



CITY OF SACRAMENTO

14

DIVISION OF WATER AND SEWERS
927 - 10TH ST.
SUITE #201

SACRAMENTO, CALIFORNIA 95814
TELEPHONE (916) 449-5271

CITY MANAGER'S OFFICE
RECEIVED
APR 29 1980

HARRY G. BEHRENS
MANAGER
ROBERT W. JOHNSTON
ASSISTANT MANAGER

April 28, 1980

City Council
Sacramento, California

Honorable Members in Session:

SUBJECT: Approval of Plans and Specifications for Construction of a 42"/30" Diameter Water Transmission Main (American River to El Monte Avenue) and SNRR Bikeway (North "B" Street to American River Parkway)

Amendment to 1979/80 Budget, Water Distribution Capital Improvements

SUMMARY

The Water & Sewers Division has prepared plans and specifications for the water main portion of this project. The City Engineer's office has prepared plans and specifications for the bikeway portion. These projects have been incorporated into a single set of plans and specifications for advertisement as a single contract. It is recommended that the plans and specifications be approved and the project be advertised for bid. It is also recommended that the 1979/80 Water Distribution Capital Improvements Budget be amended by appropriating \$600,000 from the Water Fund. This amount was included in the 1980/81 Capital Improvements Budget request; this amendment advances the funding. After consulting with the chairman of the Budget and Finance Committee, this matter is being brought directly to the Council, since the Committee is in the process of budget hearings.

BACKGROUND

The water transmission main is part of the current 5-year Capital Improvements Program to extend filtered surface water from North B Street across the American River to the North Sacramento System. Part of the system, the main on the Old Sacramento Northern Bridge, is currently under construction. The portion from North 18th Street to the bridge has been budgeted previously, and the pipe itself has been advertised for bid. This portion is adjacent to the Almond Growers Exchange. That agency has requested that construction in the area be completed by July 15 to avoid conflicts with the almond harvest and delivery.

APPROVED
BY THE CITY COUNCIL

MAY - 8 1980

OFFICE OF THE
CITY CLERK

April 28, 1980

The second phase of the water transmission main, from the American River crossing to the downtown area of North Sacramento at El Monte has been included in our 1980/81 Capital Improvements Budget request.

The bikeway route parallels the route of the water transmission main in the area from North 18th Street to the American River Parkway bikepath. It is therefore necessary that construction of the water main precede construction of the bikeway. The attached map shows the location.

Combining these projects into a single contract and advertising for bids at this time will minimize coordination problems and allow completion of a bikeway concurrent with completion of the water main. It is anticipated that, by advertising for bids at this time, the bikeway connection to the American River Parkway could be completed as early as Mid-October. It will also insure that an installation contractor is available to install the section adjacent to the Almond Growers prior to mid-July.

FINANCIAL

In order to begin construction prior to July 1, 1980, an amendment to the 1979/80 Budget is required. The engineer's cost estimate for construction of the water transmission main is \$500,000. The 1980/81 Capital Improvements Budget request includes \$600,000 for this project. This will be deleted if the 1979/80 Budget is amended as recommended.

The total project cost for the SNRR Bikeway is estimated to be approximately \$3,000,000. The engineer's estimate for this phase of the bikeway is \$92,139. Phase II, III & V have been awarded and a balance of \$418,431 is currently available for the remaining phases of the project.

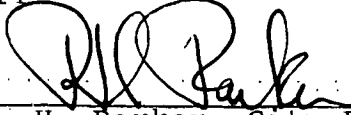
RECOMMENDATION

It is recommended that the plans and specifications for the subject project be approved and that bids be received on May 27, 1980. It is further recommended that the 1979/80 Budget for Water Distribution Capital Improvements, 3030, be amended to add \$600,000 from the Water Fund for construction of the water main portion of this project.

Respectfully submitted,


Harry G. Behrens, Manager

Approval recommended,

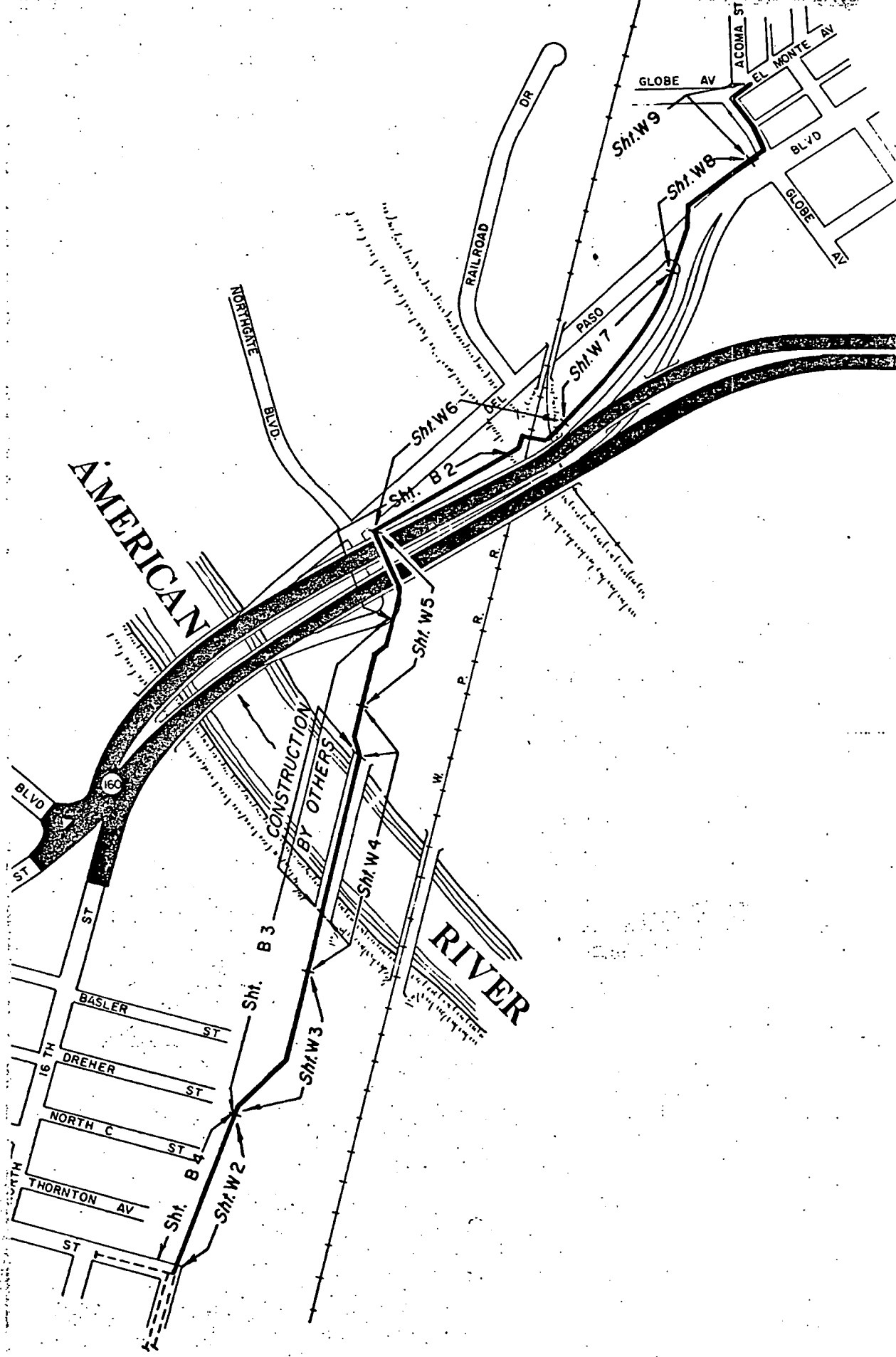

R. H. Parker, City Engineer

Recommendation approved,


Walter J. Slize, City Manager

attachment

May 8, 1980
Districts 1 & 2



LOCATION MAP:
NO SCALE

RESOLUTION NO. 80-275

Adopted by The Sacramento City Council on date of

May 8, 1980

RESOLUTION AMENDING CITY BUDGET FOR FISCAL YEAR 1979/80 FOR APPROPRIATION OF \$600,000 TO WATER DISTRIBUTION CAPITAL IMPROVEMENTS BUDGET, 3030, FOR CONSTRUCTION OF A WATER TRANSMISSION MAIN TO NORTH SACRAMENTO

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

The City Budget for Fiscal Year 1979/80 is amended by appropriating \$600,000 from the Water Fund to the Water Distribution Capital Improvements Budget, 3030, for the purpose of construction of water transmission main to North Sacramento.

MAYOR

ATTEST:

CITY CLERK

APPROVED
BY THE CITY COUNCIL

MAY - 8 1980

OFFICE OF THE
CITY CLERK

NORTH SACRAMENTO WATER TRANSMISSION MAIN
(North B Street to El Monte Avenue)

and

SACRAMENTO NORTHERN BIKEWAY
(North B Street to American River Bikeway)

C.C. 1568 (Water Main)

C.C. 1199 (Bikeway)

SACRAMENTO
CALIFORNIA

SEPARATE PLANS

APPROVED
BY THE CITY COUNCIL

MAY - 8 1980

OFFICE OF THE
CITY CLERK

Bids to be received: May 27, 1980

NOTICE TO CONTRACTORS

Sealed Proposals will be received by the City Clerk of the City of Sacramento at the office of the City Clerk, Room 203, City Hall, located on I Street, between 9th and 10th Streets, up to the hour of 10:00 a.m. on May 27, 1980 and opened at 10:15 a.m. in the Council Chambers, City Hall for

NORTH SACRAMENTO WATER TRANSMISSION MAIN
(North B Street to El Monte Avenue)
and
SACRAMENTO NORTHERN BIKEWAY
(North B Street to American River Bikeway)

as set forth in plans and specifications adopted May 8, 1980

All such proposals received and any work performed thereunder must comply with the requirements of Chapter 58 of the Sacramento City Code (Ordinance No. 3129, Fourth Series.)

Bids must be submitted on printed forms supplied by the City Clerk without charge to prospective bidders and enclosed in an envelope marked "Sealed Proposal for

NORTH SACRAMENTO WATER TRANSMISSION MAIN
(North B Street to El Monte Avenue)
and
SACRAMENTO NORTHERN BIKEWAY
(North B Street to American River Bikeway)

All contractors, subcontractors and all concerned must comply with the rate of wages per hour as established by the Director of the Department of Industrial Relations under provisions of Sections 1770 and 1773 of the Labor Code of the State of California, a copy of which is on file in the office of the City Clerk; or such other rate of wages as may hereafter be established by the Director of the Department of Industrial Relations in compliance with Section 1770 of the Labor Code of the State of California.

Each bid must be accompanied by cash, cashier's check, certified check or bid bond made payable to the order of the City Director of Finance in the sum of ten percent (10%) of the aggregate of said proposal.

The right to reject any and all bids or to waive any informality in any bid received is reserved by the City Council.

SEALED PROPOSAL

Sealed Proposals will be received not later than 10:00 a.m. on May 27, 1980 at the office of the City Clerk, Room 203, City Hall, Sacramento, California and opened at 10:15 a.m. on May 27, 1980 in the Council Chambers, City Hall, Sacramento, California.

TO THE HONORABLE CITY COUNCIL:

The undersigned hereby proposes and agrees to furnish any and all required labor, material, transportation and services for

NORTH SACRAMENTO WATER TRANSMISSION MAIN
(North B Street to El Monte Avenue)
and
SACRAMENTO NORTHERN BIKEWAY
(North B Street to American River Bikeway)

in the City and County of Sacramento, California.

The work is to be done in strict conformity with the Plans, Standard Specifications and Special Provisions all as on file in the office of the City Clerk, at the following

Item No.	Item	Est. Quantity	Unit	Unit Price	Total
W1	Installation of water main (Sta. 0 + 09 to 10 + 09)	1,000	L.F.	\$ _____	\$ _____
W2	Installation of water main (Sta. 10 + 09 to 18 + 74)	865	L.F.	\$ _____	\$ _____
W3	Installation of water main (Sta. 28 + 17.82 to 40 + 87.33)	865	L.F.	\$ _____	\$ _____
W4	Installation of water main (Sta. 40 + 87.33 to 48 + 00)	865	L.F.	\$ _____	\$ _____
W5	Installation of water main (Sta. 48 + 00 to 50 + 30)	865	L.F.	\$ _____	\$ _____
W6	Installation of water main (Sta. 50 + 30 to 71 + 53.98)	865	L.F.	\$ _____	\$ _____
B1	Clearing and Grubbing	1	Job	L.S.	\$ _____
B2	Excavation Grading	1,035	C. Y.	\$ _____	\$ _____
B3	Fill Grading	1,245	C. Y.	\$ _____	\$ _____
B4	Concrete Vee Gutter	1,520	S.F.	\$ _____	\$ _____
B5	Asphalt Concrete Pavement to Construct	552	Tons	\$ _____	\$ _____
B6	Aggregate Base Class II to Place	1,752	Tons	\$ _____	\$ _____
B7	10" Diameter, 16 Guage, CMP to Place	25	L.F.	\$ _____	\$ _____
B8	Barrier Post	15	Each	\$ _____	\$ _____
B9	Traffic Barricade	1	Job	L.S.	\$ _____
TOTAL					\$ _____

If awarded the contract, the undersigned agrees to sign said contract and furnish the necessary bonds within ten (10) days after the notice of award of said contract and to begin work within fifteen (15) days after the signing of the contract by the Contractor and the City.

In determining the amount bid by each bidder, City shall disregard mathematical errors in addition, subtraction, multiplication and division that appear on the face of the Proposal. When such a mathematical error appears on the face of the Proposal, the City shall have the right to correct such error and to compute the total amount bid by said bidder on the basis of the corrected figure or figures.

SUB-BIDDER FORM

In accordance with Sections 4101 and 4107, inclusive, of the Government Code of the State of California, as amended, the following information is submitted concerning sub-bidders:

NAME SUB-BIDDER	ADDRESS SHOP, MILL OR OFFICE	CLASS OF WORK	PORTION OF WORK TO BE DONE

FOLLOWING FORMS TO BE FILLED OUT AND SIGNED

ONLY

IF AWARDED CONTRACT

WORKMEN'S COMPENSATION INSURANCE CERTIFICATION

TO THE CITY OF SACRAMENTO:

The undersigned does hereby certify that he is aware of the provisions of section 3700 et seq. of the Labor Code which require every employer to be insured against liability for workmen's compensation claims or to undertake self-insurance in accordance with the provisions of said Code, and that he will comply with such provisions before commencing the performance of the work on this contract.

SIGNATURE

TITLE

ADDRESS

DATE

PLEASE READ CAREFULLY BEFORE SIGNING

To be signed by authorized corporate officer or partner or individual submitting the bid. If bidder is: (example)

1. An individual using a firm name, sign: "John Doe, an individual doing business as Blank Company."
2. An individual doing business under his own name, sign: your own name only.
3. A co-partnership, sign: "John Doe and Richard Doe, co-partners doing business as Blank Company, by John Doe, co-partner."
4. A corporation, sign: "Blank Company, by John Doe, secretary," (or other title).

GUARANTEE

We hereby guarantee the

which we propose to install in the City of Sacramento for one (1) year in accordance with the guarantee required in the specifications. We agree to repair or replace any or all such work, together with all or any other work which may be displaced in so doing, that may be proven defective in workmanship or material within the period from the date of acceptance without expense whatsoever to the City, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above mentioned conditions within five (5) days time after being notified in writing, we collectively or separately, do hereby authorize the City to proceed to have the defects repaired and made good at our expense and will pay the costs and damages therefor immediately upon demand.

Signed:

Dated:

AGREEMENT

THIS AGREEMENT entered into as of.....between the CITY OF SACRAMENTO, a municipal corporation, hereinafter called the City, and..... hereinafter called the Contractor.

The parties hereto mutually agree as follows:

1. Contract Documents

The following contract documents relating to this agreement are hereby made a part of and incorporated by reference into this Contract: the Advertisement, Notice to Contractors, the Bid, the Agreement, Standard Specifications, Special Provisions and Plans applicable to this work, and all modifications incorporated in said documents before their execution. Any work called for in one contract document or plan and not mentioned in the other is to be performed and executed the same as if mentioned in all contract documents and plans.

2. Scope of Contract

The Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor and material, transportation and express necessary to perform and complete in a good and workmanlike manner, the work as called for, and in the manner designated in, and in strict conformity with, the Plans, Standard Specifications and Special Provisions adopted by the City Council of the City, which Plans and Special Provisions are entitled:

It is further understood and agreed that said tools, equipment, apparatus, facilities, labor and material shall be furnished and said work performed and completed as required in the plans and specifications under the direction and supervision of, and subject to the approval of the City or its representatives.

3. Contract Amount and Payments

City agrees to pay and the Contractor agrees to accept, in full payment for the above work the sum, in accordance with the actual amount of each item of work performed, at the unit price bid for each such item. Such payment is to be paid according to the following schedule and subject to additions and deductions as provided in the general conditions of the contract and in accordance with said bid and proposal as follows:

On the first of the month, Contractor shall present to City a statement showing the amount of labor and materials incorporated in the work during the preceding month; the City shall inspect the statement and shall issue a certificate for 90% of the amount it shall find to be due.

The final payment certificate of 10% will be made 35 days after the completion and acceptance by the City of the work included in this contract and all payments will be due when certificates are issued, in accordance with the Standard Specifications and Special Provisions.

4. DELAYS BEYOND CONTROL OF CONTRACTOR

The time during which Contractor is delayed in said work by the acts or neglect of City, its officers, agents, or employees, or by changes ordered in the work, or by strikes, lockouts, fire, unusual delay in transportation, unavoidable delays as defined in the Standard Specifications, or by delay authorized by City shall be considered delays beyond the control of Contractor and the time of completion shall be extended for such reasonable time as the City Engineer may decide.

This provision does not exclude the recovery of damages for delay by either party under other provisions in the contract documents.

5. PREVAILING WAGES

Pursuant to State and local law, the City has ascertained the general prevailing rate of per diem wages and rates for legal holidays, and overtime work in the locality in which the work is to be performed, for each craft or type of workman or mechanic needed to execute this Contract. The general prevailing rate of wages on projects for the City for construction work shall be as set out in the applicable Resolution adopted by the City Council, which is hereby made a part of the Special Provisions.

6. TIME OF COMPLETION AND LIQUIDATED DAMAGES

It is understood and agreed that the time limit for the completion of said work is _____ and should said work not be completed to the satisfaction of the City within said time, there will be deducted from the final payment thereof the sum of _____ DOLLARS (\$ _____), as liquidated damages and not as a penalty, for each days' delay after the expiration of such period until the final acceptance of the work by the City and its delivery to the City.

IN WITNESS WHEREOF, the parties hereto have signed this Agreement on the date set forth above.

CITY OF SACRAMENTO, a municipal corporation

CITY MANAGER
or AUTHORIZED REPRESENTATIVE

CONTRACTOR

APPROVED AS TO FORM:

CITY ATTORNEY

FUNDS AVAILABLE:

Director of Finance

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, The City of Sacramento, a municipal corporation, has awarded to _____

_____ hereinafter designated as the "Principal", a contract for

; and,

WHEREAS, said Principal is required to furnish a bond in connection with said contract, to secure payment of claims of laborers, mechanics, or materialmen employed on work under said contract, as provided by law;

NOW, THEREFORE, we the undersigned Principal and Surety are held and firmly bound unto the City of Sacramento in the sum of _____

_____ DOLLARS

(\$ _____), said sum being equal to the estimated amount payable by the said City of Sacramento under the terms of the contract, for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if said Principal, his or its heirs, executors, administrators, successors, or assigns, or subcontractors shall fail to pay for any material, provisions, provender or other supplies or teams, implements or machinery used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, as required by the provisions of Chapter 7, Title XV, Part 4, Division 3, of the Civil Code, and provided that the claimant shall have complied with the provisions of said code; or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from the wages of employees of the contractor and his subcontractors pursuant to Section 18806 of the Revenue and Taxation Code, with respect to such work and labor, the Surety or Sureties hereon will pay for the same and in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, said Surety will pay a reasonable attorney's fee to be fixed by the Court.

This bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under Section 3181 of the Civil Code of the State of California so as to give a right of action to them or their assigns in any suit brought upon this bond.

Said Surety, for value received, hereby stipulates and agrees that, in accordance with the Standard Specifications or Special Provisions, no change, extension of time, alteration or addition to the terms of the contract, or to the work to be performed thereunder, or to the specifications accompanying the same, shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their seals this _____ day of _____, the name and corporate seal of each corporate party being affixed thereto, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

PRINCIPAL

BY _____

SURETY

BY _____

APPROVED AS TO FORM:

CITY ATTORNEY

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That

WHEREAS, the City of Sacramento, State of California, has awarded to

.....
hereinafter designated as the "Principal," a contract for

; and

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract.

NOW, THEREFORE, we the Principal, and

.....
as Surety, are held and firmly bound unto the City of Sacramento in the penal sum of

.....DOLLARS

(\$.....), lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said contract and any alteration thereof made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified and in all respects according to their true intent and meaning; and shall indemnify and save harmless the City of Sacramento, its officers and agents as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

And the surety, for value received hereby stipulates and agrees that, in accordance with the Standard Specifications or Special Provisions, no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or additions to the terms of the contract or to the work or to the specifications.



IN WITNESS WHEREOF, the above boundon parties have executed this instrument under the seals this _____ day of _____, the name and corporate seals of eac corporate party being hereto affixed and these presents duly signed by its undersigned representative, pu suant to authority of its governing body.

Principal _____

By _____

Surety _____

By _____

APPROVED AS TO FORM:

City Attorney



TRAINING OF APPRENTICES ON PUBLIC WORKS CONTRACTS

Attention is directed to the provisions in Section 1777.5 (Chapter 1411, Statutes of 1968) and 1777.6 of the Labor Code concerning the employment of apprentices by the contractor or any sub-contractor under him.

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 of the public works project and 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 not be less than one to five except where an exception is issued on one of the following conditions:

- A. In the event unemployment for the previous three-month period in such area exceeds an average of 15 percent, or
- B. In the event the number of apprentices in training in such area exceeds a ratio of 1 to 5, or
- C. If there is a showing that the apprenticeable craft or trade is replacing at least one-thirtieth of its journeymen annually through apprenticeship training, either (1) on a statewide basis, or (2) on a local basis.
- D. If assignment of an apprentice to any work performed under a public works contract would create a condition which would jeopardize his life or the life, safety, or property of fellow employees or the public at large or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyman.

The contractor is required to make contributions to funds established for the administration of apprenticeship programs if he employs registered apprentices or journeymen in any apprenticeable trade on such contracts and if other contractors on the public works site are making such contributions.

The contractor and any sub-contractor under him shall comply with the requirements of Sections 1777.5 and 1777.6 in the employment of apprentices. Noncompliance with Section 1777.5 can result in substantial penalties under Section 1777.7.

Information relative to 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 and its branch offices.

GREATER SACRAMENTO AREA PLAN (GSAP) EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS
(Executive Order 11246)

The City of Sacramento is signatory to the "Greater Sacramento Area Plan" (hereinafter referred to as the "Plan") a joint industry-labor-minority representative agreement established for the purpose of increasing the employment of minorities in all phases and at all levels of skill in the building and construction industry within the greater Sacramento area. The City has adopted the "Plan" as its affirmative action program for City construction contracts and requires a contractor and his subcontractors be signatory to the Plan in order to be eligible for an award of a City contract. Additional information regarding the Plan is available at its headquarters office located at 4320 Stockton Boulevard, Sacramento, 95821, Telephone No. (916) 452-5832.

1. As used in these specifications:

- a. "Covered area" means the geographical area within the following counties: Amador, El Dorado, Nevada, Placer, Sacramento, Sierra, and Yolo.
- b. "Director" means Director, of GSAP, or any person to whom the Director delegates authority;
- c. "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race;
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is signatory under Part I of the GSAP a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of the GSAP. Each Contractor or Subcontractor participating in the GSAP is individually required to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

- b. Establish and maintain a current list of minority and female recruitment sources, provided written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions, including specific review of these items with onsite supervisory personnel such as Superintendents, General foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
 - i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
 - j. Encourage present minority and female employees to recruit other minority persons and women and where reasonable, provide after school summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR, Part 60.3.
 - l. Conduct at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and

participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.
11. The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended and its implementing regulations, by the Office of Federal Contract Compliance Program. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

GSAP REPORTING REQUIREMENTS

- (1) All contract and subcontracts (over \$10,000) are subject to the reporting requirements.
- (2) Contractors must submit a CC 257 (Monthly Employee Utilization Report) to the GSAP at 4320 Stockton Boulevard, Sacramento, California 95829.
- (3) If the Contractor is already required to submit CC 257 there is no need to submit an additional form.
- (4) This report must arrive at the GSAP no later than the 5th working day of each month.
- (5) Failure to report is automatic cause to find the Contractor in noncompliance.
- (6) Each report is monitored by GSAP and measured against the specified goals for minorities and women.

This report is required by Executive Order 11246, Sec. 203. Failure to report can result in contracts being cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts of federally assisted construction contracts.

2. EMPLOYERS I.D. NO.

MINORITY:

FROM:

FEMALE:

TO:

NAME AND LOCATION OF CONTRACTOR

FEDERAL
FUNDING
AGENCY

5. CONSTRUCTION TRADE	Classifications	6. WORK HOURS OF EMPLOYMENT (Federal & Non-Federal)								9. TOTAL NUMBER OF EMPLOYEES	10. TOTAL NUMBER MINORIT EMPLOYE				
		6a. TOTAL ALL EMPLOYEES BY TRADE		6b. BLACK (Not of Hispanic Origin)		6c. HISPANIC		6d. ASIAN OR PACIFIC ISLANDERS				6e. AMERICAN INDIAN OR ALASKAN NATIVE		7. MINORITY PERCENTAGE	8. FEMALE PERCENTAGE
		M	F	M	F	M	F	M	F			M	F		
	Journey worker														
	APPRENTICE														
	TRAINEE														
	SUB-TOTAL														
	Journey worker														
	APPRENTICE														
	TRAINEE														
	SUB-TOTAL														
	Journey worker														
	APPRENTICE														
	TRAINEE														
	SUB-TOTAL														
	Journey worker														
	APPRENTICE														
	TRAINEE														
	SUB-TOTAL														
TOTAL JOURNEY WORKERS															
TOTAL APPRENTICES															
TOTAL TRAINEES															
GRAND TOTAL															

11. COMPANY OFFICIAL'S SIGNATURE AND TITLE

12. TELEPHONE NUMBER (Include area code)

13. DATE SIGNED

PAGE

OF

GOALS AND TIMETABLES
SACRAMENTO, CALIFORNIA

APPENDIX A

The following goals and timetables for female utilization shall be included in all construction contracts and subcontracts in excess of \$10,000. The goals are applicable to the contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a covered construction contract or subcontract.

AREA COVERED

Goals for Women apply Nationwide

GOALS AND TIMETABLES

Timetable	Goals (percent)
From April 1, 1978 until March 31, 1979 -----	3.1
From April 1, 1979 until March 31, 1980 -----	5.0
From April 1, 1980 until March 31, 1981 -----	6.9

APPENDIX B

Until further notice the following goals and timetables for minority utilization shall be included in all construction contracts and subcontracts in excess of \$10,000 to be performed in the respective covered areas. The goals are applicable to the contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a covered construction contract or subcontract.

SACRAMENTO, CALIFORNIA

Area covered - Sacramento, Yolo, Amador, Placer, El Dorado, Nevada, and Sierra Counties, California.

GOALS AND TIMETABLES

Timetable	Trade	Goal (percent)
Until further notice	All-----	17.5 to 20.0

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SECTION A1 - INFORMATION FOR BIDDERS

A1.01 Inspection of Site of Work

Bidders are required to inspect the site of the work in order to satisfy themselves, by personal examination or by such other means as they may prefer, of the location of the proposed work and as to the actual conditions of and at the site of work. Bidders may inspect the site of the work at any time on public property. On private property, bidders shall obtain approval from the Engineer to enter.

Entrance by bidders to the site of the work for purposes of making exploratory excavations shall be by special arrangement with the Engineer and under conditions established by the Engineer. Prior to conducting any excavation, the bidder shall obtain written permission from the Engineer. If, during the course of his examination, a bidder finds facts or conditions which appear confusing to him, he may apply to the City for additional information and explanation before submitting his bid. However, no such supplemental information so requested or furnished shall vary the terms of the specifications or the Contractor's sole responsibility to satisfy himself as to the conditions of the work to be performed.

Submission of a proposal by the bidder shall constitute acknowledgment that, if awarded the contract, he has relied and is relying on his own examination of (a) the site of the work, (b) access to the site, and (c) all other data, matters, and things requisite to the fulfillment of the work and on his own knowledge of existing facilities on and in the vicinity of the site of the work to be constructed under the contract, and not on any representation or warranty of the lack of knowledge of the above items. Removal, relocation, or protection of existing public utilities not identified by the City shall be done in conformance with Section 4215 of the Government Code of the Statutes of the State of California.

A1.02 Examination of Contract Documents

Each bidder shall thoroughly examine and be familiar with legal documents, specifications, drawings, and addenda (if any). Submission of a proposal shall constitute acknowledgment upon which the City may rely that the bidder has thoroughly examined and is familiar with the contract documents. Failure or neglect of a bidder to receive or examine any of the contract documents shall in no way relieve him from any obligation with respect to his proposal or to the contract. No claim for additional compensation will be allowed which is based upon a lack of knowledge of any contract documents.

A1.03 Interpretation of contract Documents

No oral representations or interpretations will be made to any

bidder as to the meaning of the contract documents. Requests for interpretation shall be made in writing and delivered to the City at least 7 days before the time announced for opening the proposals. Interpretation, where necessary, will be made by the City in the form of an addendum to the contract documents and, when issued, will be sent as promptly as is practicable to all parties to whom the bid documents have been issued. All such addenda shall become part of the contract. Requests for information regarding this procedure or other similar information, shall be directed to the Division of Water & Sewers, 927 - 10th Street, Suite 201, Sacramento, CA 95814 (916-449-5273).

It shall also be the bidder's responsibility to call to the attention of the Engineer any missing pages or drawings in the contract documents including the addenda. These items shall be brought to the attention of the Engineer at least one week prior to the bid opening date.

Al.04 Addenda

Each proposal shall include specific acknowledgment of receipt of all addenda issued during the bidding period. Failure to so acknowledge may result in the proposal being rejected as not responsive.

Al.05 Taxes

Bid prices shall include allowance for all Federal, State, and local taxes.

Al.06 Experience of Bidders

Each bidder shall be licensed at the time of bidding and throughout the period of the contract under the provisions of Chapter 9, Division 3 of the Business and Professions Code of the State of California to do the type of work contemplated for the project, and shall be skilled and regularly engaged in the general class or type of work called for under the contract. A statement setting forth his experience shall be submitted by each bidder upon request of the Engineer.

It is the intention of the City to award a contract to a bidder that has the requisite experience and ability and that he has sufficient capital, facilities, and plant to enable him to prosecute the work successfully and properly, and to complete it within the time named in the contract.

Al.07 Rejection of Proposals

The City reserves the right to reject any proposals which are incomplete, obscure, or irregular; any proposals which omit a bid on any one or more items for which bids are required; any proposals which omit unit prices if unit prices are required; any proposal in which unit prices are unbalanced in the opinion of the Engineer; any proposals accompanied by insufficient or irregular bid security; and any proposals from bidders who have previously failed to perform properly or to complete on time, contracts of any nature.

SECTION A2 - CITY - ENGINEER - CONTRACTOR RELATIONS

A2.01 Contractor's Employees

The Contractor shall at all times be responsible for the adequacy, efficiency, and sufficiency of his employees. All workers must have sufficient knowledge, skill, and experience to perform properly the work assigned to them and shall refrain from threatening or abusive actions involving any person on the work representing the City. Employees who fail to comply with these requirements shall be removed from the work.

A2.02 Attention to Work

The Contractor shall give his personal attention to and shall supervise the work to the end that it shall be prosecuted faithfully, and when he is not personally present on the work, he shall at all reasonable times be represented by a competent superintendent who shall receive and obey all instructions or orders given under the contract, and who shall have full authority to execute the same, and to supply materials, tools, and labor without delay and who shall be the legal representative of the Contractor. The Contractor shall notify the Engineer in writing who will be his superintendent. The Contractor shall be liable for the faithful observance of any instructions delivered to him or to his authorized representative.

A2.03 Suggestions to Contractor

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

A2.04 Work Instructions

At any time and from time to time during the course of the work, the Engineer may, with respect to any part or parts of the work, issue in writing to the Contractor a Work Instruction and the Contractor shall comply with the requirements of such Work Instruction, forthwith or within such time as may be specified therein.

Work Instructions will be used to order or delete work, reject work or note deficiencies, clarify contract requirements or documents, or any other matters generally of a minor nature. Those Work Instructions that may involve a change order will be handled as outlined in the Standard Specifications.

SECTION A3 - SPECIFICATIONS AND DRAWINGS

A3.01 Interpretation of Specifications, Special Provisions and Drawings

The Specifications, Special Provisions and the drawings are intended to be explanatory of each other as indicated in Section 4 of the Standard Specifications.

A3.02 Contract Plans and Field Survey

The pipeline location, alignment, angle points and required installation details are shown on the drawings which form a part of this Specification.

The horizontal pipeline location plan is based on a field survey, so the length and angle point locations are along the transit line except as noted. The vertical location plan is independent of the survey and consideration should be made accordingly.

All field changes or deviations from the drawings and Specifications as set forth herein shall be coordinated with and approved by the Engineer.

A3.03 Errors and Omissions

If the Contractor, in the course of the work, becomes aware of any errors or omissions in the contract documents, he shall immediately inform the Engineer and the Engineer, if he deems it necessary, shall rectify the matter and advise the Contractor accordingly. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

A3.04 Applicable Specifications and Requirements

The Standard Specifications of the City of Sacramento adopted by the City Council of said City by Resolution No. 653, dated March 30, 1967, are now subject to the provisions of Chapter 58 of the Sacramento City Code (Ordinance No. 3129, Fourth Series), effective July 15, 1972 (enacted pursuant to Section 251 of the Sacramento City Charter). If there is any conflict between the Standard Specifications as currently written and Chapter 58 of the Sacramento City Code, the latter shall govern.

The Standard Specifications, dated January, 1967, are an integral part of this contract. If there is any conflict between the Standard Specifications and these Special Provisions, the latter shall take precedence.

These Special Provisions contain reference to certain standards of the American Water Works Association (AWWA). Copies of these standards are available for reference at 927 - 10th Street, suite 201,

Sacramento. IT WILL BE ASSUMED THAT THE BIDDER IS FAMILIAR WITH TESTING, INSPECTION, FIELD HANDLING, AND OTHER MANDATORY REQUIREMENTS CONTAINED IN THE AWWA STANDARDS.

A3.05 Information to be Furnished by Contractor

The Contractor shall furnish all drawings, specifications, descriptive data, certificates, samples, tests, methods, schedules, and manufacturer's instructions as specifically required in the Specifications, and all other information as may reasonably be required to demonstrate fully that the materials and equipment to be furnished and the methods of work comply with the provisions and intent of the Specifications and drawings. If the information shows any deviation from the contract requirements, the Contractor shall, by a statement in writing accompanying the information, advise the Engineer of the deviation and state the reason therefor. It shall be the Contractor's responsibility to ensure there is no conflict with other submittals and to notify the Engineer in any case where his submittal may concern work by another contractor or the City. He shall also ensure coordination of submittals among all related crafts. Information shall be submitted in time to allow review and return to the Contractor without interfering with the accepted construction schedule.

A3.06 Review of Contractor's Information

When review and checking for acceptance is required of any drawing or information regarding materials and equipment, the Contractor shall prepare or secure, and submit for review six copies. The Engineer, after taking appropriate action, will return two marked copies to the Contractor.

Within a reasonable time after receipt of said submittal copies, the Engineer will return marked-up copies indicating one of the following four actions:

- a) If review and checking indicates no exceptions, copies will be returned marked "APPROVED AS SUBMITTED" and work may begin immediately on incorporating the material and equipment covered by the submittal into the work.
- b) If review and checking indicates limited corrections are required, copies will be returned marked "APPROVED AS NOTED." Work may begin immediately on incorporating into the work the material and equipment covered by the corrected submittal.
- c) If review and checking indicates insufficient or incorrect data has been submitted, copies will be returned marked "RETURNED FOR CORRECTIONS." No work may begin on incorporation the material and equipment covered by this submittal into the work until the submittal is revised, resubmitted, and returned marked either "APPROVED AS SUBMITTED" or "APPROVED AS NOTED."

- d) If review and checking indicates the material and equipment submittal is unacceptable, copies will be returned marked "RESUBMIT." No work may begin on incorporating the material and equipment covered by this submittal into the work until a new submittal is made and returned marked either "APPROVED AS SUBMITTED" or "APPROVED AS NOTED."

A3.07 Effect of Acceptance of Contractor's Information

Acceptance by the Engineer of any drawing, method of work, or any information regarding materials and equipment the Contractor proposes to furnish shall not relieve the Contractor of his responsibility for any errors therein and shall not be regarded as an assumption of risks or liability by the Engineer or City, or any officer or employee thereof, and the Contractor shall have no claim under the contract on account of the failure or partial failure or inefficiency or insufficiency of any plan or method of work or material and equipment so accepted. Such acceptance shall be considered to mean merely that the Engineer has no objection to the Contractor using, upon his own full responsibility, the plan or method of work proposed, or furnishing the materials and equipment proposed.

A3.08 As-Built Drawings

The Contractor shall maintain a neatly and accurately marked set of record drawings showing the final locations and layout of all mechanical, electrical, and instrumentation equipment; piping and conduit; structures; and other facilities. Drawings shall be kept current weekly, with all work instructions and change orders; mechanical, electrical, and instrumentation equipment accommodations; and construction adjustment. Drawings shall be subject to the inspection of the Engineer at all times and progress payments or portions thereof may be withheld if drawings are not accurate and current. Prior to acceptance of the work, the Contractor shall deliver to the Engineer two sets of neatly marked record drawings accurately showing the information required above.

SECTION A4 -- MATERIAL, EQUIPMENT, AND WORKMANSHIP

A4.01 General Quality

Material and equipment shall be new and of a quality equal to that specified or accepted. Mechanical and electrical equipment shall be the products of manufacturers of established good reputations regularly engaged in the fabrication of such equipment. Unless otherwise noted, any equipment offered shall be current modifications which have been in successful regular operation under comparable conditions. This requirement, however, does not apply to minor details nor to thoroughly demonstrated improvements in design or in materials of construction.

The work shall be executed in conformity with the best accepted standard practice of the trade so as to contribute to maximum efficiency of operation, accessibility, and appearance, and minimum cost of maintenance and construction of future alterations and additions. It shall also be so executed that the completed work will conform to any existing installation.

A4.02 Quality in Absence of Detailed Specifications

Whenever the Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market from firms of established good reputation, or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required with due consideration of the use to which they are to be put. In general, the work performed shall be in full conformity and harmony with the intent to secure the best standard of construction and equipment of the work as a whole or in part.

A4.03 Material and Equipment Specified by Name

Whenever any material or equipment is specified by patents or proprietary names or by names of manufacturers, such specifications shall be considered as used for the purpose of describing the material or equipment desired. The Contractor may offer material or equipment with equal or better quality and performance in substitution for those specified which he considers would be in the City's interest to accept. No offers for substitution will be acknowledged or considered from suppliers, distributors, manufacturers, or subcontractors. Any such offer shall be made in writing to the Engineer for his consideration. The Contractor shall include with this offer sufficient data which, together with any other data the Engineer may require, will enable the Engineer to assess the acceptability of the material or equipment for the particular application and requirements. When the substitute equipment or material necessitates changes to, or coordination with, any other portion of the work, systems, or subsystems, the data submitted shall include drawings and details showing

all such changes, and the contractor shall perform these changes as part of any acceptance of substitute material or equipment. The use of any material or equipment so offered will be permitted only after written acceptance of the offer by the Engineer. Such acceptance by the Engineer shall not relieve the Contractor from full responsibility for the efficiency, sufficiency, and quality, and performance of the substitute material or equipment, in the same manner and degree as the material and equipment specified by name.

