proceedings.

Issued: _____ Date: 8/17/11

Director of Public Works

ATTACHMENT 13

LIST OF SUBCONTRACTORS

In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" Division 2 Part 1, Chapter 4 of the California Public Contract Code, the Bidder shall set forth hereon the name and location of the place of business of each subcontractor who will perform work or labor or render service to the prime contractor in or about the construction of the work or improvement, or a subcontractor licensed by the State of California who, under subcontract to the prime contractor, specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime contractor's total bid or, in the case of bids or offers for the construction of streets or highways, including bridges, in excess of one-half of 1 percent of the prime contractor's total bid or ten thousand dollars ($10,000), whichever is greater. The prime contractor shall set forth thereon the portion of the work (type and dollar value) that will be done by each subcontractor. The prime contractor shall list only one subcontractor for each portion as defined by the prime contractor in his or her bid. Information requested, other than the sub contractor's name and location of business and the portion of work that will be done by each subcontractor may be submitted by the prime contractor within 24 hours after the deadline for submission of bids.

Name _____ Type of Work _____

Address _____ _____

City _____ Dollar Value of Subcontract $ _____

Phone No. _____

License No. _____

Name _____ Type of Work _____

Address _____ _____

City _____ Dollar Value of Subcontract $ _____

Phone No. _____

License No. _____

Name _____ Type of Work _____

Address _____ _____

City _____ Dollar Value of Subcontract $ _____

Phone No. _____

License No. _____

Name _____ Type of Work _____

Address _____ _____

City _____ Dollar Value of Subcontract $ _____

Phone No. _____

License No. _____

Name _____ Type of Work _____

Address _____ _____

City _____ Dollar Value of Subcontract $ _____

Phone No. _____

License No. _____

ATTACHMENT 14

INFORMATION TO COMPLY WITH LABOR CODE SEC. 2810

To comply with Labor Code Sec. 2810, Contractor shall complete and submit this Information Sheet which shall be incorporated into and be a part of the Contract:

1) Workers' Compensation Insurance:

   A. Policy Number: _____

   B. Name of Insurer (**NOT** Broker): _____

   C. Address of Insurer: _____

   D. Telephone Number of Insurer: _____

2) For vehicles owned by Contractor and used in performing work under this Contract:

   A. VIN (Vehicle Identification Number): _____

   B. Automobile Liability Insurance Policy Number: _____

   C. Name of Insurer (**NOT** Broker): _____

   D. Address of Insurer: _____

   E. Telephone Number of Insurer: _____

3) Address of Property used to house workers on this Contract, if any: _____

   _____

4) Estimated total number of workers to be employed on this Contract: _____

5) Estimated total wages to be paid those workers: _____

6) Dates (or schedule) when those wages will be paid: _____

   _____
   (Describe schedule: For example, weekly or every other week or monthly)

7) Estimated total number of independent contractors to be used on this Contract:_

   _____

8) Taxpayer's Identification Number: _____

NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

State of California
County of _____ } ss

(1) _____, being first duly sworn, deposes and says that he or she is (2) _____ of (3) _____ the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

(4) _____

Subscribed and sworn to before me on _____.

Notary Seal

(5) _____

(1) Name of person signing on behalf of Contractor (must be authorized to sign contracts)
(2) Title
(3) Name of Contractor
(4) Signature of Contractor
(5) Signature of Notary

WORKERS' COMPENSATION CERTIFICATION

In accordance with California Labor Code Sections 1860 and 3700, I certify that I am aware of the provisions of Section 3700 which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with said provisions before commencing the performance of the Work of this contract.

Contractor's Name:

_____

Signature of Contractor, or a corporate officer of Contractor, or a general partner of Contractor

_____

Title: _____

Date: _____

ATTACHMENT 18

Return completed certificates to:
333 W. Ocean Boulevard, 9th Fl.
Long Beach, California 90802

CERTIFICATE OF INSURANCE
CITY OF LONG BEACH, CA
("the City")
A Municipal Corporation

Only this Certificate of Insurance Form will be Accepted by the City

This certifies to the City that the following described policies have been issued to the Insured named below and are in force at this time.

Approved as to Sufficiency: Mark Christoffels, City Engineer

By _____ Date: _____

Insured:
Address:
Description of Project:

Approved as to Form: Robert E. Shannon, City Attorney

By _____ Deputy City Atty Date: _____

Insurer must be admitted in California or be a non-admitted insurer rated A:VIII or equivalent.

POLICIES AND INSURERS	LIMITS	POLICY NUMBER	EXPIRE DATE
Workers' Compensation and Employer's Liability Insurer: _____	Statutory workers compensation Employer's liability* $_____ *** Minimum employer's liability limits: $1,000,000 per accident**		
Commercial General Liability Insurer: _____	$_____ per occurrence or $_____ per claim $_____ general aggregate *** Minimum GL limits: $1,000,000 per occurrence and $2,000,000 general agg.**		
Commercial Auto Liability Auto Symbol _____ Insurer: _____	$_____ BI per accident $_____ PD per accident $_____ BI per person or $_____ CSL each accident *** Minimum auto liability limits: $1,000,000 combined single limit per accident**		
Excess/Umbrella Liability Umbrella ____ Excess ____ Insurer: _____	$_____ per occurrence or $_____ per claim $_____ general aggregate Self-insured retention $_____		

This certificate is issued as a matter of information. This certificate is not an insurance policy and does not amend, extend, or alter the coverage afforded the policies listed herein. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate of insurance may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions, and conditions of such policies.

Agent/brokerage: _____

Address: _____

Name and title of person to be contacted: _____

Contact phone number: _____ Contact fax number: _____

_____ _____

Authorized Signature **Date**

Print name: _____ **Title of signatory:** _____

ATTACHMENT 18

CITY OF LONG BEACH

RISK MANAGEMENT BUREAU
333 West Ocean Boulevard, 10th floor ♦ Long Beach, California 90802
Office : (562) 570-6714 ♦ Fax: (562) 570-5375

General Liability Endorsement – Contracts/PO's

Minimum limits required: $1,000,000 per occurrence, $2,000,000 general aggregate

A. GENERAL LIABILITY POLICY INFORMATION

1. Insurance Company _____
2. Policy No. _____ Policy term (from) _____ (to) _____
3. Endorsement effective date _____ Endorsement expiration date (if blank, it is policy expiration date) _____
4. Named Insured _____
5. Address of Named Insured _____
6. Deductible or Self-Insured Retention (nil unless otherwise specified) $ _____
7. Policy Limits: Occurrence $ _____ General Aggregate: $ _____
8. Policy Form equivalent to: CG 00 01 ___ CG 00 02 (special approval required) ___ GL 00 02 and GL 04 04 ___
9. The following coverage is provided: (*required coverages)

Contractual liability for this contract*	X	Gradual pollution	___	X, C, and U hazards included*	X
Products and completed operations*	X	EMF liability	___	Sudden and accid. pollution liab.	X
Hangarkeepers	___	Personal Injury	X	Non-owned auto	___
Liquor liability	___	Watercraft liability	___	Aircraft liability	___
Fire legal liability	X	Garagekeepers	___	Other	_____

B. POLICY AMENDMENTS

This endorsement is issued in consideration of the policy premium. Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any other endorsement attached thereto, it is agreed as follows:

1. ADDITIONAL INSURED. The City of Long Beach, and its boards, commissions, officials, employees, and agents are included as additional insureds with regard to with respect to all loss, claims, damages, settlement, expenses, and costs (including but not limited to attorney's fees and defense and investigation expenses) arising from (a) activities or operations performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, or (c) premises owned, leased, or used by the Named Insured.
2. PRIMARY AND NONCONTRIBUTORY COVERAGE. As respects (a) work performed by the Named Insured for or on behalf of the City, (b) products sold by the Named Insured to the City, or (c) premises leased by the Named Insured from the City, the insurance afforded by this policy to the City, and to its boards, commissions, officials, employees and agents, shall be primary insurance. Any other insurance or self-insurance maintained by the City, its boards, commissions, officials, employees, and agents shall be in excess of this insurance and not contribute to it.
3. SEVERABILITY OF INTERESTS. The insurance afforded by this policy applies separately to each insured seeking coverage or against whom a claim is made of suit is brought, subject to the insured's limit of liability.
4. PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS. Any failure to comply with the reporting provisions of the policy shall not affect coverage provided to the City, its boards, commissions, officials, employees, or agents.
5. CANCELLATION NOTICE. This insurance shall not be reduced in coverage or limits, cancelled, or nonrenewed except after 30 days' prior written notice (10 days notice for cancellation due to nonpayment of premium) has been given to the City by certified mail. Such notice shall be addressed to the City at the above address, attention: Risk Management.

C. INCIDENT AND CLAIM REPORTING PROCEDURES

Incidents and claims are reported to the Insurer at:

ATTENTION: _____
(Name) (Title) (Company)

ADDRESS: _____

TELEPHONE: _____ FAX: _____

D. SIGNATURE OF INSURER OR AUTHORIZED REPRESENTATIVE OF THE INSURER

I, (print name) _____, warrant that I have authority to bind the Insurance company listed above in item A.1. and by my signature hereon do so bind this company.

_____ _____
SIGNATURE OF AUTHORIZED REPRESENTATIVE (original signature required) DATE

TITLE: _____ ORGANIZATION: _____

ADDRESS: _____

TELEPHONE: _____ FAX: _____

ATTACHMENT 18

CITY OF LONG BEACH

RISK MANAGEMENT BUREAU
333 West Ocean Boulevard, 10th floor ♦ Long Beach, California 90802
Office : (562) 570-6714 ♦ Fax: (562) 570-5375

Auto Liability Endorsement

Minimum limits required: $1,000,000 combined single limit

A. AUTO LIABILITY POLICY INFORMATION

1. Insurance Company _____
2. Policy No. _____ Policy term (from) _____ (to) _____
3. Endorsement effective date _____ Endorsement expiration date _____
4. Named Insured _____
5. Address of Named Insured _____
6. Deductible or Self-Insured Retention (nil unless otherwise specified) $ _____
7. Policy Limits: CSL per accident $ _____ BI per person/BI per accident/PD: $ _____
8. Coverage: Any auto ___ All owned autos ___ Scheduled autos ___ Hired autos ___ Non-owned autos ___
9. Coverage form: CA 00 01 06 92 and endorsement CA 00 25 ___ Other _____
   If excess, the policy must afford coverage at least as broad as CA 00 01 06 92 and endorsement CA 00 25:

B. POLICY AMENDMENTS

This endorsement is issued in consideration of the policy premium. Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any other endorsement attached thereto, it is agreed as follows:

1. ADDITIONAL INSURED. The City of Long Beach, and its boards, commissions,officials, employees, and agents are included as additional insureds with regard to all loss, claims, damages, settlement, expenses, and costs (including but not limited to attorney's fees and defense and investigation expenses) arising from the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired, or borrowed by the Named Insured, regardless of whether liability is attributable to the Named Insured or a combination of the Named Insured and the City, its boards, commissions, elected or appointed officials, employees, and agents.
2. PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS. Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the City, its officials, employees, or agents.
3. CANCELLATION NOTICE. This insurance shall not be reduced in coverage/or limits, cancelled, or nonrenewed except after 30 days' prior written notice (10 days notice for cancellation due to nonpayment of premium) has been given to the City by certified mail. Such notice shall be addressed to the City at the above address, attention: Risk Management.

C. INCIDENT AND CLAIM REPORTING PROCEDURES

Incidents and claims are reported to the insurer at:

ATTENTION: _____
(Name) (Title) (Company)

ADDRESS: _____

TELEPHONE: _____ FAX: _____

D. SIGNATURE OF INSURER OR AUTHORIZED REPRESENTATIVE OF THE INSURER

I, (print name) _____, warrant that I have authority to bind the insurance company listed above in item A.1. and by my signature hereon do so bind this company.

_____ _____
SIGNATURE OF AUTHORIZED REPRESENTATIVE (original signature required) DATE

TITLE: _____ ORGANIZATION: _____

ADDRESS: _____

TELEPHONE: _____ FAX: _____

CITY OF LONG BEACH

ATTACHMENT 18

RISK MANAGEMENT BUREAU
333 West Ocean Boulevard, 10th floor ♦ Long Beach, California 90802
Office : (562) 570-6714 ♦ Fax: (562) 570-5375

Excess Liability Endorsement

A. EXCESS LIABILITY POLICY INFORMATION

1. Insurance Company _____
2. Policy No. _____ Policy term (from) _____ (to) _____
3. Endorsement effective date _____ Endorsement expiration date _____
4. Named Insured _____
5. Address of Named Insured _____
6. Deductible or Self-Insured Retention (nil unless otherwise specified) $ _____
7. Policy Limits: Occurrence* $ _____ General Aggregate: $ _____

   * The City's standard insurance requirements specify "occurrence" coverage. "Claims-made" coverage requires special approval.
8. Primary/underlying general liability policy number(s) _____

B. POLICY AMENDMENTS

This endorsement is issued in consideration of the policy premium. Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any other endorsement attached thereto, it is agreed as follows:

1. ADDITIONAL INSURED. The City of Long Beach, and its boards, commissions, officials, employees, and agents are included as additional insureds with regard to all loss, claims, damages, settlement, expenses, and costs (including but not limited to attorney's fees and defense and investigation expenses) arising from (a) activities or operations performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, or (c) premises owned, leased, or used by the Named Insured.
2. PRIMARY AND NONCONTRIBUTORY COVERAGE. The additional insured coverage afforded by this policy to the City, its boards, commissions, officials, employees and agents, shall be primary insurance. Any other insurance or self-insurance maintained by the City, its boards, commissions, officials, employees, and agents shall be in excess of this insurance and not contribute to it.
3. SCOPE OF COVERAGE. This insurance afforded by this policy is at least as broad as the underlying general liability policy.
4. SEVERABILITY OF INTERESTS. The insurance afforded by this policy applies separately to each insured that is seeking coverage or against whom a claim is made or a suit is brought, subject to the insurer's limit of liability. The naming of more than one insured under this policy shall not, for that reason alone, extinguish any rights of one insured against another, subject to the insurer's limit of liability.
5. PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS. Any failure to comply with the reporting provisions of this policy shall not affect coverage provided to the City, its officials, employees, or agents.
6. CANCELLATION NOTICE. This insurance shall not be reduced in coverage or limits, cancelled, or nonrenewed except after 30 days' prior written notice (10 days notice for cancellation due to nonpayment of premium) has been given to the City by certified mail. Such notice shall be addressed to the City at the above address, attention: Risk Management.

C. INCIDENT AND CLAIM REPORTING PROCEDURES

Incidents and claims are reported to the insurer at:

ATTENTION: _____
(Name) (Title) (Company)

ADDRESS: _____

TELEPHONE: _____ FAX: _____

D. SIGNATURE OF INSURER OR AUTHORIZED REPRESENTATIVE OF THE INSURER

I, (print name) _____, warrant that I have authority to bind the insurance company listed above in item A.1. and by my signature hereon do so bind this company.

_____ _____
SIGNATURE OF AUTHORIZED REPRESENTATIVE (original signature required) DATE

TITLE: _____ ORGANIZATION: _____

ADDRESS: _____

TELEPHONE: _____ FAX: _____

CITY OF LONG BEACH

RISK MANAGEMENT BUREAU
333 West Ocean Boulevard, 10th floor ♦ Long Beach, California 90802
Office : (562) 570-6714 ♦ Fax: (562) 570-5375

Workers' Compensation and Employer's Liability Endorsement

Minimum limits required: Statutory workers' comp and $1,000,000 employer's liability

A. POLICY INFORMATION

1. Insurance Company _____
2. Policy No. _____ Policy term (from) _____ (to) _____
3. Endorsement effective date _____ Endorsement expiration date _____
4. Named Insured _____
5. Address of Named Insured _____
6. Employer's Liability limit: $ _____

B. POLICY AMENDMENTS

This endorsement is issued in consideration of the policy premium. Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any other endorsement attached thereto, it is agreed as follows:

1. CANCELLATION NOTICE. This insurance shall not be reduced in coverage or limits, cancelled, or nonrenewed except after 30 days' prior written notice (10 days notice for cancellation due to nonpayment of premium) has been given to the City by certified mail. Such notice shall be addressed to the City of Long Beach at the above address, attention: Risk Management.
2. WAIVER OF SUBROGATION. The Insurance Company in Item A.1 above hereby agrees to waive all rights of subrogation against the City, its officials, employees and agents for losses paid under the terms of this policy which arise from work performed by the Named Insured for the City.

C. SIGNATURE OF INSURER OR AUTHORIZED REPRESENTATIVE OF THE INSURER

I, (print name) _____, warrant that I have authority to bind the insurance company listed above in item A.1. and by my signature hereon do so bind this company.

_____ _____

SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE
(Original signature required on endorsement furnished to the City)

TITLE: _____

ORGANIZATION: _____

ADDRESS: _____

TELEPHONE: _____ FAX: _____

ATTACHMENT 5

CITY OF LONG BEACH

Gas & Oil DEPARTMENT

G-228A

SPECIFICATION FOR THE CONSTRUCTION OF GAS MAIN AND SERVICES

TABLE OF CONTENTS

Specifications and Standards: 3
Notices: 3
Personnel Qualification Program: 4
Verification of Related Work Experience: 4
Drug and Alcohol Testing Program: 5
Scope of Work - Pipeline Mains and Service Lines: 6
  Construction Activity Requirements – Mains and Service Lines 6
  Construction Activity Requirements – Pipeline Mains 6
  Construction Activity Requirements – Service Lines 6
  Inspection: 7
  Construction Water: 7
  As-Built Information: 7
  Permits: 7
Materials Furnished by the Contractor: 8
Pipe Placing: 8
Excavation: 8
Cut and Bore Option: 9
Tie-In Procedures: 9
Pressure Tests: 10
  Pipeline Main Pressure Testing: 10
  Service Line Pressure Test: 10
Bedding, Backfill and Street and Sidewalk Surface Restoration: 11
Backfilling and Surface Restoration Requirements on Private Property: 12
Hours of Operation: 13
Traffic Control: 13
Housekeeping: 14
Noise Control: 14

Subsurface Interferences: 14
Policy for the Removal of USA Markings: 15
Street & Sidewalk Markings: 15
Removal Of Street & Sidewalk Markings: 15
Compliance With NPDES: 15
Failure To Remove Markings: 15
Guarantee: 16
LIST OF ATTACHMENTS 17

Specifications and Standards:

All work embraced herein shall be done in accordance with the applicable requirements provided in "STANDARD SPECIFICATIONS for PUBLIC WORKS CONSTRUCTION, 2003 Edition," adopted by the City Council of the City of Long Beach, the City of Long Beach Standard Plans, January, 2003 Edition and any amendments thereto, and in accordance with these Special Provisions.

Whenever reference is made to "Standard Specifications," it shall be deemed to mean **"STANDARD SPECIFICATIONS for PUBLIC WORKS CONSTRUCTION, 2003 Edition".**

If the bidder believes that a conflict exists between said document or said documents and the bid form, the bidder shall request in writing an interpretation of said documents prior to the filling of the Bid. If the bidder fails to make such a request, then the City will assume that no conflict exists. If the bidder is awarded a contract, the bidder shall be bound by the Plans, Specifications, and Bid and shall perform the required work at the price bid.

Notices:

The Contractor shall give advance notice shown below to the proper Agency office, prior to the time each of the following operations is to be commenced:

Operation	Office	Phone	Advance Notice
Design Review	Engineering Section	(562) 570-2032 (562) 570-2034	
Start of Construction	Inspection Section	(562) 570-2085	2 Working Days
*Shutdown of work or resumption of work after shutdown	Inspection Section	(562) 570-2085	24 Hours
*Main shutdown, taps or tie-ins.	Inspection Section	(562) 570-2085	3 Working Days

*Notice for these operations may be given to the Inspector at the job site in lieu of calling the office.

The Contractor shall also contact Underground Service Alert of Southern California at 1 - (800) 422-4133 not less than 48 hours prior to excavating in each area.

The Contractor shall notify the Long Beach Dept of Public Works, telephone 562.570.6468 at least 48 hours in advance of excavating around, or adjacent to, any of the traffic signal facilities. For traffic signal notification, contact the Electronics Systems Division

at (562) 570-2787. All repair work required for these facilities will be performed by the Bureau of Public Service unless otherwise authorized or directed by the Director of Public Works. In either case, the Contractor shall be responsible for, and bear all costs for, any required remedial work due to damage caused by its operations.

The Contactor shall notify the following agencies at least 48 hours in advance of any excavation work:

City of Long Beach Water Dept (for water, sewer and storm drain)	(562) 570-2441
Southern California Edison Company	(800) 655-4555
Verizon Phone Company	(800) 555-4833
City Light & Power, Inc.	(562) 983-2000

Personnel Qualification Program:

The Contractor shall comply with all the requirements of the Department of Transportation (D.O.T) qualification of individuals performing covered tasks on a pipeline facility, Regulations 49 CFR Part 192 Subpart N. It is the responsibility of the Contractor to be familiar with the requirements of these regulations.

Prior to start of work, the Contractor shall provide adequate documentation to Long Beach Gas and Oil Department (LBGO) to substantiate that he is in full compliance with these regulations. This documentation shall include, but not be limited to; a copy of the Contractor's written D.O.T. mandated Qualification Program.

The contractor shall provide a list of workers and their qualifications shall be submitted to LBGO prior to commencing work. The contractor must keep this list current for all workers.

LBGO reserves the right to reject any Contractor that does not meet the aforementioned Qualification Program requirements of the D.O.T. regulations.

LBGO reserves the right to inspect the Contractor's Qualification Program records, if deemed necessary.

Verification of Related Work Experience:

To qualify for this project, contractors must:

1. Verify that the Contractor has been in business for a minimum of 5 years;

2. Verify that the Contractor has completed 3 natural gas pipeline projects of comparable size and complexity in the last 5 years; and

3. Supply current State of California C-34 (pipeline) or Class "A" contractor's license number.

4. Meet all D.O.T requirements.

In order to comply with Item 2 above, contractors are requested to provide 3 references that can verify their experience in contract construction work involving the installation of underground natural gas steel and polyethylene pipeline systems. The following information must be provided in connection with each reference:

(a) Identification of the company or government agency involved in a former contract;

(b) Name of person in that company or government agency who can be contacted;

(c) Telephone number of person identified (including area code); and

(d) Description of job, including type of pipe material, size and length of the pipeline.

This information shall be submitted and approved before work is started.

In lieu of the above experience requirements (Items 1 and 2), a contractor shall be deemed to qualify for this project if that Contractor has satisfactorily completed a project of similar size and complexity for LBGO within the past 10 years.

If, in the opinion of the Project Engineer from LBGO, any contractor is not technically qualified to perform the work, or the references submitted by the contractor are unsatisfactory, the Project Engineer, may, at his discretion, reject the contractor.

Drug and Alcohol Testing Program:

The Contractor shall comply with all the requirements of the D.O.T. Drug and Alcohol Testing Regulations 49 CFR Parts 40 and 199 for pipeline operators and the Federal Highway Administration Drug and Alcohol Testing Regulations 49 CFR Parts 382 and 40 for drivers of commercial motor vehicles. It is the responsibility of the Contractor to be familiar with the requirements of these regulations.

Prior to start of work, the Contractor shall provide adequate documentation to substantiate that he is in full compliance with these regulations. This documentation shall include, but not be limited to; a current copy of the Contractor's written D.O.T. mandated Drug and Alcohol testing policy indicating:

- Type of tests (pre-employment, preventative, post-accident, etc.) and details of the testing procedures employed;
- Name of the Medical Review Officer and Substance Abuse Professional and an outline of their responsibilities;

- Name of the testing laboratory and proof of N.I.D.A. certification by the U.S. Department of Health and Human Services; and
- Name of the collection agency.

The Long Beach Gas and Oil Department Project Engineer reserves the right to reject a Contractor that, in his opinion, does not meet the aforementioned drug and alcohol testing program requirements of the D.O.T. regulations.

10 days prior to start of construction the Contractor shall submit to the Project Manger a copy of the summary of results of the previous 3 month's drugs tests. This summary should include only the total number of persons tested each month and the number of positive and negative test results for each month. The names of those persons tested shall not be included in the summary report.

Long Beach Gas and Oil Department reserves the right, in accordance with the provisions of 49 CRF Part 199, to inspect the Contractor's program records, upon request.

Scope of Work - Pipeline Mains and Service Lines:

Contractor shall furnish all labor, equipment, tools, and materials, unless otherwise directed.

Construction Activity Requirements – Mains and Service Lines

All new main and service lines shall be pressure tested as specified herein before being tied in to the existing gas distribution system.

Construction Activity Requirements – Pipeline Mains

Ditches shall be excavated to a minimum width so as not to damage the pipe coating during installation and to that depth necessary to provide a minimum coverage of thirty-six (36") inches from the top of the pipe to the final grade, except where greater depths may be required by special highway or road conditions or to avoid obstructions. Approval from LBGO is required to vary from 36-inch cover.

Contractor shall install the specified type of cathodic protection test wires where insulators are installed as indicated on the drawings. Wires shall be brought to grade and terminate in a curb box in accordance with Attachment A, Standard Drawing A-914 or in the adjacent valve box.

Construction Activity Requirements – Service Lines

Unless indicated or otherwise approved, all new service and branch lines shall be of the same size as of the existing and shall be tested as specified herein before being placed into service within the existing gas distribution system.

Ditches for service lines shall be excavated to a minimum width so as not to damage the pipe during installation and to that depth necessary to provide a minimum coverage of

eighteen (18") inches on private property and twenty-four (24") inches in streets and roads from the top of the pipe to the final grade, except where greater depths may be required by special road, alley or private property conditions or to avoid obstructions. Branch services shall be installed with a minimum of twenty-four (24") inches of cover at the lot line crossing. Service line separation shall be in accordance with Attachment A, Standard Drawing A-982.

Inspection:

The Long Beach Gas and Oil Department Inspector will be designated by the Project Engineer to act on his behalf in monitoring the quality of the work from the standpoint of compliance with specification requirements. If, in the opinion of the Inspector, the quality of the construction work is not satisfactory, the Inspector may direct the Contractor to take whatever steps are necessary to bring the quality of the work up to specification standards or to stop the progress of the work, whichever is appropriate. The Contractor shall comply with all verbal and written orders issued by the Inspector.

Construction Water:

All water used during construction shall be potable water and shall be approved by Long Beach Gas and Oil Department. Water can be obtained from the Long Beach Water Department system by making application for temporary water service to the Commercial Services Bureau of the Financial Management Department, 333 West Ocean Boulevard, Long Beach, CA 90802. The Long Beach Water Department will provide a construction meter for use at the closest fire hydrant available. Charges for this water service will be at the standard established rates of the Long Beach Water Department.

The Contractor shall not use water from any fire hydrant unless said water first passes through a meter provided for the Contractor's use. Furthermore, the Contractor shall not, for any purpose, operate any valve in the Long Beach Water Department system, but shall request any necessary valve operation be done by authorized Water Department personnel.

As-Built Information:

The contractor will maintain a set of plans for the purpose of entering thereon any changes in alignment, elevation or material that may occur during the course of construction and will complete Long Beach Gas and Oil Department's standard Service Order and Report Form for each service line installed.

It shall be the responsibility of the Contractor to provide the Inspector with any requested information relative to the installations.

Permits:

The Contractor shall obtain a no-fee excavation permit from the City Public Works Department (10th floor of City Hall) for excavations in the public right-of-way. All required permits of any other nature shall be furnished and paid for by the Contractor.

Materials Furnished by the Contractor:

The Contractor shall furnish all pipe, fittings, tools, vehicles, materials, supplies and equipment unless otherwise noted in the Contract Documents and shall perform all necessary tapping and stopping to complete the project.

Materials and supplies to be used on this project shall comply with the following requirements in order to ensure compatibility and uniformity with existing Long Beach Gas and Oil Department facilities and equipment:

Pipe Placing:

Before the pipe is lowered into the trench, the trench shall be cleaned of all debris and a six-inch (6") sand bedding shall be placed and compacted in the trench bottom. The bedding or sand mounds shall be inspected by the Inspector before the pipe is lowered into the trench. Special care must be taken in handling pipe to prevent damage to the pipe and any pipe coatings. Before pipe is lowered into final position, it shall be inspected and abrasions to the pipe or coating shall be repaired.

Pipe installed in open trenches shall be carefully lowered to final grade by hand or by using belt slings. Pipelines, as finally constructed, shall conform to the profile of the excavation at all points and the pipe shall be free from excessive strains after backfilling is complete.

Excavation:

Excavations for pipe trenches and bellholes shall be made by trenching and excavation machines or by hand. All cutting of asphalt and concrete paving on public and private property shall be performed with rotary sawing equipment or by equipment, which grinds and pulverizes the paving material. Concrete shall be saw cut to the full depth of the pavement. All excavated material which is to be reused (subject to the restrictions in the paragraph entitled "Bedding, Backfill and Street Surface Restoration") shall be uniformly piled along trenches and bell holes in a manner, which will avoid interference with traffic, driveways, roads, alleys, sidewalks and other walkways. All other material shall be removed from the site and disposed of by the Contractor at regular intervals, prior to the end of each work week and as directed by LBGO for public safety and convenience.

If the cut edges of any paved surfaces located in a public street or within the limits of any private property site are broken during the course of construction, they shall be trimmed by saw cutting immediately prior to placing of the permanent asphalt or cement paving.

Trench excavations for portions of service lines located in streets shall have a minimum width of twelve inches (12") measured at the position of the horizontal diameter of the service pipe. The minimum width of the top of the trench shall also be twelve inches (12"). Joint utility trenching shall be performed in accordance with Standard Drawing A-982.

Trenches for pipelines in street and alleys shall have a maximum width of twenty-four inches (24") measured at the position of the horizontal diameter of the pipe. The maximum width of the top of the trench shall also be twenty-four inches (24").

The Contractor shall arrange his work so that a maximum of five hundred feet (500') of trench (without plates) in a public street or alley shall be open at any time. The trench excavation work shall be followed immediately by the pipe installation crews.

All excavations shall be kept dewatered by pumping or other means, until the construction or installation of facilities is complete. Water must not be allowed to enter the storm drain system.

Cut and Bore Option:

The use of the cut and bore method for installing lines requires the approval of the Gas and Oil Department. If the Contractor wishes to utilize the cut and bore method of installation the following requirements shall be strictly adhered to:

A. All bellholes through which the pipe passes during insertion into the bore hole will be excavated a distance below the pipe sufficient to allow complete visual inspection by the Long Beach Gas and Oil Department Inspector. This distance shall be a minimum of twelve inches (12").

B. During insertion, the pipe shall be rotated and wiped clean and all water and debris shall be removed from the bellholes so that the integrity of the pipe and/or coating can be inspected thoroughly.

C. No piping shall be inserted into any bore hole unless a Long Beach Gas and Oil Department Inspector is present to observe the operation.

D. All substructures in the path of the proposed pipeline shall be completely exposed prior to insertion of the pipe. Where, in the opinion of the Inspector, the boring operation produces any indication of the possible existence of a substructure interference, a bellhole shall be excavated at that location.

No extra payment will be made for alternative pipeline construction methods. Payment for pipeline construction will be in accordance with the bid proposal, regardless of the construction technique used.

Tie-In Procedures:

All tie-ins are to be performed under the supervision, and subject to the approval, of the Long Beach Gas and Oil Department Inspector. All tie-ins that are performed by Long Beach Gas and Oil Department will be billed to the contractor.

Whenever a line stopper is inserted into a fitting to shut off the flow of gas a pressure gauge shall be installed on both sides of the fitting to ensure that gas pressure to current customers is not inadvertently reduced. Each gauge will be of an appropriate range with respect to the gas main operating pressure. For example, main pressure of 7-10 psig, 15 psig, above 15 psig, will require a 0-60 psig gauge. This requirement may be waived, with permission of the Inspector.

Pressure Tests:

Pipeline Main Pressure Testing:

Upon completion of pipeline installation, the complete pipeline system shall be pressure tested with air or nitrogen and approved by Long Beach Gas and Oil Department. The testing device must be installed and removed in the presence of the Long Beach Gas and Oil Department Inspector. The testing device used for testing mains shall be a circular chart clock recording gauge that shall produce a permanent graphic record of the test results. After all of the pipe joints of the complete system have been fused or welded together, the ends shall be closed and air or nitrogen shall be pumped into the new pipeline system. Unless otherwise noted, the system shall be tested at a minimum of 95 psig for generally 24 hours but not less than 12 hours.

The system shall stand under the test pressure for the specified time duration. If any air or nitrogen escapes, as shown by a drop in gauge pressure in excess of that attributable to temperature changes, during the course of the test, the Contractor shall be required to locate the leak(s) and repair them at his own expense. If the drop in pressure is attributable to a defective weld or fusion joint, the weld or fusion shall be cut out and a new weld or fusion shall be made. In the event that a weld or fusion joint has been cut out and the ends of the pipeline so affected cannot be brought together without damage to the pipe, the contractor shall weld or fuse in a short piece of pipe. The rewelded section of a steel pipeline shall then be field wrapped by the contractor as previously specified herein. After repair work is completed, the testing procedure shall be repeated until the complete system is proved air tight to the satisfaction of the Long Beach Gas and Oil Department Inspector. No additional payment will be made to the Contractor for repair work performed to satisfy the pressure test requirements.