A4.04 Proof of Compliance with Contract

In order that the Engineer may determine whether the Contractor has complied with the requirements of the contract documents not readily determinable through inspection and tests of plant, equipment, work, or materials, the Contractor shall at any time when requested, at the Contractor's expense, submit to the Engineer properly authenticated documents or other satisfactory proofs as to his compliance with such requirements.

A4.05 Storage of Materials and Equipment

Materials and equipment shall be stored so as to insure the preservation of their quality and fitness for the work. Stores of equipment and materials shall be located so as to facilitate inspection. The Contractor shall be responsible for all damages that occur in connection with the care and protection of all materials and equipment until the completion and final acceptance of the work by the City.

A4.06 Manufacturer's Direction

Manufactured articles, material, and equipment shall be applied, installed, connected, erected, adjusted, tested, used, cleaned, and conditioned as recommended by the manufacturer unless specified to the contrary. Copies of manufacturer's installation instructions and procedures shall be submitted prior to the installation of manufactured articles, material, and equipment.

SECTION A5 - PUBLIC SAFETY AND CONVENIENCE

A5.01 Public Safety

This Section defines the Contractor's responsibility with regard to providing for the safety of the public during construction.

Whenever the Contractor's operations create a condition hazardous to traffic or to the public, he shall furnish, erect, and maintain, at his expense and without cost, such fences, barricades, lights, signs and other devices as are necessary to prevent accidents or damage or injury to the public. The Contractor shall also furnish such flagmen and guards as are necessary to give adequate warning to traffic or the public of any dangerous conditions to be encountered.

Should the Contractor appear to be negligent in furnishing warning and protective measures as above provided, the Engineer may direct attention to the existence of a hazard and the necessary warning and protective measures shall be furnished and installed by the Contractor at his own expense. Should the Engineer point out the inadequacy of warning and protective measures, such action on the part of the Engineer shall not relieve the Contractor from responsibility for public safety or abrogate his obligation to furnish and pay for these devices.

No material or equipment shall be stored where it will interfere with the free and safe passage of public traffic. At the end of each day's work, and at other times when construction operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from that portion of the roadway open for use by the public traffic.

A5.02 Public Convenience

This Section defines the Contractor's responsibility with regard to convenience of the public and public traffic in connection with his operations.

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to the public and he shall have under construction no greater length or amount of work than he can prosecute properly with due regard to the rights of the public.

Unless otherwise provided in the Special Provisions, all public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible.

Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately by the Contractor at his expense.

Existing traffic signal and highway lighting systems shall be kept in operation for the benefit of the traveling public during progress of the work. Other forces will continue routine maintenance of existing systems.

The Contractor may be required to cover certain signs which regulate or direct public traffic to roadways that are not open to traffic. The Traffic Engineer will determine which signs shall be covered.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.

Convenient access to driveways, houses, and buildings along the line of work shall be maintained. Temporary approaches to crossings or intersecting highways shall be provided and kept in good condition. When the abutting property owner's access across the right-of-way line is to be eliminated, or to be replaced under the contract by other access facilities, the existing access shall not be closed until the replacement access facilities are usable.

Roadway excavation and the construction of embankments shall be conducted in such a manner as to provide a reasonably smooth and even surface satisfactory for use by public traffic at all times. Sufficient fill at culverts and bridges to permit traffic to cross shall be placed in advance of other grading operations. If ordered by the Engineer, roadway cuts shall be excavated in lifts and embankments constructed part width at a time. Construction shall be alternated from one side to the other and traffic routed over the side opposite the one under construction. Culvert installation shall be conducted on one-half the width of the traveled way at a time. That portion of the traveled way being used by public traffic shall be kept open and unobstructed until the opposite side of the traveled way is ready for use by traffic.

Water or dust palliative shall be applied if ordered by the Engineer for the alleviation or prevention of dust nuisance.

In order to expedite the passage of public traffic through or around the work and where ordered by the Engineer, the Contractor shall install signs, lights, flares, barricades, and other facilities for the sole convenience and direction of public traffic. Also where directed by the Engineer, the Contractor shall furnish competent flagmen whose sole duties shall consist of directing the movement of public traffic through or around the work. The cost of furnishing and installing such signs, lights, flares, barricades, and other facilities will be borne by the Contractor.

The Contractor will insure the utility services to customers in the project area is maintained.

SECTION A6 - PROGRESS AND COMPLETION

A6.01 Use of Completed Portions of the Work

The City shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding that the time for completing the work or such portions may not have expired. Such taking of possession and use shall not be deemed an acceptance of any part of the work. The Contractor may be entitled to claim for extra compensation if the Engineer is notified prior to each occurrence and in the manner outlined in this contract. The amount of extra compensation shall be in accordance with the terms of the Standard Specifications. The Contractor shall not, however, be entitled to claim extra compensation for portions of the work which are specifically required by the contract (or required by being integral to the performance of the work of the contract documents) to be placed into use or operation before completion of all work under this contract.

A6.02 Relief from Maintenance and Responsibility-Resolution No. 108

Upon the written request of the Contractor, and upon written approval of the City Engineer, the Contractor may be relieved of the duty of maintaining and protecting certain portions of the work which have been completed in all respects in accordance with the requirements of the contract and to the satisfaction of the City Engineer. Thereafter, except with his consent, the Contractor will not be required to do further work thereon. In addition, such action by the City Engineer will relieve the Contractor of responsibility for injury or damage to said completed portions of the work resulting from use by public traffic or from the action of the elements or from any other cause; but not from injury or damage resulting from the Contractor's own operations or from his negligence. Nothing in this section providing for relief from maintenance and responsibility will be construed as relieving the Contractor of full responsibility for making good defective work or materials found prior to the formal acceptance of the entire contract by the City Council, or during the applicable guarantee period.

A6.03 Work Scheduling

Work scheduling shall take into consideration that other utility installation and subdivision development may be concurrent with or be started prior to water main installation. The Contractor shall schedule his work in cooperation with other contractors to the mutual benefit of the City and other utilities or developers. The Contractor shall repair any damage to the roads to original or better condition. Drainage drop-ins may be removed and shall be replaced as part of the contract.

The Contractor's work shall be continuous and be conducted with such force and equipment that, in the judgment of the City's Engineer, it shall be adequate to complete the project within the allotted time as specified in Sect. Bl.01 of these Special Provisions.

Whenever, in the opinion of the City, there shall arise outside of regular working hours an emergency involving water service to the public or danger to public safety, or unreasonable inconvenience and/or nuisance to the public, the City's forces shall handle such emergency work. If such emergency is the result of operations by the Contractor, the cost of the corrective measures shall be billed to the Contractor and deducted from his payment. The performance of such emergency work by the City forces shall not relieve the Contractor of any of his responsibilities, obligations or liabilities under the contract. The Contractor's attention is directed to Section 5-12 "Provision for Emergencies" of the Standard Specifications.

SECTION A7 - MEASUREMENT AND PAYMENT

A7.01 - Item W1 - Installation of Water Main (Sta 0+09 to 10+09)

The Contractor shall furnish all plant, labor, equipment, and materials (except as indicated in Sections Bl.03 b) and Bl.03 c)) to install, test, and complete the pipelines and appurtenances in place as shown on the plans and as specified herein, making the necessary connections to the existing water system. The work shall be so performed that upon contract completion, the project shall be ready for use.

Payment shall be paid per lineal foot of 42" water main and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals required for clearing, trenching, installing, testing, disinfecting, backfilling, and surface restoring for the size pipe indicated on the plans and for all required connections to existing water mains and adding all appurtenances to the installation as shown on the plans.

A7.02 - Item W2 - Installation of Water Main (Sta 10+09 to 18+74)

The Contractor shall furnish all plant, labor, equipment, and materials to install, test, and complete the pipelines and appurtenances in place as shown on the plans and as specified herein, making the necessary connections to the existing water system. The work shall be so performed that upon contract completion, the project shall be ready for use.

Payment shall be paid per lineal foot of 42" water main and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals required for clearing, trenching, boring, jacking, grouting, installing, testing, disinfecting, backfilling, and surface restoring for the size pipe indicated on the plans and for making all required connections to existing water mains and adding all appurtenances to the installation as shown on the plans.

A7.03 - Item W3-Installation of Water Main (Sta 28+17.82 to 40+87.33)

The Contractor shall furnish all plant, labor, equipment, and materials (except as indicated in Section Bl.03 b)) to install, test, and complete the pipelines and appurtenances in place as shown on the plans and as specified herein, making the necessary connections to the existing water system. The work shall be so performed that upon contract completion, the project shall be ready for use. Appurtenances shall include the installation of all butterfly valves at Sta 37+13 and Sta 40+87.

Payment shall be paid per lineal foot of 42" water main and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals required for clearing, trenching,

installing, testing, disinfecting, backfilling, and surface restoring for the size pipe indicated on the plans and for making all required connections to existing water mains and adding all appurtenances to the installation as shown on the plans.

A7.04 - Item W4 - Installation of Water Main (Sta 40+87.33 to 48+00)

The Contractor shall furnish all plant, labor, equipment, and materials to install, test, and complete the pipelines and appurtenances in place as shown on the plans and as specified herein, making the necessary connections to the existing water system. The work shall be so performed that upon contract completion, the project shall be ready for use.

Payment shall be paid per lineal foot of 30" water main and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals required for clearing, trenching, installing, testing, disinfecting, backfilling, and surface restoring for the size pipe indicated on the plans and for making all required connections to existing water mains and adding all appurtenances to the installation as shown on the plans.

7.05 - Item W5 - Installation of Water Main (Sta 48+00 to 50+30)

The Contractor shall furnish all plant, labor, equipment, and materials (except as indicated in Section B1.03 b)) to install, test, and complete the pipelines and appurtenances in place as shown on the plans and as specified herein, making the necessary connections to the existing water system. The work shall be so performed that upon contract completion, the project shall be ready for use. Appurtenances shall include the installation of the butterfly valve at Sta 50+27.

Payment shall be paid per lineal foot of 30" water main and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals required for clearing, trenching, boring, jacking, grouting, installing, testing, disinfecting, backfilling, and surface restoring for the size pipe indicated on the plans and for making all required connections to existing water mains and adding all appurtenances to the installation as shown on the plans.

7.06 - Item W6 - Installation of Water Main (Sta 50+30 to 71+53.98)

The Contractor shall furnish all plant, labor, equipment, and materials to install, test, and complete the pipelines and appurtenances in place as shown on the plans and as specified herein, making the necessary connections to the existing water system. The work shall be so performed that upon completion, the project shall be ready for use.

Payment shall be paid per lineal foot of 30" water main and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals required for clearing, trenching, installing, testing, disinfecting, backfilling, and surface restoring for

the size pipe indicated on the plans and for making all required connections to existing water mains and adding all appurtenances to the installation as shown on the plans.

A7.07 - Item B1 - Clearing and Grubbing

This item shall include removal of shrubs, signs, hedges, fences, and any other obstruction lying within the limits of the work as shown on the plans or directed by the Engineer.

Payment for clearing and grubbing shall be a lump sum figure and shall include disposal of excess material away from the site. The cost of fence relocation and adjusting manhole to grade at North B Street shall be included in this item.

A7.08 - Item B2 - Excavation Grading

Excavation grading involved shall conform to the provisions of Section 12 "Standard Specifications." Water used in the preparation of subgrade will be included in this item.

Disposal of Excess Excavated Material - Excess excavated material shall be the property of the Contractor and shall be deposited in a location and manner satisfactory to the Engineer. When any material is to be disposed of outside the right of way, the Contractor shall obtain written permission from the owner upon whose property the disposal is to be made before any material is deposited thereon. Excavation of existing embankment to obtain appropriate width for bikeway may be spread evenly over the side of the embankment.

Payment shall be made per cubic yard of material excavated and shall include removal and disposal of excess material away from the site if necessary.

A7.09 - Item B3 - Fill Grading

Fill grading involved shall conform to the provisions of Section 12 Standard Specifications and shall include any fill compaction where directed by the Engineer.

Payment shall be made per cubic yard of fill material complete in place.

A7.10 - Item B4 - Concrete Vee Gutter

Portland cement concrete vee gutter shall be constructed to the details shown on the plans or as directed by the Engineer and shall conform to the applicable requirements of Section 23 Standard Specifications.

Payment shall be per square foot of vee gutter complete in place, and shall include removal of existing curb, gutter and sidewalk.

A7.11 - Item B5 - Asphalt Concrete Pavement to Construct

Asphalt concrete shall conform to the applicable requirements of Section 19 of the Standard Specifications. Class B Single Seal Coat shall not be applied as specified in Section 19-8 of the Standard Specifications. The pavement shall consist of a surface course and shall be a fine mix (100% passing the $\frac{1}{2}$ " screen or finer). Asphalt content shall be 5.8 to 6.2.

Included under this item shall be the placement of A.C. as directed by the Engineer to provide a smooth transition between new and existing pavement and any overlay required by the Engineer.

Paving asphalt shall be viscosity Grade AR 4000, unless otherwise directed by the Engineer, and shall conform to applicable portions of Section 92 of the California Department of Transportation's Standard Specifications dated January, 1978. Fog seal shall be applied and shall be SS-1 and equal parts water spread at 0.07 gallons per square yard. Apply 1 pound Poly-Bor-Chlorate sterilant to each 2 gallon water at the rate of 8 gallons per 100 square feet of subgrade applied to subgrade.

Payment - The price paid per ton for asphalt concrete shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and doing all the work involved in completing this item in place, as shown on the plans, specified in the Standard Specifications, these Special Provisions, and as directed by the Engineer. This item shall include fog seal, subgrade sterilant, and R.R. grade crossings.

A7.12 - Item B6 - Aggregate Base Class II to Place

This item shall consist of furnishing and placing Aggregate Base Class II at such places as are designated by the plans or by the Engineer in accordance with these specifications and in conformity with the lines and grades given. This item may be omitted all or in part at the discretion of the Engineer.

Aggregate Base Class II shall be dense graded and shall conform to Paragraph 10-7 and 14-1 of the Standard Specifications, with the exception that the water used for laying shall be included in the unit price bid.

Payment - The price paid per ton for aggregate base shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and doing all the work involved in completing this item in place, as shown on the plans, specified in the Standard Specifications, these Special Provisions, and as directed by the Engineer.

A7.13 - Item B7 - 10" Diameter, 16 Gauge, Corrugated Metal Pipe to Place

Corrugated metal pipe drainage culvert shall be constructed to the details shown on the plans and conform to the applicable requirements of Section 10, 12, 25-8 and 27 of the Standard Specifications.

Payment - The price paid per lineal foot of corrugated metal pipe in place shall include full compensation for furnishing all labor, materials, tools and equipment and performing all work involved in laying and installing the pipe.

A7.14 - Item B8 - Barrier Post

Barrier posts shall be installed at entrances to bikeway where shown on the plans and as detailed on the plans.

Payment shall be at the price per barrier post and shall constitute full compensation for all materials furnished and work performed. Contractor shall take into consideration fixed and removable barrier posts in the average price bid per barrier post.

A7.15 - Item B9 - Traffic Barricade

Traffic barricades shall be installed where shown on the plans and as detailed on the plans.

Payment shall be at the lump sum price bid and shall include full compensation for all materials furnished and work performed for traffic barricades in place.

SECTION A8 - PERMITS

A8.01 Permits Secured by Owner

The Contractor shall comply with conditions of all permits issued by utility companies and regulatory agencies in connection with all work under the contract. Copies of all permits obtained by the City are contained in Appendix I of this document. All other permits are the responsibility of the Contractor to obtain.

A8.02 Permits Secured by Contractor

The Contractor shall obtain permits or easements for use of private property for storage or equipment use and shall be responsible to the property owner.

A8.03 Trenching and Excavation Permits

The Contractor shall comply with the State of California Division of Industrial Safety Regulations conforming to trenching, excavation and other safety aspects of the project. Trenching permits may be obtained at the Division of Industrial Safety, 714 "P" Street, Room 1393, telephone 445-5818, for excavations or trenches five (5) feet or deeper. If the public contract is valued at more than \$25,000, bidders shall submit detailed plans of trench shoring systems and provisions for work safety. Note reference to this requirement in the Standard Specifications.

SECTION B1 - GENERAL CONSTRUCTION INFORMATION

B1.01 Location, Scope of Work, and Completion Time

These Special Provisions cover the installation of a water transmission main with appurtenances and special requirements as shown on the project plans (sheets W1 through W10).

<u>Location</u>	<u>Nominal Size</u>	<u>Length (ft.)</u>
Sta 0+09-10+09 (installation only)	42"	1,000
Sta 10+09-18+74	42"	865
Sta 18+74-28+17.82	NOT IN THIS CONTRACT	
Sta 28+17.82-40+87.33	42"	1,270
Sta 40+87.33-71+53.98	30"	3,067

The Contractor shall furnish all plant, labor, equipment, and materials to install, test, and complete the pipelines and appurtenances in place as shown on the plans and as specified herein making the necessary connections to the existing water system. The work shall be so performed that upon contract completion, the project shall be ready for use.

These Special Provisions also cover the construction of a full bike-way improvement, including clearing and grubbing, excavation, drainage, pavement construction, railroad grade crossings, ties to minor structures and bridges, driveways, and fences as shown on the project plans (sheets B2 through B5).

<u>Location</u>	<u>Length (ft)</u>
Sta 374+00-392+95	1,895
Sta 402+25-420+60	1,835

The time limit for the completion of all work is one hundred fifty (150) calendar days, from award of contract, and should said work not be completed to the satisfaction of the City within said time, the Contractor shall pay to the City of Sacramento a sum of Fifty Dollars (\$50) as liquidated damages and not as a penalty, for each day's delay after the expiration of such period until the final acceptance of the work by the City and its delivery to the City.

The Contractor shall submit a CPM chart which reflects his scheduling of work within 21 days after award of contract.

B1.02 Inspection

The City will designate an inspector to oversee the manufacturing and testing of the pipe and will designate a field inspector for the pipe installation and bikeway construction. Telephone (916) 449-5281 for further information.

B1.03 Special Considerations

- a) Basis of pipe design - All pipe shall be designed for an internal working pressure of 150 psi and in external earth loading as indicated on the plan profile sheets.
- b) Butterfly Valves - The City shall provide butterfly valves for installation at locations as follows:

<u>Size</u>	<u>Location</u>
36"	Sta 0+11
30"	Sta 37+13
42"	Sta 40+87
30"	Sta 40+87
30"	Sta 50+27

The Contractor shall be responsible for transportation of the valves from the City Corporation Yard to the job site.

- c) Water Main Sta 0+09 Through Sta 10+09 - The water transmission main in this section must be complete in place and tested prior to July 15, 1980 to avoid inconvenience to California Almond Growers Exchange operations. The City of Sacramento will award a separate contract for manufacture of the pipe in this section of the project. The pipeline manufacture will be responsible for transportation costs and for making pipe available by July 1, 1980. The Contractor shall contact the manufacturer to arrange for pipe delivery to the job site.

In the event that installation is not complete by July 15, 1980, the City will shut down this portion of the project. Work on the balance of the contract shall proceed with the contractor making alternate arrangements for water for disinfection and testing purposes. Once work is shut down, it will not be allowed to resume until after March 1, 1981.

- d) General Order of Work - The Contractor may disinfect and test the water transmission main in sections in order to expedite construction of the bikeway. It should be noted that the water main and bikeway follow the same alignment between Sta 10+09 and Sta 46+50. The Contractor shall schedule work in such a manner as to complete the bikeway at the earliest possible date.
- e) Cooperation with Other Forces - The City has received permits from a number of public agencies. These permits are included in Appendicies 1A to 1D and are hereby incorporated in these Special Provisions. The Contractor shall coordinate his work with personnel of the following public and private agencies:
 - 1) California Almond Growers Exchange (Sta 0+00 to 10+09) - Vehicular and pedestrian traffic associated with the Growers Exchange operations is expected in the vicinity of the intersection of 18th and North B Streets. Also, the paved road between Sta 0+00 and Sta 10+09 is normally used

for the transportation of packaging materials on a continuous basis. The Growers Exchange has indicated a willingness to reroute traffic from this road if necessary for limited periods of time (2 or 3 days). Coordination with the Growers Exchange personnel is required in addition to the conditions set forth in Section Bl.03(c) above.

- 2) City of Sacramento (Contractor: CONCO-BPA) (Sta 18+74 through Sta 28+17.82) - Contractor is constructing the American River Crossing of the water transmission main and the bikeway.
 - 3) Western Pacific Railroad (Sta 10+09 through Sta 18+74; and Sta 48+40 through Sta 50+00) - The Contractor shall enter into any agreements required by Western Pacific Railroad and shall comply with the provisions of the permit (see Appendix 1A).
 - 4) State of California, Department of Transportation (Sta 35+00 through Sta 60+00) - The Contractor shall enter into any agreements required by the Department of Transportation and shall comply with the provisions of the permit (see Appendix 1B).
 - 5) State of California, Department of Water Resources, The Reclamation Board (Sta 18+00 through 50+00) - The Contractor shall comply with the provisions of the permit (see Appendix 1C).
 - 6) State of California, Department of Industrial Relations, Division of Occupational Safety & Health - The Contractor shall comply with provisions of the permit (see Appendix 1D).
 - 7) The City has applied for permits from the Reclamation Board and Public Utilities Commission which will be required for the bikeway portion of this project. For the purposes of bidding, it will be assumed that no significant changes will result from these permits. Any extra expenses incurred by the Contractor awarded the project will be by Contract Change Order. Work will not be permitted in areas governed by permits until approval is made final. Areas affected by the Reclamation Board are from Sta 374+00 to Sta 402+40 and area affected by the P.U.C. is WPRR crossings at Sta 402+40.
- f) The following information specifically concerns construction of the bikeway portion of this project:
- 1) Maintaining Existing Drainage - The Contractor shall be responsible for maintaining existing drainage until new drainage improvements are complete and functioning. No compensation will be paid to the Contractor for maintenance of the existing facilities, and he should include the cost of this work in the items he deems appropriate.

- 2) Dust Control - The Contractor is responsible for the control of dust. He shall take any steps necessary or required by the Engineer to eliminate the nuisance caused by blowing dust. Dust control must be maintained on weekends and holidays in addition to normal working days. No additional compensation will be paid to the Contractor for water used or for work performed in the control of dust. He shall include the cost in any item he deems appropriate.
- g) Questions regarding these specifications should be addressed to the City of Sacramento, Division of Water and Sewers, Attention: Steve Davis, 927 - 10th Street, Suite 201, Sacramento, CA 95814 ((916) 449-5273).

SECTION B2 - WELDED STEEL PIPE

B2.01 Material, Manufacturing Operations, Testing and Inspection

All material, manufacturing operations, testing, and inspection of pipe shall be in conformity with the requirements of AWWA Standard C200 "Steel Water Pipe 6 Inches and Larger" except as modified herein. The following acceptable minimums shall apply:

<u>Nominal Pipe Diameter</u>	<u>Min. I.D. of (Cement Mortar Lined) Steel Cylinder Shell</u>	<u>Minimum Steel Cylinder Shell Thickness, Inches</u>	<u>Class</u>
18"	19.5	0.1345, 10 ga.	150
24"	25.5	0.1494, 9 ga.	150
30"	31.5	0.1875, 3/16	150
36"	37.5	0.2187, 7/32	150
42"	43.5	0.2500, 1/4	150

The bare cylinder shall be hydraulically pressure tested to a circumferential stress of 22,000 psi.

Sufficient field pieces shall be provided to allow a 2-foot adjustment within each one-half mile of straight length or within each major directional change where the run is less than one-half mile.

Except for specials required to meet the laying conditions, pipe will be furnished in standard lengths suiting the manufacturer's shop practice of between 32 and 40 feet.

B2.02 Cement - Mortar Lining

Cement-mortar lining shall conform to AWWA Standard C205 "Cement-Mortar Protective Lining and Coating for Steel Water Pipe - 4 Inches and Larger - Shop Applied", except as modified herein. All pipe shall be lined to a thickness of 3/4 inches. Tolerances shall be -1/16 inch to +1/8 inch. If steam curing is used in lieu of water curing, it shall not be started until the pipe temperature is lower than 90°F, or until three hours has elapsed, whichever occurs first.

B2.03 Cement-Mortar Coating

All steel pipe which is to be buried shall be cement-mortar coated in accordance with AWWA Standard C205 "Cement-Mortar Protective Lining and Coating for Steel Water Pipe - 4 Inches and Larger - Shop Applied," except as modified herein. Reinforcement for coating shall be ribbon-mesh reinforcement conforming to Section 2.1.3. of AWWA Standard C205 or spirally wound steel wire conforming to ASTM A82, 13 gauge (0.0915") spaced at 1 inch centers.

B2.04 Painted Exterior Coating

All steel pipe which is to be aboveground shall be painted in accordance with AWWA Standard C204, "Chlorinated Rubber-Alkyol Paint System for the Exterior of Aboveground Steel Water Piping."

Both primer and topcoats may be applied in the shop or in the field at the Contractor's option. Field touch-ups and joint painting shall be in accordance with AWWA Standard C204. The color of the finish shall be approved by the Engineer and will be selected to match the final coat color selected for adjacent work.

The Contractor shall furnish the Engineer with an affidavit of compliance in accordance with Section 1.3 of AWWA Standard C204.

B2.05 Pipe End Finish

Ends of pipe sections supplied under this specification shall be one of the following types as shown on the plans.

- a) Ends for mechanically coupled field joints.
- b) Ends fitted with butt straps for field welded joints.
- c) Ends of the bell and spigot type for field welded joints.
- d) Ends of the bell and spigot type for joints with rubber gaskets.
- e) Plain ends fitted with flanges.

All joints used shall have been thoroughly tested for sealing water at design pressures and have an experience record on comparable pipe sizes that will satisfy the Engineer. Drawings of the type of pipe joints used shall be submitted as part of the shop drawings. The exposed inside and outside surface of the joint shall be rust protected with an approved coating applied at the time of manufacture.

B2.06 Mechanically Coupled Field Joints

Ends for mechanically coupled field joints shall conform to Section 3.7.1 of AWWA Standard C200.

Mechanically coupled joints including bolts, nuts, gaskets, shall conform to the material, dimensions, and tests in AWWA Standard C111 (ASA A21:11). Evidence of prior experience and testing shall be approved by the Engineer before fabrication.

Insulating couplings shall be provided, where required, equal to Smith-Blair, Type 400 series, Dresser style 30 or 5 series, or Baker Series 200. Non-insulating couplings shall be provided only if specified or approved by the Engineer. Insulated joint harness shall be provided where indicated on the plans. Insulating couplings shall be double sleeved. Neoprene ring gaskets and insulating sleeved

shall be furnished. No integral pipe stop is required. Insulating couplings shall be provided in every mile of pipeline (preferably adjacent to a butterfly valve).

Stiffner rings 3/8" thickness by 3" wide steel plate shall be welded to the outer pipe walls in a plane perpendicular to the pipe axis at all pipe ends joined by flexible couplings. If the stiffner rings are to be integral with a joint harness, the ring shall be suitably increased in thickness and reinforced with plate gussets to adequately withstand pipe thrust from adjacent fittings. Stiffner rings and harness rings or lugs shall be installed at the manufacturing plant.

B2.07 Butt Strap Field Welded Joints

Ends of pipe to be fitted with butt straps for field welded joints shall conform to Section 3.7.6. of AWWA Standard C200. Straight butt end straps shall be a minimum of six inches (6") wide and 1/4 inch in thickness. Butt strap joints may be used for turns or directional change up to five degrees (5°), when field conditions warrant, with the Engineer's approval.

B2.08 Bell and Spigot Field Welded Joints

Pipe to be fitted with bell and spigot ends for field welded joints shall conform to Section 3.7.3 of AWWA Standard C200 except as modified herein.

As shown on the drawings and where thrust is evident, welded or bolted joints are required. Welding of joints shall conform to City of Sacramento Standard Drawings SD11B thru 11 E. Ends shall be formed (by swaging), or shall employ joint rings (carnegie rings).

B2.09 Bell and Spigot Joints with Rubber Gaskets

The pipe ends shall be formed (by swaging), or shall employ joint rings (carnegie rings) and shall be designed and fabricated to accommodate a rubber O-ring gasket seal in accordance with Section 3.7.7 of AWWA Standard C200. The joint shall be so designed and fabricated that when the pipe is laid and the joint telescoped, the gasket will be compressed peripherally (self centering) and the gasket compression will not be dependent on the pipe water pressure for sealing. Gasket deformation shall not be more than 50% nor less than 14% based on the most extreme pipe manufacture tolerance that can occur. The gasket shall not support the weight of the pipe, but shall seal completely under all normal conditions of service, including expansion, contraction, and normal earth movement or settlement. The pipe bell and spigot ends shall not deviate from a true circle more than 1/16" within an arc of 45°. The bell and spigot ends shall allow, by dimensional clearance for a maximum angular pull of one inch on one side of the joint without interference of the bell and spigot.

B2.10 Plain-End Pipe with Flanges

Pipe supplied with plain ends fitted with flanges shall conform to

Section 3.7.4 of AWWA Standard C200 and in accordance with AWWA Standard C207, "Steel Pipe Flanges for Water Works Service - Sizes 4 Inch Through 144 Inch," except as modified herein. All flanges shall be Class D with fullface gaskets of 1/8" stock. The gaskets shall be red rubber or neoprene sheet packing for 150 psi cold water service and shall also conform to Federal Specification HH-P-151.

B2.11 Fittings and Openings

Special and standard type fittings which include bands, reducers, outlets, manholes, etc., shall be designed to a strength at least equal to the adjacent pipe. Fittings for steel pipe shall conform to AWWA Standard C208, "Dimensions for Steel Water Pipe Fittings." Outlets with diameters up to one-half the maximum diameter of the pipe run shall be reinforced with collars having an effective width and a minimum thickness T, as determined by:

$$T = \frac{P_w \times C \times O}{36,000 \times W}$$

where

T = minimum collar thickness, inches

P_w = design pressure, psi

C = cylinder inside diameter, inches

O = outlet inside diameter, inches (within 0.5 to 0.7 times the maximum size pipe diameter).

W = collar width from the outlet inside surface to at least 1/3 but not more than 1/2 the outlet inside diameter, inches.

For tees and outlets beyond these limits three-plate stiffeners shall be provided, designed according to the method described in AWWA Journal, Vol. 47, No. 6, June, 1955, pp. 617 - 623. Reducer lengths shall not be less than the reducer maximum diameter. The required transverse steel area in concrete cylinder pipe shall all be provided in the cylinder. Fittings shall be provided with lifting lugs.

Manual-welding operators and procedures shall be qualified in accordance with the Standard Qualification Procedure of the American Welding Society. Radiographic testing of manual wells shall be accomplished in accordance with these specifications and AWWA Standard D100 appendix A "Procedures for Examination of Butt-Welded Shell Joints for which Complete Penetration and Fusion are Specified--Radiographic Testing."

The first joint welded by each welder or welding operator shall be 100% radiographed. Thereafter, without regard to the number of welders or welding operators working thereon, one additional joint shall be 100% radiographed for each additional five (5) joints and any remaining major fraction thereof.

When a section of weld is shown by a radiograph to be unacceptable,

the inspector shall have the option of requiring that one radiograph be taken at any selected location on any other joint on which the same welder (or operator) has welded. If any of the selected spots fails to comply with the radiographic standards AWWA Standard D100, Appendix A, the limits of unacceptable welding shall be determined as required in the referenced specification. All costs for radiographic testing shall be borne by the Contractor.

The fittings, lining and coating shall be applied as outlined in the respective specification for each type of pipe. All specials, thirty-six inches (36") and larger, shall have 2" x 4" x #13 gauge wire mesh reinforcing embedded in the lining unless the lining has been centrifugally placed. Mortar lining of outlets, twelve inches (12") and smaller, shall have a nominal thickness of one fourth inch (1/4").

Shop details of all fittings shall be submitted to the Engineer for approval before fabrication is started.

B2.12 Internal Bracing and End Protection

Prior to delivery, pipe end covers and end/internal bracing shall be applied, as recommended by the manufacturer, for shipping and storage protection.

SECTION B3 - REINFORCED CONCRETE WATER
PIPE-STEEL CYLINDER TYPE, PRETENSIONED

B3.01 Material, Manufacturing Operations, Testing, and Inspection

All material, manufacturing operations, testing, and inspection of pipe shall be in conformity with the requirements of Federal Specifications SS-P-381a and AWWA Standard C303, "Reinforced Concrete Water Pipe-Steel Cylinder Type, Pretensioned" except as modified herein. The following acceptable minimum shall apply:

- a) Minimum thickness of steel cylinder shall be ten (10) gauge.
- b) Wire rod reinforcement shall be a minimum 7/32 inch diameter with spacing not to exceed 1½ inches.
- c) The cross sectional area of the rod shall not exceed 40% of the total areas of rod and cylinder steel.

Sufficient field pieces shall be provided to allow a 2-foot adjustment within each one-half mile of straight length or within each major directional change where the run is less than one-half mile.

Except for specials required to meet the laying conditions, pipe will be furnished in standard lengths suiting the manufacturer's shop practice and in accordance with Section 3.1.2. of AWWA Standard C303.

B3.02 Pipe End Finish

Ends of pipe sections supplied under this specification shall be one of the following types as shown on the plans:

- a) Ends for mechanically coupled field joints.
- b) Ends fitted with butt straps for field welded joints.
- c) Ends of the bell and spigot type for field welded joints.
- d) Ends of the bell and spigot type for joints with rubber gaskets.
- e) Plain ends fitted with flanges.

All joints used shall have been thoroughly tested for sealing water at design pressures and have an experience record on comparable pipe sizes that will satisfy the Engineer. Drawings of the type of pipe joints used shall be submitted as part of the shop drawings. The exposed inside and outside surface of the joint shall be rust protected with an approved coating applied at the time of manufacture.

B3.03 Mechanically Coupled Field Joints

Ends for mechanically coupled field joints shall conform to the requirements set forth in Section B2.6 of these Special Provisions.

B3.04 Butt Strap Field Welded Joints

End of pipe to be filled with butt straps for field welded joints shall conform to the requirements set forth in Section B2.7 of these Special Provisions.

B3.05 Bell and Spigot Field Welded Joints

Pipe to be fitted with bell and spigot ends for field welded joints shall conform to the requirements of Section B2.8 of these Special Provisions and City of Sacramento Standard Drawing SD-11A.

B3.06 Bell and Spigot Joints with Rubber Gaskets

The pipe ends shall be formed (by swaging), or shall employ joint rings (cranegie rings) and shall be designed and fabricated to accommodate a rubber O-ring gasket seal in accordance with Sections 3.3 and 3.4 of AWWA Standard C-303.

B3.07 Plain-End Pipe with Flanges

Pipe supplied with plain ends fitted with flanges shall conform to the requirements of Section B2.10 of these Special Provisions.

B3.08 Fittings and Openings

Special and standard type fittings which include bands, reducers, outlets, manholes, etc., shall be designed to a strength at least equal to the adjacent pipe and to conform to Section 4 of AWWA Standard 303.

B3.09 Internal Bracing and End Protection

Prior to delivery, pipe end covers and end/internal bracing shall be applied, as recommended by the manufacturer, for shipping and storage protection.

B3.10 Contractor Submitted Items

The Contractor shall submit the following items in addition to any other items required by AWWA Standard C303 or item required elsewhere in these Special Provisions.

<u>Item</u>	<u>Section of AWWA Standard C300</u>
a) Affidavit of compliance	1.11
b) Design calculations	3.21
c) Mill or plant steel test reports	1.10.3
d) Test specimens of steel for cylinders and rods	1.10.4
e) Tabulated layout schedule	1.6.2
f) Quality control test reports on concrete lining	1.10.2
g) Rubber gasket material test report	1.10.5
h) Shop drawings to include details of specials and fittings	4.1

SECTION B4 - DUCTILE IRON PIPE

B4.01 Material, Manufacturing Operations, Testing and Inspection

All material, manufacturing operations, testing and inspection of pipe shall be in conformity with the requirements of AWWA Standard C151 "Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids" except as modified herein.

Sufficient field pieces shall be provided to allow a 2-foot adjustment within each one-half mile of straight length or within each major directional change where the run is less than one-half mile.

Except for specials required to meet the laying conditions, pipe will be furnished in standard lengths suiting the manufacturer's shop practice and in accordance with Section 51-3.2 of AWWA Standard C151.

B4.02 Cement - Mortar Lining

Cement-mortar lining shall conform to AWWA Standard C104 "American National Standard for Cement-Mortar Lining for Cast-Iron and Ductile-Iron Pipe and Fittings for Water."

B4.03 Pipe End Finish

Ends of pipe sections supplied under this specification shall be one of the following types as shown on the plans.

- a) Ends for mechanically coupled field joints.
- b) Ends of the bell and spigot type for joints with rubber gaskets.
- c) Ends fitted with threaded flanges.

All joints used shall have been thoroughly tested for sealing water at design pressures and have an experience record on comparable pipe sizes that will satisfy the Engineer. Drawings of the type of pipe joints used shall be submitted as part of the shop drawings. The exposed inside and outside surface of the joint shall be rust protected with an approved coating applied at the time of manufacture.

B4.04 Mechanically Coupled Field Joints

Ends for mechanically coupled field joints shall conform to the requirements set forth in Section 51-3.1 of AWWA Standard C151 and Section B2.6 of these Special Provisions.

B4.05 Bell and Spigot Joints with Rubber Gaskets

Pipe shall conform to Section 51-3.1 of AWWA Standard C151.

B4.06 Ends Fitted with Threaded Flanges

Ends fitted with threaded flanges shall conform to the requirements of AWWA Standard C115.

B4.07 Fittings and Openings

Fittings and openings shall conform to AWWA Standard C104. Cement-mortar lining shall be the same as for the pipe itself. Where outlets are required, tees shall be used, with the outlet branch being flanged.

B5 - APPURTENANCES

B5.01 Butterfly Valves

- a) General - The units shall be flanged, rubber seated, with both valve body and disc to be of cast or ductile iron construction. As a minimum requirement, the valves shall meet AWWA Standard C504 "AWWA Standard for Rubber-Seated Butterfly Valves," Class 150B, Short Body.

Valves will be used as isolating valves, are for buried service in a domestic water main, and shall be provided with manual operators. See enclosed Standard Drawing Sd-10 for typical valve installation details.

Under normal service conditions, shut-off pressure and maximum velocity correspond to Class 150B of the AWWA Standard, which establishes the minimum acceptable pressure and velocity standards both as to valve and operator.

- b) Valve and Operator Construction - Valve body is to be a one-piece casting and is to include two integral Bl6.1 Class 125 flat face flanges, two bearing trunnions and a pad for mounting bonnet with operator. Raised marking plate shall be welded to the valve body showing the manufacturer's name or mark, the year of valve casting, the valve diameter and the AWWA Class rating.

Valve seats shall be mechanically retained or suitably cemented so as to adhere without leakage under all conditions of service. If the valve seat is not mechanically retained, manufacturers shall submit a list of at least three West Coast installations where comparable valves have been in satisfactory service for a period of at least three years, under conditions of similar use. Seating edge shall be of non-corrosive metal, ground smooth and polished. Since the entire valve and operator will be coated for corrosion resistance, a cast iron spacer will be provided between the operator and valve body which will completely seal off their interconnecting shaft and the main valve shaft stuffing box, if any. Access to the stuffing box shall be provided by removable, water-tight cast iron cover plates. In lieu of stuffing box, O-ring seals may be used.

Valve operator shall be of the buried and submersible, permanently lubricated worm-gear reducer type, terminating in a water works standard 2" square operating nut marked for direction of opening.