The contractor shall furnish the necessary recording gauges, proof of current calibration, fittings and equipment to pressurize and test the complete piping system with air or nitrogen.

The contractor shall notify the Long Beach Gas and Oil Department Inspector 24 hours in advance when the pipeline system will be ready for pressure testing.

Service Line Pressure Test:

The Contractor shall furnish the necessary gauges, fittings and equipment to pressurize and test each service line installation with air.

Each new service line system shall be air tested as follows:

After the complete service line system has been assembled, air shall be pumped into the system through the shut-off valve at the riser end (or through one of the shut-off valves with the other shut-off in the case of a branched service), through an untapped new service tee, or through a special pressurizing/purging manifold. The air test pressure shall then be increased until the complete system with all its branches, if applicable, has been pressurized to a minimum of 95 psig. The air pressure shall extend from the shut-off valve to the top of the untapped gas main inside the service

tee. The plastic system being tested shall be capable of maintaining an air pressure of 95 psig for a period of not less than 15 minutes without any discernible reduction in air pressure when using a gage with a large face diameter by means of which a very small leakage of air during the period of the test can be readily detected. The Contractor shall notify the Long Beach Gas and Oil Department Inspector in advance when service lines will be tested. The Inspector shall witness each service line test. If the service line shows any sign of leakage, the Inspector will designate the air test as a failure.

In the event of failure to pass an air test, the Contractor shall take appropriate steps to eliminate the source of the leakage, at its own expense, and the air test shall be repeated in the presence of the Inspector as many times as necessary to establish the gas tight integrity of the service line system.

Bedding, Backfill and Street and Sidewalk Surface Restoration:

Backfill (including bedding, sand encasements, and trench and pit backfill) shall be constructed in accordance with the applicable provisions of Subsection 306-1.2.1 of the Standard Specifications. However, rocks, broken pavement, or similar materials will not be allowed.

All underground piping shall satisfactorily pass inspection prior to backfilling the trench. The Contractor shall not backfill any trench without the approval of the Long Beach Gas and Oil Department Inspector. Backfilling must not commence until the pipe fits the trench and is at the proper depth and as-built surveys have been completed.

Long Beach Gas and Oil Department supplied plastic warning identification tape shall be placed in all open excavations while they are being backfilled. The tape shall be located approximately one foot (1') below finished grade above pipe and service tees.

Upon completion of the required pipe bedding and sand encasement in streets, alleys, driveways and sidewalks, the trench depth from six inches (6") above the top of the pipe to not less than one-inch below the bottom surface of the existing A.C. or P.C.C. paving shall be filled with "one sack slurry" and 95% compaction. Materials for this slurry shall meet the requirements for Class 100-E-100 concrete as specified in the Standard Specifications.

Leak testing of piping shall be completed prior to installing permanent pavement. Temporary asphalt surfacing will be required to maintain road service until the permanent pavement is installed. When temporary asphalt is used, it shall be placed four inches (4") thick and compacted.

When any pavement restoration occurs within two feet (2') of an existing construction joint, cold joint, expansion joint, or edge, the pavement between the excavation and the joint or edge shall be removed and replaced in kind along with the excavation paving. It is the bidders responsibility to determine, by site inspection prior to bidding, where these conditions exist and to include the appropriate cost in the base price bid for the pipeline construction. No additional compensation will be paid to the Contractor for extra paving required by these conditions.

Permanent pavement restoration shall commence within 10 working days from completion of construction. Final paving may be delayed long enough to allow for the accumulation of at least one 1 day's work for a crew.

All soils and debris shall be removed daily.

If saw-cutting P.C.C. sidewalks, do so on the score marks or as directed.

Do not disturb local depressions, concrete cross gutters or concrete bus stop street pads. If they are disturbed, the entire structure shall be replaced.

Permanent asphalt street surface restoration shall consist of not less than five inches (5") thick asphalt concrete conforming to the requirements of Class C2-AR-4000 as specified in Section 203-6 of the Standard Specifications. Slurry seal shall be applied for the entire lane width, it shall extend a minimum of 5 feet on either end of AC patch. Permanent concrete street surface restoration shall consist of not less than four inch (4") thick portland cement concrete conforming to the requirements of Class 520-C-2500 as specified in Subsection 102-1.1.2 of the Standard Specifications.

Pavement placement methods shall be as follows:

(1) Existing concrete pavement on top of an aggregate granular base will require placing concrete on top of the slurry backfill until flush with the existing pavement and surfacing to match the existing finish.

(2) Existing asphalt concrete pavement on top of aggregate granular base will require placing asphalt concrete on top of the slurry backfill and rolling to match the existing pavement grade. The asphalt concrete shall be applied in two layers, base course and wearing course. The wearing course shall have a minimum thickness of one-inch (1") plus or minus one-quarter of an inch (1/4"), and shall be rolled to match the existing pavement grade.

The Contractor shall employ sufficient personnel and equipment necessary to expeditiously accomplish proper placement and compaction of the asphalt concrete pavement to the satisfaction of the Inspector.

Backfilling and Surface Restoration Requirements on Private Property:

Sand bedding of the pipe in open excavations shall be performed as specified in the preceding paragraph entitled **"Bedding, Backfill and Street Surface Restoration"**.

The use of native materials from excavations on private property as fill shall be permitted, except that material such as stones, pieces of wire, concrete, etc., shall not be allowed. Backfill material containing hard lumps of clay, adobe, etc., shall be permitted; however, the Contractor shall take whatever steps are necessary to prevent the consolidated soil pieces from coming closer than six inches (6") to any portion of the plastic service line system. Use of native soil is subject to approval by LBGO Inspector

Backfill compaction on private property shall be done with a pneumatic hand-tamping machine.

Plastic warning identification tape shall be placed in all open excavations while being backfilled. The tape shall be located one foot below finished grade over the plastic pipe.

All concrete used for the restoration of driveways, sidewalks, etc., shall be as specified for street surface restoration. Where driveways, walkways or other concrete paving on private property is cut it shall be replaced to the nearest existing joint or edge and the finished surface shall match the existing in all respects.

Hours of Operation:

In addition, and supplemental to, the provisions of Subsection 6-7 "Time of Completion" of the Standard Specifications, and more specifically, 6-7.2 "Working Day" of the Standard Specifications, the following shall apply:

The Contractor shall endeavor to keep the noise level resulting from its operations to a minimum at all times, especially during the morning hours between 7 a.m. and 9 a.m.

No construction shall be permitted between the hours of 6:00 p.m. and 7:00 a.m. or as permitted under permit conditions. Weekend work may be permitted only when authorized in advance by LBGO.

Work schedule, other than standard eight-hour day from Monday to Friday, must be pre-approved by LBGO.

Traffic Control:

In supplement to the provisions of Subsection 7-10.3" Street Closures, Detours, Barricades" of the Standard Specifications, the Contractor shall provide and maintain suitable protective devices at open excavations and other areas closed to driving during non-construction periods to protect motorists and pedestrians, and to minimize potential City and Contractor liability. The Contractor shall provide proof of current "Competent Person" status for at least one person on site.

The Contractor shall submit traffic plans for major streets, prepared by a qualified traffic or civil engineer, to the City Traffic Engineer, two weeks prior to start construction.

The Contractor shall provide control of vehicular and pedestrian traffic during the construction period as follows:

Maintain a minimum of one lane in each direction while construction is in progress. If one ten-foot (10') wide lane in each direction is not feasible and traffic must be reduced to one lane, there shall be a flagman on duty to direct traffic. When construction is not being performed, all roadways shall be returned to their full traffic usage by plating or backfilling trenches.

Parking may be prohibited, as needed, by posting approved "No Parking" signs 24 hours prior to beginning construction. Signs shall be removed as soon as work is completed. Signs are available from Long Beach Gas and Oil.

Advance signing and barricading shall be performed in accordance with the procedures in the WATCH Handbook and in the Manual on Uniform Traffic Control Devices (MUTCD).

Housekeeping:

The Contractor shall make housekeeping a top priority by performing housekeeping tasks daily or more often as necessary. At the end of each working day, the Contractor shall collect and prepare for disposal all scrap, debris and waste material generated by project activities from adjacent areas including the sidewalk area, gutter, street pavement and storm drains impacted by the project. All wastes shall be stored in covered containers, disposed of or recycled immediately.

The Contractor shall clean sidewalks, driveways or other paved areas within the construction site to eliminate or prevent mud tracking conditions and safety of the citizens. Vacuuming, power sweeping or manual sweeping is acceptable. Disposal of sweepings in a place that will not pollute the storm drain system is mandatory. Domestic water may be used but it shall be contained and directed to the City owned landscapes or the sanitary sewer. The discharge of wash-water to the storm drain system is strictly prohibited.

Failure to maintain routine daily housekeeping to the satisfaction of the City Inspector will cause the City to impose fines to the Contractor up to $1500 a day.

Noise Control:

The Contractor shall endeavor to keep the noise level resulting from its operations to a minimum at all times, especially during the morning hours.

Subsurface Interferences:

The locations of all known existing subsurface structures, herein called interferences, have been determined from records and field investigations and are shown on the substructure drawings that are available for review in the office of the City Engineer. However, no guarantee can be made for the accuracy of the indicated locations or that all interferences are shown.

If the Contractor encounters any unknown interference, or if any known interference's actual location is greatly different than the drawings indicated, the Contractor shall immediately notify the LBGO Inspector and shall not move the interference or perform any work on it except in the presence of the Inspector.

If the Contractor encounters any interfering line other than a sewer or storm drain line that is abandoned, the Contractor shall remove the interfering portions of the line and seal the open ends of the line in accordance with Section 306- 5, "Abandonment of Conduits and Structures," of the Standard Specifications.

If the interfering line is active, the owner of the line shall be notified and either the line will be moved by the owner or the Inspector will make minor revisions to the alignment of the construction.

Interferences other than utilities shall be removed by the Contractor to clear construction by a minimum of 12 inches.

Policy for the Removal of USA Markings:

The City's policy applies to street and sidewalk markings used to identify the location of utility services under the USA Program and construction related markings, including but not limited to horizontal and vertical grade markings, survey stationing, offsets, curb lines, and other layout lines.

Street & Sidewalk Markings:

The facilities shall not be marked more than 14 calendar days in advance of the work performed. The contractor must outline their excavation area and include their name or initials in white spray chalk. Marking of brick pavers or concrete shall be in chalk-based or other naturally weathering materials that allow removal as specified below, but contractors and utility companies are encouraged to avoid marking in these areas by using offset markings.

Removal Of Street & Sidewalk Markings:

It is the responsibility of the permit holder/contractor to remove all utility identification and construction related markings after the completion of the work or as determined by the City Inspector and to the satisfaction of the City. *Permit holders/contractors are responsible for removal of any markings within two* (2) *months* of *the date the markings are no longer needed, or upon completion of the work, whichever is occurs first.* The City will accept natural weathering of markings if the markings disappear within the two-month period. If the markings are in brick pavers or concrete areas and if by natural weathering the markings still remain after two months, the contractor must replace the concrete or the brick pavers in-kind. The contractors and utility companies are encouraged to avoid marking in these areas by using offset markings.

Compliance With NPDES:

Removal of markings shall comply with the federal, state and local requirements of the National Pollutant Discharge Elimination System (NPDES).

Failure To Remove Markings:

Street and sidewalk markings not removed by the required time lines, may be removed and the sidewalk or street repaired/replaced by the City at its discretion. The City will charge the permit holder/contractor a service fee equal to the actual costs of removal,

plus an administrative fee of 20 percent for removing the markings, and making any repairs and/or replacements. This fee will include the cost to comply with NPDES.

Guarantee:

The Contractor shall guarantee all work done against failure due to defective materials and/or faulty workmanship for a period of 1 year from date of acceptance of the completed project by Long Beach Gas and Oil Department unless some other period is expressly set forth.

Whenever any work is to be guaranteed or maintained by a manufacturer, supplier or subcontractor, said obligations shall be that of the Contractor insofar as Long Beach Gas and Oil Department is concerned.

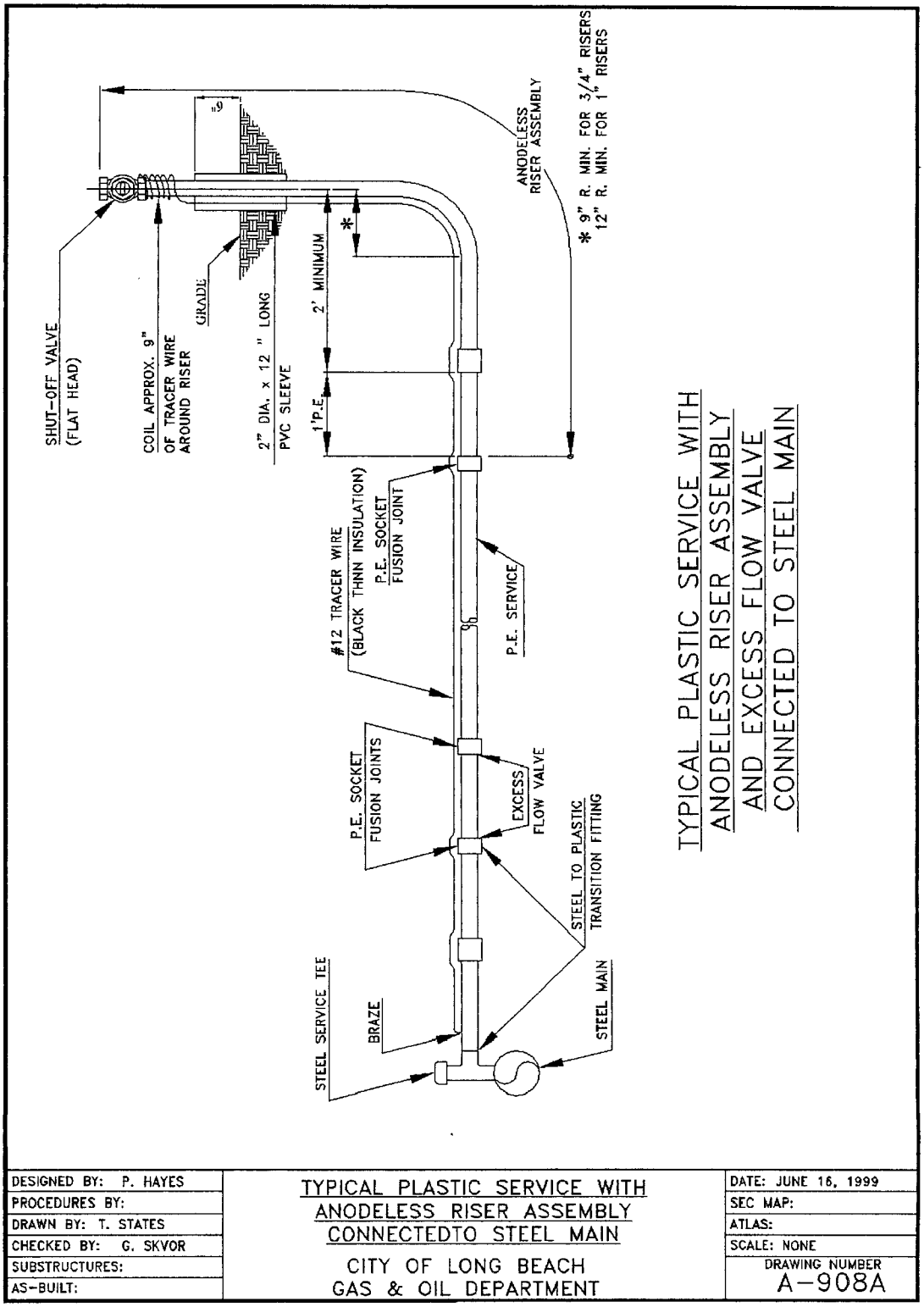
In view of the constraints which the Public Works Department of the City of Long Beach may impose on any excavation necessary to perform substructure repair work after the street improvements are completed, every precaution shall be taken to ensure that the gas main installation is carried out in such a manner as to eliminate, as far as possible, any flaws which might generate a requirement for future remedial work. In particular, every conceivable effort must be made to preclude any possibility of the new gas main being laid in such a manner that it might come into contact with any other substructure, either inadvertently during installation or as the result of future ground movement.

If within a period of 1 year following acceptance of the completed installation, surveys indicate the possibility of either a gas leak or a cathodic protection current drain, Long Beach Gas and Oil Department will perform the necessary excavation to expose a section of the line at that location. If the problem, in the opinion of Long Beach Gas and Oil Department, originated during the installation work performed under the contract, the Contractor shall reimburse Long Beach Gas and Oil Department for all repair costs associated therewith, including all excavation, backfilling and paving in accordance with the requirements of the City of Long Beach Department of Public Works. Should the problem prove to have been caused though no fault of the Contractor, Long Beach Gas and Oil Department will assume liability for the necessary repair work at that particular location.

LIST OF ATTACHMENTS

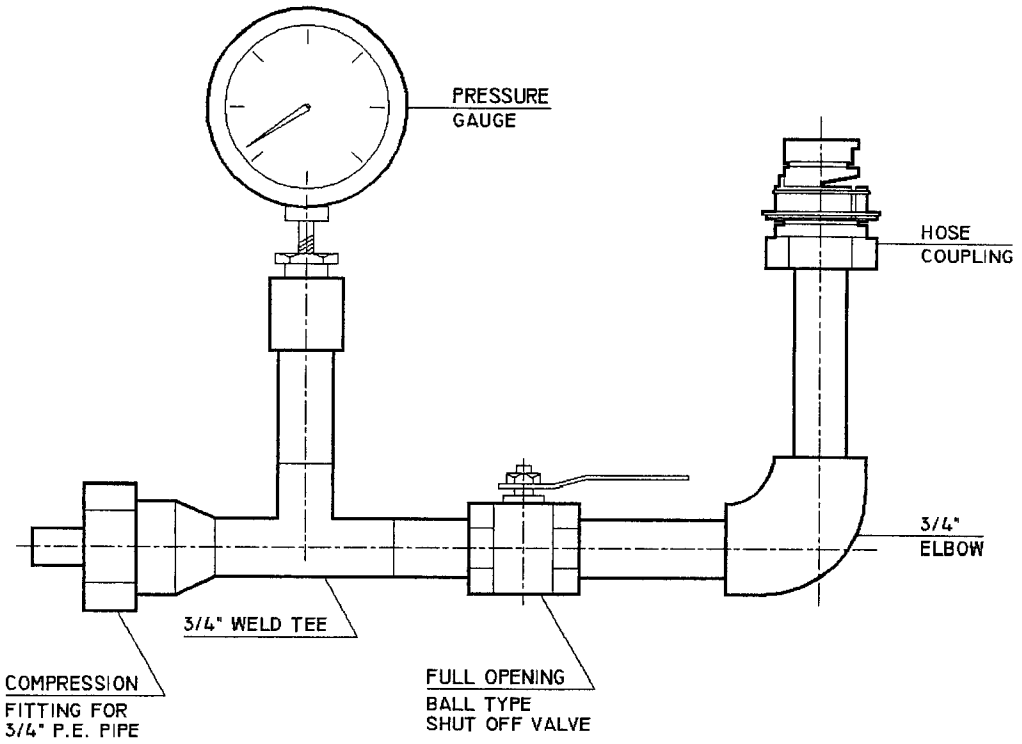
ATTACHMENT	TITLE
Drawing A-908A	Typical Plastic Service with Anodeless Riser and Excess Flow Valve Connected to Steel Main
Drawing A-908B	Pressurizing and Purging Manifold
Drawing A-909	PE Service w/ Anodeless Riser Assembly Connected to PE Main
Drawing A-909A	PE Service w/ Anodeless Riser Assembly and EFV Connected to PE Main
Drawing A-914	Typical Cathodic Protection Test Terminal
Drawing A-982	Joint Utility Trench Detail
Drawing A-983	Gas Piping Installation for Meter Rooms
Drawing A-985A	Typical Stub-Out Diagram for Multiple Gas Meter Installation Residential
Drawing A-986	Separation Requirement for Gas Service and Meter Assembly
Drawing A-989	Typical Plastic Service Stub-Out with Mechanical End Cap Connected to PE Main
Drawing A-990A	Residential Meter Compartment
Drawing A-996	Typical Installation of 2" PE Ball Valve
Drawing A-997	Typical Installation of 4" or 6" PE Ball Valve

Drawing A-908A PE Service w/ Anodeless Riser and Excess Flow Valve Connected to Steel Main



DESIGNED BY: P. HAYES	TYPICAL PLASTIC SERVICE WITH ANODELESS RISER ASSEMBLY CONNECTEDTO STEEL MAIN	DATE: JUNE 16, 1999
PROCEDURES BY:		SEC MAP:
DRAWN BY: T. STATES		ATLAS:
CHECKED BY: G. SKVOR		SCALE: NONE
SUBSTRUCTURES:	CITY OF LONG BEACH	DRAWING NUMBER
AS-BUILT:	GAS & OIL DEPARTMENT	A-908A

REVISION 11/17/2011

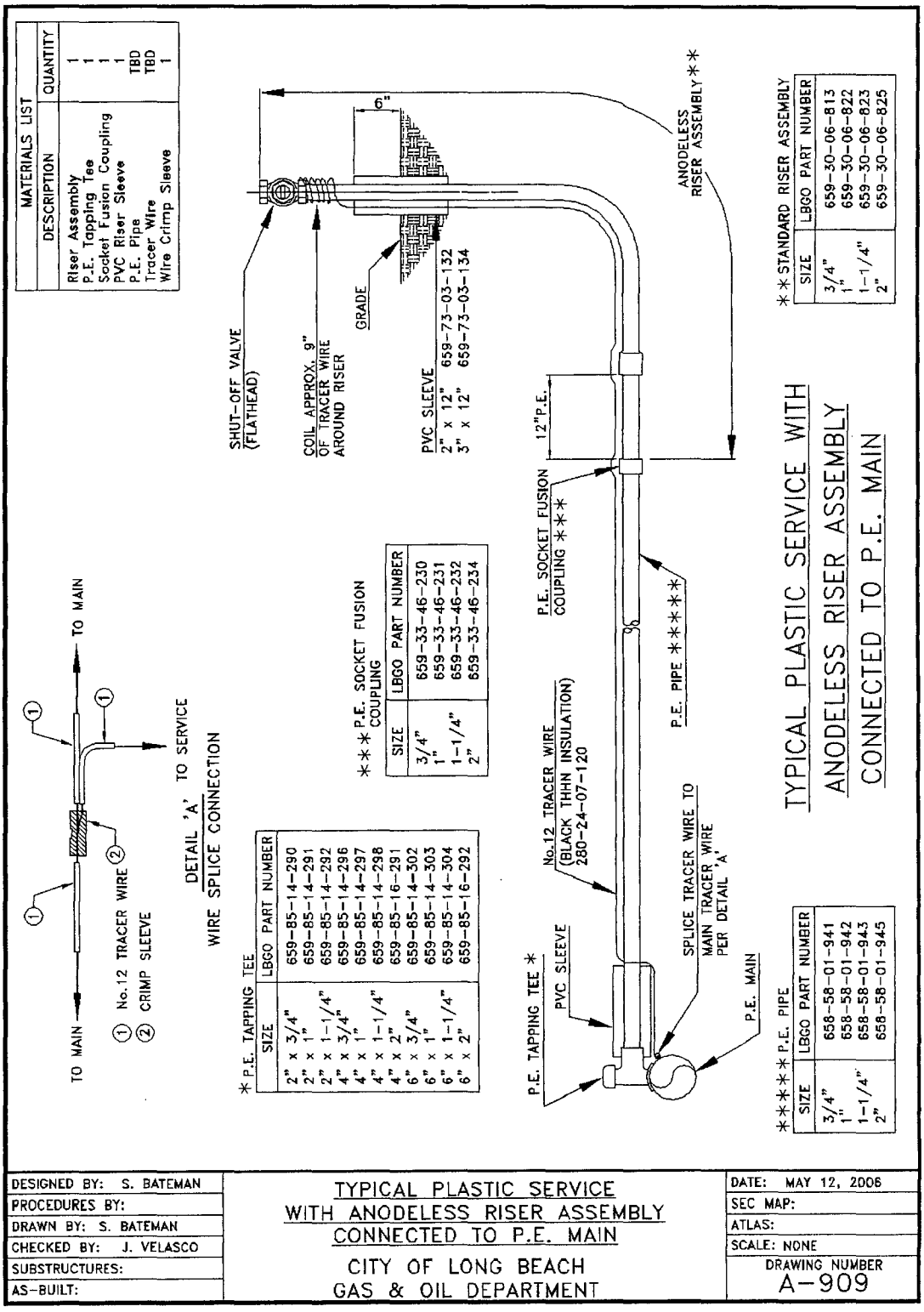


PRESSURIZING AND PURGING MANIFOLD

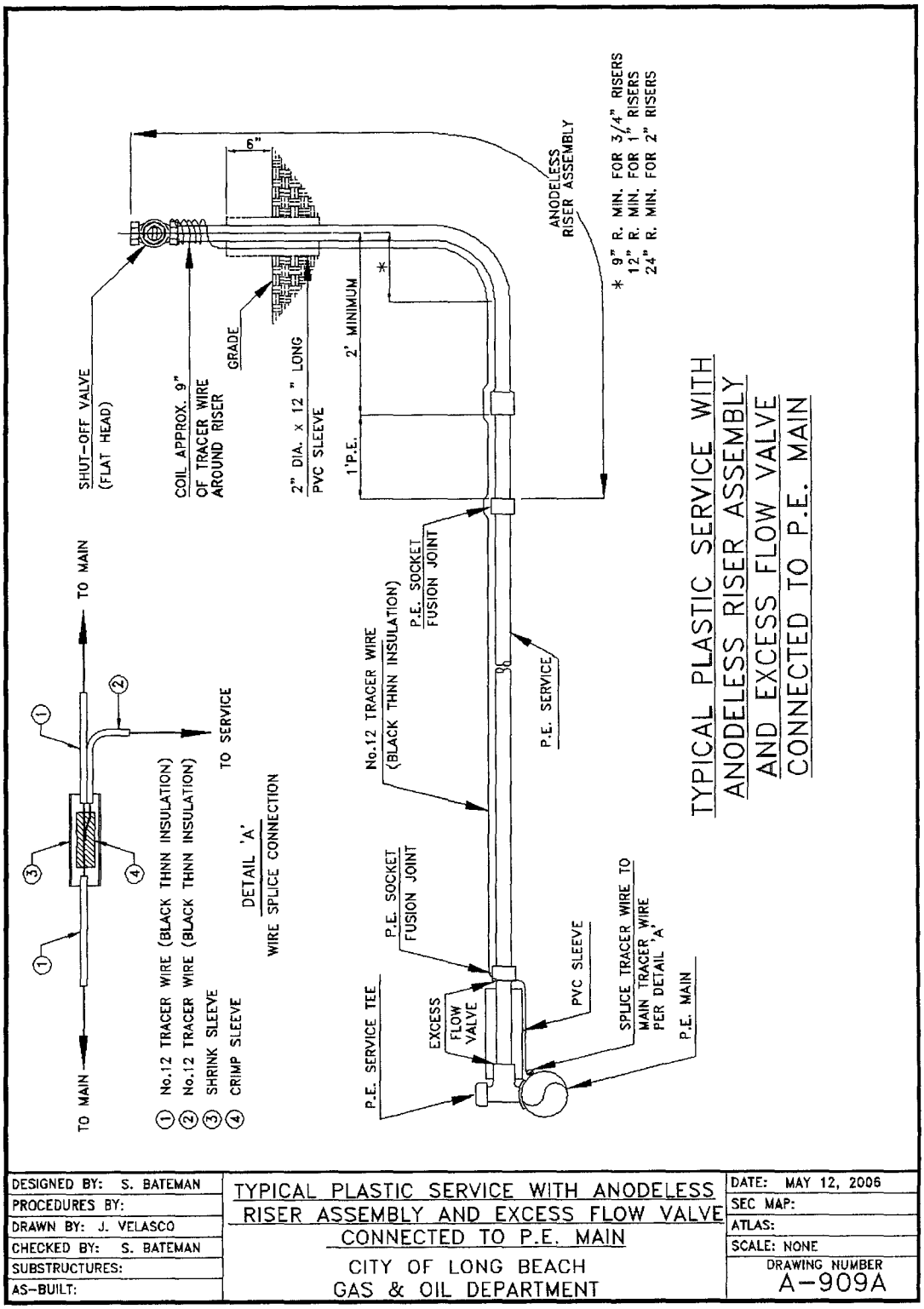
FOR USE WITH PLASTIC SERVICE LINES CONNECTED TO A STEEL MAIN WHERE AN EXCESS FLOW VALVE IS TO BE INSTALLED

DESIGNED BY: P. HAYES	PRESSURIZING AND PURGING MANIFOLD CITY OF LONG BEACH GAS & OIL DEPARTMENT	DATE: JULY 15, 1999
PROCEDURES BY:		SEC MAP:
DRAWN BY: T. STATES		ATLAS:
CHECKED BY: G. SKVOR		SCALE: NO SCALE
SUBSTRUCTURES:		DRAWING NUMBER A-908B
AS-BUILT:		

Drawing A-909 PE Service w/ Anodeless Riser Assembly Connected to PE Main

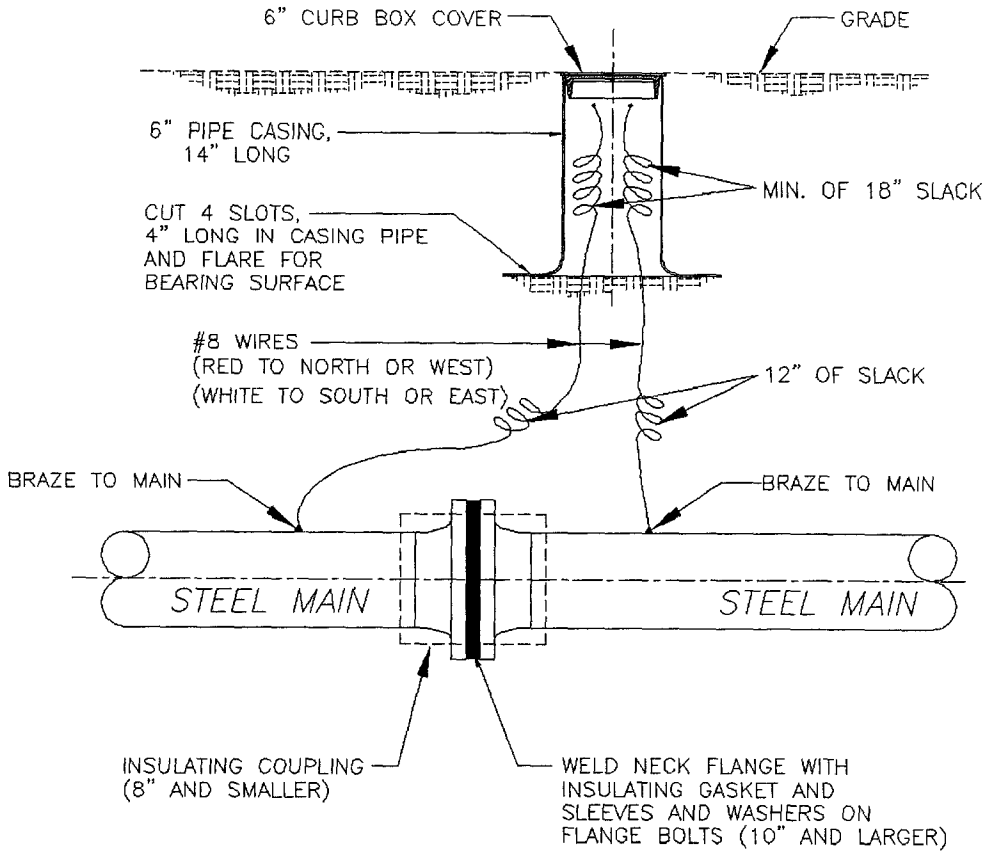


REVISION 11/17/2011

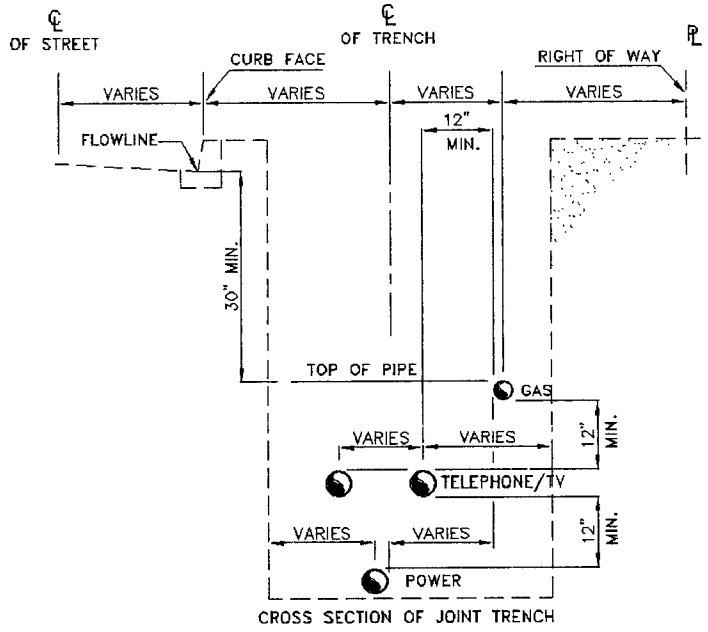


DESIGNED BY: S. BATEMAN	TYPICAL PLASTIC SERVICE WITH ANODELESS RISER ASSEMBLY AND EXCESS FLOW VALVE CONNECTED TO P.E. MAIN	DATE: MAY 12, 2006
PROCEDURES BY:		SEC MAP:
DRAWN BY: J. VELASCO		ATLAS:
CHECKED BY: S. BATEMAN		SCALE: NONE
SUBSTRUCTURES:	CITY OF LONG BEACH GAS & OIL DEPARTMENT	DRAWING NUMBER A-909A
AS-BUILT:		

NOTE: LOCATE CURB BOX AND WIRES OVER INSULATOR IN STREET UNLESS AREA IS SUBJECT TO VERY HEAVY TRAFFIC, IN WHICH CASE THEY MAY BE OFFSET INTO ADJACENT SIDEWALK OR OTHER SAFE LOCATION. (IF IN DOUBT, CHECK WITH THE CORROSION CONTROL SUPERVISOR.)