The manual operator shall be designed to produce the required maximum torque with a maximum torque at the operating nut of 150 foot-pounds. The valve disc shall be moved through its full stroke with a minimum number of turns of the operating shaft

consistent with the torque limitations. The mechanism shall be inherently self-locking and shall hold the valve disc rigidly in position, free of flutter, for any degree of valve opening. Machining and fitting of all parts shall be held to close tolerances to reduce backlash and lost motion to a minimum. The mechanism shall be totally enclosed in a rugged lubricant tight and water tight case. A gasketed removable cover plate shall be provided for maintenance purposes. All moving parts shall work completely submerged in a bath of long-lasting lubricant. The case shall be filled with the proper lubricant and sealed before shipment. Provision shall be made for relubrication so that it may be accomplished from the exterior without removing any parts other than a pipe plug or plugs or similar device. A suitable stuffing box requiring infrequent attention shall be provided at spindle openings in the gear box to prevent completely the escape of lubricant or ingress of water. The operating spindle shall be bronze or stainless steel. All external bolts, studs, and nuts on stuffing boxes or operator housing shall be stainless steel or monel metal. Materials for other parts shall conform to the best current engineering practice, considering strength, ductility, and electrolysis.

- c) Painting - Painting shall conform to Section 15 of AWWA Standard C504.

Finished or bearing surfaces shall not be painted. Exposed machined surfaces shall be covered with slush grease or other readily removable protective coating before shipment.

- d) Data Required with Bid - Bidder shall submit with his bid information required under Section 2 of AWWA Standard C504. This will show details of valve and operator construction, and materials used for all parts together with overall dimensions. Data will include valve torque maximum requirement and operator torque maximum rating.
- e) Other Requirements - Four certified prints of dimension, arrangement and sectional parts list drawings of the valve and operator are required for approval before manufacture can be released. These drawings are also to include information on (a) shaft and bearing sizes, (b) materials on all parts, (c) flange rating and thickness, (d) valve torque maximum requirement, (e) operator torque maximum rating, (f) number of turns required on operator nut to open and close the valves and (g) weight of valve less and with operator.

If requested by the City, the valve supplier shall be required to furnish detailed calculations showing the method and data used to determine the maximum torque requirement of the valves.

For each valve size furnished, four copies of manual of instructions for installation, operation, and maintenance of both valve and operator shall be submitted for approval within six weeks of drawing approval.

Valve testing is to be in accordance with Section 12 of AWWA Standard C504 except that the Engineer may, at the City's option, either witness the performance, hydrostatic, and leakage tests at the factory or accept certified test reports for each test requirement. It is also required that the valves meet leakage tests on both sides of the disc for flow in either direction.

AWWA Standard C504 74 Sections 13 and 16 are applicable with regard to the Workmanship, Inspection, and Rejection requirements on all valves. An affidavit of compliance that all valves provided comply with provisions of the specification shall be furnished.

- f) Guarantee - The valves and accessories furnished under these Special Provisions must be guaranteed to operate satisfactorily under the service conditions specified. The bidder shall furnish all labor and materials necessary to replace or repair without charge or expense to the City, any parts which develop defects within one year after the equipment is placed in service.

B5.02 Air Relief, Air Inlet, Blow-Off Valves and Valve Boxes

Air vacuum valves shall have cast iron bodies, 2" i.p. inlet, and be equal to or equivalent to APCO, Valve and Primer Corporation, Model 145C or CRISPEN Type R or S 2" air and vacuum valve. Installation, including valve box, shall be in accordance with City Standard SD-7.

Blow-off valves shall be six inch (6") size, double disc parallel seat, open to the right (clockwise) have a two inch (2") square operating nut and conform to AWWA Standard C500.

Blow-off valves shall be furnished with flange by hub for caulking or rubber ring joints, which shall conform in dimension and style to the requirements for water pipe fittings. Installation of blow-off valves and valve boxes shall be in accordance with the City Standard SD-9.

B5.03 Boring, Casings, Casing Appurtenance

The following table shall be used for selecting casing types and minimum shell thicknesses:

<u>Nominal Pipe Diameter, Inches</u>	<u>Casing Shell Thickness</u>	
	<u>CMP, Gage/Steel, Inches</u>	
8"	14	0.125
10	14	0.187
12 to 16	12	0.250
18 to 24	10	0.3125
30 to 48	8	0.375

The inside diameter of casings shall be as required on the Plans, or larger if the bell diameter of the pipe requires it.

Casing cradles shall be insulated and installed at 10 foot intervals with a segment of four skids placed on the pipe bottom to insure equal bearing pressure on the casing without pipe deformation. Casing cradles shall be similar or equal to "PLICO" type 512M or "Pipeline Seal & Insulator Co." Model A12, bolted spacer assembly.

Casing seals shall be equivalent to "PLICO" type 660 or "Pipeline Seal and Insulator Co." Model S, C or W.

B6 - TRENCHING OPERATIONS

B6.01 Site Clearing in Unpaved Areas

Vegetation and abandoned aboveground structures shall be cleared for the width of the pipe trench plus two feet (2') on each side and in the remaining work areas. When approved by the Engineer, removed vegetation may be neatly spread over adjacent ground. Or at the Contractor's option, vegetation and abandoned structures shall be removed to a disposal site.

B6.02 Pavement Cutting and Removal

The paved area to be removed shall be accurately outlined by painted lines, continuous or at intervals not exceeding 6 inches, that are clearly visible to the cutting machine operator.

The asphaltic cutting machine tool shall not be less than 1 inch nor more than 5 inches in width. The cutting tool shall penetrate the asphalt to its full thickness, the cut shall be clean, even, perpendicular and continuous. The abrasive saw cut in concrete shall be clean, continuous and to a depth of at least 1½ inches and not exceed the trench width by more than 6 inches on either side.

The primary cutting line in asphalt shall be made 4 inches outside the trench edge with one or two secondary inside relief cuts located 18 inches from the outside cuts. The secondary cuts shall be at the Engineers discretion with respect to the prevailing conditions, location, native material, etc. The objective to be obtained after trenching is a clean continuous asphalt cut with a native soil bearing area from the trench edge to the pavement cut, so upon pavement replacement a good crimping can be made by the roller, thus minimizing hand tamping, and providing a compacted repair that is comparable to or better than the original pavement. Conditions that produce a jagged asphaltic cut line, loose asphalt or under asphaltic material sloughing shall be reason for recutting to obtain the above objective.

All pavement debris and other material not destined for backfill shall be removed and disposed offsite.

Whenever a portion of an existing concrete sidewalk or driveway square or slab is broken, the entire square or slab shall be replaced or a new square made by cutting and replacing the damaged area.

B6.03 Trench Excavation

Large water transmission main trenches shall conform to City Standard Drawings SD-8, SD-8A and/or SD-8B and to the planned lines and grades. In compliance, excavated material shall not be placed nearer than one foot (1') from the trench edge.

Adequate size bell holes shall be excavated, as needed, at joints to permit assembly ease and final reparation.

B6.04 Timbering, Sheet Piling

The Contractor shall furnish, place and maintain a trench or bore hole shoring system in accordance with the stipulations in the State of California Construction Safety orders for the work duration.

B6.05 Drainage

The Contractor shall adequately drain all trenches and provide drainage in the work area during the work duration. Subsequent to work completion, original or better drainage shall be provided in the work area.

B6.06 Trench Bridges

Foot and vehicular bridges shall be contractor provided and used on trenches encroaching crosswalks and roadways.

Footbridge minimum width shall be 5 feet with handrails and constructed to safety standards using structural lumber.

Vehicle bridges shall be 12 feet width minimum and structurally able to withstand the heaviest vehicle and traffic loads. They shall be installed over the trenches at all intersections, whenever excavation is in excess of one-half the street width. Bridges shall also be contractor provided for the safe use of all garage runways and other accesses used to move vehicles from public streets onto public, school or private property.

All bridges shall remain in place for public safety and convenience during the work duration. They may be relocated to accommodate the work or temporarily removed for a reasonable period of time as approved by the Engineer at the Contractor's risk.

B6.07 Open Trench Limit

The distance between the trench forward end and the temporary repaved surface shall not exceed 1,000 feet in traveled way parallel to traffic flow. In traveled way crossing traffic flow, the trench shall be bridged or backfilled, compacted and temporarily repaved. Trench excavation, not in traveled way, shall not precede pipe installation by more than 1,000 feet nor open trench to exceed 1,500 feet. Unless ordered by the Engineer, open trenching shall never exceed five working days run.

Temporary asphaltic repaving shall consist of two inches (2") minimum cold-placed bituminous surfacing over compacted backfill which may be wheel-rolled with heavy equipment. All spoil shall be

removed from the street surface and the surface cleanly swept to the forward end of the temporarily repaved surface.

B6.08 Pipe Stockpiling Limits

Pipe shall not be stockpiled in public right-of-way along the route in excess of an amount representing a ten day supply at current rates of pipe laying, and shall never exceed a maximum length of 2,000 feet. Stockpiling shall not be allowed on the opposite side of the street from construction without the Engineer's approval.

B6.09 Traffic Control

- a) General - Prospective bidders shall consult the City Traffic Engineer's Office prior to bid submission. The successful bidder shall establish suitable scheduling and traffic control measures with the Traffic Engineer's Office prior to starting work.

All Contractor's work shall be regulated by "Regulations Governing Utility Operations as Related to Traffic Movements on Public Streets," City Engineer's Office, except as noted.

The Contractor shall not remove, obscure, or relocate any official traffic control devices. The City Traffic Engineer shall be contacted and requested to relocate any traffic devices, (excluding signals), that will impede the work progress at least 24 hours in advance of such need. The Contractor shall not be charged for relocation or replacement unless the device is damaged by his work.

Temporary traffic control devices and personnel pertinent to the job shall be furnished and maintained by the Contractor; reference - California Division of Industrial Safety, Construction Safety Orders, Traffic Control Section. The City shall furnish and maintain, at no charge, all remote detour warning and control devices required.

- b) Special Traffic Control Requirements - The Contractor shall place "Construction Zone" warning signs at each end of the work; Barricades and blinker lights along the open trenches or uncompacted backfill at 40 foot intervals on any traveled way work areas. Stockpiled pipe along or adjacent to traveled way shall be provided with barricades and blinker lights spaced 100 feet apart.
- c) Flagmen - Contractor furnished flagmen shall be used where traffic space is limited to one way control or at the Engineer's request. If the traffic interrupted distance is less than 150 feet, one flagman shall be used; more than 150 feet, two flagmen. Flagmen and speed control signs shall also be provided where the Contractor's equipment is operating on the traveled way excluding the curb parking strip.

B6.10 Property Protection

Contractor's work adjacent to private real property shall be prosecuted and maintained in a manner that will not cause undue interference or damage to the property, its improvements, utilities or structures. Protecting power and telephone poles adjacent to the trench are part of the contract. Property damage shall be immediately reported to the owner and immediately repaired at the Contractor's expense.

B6.11 Subsurface Structures and Utilities

- a) General - The City assumes no responsibility for the accuracy, completeness or exact location of subsurface structures shown on the plans or imparted to the Contractor by City representatives. The indicated subsurface structures are based on a field survey and, except for our utility services, the known utility depths crossing the proposed pipeline has been determined by field measuring the exposed utility. The subsurface information offered is solely for the Contractor's convenience and must be checked by him to satisfy his requirements. The Contractor shall contact appropriate utility agencies to provide adequate confirming field locations data.

In the event unknown underground structures are encountered or mislocated, the Engineer may order additional excavation as required to provide passage. When ordered work exceeds one foot (1') depth or widening from the trench grade or planned location, or where a major pipeline shift requires added work on materials, monetary adjustments will be made for these alterations in accordance with the procedures outlined in the Standard Specifications for extra work or material.

- b) City Utilities - Unless otherwise shown on the drawings, the City will relocate at its expense all water mains, sewer mains, traffic control or street light conduit or wiring which extend into the Contractor's work area. The Contractor's responsibility shall encompass verification of the location and grade sufficiently in advance of the work to avoid delay. No additional payment will be made for relocation delays.

If the Contractor elects to remove house services to facilitate trenching or main replacement, he may do so at his own expense. Such work and material shall conform to City Standards. Service outage shall not exceed four hours and a twenty-four hour advance notice shall be extended to the user. As an alternate, the Division of Water and Sewers will for a charge of \$50 per service:

Shut off service at main
Remove service line for trench width
Replace removed portion of line
Restore services

The Contractor shall expose the service line in the trench and at the main (Corporation Stop) and backfill and repave the pavement.

Cut house sewer services or street gutter drains shall be replaced by the Contractor at his expense. Cut services, not shown on the plans, that require replacement or ordered by the Engineer to alter or maintain their grade shall be considered additional work and the Contractor may be compensated for the replaced length at the unit prices established below. The prices shall cover all labor, material trenching, placing backfill and resurfacing costs.

UNIT PRICES FOR HOUSE SEWER OR STREET DRAIN REPLACEMENT

<u>Size</u>	<u>Without Added Surfacing</u>	<u>With Added Surfacing</u>
4"	\$7.00/ft.	\$10.00/ft.
6"	8.00/ft.	11.00/ft.
8"	9.00/ft.	12.00/ft.

- c) Other Utilities (Gas, Electric, Telephone, TV Cable, Private Water) - The Contractor shall expose and avoid or remove and replace at his own responsibility and expense, all house utility services not City owned that extend in the trench above the final main location. Where these utilities conflict with the final main location, the Contractor shall arrange with the City for the relocation and shall be compensated for the actual relocation cost. Relocation delay does not warrant additional compensation.
- d) Miscellaneous Obstructions - Additional compensation will not be made for minor obstruction removal where the cost is less than \$100.00.

B7 - PIPE LAYING

B7.01 General Requirements

The trench bottom shall be cleared of rocks or clay lumps larger than 1 inch. A river sand bedding layer per standard SD-8, or SD-8B be placed to uniformly support the pipe at the required grade. Pipe shall not be supported at joints. All gradestakes, wood, or other organic material shall be removed from the trench.

Where excavation reveals soft unstable soils unsuitable for bedding, imported materials shall be used. The Engineer shall determine the extent and conditions desired and equate the monetary adjustment involved for the extra work and material based on extra work section of the Standard Specifications.

The pipe shall be carefully lowered into place and adjusted to the required line and grade.

Where pipe deflection becomes necessary to avoid obstacles in the vertical or horizontal planes or where large radius curves are permitted, the joint deflection degree shall be limited to the pipe manufacturer's recommendation and in no case shall the pull exceed three quarters inch (3/4").

The Engineer will:

- a) Decide if trench conditions are suitable for pipe laying due to inclement weather.
- b) Direct repairs to pipe outside coating as needed.
- c) Request cleaning pipe inside as required.
- d) Direct the Contractor to prevent undue pipe deflection and/or unit loading during pipe handling.

The Contractor shall consider the above items an integral part of the contract.

B7.02 Joints

- a) Rubber Gasketed Joints - Pipe joining shall be executed in accordance with the manufacturer's recommendations and in the following sequence:
 - 1) The spigot groove, inside bell sealing surface and rubber O-ring gasket shall be thoroughly cleaned.
 - 2) The above cleaned surfaces shall be thoroughly lubricated with a soft, vegetable soap compound.

- 3) The gasket shall be uniformly stretched in placing it in the spigot groove to assure a constant volume of rubber distributed uniformly around the circumference.
 - 4) The pipe shall be joined by a firm horizontal push without binding.
 - 5) A thin metal feeler gauge shall be inserted between the bell and spigot to check the position of the rubber gasket around its periphery. If the gasket is in an improper position, it shall be removed, inspected, reassembled, and rechecked.
- b) Welded Joints - Field Welding shall conform to AWWA Standard Specification C206, AWS D 7.0 "Field Welding of Steel Water Pipe Joints," by welder operators qualified in three position welding per AWWA, ASME or other similar three position-root bend test method of qualification. The Engineer shall exercise his option of requesting welding sample coupons for testing. The tests shall show a weld strength at least equal to the plate strength to be acceptable. Acceptable tests costs shall be borne by the City; unacceptable tests costs and weld repairing shall be borne by the Contractor.

Field welding shall conform to City Standard Drawing SD-11 series.

Welded joint inside and outside lining or grouting shall be applied subsequent to welding to preclude formation of welding gas pockets.

When internal pipe welding is in progress, the Contractor shall provide forced air draft venting of the pipe.

Weld area artificial cooling during welding or quenching the completed weld is not permitted.

- c) Pipe Couplings Installation - Specified regular or insulated coupling installation shall be in accordance with the manufacturers recommendations.

B7.03 Joint Finish, Cement Mortar

- a) General - Exterior joints shall be mortared after the pipe is adequately sand bedded.

Interior joints shall be mortared after all backfill sand is in place.

To minimize annular shrinkage cracks due to temperature change, exterior joints mortar shall be poured during morning hours when the pipe is cool. Water jetting to cool the pipe shall be done when the joint mortar is still in a plastic state and is protected from washing by canvas or impervious joint wrapping.

Cracks occurring in interior or exterior joint mortar shall not exceed 0.04 inches. Where cracks exceed this limit, they shall be removed to the metal to a width of at least 3/8 inch and new mortar set in.

- b) Exterior Joints - After cleaning, a sail cloth band with three eights inch (3/8") steel box strapping attached to the two long ends shall be placed around the pipe outside and centered over the joint with the band, opening for grout on the pipe top. The band shall fit snugly around the pipe.

The joint grout shall consist of one part cement to two parts sand mixed to a consistency of thick fluid cream. After the joint is moistened, the grout shall be poured into the joint recess on one side, rodded, if necessary, until it appears on the opposite side, then the remainder shall be poured.

The mortar grout shall completely fill the outside joint annular space. Upon completion, the joint cover shall be placed over the opening and the mortar allowed to set.

- c) Interior Joints - Except for 18 inch diameter pipe, the inside recess shall be cleaned and wetted, caulked with cement mortar, and troweled flush with the inside surface. The cement mortar shall consist of one part cement and one and one-half parts sand, dry mixed and wetted with sufficient water to permit caulking and troweling without crumbling or sloughing. Sufficient time shall be allowed for curing prior to use.

For 18 inch diameter pipe, mortar will be placed in the inside recess prior to joining the pipe. After each new piece of pipe is in position, a ball shall be pulled by the joint in order to smooth the mortar at the joint.

B7.04 Pipe End Plugging

Installed open pipe ends shall be sealed at the end of each work day. The seal shall be water tight and easily installed and removed. The trench at the pipe end shall be temporarily backfilled by completely covering the seal. Places where valves are installed at the pipe end shall utilize water tight seals and temporary backfilling at the days end also.

B7.05 Side Connections and Appurtenance Installation

The following appurtenances shall be installed by the Contractor at locations shown on the plans.

- a) Major Pipe Line Fittings - The joints between the major pipe line and side fittings shall be welded in compliance with the plans, and the appropriate City Standard Drawings.

The trench bottom shall be graded uniformly to provide a level base for the fittings and minimize torsional strain when the backfill is placed.

- b) Blow-Offs - Blowoffs shall be Contractor installed per City Standard Drawings SD-9 and SD-22 in locations as specified in the plans.
- c) Main Pipe Line Valves - Side outlet valves shall be Contractor installed as designated in the plans and in accordance with Standard Drawings SD-22 "Flange Insulators."
- d) Side Outlets - Blind flange side outlets and contiguous valves and ties shall be covered with a one eighth (1/8") E.C. 244 coating. The coating is basically a protection for the bolts and nuts and shall not be considered as a replacement for flange insulation
- e) Air Release Valves - Air release valves shall be installed by the Contractor where shown in accordance with typical details shown in City Standard Drawing SD-7.

Air release lines shall be installed with a positive grade to the outlet.

B7.06 Transmission Mains Thrust Blocks

Thrust blocks shall be installed at areas indicated in the plans, in accordance with the details in Standard Drawings SD-12A, and where thrust from water pressure needs to be blocked. The concrete shall bear on undisturbed, solid earth opposite to the pipe and make positive contact with the pipe surface. The concrete shall have a compressive strength of 1500 psi at 28 days, cement to meet ASTM C150, Type II.

Forms shall be used to give square ends across the trench section.

B7.07 Clean-Up Behind Pipe Laying Operation

The Contractor shall maintain clean-up operation in pace with pipe laying. Concurrently with or immediately after placing a temporary bituminous surface within paved areas, or the placing of backfill in unpaved locations, all areas affected by Contractor's operations shall be restored to their original conditions (except for final repaved surfacing) and left in a neat and orderly condition. Paved areas shall be swept with a power broom of a size and type approved by the Engineer, and flushed with water applied by hose under suitable pressure. No excavations at valves, connections, blow-offs or other locations shall be left open without the Engineer's written permission. Replacement of removed improvements or repairs to damaged or disturbed real property or improvements, shall be accomplished concurrently with the clean-up work.

WARNING!

Failure to perform the above work in pace with the forward trenching progress shall be sufficient cause for the Engineer to order trenching stopped until such work is satisfactorily completed to within 500 feet of the forward end of the backfilled trench.

B8 - TESTING, DISINFECTION AND CONNECTION TO EXISTING SYSTEM

B8.01 Testing

- a) General - During hydrostatic testing, only one supply connection to the existing water grid network shall be used for transmission mains 18 inches diameter and larger. The remaining outlets shall terminate with valves or blind flanges, and connection to the existing grid shall be made after test completion. Each valved section shall be tested to check valve leakage.

The Contractor shall provide the appurtenances and power sources required for hydrostatic pressure testing. The Engineer shall have the prerogative of testing the Contractor's pressure gauge by a City Inspector.

Hydrostatic testing costs shall be part of the Contractor's contract. Adjacent water use shall be at no charge to the Contractor.

- b) Pressure Tests - Upon completion of each valved section, a pressure test shall be performed. A hydrostatic pressure of 125 + 10 psig shall be maintained for a duration of one hour. If the pressure drops more than 10 psi, the cause shall be determined, corrective measures taken, and the test rerun until satisfactory performance is achieved.
- c) Leakage Test - Subsequent to the pressure test, a leakage test shall be conducted. The pipe section shall be subjected to a hydrostatic pressure of 100 psig for a duration of two hours. Maximum allowable leakage shall be ten gallons per day per inch of inside diameter per mile of length. Leakage exceeding this amount shall be cause for rejection.

The Contractor shall determine the cause, take corrective measures and conduct subsequent leakage tests until the leakage meets the minimum requirements. Leakage shall be determined by measuring water volume and pressure in a proven manner acceptable to the Engineer.

B8.02 Disinfection

The City will chlorinate the water admitted for testing with no charge to the Contractor. Redisinfection, if required, due to test failure or other act of the Contractor shall be performed by the City at the Contractor's expense. Disinfection shall conform to the requirements outlined in the Standard Specifications and AWWA Standard Specification C-601 "Disinfecting Water Mains."

B8.03 Connection Existing System

The Contractor shall connect the new main to the existing system in

accordance with the plans after testing and disinfection. The Contractor shall give the City Engineer adequate notice of these operations so that water customers may be notified of service shutdown. Where existing lines cross and interfere with the main grade as shown on the plans, the Contractor shall cut and reroute the line to provide continuous service until the permanent service is ready and the final cut-in is to be made.

City crews shall operate all system valves throughout the project work. The Contractor shall request this service after complete preparation, satisfactory to the City's Superintendent of Distribution, is made to minimize the shutdown time.

When specified in the plans, the Contractor shall remove the existing plugs or bulkheads, clean the ends, prepare the connections and make the new connection to the main.

Water released from cutting or opening existing mains shall be removed and the excavation kept dry until all necessary work is performed within the excavation.

B9 - BACKFILL AND PAVEMENT REPAIR

B9.01 General

Care shall be exercised in backfilling to avoid pipe damage, or displacement.

Pipe floating due to trench residual water shall be avoided.

Water for jetting, and street washing at adjacent City water facilities may be used with no charge to the Contractor.

B9.02 Sand Backfill

Sand backfill shall be placed in two lifts as shown in Standard Drawing SD-8 series.

Sand for the first lift shall be placed to approximately the level of the pipe spring line, thoroughly jetted to insure a compacted condition, free of voids throughout the layer and especially under the pipe. The second lift shall have a final depth 8 inches above the pipe top after compacting with a vibrating compactor or by flooding. The amount of water used and compacity of the tank trucks shall be at the Engineer's discretion.

B9.03 Sand Backfill (Ductile Iron Only)

Sand backfill shall be placed and compacted to the pipe spring line. Native backfill may be used for the remainder of the backfill except where specifically stated in the plans or where conditions warrant otherwise.

B9.04 Earth Backfill

Earth backfill shall be placed in two courses or layers. The first layer shall be to a depth slightly greater than half the remaining depth to grade.

Jetting shall be applied to a moisture content for optimum gravity compaction as determined by the Engineer. No jetting is required for the second layer; compaction shall be by wheel rolling if not in traveled way, and finished with a slight crown. In traveled ways, the compaction shall be increased by heavy equipment wheel rolling and/or mechanical tamping equipment before placing the bituminous surface layer. Earth and select backfill in restricted areas not suitable for wheel rolling, shall be compacted with mechanical compactors in 8 inch layers for the entire depth. Relative compaction of not less than 90 per cent shall be obtained in all material in traveled ways.

B9.05 Select Backfill

Select backfill shall be used as designated in the plans and is usually

specified for the following conditions:

- a) Paved areas where good compaction is needed or if the trench section is unusual.
- b) Bore pits or where over cutting is required, i.e., at transmission main valve installations.
- c) Paved areas where sewers or drains cross above the transmission mains, Standard Drawing SD-26.

Select backfill shall extend to the level of road subbase and to undisturbed earth on the sides.

When the trench is along the roadway shoulder, the top 8 inches of backfill shall be Class IIAB.

B9.06 Utility Crossing Padding

Wherever the transmission main crosses over intersecting sewers or drains, or other utilities, and clearance between the two lines is 6 inch or less, a styrofoam pad of full gap thickness approximately 18 inch square will be placed between the lines, and secured so as to remain in place during subsequent backfill operations. Larger pads will be provided where marked on the drawings.

B9.07 Pavement Repair

Following completion of the backfill, pavement and sidewalk shall be replaced wherever they have been cut or damaged by operations of the Contractor. Unless otherwise provided below or on the drawings, the base and other paving materials incorporated in the completed pavement and sidewalk shall be identical with that of the original, as near as practicable. Except as noted below, the material used for the repairs and method of placement shall conform to the requirements of the Standard Specifications. No pavement over the trench shall be left unrepaired for a period of more than 15 calendar days after the backfill has been completed, unless otherwise approved by the Engineer.

Where shown on the plans, the Contractor shall replace pavement with aggregate base course, thickness as noted, and an asphaltic concrete surface course, thickness as noted.

Base rock for pavements shall meet the requirements for Class I Aggregate Base as contained in Section 26, Standard Specifications, California Division of Highways. The base shall be laid in accordance with Section 14, "Standard Specifications," except that it shall be compacted to a relative compaction of not less than 95% as measured by modified AASHTO test. The method and equipment used for compacting the base must meet approval by the Engineer.

Asphaltic concrete pavement shall conform to Section 19, Standard Specifications, except as modified by these Special Provisions.

Payment for asphalt concrete pavement shall be included in the lump sum contract amount. Asphaltic concrete pavement three inches or more in total thickness shall be placed in two courses with the top course being from 1 inch to one and one-half inches in thickness. Maximum size aggregate in the surface course shall be 1/2 inch. The first course of pavement shall be compacted by a tandem roller weighing not less than 5 tons where the width of asphalt pavement to be placed exceeds four feet. The surface course of all asphalt pavement shall be compacted by a tandem roller weighing not less than eight tons.

Where less than 1 foot of paving is left between edge of trench and lip of concrete gutter or pavement edge, remove paving to the gutter and repave. All asphaltic pavement made loose or cracked by the Contractor's operations within and adjacent to trenches will be removed and repaved.

Prior to replacing the pavement, the edges of the existing pavement shall be cut to a vertical plane and in straight lines. The Contractor will have pneumatic hand tamping equipment available at the job, and will hand tamp the subgrade in any small irregular areas not reached by power rollers. The edges shall be thoroughly cleaned of all mud, dirt, and dust before placing the surface material. Where the material is Portland Cement concrete, the sides of the existing pavement and the surface of the base course shall be thoroughly wetted just prior to placing the concrete. Where the material is bituminous material, the edges and a 6 inch width of the existing pavement shall be completely coated with tack coat by spraying. Brushes or daubers shall not be used.

Thorough cleaning and sweeping of the adjacent street shall be accomplished in pace with the placing of the temporary surfacing.

Until the permanent pavement is placed, the material at the surface of the trench shall be maintained at all times at a grade level with the adjacent street. Continuous inspection and maintenance of the trench area will be required. Lights and barriers shall be maintained on all work that is not safe for travel until such time as it is made safe.

Only journeymen concrete finishers shall be employed for the repair and/or replacement of concrete curbs and walks or other structures. Materials shall conform to the Standard Specifications, and the completed work shall present a finished, workmanlike appearance.

The patching of small areas of asphaltic pavements shall be neat and workmanlike, with edges feathered to match existing paving. The finished surface of any repaved work, either along trenches or in patched areas, will not be over 1/4 inch from a straight edge placed across the original paved surface.

The Contractor shall replace asphaltic pavement with aggregate base course and surface course to the thicknesses as noted. Generally,

unless otherwise called for, repairs shall be 8 inches aggregate base and 4 inches asphaltic concrete.

The following sequence shall be employed during pavement repairs:

- a) The aggregate base shall be layed and compacted in accordance with the applicable section of the Standard Specifications. Water jet compaction shall not be used.
- b) The work area shall be cleaned of loose particles, sharp edges removed and compaction and base evenness checked and corrected.
- c) An asphaltic liquid tack coat shall be applied to the asphaltic concrete edges and a 6 inch width of existing pavement by spraying. Brushes or daubers shall not be used.
- d) The aggregate base course shall be applied by windrowing the calculated amount for the specified thickness to a crown in the middle of the trench or work area and spread evenly to the edges. Compacting shall be first applied at the edges working to the middle and the mid-portion compacted last. The procedure is mandatory to obtain a tight bond with the existing pavement and uniform compaction throughout the work area.
- e) The aggregate surface course shall be applied in the same manner as the base course above.
- f) Inspection of the finished surface shall show a slight middle crown indicating adequate compaction throughout and a smooth blended edge (not over 1/4 inch difference), indicating a good seal. Any undue crown or edge variance plus or minus indicates improper amount of course. Water seepage or percolation shall be cause for rejection.
- g) The entire area used for work shall be cleaned by washing or sweeping and all loose debris or foreign material removed. Traffic shall resume as soon as possible with unrestricted flow.

B9.08 Temporary Surfacing and Patching (Special Areas)

Temporary surfacing such as detours shall incorporate the above principles with minimums applied, surface 2 inches thickness, compaction to support the heaviest expected vehicle, etc.. Temporary surfacing compacted by existing traffic shall allow sufficient time to mature and will be at the discretion of the Engineer as to the replacement.

Temporary bituminous surfacing 2 inches thickness shall be maintained within 1,000 feet of forward end of the open trench in traveled ways except at crossings. Thorough cleaning and sweeping of the adjacent street shall be maintained in pace with the temporary surfacing.

Until permanent pavement is placed, the material at the surface of

the trench shall be maintained at all times, at a grade level with the adjacent street. Continuous inspection and maintenance shall be maintained. Traffic lights and barriers shall be used on all unsafe work areas, until safe for travel.

Patching shall follow the above materials, methods, and procedures. All patches shall be square to insure uniform compaction and edge sealing. Contractor equipment scarring and damage to pavement shall be repaired as part of the contract.

Special areas, such as unpaved planting strips, no base material will be required. The top 8 inches of backfill in trenches or excavations shall be replaced with top soil similar to that removed.

B10 - BORING OR TUNNELING PIPE CASINGS

B10.01 General

The Contractor shall employ only experienced personnel for tunneling, boring or jacking operations. All work will meet the applicable requirements of the "Tunnel Safety Orders" of the Division of Industrial Safety, State of California. Casings shall be placed in locations so designated on the drawings. Deviation from design line and grade shall not exceed 0.2 foot for each 20 feet of casing placed for the final located position.

Excavation or tunneling for the subsequent accommodation of the casing shall have a diameter of not more than 0.1 foot greater than the outside diameter of the respective casing. Excavation shall not be accomplished by sluicing or jetting with water.

The annular space between the casing and the unexcavated earth shall be backfilled with grout in a manner that will completely fill all voids and irregularities.

APPENDIX 1

PERMITS

(App. 1A, 1B, 1C, 1D)

RECEIVED
APR 8 - 1980

THE WESTERN PACIFIC RAILROAD COMPANY
SACRAMENTO NORTHERN RAILWAY
TIDEWATER SOUTHERN RAILWAY CO.

CITY OF SACRAMENTO
DIVISION OF WATER & SEWERS

WESTERN PACIFIC BUILDING, 526 MISSION STREET
SAN FRANCISCO, CALIFORNIA 94105
TELEPHONE: (415) 982-2100

CITY OF SACRAMENTO
Div. of Water & Sewers
927 10th St. - Suite #201
Sacramento, Calif. 95814

April 7, 1980

Attn: Mr. Harry G. Behrens, Mgr.

In reply please refer to our

Gentlemen:

File: L-11,180 UNDERGROUND LICENSE

This refers to your letter dated January 18, 1980 concerning proposed installation of a 30" water line in a 42" casing, crossing under tracks of The Western Pacific Railroad Company at Milepost 140.3 northerly of CPUC Crossing No. 4-140.3A in Sacramento, California.

We have no objections to your proposal, provided the casing or structure is installed by jack and dry-bore methods under our tracks at a depth of not less than 5 feet from top of structure to top of rail for a distance of at least 20 feet measured at right angles from the centerline of our tracks; that no open excavation be made closer than 20 feet from the centerline of our tracks; that you and/or your contractor should arrange to insure that the jacking pit and recovery pit is well compacted after completion of the project - such compaction shall be by conventional methods, and if settlement occurs, it will be your responsibility to correct such settlement at a future date. Also, the cost of any expense for our flagmen and/or inspectors necessitated by this installation will be paid by your organization.

~~(Applies)~~ (Does not Apply) There are underground cables in this location and the cost of protecting and, if necessary, replacement due to damage by your construction will be at your sole expense.


Attached are triplicate copies of our license agreement covering the above. Please have all copies signed by the proper officer of your organization, returning the documents to me for completion of execution, after which you will be furnished copies for your files.

After the document has been signed by you and received in this office, we then request you notify us at least 5 working days in advance of commencement of your work so we in turn may advise our field forces, and if any questions arise, please call this office - Phone 982-2100, Extension 294.

Very truly yours,

C. G. Yund, Chief Engineer

By


L. E. Lelevich

Engineer-Planning & Design

encls. (3)

LICENSE

Engineering Dept.
License File: L-11,180

THIS LICENSE, made and entered into this 7th day of APRIL, 1980,

by and between * * THE WESTERN PACIFIC RAILROAD COMPANY * *

Delaware
a ~~California~~ corporation, hereinafter termed the "Licensor", party of the first part, and

* * CITY OF SACRAMENTO, CALIFORNIA * *

hereinafter termed the "Licensee", party of the second part,

WITNESSETH:

That the Licensor hereby licenses the Licensee, subject to the covenants and conditions hereinafter contained, to construct, install, maintain and operate

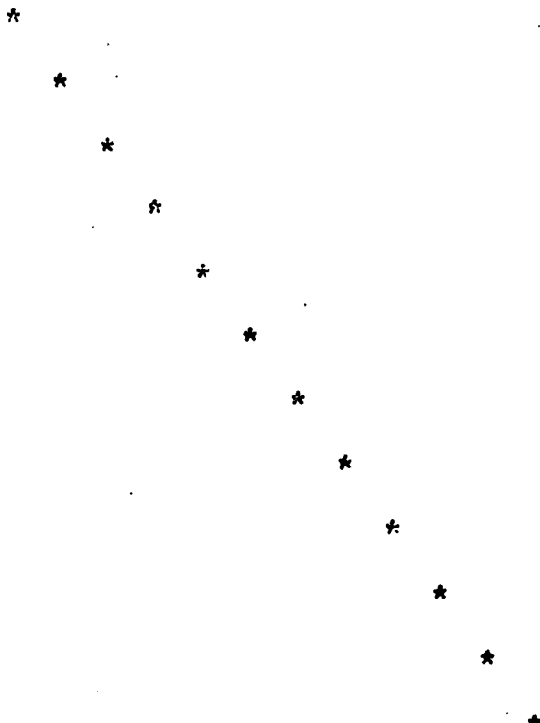
a 30-inch Water Line in a 42-inch Casing,

COPY

(hereinafter called "structure") UNDER and ACROSS the property, right of way and track or tracks of the Licensor, at or near

Milepost 140.3, northerly of CPUC Crossing No. 4-140.3A,
in the City and County of Sacramento, State of California. * * * * *

* * * * *



NORTH SACRAMENTO WATER TRANSMISSION MAIN
NORTH B. ST. TO EL MONTE AVE.

* * * * *

DWG. NO. 60-3, Sheet 6 of 10
the location of said structure being shown in red on the print marked "Exhibit A" hereto attached and made a part hereof.

This license is conferred subject to the following covenants and conditions hereinbefore referred to and which the Licensee hereby expressly agrees to keep and perform:

1. This license is personal to the Licensee and the Licensee shall not assign the privileges hereby conferred, or any part thereof, without the written consent of the Licensor first had and obtained.

2. The said structure shall be constructed of material and in accordance with plans which shall have been first approved by the Chief Engineer of the Licensor, and the work of installation shall be carried on under the supervision and to the satisfaction of the said Chief Engineer or his representative thereunto duly authorized. Before performing any work upon the property or right of way or over or beneath the track or tracks of the Licensor for the purpose of installing the said structure, or for the inspection, maintenance or repair thereof, the Licensee shall give the Chief Engineer of the Licensor advance notice in writing in ample time to permit the Licensor to arrange for the presence of its representative when such work is being performed. The Licensee shall bear the reasonable cost of supervision and inspection of the said work, or of any part thereof, by the Licensor.

3. The said structure shall be constructed and thereafter at all times operated, maintained and repaired in a manner satisfactory to the Licensor and so as not to affect, interfere with or in any way endanger the construction, maintenance or operation by the Licensor of its line or lines of railroad, together with its or their present or future adjuncts or appurtenances, and so as not to affect, interfere with or in any way endanger the use or enjoyment by the Licensor of any of its property whatsoever, and all property of any kind, whether fixed or movable, brought or remaining upon the property of the Licensor, shall at all times be so placed and maintained by Licensee as to observe the minimum clearance on each side of, over or under, the track or tracks of the Licensor as may now or hereafter be required by order or orders of the Public Utilities Commission of the State of California, or other state, federal or municipal body having jurisdiction, and all safety devices or appliances made necessary or required by order or orders of any such body shall be installed and maintained by the Licensee at Licensee's sole cost and expense.

4. The Licensee shall indemnify the Licensor and save it harmless from and against any and all loss, damage, expense, claims and demands of whatsoever character, direct or consequential, including injuries to employees of the Licensor, or to third persons, damage to property belonging to or in the custody or possession of the Licensor or third persons, whether upon the property or right of way of the Licensor or elsewhere, caused directly or indirectly by the construction, repair, operation, maintenance or replacement of such structure, its adjuncts or appurtenances.

5. If the structure herein authorized to be constructed by the Licensee is a line or lines for the transmission of electrical power or energy, or is a telephone or telegraph line or lines, the Licensee shall take adequate precautions to prevent interference with electrically controlled railway signals, telegraph, telephone or other circuits of the Licensor, or of any telephone, telegraph or other circuits of any other company or person operating such circuits upon the property or along the right of way of the Licensor, through or by leakage of electricity or induction from or between its conductors and said signals and circuits, or otherwise.