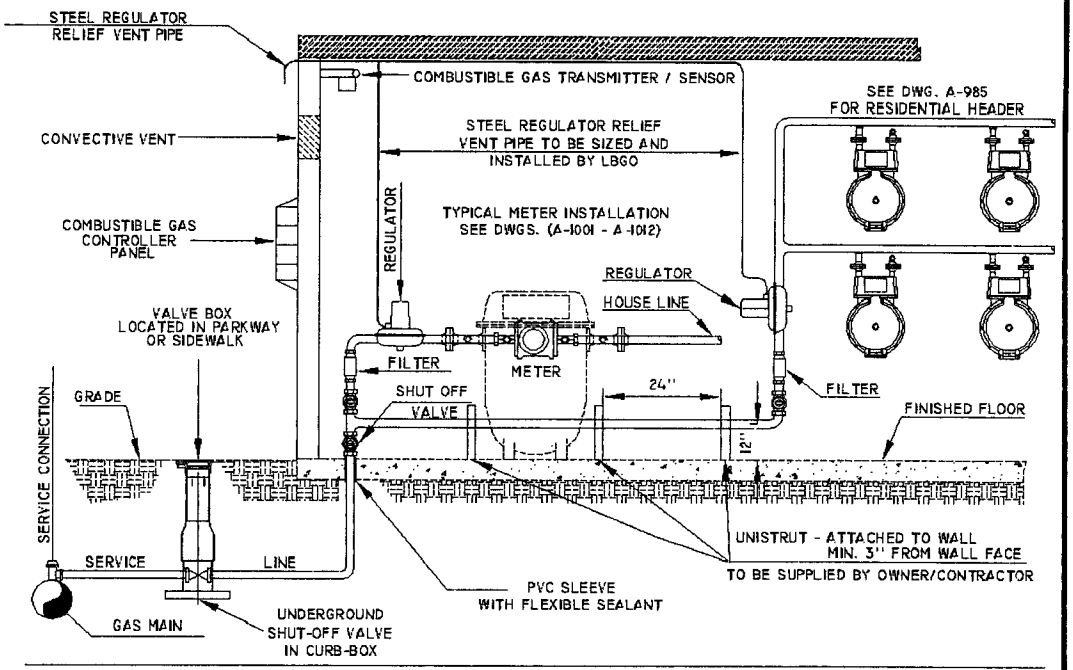


DESIGNED BY: S. BATEMAN	TYPICAL CATHODIC PROTECTION TEST TERMINAL	DATE: MAY 12, 2006
PROCEDURES BY:		SEC MAP:
DRAWN BY: S. BATEMAN		ATLAS:
CHECKED BY: J. VELASCO		SCALE: NONE
SUBSTRUCTURES:	CITY OF LONG BEACH GAS & OIL DEPARTMENT	DRAWING NUMBER A-914
AS-BUILT:		



CROSS SECTION OF JOINT TRENCH

DESIGNED BY: S. BATEMAN	JOINT UTILITIES TRENCH DETAIL	DATE: MAY 12, 2006
PROCEDURES BY:		SEC MAP:
DRAWN BY: J. VELASCO		ATLAS:
CHECKED BY: S. BATEMAN		SCALE: NONE
SUBSTRUCTURES:	CITY OF LONG BEACH	DRAWING NUMBER
AS-BUILT:	GAS & OIL DEPARTMENT	A-982



GENERAL NOTES:

1) A METER ROOM IS AN ENCLOSED SPACE WITHIN A BUILDING OR STRUCTURE THAT IS TO BE USED TO HOUSE NATURAL GAS METERING EQUIPMENT.

2) IT IS THE RESPONSIBILITY OF DEVELOPER / CONTRACTOR / OWNER TO COMPLY WITH ALL METER ROOM PROVISIONS AND OBTAIN LBGO APPROVAL PRIOR TO THE INSTALLATION OF METERS.

3) A METER ROOM SHALL BE DEDICATED SOLELY FOR THE PURPOSE OF HOUSING NATURAL GAS METERING AND REGULATING EQUIPMENT, AND BE PHYSICALLY SEPARATED BY SOLID WALLS FROM OTHER SPACES THAT ARE FOR MULTI-USE. A METER ROOM SHALL NOT BE USED AS A STORAGE AREA.

4) METER LOCATION AND METER ROOM PIPING SHALL CONFORM TO THE CURRENT EDITION OF THE CALIFORNIA PLUMBING CODE, CHAPTER 12; CALIFORNIA MECHANICAL CODE; CHAPTER 15; AND PIPELINE SAFETY REGULATIONS, 49 C.F.R. PART 192.

5) LONG BEACH GAS & OIL HAS CLASSIFIED ALL METER ROOMS AS HAZARDOUS LOCATIONS, CLASS I, DIVISION 2, PURSUANT TO THE NFPA 70, NATIONAL ELECTRIC CODE, ARTICLE 500. ALL ELECTRICAL INSTALLATIONS THAT TERMINATE OR PASS THROUGH A METER ROOM SHALL CONFORM TO ARTICLE 501 - CLASS I LOCATION, OF THE LATEST EDITION OF NFPA 70, NATIONAL ELECTRICAL CODE.

6) THE FLOOR TO CEILING HEIGHT IN A METER ROOMS SHALL BE NO LESS THAN SIX FEET, EIGHT INCHES (6'-8").

7) EACH METER ROOM SHALL HAVE A COMBUSTIBLE GAS DETECTION SYSTEM WITH AN AUDIBLE ALARM AND STROBE LIGHT LOCATED OUSTIDE THE METER ROOM. EVIDENCE THAT THE COMBUSTIBLE GAS DETECTION SYSTEM HAS BEEN TESTED SHALL BE SUPPLIED TO LBGO PRIOR TO THE INSTALLATION OF GAS METERS. GAS DETECTION SYSTEM SHALL BE LABELED SO AS NOT TO BE CONFUSED WITH FIRE ALARMS.

8) METER ROOM SHALL HAVE A MINIMUM OF TWO VENTS TO AN OUTDOOR SPACE OR PARKING STRUCTURE SPACE.

9) METER ROOM DOORS SHALL HAVE AN IDENTIFICATION LABELED "GAS METER ROOM."

10) REGULATOR RELIEF VENT PIPING MUST TERMINATE OUTDOORS.

11) METER ROOM ACCESS SHALL BE DIRECTLY FROM OUTDOORS OR FROM A PARKING STRUCTURE.

DESIGNED BY: S. BATEMAN	GAS PIPING INSTALLATIONS FOR METER ROOMS	DATE: JUNE 15, 2005
PROCEDURES BY:		SUBSTRUCTURES:
DRAWN BY: J. VELASCO		AS-BUILT:
CHECKED BY: M. ZUKOSKI		SCALE: NO SCALE
SHEET 1 OF 2	CITY OF LONG BEACH GAS & OIL DEPARTMENT	DRAWING NUMBER A-983

GENERAL NOTES:

12) ALL METER ROOMS SHALL HAVE KEYS LOCATED IN LOCKBOXES OUTSIDE METER ROOM DOOR. MULTIPLE METER ROOMS ON SAME PROPERTY SHALL HAVE DOOR LOCKS KEYED ALIKE WITH LOCKBOXES.

13) COMBUSTIBLE GAS DETECTORS

A. LOCATED INSIDE ROOM
   1. GAS SENSOR - LOCATED NO MORE THAN 6 INCHES FROM THE CEILING
   2. TRANSMITTER - TO OUTSIDE CONTROLLER
   3. CONDUIT TO MEET REQUIREMENTS OF ARTICLE 501 OF NFPA 70, NATIONAL ELECTRIC CODE FOR CLASS I, DIVISION 2 LOCATIONS

B. LOCATED OUTSIDE METER ROOM NEAR DOOR
   1. CONTROLLER
      i. DISPLAY - SHOWING THE % LOWER EXPLOSIVE LIMIT (LEL)
   2. AUDIBLE ALARM - MANUAL SILENCE OK UPON ACKNOWLEDGEMENT OF ALARM
   3. FLASHING RED STROBE LIGHT - OPERATIONAL SO LONG AS ALARM CONDITION EXISTS (LEL EXCEEDED)

14) VENTILATION
A. CONVECTIVE VENTILATION
   1. MINIMUM TWO (2) VENTS REQUIRED
      I. ONE VENT LOCATED NO MORE THAN 4 INCHES FROM CEILING OF METER ROOM
      II. ONE VENT LOCATED NO MORE THAN 12 INCHES FROM FLOOR OF METER ROOM.
      III. MINIMUM HORIZONTAL SEPARATION OF 2 FT., OR ON DIFFERENT WALL
   2. EACH VENT = MINIMUM OF 6 INCHES FROM SIDE WALL
   3. EACH VENT GRILLE AREA - MINIMUM 4 SQ. FT., WITH A MINIMUM HORIZONTAL WIDTH OF 2 FT.

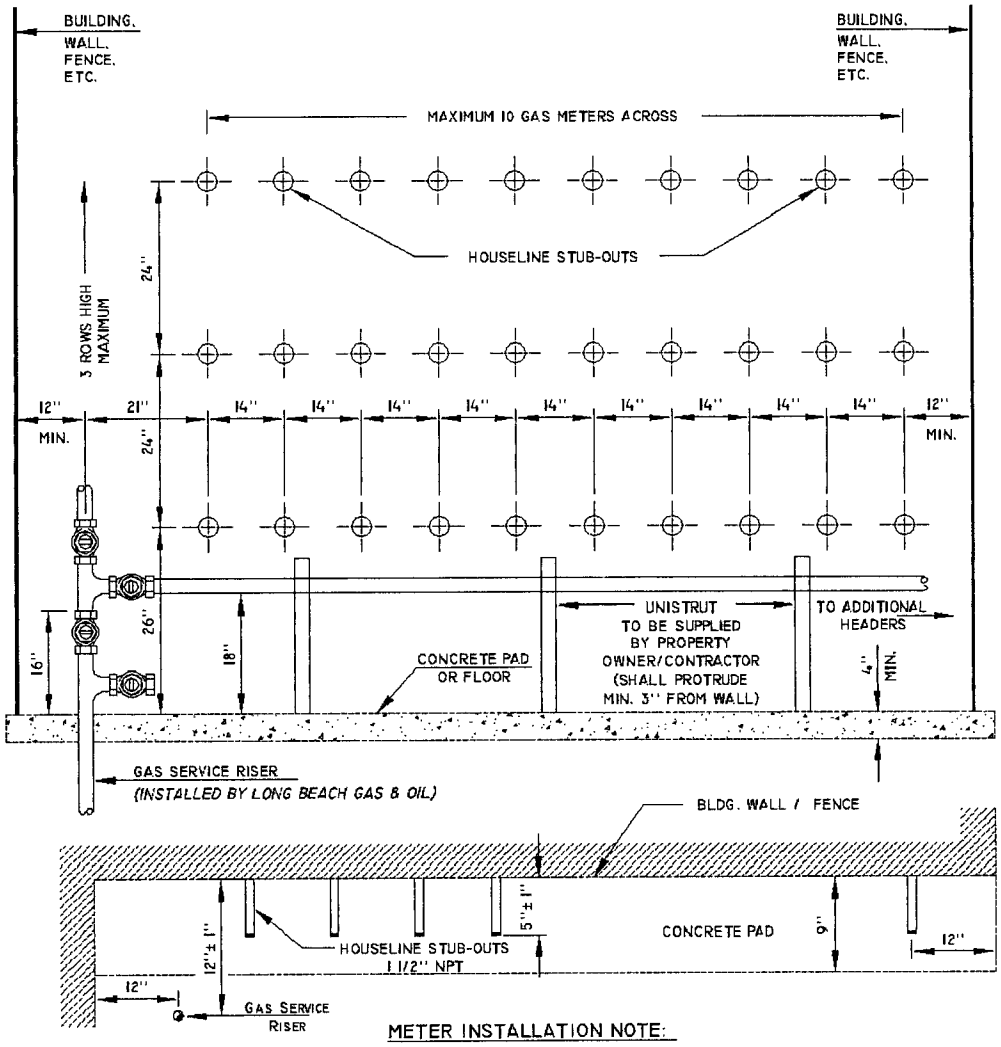
B. NEGATIVE AIR FLOW - ALTERNATIVE TO CONVECTIVE VENTILATION
   1. EXHAUST VENT DIRECTLY TO OUTSIDE AREA OR PARKING STRUCTURE
   2. MUST MEET ELECTRICAL REQUIREMENTS OF ARTICLE 501 OF NFPA 70, NATIONAL CODE FOR CLASS I, DIVISION 2 LOCATIONS

15) IF BUILDING IS EQUIPPED WITH FIRE SPRINKLERS, METER ROOM SHALL BE EQUIPPED WITH FIRE SPRINKLERS PER NFPA 13.

DESIGNED BY: S. BATEMAN	GAS PIPING INSTALLATIONS FOR METER ROOMS	DATE: JUNE 15, 2005
PROCEDURES BY:		SUBSTRUCTURES:
DRAWN BY: J. VELASCO		AS-BUILT:
CHECKED BY: M. ZUKOSKI		SCALE: NO SCALE
SHEET 2 OF 2	CITY OF LONG BEACH GAS & OIL DEPARTMENT	DRAWING NUMBER A-983

Drawing A-985A

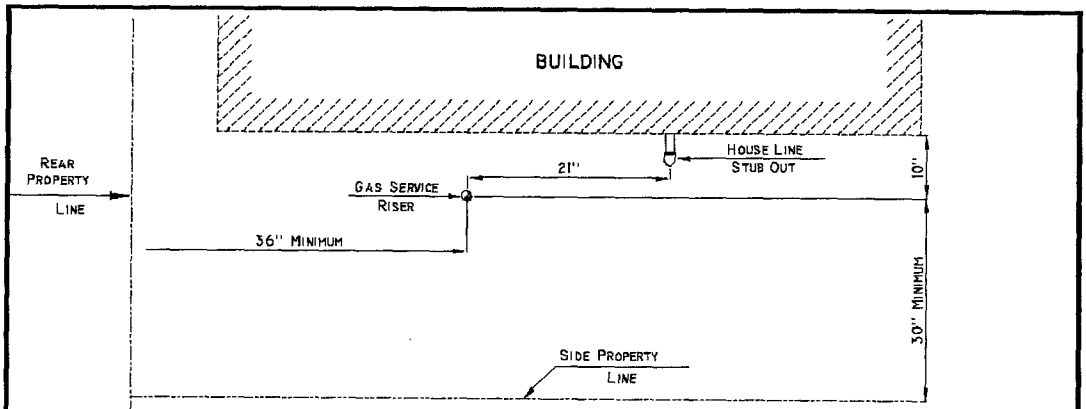
Typical Stub-Out Diagram for Multiple Gas Meter Installation Residential



METER INSTALLATION NOTE:

1. GAS METERS WILL BE INSTALLED ONLY AFTER ALL HOUSE LINES HAVE BEEN INSTALLED, TAGGED AND APPROVED BY LBGO.
2. SEE STANDARD METER ASSEMBLY DRAWING A-1001 THROUGH A-1012 FOR LOCATION CLEARANCES FROM WINDOWS, VENTS, ELECTRICAL COMPONENTS, ETC.
3. PROPERTY OWNER/CONTRACTOR RESPONSIBLE FOR COMPLIANCE.
4. CONCRETE PAD REQUIRED FOR HEADERS WIDER THAN 6 METERS PER ROW.
5. BOLLARDS TO BE SUPPLIED BY PROPERTY OWNER/CONTRACTOR TO PROTECT METERS FROM PHYSICAL DAMAGE PER LBGO INSPECTION.
6. LANDSCAPE IRRIGATION SYSTEMS SHALL BE DESIGNED NOT TO IMPINGE ON GAS METER SETS OR PIPING.
7. MINIMUM 3' DISTANCE FROM ANY OBSTRUCTION TO FRONT OF METER.
8. HOUSE / COMMERCIAL METERS SHALL BE ON SEPARATE HEADER.
9. USE BRASS TAGS ON EACH HOUSE LINE STAMPED WITH UNIT NUMBERS OF ADDRESS.
10. METER ASSEMBLY SHALL NOT BE VISABLE/ACCESSABLE FROM PUBLIC RIGHT OF WAY.

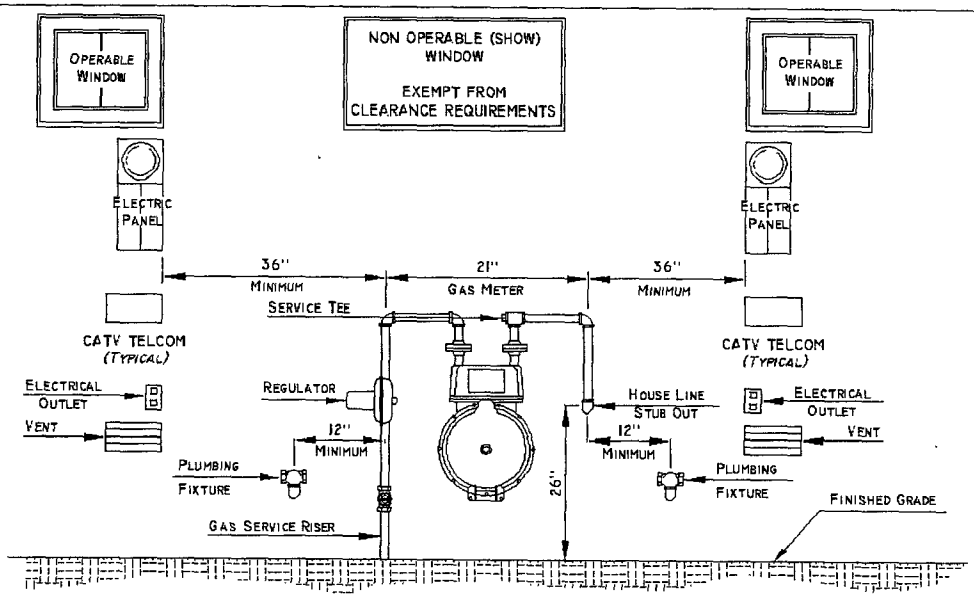
DESIGNED BY: S. BATEMAN	TYPICAL STUB-OUT DIAGRAM	DATE: JUNE 15, 2005
PROCEDURES BY:	FOR MULTIPLE GAS METER INSTALLATION	SEC MAP:
DRAWN BY: J. VELASCO	RESIDENTIAL	ATLAS:
CHECKED BY: M. ZUKOSKI	CITY OF LONG BEACH	SCALE: NO SCALE
SUBSTRUCTURES:	GAS & OIL DEPARTMENT	DRAWING NUMBER A-985A
AS-BUILT:		



RISER LOCATION - PLAN VIEW

NOTES:

1. DIMENSIONS FROM REAR AND SIDE PROPERTY LINES ARE IN ACCORDANCE WITH THE CITY OF LONG BEACH MUNICIPAL CODE, CHAPTER 21-31, TABLE 31-3.



EQUIPMENT LOCATION CLEARANCES - ELEVATION

GENERAL NOTES:

1. ALL WINDOWS OR VENTS MUST BE 36" MINIMUM FROM GAS RISER AND HOUSE LINE TIE-IN.
2. STUB-OUT TO EXTEND 2" TO 4" BEYOND THE FINISHED WALL.

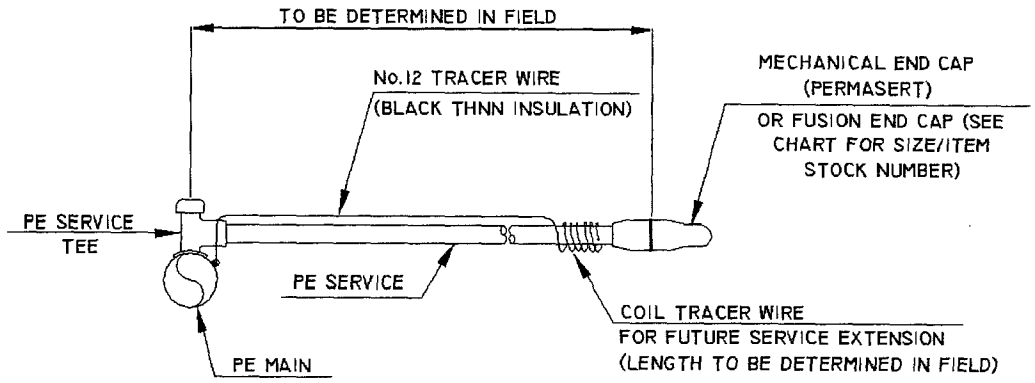
DESIGNED BY: M. J. ZUKOSKI	SEPARATION REQUIREMENTS FOR GAS SERVICES AND METER ASSEMBLIES	DATE: MARCH 9, 2004
PROCEDURES BY:		SEC MAP:
DRAWN BY: T. STATES		ATLAS:
CHECKED BY: G. S.		SCALE: NO SCALE
SUBSTRUCTURES:	CITY OF LONG BEACH	DRAWING NUMBER
AS-BUILT:	GAS & OIL DEPARTMENT	A-986

REVISION 11/17/2011

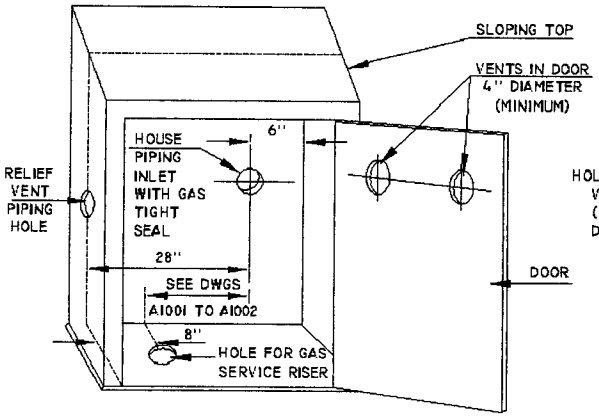
Drawing A-989

Typical Plastic Service Stub-Out with Mechanical End Cap Connected to PE Main

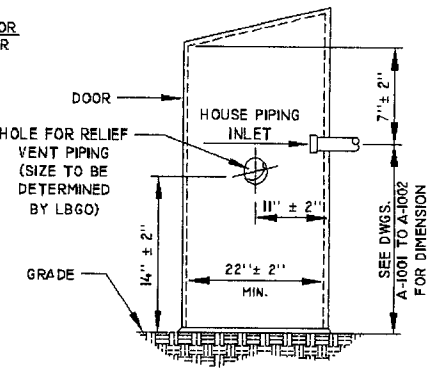
MECHANICAL END CAP (PERMASERT)	
PE PIPE SIZE	ITEM STOCK NUMBER
3/4"	659-27-11-080
1"	659-27-11-082
1 1/4"	659-27-11-084
2"	659-27-11-086



DESIGNED BY: M. ZUKOSKI	TYPICAL PLASTIC SERVICE STUB-OUT WITH MECHANICAL END CAP CONNECTED TO PE MAIN	DATE: OCTOBER 2, 2001
PROCEDURES BY:		SEC MAP:
DRAWN BY: T.STATES		ATLAS:
CHECKED BY: G.S.		SCALE: NO SCALE
SUBSTRUCTURES:	CITY OF LONG BEACH	DRAWING NUMBER
AS-BUILT:	GAS & OIL DEPARTMENT	A-989



FRONT VIEW OF SINGLE METER COMPARTMENT



SIDE VIEW OF METER COMPARTMENT

NOTE: DOORS TO METER COMPARTMENT MUST BE HINGED ON SIDE ONLY

REQUIREMENT

MINIMUM DIMENSIONS

	WIDTH OF OPENING	HEIGHT OF OPENING	DEPTH OF METER COMPARTMENT
TO ACCOMMODATE ONE DOMESTIC METER AND REGULATOR			
WHERE THE CONSUMPTION WILL NOT EXCEED 250,000 BTU/HR	30"	32"	22" ± 2"
WHERE THE CONSUMPTION WILL NOT EXCEED 375,000 BTU/HR	34"	38"	22" ± 2"
WHERE THE CONSUMPTION WILL NOT EXCEED 630,000 BTU/HR	34"	40"	22" ± 2"

THE CITY OF LONG BEACH MUNICIPAL CODES REQUIRES:

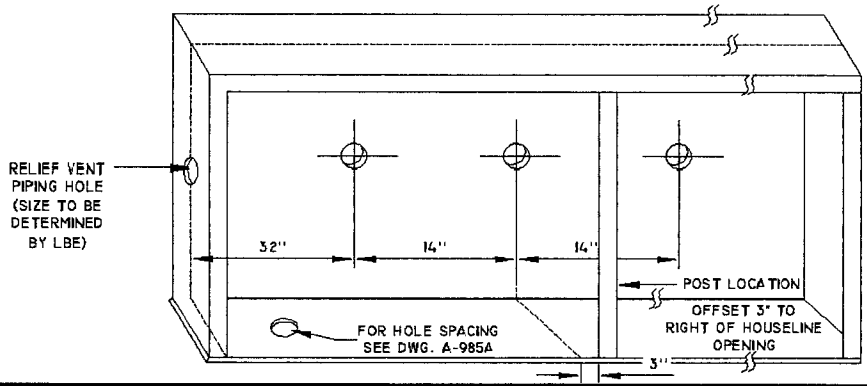
1. THE OWNER OF THE PROPERTY OR PREMISES SHALL PROVIDE A SUITABLE AND ACCESSIBLE LOCATION FOR ALL NATURAL GAS METER SET ASSEMBLIES AND RELATED APPARATUS.
2. THE METER SET ASSEMBLIES MUST BE ACCESSIBLE AT ALL TIMES TO PROPERLY AUTHORIZED EMPLOYEES OR REPRESENTATIVES OF THE CITY.
3. IF A COMPARTMENT IS PROVIDED FOR HOUSING THE NATURAL GAS METER SET ASSEMBLY, RELATED APPARATUS OR ANY PART THEREOF, IT SHALL BE USED AND OCCUPIED ONLY AND EXCLUSIVELY BY AND FOR SUCH EQUIPMENT.

COMPARTMENT MAY BE EXTERNAL OR RECESSED INTO A BUILDING STRUCTURE.
VENTS SHALL BE INSTALLED WITHIN 12" OF THE BOTTOM AND WITHIN 4" OF THE TOP OF THE COMPARTMENT.

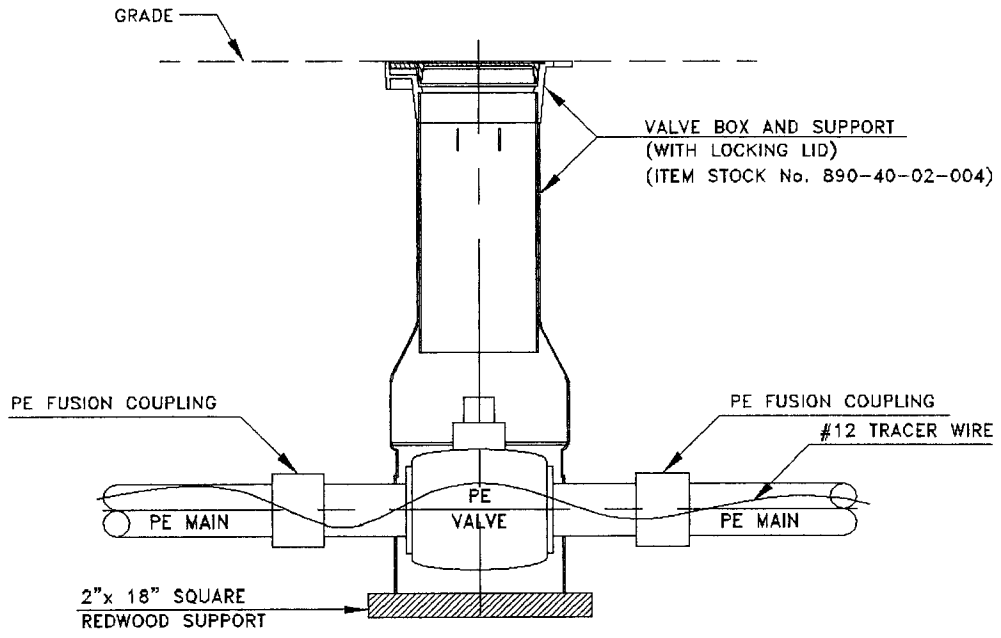
HOUSE PIPING:
SEE LONG BEACH GAS & OIL STANDARD DRAWING A-1001 OR A-1002 FOR HOUSE PIPING DIMENSIONS.

MULTIPLE METER COMPARTMENT

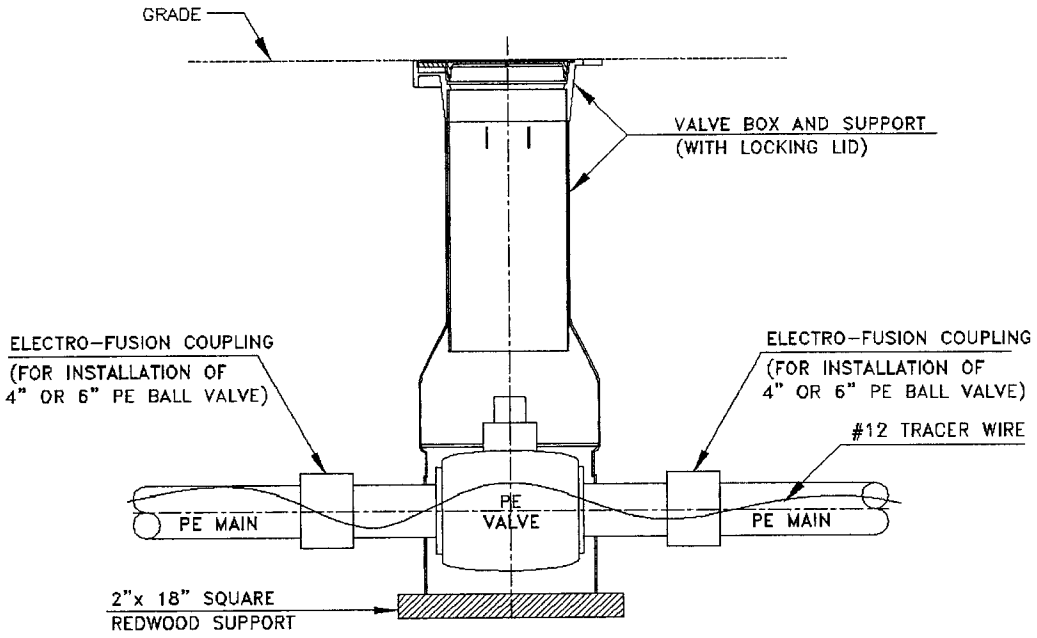
(SEE LBGO DWG. A-985A FOR MULTIPLE METER INSTALLATION REQUIRMENTS)



DESIGNED BY: S. BATEMAN	RESIDENTIAL METER COMPARTMENT	DATE: JUNE 15, 2005
PROCEDURES BY:		SEC MAP:
DRAWN BY: J. VELASCO		ATLAS:
CHECKED BY: M. ZUKOSKI		SCALE: NO SCALE
SUBSTRUCTURES:	CITY OF LONG BEACH	DRAWING NUMBER
AS-BUILT:	GAS & OIL DEPARTMENT	A-990A



DESIGNED BY: G. GREWAL	TYPICAL INSTALLATION FOR 2" PE BALL VALVE	DATE: AUGUST 25, 2003
PROCEDURES BY:		SEC MAP:
DRAWN BY: T. STATES		ATLAS:
CHECKED BY: G. SKOVOR		SCALE: NONE
SUBSTRUCTURES:	CITY OF LONG BEACH GAS & OIL DEPARTMENT	DRAWING NUMBER A-996
AS-BUILT:		



DESIGNED BY: G. GREWAL	TYPICAL INSTALLATION FOR 4" OR 6" PE BALL VALVE	DATE: AUGUST 26, 2003
PROCEDURES BY:		SEC MAP:
DRAWN BY: T. STATES		ATLAS:
CHECKED BY: G.S.		SCALE: NONE
SUBSTRUCTURES:	CITY OF LONG BEACH GAS & OIL DEPARTMENT	DRAWING NUMBER A-997
AS-BUILT:		

ATTACHMENT 6

CITY OF LONG BEACH
Gas & Oil
DEPARTMENT

G-228P
SPECIFICATION FOR INSTALLATION OF P.E. GAS MAIN AND SERVICES

TABLE OF CONTENTS

Materials: 2
Plastic Pipe and Fittings: 2
Polyethylene Pipe Fittings: 2
Fusion 45° Ell: 2
Fusion 90° Ell: 3
Fusion Tees: 3
Branch Saddles: 3
Socket Fusion Couplings: 3
Fusion Reducers: 4
End Caps: 4
Punch (Tapping) Tee: 4
High Volume Punch (Tapping) Tee: 5
Service Riser Assemblies: 5
Other Fittings and Valves 5
Valves: 5
Excess Flow Valves: 6
Electrofusion Couplings: 6
Steel to PE Transition Fittings: 6
Transport, Handling and Distributing Pipe and Materials: 7
Testing of Persons Performing Plastic Pipe Joining: 7
Pipeline Plastic Pipe Qualification Testing: 7
Plastic Pipe and Fitting Installation: 8
Tracer Wire: 10
Cover: 10
Control of Static Electricity During Squeeze-Off and Purging Operations: 10

Materials:

Plastic Pipe and Fittings:

The following medium density polyethylene pipe sizes are approved for use in the City of Long Beach Gas & Oil Department's (LBGO) gas distribution system:

Nominal Pipe Size	Dimension Ratio	Outside Diameter (inches)	Minimum Wall Thickness (in.)
¾" IPS	11.0	1.050	0.095
1" IPS	11.0	1.315	0.120
1 ¼"	10.0	1.660	0.166
2"	11.0	2.375	0.216
4"	11.5	4.500	0.391
6"	11.5	6.625	0.576
8"	11.5	8.625	0.750

All PE 2406/2708 (yellow) polyethylene pipe to be furnished shall be new and unused, of domestic manufacture and free from all defects. The pipe shall be manufactured, tested and marked in strict conformance with the requirements ASTM D 2513, D3261 for Plastic Pipe.