6. The Licensee shall indemnify the Licensor and save it harmless from and against any and all loss, damage, or disadvantage which it may incur or in anywise be put to through actions, suits or legal proceedings of whatsoever character, including forfeiture of any rights or property, injunctions against the use or enjoyment of any such rights or property, the entry or enforcement of any orders or judgments, and all costs and expenses incident thereto, caused by or in any way arising from the installation, maintenance, operation, repair or replacement of the said structure, its adjuncts or appurtenances. In the event that the rights of the Licensor in and to the possession of the said property or right of way shall at any time be impaired by reason of the construction, operation or maintenance of the said structure, the Licensor shall have the right, upon giving notice to the Licensee, to require the Licensee immediately to remove from said property or right of way and peaceably and quietly yield possession thereof to the Licensor.

7. All permits and franchises (federal, state, county or municipal) which may be necessary to be obtained for the construction, maintenance and operation of the said structure shall be obtained by the Licensee, and the said Licensee hereby agrees not to construct, operate or maintain the said structure in violation of any law, statute or ordinance, or in violation of the rights of the Licensor in the use or enjoyment of its property or right of way. It is expressly understood that this agreement shall operate to give the Licensee the rights herein provided only in so far as the Licensor may do so under and by virtue of the rights that it has in the said property or right of way.

8. The Licensee shall assume all risk of damage to the said structure, its adjuncts and appurtenances, and to any other property of said Licensee, or any property under the custody or control of the Licensee, while upon the property or right of way of the Licensor or in proximity thereto, caused by or contributed to, in any way, by the construction, operation or maintenance of the line or lines of railroad of the Licensor or its or their present or future adjuncts or appurtenances, and shall release, indemnify and save harmless the Licensor from and against any and all liability for injuries suffered by the Licensee, or the agents or representatives of the Licensee, or any other person or persons while engaged in the installation, maintenance, operation, repair or replacement of the said structure, its adjuncts or appurtenances, caused by or contributed to, in any way, by the construction, operation or maintenance of the line or lines of railroad of the Licensor or its or their present or future adjuncts or appurtenances, or caused in any other respect whatsoever.

9. Whenever the Licensor shall direct that the location of the said structure be changed, or that any change be made in the installation, maintenance, use or operation of the same, the Licensee shall, upon thirty days' written notice from the Licensor, make such changes to the full satisfaction of the Licensor, at the sole expense of said Licensee.

10. Whenever the Licensor shall elect to revoke this license or any of the privileges hereby conferred, the Licensee shall, upon thirty days' written notice from the Licensor, remove the said structure, its adjuncts and appurtenances from the right of way or property of the Licensor and shall promptly reimburse the Licensor for any damage which may have been done to the right of way or other property of the Licensor by the installation, maintenance, operation or removal of the said structure, its adjuncts or appurtenances.

11. The Licensee shall acquire no easement or property right in or to the property or right of way of the Licensor by virtue of this agreement.

12. Upon the failure of the Licensee to conform to any of the covenants and conditions hereinbefore specified, the license hereby conferred shall, at the option of the Licensor, cease and terminate, and the Licensor shall have the right forthwith to remove the said structure, its adjuncts and appurtenances, from the right of way and property of the Licensor, and thereupon the Licensee shall pay to the Licensor all costs and expenses in connection with such removal.

13. The covenants and conditions herein contained shall inure to the benefit of the successors and assigns of the Licensor.

14. All physical property used in said structure capable of being so marked shall, at the time of installation thereof or immediately thereafter, be plainly and permanently marked with the name of the Licensee.

15. Licensee agrees to pay to Licensor the sum of ONE HUNDRED FIFTY DOLLARS (\$150.00) upon the execution hereof. *

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IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed the day and year first above written.

THE WESTERN PACIFIC RAILROAD COMPANY

.....
C. G. Yund, Chief Engineer

CITY OF SACRAMENTO, CALIFORNIA

By

Title

PERMIT No. 380-U-787056

DIST. 03 CO. Sac RTE. 160 P.M. 44.71/45.0

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 UTILITIES ENCROACHMENT PERMIT

To City of Sacramento
 Division of Water & Sewers
 927 - 10th St., Suite 201
 Sacramento, CA 95814
 , Permittee

Marysville, California
 Dated April 8, 19 80

1. Subject first to the applicable law, and second, to the terms and conditions Relating to Utility Encroachments issued by the State of California, Department of Transportation, which by this reference is made a part hereof, permission is hereby given to construct water transmission line along road 03-Sac-160-44.71/45.06.

Work is to be done as shown on the attached plan entitled "North Sacramento Water Transmission Main" except as follows and on the attachments.

Should the work authorized herein be done by an individual, firm, or company for the City of Sacramento, he shall make separate application for an encroachment permit and furnish a surety bond in the amount of \$5,000 on a form to be provided by the Department of Transportation to insure the work being done in conformance with the encroachment permit.

The individual, firm, or company shall also pay the actual cost of State inspection, which will be approximately \$30 per hour, including salary, traveling expense (depending on location of work), and other incidental expense of such inspection as specified in General Provision 14 of the permit. The actual cost will depend upon the length of the job and the problems encountered.

(Cont. on Page 2)

in accordance with your attached Plan No.....

2. This Permit has been issued by the Department pursuant to:

Complete } (X) Your Application of March 4, 19 80
 Proper } () Utility Notice No. of , 19
 Line } () Agreement No. of , 19

3. This Permit applies only to the work specifically authorized above.

4. Inspection required by Division—Full () Partial ()

5. This Permit shall be void unless the work hereinabove provided for shall have been completed before June 30, 19 80, unless time extension granted by separate Rider.

FGH:dz

cc W. G. Rigby
 P. O. Box 19274
 Sacramento, CA 95819
 Phone 445-2821

DEPARTMENT OF TRANSPORTATION

LEO J. TROMBATORE

District Director of Transportation
 By Richard [Signature] / [Signature]
 District Permits Engineer

All work is to be done in accordance with the attached "Underground Utilities" and "Backfill Requirements" and as follows:

Permittee's attention is directed to Section 116 of the "Underground Requirements".

City of Sacramento has cleared this project with an approved Environmental Impact Report.

All work shall be conducted and completed to the satisfaction of Mr. W. G. Rigby, Department of Transportation's representative, whose office shall be notified at least one day before any work is started by telephoning Sacramento, 445-2821.

Upon completion of work, please fill in and mail the attached postcard.

UNDERGROUND UTILITIES

- 100 The encroachment shall be located outside the highway pavement except at crossings and as otherwise specified by this permit. Any exception to this must have special justification and be authorized by written permission from the California Department of Transportation's (Caltrans) representative.
- 101 Facilities crossing under the traveled way shall be placed in steel casings or sleeves providing a minimum of 4 inches clearance.
- 102 Casings shall be placed beneath the pavement by boring and jacking methods. In unusual situations, open trenching methods may be used if written approval is secured from the Caltrans' representative. Open trenching method does not delete the requirement for the casing or sleeve unless specifically stated in the written approval.
- 103 Casings shall extend at least 8 feet beyond the edge of the paving or 5 feet from a line at a 1:1 slope from the hinge point, whichever is greater. No open excavation will be permitted within these limits. In access control areas, the casing shall extend from access control to access control unless otherwise specified on face of permit.
- 104 The diameter of the excavated hole shall not be more than 0.1 foot greater than the outside diameter of the pipe which shall be by dry bore only. Sluicing and jetting with water will not be permitted. When material tends to cave in from outside these limits, a shield shall be used ahead of the first section of pipe or the face of excavation shall not extend beyond the end of the pipe greater than 1-1/2 feet unless permitted by the Caltrans' representative. Areas resulting from caving or excavating outside the above limits shall be backfilled with sand or grout which will fill the voids.
- 105 The facility shall be placed at a depth to provide a minimum cover of 30 inches unless the facility falls into the category of low and high risk materials. Low and high risk materials shall be provided a minimum cover of 42 inches.
- 106 Backfill shall be performed in accordance with the attached "Backfill Requirements".
- 107 In populated area, care shall be used to avoid excessive noise, dust, and other unnecessary disturbances. Trenching across private driveways shall be scheduled so as to minimize inconvenience to the owner. The trench shall be backfilled immediately.
- 108 Existing improvements shall be protected or relocated as required by work authorized by this permit. If existing improvements are damaged or their operation impaired by this work, they shall be replaced or restored to the satisfaction of the Caltrans' representative. Such work shall be done immediately if requested by the Caltrans' representative.

Permittee shall notify the Corrosion Engineer, Materials and Research Department, Department of Transportation, Sacramento, (phone 916/444-4787) three days in advance of the above test and an inspector from the Materials and Research Department will be assigned to the job while the test is being conducted.

- 120 Before commencing work, proof of a valid Department of Industrial Safety (DIS) permit shall be presented if work consisting of trenches or excavations which are five feet or deeper into which a person is required to descend is to be conducted.

If there is a question regarding the proposed work, as to whether or not a DIS permit is required pursuant to the provisions of Section 6500 of the Labor Code, Permittee will be required to show proof in writing from DIS that a permit is not required or present a DIS permit.

- 121 Excavation for any trench, including boring pits, five feet or more in depth shall not begin until the Permittee has received approval, from the Permit Engineer, of the Permittee's detailed plan for worker protection and highway facilities from the hazards of caving ground during the excavation of such trench or boring pits. Such plan shall be submitted at least ten working days before the Permittee intends to begin excavation for the trench or boring pits and shall show the details of the design of shoring, bracing, sloping, or other provisions to be made for worker protection during such excavation.

No such plan shall allow the use of shoring, sloping, or a protective system less effective than that required by the Construction Safety Orders of DIS, and if such plan varies from the shoring system standards established by the Construction Safety Orders, the plan shall be prepared and signed by an engineer who is registered as a Civil or Structural Engineer in the State of California. Special attention is directed to DIS Construction Safety Orders Sections 1540(c) (4) and (J).

- 122 If a tunnel is involved in the permit work, the Permittee shall arrange and hold a pre-job safety conference with representatives of DIS, Caltrans, Permittee, (and tunnel contractor if sub-contracted), and employees.

This requirement applies to any tunnel 30 inches or greater in diameter and 100 feet or more long, regardless of whether any employee enters the tunnel or to any tunnel, without regard to diameter or length, that any employee enters.

To arrange for a pre-job safety conference, contact:

The Division of Industrial Safety
Mining and Tunneling Section
2422 Arden Way, Suite 55
Sacramento, CA 95825

Phone: 916/920-6361

ADDITIONAL PERMIT REQUIREMENTS

The permittee for himself, his personal representatives, successors in interest and assigns, as part of the consideration hereof, does hereby covenant and agree

- (1) that no person on the ground of race, color or national origin shall be excluded from participation in the use of said facilities,
- (2) that in the construction of any improvements on, over or under such land and the furnishing of services thereon, no person on the ground of race, color, or national origin shall be excluded from participation in, denied the benefits of or otherwise be subjected to discrimination.
- (3) that the permittee shall use the premises in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation-Effectuation of Title VI of the Civil Rights Acts of 1964, and as said regulations may be amended.

That in the breach of any of the above nondiscrimination covenants, the State of California, shall have the right to terminate the permit and to re-enter and reposses said land and the facilities thereon, and hold the same as if said permit had never been made or issued.

All work shall be done in accordance with the applicable sections of the Standard Specifications of the Department of Transportation currently in use as of the date of issuance of the permit. Special attention is directed to Section 7-1.01 entitled "Laws to be Observed" and Section 7-1.06 entitled "Safety Provisions".

The permittee shall comply with all safety requirements as set forth in the Federal Occupational Safety and Health Act of 1970 (Public Law 91-596).

Whenever the term "Contractor" is used in the Standard Specifications the intent and meaning shall be interpreted as "Permittee".

Permittee shall secure any necessary permits from local, Federal, or other State agencies.

Any changes in conditions or characteristics under which this permit was issued may be cause for reevaluation of the permit. Any revisions resulting from the reevaluation shall be at the Permittee's expense. This shall also include the grantor's cost, which shall be paid by the Permittee upon presentation of a bill therefor.

Backfill Requirements - Continued

D. Backfill Outside of Highway Shoulders:

The backfill material may consist of material from excavation, free from stones or lumps exceeding 3 inches, vegetable matter, or other unsatisfactory material, and shall be compacted in lifts not exceeding 8 inches to a relative compaction of 90 percent. When the material from excavation is unsuitable for use as backfill, it shall be disposed of and replaced with material meeting the above requirements of A.1.

Excess material shall be disposed of outside the State right of way or at a location designated by Department of Transportation's representative.

Note: Wherever relative compaction is specified to be determined by Test Method No. Calif. 216, the relative compaction will be determined by Test Method No. Calif. 231. The in-place density required by Test Method No. Calif. 312 will be determined by Test Method No. Calif. 231.

DEPARTMENT OF WATER RESOURCES
THE RECLAMATION BOARD
1416 - 9th Street, Room 335-18
Sacramento, CA 95814
(916) 445-9454

RECEIVED
MAR 31 1980



March 28, 1980

CITY OF SACRAMENTO
DIVISION OF WATER & SEWERS

File No. 3005.05.200
Application No. 12432-A GM

City of Sacramento
Division of Water and Sewers
927 - 10th Street, Suite 201
Sacramento, CA 95814

Enclosed is a copy of an Approval of Plans in connection with your application to the State Reclamation Board.

The commencement of any work under this Approval shall constitute an acceptance of the provisions of the Approval and an agreement to perform accordingly. Approval of this application shall be void unless the work proposed has started within one year of the approval date. If the work cannot be started within that time, a request for an extension should be submitted 60 days prior to the expiration date. If your Approval of Plans has a time limitation as a Special Condition, a request for renewal should also be submitted at least 60 days prior to the expiration date.

Under Condition Four of the Approval, you are required to advise the Department of Water Resources before beginning the work covered by your application at least three days prior to the commencement of work. We have enclosed, for your convenience, an addressed and stamped post card.

Sincerely,

Ted Allen
Assistant Secretary
The Reclamation Board

Enclosures

cc: U. S. Army Corps of Engineers
Department of Water Resources
Central District

DWR 3804-C (Est 10/78)



App. 1C-1

STATE OF CALIFORNIA
THE RECLAMATION BOARD
APPROVAL OF PLANS

Application No. 12432-A GM

The Application of: City of Sacramento
Division of Water and Sewers
927 - 10th Street, Suite 201
Sacramento, CA 95814

for approval of plans

To construct Phase II of installation of North Sacramento Water Transmission Main, from North "B" Street to El Monte Avenue across the American River at Sacramento. Section 30, T9N, R5E, M.D.B.&M. (American River Flood Control District) American River, Sacramento County.

On the 28 day of March, 1980, The Reclamation Board or its General Manager pursuant to delegation from the Board, has considered this application. Now, therefore, it is ORDERED that this application and plans attached therein are hereby approved and permission to proceed with the work in accordance therewith is hereby granted subject to all terms, conditions, and restrictions attached hereto which are incorporated herein by reference and made a part hereof.

GENERAL CONDITIONS:

ONE: This approval is issued under the authority of Sections 8700-8723 of the State Water Code;

TWO: This approval is to be strictly construed and no work other than that specifically described herein, is authorized hereby.

THREE: This approval of plans does not carry with it permission to construct any works on lands owned by the Sacramento and San Joaquin Drainage District, nor on any other lands whatsoever;

FOUR: The work hereunder shall be accomplished under the direction and supervision of the State Department of Water Resources and applicant shall conform to all requirements of said Department and the State Reclamation Board, and applicant shall notify said Department of Water Resources, P. O. Box 160088, Sacramento, CA 95816, telephone (916) 445-3942, at least three days prior to commencement;

FIVE: This approval shall be void unless the work herein contemplated shall have been commenced within one year after issuance;

SIX: This approval shall remain in effect until revoked. This approval is revokable on 15 days' notice in the event that any conditions contained herein are not complied with.

SEVEN: It is understood and agreed by applicant that the commencement of any work under this approval shall constitute an acceptance of the provisions of this approval and an agreement to perform in accordance therewith;

EIGHT: This approval is granted with the understanding that this action is not to be considered as establishing any precedent with respect to any other application received by The Reclamation Board;

NINE: The applicant to whom this approval is issued shall, whenever the same is required by law, secure the written order or consent to any work hereunder from any other public agency having jurisdiction;

TEN: Upon completion of the work all waste material and debris shall be entirely removed from the site of the work and the site left in as presentable a condition as before the work started;

ELEVEN: The applicant is responsible for all liability for personal injury or property damage which may arise out of failure on the applicant's part to perform his obligations under this approval. In the event any claim of liability is made against the State of California or any department thereof, the United States of America, a local district or other maintaining agency and the officers, agents or employees thereof, applicant shall defend, indemnify and hold each of them harmless from such claim;

TWELVE: The applicant agrees by the acceptance of this approval to exercise reasonable care to operate and maintain properly any work authorized herein and agrees to conform to standards of operation and maintenance prescribed by the State of California;

(OVER)

DWR 3784 (Est. 11/76)

DEPARTMENT OF INDUSTRIAL RELATIONS

DIVISION OF Occupational Safety & Health
455 GOLDEN GATE AVENUE, SAN FRANCISCO

ADDRESS REPLY TO:

2424 Arden Way
Suite 107
Sacramento, CA 95825

April 4, 1980

City of Sacramento
Division of Water & Sewers
927 10th Street., Suite 201
Sacramento, CA 95814

Attention Mr. Steve Davis - Associate Engineer

Dear Mr. Davis

Subject: North Sacramento Water Transmission Main Project.

Transmitted herewith is the classification for the above project. Copy of the classification should be transmitted to the successful bidder for his posting at the site. A pre-job safety conference shall be conducted with representatives of the owner, the employer, his employees, and this Division prior to commencement of underground operations. Please contact Mr. George Denton, Associate Safety Engineer of the Division to arrange that conference. His address is in care of the Division of Occupational Safety & Health, 31 E. Channel Street., Room 418, Stockton, CA 95202. Telephone (209) 948-7762., or you may contact this office.

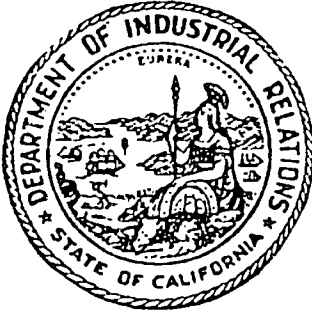
If you have any questions, please contact Mr. Denton or this office.

Very truly yours

A handwritten signature in cursive script that reads "S. A. Alexander".

S. A. Alexander
Senior Safety Engineer
Mining & TunnelingS.A/mem
Enc

cc G. Denton



State of California
Agriculture and Services Agency
Department of Industrial Relations
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

Underground Classification

#85-3-80 Railroad Tunnel - City of Sacramento Division of Water & Sewers

(NAME OF TUNNEL OR MINE AND COMPANY NAME)

OF 927 10th Street., Suite 201, Sacramento, CA 95814

(MAILING ADDRESS)

AT Highway 160 and W.P. R.R. North of the American River, Sacramento

(LOCATION)

HAS BEEN CLASSIFIED AS Non Gassy

(CLASSIFICATION)

AS REQUIRED BY THE CALIFORNIA LABOR CODE SECTION 7953.

THE DIVISION SHALL BE NOTIFIED IF SUFFICIENT QUANTITIES OF FLAMMABLE GAS OR VAPORS HAVE BEEN ENCOUNTERED UNDERGROUND TO REQUIRE RECLASSIFICATION. CLASSIFICATIONS ARE BASED ON THE CALIFORNIA LABOR CODE PART 9, TUNNEL SAFETY ORDERS AND MINE SAFETY ORDERS.

THIS CLASSIFICATION SHALL BE CONSPICUOUSLY POSTED AT THE PLACE OF EMPLOYMENT.