Pipe markings shall also comply with the limitations prescribed in U.S. Department of Transportation Pipeline Safety Standards, Part 192, Title 49 - Transportation of Natural and other Gas by Pipe Line, Paragraph 192.63. Manufacturers approved to supply PE 2406/2708 pipe for use in LBGO's gas distribution system are Performance Pipe, a division of Chevron Phillips Chemical Company LP, and JM Eagle, formerly US Poly Company.

Polyethylene Pipe Fittings:

All polyethylene pipe fittings for main and service installation shall be PE 2406/2708 manufactured in accordance with ASTM 2513 standards. Fittings shall be Performance Pipe fittings or JM Eagle fittings, or equal with prior approval from LBGO Project Engineer.

Fusion 45° Ell:

Fusion 45° ells for offsets shall be molded in the following sizes:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
4" BUTT	11.0/11.5	65M040 IPS L45D*	511450450081
6" BUTT	11.0/11.5	65M060 IPS L45D*	511663663081
8" BUTT	11.0	65M080 IPS L45D*	511863863081

Fusion 90° Ell:

Fusion 90° ells for offsets shall be molded in the following sizes:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
2" SOCKET		65M020 IPS L90K*	502238238081
4" BUTT	11.0/11.5	65M040 IPS L90D*	512450450081
6" BUTT	11.0/11.5	65M060 IPS L90D*	512663663081
8" BUTT	11.0	65M080 IPS L90D*	512863863081

Fusion Tees:

Fusion tees for branch connections shall be molded in the following sizes:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
¾" SOCKET IPS		65M.75 IPS TSTK*	503105105081
1" SOCKET IPS		65M010 IPS TSTK*	503132132081
1-1/4" SOCKET IPS		65M01.25IPS TSTK*	503166166081
2" BUTT	11	65M020 IPS TSTR*	513238238081
2" SOCKET		65M020 IPS TSTK*	503238238081
4" BUTT	11 / 11.5	65M040 IPS TSTR*	513450450081
6" BUTT	11 / 11.5	65M060 IPS TSTR*	547663663081
8" BUTT	11	65M080 IPS TSTR*	547863863081

Branch Saddles:

Branch saddles for main and service branch connections of 2" dia. shall have a rectangular base with butt fusion outlet in the following sizes:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
4" x 2"	11.0	65M 4x2 IPS BSDL*	539450238081
6" x 2"	11.0	65M 6x2 IPS BSDL*	539663238081
8" x 2"	11.0	65M 8x2 IPS BSDL*	539863238081

Socket Fusion Couplings:

Socket fusion couplings for joining two pipes of the same diameters shall be molded in the following sizes:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
¾" SOCKET IPS		65M.75 IPS CPLG*	500105105081
1" SOCKET IPS		65M010 IPS CPLG*	500132132081
1-¼" SOCKET IPS		65M1.25 IPS CPLG*	500166166071
2" SOCKET IPS		65M020 IPS CPLG*	500238238081

Fusion Reducers:

Fusion reducers for joining two pipes of different diameters shall be molded in the following sizes:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
1" x ¾" SOCKET IPS		65M 1x3/4 IPS RCOK*	504132105081
1-¼" x ¾" SOCKET IPS		65M 1-1/4x3/4 IPS RCOK*	504166105071
1-¼" x 1" SOCKET IPS		65M 1-1/4x1 IPS RCOK*	504166132071
2" x ¾" SOCKET IPS		65M 2x3/4 IPS RCOK*	504238105071
2" x 1" SOCKET IPS		65M 2x1 IPS RCOK*	504238132081
2" x 1-¼" SOCKET IPS		65M 2x1-1/4 IPS RCOK*	504238166071
4" x 2" BUTT	11.0 x 11.0	65M 4x2 IPS RSTI*	514450238081
6" x 4" BUTT	11.0 x 11.0	65M 6x4 IPS RSTI*	514663450081
8" x 6" BUTT	11.0 x 11.0	65M 8x6 IPS RSTI*	514863663081

End Caps:

Fusion end caps shall be molded in the following sizes:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
¾" SOCKET IPS		65M.75 IPS CPSK*	504105000081
1" SOCKET IPS		65M010 IPS CPSK*	504132000081
1-¼" SOCKET IPS		65M1.25 IPS CPSK*	505166000071
2" SOCKET IPS		65M020 IPS CPSK*	505238000081
4"BUTT	11.0/11.5	65M040 IPS CPST*	515450000081
6" BUTT	11.0/11.5	65M060 IPS CPST*	515663000081
8"" BUTT	11.0	65M080 IPS CPST*	515863000081

Punch (Tapping) Tee:

Tapping tees (service connection tees) shall have a rectangular base with socket outlet in the following sizes:

SIZE	Performance Pipe Part Number	JM Eagle Part Number
2" x ¾" IPS	65M 2x3/4 IPS RTSTT	547238105181
2" x 1" IPS	65M 2x1 IPS RTSTT	547238132181
2" x 1-¼" IPS	65M 2x1-1/4 IPS RTSTT	547238166171
4" x ¾" IPS	65M 4x3/4 IPS RTSTT	547450105181
4" x 1" IPS	65M 4x1 IPS RTSTT	547450132181
4" x 1-¼" IPS	65M 4x1-1/4 IPS RTSTT	547450166171
6" x ¾" IPS	65M 6x3/4 IPS RTSTT	547663105781
6" x 1" IPS	65M 6x1 IPS RTSTT	547663132781
6" x 1-¼" IPS	65M 6x1-1/4 IPS RTSTT	547663166771
8" x ¾" IPS	65M 8x3/4 IPS RTSTT	547863105781
8" x 1" IPS	65M 8x1 IPS RTSTT	547863132781
8" x 1-¼" IPS	65M 8x1-1/4 IPS RTSTT	547863166771

High Volume Punch (Tapping) Tee:

Service tees for service lines of 2" dia. may be high volume tapping tees as specified below:

SIZE	Dimension Ratio	Performance Pipe Part Number	JM Eagle Part Number
4" x 2" IPS	11.0	65F 4x2 IPS HVSTT	51A450238681
6" x 2" IPS	11.0	65F 6x2 IPS HVSTT	51A663238681
8" x 2" IPS	11.0	65F 8x2 IPS HVSTT	51A863238681

For 2" service lines connected to 2" mains, a 2" socket fusion tee shall be installed along the mainline, with a 2" PE ball valve on the branch.

Service Riser Assemblies:

All service riser assemblies shall include a gas meter valve. Service risers shall have an IPS, SDR 11, PE tail end capable for socket fusion onto a PE service line, have a threaded A-53, Schedule 40 steel pipe end, FBE or equivalent coating on exposed steel parts and not require cathodic protection (anodeless). Only riser assemblies manufactured by R.W. Lyall & Co. and Perfection Corp. are approved for use in LBGO's system. The following riser assemblies are approved for use in LBGO's distribution system:

Standard Risers	Approximate Length of Steel
¾" x ¾" straight	58-½"
¾" x ¾" pre -bent	24" x 24"
1" x 1" pre-bent	30" x 30"
1-¼" x 1-¼" pre-bent	34" x 34"
2" x 2" pre-bent	36" x 35"

The gas meter valve shall be Lube-O-Seal, or equal with prior approval from LBGO Project Engineer. A protective cap shall be provided to cover the end of the plastic pipe and a plug shall be provided in the valve outlet to protect the threads. Care shall be taken during shipment, delivery and installation to prevent damage to both the piping assemblies and the pipe coating.

Other Fittings and Valves

Valves:

All valves for use in PE systems shall be "ball-type" with a 1-3/4" operating nut compatible for use with PE 2406/2708 pipe. All valves shall be supplied by LBGO. All valve casing assemblies and lids shall be supplied by LBGO.

Excess Flow Valves:

UMAC Model 58, PE2406/2708, SDR-11, Socket fusion type, 1100 series
UMAC Model 58, PE2406/2708, SDR-11, Socket fusion type, 1800 series

Sizes: ¾" IPS, 1" IPS, 1-¼" IPS

Electrofusion Couplings:

All electrofusion couplings shall be compatible for use with PE 2406/2708 pipe. Fittings shall be INNOGAZ, or equal with prior approval from LBGO Project Engineer in the following sizes:

SIZE	INNOGAZ Part Number
¾"	88386347-3/4IPS
1"	88386354-1IPS
1-¼"	88371788-1-1/4IPS
2"	88385760-2IPS
4"	88385786-4IPS
6"	88385794-6IPS
8"	88371315-8IPS

Steel to PE Transition Fittings:

All steel to polyethylene pipe transitions shall be performed using a pre-manufactured transition fitting. The transition fitting shall be epoxy coated, schedule 40 steel pipe x PE 2406/2708, SDR 11, IPS, PE pipe, with the steel end beveled for welding. Only transition fittings manufactured by R.W. Lyall & Co. and Perfection Corp are approved for use in LBGO's system. Standard transition fittings listed below are approved for use in LBGO's distribution system:

SIZE	Dimension Ratio	Perfection Corp. Part Number	R. W. Lyall & Co. Part Number
¾" IPS x ¾" IPS	11.0	700902	LT060S060Y-AT
1" IPS x 1" IPS	11.0	701302	LT070S070Y-AT
1-¼" IPS x 1-¼" IPS	10.0/11.0	702305	LT080S080Y-AT
2" IPS x 2" IPS	11.0	702702	LT200S200Y-AT
4" IPS x 4" IPS	11.5	703102	LT400S400Z-AT
6" IPS x 6" IPS	11.5	704100	LT600S600Z-AT
8" IPS x 8" IPS	11.5		LT800S800Z-AT

Modifying the transition fitting by shortening the length of the steel portion is not permitted.

Transport, Handling and Distributing Pipe and Materials:

The Contractor shall be required to unload the pipe and distribute it along the route of the pipeline. Care must be taken not to obstruct the roadways any more than is necessary, to lay the pipe well off the traveled roadway where it will not be a menace to traffic, to leave all private and public driveways, alleys, streets, etc., open and handle the pipe in a careful manner so that the pipe will not be damaged.

Care shall be exercised at all times to protect the plastic materials from fire, excessive heat, or harmful chemicals. Thermoplastic pipe and fittings shall be protected from long-term exposure to direct sunlight.

The Contractor shall take all reasonable steps during handling and installation in order to minimize the possibility of dirt or other foreign materials getting inside the pipe. Plastic pipe ends shall be kept closed when left in trench excavations or in work areas for overnight periods. Factory installed caps shall be left on plastic pipe until ready for immediate use.

Testing of Persons Performing Plastic Pipe Joining:

Prior to the start of any work on plastic pipelines the Contractor shall submit to the Long Beach Gas and Oil Department (LBGO) a list of personnel proposed to perform plastic pipe joining. The list shall contain a brief outline of each person's experience to satisfy the requirements of Part 192.285(a)(1). Only persons qualified by LBGO in heat fusion or electrofusion are allowed to make plastic pipe joints.

LBGO will administer the necessary qualifying tests in accordance with the requirements of Part 192.285 (a)(2). LBGO will furnish pipe and fittings for the tests. The Contractor, at his expense, shall provide all equipment which will actually be used to perform fusion joints in the field such as heating equipment, electric generators, electrofusion equipment, timing devices, connecting wiring, clamps, pyrometers, etc.

To schedule the qualifying tests, the Contractor must notify LBGO two weeks prior to start of any field work for LBGO scheduling and allow for a period of 3 working days after the tests are administered before the test results will be available. Upon successful completion of testing and payment by Contractor to LBGO or other payment arrangement agreed to by LBGO, LBGO will issue a "Qualifications Card" that must be presented along with a picture ID to an LBGO representative if requested.

Pipeline Plastic Pipe Qualification Testing:

The heat fusion qualification test will consist of five fusions, all of which must be completed successfully prior to the start of any field heat fusion. For Contractors proposing to join plastic parts using electrofusion, a separate qualification test shall be administered by LBGO. LBGO adheres to the current "Heat Fusion Joining Procedures," published by Performance Pipe, a division of Chevron Phillips Chemical Company, LP as qualified plastic

joining procedures. If the Contractor uses procedures different than those recognized by LBGO, the Contractor shall submit a copy of written procedures and written documentation that the procedures have been qualified under 49 CFR Part 192.283 to LBGO prior to the scheduling of fusion testing.

For heat fusion testing, the first part will consist of heat fusing two sections of two-inch (2") diameter plastic pipe into each side of a plastic socket coupling. The second part shall consist of butt fusing two sections four-inch (4") diameter plastic pipe together. The third part shall consist of heat fusing a three-quarter-inch (¾") service tee or saddle on top of a section of two-inch 2" pipe held in the horizontal position. The fourth part shall consist of heat fusing a two-inch (2") branch saddle on the side of a section of four-inch (4") pipe held in the horizontal position. The resulting joints will be examined and tested by LBGO in accordance with 49 CFR Part 192.285(b).

For electrofusion testing, the test will consist of simultaneously electrofusing two sections of two-inch (2") diameter plastic pipe into each side of a 2" electrofusion coupling. The resulting joint will be examined and tested by LBGO in accordance with 49 CFR Part 192.285(b).

LBGO shall charge the Contractor for each person taking the heat fusion qualification test or electrofusion qualification test, pursuant to the current City of Long Beach Master Fee and Charges Schedule, as approved by the Long Beach City Council. The Contractor will be charged for each test administered, whether or not the test is successful.

Full payment for successfully qualifying personnel to perform service line and main plastic pipe joining, except for materials identified as being furnished by LBGO and costs associated with testing the completed joints (except as otherwise noted), shall be included in the base price bid for the work.

Plastic Pipe and Fitting Installation:

All in-line fitting connections of 2" or less shall be performed by socket fusion or electrofusion. All in-line fitting connections of larger than 2" shall be performed by butt fusion or electrofusion.

Approved branched main-to-main connections shall be performed as follows:

Mainline Pipe Size	Branch Pipe Size	Recommended Connection Method	Alternate Approved Connection Method
2"	2"	2" BUTT TEE	
4"	2"	4" BUTT TEE/4"x2" REDUCER	4"x2" BRANCH SADDLE
4"	4"	4" BUTT TEE	
6"	2"	6" BUTT TEE/6"x4" & 4"x2" REDUCER	6"x2" BRANCH SADDLE
6"	4"	6" BUTT TEE / 6"x4" REDUCER	
6"	6"	6" BUTT FUSION TEE	
8"	2"	8" BUTT TEE/8"x6", 6"x4" & 4"x2" REDUCER	8"x2" BRANCH SADDLE
8"	4"	8" BUTT TEE/8" x 6" & 6" x 4" REDUCER	
8"	6"	8" BUTT TEE/8" x 6" REDUCER	
8"	8"	8" BUTT TEE	

All plastic pipe joints shall be made by heat fusion methods. Electrofusion joints may be used only with the permission of a LBGO Inspector. All plastic fusion joints shall not be disturbed until they have properly set per manufactures specifications. Joining plastic pipe by mechanical methods, such as mechanical fittings or threaded couplings, or use of adhesives is not allowed.

Heat fusion and electrofusion joints shall be performed only with qualified written procedures that are approved by LBGO.

Plastic piping components are susceptible to damage by mishandling. Gouges, cuts, kinks or other forms of damage may cause failure. Care shall be exercised during handling and installation to prevent any such damage.

Sections of plastic pipe containing unacceptable defects, defective fusion joints or fusion joints that do not pass an inspection by an LBGO inspector shall be cut out and replaced with serviceable plastic pipe, using heat fusion fittings, at no expense to LBGO.

Plastic piping shall be laid on prepared pipe bedding as specified in the paragraph entitled "Bedding, Backfill and Street Surface Restoration" of Specification 228. Blocks shall not support plastic piping. The piping shall be installed with sufficient slack to provide for possible contraction. Plastic pipe shall be installed in such a way that shear or tensile stresses resulting from construction, backfill or other external loadings are eliminated. Plastic pipe may be deflected per manufacturers recommendations. Bends shall be free of buckles, cracks or other evidence of damage. Miter bends or joints are not permitted on plastic pipe. A LBGO Construction Inspector shall approve all pipe placement, bends and offsets.

Where existing substructures cannot be avoided by the use of smooth bends ("roping") the Contractor shall make the necessary elevation changes or offsets using 45-degree socket fusion elbows. LBGO's Inspector shall be consulted to determine whether to route the new pipe over, under or around any obstruction. A minimum separation of twelve-inches (12") shall be maintained between the new pipe and any other substructure unless the Inspector

waives this requirement due to unusual circumstances that render the separation requirement impractical.

All welding required for PE to steel tie-ins shall be performed in accordance with LBGO Specification number G-228S only by personnel qualified by LBGO.

Tracer Wire:

Plastic pipe shall be installed with an electrically conductive 12-gauge solid copper tracer wire with black insulation to provide a means of locating the pipe. The tracer wire shall be located at or near the top of the pipe as practicable. The tracer wire shall be taped to the plastic pipe at intervals of not more than ten-feet (10'). The tracer wire shall not be allowed to spiral around the pipe during installation.

Where the transition from steel to plastic occurs the tracer wire shall be securely brazed to the steel portion of the transition fitting and approved by LBGO Corrosion Control personnel prior to backfilling.

A tracer wire continuity check shall be completed by the contractor and approved by the Inspector prior to backfilling the excavations.

Cover:

Plastic pipe shall be installed with minimum cover depths as follows:

LOCATION	Depth of Cover
Main - City Streets and Alleys	36"
Main - Parkways	36"
Main – State Highways or	48"
Service - City Streets and Alleys	24" at flow line
Service – Private Property	18"
Service – Branch to adjoining Property	24" at property line

A LBGO Construction Inspector must approve any variation in the depth of pipe, prior to installation.

Control of Static Electricity During Squeeze-Off and Purging Operations:

Friction induced static electricity can buildup on any non-conductive surface, such as plastic pipe, creating the possibility of a spark discharge of sufficient energy to cause ignition of blowing natural gas if the proper air/gas mixture is present. A film of water on the surface of the pipe provides a conductive path to rapidly diffuse static electricity. All pipe in the work area that may be touched during purge or squeeze operations must be grounded. Grounding of plastic pipe should be performed by wrapping the entire circumferential area of

exposed piping with a wet, soapy rags made out of burlap or other non-synthetic material such as a wet tape. The material needs to go from ground to the pipe to the ground. Do not permit the material to dry out.

All tools and fittings used in squeezing, cutting or purging of plastic pipe connected to LBGO's gas distribution system shall be grounded during the squeezing, cutting or purging operation.

Where metallic pipe is involved, construction personnel shall wear dry gloves and take precautions to prevent any other part of the body from coming into contact with pipe, fittings, etc. to help ensure the prevention of accidental ignition of blowing gas.

ATTACHMENT 7

CITY OF LONG BEACH
Gas & Oil
DEPARTMENT

G-228S
SPECIFICATION FOR INSTALLATION OF STEEL GAS MAIN AND SERVICES

TABLE OF CONTENTS

MATERIALS: 2
Pipe 2
Pipe Coating 3
Pipe Marking 3
Girth Joint Coating 3
Tape coating for flanges, tapping fittings and valves: 3
Weld Fittings 3
Flanges 4
Flange Gaskets and Isolation Kits 4
Steel Valves 4
Main Connections to Existing Steel Mains 4
Miscellaneous Steel Tapping Fittings 5
Line Stops on Existing Steel Mains 5
Service Connections to Existing Steel Mains 5
Steel to PE Transition Fittings 5
Isolation Fittings 5
Casing Seals and Spacers 6
MATERIAL HANDLING AND INSPECTION 6
Pipe Coating Process and Inspection 6
Pipe and Component Inspection 7
Pipe Handling 7
Distributing Pipe and Materials 7
WELDER QUALIFICATION 7
Testing of Persons Performing Welding on Steel Pipelines 7
Pipeline Welder Qualification Testing 8
INSTALLATION 8
Clearance from Other Underground Structures 8
Cover 9
Smooth Pipe Bends 9
Valve Installation 10
Pipeline Miter Joints 10
Field Wrapping 10
Pipe Joining – Welding 10
Qualification of Welders 10
Welding and Preparation 10
Weld Inspection 12
Weld Repairs 13

MATERIALS:

All materials used in the construction of mains and services for the Long Beach Gas & Oil Department must comply with those standards enumerated in the Code of Federal Regulations, Title 49, Part 192, Transportation of Natural and Other Gas by Pipe Line: Minimum Federal Safety Standards. The following tables list those parts and manufacturers that are currently approved for installation in LBGO's natural gas distribution system. Unless otherwise specified, all valves shall be supplied by LBGO. All valve casing assemblies and lids shall be supplied by LBGO. Prior to use, any part or fitting not listed in the tables below must be approved by LBGO Project Engineer or Construction Inspector.

Pipe

Unless otherwise specified, all steel pipe must be new and unused, preferably of domestic manufacture, straight and free from all defects, with ends beveled for welding. Length of pipe joints shall be standard for all pipe supplied. The pipe shall be manufactured, tested and marked in strict conformance with the requirements of one of the following pipe specifications:

API Std. 5L, Grade B ..... Steel Line Pipe
ASTM A-53, Grade B ..... Electric Resistance Welded Steel Pipe
ASTM A-106, Grade B ..... Seamless Steel Pipe

Standard pipe sizes listed below are approved for use in LBGO's distribution system:

NOMINAL PIPE DIAMETER (inches)	PIPE SCHEDULE	OUTSIDE DIAMETER (inches)	NOMINAL WALL THICKNESS (inches)	APPROX PIPE WEIGHT Per FT (lbs.)
¾	40	1.050	0.113	1.131
1	40	1.315	0.133	1.679
1 ¼	40	1.660	0.140	2.273
2	40	2.375	0.154	3.653
3	40	3.500	0.216	7.576
4	40	4.500	0.237	10.79
6	40	6.625	0.280	18.97
8	40	8.625	0.322	28.55
10	40	10.75	0.365	40.48
12	40	12.75	0.375	49.56
14	30	14.00	0.375	54.57
16	30	16.00	0.375	62.58
20	30	20.00	0.500	104.10

Pipe sizes not listed in the table above shall be approved by the LBGO Project Engineer prior to installation in LBGO's distribution system.

Pipe Coating

All steel pipe must be coated in accordance with one of the following plant applied coating systems:

NOMINAL PIPE SIZE (inches)	MANUFACTURER	PRODUCT	MINIMUM THICKNESS
2" to 3"	Tyco – Polyken	Synergy	50 mils
4" to 20"	Bredero Shaw	3LPE	50 mils
2" to 20"	Bredero Shaw	Dual Layer FBE	50 mils

Depending on the installation technique, additional coating thickness may be required. Unless otherwise specified, the coating shall be cut back six inches from each end of the pipe length. The outer layer of all pipe coating must be yellow, unless the Contractor receives prior approval from LBGO Project Engineer.

Pipe Marking

The exterior surface of the pipe coating must be continuously imprinted with identification markings that include, but not limited to, the following:

Specification, grade, and schedule or wall thickness of the pipe and coating type, coating date and coating contractor's name

Girth Joint Coating

All girth joints shall be coated using heat shrinkable sleeves (Covalence Raychem WPC/B or CANUSA) or Cold applied tape coating system (Polyguard Products 600/634P - Polyken® 930-35).

Tape coating for flanges, tapping fittings and valves:

All irregular shaped components that are installed belowground shall be coated prior to backfill. For components that are not factory-coated, Trenton #1 Wax-Tape and primer shall be used, unless the Contractor receives prior approval from LBGO Construction Inspector.

Weld Fittings

Unless otherwise specified, all steel pipe fittings must be new and unused, of domestic manufacture, free from all defects, with ends beveled for welding that meet the specifications described below. Each valve, fitting, or other component must bear a marking as prescribed in the specification or standard to which it was manufactured, or to indicate size, material, manufacturer, pressure rating, type, grade and model. All markings must remain clearly visible until the item is installed. Any component that will be subjected to internal pressure shall not have markings that are die stamped.

Flanges

All steel flanges must be raised face, rated at Class 150, 275 MOP, and meet the requirements of ASME/ANSI B16.5. All flanges shall be joined using ASTM A193, Grade B7 studs and nuts.

Flange Gaskets and Isolation Kits

Non-isolating flange gaskets shall be PTFE-Teflon (Garlock Gylon® Style 3510 or pre-approved equivalent) with a thickness of 1/16".

Electrical isolating flange gaskets shall have a phenolic retainer with a nitrile sealing ring and a dielectric strength of 500 volts/mil designed for a temperature range of -65°F to 220°F (PSI LineBacker® Type E Sealing Gasket). Isolating bolt sleeves shall be Mylar double integral sleeves with steel washers.

Steel Valves

All steel valves must be weld-end, welded-body ball valves designed for natural gas service, which meet the requirements of API 6D. All steel valves must be rated at Class 150, 275 MOP and designed for buried service.

Unless otherwise specified, all valves shall be supplied by LBGO. All valve casing assemblies, boxes and lids shall be supplied by LBGO.

Main Connections to Existing Steel Mains

All main connections to steel main shall be performed using the following Mueller® fittings:

NEW MAIN SIZE	LBGO Part Number	Mueller Company Part Number
2" Service Tee	6598410944	H-17500 – 2"x2"
3" Flanged Tee	6598408882	H-17505 – 3"
4" Flanged Tee	6598408883	H-17505 – 4"
6" Flanged Tee	6598408884	H-17505 – 6"
8" Flanged Tee	6598408885	H-17505 – 8"
HOST MAIN CONNECTION SIZE		
2" Bottom Out Line Stopper		H-17160 – 2"
3" Bottom Out Line Stopper	6595442343	H-17260 – 3"
4" Bottom Out Line Stopper	6595442344	H-17260 – 4"
6" Bottom Out Line Stopper	6595442345	H-17260 – 6"
8" Bottom Out Line Stopper	6595442346	H-17260 – 8"

Bottom-Out and Side-Out Line Stopper fittings for pipe sizes not listed in the table above shall be approved by the LBGO Project Engineer prior to installation.

Miscellaneous Steel Tapping Fittings

Mueller® Save-A-Valve® Drilling Nipple Welding Type For Steel Pipe, Catalog No. H-17490 in the following sizes: 1" x 3", 1-¼" x 3", & 2" x 3"

Line Stops on Existing Steel Mains

All line stops on existing steel main shall be performed using the following Mueller® fittings:

MAIN SIZE	LBGO Part Number	Mueller Company Part Number
2" Low Pressure Line Stopper	6595437335	H-17190 – 2"
2" Standard Line Stopper	6595438341	H-17125 – 2"
3" Low Pressure Line Stopper	6595437336	H-17190 – 3"
3" Standard Line Stopper	6595433342	H-17255 – 3"
4" Low Pressure Line Stopper	6595437337	H-17190 – 4"
4" Standard Line Stopper	6595433343	H-17255 – 4"
6" Standard Line Stopper	6595433345	H-17255 – 6"
8" Standard Line Stopper	6595433346	H-17255 – 8"
10" Standard Line Stopper	6595433347	H-17255 – 10"
12" Standard Line Stopper	6595433348	H-17255 – 12"

Line stopper fittings for pipe sizes larger than 12" shall be approved by the LBGO Project Engineer prior to installation.

Service Connections to Existing Steel Mains

All service connections to steel main shall be performed using one of the following Mueller® NO-BLO® Forged Steel Valve Tees:

SERVICE SIZE	LBGO Part Number	Mueller Company Part Number
1" x 1"	6598409934	H-17650 – 1"x1"
1-¼" x 1-¼"	6598409935	H-17650 – 1¼"x1-¼"
2" x 2"	6598409938	H-17650 – 2"x2"

Steel to PE Transition Fittings

Steel to PE transition fittings are described in LBGO Specification number G-228P, Specification for Installation of PE Gas Main and Services. All PE fusion required for PE to steel tie-ins shall be performed in accordance with LBGO Specification number G-228P only by personnel qualified by LBGO.

Isolation Fittings

All belowground pipeline cathodic protection isolation shall be performed using a pre-manufactured electrical isolator fitting. Unless otherwise specified, the isolator fitting shall be compatible with schedule 40, Grade B steel pipe, with the steel end beveled for welding. Unless otherwise specified, all isolation fittings shall be supplied by LBGO.

Casing Seals and Spacers

All steel pipe installed through a wall penetration or installed in a casing shall be sealed and isolated from the hole or casing. The seal shall be suitable for use in water, direct ground burial and atmospheric conditions. The seal shall also provide electrical insulation for cathodic protection. Unless otherwise specified, all seal elements shall be EPDM rubber. All steel pipe installed in a casing shall be isolated from the casing with isolators/spacers. Isolators/spacers shall be non-metallic and designed to center the carrier pipe within the diameter of the casing.

Seals and Spacers listed below are approved for use in LBGO's distribution system:

Carrier Pipe Size x Casing Pipe Size or Hole ID	LBGO Part Number	PSI Casing Isolator/Spacer Part Number	LBGO Part Number	PSI Thunderline Link Seals Part Number
2" x 4"		PE2 x 4		LS-300-C-6
4" x 6"		PE4 x 6		LS-300-C-10
6" x 8"		PE6 x 8	6700403306	LS-300-C-14
3" x 6"		PE3 x 6		LS-425-C-4
4" x 8"		PE4 x 8	6700403704	LS-475-C-7
6" x 10"		PE6 x 10		LS-475-C-10
8" x 12"		PE8 x 12	6700403708	LS-475-C-12
12" x 16"		PE12 x 16		LS-425-C-12

MATERIAL HANDLING AND INSPECTION

Pipe Coating Process and Inspection

The Contractor shall notify LBGO 48 hours prior to commencing the cleaning and coating of pipe. A LBGO Construction Inspector shall have free access to all materials and shall be free to inspect and observe all phases of the coating process, from the blasting of the pipe to the final banding of the pipe for shipment. The Contractor may be required to provide airfare, food and lodging for a LBGO Construction Inspector to observe the coating process in the event that the pipe coating plant is located at a distance greater than seventy-five (75) miles from Long Beach Gas and Oil Department's Base Facility, at 2400 E. Spring Street, Long Beach, California.

The coating shall be thoroughly inspected by the contractor prior to installation with a spark gap holiday detector (8,000 volts minimum), approved by the LBGO Construction Inspector. The Contractor shall furnish the equipment and labor to perform the holiday inspection. Contractor shall notify the LBGO Construction Inspector of any defect disclosed by the holiday detector and any other damage discovered by visual inspection of the pipe coating. Damaged sections that are unrepairable, as determined by the LBGO Construction Inspector, shall be cut out. The Contractor shall repair all other damage in accordance with the coating manufacturer's published recommended repair procedure at no expense to LBGO. The method used to remove the coating shall not damage the pipe in any way.

Pipe and Component Inspection

The LBGO Construction Inspector shall approve all pipe and components. Each pipe joint and piping component shall be visually inspected for damage, prior to installation. Any component that is discovered to be damaged shall be set aside and a replacement component shall be installed in its place. Any damaged component shall be rejected.

Pipe Handling

The equipment used for pipe handling must not damage the pipe or its coating. Slings or hooks used to move pipe shall be designed and/or padded so as to prevent damage to pipe coating or deformation of the pipe and its welding bevels.

Bare and coated pipe may be stockpiled or nested. The pipe shall be supported clear of the ground. The supports may be sand berms, wooden blocks, concrete piers or similar devices, designed to prevent deformation of the pipe or coating. Coating which is damaged due to stockpiling, handling, or any other cause, shall be repaired as described hereinafter. Blocking of the stockpile shall be adequate to prevent failure.

Distributing Pipe and Materials

The Contractor shall be required to unload the pipe and distribute it along the route of the pipeline. Care must be taken not to obstruct the roadways any more than is necessary, to lay the pipe well off the traveled roadway where it will not be a menace to traffic, to leave all private and public driveways, alleys, streets, etc., open and handle the pipe in a careful manner so that the pipe and pipe coating will not be damaged.

WELDER QUALIFICATION

Testing of Persons Performing Welding on Steel Pipelines

Prior to the start of any work on steel pipelines the Contractor shall submit to the Long Beach Gas and Oil Department (LBGO) a list of personnel proposed to perform welding on steel pipe. Only persons qualified by LBGO are allowed to weld steel pipe on LBGO's gas distribution system.

LBGO will administer the necessary qualifying tests in accordance with the requirements of 49 CFR 192.227. LBGO will furnish pipe for the tests. The Contractor, at his expense, shall provide all equipment and consumables, which will actually be used to perform welds in the field such as welding machines, preparation equipment, grinders, welding rods, etc.

To schedule the qualifying tests, the Contractor must notify LBGO two weeks prior to start of any field work for LBGO scheduling and allow for a period of 3 working days after the tests are administered before the test results will be available. Upon successful completion of testing and payment by Contractor to LBGO or other payment arrangement agreed to by LBGO, LBGO will issue a "Qualifications Card" that must be presented along with a picture ID to an LBGO representative if requested.

Pipeline Welder Qualification Testing

All welders shall be qualified under API 1104, Section 3.

The SMAW welder qualification test will consist of 2 welds, both of which must be completed successfully prior to the start of any field weld process. For Contractors proposing to weld using the oxy-acetylene (OAW) process, a separate qualification test shall be administered by LBGO.

For the SMAW test, the first part consists of butt welding together two sections of twelve-inch (12") diameter Schedule 40 steel pipe in a horizontal fixed position (without a backing strip) using the qualified electric arc welding procedure No. A-1 furnished by LBGO. The root pass is to be made with E6010 and remaining passes are to be made with E6010 or E7018. The second part consists of saddle welding together two sections of twelve-inch (12") diameter Schedule 40 steel pipe in a horizontal fixed position (without a backing strip) with the branch segment in the vertical down position using the qualified electric arc welding procedure No. A-2 furnished by LBGO. The root pass is to be made with E6010 and remaining passes are to be made with E6010 or E7018. The resulting weld will be examined and tested in accordance with Section I of Appendix C to Part 49 CFR 192.

For the OAW test, the first part consists of butt welding together two sections of two-inch (2") diameter Schedule 40 steel pipe in a horizontal fixed position using the qualified oxy-acetylene welding procedure No. G-1 furnished by LBGO. The second part consists of welding a one-inch (1") pipe nipple on to the top of a two-inch (2") pipe using the qualified oxy-acetylene welding procedure No. G-2 furnished by LBGO.

LBGO shall charge the Contractor for each person taking the SMAW qualification test or the OAW qualification test, pursuant to the current City of Long Beach Master Fee and Charges Schedule, as approved by the Long Beach City Council. The Contractor will be charged for each test administered, whether or not the test is successful.

Full payment for successfully qualifying personnel to perform service line and main plastic pipe joining, except for materials identified as being furnished by LBGO and costs associated with testing the completed joints (except as otherwise noted), shall be included in the base price bid for the work.

INSTALLATION

The Contractor shall fabricate and connect all pipe, pipe assemblies and fittings necessary to complete the pipeline installation.

Clearance from Other Underground Structures

Each main or service must be installed with enough clearance to protect against damage that might result being close to other structures (i.e. hot oil lines, etc.). Clearance from other underground structures must be enough to allow for proper maintenance of the gas line, (i.e. installation of leak clamps or stopper fittings). A minimum separation of 12 inches shall be maintained between the new pipe and any other belowground structure unless the LBGO Project Engineer or LBGO Construction Inspector waives this requirement due to unusual circumstances that render the clearance requirement impractical.

When there is the possibility of an electrical current transfer between steel gas pipes and other underground metallic structures, such as water pipes and oil pipes, a mycarta sleeve or equivalent insulating material shall be placed between the lines with the approval of LBGO Corrosion Control.

Cover

Unless Contractor receives prior approval from the LBGO Project Engineer or Construction Inspector, the standard depths for gas mains and services are as follows:

LOCATION	Depth of Cover
Main - City Streets and Alleys	36"
Main - Parkways	36"
Main – State Highways or	48"
Service - City Streets and Alleys	24" at flow line
Service – Private Property	18"
Service – Branch to adjoining Property	24" at property line

Gas facilities should be installed below other utilities unless adequate cover can be provided. The LBGO Project Engineer or Construction Inspector must approve any deviation from these requirements.

Smooth Pipe Bends

Smooth bends in the pipe may be used to make adjustments for minor differences in elevation of the surface of a trench and in pipeline alignment. Fired or wrinkled bends are not allowed.

The bend must not impair the serviceability of the pipe. On pipe containing a longitudinal weld, the longitudinal seam must be as near as practicable to the neutral axis of the bend. Each bend must have a smooth contour and be free from buckling, cracks or other mechanical damage. Any pipe that is buckled by the bending operation shall be cut out and replaced, at no additional cost to LBGO.

A bend on pipe that is 12-inches or more in nominal diameter must not deflect the pipe more than 12 degrees in any length of pipe equal to the diameter. For pipe more than 4-inches in nominal diameter, the difference between the maximum and minimum diameter at the bend must not be more than 22 percent of the nominal diameter.

All smooth pipe bends shall be made using a bending machine of proper size and design. No stretching or thinning of the pipe wall thickness or injury to the coating will be permitted.

Each circumferential weld of steel pipe that is subjected to stress during bending shall be non-destructively tested, prior to being placed into gas service.

Prior to backfilling, the LBGO Construction Inspector shall approve each bend.

Where existing substructures cannot be avoided by the use of smooth pipe bends, forged steel 45-degree or 90-degree long sweep butt weld elbows shall be used for any changes in

elevations or offsets. The LBGO Project Engineer or Construction Inspector shall approve the routing around any obstruction, prior to installation.

Valve Installation

Valves shall be carefully lowered into the trench using suitable equipment. Valves shall be inspected for defects prior to lowering into trench. Under no circumstances shall valves be dropped or dumped into the trench.

Valve boxes and covers shall be installed in accordance with the standard drawings in Attachment A of Specifications G-228A. Valve boxes shall be installed even with the surrounding pavement with a + ¼" tolerance. The sand bedding shall be carefully and completely packed tightly under and around the valve boxes, redwood supports and support plates to preclude any possibility of settlement or movement of the lower section of the valve boxes. No part of the valve box or supports shall be allowed to come into contact with the valve or the pipe.

Pipeline Miter Joints

Miter joints may be used to make minor alignment adjustments. A miter joint on steel pipe may not deflect the pipe more than 12 ½ degrees. If more than one miter joint is required, the joint must be at least one pipe diameter away from any other miter joint, as measured from the crotch of each joint.

Field Wrapping

After final inspections of the welds and pressure and leak tests have been completed, field joints shall be wrapped using shrink sleeves or tape wrap, as identified in the materials section. The sleeves or wrap shall be well lapped and bonded to the pipe coating in such a manner as to insure continuous and uniform protection over the entire pipeline. Steel valves and other irregularly shaped steel pipe fittings shall be coated carefully with Trenton #1 Wax-Tape. The coating shall be well bonded to the fittings using Trenton Wax-Tape Primer and shall be lapped in such a manner as to provide continuous protection.

Pipe Joining – Welding

All welding of gas pipeline components shall be performed by qualified welders in accordance with the current edition of API Standard 1104.

Qualification of Welders

Prior to welding on LBGO gas pipelines, any welder must have passed a LBGO administered welder qualification test within the previous 12 months.

Welding and Preparation

All production welds and weld preparation shall be performed pursuant to welding procedures approved by the LBGO Engineering Division. For welding processes that deviate from LBGO standard welding procedures, the Contractor shall assist LBGO in

developing and qualifying welding procedures, in accordance with the current edition of API Standard 1104, Section 5, necessary to complete the work.

Unless otherwise instructed, all production welding and weld preparation shall be performed in accordance with the current edition of API Standard 1104, Section 7.

Unless otherwise instructed, all welding and weld preparation on pressurized (in-service) piping systems shall be performed in accordance with the current edition of API Standard 1104, Appendix B.

The pipe joints to be welded in the field shall be supported to provide a minimum of 16" working clearance around the pipes.

All oxides and foreign matter shall be removed prior to welding. The surfaces shall be smooth, uniform and free from fins or burrs that might adversely affect the welding operation.

Stringer beads shall be deposited so as to completely fuse the abutting pipe ends. There shall be complete penetration with a minimum inside reinforcement of 1/16-inch and maximum of 1/8-inch. The pipe shall not be moved during deposition of a stringer bead. Stringer bead welders shall not repair any "windows."

Each filler pass shall be completed before the next pass is started, except that a "stripper" may be used to build up low areas. The start of filler passes shall be staggered with complete overlapping of the previous bead.

All slag, knots of filler metal, and surface defects shall be removed between passes. Cleaning may be done by either hand or power tools. Flame gouging is not allowed.

Whenever work is left unattended, open ends of pipe shall be closed by plugs or by tying sacks securely over the ends. The ends of pipe shall be thoroughly cleaned of all rust, scale or foreign matter, which would affect the quality of welds.

Care shall be taken to avoid burning the coating during the welding operation. In no case shall any spacing between pipe ends be greater than 1/8-inch and the welding must be performed in a manner that will leave no internal hollow spots or internal undercut. The finished weld must be equal to or greater in strength than the parent metal and of good structure acceptable for testing. Prior to welding, the pipe shall be thoroughly swabbed out, ***brushed or ground to clean metal*** at the discretion of the LBGO Construction Inspector.

Suitable wind guards, welder's platforms or bellholes shall be provided when conditions warrant their use.

Electrodes

Field connections of non-pressurized steel pipe made by the shielded metal arc process shall use 5P (E6010), or approved equal, welding rod for root passes and 5P (E6010), 5P+ (E6010), or E7018 for the remainder.

For welds made on pressurized gas lines, low hydrogen electrodes (E7018) shall be used. Cellulous electrodes (E6010) **shall not** to be used on pressurized gas lines.

End Preparation

Pipe cutting shall be performed with a machine tool or an oxyacetylene torch. Beveling shall be performed with a machine tool or oxyacetylene beveling machine. All field cuts shall be normal to the axis of the pipe. No sharp bevels shall be permitted. All pipe ends must have a land of approximately 3/32-inch before fitting for welding. Miter welds shall be prohibited on pipeline strings. Miter welds are only allowed on pipeline tie-ins, with the approval of the LBGO Construction Inspector.

Alignment

The maximum offset or misalignment of the abutting pipe ends shall not exceed 1/8-inch. If the pipe ends are damaged or dented beyond these acceptable limits they shall be cut and re-beveled. Heating and straightening is prohibited.

Line-up clamps shall be used in all cases where pipe ends are to be joined with field welding operations.

In no case shall any spacing between pipe ends be greater than 1/8-inch and the welding must be performed in a manner that will leave no internal hollow spots or internal undercut.

Weld Inspection

The LBGO Construction Inspector shall visually inspect the welding process to ensure that the welding was performed with the proper welding procedure and that the weld is free from defects, such as incomplete fusion, slag inclusion, porosity or cracks, that can be visually ascertained, in accordance with the current edition of API Standard 1104, Section 9.

The LBGO Project Engineer may require non-destructive testing in the form of radiographic examination of any and all pipeline system welds. Welds that are found to be unsatisfactory shall be cut out. Non-destructive weld testing will be performed by LBGO as directed by the LBGO Construction Inspector. Welds that are found to be unsatisfactory shall be cut out and repairs made at no cost to LBGO. The Contractor shall also reimburse LBGO for all costs associated with non-destructive testing of welds that are found to be unsatisfactory and retesting of repair/replacement weld(s).

The LBGO Project Engineer may require destructive testing of a specific joint(s) of a new pipeline system. The LBGO Project Engineer will request that a section of pipe at a joint from which test specimens will be made be cut out. Samples will be tested to destruction by pulling or bending. Welds shall show an ultimate tensile strength of not less than the minimum tensile strength of the pipe metal. If fractured in bending, the weld shall show a uniform homogeneous structure free from porosity or slag and oxide inclusions. Welds shall show a 98% penetration and thorough fusion with the pipe metal. Where welds have passed a satisfactory test, LBGO will bear the reasonable cost of cutting out the sample and repairing the pipe. If the welds fail to pass a

satisfactory test, the Contractor shall bear all costs in connection with the test and repairing of the pipe.

Where field welds have been cut out for testing purposes or for failing a non-destructive test, the repairs shall be made by bringing the two ends of the pipe section together or by placing a short section of pipe, at least a minimum of two pipe diameters (2) in the gap and welding the ends.

Weld Repairs

All weld repairs shall be in accordance with the current edition of API Standard 1104, Section 10. Weld repairs shall be subject to inspection and approval from the LBGO Construction Inspector.

Water Conservation Practices NS-1

Objectives		
EC	Erosion Control	✓
SE	Sediment Control	✓
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and the transport of pollutants offsite. These practices can reduce or eliminate non-stormwater discharges.

Suitable Applications

Water conservation practices are suitable for all construction sites where water is used, including piped water, metered water, trucked water, and water from a reservoir.

Limitations

- None identified.

Implementation

- Keep water equipment in good working condition.
- Stabilize water truck filling area.
- Repair water leaks promptly.
- Washing of vehicles and equipment on the construction site is discouraged.
- Avoid using water to clean construction areas. If water must be used for cleaning or surface preparation, surface should be swept and vacuumed first to remove dirt. This will minimize amount of water required.

NS-1 Water Conservation Practices

- Direct construction water runoff to areas where it can soak into the ground or be collected and reused.
- Authorized non-stormwater discharges to the storm drain system, channels, or receiving waters are acceptable with the implementation of appropriate BMPs.
- Lock water tank valves to prevent unauthorized use.

Costs

The cost is small to none compared to the benefits of conserving water.

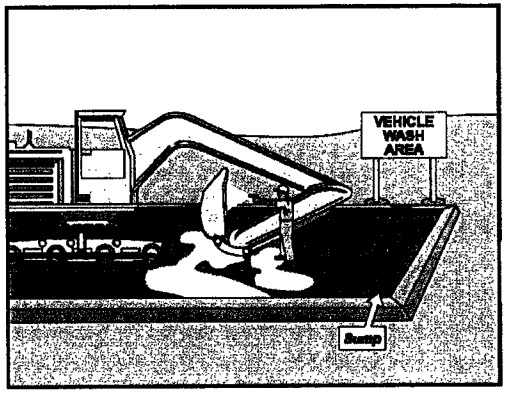
Inspection and Maintenance

- Inspect and verify that activity based BMPs are in place prior to the commencement of authorized non-stormwater discharges.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges are occuring.
- Repair water equipment as needed to prevent unintended discharges.
  - Water trucks
  - Water reservoirs (water buffalos)
  - Irrigation systems
  - Hydrant connections

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Vehicle and Equipment Cleaning NS-8



Objectives		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	
Metals	
Bacteria	
Oil and Grease	✓
Organics	✓

Potential Alternatives

None

Description and Purpose

Vehicle and equipment cleaning procedures and practices prevent or reduce the discharge of pollutants to stormwater from vehicle and equipment cleaning by using offsite facilities; washing in designated, contained areas only; eliminating discharges to the storm drain by infiltrating the wash water; and training employees and subcontractors.

Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment cleaning is performed.

Limitations

Even phosphate-free, biodegradable soaps have been shown to be toxic to fish before the soap degrades. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

Implementation

Use an offsite commercial washing business as much as possible. These businesses are better equipped to handle and dispose of the wash waters properly. Performing this work offsite can also be economical by eliminating the need for a separate washing operation onsite.

- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.

CASQA California Stormwater Quality Association

NS-8 Vehicle and Equipment Cleaning

- Do not permit steam cleaning onsite. Steam cleaning can generate significant pollutant concentrates.
- Cleaning of vehicles and equipment with soap, solvents or steam should not occur on the project site unless resulting wastes are fully contained and disposed of. Resulting wastes should not be discharged or buried, and must be captured and recycled or disposed according to the requirements of WM-10, Liquid Waste Management or WM-6, Hazardous Waste Management, depending on the waste characteristics. Minimize use of solvents. Use of diesel for vehicle and equipment cleaning is prohibited.
- All vehicles and equipment that regularly enter and leave the construction site must be cleaned offsite.
- When vehicle and equipment washing and cleaning must occur onsite, and the operation cannot be located within a structure or building equipped with appropriate disposal facilities, the outside cleaning area should have the following characteristics:
  - Located away from storm drain inlets, drainage facilities, or watercourses
  - Paved with concrete or asphalt and bermed to contain wash waters and to prevent runon and runoff
  - Configured with a sump to allow collection and disposal of wash water
  - No discharge of wash waters to storm drains or watercourses
  - Used only when necessary
- When cleaning vehicles and equipment with water:
  - Use as little water as possible. High-pressure sprayers may use less water than a hose and should be considered
  - Use positive shutoff valve to minimize water usage
  - Facility wash racks should discharge to a sanitary sewer, recycle system or other approved discharge system and should not discharge to the storm drainage system, watercourses, or to groundwater

Costs

Cleaning vehicles and equipment at an offsite facility may reduce overall costs for vehicle and equipment cleaning by eliminating the need to provide similar services onsite. When onsite cleaning is needed, the cost to establish appropriate facilities is relatively low on larger, long-duration projects, and moderate to high on small, short-duration projects.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.

Vehicle and Equipment Cleaning NS-8

- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspection and maintenance is minimal, although some berm repair may be necessary.
- Monitor employees and subcontractors throughout the duration of the construction project to ensure appropriate practices are being implemented.
- Inspect sump regularly and remove liquids and sediment as needed.
- Prohibit employees and subcontractors from washing personal vehicles and equipment on the construction site.

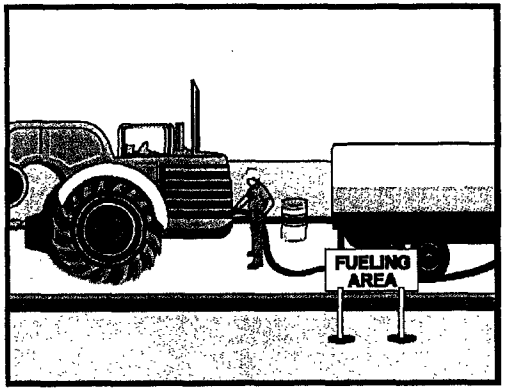
References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Swisher, R.D. Surfactant Biodegradation, Marcel Decker Corporation, 1987.

ATTACHMENT 8

Vehicle and Equipment Fueling NS-9



Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	✓
Organics	

Potential Alternatives

None

Description and Purpose

Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

Suitable Applications

These procedures are suitable on all construction sites where vehicle and equipment fueling takes place.

Limitations

Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. Sending vehicles and equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/ Exit.

Implementation

- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
- Discourage "topping-off" of fuel tanks.

- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should be disposed of properly after use.
- Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the adsorbent materials promptly and dispose of properly.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and large excavators, most vehicles should be able to travel to a designated area with little lost time.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- When fueling must take place onsite, designate an area away from drainage courses to be used. Fueling areas should be identified in the SWPPP.
- Dedicated fueling areas should be protected from stormwater runon and runoff, and should be located at least 50 ft away from downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent runon, runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
- Use vapor recovery nozzles to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD).
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

Costs

- All of the above measures are low cost except for the capital costs of above ground tanks that meet all local environmental, zoning, and fire codes.

Inspection and Maintenance

- Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.

ATTACHMENT 8

Vehicle and Equipment Fueling NS-9

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

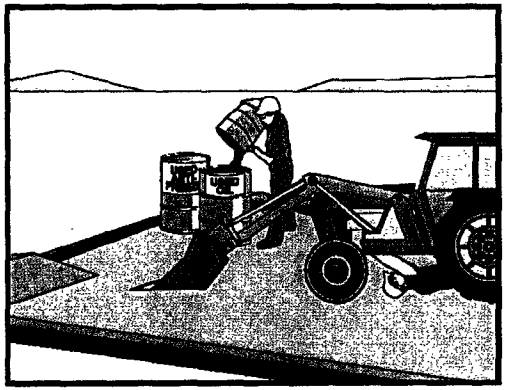
Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

ATTACHMENT 8

Vehicle & Equipment Maintenance NS-10



Objectives		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	✓
WM	Waste Management and Materials Pollution Control	

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	✓
Metals	
Bacteria	
Oil and Grease	✓
Organics	✓

Potential Alternatives

None

Description and Purpose

Prevent or reduce the contamination of stormwater resulting from vehicle and equipment maintenance by running a "dry and clean site". The best option would be to perform maintenance activities at an offsite facility. If this option is not available then work should be performed in designated areas only, while providing cover for materials stored outside, checking for leaks and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

Suitable Applications

These procedures are suitable on all construction projects where an onsite yard area is necessary for storage and maintenance of heavy equipment and vehicles.

Limitations

Onsite vehicle and equipment maintenance should only be used where it is impractical to send vehicles and equipment offsite for maintenance and repair. Sending vehicles/equipment offsite should be done in conjunction with TC-1, Stabilized Construction Entrance/Exit.

Outdoor vehicle or equipment maintenance is a potentially significant source of stormwater pollution. Activities that can contaminate stormwater include engine repair and service, changing or replacement of fluids, and outdoor equipment storage and parking (engine fluid leaks). For further information on vehicle or equipment servicing, see NS-8, Vehicle and Equipment Cleaning, and NS-9, Vehicle and Equipment Fueling.

CASQA California Stormwater Quality Association

NS-10 Vehicle & Equipment Maintenance

Implementation

- Use offsite repair shops as much as possible. These businesses are better equipped to handle vehicle fluids and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate maintenance area.
- If maintenance must occur onsite, use designated areas, located away from drainage courses. Dedicated maintenance areas should be protected from stormwater runon and runoff, and should be located at least 50 ft from downstream drainage facilities and watercourses.
- Drip pans or absorbent pads should be used during vehicle and equipment maintenance work that involves fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- All fueling trucks and fueling areas are required to have spill kits and/or use other spill protection devices.
- Use adsorbent materials on small spills. Remove the absorbent materials promptly and dispose of properly.
- Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately.
- Keep vehicles and equipment clean; do not allow excessive build-up of oil and grease.
- Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic and transmission fluids. Provide secondary containment and covers for these materials if stored onsite.
- Train employees and subcontractors in proper maintenance and spill cleanup procedures.
- Drip pans or plastic sheeting should be placed under all vehicles and equipment placed on docks, barges, or other structures over water bodies when the vehicle or equipment is planned to be idle for more than 1 hour.
- For long-term projects, consider using portable tents or covers over maintenance areas if maintenance cannot be performed offsite.
- Consider use of new, alternative greases and lubricants, such as adhesive greases, for chassis lubrication and fifth-wheel lubrication.
- Properly dispose of used oils, fluids, lubricants, and spill cleanup materials.
- Do not place used oil in a dumpster or pour into a storm drain or watercourse.
- Properly dispose of or recycle used batteries.
- Do not bury used tires.
- Repair leaks of fluids and oil immediately.

ATTACHMENT 8

Vehicle & Equipment Maintenance NS-10

Listed below is further information if you must perform vehicle or equipment maintenance onsite.

Safer Alternative Products

- Consider products that are less toxic or hazardous than regular products. These products are often sold under an "environmentally friendly" label.
- Consider use of grease substitutes for lubrication of truck fifth-wheels. Follow manufacturers label for details on specific uses.
- Consider use of plastic friction plates on truck fifth-wheels in lieu of grease. Follow manufacturers label for details on specific uses.

Waste Reduction

Parts are often cleaned using solvents such as trichloroethylene, trichloroethane, or methylene chloride. Many of these cleaners are listed in California Toxic Rule as priority pollutants. These materials are harmful and must not contaminate stormwater. They must be disposed of as a hazardous waste. Reducing the number of solvents makes recycling easier and reduces hazardous waste management costs. Often, one solvent can perform a job as well as two different solvents. Also, if possible, eliminate or reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. For example, replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check the list of active ingredients to see whether it contains chlorinated solvents. The "chlor" term indicates that the solvent is chlorinated. Also, try substituting a wire brush for solvents to clean parts.

Recycling and Disposal

Separating wastes allows for easier recycling and may reduce disposal costs. Keep hazardous wastes separate, do not mix used oil solvents, and keep chlorinated solvents (like,-trichloroethane) separate from non-chlorinated solvents (like kerosene and mineral spirits). Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around. Provide cover and secondary containment until these materials can be removed from the site.

Oil filters can be recycled. Ask your oil supplier or recycler about recycling oil filters.

Do not dispose of extra paints and coatings by dumping liquid onto the ground or throwing it into dumpsters. Allow coatings to dry or harden before disposal into covered dumpsters.

Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Costs

All of the above are low cost measures. Higher costs are incurred to setup and maintain onsite maintenance areas.

NS-10 Vehicle & Equipment Maintenance

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Keep ample supplies of spill cleanup materials onsite.
- Maintain waste fluid containers in leak proof condition.
- Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site.
- Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.

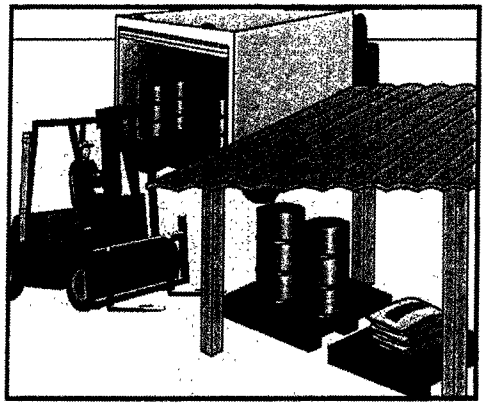
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program; Program Development and Approval Guidance, Working Group, Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Material Delivery and Storage WM-1



Objectives		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Potential Alternatives

None

Description and Purpose

Prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in a designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

This best management practice covers only material delivery and storage. For other information on materials, see WM-2, Material Use, or WM-4, Spill Prevention and Control. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

These procedures are suitable for use at all construction sites with delivery and storage of the following materials:

- Soil stabilizers and binders
- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- [illegible]alt and concrete components

- Hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

- Space limitation may preclude indoor storage.
- Storage sheds often must meet building and fire code requirements.

Implementation

The following steps should be taken to minimize risk:

- Temporary storage area should be located away from vehicular traffic.
- Material Safety Data Sheets (MSDS) should be supplied for all materials stored.
- Construction site areas should be designated for material delivery and storage.
- Material delivery and storage areas should be located near the construction entrances, away from waterways, if possible.
  - Avoid transport near drainage paths or waterways.
  - Surround with earth berms. See EC-9, Earth Dikes and Drainage Swales.
  - Place in an area which will be paved.
- Storage of reactive, ignitable, or flammable liquids must comply with the fire codes of your area. Contact the local Fire Marshal to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code, NFPA30.
- An up to date inventory of materials delivered and stored onsite should be kept.
- Hazardous materials storage onsite should be minimized.
- Hazardous materials should be handled as infrequently as possible.
- During the rainy season, consider storing materials in a covered area. Store materials in secondary containments such as earthen dike, horse trough, or even a children's wading pool for non-reactive materials such as detergents, oil, grease, and paints. Small amounts of material may be secondarily contained in "bus boy" trays or concrete mixing trays.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items on a pallet and, when possible, in secondary containment.

- If drums must be kept uncovered, store them at a slight angle to reduce ponding of rainwater on the lids to reduce corrosion. Domed plastic covers are inexpensive and snap to the top of drums, preventing water from collecting.
- Chemicals should be kept in their original labeled containers.
- Employees and subcontractors should be trained on the proper material delivery and storage practices.
- Employees trained in emergency spill cleanup procedures must be present when dangerous materials or liquid chemicals are unloaded.
- If significant residual materials remain on the ground after construction is complete, properly remove materials and any contaminated soil. See WM-7, Contaminated Soil Management. If the area is to be paved, pave as soon as materials are removed to stabilize the soil.

Material Storage Areas and Practices

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, or 302 should be stored in approved containers and drums and should not be overfilled. Containers and drums should be placed in temporary containment facilities for storage.
- A temporary containment facility should provide for a spill containment volume able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest container within its boundary, whichever is greater.
- A temporary containment facility should be impervious to the materials stored therein for a minimum contact time of 72 hours.
- A temporary containment facility should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be collected and placed into drums. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. All collected liquids or non-hazardous liquids should be sent to an approved disposal site.
- Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.
- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Throughout the rainy season, each temporary containment facility should be covered during non-working days, prior to, and during rain events.
- Materials should be stored in their original containers and the original product labels should be maintained in place in a legible condition. Damaged or otherwise illegible labels should be replaced immediately.

- Bagged and boxed materials should be stored on pallets and should not be allowed to accumulate on the ground. To provide protection from wind and rain throughout the rainy season, bagged and boxed materials should be covered during non-working days and prior to and during rain events.
- Stockpiles should be protected in accordance with WM-3, Stockpile Management.
- Materials should be stored indoors within existing structures or sheds when available.
- Proper storage instructions should be posted at all times in an open and conspicuous location.
- An ample supply of appropriate spill clean up material should be kept near storage areas.
- Also see WM-6, Hazardous Waste Management, for storing of hazardous materials.

Material Delivery Practices

- Keep an accurate, up-to-date inventory of material delivered and stored onsite.
- Arrange for employees trained in emergency spill cleanup procedures to be present when dangerous materials or liquid chemicals are unloaded.

Spill Cleanup

- Contain and clean up any spill immediately.
- Properly remove and dispose of any hazardous materials or contaminated soil if significant residual materials remain on the ground after construction is complete. See WM-7, Contaminated Soil Management.
- See WM-4, Spill Prevention and Control, for spills of chemicals and/or hazardous materials.

Cost

- The largest cost of implementation may be in the construction of a materials storage area that is covered and provides secondary containment.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Keep an ample supply of spill cleanup materials near the storage area.
- Keep storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Repair or replace perimeter controls, containment structures, covers, and liners as needed to maintain proper function.

Material Delivery and Storage WM-1

References

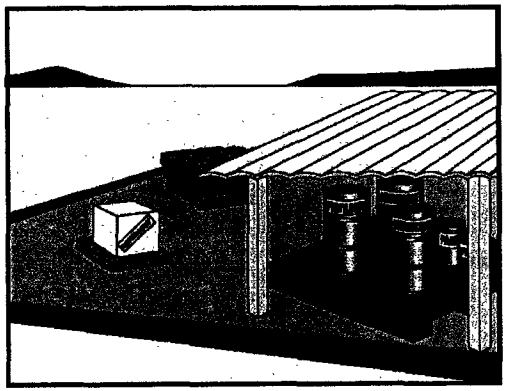
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Material Use WM-2



Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for use at all construction projects. These procedures apply when the following materials are used or prepared onsite:

- Pesticides and herbicides
- Fertilizers
- Detergents
- Plaster
- Petroleum products such as fuel, oil, and grease
- Asphalt and other concrete components
- Other hazardous chemicals such as acids, lime, glues, adhesives, paints, solvents, and curing compounds
- Concrete compounds
- Other materials that may be detrimental if released to the environment

Limitations

Safer alternative building and construction products may not be available or suitable in every instance.

Implementation

The following steps should be taken to minimize risk:

- Minimize use of hazardous materials onsite.
- Follow manufacturer instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Train personnel who use pesticides. The California Department of Pesticide Regulation and county agricultural commissioners license pesticide dealers, certify pesticide applicators, and conduct onsite inspections.
- Do not over-apply fertilizers, herbicides, and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Unless on steep slopes, till fertilizers into the soil rather than hydro seeding. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains.
- Train employees and subcontractors in proper material use.
- Supply Material Safety Data Sheets (MSDS) for all materials.
- Dispose of latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths, when thoroughly dry and are no longer hazardous, with other construction debris.
- Do not remove the original product label; it contains important safety and disposal information. Use the entire product before disposing of the container.
- Mix paint indoors or in a containment area. Never clean paintbrushes or rinse paint containers into a street, gutter, storm drain, or watercourse. Dispose of any paint thinners, residue, and sludge(s) that cannot be recycled, as hazardous waste.
- For water-based paint, clean brushes to the extent practicable, and rinse to a drain leading to a sanitary sewer where permitted, or into a concrete washout pit or temporary sediment trap. For oil-based paints, clean brushes to the extent practicable, and filter and reuse thinners and solvents.
- Use recycled and less hazardous products when practical. Recycle residual paints, solvents, non-treated lumber, and other materials.
- Use materials only where and when needed to complete the construction activity. Use safer alternative materials as much as possible. Reduce or eliminate use of hazardous materials onsite when practical.

Material Use WM-2

- Require contractors to complete the "Report of Chemical Spray Forms" when spraying herbicides and pesticides.
- Keep an ample supply of spill clean up material near use areas. Train employees in spill clean up procedures.
- Avoid exposing applied materials to rainfall and runoff unless sufficient time has been allowed for them to dry.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Maintenance of this best management practice is minimal.
- Spot check employees and subcontractors throughout the job to ensure appropriate practices are being employed.

References

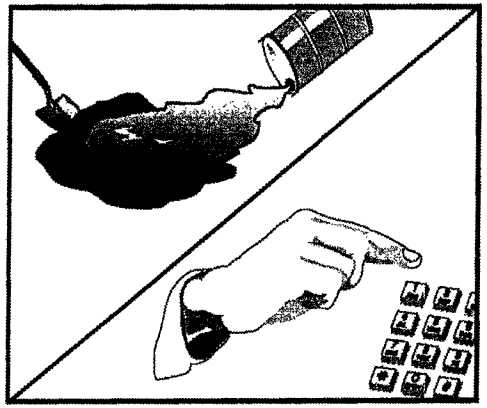
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance, Working Group Working Paper; USEPA, April 1992.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Spill Prevention and Control WM-4



Objectives		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, WM-1, Materials Delivery and Storage, and WM-2, Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs in this section.

Suitable Applications

This BMP is suitable for all construction projects. Spill control procedures are implemented anytime chemicals or hazardous substances are stored on the construction site, including the following materials:

- Soil stabilizers/binders
- Dust palliatives
- Herbicides
- Growth inhibitors
- Fertilizers
- Deicing/anti-icing chemicals

Spill Prevention and Control WM-4

- Fuels
- Lubricants
- Other petroleum distillates

Limitations

- In some cases it may be necessary to use a private spill cleanup company.
- This BMP applies to spills caused by the contractor and subcontractors.
- Procedures and practices presented in this BMP are general. Contractor should identify appropriate practices for the specific materials used or stored onsite

Implementation

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn't compromise clean up activities.
- Do not bury or wash spills with water.

- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with WM-10, Liquid Waste Management.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Absorbent materials should be promptly removed and disposed of properly.
- Follow the practice below for a minor spill:
  - Contain the spread of the spill.
  - Recover spilled materials.
  - Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

- Spills should be cleaned up immediately.
  - Contain spread of the spill.
  - Notify the project foreman immediately.
  - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
  - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
  - If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
  - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
  - Notify the Governor's Office of Emergency Services Warning Center, (916) 845-8911.
  - For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
  - Notification should first be made by telephone and followed up with a written report.
  - The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
  - Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, California Division of Oil and Gas, Cal/OSHA, etc.

Reporting

- Report significant spills to local agencies, such as the Fire Department; they can assist in cleanup.
- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under paving equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around
- Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- If fueling must occur onsite, use designate areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- Discourage "topping off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

Costs

Prevention of leaks and spills is inexpensive. Treatment and/ or disposal of contaminated soil or water can be quite expensive.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.

Spill Prevention and Control WM-4

- Keep ample supplies of spill control and cleanup materials onsite, near storage, unloading, and maintenance areas.
- Update your spill prevention and control plan and stock cleanup materials as changes occur in the types of chemicals onsite.

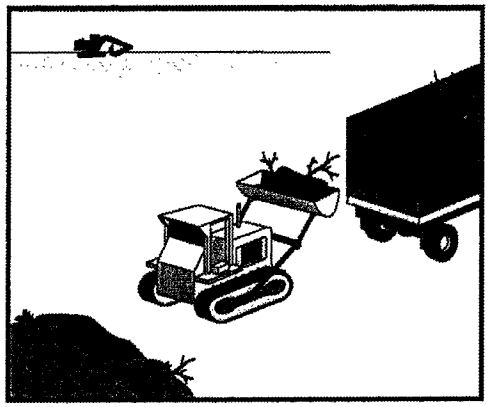
References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Solid Waste Management WM-5



Objectives		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	✓
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Potential Alternatives

None

Description and Purpose

Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications

This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction
- Packaging materials including wood, paper, and plastic
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces and masonry products
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes
- Construction wastes including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, styrofoam and other materials used to transport and package construction materials

- Highway planting wastes, including vegetative material, plant containers, and packaging materials

Limitations

Temporary stockpiling of certain construction wastes may not necessitate stringent drainage related controls during the non-rainy season or in desert areas with low rainfall.

Implementation

The following steps will help keep a clean site and reduce stormwater pollution:

- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use. Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Locate containers in a covered area or in a secondary containment.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas.

Education

- Have the contractor's superintendent or representative oversee and enforce proper solid waste management procedures and practices.
- Instruct employees and subcontractors on identification of solid waste and hazardous waste.
- Educate employees and subcontractors on solid waste storage and disposal procedures.

- Hold regular meetings to discuss and reinforce disposal procedures (incorporate into regular safety meetings).
- Require that employees and subcontractors follow solid waste handling and storage procedures.
- Prohibit littering by employees, subcontractors, and visitors.
- Minimize production of solid waste materials wherever possible.

Collection, Storage, and Disposal

- Littering on the project site should be prohibited.
- To prevent clogging of the storm drainage system, litter and debris removal from drainage grates, trash racks, and ditch lines should be a priority.
- Trash receptacles should be provided in the contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods.
- Litter from work areas within the construction limits of the project site should be collected and placed in watertight dumpsters at least weekly, regardless of whether the litter was generated by the contractor, the public, or others. Collected litter and debris should not be placed in or next to drain inlets, stormwater drainage systems, or watercourses.
- Dumpsters of sufficient size and number should be provided to contain the solid waste generated by the project.
- Full dumpsters should be removed from the project site and the contents should be disposed of by the trash hauling contractor.
- Construction debris and waste should be removed from the site biweekly or more frequently as needed.
- Construction material visible to the public should be stored or stacked in an orderly manner.
- Stormwater runon should be prevented from contacting stored solid waste through the use of berms, dikes, or other temporary diversion structures or through the use of measures to elevate waste from site surfaces.
- Solid waste storage areas should be located at least 50 ft from drainage facilities and watercourses and should not be located in areas prone to flooding or ponding.
- Except during fair weather, construction and highway planting waste not stored in watertight dumpsters should be securely covered from wind and rain by covering the waste with tarps or plastic.
- Segregate potentially hazardous waste from non-hazardous construction site waste.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.

- For disposal of hazardous waste, see WM-6, Hazardous Waste Management. Have hazardous waste hauled to an appropriate disposal and/or recycling facility.
- Salvage or recycle useful vegetation debris, packaging and surplus building materials when practical. For example, trees and shrubs from land clearing can be used as a brush barrier, or converted into wood chips, then used as mulch on graded areas. Wood pallets, cardboard boxes, and construction scraps can also be recycled.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Inspect construction waste area regularly.
- Arrange for regular waste collection.

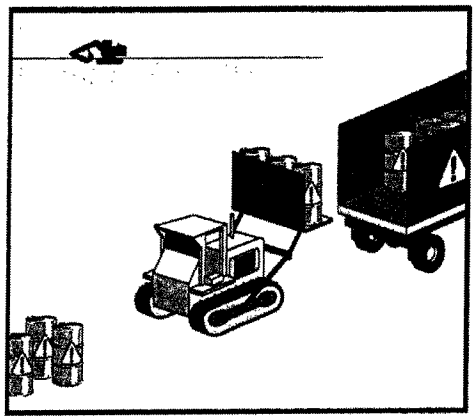
References

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Hazardous Waste Management WM-6



Objectives

EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents

Sediment	
Nutrients	✓
Trash	✓
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Potential Alternatives

None

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

Suitable Applications

This best management practice (BMP) applies to all construction projects. Hazardous waste management practices are implemented on construction projects that generate waste from the use of:

- Petroleum Products
- Asphalt Products
- Concrete Curing Compounds
- Pesticides
- Palliatives
- Acids
- Septic Wastes
- Paints
- Stains
- Solvents
- Wood Preservatives
- Roofing Tar
- Any materials deemed a hazardous waste in California, Title 22 Division 4.5, or listed in 40 CFR Parts 110, 117, 261, or 302

CASQA California Stormwater Quality Association

Hazardous Waste Management WM-6

In addition, sites with existing structures may contain wastes, which must be disposed of in accordance with federal, state, and local regulations. These wastes include:

- Sandblasting grit mixed with lead-, cadmium-, or chromium-based paints
- Asbestos
- PCBs (particularly in older transformers)

Limitations

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Nothing in this BMP relieves the contractor from responsibility for compliance with federal, state, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.
- This BMP does not cover aerially deposited lead (ADL) soils. For ADL soils refer to WM-7, Contaminated Soil Management.

Implementation

The following steps will help reduce stormwater pollution from hazardous wastes:

Material Use

- Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179.
- All hazardous waste should be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.
- Waste containers should be stored in temporary containment facilities that should comply with the following requirements:
  - Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25 year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater.
  - Temporary containment facility should be impervious to the materials stored there for a minimum contact time of 72 hours.
  - Temporary containment facilities should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be placed into drums after each rainfall. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids should be sent to an approved disposal site.
  - Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access.

- Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility.
- Throughout the rainy season, temporary containment facilities should be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs.

- Drums should not be overfilled and wastes should not be mixed.
- Unless watertight, containers of dry waste should be stored on pallets.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application. Allow time for infiltration and avoid excess material being carried offsite by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with federal and state regulations.
- Paint brushes and equipment for water and oil based paints should be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused should be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste.
- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.
- The following actions should be taken with respect to temporary contaminant:
  - Ensure that adequate hazardous waste storage volume is available.
  - Ensure that hazardous waste collection containers are conveniently located.
  - Designate hazardous waste storage areas onsite away from storm drains or watercourses and away from moving vehicles and equipment to prevent accidental spills.
  - Minimize production or generation of hazardous materials and hazardous waste on the job site.
  - Use containment berms in fueling and maintenance areas and where the potential for spills is high.
  - Segregate potentially hazardous waste from non-hazardous construction site debris.
  - Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.

Hazardous Waste Management WM-6

- Clearly label all hazardous waste containers with the waste being stored and the date of accumulation.
- Place hazardous waste containers in secondary containment.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Do not mix wastes.
- Use all of the product before disposing of the container.
- Do not remove the original product label; it contains important safety and disposal information.

Waste Recycling Disposal

- Select designated hazardous waste collection areas onsite.
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place hazardous waste containers in secondary containment.
- Do not mix wastes, this can cause chemical reactions, making recycling impossible and complicating disposal.
- Recycle any useful materials such as used oil or water-based paint.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) are not disposed of in dumpsters designated for construction debris.
- Arrange for regular waste collection before containers overflow.
- Make sure that hazardous waste (e.g., excess oil-based paint and sludge) is collected, removed, and disposed of only at authorized disposal areas.

Disposal Procedures

- Waste should be disposed of by a licensed hazardous waste transporter at an authorized and licensed disposal facility or recycling facility utilizing properly completed Uniform Hazardous Waste Manifest forms.
- A Department of Health Services certified laboratory should sample waste to determine the appropriate disposal facility.
- Properly dispose of rainwater in secondary containment that may have mixed with hazardous waste.
- Attention is directed to "Hazardous Material", "Contaminated Material", and "Aerially Deposited Lead" of the contract documents regarding the handling and disposal of hazardous materials.

Education

- Educate employees and subcontractors on hazardous waste storage and disposal procedures.
- Educate employees and subcontractors on potential dangers to humans and the environment from hazardous wastes.
- Instruct employees and subcontractors on safety procedures for common construction site hazardous wastes.
- Instruct employees and subcontractors in identification of hazardous and solid waste.
- Hold regular meetings to discuss and reinforce hazardous waste management procedures (incorporate into regular safety meetings).
- The contractor's superintendent or representative should oversee and enforce proper hazardous waste management procedures and practices.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Warning signs should be placed in areas recently treated with chemicals.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- If a container does spill, clean up immediately.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity–based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur
- Hazardous waste should be regularly collected.
- A foreman or construction supervisor should monitor onsite hazardous waste storage and disposal procedures.
- Waste storage areas should be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.
- Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.
- Hazardous spills should be cleaned up and reported in conformance with the applicable Material Safety Data Sheet (MSDS) and the instructions posted at the project site.

Hazardous Waste Management WM-6

- The National Response Center, at (800) 424-8802, should be notified of spills of federal reportable quantities in conformance with the requirements in 40 CFR parts 110, 117, and 302. Also notify the Governors Office of Emergency Services Warning Center at (916) 845-8911.
- A copy of the hazardous waste manifests should be provided.

References

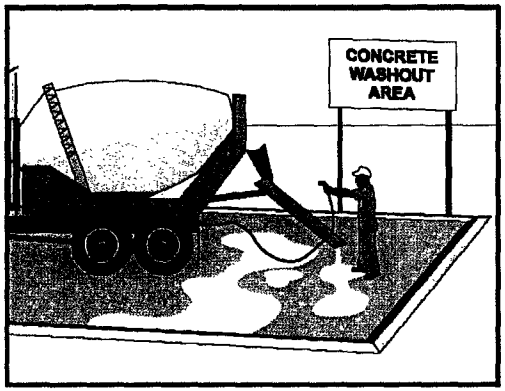
Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity, 430/9-73-007, USEPA, 1973.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.

Concrete Waste Management WM-8



Objectives		
EC	Erosion Control	
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	✓

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives
None

Description and Purpose

Prevent or reduce the discharge of pollutants to stormwater from concrete waste by conducting washout offsite, performing onsite washout in a designated area, and training employee and subcontractors.

Suitable Applications

Concrete waste management procedures and practices are implemented on construction projects where:

- Concrete is used as a construction material or where concrete dust and debris result form demolition activities
- Slurries containing portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from saw cutting, coring, grinding, grooving, and hydro-concrete demolition
- Concrete trucks and other concrete-coated equipment are washed onsite
- Mortar-mixing stations exist
- See also NS-8, Vehicle and Equipment Cleaning

Limitations

- Offsite washout of concrete wastes may not always be possible.

Implementation

The following steps will help reduce stormwater pollution from concrete wastes:

- Discuss the concrete management techniques described in this BMP (such as handling of concrete waste and washout) with the ready-mix concrete supplier before any deliveries are made.
- Incorporate requirements for concrete waste management into material supplier and subcontractor agreements.
- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks offsite or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped onsite, except in designated areas.
- For onsite washout:
  - Locate washout area at least 50 feet from storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
  - Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.
- Avoid creating runoff by draining water to a bermed or level area when washing concrete to remove fine particles and expose the aggregate.
- Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose in the trash.

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.
- Arrange for contractor's superintendent or representative to oversee and enforce concrete waste management procedures.

Concrete Slurry Wastes

- PCC and AC waste should not be allowed to enter storm drains or watercourses.
- PCC and AC waste should be collected and disposed of or placed in a temporary concrete washout facility.
- A sign should be installed adjacent to each temporary concrete washout facility to inform concrete equipment operators to utilize the proper facilities.

- Below grade concrete washout facilities are typical. Above grade facilities are used if excavation is not practical.
- A foreman or construction supervisor should monitor onsite concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.
- Saw-cut PCC slurry should not be allowed to enter storm drains or watercourses. Residue from grinding operations should be picked up by means of a vacuum attachment to the grinding machine. Saw cutting residue should not be allowed to flow across the pavement and should not be left on the surface of the pavement. See also NS-3, Paving and Grinding Operations; and WM-10, Liquid Waste Management.
- Slurry residue should be vacuumed and disposed in a temporary pit (as described in OnSite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures, below) and allowed to dry. Dispose of dry slurry residue in accordance with WM-5, Solid Waste Management.

Onsite Temporary Concrete Washout Facility, Transit Truck Washout Procedures

- Temporary concrete washout facilities should be located a minimum of 50 ft from storm drain inlets, open drainage facilities, and watercourses. Each facility should be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign should be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.
- Temporary concrete washout facilities should be constructed above grade or below grade at the option of the contractor. Temporary concrete washout facilities should be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
- Temporary washout facilities should have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete materials generated during washout procedures.
- Washout of concrete trucks should be performed in designated areas only.
- Only concrete from mixer truck chutes should be washed into concrete wash out.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed of offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete should be broken up, removed, and disposed of per WM-5, Solid Waste Management. Dispose of hardened concrete on a regular basis.
- Temporary Concrete Washout Facility (Type Above Grade)
  - Temporary concrete washout facility (type above grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft, but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.
  - Straw bales, wood stakes, and sandbag materials should conform to the provisions in SE-9, Straw Bale Barrier.
  - Plastic lining material should be a minimum of 10 mil in polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.
- Temporary Concrete Washout Facility (Type Below Grade)
  - Temporary concrete washout facilities (type below grade) should be constructed as shown on the details at the end of this BMP, with a recommended minimum length and minimum width of 10 ft. The quantity and volume should be sufficient to contain all liquid and concrete waste generated by washout operations.
  - Lath and flagging should be commercial type.
  - Plastic lining material should be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears, or other defects that compromise the impermeability of the material.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, the hardened concrete should be removed and disposed of. Materials used to construct temporary concrete washout facilities should be removed from the site of the work and disposed of.
- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities should be backfilled and repaired.

Costs

All of the above are low cost measures.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and of two-week intervals in the non-rainy season to verify continued BMP implementation.
- Temporary concrete washout facilities should be maintained to provide adequate holding capacity with a minimum freeboard of 4 in. for above grade facilities and 12 in. for below grade facilities. Maintaining temporary concrete washout facilities should include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials should be removed and disposed of.
- Washout facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.

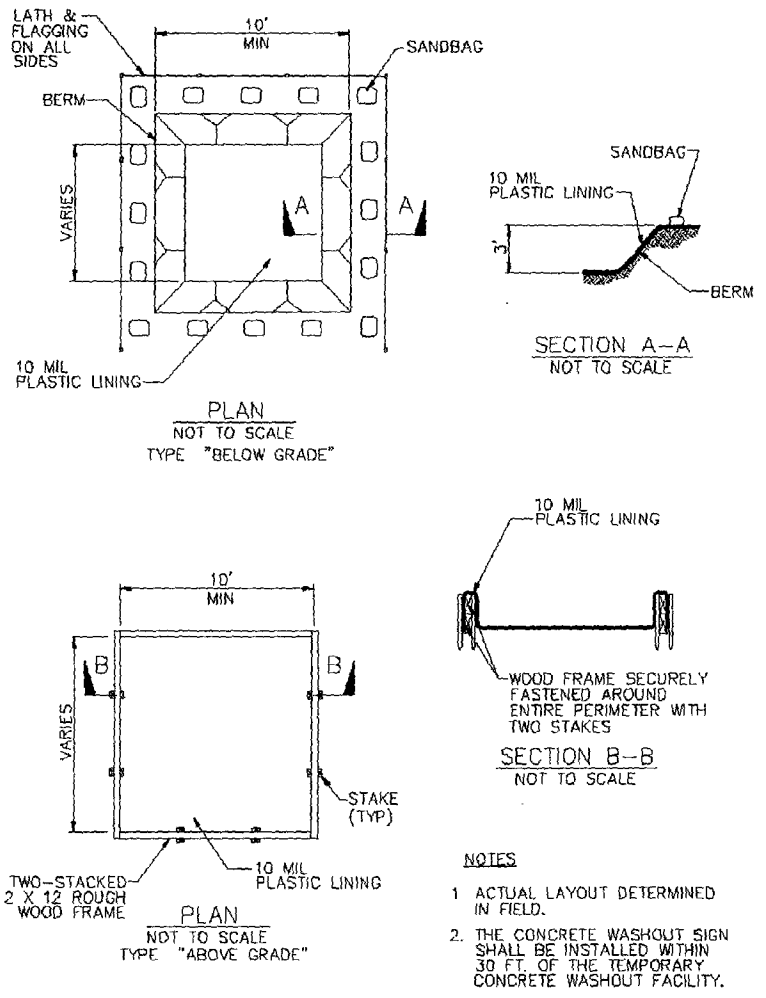
Concrete Waste Management WM-8

References

Blueprint for a Clean Bay: Best Management Practices to Prevent Stormwater Pollution from Construction Related Activities; Santa Clara Valley Nonpoint Source Pollution Control Program, 1995.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

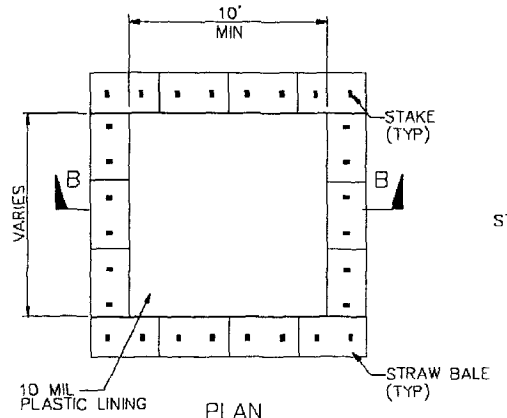
Stormwater Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practice, EPA 832-R-92005; USEPA, April 1992.



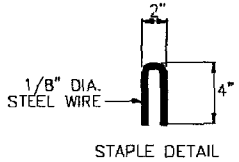
NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

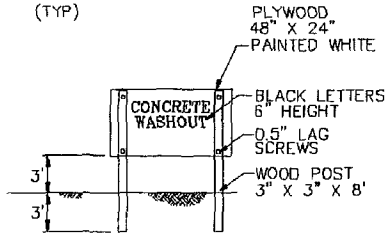
Concrete Waste Management WM-8



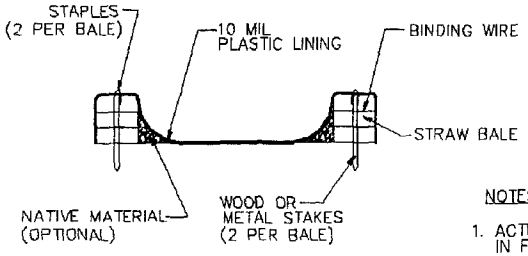
PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"
WITH STRAW BALES



STAPLE DETAIL



CONCRETE WASHOUT
SIGN DETAIL
(OR EQUIVALENT)

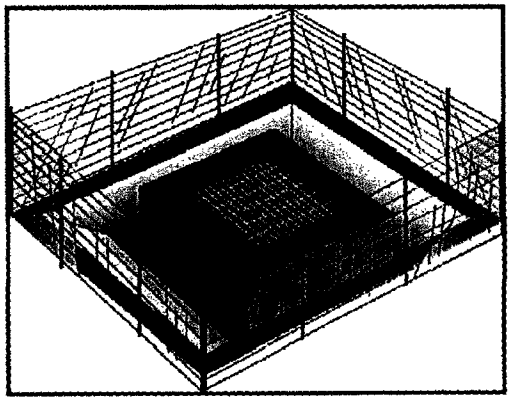


SECTION B-B
NOT TO SCALE

NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

Storm Drain Inlet Protection SE-10



Objectives		
EC	Erosion Control	
SE	Sediment Control	✓
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
✓ Primary Objective
✓ Secondary Objective

Targeted Constituents	
Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence
SE-5 Fiber Rolls
SE-6 Gravel Bag Berm
SE-8 Sandbag Barrier
SE-9 Straw Bale Barrier

Description and Purpose

Storm drain inlet protection consists of a sediment filter or an impounding area around or upstream of a storm drain, drop inlet, or curb inlet. Storm drain inlet protection measures temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Some filter configurations also remove sediment by filtering, but usually the ponding action results in the greatest sediment reduction.

Suitable Applications

Every storm drain inlet receiving sediment-laden runoff should be protected.

Limitations

- Drainage area should not exceed 1 acre.
- Straw bales, while potentially effective, have not produced in practice satisfactory results, primarily due to improper installation.
- Requires an adequate area for water to pond without encroaching into portions of the roadway subject to traffic.
- Inlet protection usually requires other methods of temporary protection to prevent sediment-laden stormwater and non-stormwater discharges from entering the storm drain system.
- Sediment removal may be difficult in high flow conditions or if runoff is heavily sediment laden. If high flow conditions are

expected, use other onsite sediment trapping techniques in conjunction with inlet protection.

- Frequent maintenance is required.
- For drainage areas larger than 1 acre, runoff should be routed to a sediment-trapping device designed for larger flows. See BMPs SE-2, Sediment Basin, and SE-3, Sediment Traps.
- Excavated drop inlet sediment traps are appropriate where relatively heavy flows are expected, and overflow capability is needed.

Implementation

General

Large amounts of sediment may enter the storm drain system when storm drains are installed before the upslope drainage area is stabilized, or where construction is adjacent to an existing storm drain. In cases of extreme sediment loading, the storm drain itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

Inlet control measures presented in this handbook should not be used for inlets draining more than one acre. Runoff from larger disturbed areas should be first routed through SE-2, Sediment Basin or SE-3, Sediment Trap. Different types of inlet protection are appropriate for different applications depending on site conditions and the type of inlet. Inlet protection methods not presented in this handbook should be approved by the local stormwater management agency.

Design and Layout

Identify existing and planned storm drain inlets that have the potential to receive sediment-laden surface runoff. Determine if storm drain inlet protection is needed and which method to use.

- Limit upstream drainage area to 1 acre maximum. For larger drainage areas, use SE-2, Sediment Basin, or SE-3, Sediment Trap, upstream of the inlet protection device.
- The key to successful and safe use of storm drain inlet protection devices is to know where runoff will pond or be diverted.
  - Determine the acceptable location and extent of ponding in the vicinity of the drain inlet. The acceptable location and extent of ponding will influence the type and design of the storm drain inlet protection device.
  - Determine the extent of potential runoff diversion caused by the storm drain inlet protection device. Runoff ponded by inlet protection devices may flow around the device and towards the next downstream inlet. In some cases, this is acceptable; in other cases, serious erosion or downstream property damage can be caused by these diversions. The possibility of runoff diversions will influence whether or not storm drain inlet protection is suitable; and, if suitable, the type and design of the device.
- The location and extent of ponding, and the extent of diversion, can usually be controlled through appropriate placement of the inlet protection device. In some cases, moving the

inlet protection device a short distance upstream of the actual inlet can provide more efficient sediment control, limit ponding to desired areas, and prevent or control diversions.

- Four types of inlet protection are presented below. However, it is recognized that other effective methods and proprietary devices exist and may be selected.
  - Filter Fabric Fence: Appropriate for drainage basins with less than a 5% slope, sheet flows, and flows under 0.5 cfs.
  - Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap sediment (SE-3).
  - Gravel bag barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets. Appropriate for sheet flow or when concentrated flow may exceed 0.5 cfs, and where overtopping is required to prevent flooding.
  - Block and Gravel Filter: Appropriate for flows greater than 0.5 cfs.
- Select the appropriate type of inlet protection and design as referred to or as described in this fact sheet.
- Provide area around the inlet for water to pond without flooding structures and property.
- Grates and spaces around all inlets should be sealed to prevent seepage of sediment-laden water.
- Excavate sediment sumps (where needed) 1 to 2 ft with 2:1 side slopes around the inlet.

Installation

- ***DI Protection Type 1 - Filter Fabric Fence*** - The filter fabric fence (Type 1) protection is shown in the attached figure. Similar to constructing a silt fence; see BMP SE-1, Silt Fence. Do not place filter fabric underneath the inlet grate since the collected sediment may fall into the drain inlet when the fabric is removed or replaced.
  1. Excavate a trench approximately 6 in. wide and 6 in. deep along the line of the silt fence inlet protection device.
  2. Place 2 in. by 2 in. wooden stakes around the perimeter of the inlet a maximum of 3 ft apart and drive them at least 18 in. into the ground or 12 in. below the bottom of the trench. The stakes must be at least 48 in.
  3. Lay fabric along bottom of trench, up side of trench, and then up stakes. See SE-1, Silt Fence, for details. The maximum silt fence height around the inlet is 24 in.
  4. Staple the filter fabric (for materials and specifications, see SE-1, Silt Fence) to wooden stakes. Use heavy-duty wire staples at least 1 in. in length.
  5. Backfill the trench with gravel or compacted earth all the way around.
- ***DI Protection Type 2 - Excavated Drop Inlet Sediment Trap*** - The excavated drop inlet sediment trap (Type 2) is shown in the attached figures. Install filter fabric fence in

accordance with DI Protection Type 1. Size excavated trap to provide a minimum storage capacity calculated at the rate 67 yd3/acre of drainage area.

- ***DI Protection Type 3 - Gravel bag*** - The gravel bag barrier (Type 3) is shown in the figures. Flow from a severe storm should not overtop the curb. In areas of high clay and silts, use filter fabric and gravel as additional filter media. Construct gravel bags in accordance with SE-6, Gravel Bag Berm. Gravel bags should be used due to their high permeability.
  1. Use sand bag made of geotextile fabric (not burlap) and fill with 0.75 in. rock or 0.25 in. pea gravel.
  2. Construct on gently sloping street.
  3. Leave room upstream of barrier for water to pond and sediment to settle.
  4. Place several layers of sand bags – overlapping the bags and packing them tightly together.
  5. Leave gap of one bag on the top row to serve as a spillway. Flow from a severe storm (e.g., 10 year storm) should not overtop the curb.
- ***DI Protection Type 4 – Block and Gravel Filter*** - The block and gravel filter (Type 4) is shown in the figures. Block and gravel filters are suitable for curb inlets commonly used in residential, commercial, and industrial construction.
  1. Place hardware cloth or comparable wire mesh with 0.5 in. openings over the drop inlet so that the wire extends a minimum of 1 ft beyond each side of the inlet structure. If more than one strip is necessary, overlap the strips. Place filter fabric over the wire mesh.
  2. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, so that the open ends face outward, not upward. The ends of adjacent blocks should abut. The height of the barrier can be varied, depending on design needs, by stacking combinations of blocks that are 4 in., 8 in., and 12 in. wide. The row of blocks should be at least 12 in. but no greater than 24 in. high.
  3. Place wire mesh over the outside vertical face (open end) of the concrete blocks to prevent stone from being washed through the blocks. Use hardware cloth or comparable wire mesh with 0.5 in. opening.
  4. Pile washed stone against the wire mesh to the top of the blocks. Use 0.75 to 3 in.

Costs

- Average annual cost for installation and maintenance (one year useful life) is $200 per inlet.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.

Storm Drain Inlet Protection SE-10

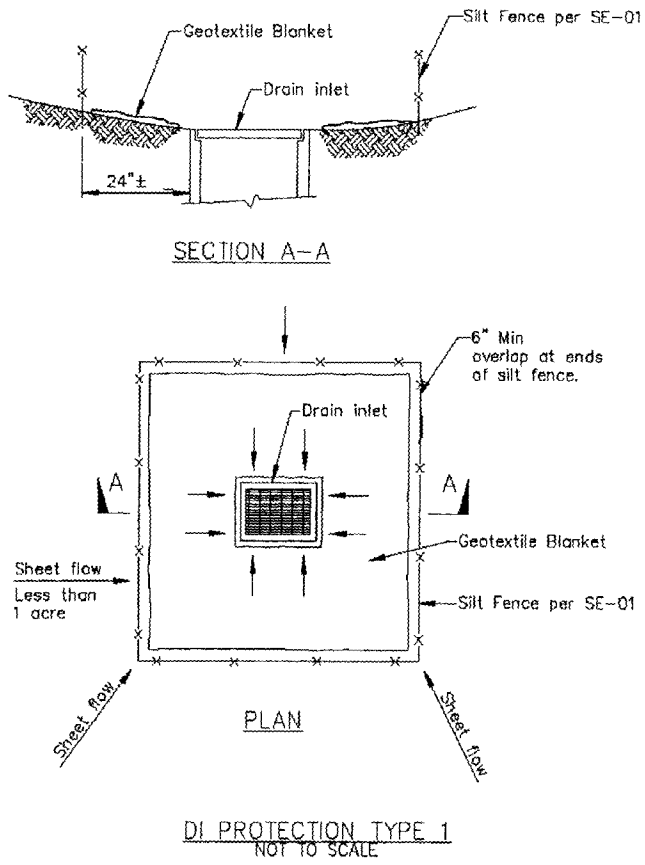
- Filter Fabric Fences. If the fabric becomes clogged, torn, or degrades, it should be replaced. Make sure the stakes are securely driven in the ground and are in good shape (i.e., not bent, cracked, or splintered, and are reasonably perpendicular to the ground). Replace damaged stakes.
- Gravel Filters. If the gravel becomes clogged with sediment, it must be carefully removed from the inlet and either cleaned or replaced. Since cleaning gravel at a construction site may be difficult, consider using the sediment-laden stone as fill material and put fresh stone around the inlet. Inspect bags for holes, gashes, and snags, and replace bags as needed. Check gravel bags for proper arrangement and displacement.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site ore disposed at an appropriate location.
- Remove storm drain inlet protection once the drainage area is stabilized.
  - Clean and regrade area around the inlet and clean the inside of the storm drain inlet as it must be free of sediment and debris at the time of final inspection.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

SE-10 Storm Drain Inlet Protection

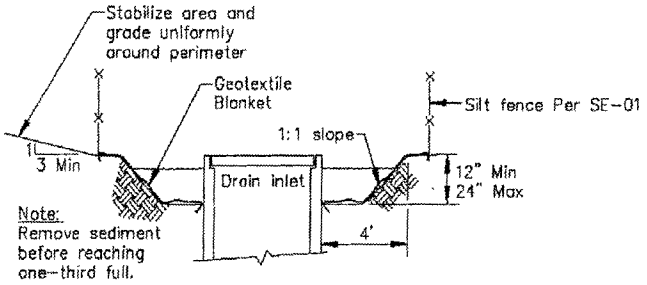


DI PROTECTION TYPE 1
NOT TO SCALE

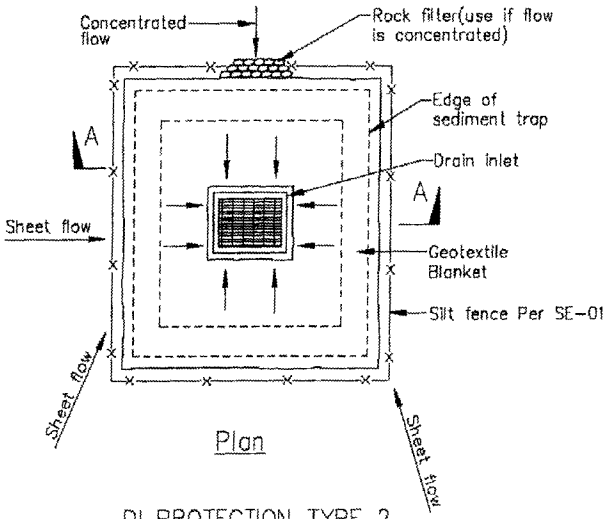
NOTES:

1. For use in areas where grading has been completed and final soil stabilization and seeding are pending.
2. Not applicable in paved areas.
3. Not applicable with concentrated flows.

Storm Drain Inlet Protection SE-10



Section A-A

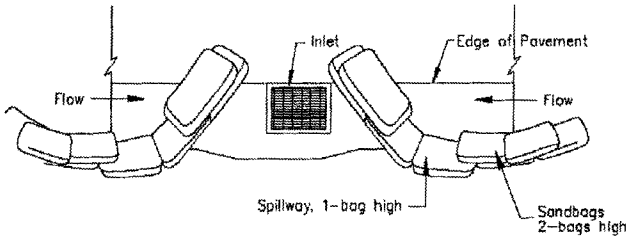


Plan

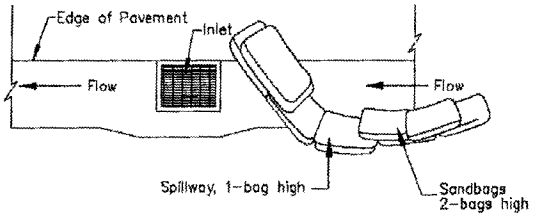
DI PROTECTION TYPE 2
NOT TO SCALE

Notes
1. For use in cleared and grubbed and in graded areas.
2. Shape basin so that longest inflow area faces longest length of trap.
3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.

SE-10 Storm Drain Inlet Protection



TYPICAL PROTECTION FOR INLET ON SUMP

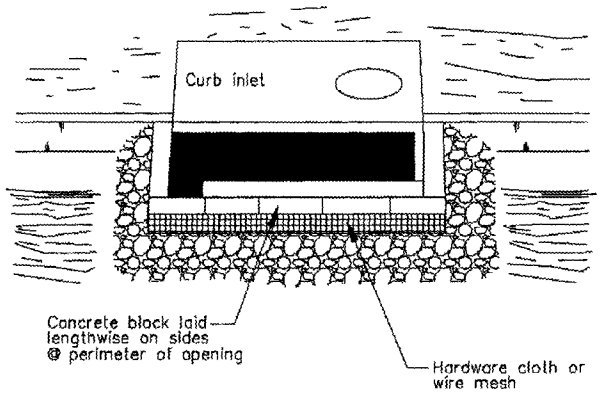


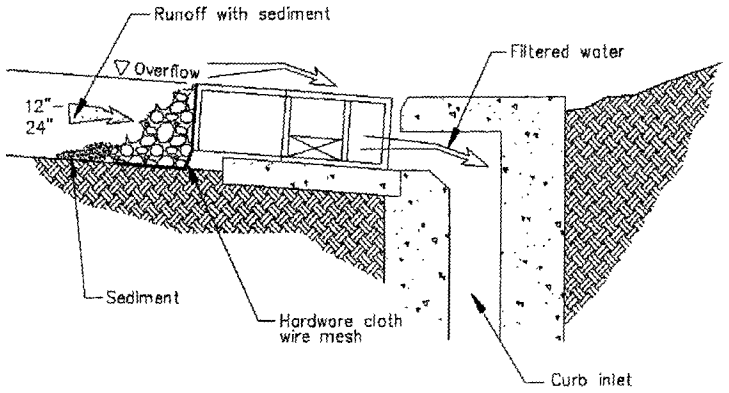
TYPICAL PROTECTION FOR INLET ON GRADE

NOTES:
1. Intended for short-term use.
2. Use to inhibit non-storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.

DI PROTECTION TYPE 3
NOT TO SCALE

Storm Drain Inlet Protection SE-10





DI PROTECTION – TYPE 4
NOT TO SCALE

ATTACHMENT 9

UTILITIES

DESIGN CRITERIA

AND

STANDARD PLANS

ATTACHMENT 9

TABLE OF CONTENTS
UTILITIES

TITLE **PAGE NO.**

General Criteria 1

Design Criteria 2
- Codes and Standards 2
- Pipe Laying 2
- Pavement Removal 3
- Earthwork for Pipelines 3
  - Excavation 3
  - Trenches 3
  - Minimum Width 3
  - Maximum Width 3
  - Manholes and Other Structures 3
  - Excavation Shoring 3
- Public Safety 4
- Traffic Control 5
- Trenching Railroad 5
  - Ballast 6
  - Gradation of Ballast 6
  - Sub-Ballast 7
  - Backfill and Densification 7
  - Restoration of Surfaces and Improvements 7
- Pipeline Abandonment 7

Standard Plans

DESCRIPTION	STANDARD PLAN NO.	NO. OF SHEETS
Trench Requirements in Streets	U-1	1
Trench Width and Bedding Requirements	U-2	4
Pipe Support Across Trenches	U-3	1
Trench Restoration	U-4	3
Underground Pipeline Symbols	U-5	2

UTILITIES
GENERAL CRITERIA

The following general criteria are to be applied to the development of the plans for new utilities, relocation of utilities, and temporary utility services as part of the design and construction of a Port project.

The Engineer shall prepare a substructure plan showing all utilities, pipelines and structures within and adjacent to the Project site. The plans shall indicate ownership and shall be verified by the Agency or private owners or operators.

The Port recognizes that the Port Project Manager may be required to become directly involved with the third-party utility coordination effort to help the utility understand the Port's priorities. The Engineer shall provide the necessary coordination for the timely relocation or reconstruction of existing third party utilities.

The Engineer shall resolve interferences between existing utilities and any utilities requirements of the Project are resolved without loss of function, through coordination with agencies and entities which may have data or information on existing conditions including potential obstructions. The Engineer shall obtain any required approval where necessary to construct adjacent to and/or over/under their utilities/facilities and coordinate Project design to avoid damages.

Where utility relocation or reconstruction will be done by the utility concerned and not by the Port contractor, the Engineer shall coordinate with the utility to receive a commitment for construction with a schedule appropriate to the Engineer's estimate of when the Work must be performed by the utility such that the construction by the utility will not adversely affect the Port or the Port Contractor. With respect to this provision, utilities include, but are not limited to: Southern California Edison; Long Beach Energy Department; Long Beach Water Department (Water and Sewer); Los Angeles County Sanitation Districts; City of Los Angeles Department of Water and Power; Verizon; THUMS; TOPKO; private oil companies including: Arco; Shell; Golden West; PetroDiamond; Aera Energy; ChemOil; TOSCO; Southern California Gas Co.; Equilon; and others; the Burlington Northern/Santa Fe Railroad, Union Pacific Railroad; Pacific Harbor Line Railroad; City of Los Angeles Department of Public Works (Sewers); and others.

The Engineer shall provide engineering services to identify and coordinate the removal or re-routing of utilities located outside the Project area that are affected by the Project.

The Engineer shall design any utilities or facilities necessary to support the Project to meet the Port's insurance and risk management requirements. The Port Project Manager will coordinate with the Port's insurer as required.

The Engineer shall investigate, quantify, contact, and verify with the applicable utility company that there is sufficient availability of additional utility capacity as may be required for the project.

Any temporary service requirements for maintaining Port operation(s) during construction shall be identified. An implementation plan shall be drafted describing when and how to initiate and maintain any such service.

The Engineer shall coordinate the temporary service requirements with the affected utilities. A final temporary utility services plan shall be submitted to and approved by the port, indicating work to be performed by contract, by utility owner and by Port personnel. The Engineer shall document submittals to and responses from utility companies, and provide assistance to the Port Project Manager in the preparation of permit applications and in obtaining agreements.

The Engineer shall maintain a written log of all contacts with the utility companies and include such log in the Monthly Status Report.

DESIGN CRITERIA

All work not included in these guidelines shall conform to the latest edition and amendments of the Standard Specifications for Public Works Construction (SSPWC).

The Engineer shall incorporate the appropriate criteria in the Project design and document preparation.

Codes and Standards

The Engineer shall design and conduct Work in compliance with all applicable Federal, State and local laws, codes and regulations.

The Engineer shall design in accordance with Port design criteria and current applicable codes, standards, and regulations. It is the Engineer's sole responsibility to determine the applicable and appropriate codes and standards that apply to the Work.

The Engineer shall contact applicable government agencies to verify that he or she is using their current codes, standards and regulations. This should be done prior to the start of design. If the engineer does not perform this verification and the agency subsequently requires the use of a different code or standard, the cost of revising the design shall be the sole responsibility of the Engineer.

Public Safety

The Engineer shall specify such precautions as are necessary to protect all workers engaged in the performance of the work, provide safe passage to and from adjacent areas that may be affected by the work, and protect the public from hazardous conditions, per applicable sections of the California Occupational Safety and Health Act (Cal-OSHA).

The requirements shall comply with the provisions of Subsections 7-10 "Public Conveyance and Safety" of the SSPWC, latest edition, and all subsequent supplements.

Traffic Control

The work of installation of pipelines and any repair, relocation, reconstruction, or removal thereof shall be specified to be conducted in accordance with the latest edition of the Work Area Traffic Control Handbook (WATCH) or the Caltrans Manual of Traffic Controls for Construction Zones and in a manner which maintains access to adjacent properties.

Necessary guards, barriers, warning lights, signs, watchmen and signalmen as may be necessary to prevent accidents shall be specified. A Traffic Control Plan shall be required and provided to the POLB Project Manager for approval by the POLB Traffic Engineer.

Pipe Laying

Each pipe shall have a firm and uniform bearing over its entire length.

All pipelines not otherwise specifically provided for shall be constructed of materials which are new or in such a condition as will assure satisfactory service and durability in accordance with the purpose of the intended use and as approved by the Port of Long Beach (POLB) Engineering Division.

Upon completion, approved above-ground pipeline installations shall be painted and maintained in a neat and orderly manner, and the immediate area shall be kept free of debris. Guard posts may be necessary in some areas.

Pavement Removal

All asphaltic concrete paving shall be neatly cut, outlining the width of the trench. The pavement in the center of the trench shall be broken before the pavement at the sides of the trench is broken. The removed asphaltic concrete and unsuitable excavated material shall not be placed in the backfill, but shall be promptly disposed of.

Earthwork For Pipelines

Excavation: Excavation shall include the removal of all water and material of any nature which interferes with the construction work. Subgrade shall be the exterior bottom of the pipe. Where the ground on which the pipe or appurtenant structure is to be constructed is composed of soft or spongy material, such material shall be removed and replaced with good, sound earth, sand, or gravel, which shall be compacted to not less than ninety percent (90%) relative compaction.

If the bottom of the excavation is found to consist of rock or any material that by reason of its hardness cannot readily be excavated to a true subgrade, the rock or hard material shall be removed for at least three (3) inches below subgrade, and the excavation refilled to subgrade with good, sound earth, sand, or gravel, which shall be compacted as previously stated.

In addition, should unidentified utilities (i.e. pipes, conduits, casings, etc.) be encountered during excavation, the Engineer shall research and identify the unknown condition, and determine the required corrective actions to be taken in order to complete the work.

Excavations for pulling operations and repair of the pipelines shall be confined to a right-of-way

five (5) feet on either side of the center line of the pipelines.

Excavations shall be made in a manner that will minimize damage to vegetation encountered in the course of the work. Plants in the way of excavation shall be removed and replaced.

Trenches: The pipe shall be laid in an open trench unless tunneling is required. If an alternative method of installation is approved, payment will be made based upon the specified method of construction. No trench shall be excavated more than three-hundred (300) feet in advance of the construction or left unfilled for more than four-hundred (400) feet in the rear thereof, unless approved by the POLB Engineering Division. Testing and "As Built" survey of pipelines shall be performed before any backfill is allowed.

Where trenches must cross roadways that are in use the Engineer shall make provision for trench crossings, either by means of backfills or temporary plating, to permit passage of at least one lane of traffic in each direction, and additional lanes, if traffic conditions require, as approved by the POLB Traffic Engineer.

Pipelines under existing railroad tracks shall be installed in a pipe casing per the requirements of the SSPWC and subject to approval by the POLB Engineering Division and Railroad Operator. The Engineer shall notify the railroad company at least seven (7) days in advance of excavating under the railroad tracks. If open trench is approved, track, ballast and subgrade shall be replaced; railroad ties, rails, and appurtenances realigned; and ballast re-tamped to grade by an experienced railroad contractor. The track shall be blocked and barricaded during pipe-crossing operations in accordance with railroad practices. Switches on either side of the work shall be padlocked by the railroad company. Contractor personnel working adjacent to operating tracks shall review the requirements in the Railroad section of these guidelines.

Minimum Width: The minimum width of excavation for pipes in trenches and tunnels shall be the exterior diameter of the pipe, plus twelve (12) inches for pipe with bells or collars, or eight (8) inches for pipe without bells or collars, on each side of the pipe. For conduits formed in place in the trench, the minimum width of excavation shall be the external horizontal dimension of the structure. The minimum width under any circumstances shall be twenty-four (24) inches unless otherwise authorized by the POLB Engineering Division.

When required, the trench width may be increased a sufficient amount to permit the placing of sheeting.

Maximum Width: The maximum width of excavation for all pipes shall be not more than twenty-four (24) inches greater than the exterior diameter of the pipe, up to a point six (6) inches above the top of the pipe, except that it may be widened enough to place sheeting where required. If maximum trench width is exceeded, Engineer approved additional bedding of high strength pipe shall be provided at no additional cost to the Port.

Manholes and Other Structures: The excavation for all manholes and other structures shall be sufficient to leave at least six (6) inches in the clear between the outer surface of the structure and the embankment or timber which may be used to protect it. In suitable soil, the excavation may serve as the exterior form for concrete structures provided the excavation is neatly made at least one (1) inch wider per side than specified and fallen dirt and rock is removed prior to placement of concrete.

Excavation Shoring: Where an excavation or trench is five (5) feet or more in depth, an acceptable, detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground must be developed. If such plan varies from the shoring system standards established by the Construction Safety Orders of the State of California Division of Industrial Safety, the design shall be prepared by a California Registered Civil or Structural Engineer. No shoring, sloping, or protective system less effective may be used in such excavation. No Excavation shall commence until said detailed design has been approved by the POLB Engineering Division. The shoring design shall provide for nearby railroad loading and clearance requirements.

Trenching Railroad (When jacking is not required)

Where trench excavation encroaches on a railroad ballast section, ballast excavated from the trench may be used to re-ballast the railroad tracks provided the ballast is clean and free from foreign materials; otherwise, new ballast rock shall be furnished.

Where pipe is to be installed under railroad tracks, backfill under tracks to a distance of fifteen (15) feet on each side of the tracks shall be washed concrete sand. Sand backfill material shall be placed in 6-inch layers and be thoroughly compacted to ninety-five (95) percent of maximum density, as determined in accordance with American Society for Testing and Materials (ASTM) Designations D 1556 and D 1557, to a level ten (10) inches below the bottom of the ties. Then ballast rock shall be placed in a 6-inch layer, and a 4-inch layer, each layer being thoroughly tamped to bring the tracks to grade. Tracks shall be restored to perfect alignment by an experienced railroad contractor.

Pipelines installed under railroad tracks shall be placed within a minimum ¼-inch steel casing as approved by the POLB Engineering Division for a distance of not less than fifteen (15) feet on each side of the center lines of the tracks. The ends of the steel casing shall be sealed with a neoprene collar. and the collar shall be fastened to the casing and pipe with three-eighths (3/8) inch wide stainless steel bands.

Ballast shall be heavy tamped from a point twelve (12) inches inside each rail on both sides of the ties to the ends of the ties. Light tamping only shall be permitted at the center of the tie between above stated limits. Both ends of the ties shall be tamped simultaneously and tamping inside and outside of the rail shall be done at the same time. Thorough tamping of ballast under the rail seat shall be required. Two tamping tools shall always be worked opposite each other on the same tie. Tampers shall be started from a nearly vertical position and used directly against the sides of the tie to be tamped, and worked downward past the bottom corner, after which the tool may be tipped down to force the ballast directly under the tie. Switch ties shall be heavy tamped under each rail to a point twelve (12) inches on either side of each rail. Light tamping only shall be permitted between the above-stated limits. Special attention shall be paid to joint ties. Each tie will be thoroughly inspected as to compactness of ballast under the tie by means of sounding devices, and any tie found not to be solidly embedded in ballast shall be retamped. Only experienced tamping tool operators shall be employed for the tamping operations and those operators not tamping properly shall be immediately removed from that duty. Pneumatic and electric tamping tools will be permitted, but tamping by hand will not be allowed.

In paved areas, ballast shall be dressed one (1) inch above top of tie in order to allow for asphaltic concrete pavement six (6) inches in depth. In unpaved areas, ballast shall be dressed to

tops of ties.

The railroad trackage shall be tested with a railroad locomotive before any asphaltic concrete pavement is placed.

Ballast

Crushed stone used for ballast shall consist of clean, tough, durable fragments free of any detrimental quantity of soft, friable, thin, elongated or laminated pieces, pieces coated with dirt, disintegrated material, oil, or other deleterious substance.

The source of the crushed stone used for all ballast requirements needs to be approved and no change from one material to another or mixing of two materials shall be allowed without permission from the POLB Engineering Division.

Ballast shall conform to specifications outlined in American Railway Engineering Association (AREA), Chapter 1, Part 2, Section 2.4.

Gradation of Ballast

1. The gradation of ballast rock shall be determined by test with laboratory sieves having square openings conforming to ASTM guideline - ASTM E 11.

2. Crushed stone ballast shall conform to the gradation requirements of AREA Size No. 5 gradation.

Sieve Size	Square Mesh Amount Finer than Each Laboratory Sieve (Square Openings), Weight Percent Size No. 5
1-1/2" 100 (37.5 mm)	100
1" 90-100 (25.0 mm)	90-100
¾" (19.0 mm)	40-75
½" (12.5 mm)	15-35
3/8" (9.5 mm)	0-15
No. 4	0-5

Prepared ballast shall be handled at the producing plant in such a manner that it is kept clean and prevented from segregating. It shall be loaded only into cars or trucks that are in good order, tight enough to prevent leakage and waste of materials and that are clean and free from rubbish or any substance that would foul or damage the ballast. The ballast will be unloaded and spread in its final position in such a manner that it will be kept clean and prevented from segregating.

Sub-Ballast

Sub-ballast shall be crushed rock and shall conform to Subsection 200-1.2, "Crushed Rock and Rock Dust," of the SSPWC. Crushed rock shall be gradation size 1".

Placement of the sub-ballast shall conform to Subsections 301-2.2, "Spreading" and 301-2.3, "Compacting" of the SSPWC.

Bedding and Pipe Laying

Bedding and pipe laying shall be in accordance with SSPWC 306-1.2, "Installation of Pipe" and POLB Standard Plan U-2.

Backfill and Densification

Backfill of trenches under railroad trackage shall be done in accordance with Section 306-1.3 "Backfill and Densification" of the latest addition of the SSPWC. The top three (3) feet shall be compacted to ninety-five (95) percent as determined by field density tests. Testing and "As-Built" survey of pipelines shall be performed before any backfill is allowed.

Pipeline Test

Testing of pipelines shall be in accordance with SSPWC 306-1.4 "Testing Pipelines" unless otherwise specified.

Restoration of Surfaces and Improvements

Upon completion of the backfill, and the pipeline testing has been approved the paved surfaces and ground areas shall be restored in a satisfactory manner. All surface improvements damaged or removed shall be reconstructed to the same dimensions. In asphalt concrete-paved areas, a temporary patch shall be placed with a minimum of twelve (12) inches of compacted base rock and two (2) inches of temporary plant mix in the upper fourteen (14) inches of the trench or replace to the existing dimensions, which ever is greater. The plant mix surfacing shall be maintained in good traffic condition, smooth and free from bumps and depressions. Prior to placement of plant mix, the edge of the trench pavement shall be neatly cut to a minimum depth of two (2) inches back from the edge of excavation to sound material. The strip of existing pavement delineated by the saw cut and the edge of excavation shall be left in place until permanent resurfacing is performed, at which time it shall be removed along with the plant mix surfacing. After settlement has taken place, the temporary plant mix, trimmed pavement, and the upper 4-inch thickness of base rock shall be removed, adjacent edges of asphaltic concrete pavement shall be cleaned and coated with hot asphalt cement; and replaced with in-kind asphaltic concrete pavement Class B or Cl, Grade AR8000, as specified in SSPWC Subsections 203-6 "Asphalt Concrete" and 302-5 "Asphalt Concrete Pavement" to a neat and even grade with the existing pavement. In areas where only dirt or base rock exist, the replacement shall be in kind after compacting the backfill material. (Refer to Standard Plan ST-15)

The material shall be of such nature and quality that when watered and rolled during the process of paving or base construction it will thoroughly compact throughout with a hard unyielding surface and will not become soft or unstable when saturated with water. All base rock shall be capable of being compacted to at least one hundred (100) percent relative density.

Pipeline Abandonment

In the case of pipelines, the POLB Engineering Division monitors construction projects and requires submittal of as-built drawings for mapping purposes. The POLB Engineering Division

establishes conditions for pipeline removal within the Harbor District. No pipelines shall be abandoned in place without prior written consent from POLB's Chief Harbor Engineer and Director of Planning.

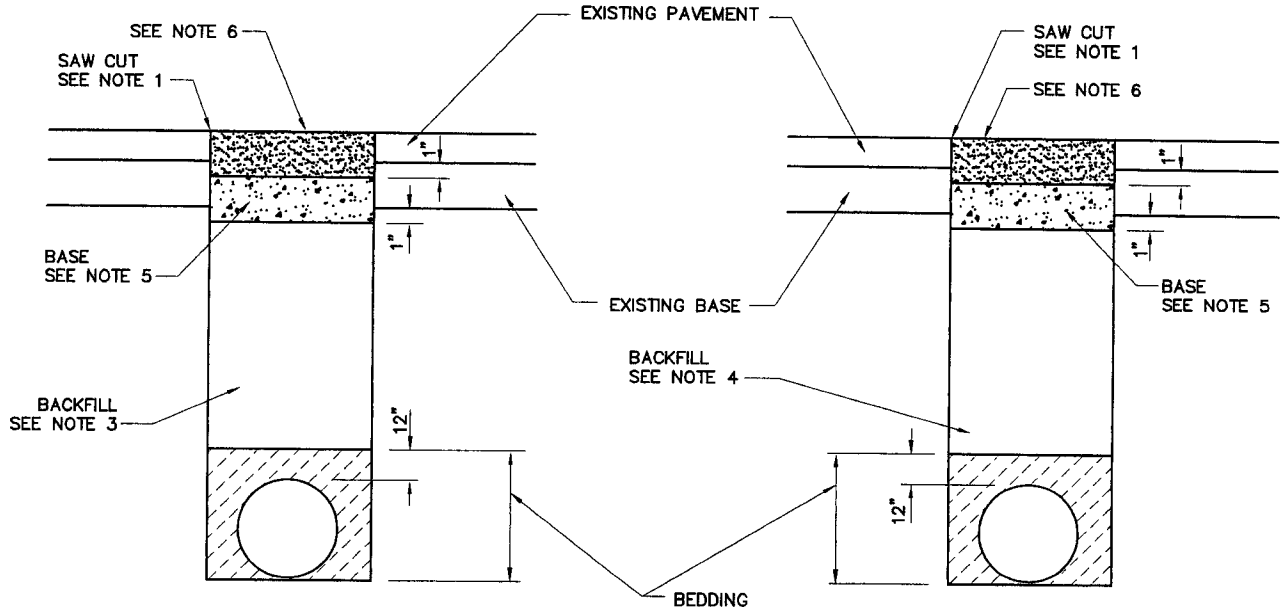
Stipulations when pipelines or facilities are removed or abandoned:

a) Prior to removal or abandonment of pipelines, pipelines shall be cleaned in a manner that removes all residue materials. All residues removed from the pipeline along with any materials used in the cleaning process shall be contained. All residues and cleaning materials shall be disposed of in accordance with applicable laws and regulations.

b) If the pipeline is removed, excavation, backfill, and resurfacing shall be done in accordance with the provisions of these guidelines.

c) Any pipeline to be abandoned shall be cleaned and filled with mud-jack material throughout the entire abandoned portion, and both ends of the line plugged. The mug-jack material shall be approved by the POLB Engineering Division.

ATTACHMENT 9



SEE POLB U-2 "TRENCH WIDTH AND BEDDING REQUIREMENTS"

CASE I
NATIVE SOIL WITH SAND EQUIVALENT LESS THAN 15

CASE II
NATIVE SOIL WITH SAND EQUIVALENT 15 OR GREATER

NOTES: (SEE POLB STD U-4 – TRENCH RESTORATION)

1. TRENCHES FOR BOTH CONCRETE AND ASPHALT CONCRETE PAVEMENTS SHALL BE SAW CUT TO FULL DEPTH OF THE PAVEMENT.
2. ALL DISTURBED SUBGRADE, AND BACKFILL SHALL BE COMPACTED TO NOT LESS THAN NINETY PERCENT (90%) RELATIVE COMPACTION, UNLESS OTHERWISE NOTED ON PROJECT PLAN.
3. CASE I – TRENCH BACKFILL SHALL BE TRENCH BACKFILL SLURRY, CLASS 100-E-100 CONCRETE OR APPROVED BACKFILL MATERIAL WITH A SAND EQUIVALENT OF 15 OR GREATER.
4. CASE II – NATIVE MATERIAL IS SUITABLE FOR BACKFILL.
5. TRENCH BACKFILL SLURRY MAY BE USED IN LIEU OF REPLACING EXISTING BASE MATERIAL.
6. TEMPORARY ASPHALT CONCRETE SHALL BE 4 INCH MINIMUM THICKNESS. COMPACTION AND SURFACE FINISH SHALL BE EQUAL TO THAT SPECIFIED FOR PERMANENT ASPHALT CONCRETE PAVEMENT.

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS	
NO.	DATE
1	
2	
3	

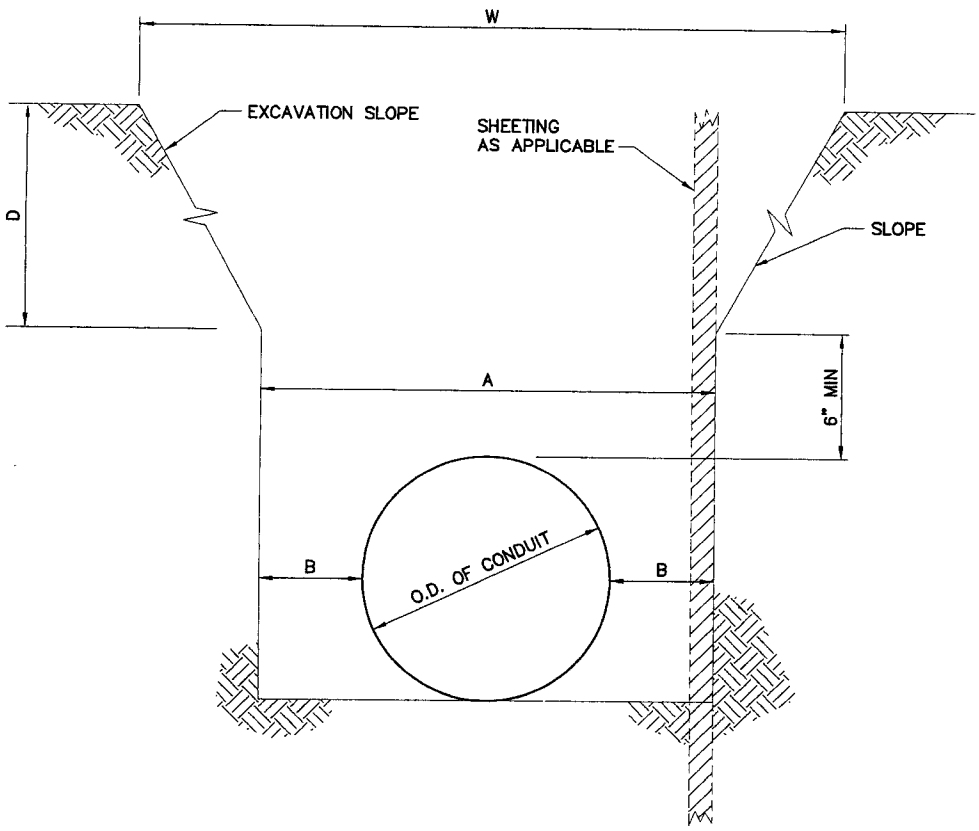
TRENCH REQUIREMENTS IN STREETS

STANDARD PLAN
U-1

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

1 OF 1

ATTACHMENT 9



A = DIMENSION OF TRENCH MEASURED AT TOP OF PIPE

A (MIN., MAX.) = 24", OD + 24" (NOTE 1)

B MIN = 12" FOR PIPE W/BELL OR COLLAR
OR 8" FOR PIPE W/O BELL OR COLLAR

OD = OUTSIDE DIAMETER OF CONDUIT

D = IN ACCORDANCE WITH CAL-OSHA GUIDELINES

SLOPE = AS DETERMINED BY THE SOILS ENGINEER

W = SURFACE TRENCH WIDTH (AS APPROVED BY THE CHIEF HARBOR ENGINEER)

NOTES

1. UNLESS OTHERWISE APPROVED BY THE CHIEF HARBOR ENGINEER. IF MAXIMUM ALLOWABLE WIDTH SPECIFIED IS EXCEEDED, SPECIAL BEDDING & CRADLING MUST BE PROVIDED AT CONTRACTOR'S EXPENSE.

TRENCH WIDTH REQUIREMENTS

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE
1	
2	
3	

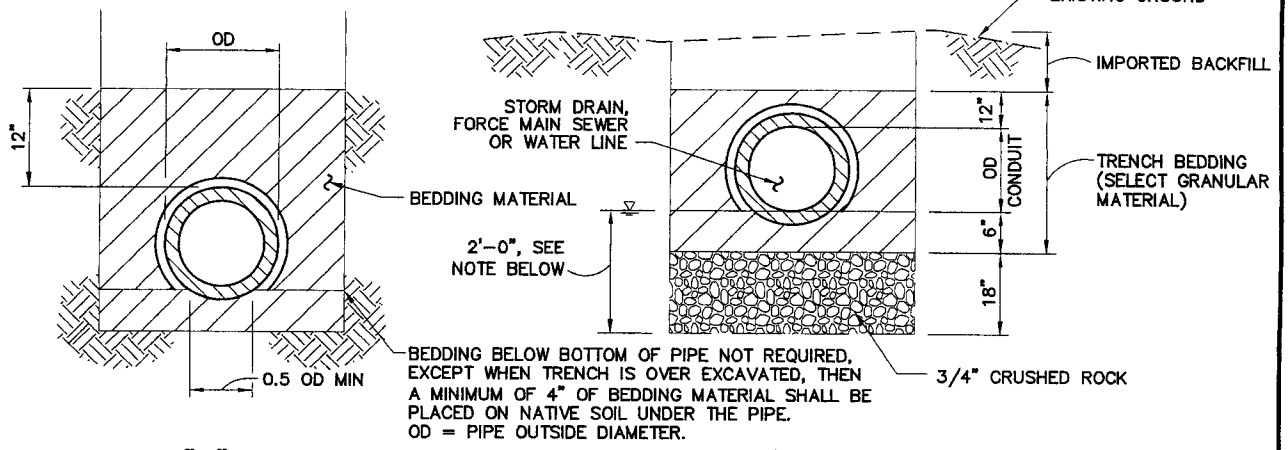
TRENCH WIDTH AND BEDDING REQUIREMENTS

STANDARD PLAN U-2

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

1 OF 3

ATTACHMENT 9

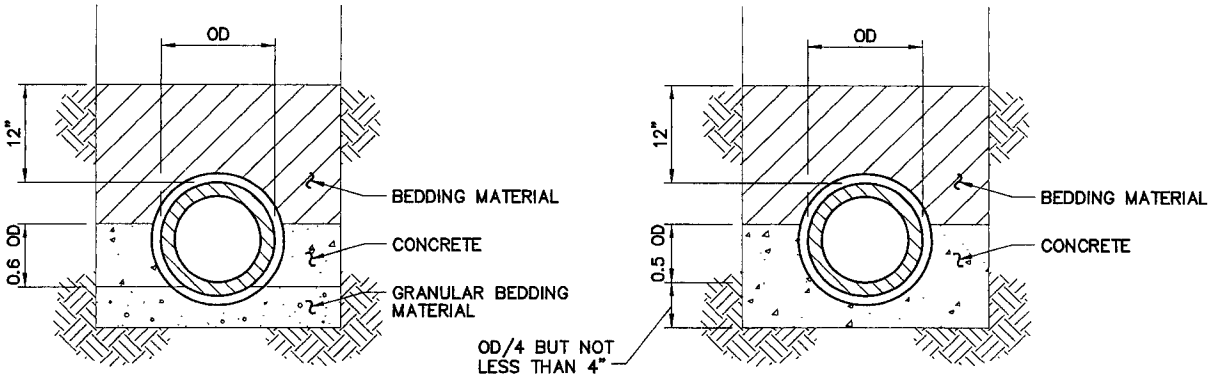


CLASS "A" BEDDING
LOAD FACTOR 1.5

CLASS "A" BEDDING ALTERNATIVE
LOAD FACTOR 1.5
TO BE USED ONLY WHEN SEVERE GROUND WATER CONDITION OCCURES

NOTE:

THE TRENCH WIDTH SHALL CONFORM TO POLB STD PLAN NO. U-2. THE BEDDING DETAIL APPLIES TO ALL STORM DRAIN, FORCE MAIN DISCHARGE PIPING, SEWER AND WATER SERVICE CONSTRUCTION. WHERE BOTTOM OF TRENCH IS BELOW WATER TABLE, OVEREXCAVATE AND USE 2 FEET THICK ¾" CRUSHED ROCK FOR BEDDING BELOW BOTTOM OF PIPE.



CLASS "B" BEDDING
LOAD FACTOR 2.5

CLASS "C" BEDDING
LOAD FACTOR 3.0

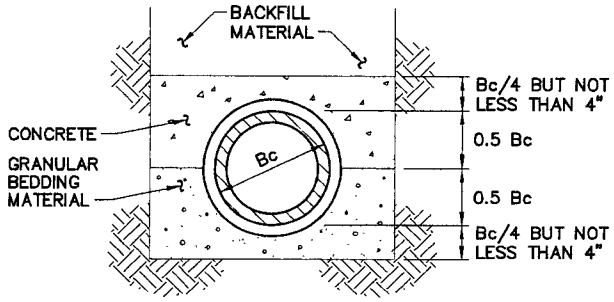
NOTES

1. CLASS "A" BEDDING SHALL BE USED, UNLESS OTHERWISE NOTED ON PROJECT PLANS.
2. BEDDING MATERIAL SHALL CONFORM TO SECTION 306-1.2.1 OF THE STANDARD SPECIFICATIONS. SAND EQUIVALENT OF NOT LESS THAN 30.
3. WHEN CONCRETE BEDDING IS USED, PIPE SHALL BE SECURELY ANCHORED AT EACH JOINT TO PREVENT PIPE FROM FLOATING.
4. SHEETING NOT SHOWN.
5. GRANULAR MATERIAL SHALL BE NO. 4 AGGREGATE OR ½" CRUSHED ROCK.
6. CONCRETE BEDDING SHALL BE CLASS 450-C-2000.
7. IF TRENCH IS OVER EXCAVATED, A MINIMUM OF 4" OF BEDDING MATERIAL SHALL BE PLACED ON NATIVE SOIL UNDER THE PIPE.

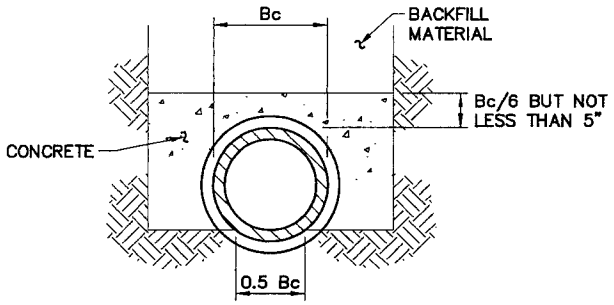
THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS		TRENCH WIDTH AND BEDDING REQUIREMENTS	STANDARD PLAN
NO.	DATE		U-2
1			
2			
3		APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____	2 OF 3

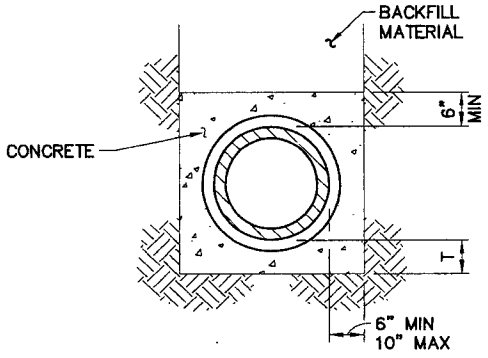
ATTACHMENT 9



CLASS "D" BEDDING
LOAD FACTOR 3.2
(TO BE USED ONLY WHEN SEVERE GROUND WATER CONDITIONS OCCUR)



CLASS "E" BEDDING
LOAD FACTOR 3.2



CLASS "F" BEDDING
LOAD FACTOR 4.5

TABLE OF T DIMENSIONS	
PIPE SIZE (I.D.)	T
6" – 24"	6"
27" – 33"	8"
36" – 39"	9"
42" – 60"	10"

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE
1	
2	
3	

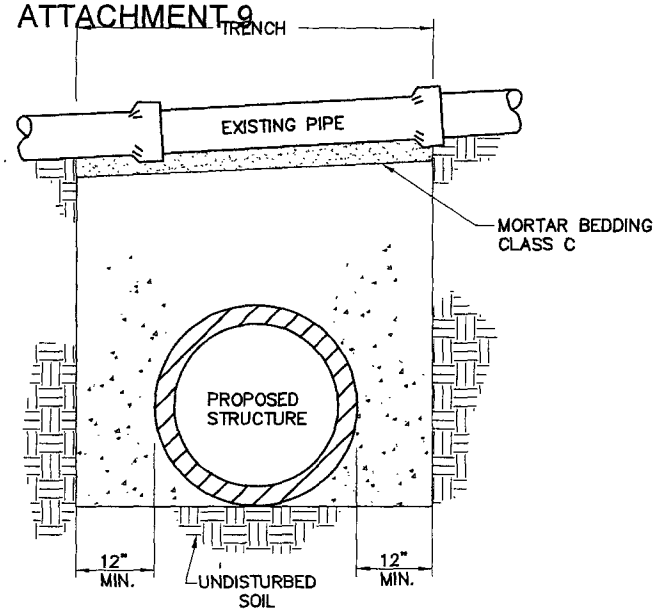
TRENCH WIDTH AND BEDDING REQUIREMENTS

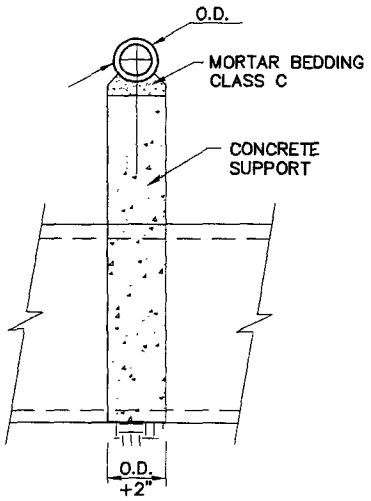
STANDARD PLAN U-2

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

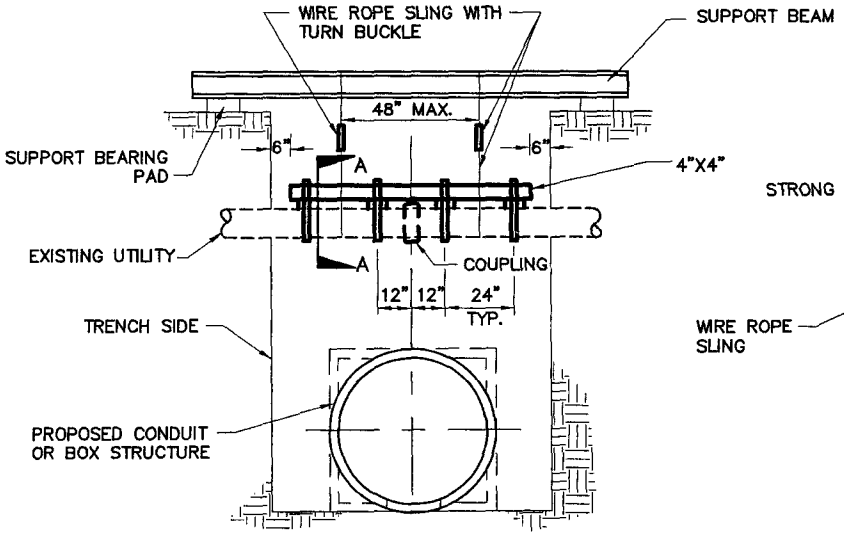
3 OF 3

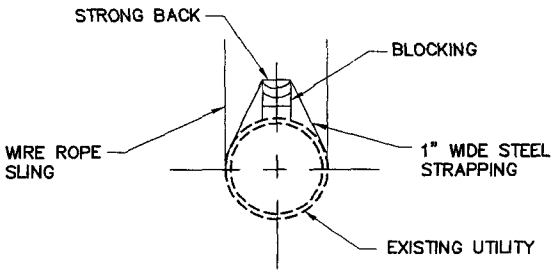
ATTACHMENT 9





PERMANENT WALL SUPPORT





SECTION A–A

TEMPORARY PIPE SUPPORT ACROSS TRENCHES

NOTES:

1. PERMANENT, PIPE SUPPORT SHALL BE CONSTRUCTED UNDER ALL EXISTING CONCRETE, ASBESTOS CEMENT AND CLAY PIPES AND UNDER OTHER PIPELINES WHERE REQUIRED BY THE ENGINEER.
2. OTHER PIPE SUPPORT METHODS (FOR EXAMPLE, REINFORCED CONCRETE BEAMS) MAY BE APPROVED BY THE ENGINEER.
3. STRONG BACK BEAMS MAY BE DELETED FROM TEMPORARY SUPPORTS FOR IRON OR STEEL PIPES IF APPROVED BY THE ENGINEER.
4. IF MORE THAN ONE PIPE COUPLING IS EXPOSED, THE CONTRACTOR SHALL SUBMIT DETAILS OF PROPOSED LATERAL RESTRAINT FOR APPROVAL BY THE ENGINEER.

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE
1	
2	
3	

PIPE SUPPORT ACROSS TRENCHES

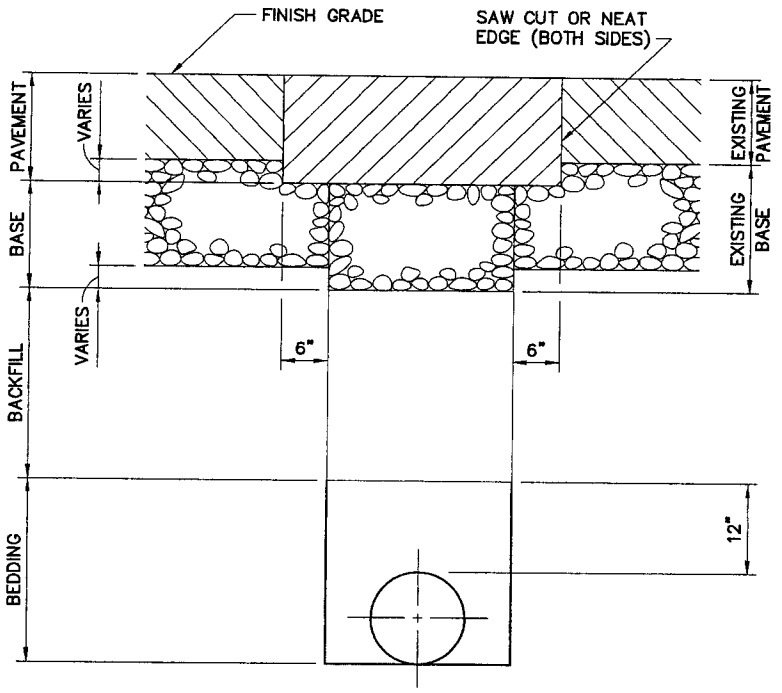
STANDARD PLAN U-3

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

1 OF 1

ATTACHMENT 9

TRENCH RESTORATION SUMMARY



TRENCH SECTION

	MATERIAL	REQUIREMENTS	THICKNESS LIMITS
PAVEMENT	ASPHALTIC CONCRETE OR CEMENT CONCRETE	EXISTING THICKNESS PLUS ONE-INCH	4-INCH MINIMUM
	ASPHALTIC CONCRETE OR CEMENT CONCRETE	SAME THICKNESS AS EXISTING	8-INCH MAXIMUM
BASE	CRUSHED AGGREGATE CRUSHED MISC. BASE	SAME THICKNESS AS EXISTING COMPACTED 95%	ZERO IF NONE EXISTS 6-INCH MINIMUM 9-INCH MAXIMUM
	SLURRY	WHEN REQUIRED	
BACKFILL	NATIVE IMPORT (SE 30%) SAND	COMPACTED 90%	
	SLURRY	WHEN REQUIRED	
BEDDING WATER MAIN	NATIVE (SE 30%) SAND	JETTED OR COMPACTED 90%	
BEDDING SEWER MAIN	GRAVEL	JETTED OR COMPACTED 90%	

(SE 30%) = SAND EQUIVALENT GREATER THAN 30
MISC. = MISCELLANEOUS

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE
1	
2	
3	

TRENCH RESTORATION

STANDARD PLAN U-4

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

ATTACHMENT 9

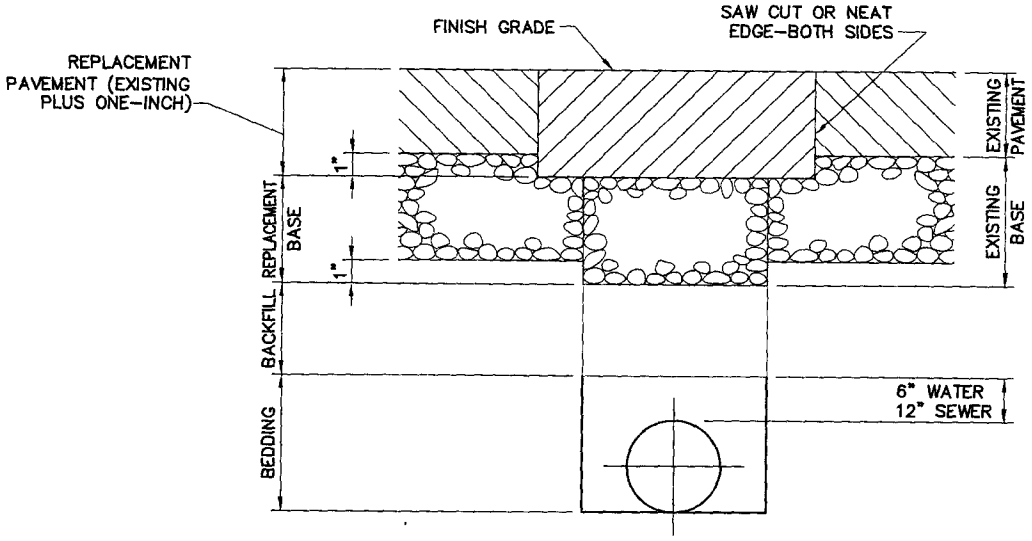
NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS PROVIDED IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. CURRENT EDITION.
2. PERMANENT PAVEMENT RESTORATION SHALL COMMENCE WITHIN TEN WORKING DAYS FROM COMPLETION OF CONSTRUCTION OR AFTER A MAXIMUM OF 500 LINEAR FEET OF TRENCH CONSTRUCTION HAS BEEN COMPLETED, WHICHEVER COMES FIRST.
3. SLURRY BACKFILL AND BASE MUST BE USED WHEN SPECIFIED BY THE WATER DEPARTMENT. SLURRY MAY BE REQUIRED AT MAJOR STREET CROSSINGS.
4. ALL CONCRETE OR CONCRETE OVERLAID STREETS AND ALLEYS SHALL BE SAW CUT TO FULL DEPTH OF PAVEMENT. SAWCUTTING OF ASPHALT PAVEMENT SHALL BE OPTIONAL. OTHER METHODS OF ASPHALT PAVEMENT CUTTING REQUIRES APPROVAL BY THE POLB ENGINEER PRIOR TO START OF CONSTRUCTION.
5. DURING CONSTRUCTION WHEN TEMPORARY ASPHALT IS USED, IT SHALL BE PLACED 4 INCHES THICK AND COMPACTED BY MEANS OF A SELF-PROPELLED STEEL WHEEL ROLLER.
6. WHEN ANY TRENCH PAVEMENT RESTORATION OCCURS WITHIN 3 FEET OF A CONSTRUCTION JOINT, EXPANSION JOINT, COLD JOINT, OR EDGE, THE PAVEMENT BETWEEN THE TRENCH AND THE JOINT, OR EDGE SHALL BE REMOVED AND REPLACED IN KIND WITH THE TRENCH PAVING.
7. COMPACTION TESTS SHALL BE PERFORMED DURING BACKFILL OPERATIONS, AT 100 FOOT INTERVALS AT VARYING DEPTHS DETERMINED IN THE FIELD BY THE PORT OF LONG BEACH.
8. IF THE NATIVE SOIL IS DEEMED UNSUITABLE FOR BACKFILL BY THE PORT OF LONG BEACH, IMPORTED BACKFILL WITH A SAND EQUIVALENT GREATER THAN (30) SHALL BE PROVIDED.

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE	TRENCH RESTORATION	STANDARD PLAN U-4
1			
2			
3		APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____	2 OF 3

ATTACHMENT 9



TRENCH SECTION

NOTES:

1. GRAVEL BASE IS NOT REQUIRED IF NO BASE EXISTS.
2. NATIVE MATERIAL REMOVED FROM TRENCH. USE OF IMPORTED MATERIAL MUST BE APPROVED BY THE POLB ENGINEER.
3. WATER MAIN SHALL BE BEDDED IN NATIVE MATERIAL IF SANDY, OTHERWISE SAND WILL BE USED. SEWERS SHALL BE BEDDED IN GRAVEL.
4. BEDDING SHALL BE JETTED. BACKFILL SHALL BE MECHANICALLY COMPACTED TO 90%, AND BASE TO 95%.

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE
1	
2	
3	

TRENCH RESTORATION
FORCE ACCOUNT ONLY

STANDARD PLAN
U–4

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

3 OF 3

ATTACHMENT 9

GENERAL

NORTH ARROW

NUMBER OF DETAIL, SECTION OR ELEVATION NUMBERED CONSECUTIVELY ON EACH SHEET.
S1- DRAWING NUMBER WHERE DETAIL, SECTION OR ELEVATION ORIGINATED.
S2- DRAWING NUMBER WHERE DETAIL SECTION OR ELEVATION DRAWN.

SECTION NUMBER

DETAIL SCALE 1" = 1-0" | SECTION SCALE 1" = 1-0" | TITLE SCALE 1" = 1-0"

BUILDING — BUILDING

CONCRETE CURB AND GUTTER

LIMIT OF WORK

PROPERTY LINE

ELECTRICAL

VERTICAL BEND

E — ELEC. DUCT

ELEC. METER PANEL — ELECTRICAL METER PANEL

ELEC. PAD — ELECTRICAL PAD

LP — LIGHT POLE
PP — POWER POLE
RISER — RISER
STUB OUT
METER — METER
GP — GUY POLE
E — ELECTRICAL MANHOLE
ELE — PANELBOX
TC — TRAFFIC PANELBOX
RR — RR SIGNAL POLE
TL — TRAFIC LIGHT POLE
PB — PULLBOX

GAS

G — GAS LINE
GAS VERTICAL BEND
GAS VALVE
RISER — GAS RISER
METER — GAS METER
GAS REDUCER

OIL

O — OIL LINE
WI — WATER INJECTION LINE
WG — WETGAS LINE
CHEM — OIL CHEMICAL LINE
OWAT — OIL WATER LINE
DG — DRYGAS LINE
OIL VERTICLE BEND
VB — OIL: VALVE BOX
OW — OILWELL STEM
OIL REDUCER
RISER — OIL RISER
T — OIL TEST/ STUBOUT
OIL VALVE
VENT — OIL VENT

SEWER

S — SEWER LINE
SEWER VERTICLE BEND
CHIMNEY — SEWER CHIMNEY
C.O. — SEWER CLEAN OUT
D — STORMDRAIN: MH
D PUMP STA — STORMDRAIN PUMP STATION

WHARF

CRANE STOP
CLEAT
BOLLARD
E — ELEC BOX SHIPSERVICE
F — FUEL OIL BOX SHIPSERVICE
T — TELEPHONE BOX SHIPSERVICE
W — WATER BOX SHIPSERVICE

TELEPHONE

T — TELEPHONE VERTICLE BEND
T — TELEPHONE MANHOLE
TEL — TELEPHONE PANELBOX
TP — TELEPHONE POLE
JBOX — JUNCTION BOX
PA — PUBLIC ADDRESS
FO — FIBER OPTIC DUCT
T — TELEPHONE DUCT
FA — FIRE ALARM
TV — TELEVISION CABLE

STRUCTURE

RETAINING WALL
FENCE CHAINLINK
FENCE BLOCK WALL
FENCE, OTHER
GUARD RAIL
TANK ABOVE GROUND
FENCE TURNSTYLE
FENCE GATE
TRANSMISSION TOWER
LARGE TANK OUTLINE
TANK UNDERGROUND

WATER

B.F. — BACKFLOW
W — WATER VERTICLE BEND
WATER VALVE
W — WATER LINE/ LATERAL
SPR — SPRINKLER LINE
CHECK VALVE
FH — FIRE HYDRENT
METER — WATER METER
REDUCER
W — MANHOLE
RISER — RISER
Y — WATER: SIAMESE
SPRINKLER PIT
PB — SPRINKLER PULLBOX

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE
1	
2	
3	

UNDERGROUND PIPELINE SYMBOLS

STANDARD PLAN U-5

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

ATTACHMENT 9

A

ABN	ABANDON
ABUT	ABUTMENT
AC	ASPHALT CONCRETE
ADJ.	ADJUSTABLE
ASSY	ASSEMBLY
AVE	AVENUE
AW	ABOVE WATER

B

BC	BEGIN CURVE
BEG	BEGIN
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCH MARK
BVC	BEGIN VERTICLE CURVE

C

CAP	CORRUGATED ALUMINUM PIPE
CAPA	CORRUGATED ALUMINUM PIPE ARCH
CIP	CAST IRON PIPE
℄	CENTER LINE
CL.	BENCH MARK
CLR	CLEAR(ANCE)
CO	COUNTY
COL	COLUMN
CONC	CONCRETE
COND	CONDUIT
CONN	CONNECTOR
CONST	CONSTRUCT(ION)
COORD	COORDINATE
CRSP	CONCRETE ROCK SLOPE PROTECTION
CSP	CORRUGATED STEEL PIPE

D

DET	DETAIL/ DETOUR
DIA	DIAMETER
DIST	DISTANCE
DMBB	DOUBLE METAL BEAM BARRIE
DR	DRIVE
DTBB	DOUBLE THRIE BEAM BARRIER
DWY	DRIVEWAY

E

EA.	EACH
EB	END OF BRIDGE/ EASTBOUND
EC	END OF CURVE
ECR	END CURVE RETURN
ELEV	ELEVATION
EL	ELEVATION
EP	EDGE OF PAVEMENT
ETW	EDGE OF TRAVELED WAY
EVC	END VERTICLE CURVE
EXIST	EXISTING
EXP JT	EXPANSION JOINT

F

F&G	FRAME & GRATE
FH	FIRE HYDRANT
FL	FLOW LINE
FR RD	FRONTAGE ROAD
FWY	FREEWAY

G

GALV	GALVANIZED

H

H	HEIGHT
HORIZ	HORIZONTAL
HWY	HIGHWAY

I

INV	INVERT

J

JT	JOINT

L

L	LENGTH
LT	LEFT

M

MAX	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAIL
MED	MEDIAN
MH	MANHOLE
MKR	MARKER
MISC	MISCELLANEOUS
MOD	MODIF(Y)(IED)
MON	MONUMENT

N

NB	NORTHBOND
NO.	NUMBER
ø	NOMINAL DIAMETER

O

OD	OUTSIDE DIAMETER

P

PB	PULL BOX
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE/ PORTLAND CEMENT CONCRETE
PCVC	POINT OF COMPOUND VERTICLE CURVE
PED	PEDESTRIAN
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PL	PLATE
POC	POINT ON CURVE
POT	POINT OF TANGENT
POVC	POINT ON VERTICLE CURVE
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PRVC	POINT OF REVERSE VERTICLE CURVE
PSP	PERFORATED STEEL PIPE
PVMT	PAVEMENT

R

R	RADIUS
RCP	REINFORCED COCRETE PIPE
RD	ROAD
REINF	REINFORC(ED)(ING)
RET	RETAINING
RR	RAILROAD
RT	RIGHT
RTE	ROUTE
R/W	RIGHT OF WAY

S

SALV	SALVAGE
SB	SOUTHBOUND
$	STATIONLINE
SD	STORM DRAIN
SEC	SECTION
SHT	SHEET
SI	INTERNATIONAL SYSTEM OF UNITS
ST	STREET
STA	STATION
STBB	SINGLE THRIE BEAM BARRIER
STD	STANDARD
STR	STRUCTURE
SURF	SURFACE
SW	SIDEWALK

T

TBB	THRIE BEAM BARRIER
TEMP	TEMPORARY
TOG	TOP OF GRATE
TP	TELEPHONE POLE
TS	TRAFFIC SIGNAL/ TUBULAR STEEL
TYP	TYPICAL

V

V	VALVE
VAR	VARIABLE
VC	VERTICLE CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICLE

THE PORT OF LONG BEACH ENGINEERING DIVISION

REVISIONS NO.	DATE
1	
2	
3	

UNDERGROUND PIPELINE SYMBOLS

STANDARD PLAN U-5

APPROVED BY: _____ CHIEF HARBOR ENGINEER R.E. NO.: _____ DATE: _____

City of Long Beach

Department of Financial Management
Purchasing Division
333 W Ocean Blvd. 7th floor, Long Beach, California 90802
p 562.570.6200

12/21/11

NOTICE TO BIDDERS

ADDENDUM NO. 1

G-291

(1) This addendum includes information regarding the City of Long Beach's insurance Requirements (Pages 1-4). You are required to submit these new pages and this addendum with your bid packet.

(2) This addendum is to replace page 1 and page 5 of the bid package. **Note, this bid is to be submitted to the Long Beach Department of Gas & Oil located at 2400 East Spring Street, Long Beach, CA 90806, Attn: Director of Gas & Oil.** You are required to submit these new pages and this addendum with your bid packet.

Acknowledged By: _____ Date: January 11, 2012
Earl Eldridge, Vice President
Firm of: ARB, Inc.

ADDENDUM 1

Insurance:
In addition to or in lieu of paragraph 30 of the Contract – General Conditions, the following insurance requirements also apply:

1. Commercial general liability insurance (equivalent in scope to Insurance Services Office (ISO) form number CG 00 01 11 85 or CG 00 01 11 88): Contractor shall maintain general liability insurance of $10 million in limits, which may be accomplished through the use of excess insurance. Such coverage shall include but shall not be limited to broad form contractual liability, XCU (explosion, underground, and collapse) perils, products and completed operations liability, independent contractors liability, and cross liability protection. The City, its Boards, and their officials, employees, and agents shall be named as additional insureds by endorsement (equivalent in scope to ISO form CG 20 10 11 85 or CG 20 26 11 85). There shall be no limitations on the coverage afforded to the City, its Boards, and their officials, employees and agents.

   A. Verification of Coverage

      The Contractor shall furnish to the City the documentation set forth in paragraph B below prior to the effective date of the Contract and shall, at least 30 days prior to expiration of the insurance required herein, furnish to the City renewal documentation. Each required document shall be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf.

      The City reserves the right to require complete, certified copies of all insurance required herein at any time.

      The Contractor shall notify the City in writing within five business days if any insurance required herein is voided by the insurer or cancelled by the insured. Such notice shall be sent by certified mail, return receipt requested, and shall include a certificate of insurance and the required endorsements for the replacement coverage.

   B. Documentation Required

      The certificates and endorsements shall be on forms provided by the City and shall be received and approved by the City before Work commences. As an alternative, Contractor may submit certified copies of any policy that includes the required endorsement language as set forth below in paragraphs D.2, D.3, and D.4.

      1. Certificates of insurance evidencing the required general liability insurance, automobile liability insurance, and workers' compensation insurance required hereunder.

ADDENDUM 1

2. General liability insurance endorsements

   a. ADDITIONAL INSURED endorsement (equivalent in scope to ISO form CG 20 10 11 85 or CG 20 26 11 85) naming the City of Long Beach, its Boards, and their officials, employees, and agents as additional insureds.

   b. CANCELLATION endorsement which provides that the City is entitled to 30 days prior written notice of cancellation or nonrenewal of the policy, or reduction in coverage, by certified mail, return receipt requested.

   c. CONTRIBUTION NOT REQUIRED endorsement which provides that the insurance afforded by the general liability policy is primary to any insurance or self- insurance of the City, its Boards, or their officials, employees, or agents as respects operations of the Named Insured. Any insurance maintained by the City, its Boards, their officials, employees, or agents shall be in excess of Contractor's insurance and shall not contribute to it.

   d. SEVERABILITY OF INTEREST endorsement which provides that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

   e. ADDITIONAL INSURED COVERAGE NOT AFFECTED BY INSURED'S DUTIES AFTER ACCIDENT OR LOSS endorsement. The policy must be endorsed to provide that any failure to comply with the reporting provisions of the policy shall not affect coverage to the City, its Boards, or their officials, employees, or agents.

3. Automobile liability insurance

   a. ADDITIONAL INSURED endorsement naming the City of Long Beach, its Boards, and their officials, employees, and agents as additional insureds with respect to any auto owned, leased, hired, borrowed or used by the Named Insured, in connection with this Contract.

   b. CANCELLATION endorsement which provides that the City is entitled to 30 days prior written notice of cancellation or nonrenewal of the policy, or reduction in coverage, by certified mail, return receipt requested.

   c. CONTRIBUTION NOT REQUIRED endorsement which provides that the insurance afforded by the general liability policy is primary to any insurance or self- insurance of the City, its Boards, their officials,

employees, or agents as respects operations of the Named Insured. Any insurance maintained by the City, its Boards, or their officials, employees, or agents shall be in excess of Contractor's insurance and shall not contribute to it.

d. SEVERABILITY OF INTEREST endorsement, which provides that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

e. ADDITIONAL INSURED COVERAGE NOT AFFECTED BY INSURED'S DUTIES AFTER ACCIDENT OR LOSS endorsement. The policy must be endorsed to provide that any failure to comply with the reporting provisions of the policy shall not affect coverage to the City, its Boards, or their officials, employees, or agents.

4. Workers' compensation and employer's liability insurance endorsements

a. CANCELLATION endorsement which provides that the City is entitled to 30 days prior written notice of cancellation or nonrenewal of the policy, or reduction in coverage, by certified mail, return receipt requested.

b. WAIVER OF SUBROGATION endorsement which provides that the insurer will waive its right of subrogation against the City, its Boards, and their officials, employees and agents with respect to any losses paid under the terms of the workers' compensation and employer's liability insurance policy which arise from work performed by the Named Insured for the City.

2. Self-insured programs, self-insured retentions, deductibles

Any self-insurance program, self-insured retention, or deductible must be approved separately in writing by City's Risk Manager or designee and shall protect the City, its Boards and their officials, employees, and agents in the same manner and to the same extent as they would have been protected had the policy or policies not contained such self-insurance, self-insured retention, or deductible provisions.

The Contractor is expressly obligated to provide for the legal defense and investigation of any claim against the City as an additional insured and for all costs and expense incidental to such defense or investigation.

The Contractor shall, upon request, complete the City's self-insurance questionnaire and required certification by the Contractor's financial officer.

ADDENDUM 1

Construction Activity Requirements – Pipeline Salvage

For pipeline removal sections designated as "for salvage", pipeline shall be excavated using all due care to avoid damaging coating. Bellholes shall be excavated at each pipeline joint. Wrap at joint shall be removed. Pipe shall be cut at joint and ends beveled for future use. Pipe shall be removed from trench using straps or equivalent and transported to a site within the Port area to be determined.