DATE April 4, 1980

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

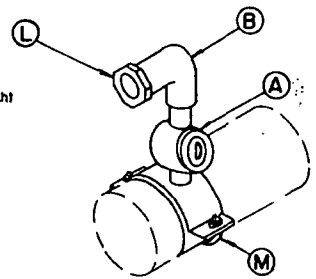
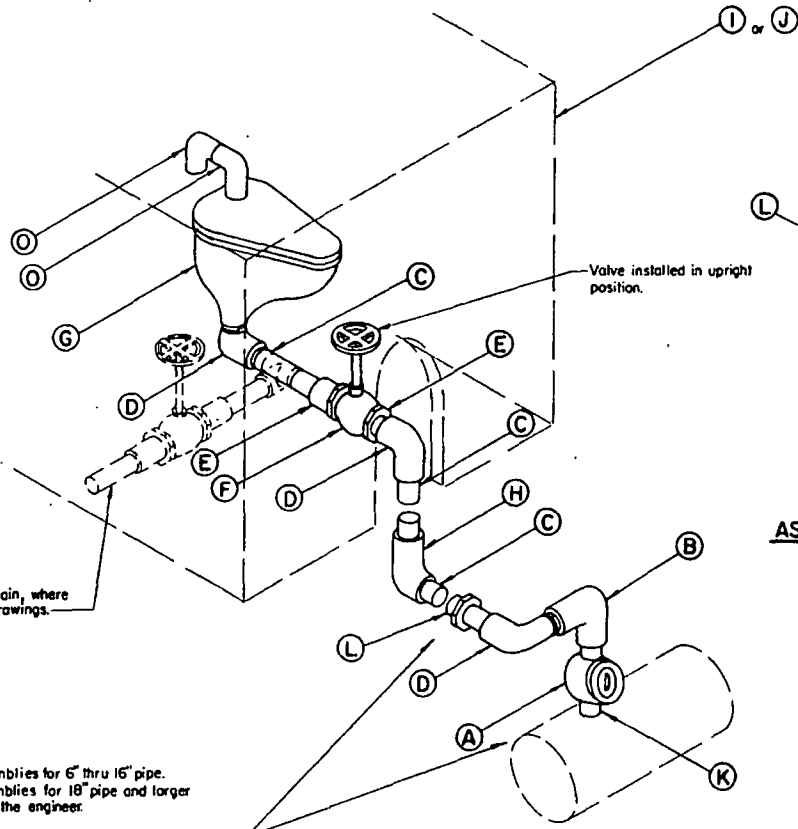
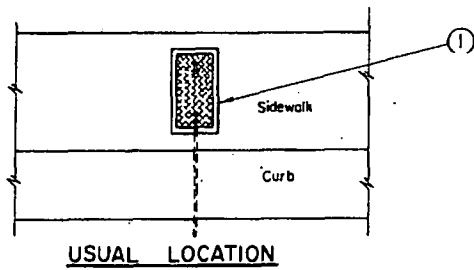
SA/mem

Senior Safety Engineer
Mining & Tunneling

APPENDIX 2

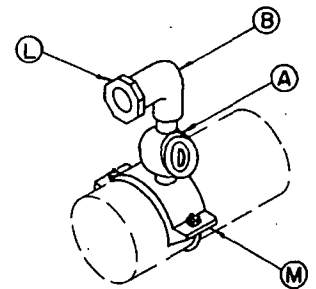
STANDARD DETAILS

(SD-7, -8, -9, -10, -11A, -11B,
-13A, -14, -16, -17, -26)



CONNECTION TO ASB. CEM. PIPE (SHOWN)

CONNECTION TO STEEL MAIN (SHOWN)

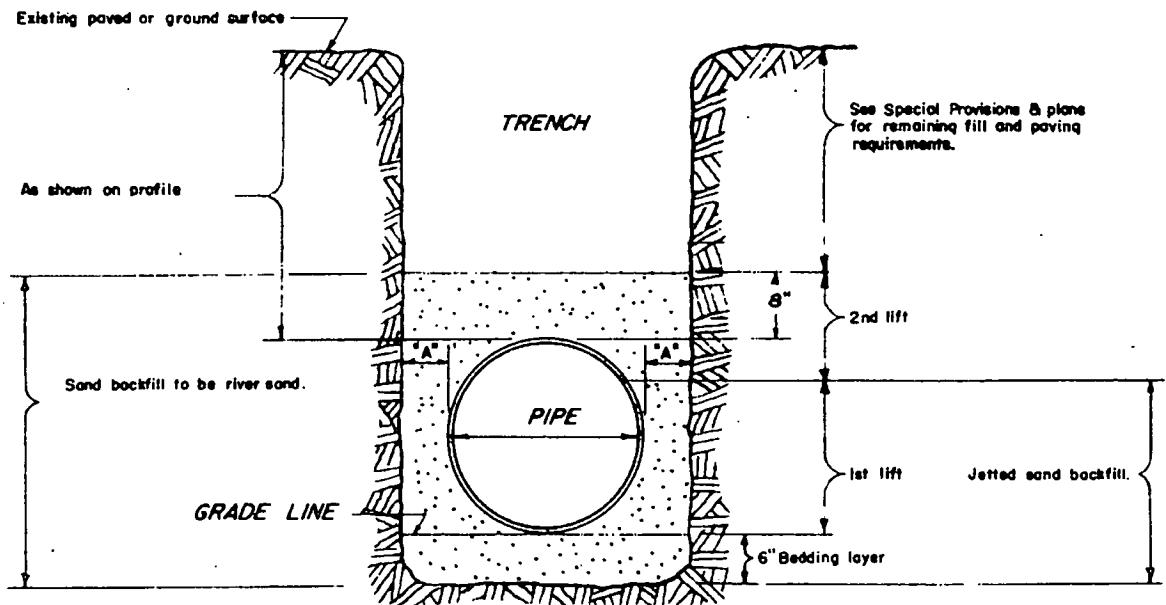


CONNECTION TO CAST IRON PIPE (SHOWN)

NOTES:

1. Use 1" air valve assemblies for 6" thru 16" pipe. Use 2" air valve assemblies for 18" pipe and larger or as designated by the engineer.
2. Maintain a grade upward from curb stop to air valve, (no traps).
3. The copper tubing shall conform to ASTM Standard Specifications for Copper Water Tube (serial designation B88) Type K.
4. Apply "Scotchwrap" No. 50 from insulating coupling to base of corporation stop.
5. Coat service clamps with E.C. 244.
6. Service strap clamps shall be used on A.C. mains and 6" and 8" C.I. mains, as shown.
7. Use Forni water meter box No. IA28 and IA36 (traffic) with Type IOB-2 cover for 1" valves and Forni No. IA56 with IOF-5 cover and Brooks No. 65 with steel cover (traffic) for 2" valves.

Item	Material	No. Req'd Ea.
A	Corp. Stop	1
B	EII-Plain 90° Sc. Brass	1
C	Pipe - Copper	Lgth. as req'd
D	EII-Streamline 90°	3
E	Coupling-Streamline Cop to I.P.	1
F	Gate Valve-Rising Stem-Brass Screw	1
G	Valve-Air and Vacuum and Air Release (Combination)	1
H	EII-Streamline 90° Cop. to Cop.	1
I	Meter Box	1
J	Meter Box (Traffic)	1
K	Coupling (Welded)	1
L	Coupling, nylon insulating	1
M	Service - Clamp	1
O	EII-90° Street. Galv.	2

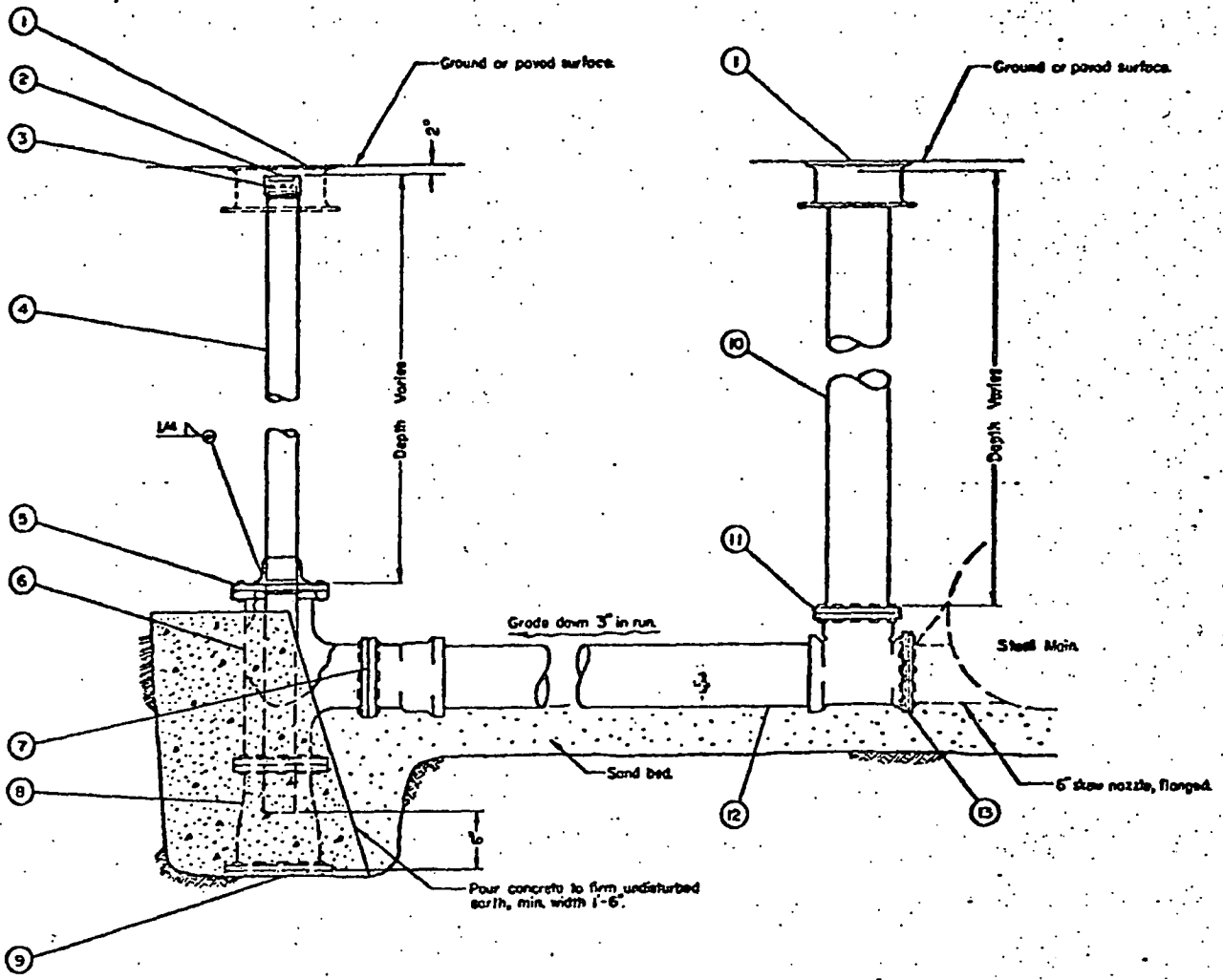


TYPICAL SECTION

NOTES:

1. Dimension "A" shall be between 8" & 10" except at bell holes.
2. Special care will be taken on coal-tar coated and wrapped pipe to prevent damage to coating by jetting pipe or from rocks or other solids within the backfill sand.
3. No solid blocking permissible beneath pipe.

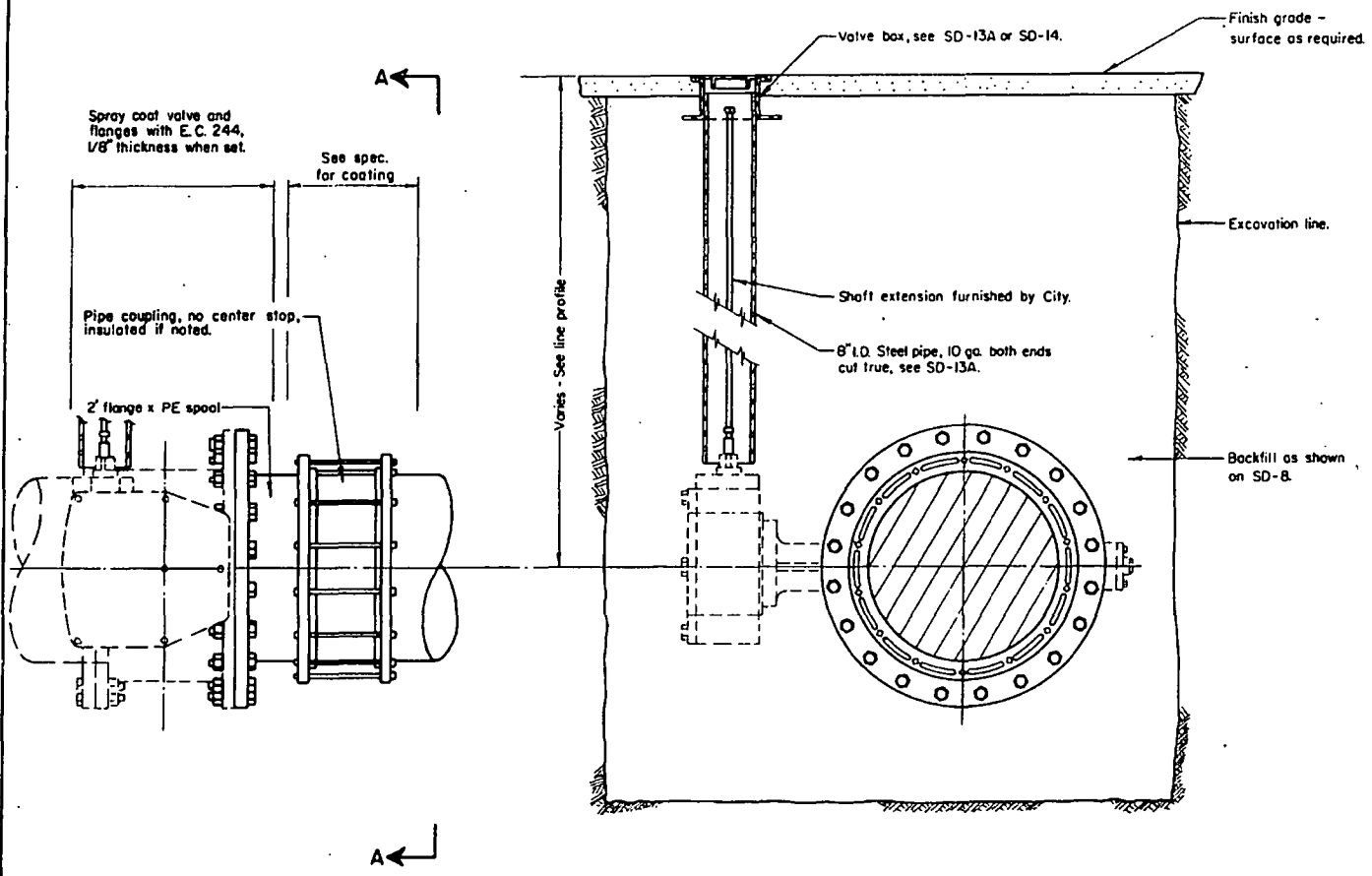
4	1/15/63	42" limit
3	11/15/61	Select backfill
2	6/28/61	Bedding layer
1	10/10/60	Sand lifts
REV. NO.	DATE	DESCR.
CITY OF SACRAMENTO		
DIVISION OF WATER & SEWERS		
BACKFILL FOR STEEL WATER MAINS, THROUGH 42		
APPROVED BY <i>[Signature]</i> SCALE 1/2" = 1'-0"		



List Of Materials

Item	Description	No. req'd
1	Valve box and cover, See SO-13A and SO-14	2
2	4" Plug with key slot.	1
3	4" Coupling.	1
4	4" Steel pipe, one piece, one end threaded.	1
5	8" x 4" Flanging slip-on welding flange.	1
6	8" x 8" x 6" Flanged C.I. Tee.	1
7	Flanged coupling, if A.C. pipe used.	1
8	6" x 10" Flanged reducer.	1
9	10" Blind flange.	1
10	6" Pipe, See SO-12A and SO-14	1
11	6" Gate valve, flange x hub (rubber ring or caulk).	1
12	6" A.C. or C.I. pipe as required.	1
13	Flange insulator, if C.I. pipe used.	1

CITY OF SACRAMENTO
 DIVISION OF WATER & SEWERS
STANDARD 6" BLOW OFF
FOR STEEL MAIN
 APPROVED BY: *Edy Wilson* SCALE: NONE
 DATE: 1971



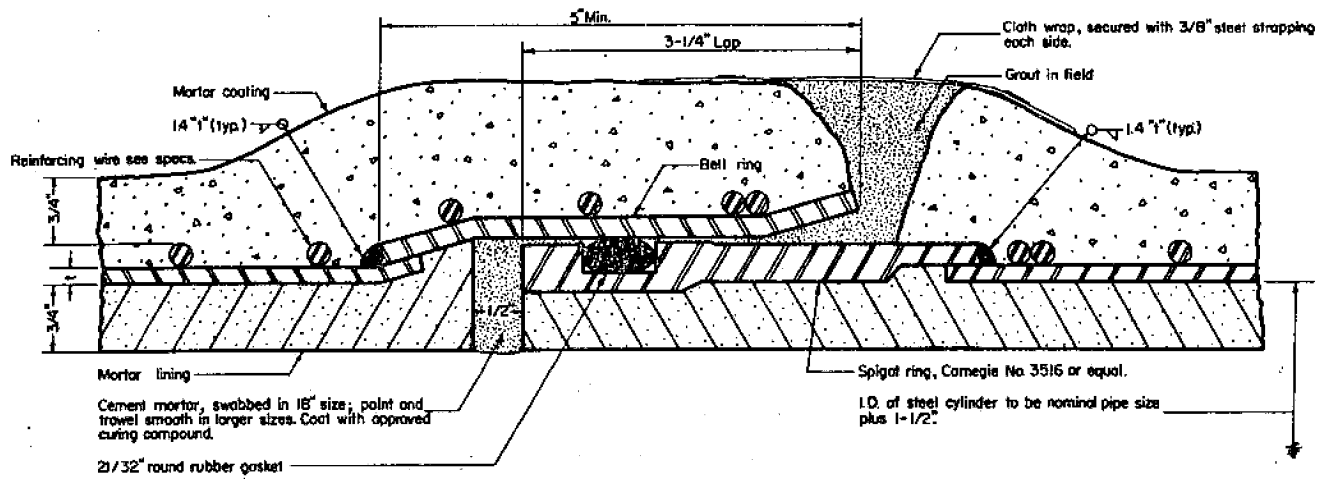
ELEVATION

SECTION A-A

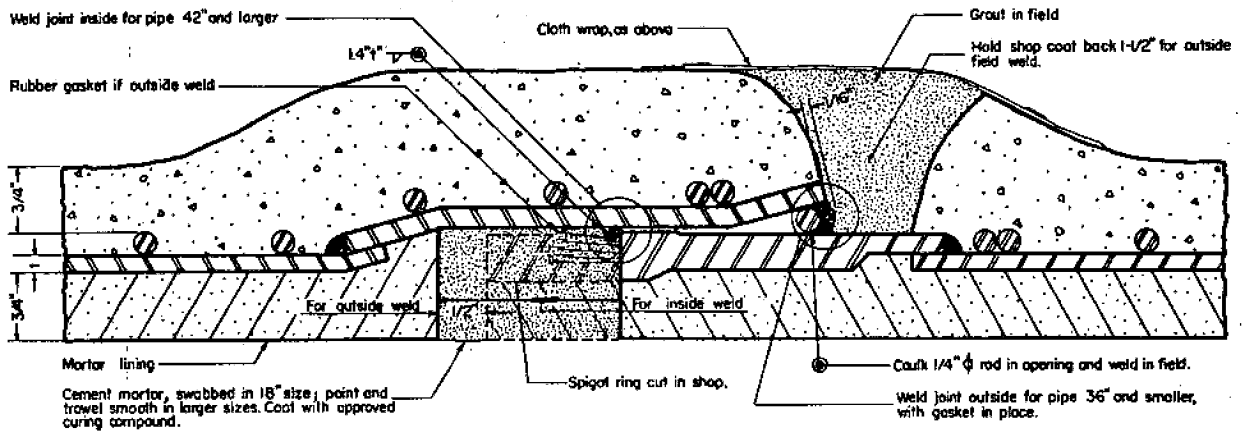
NOTES:

1. Installation contractor shall furnish bolts per ASTM A-307 Grades A or B, ASA 1318.2 and ASA 131.1 Class 2A or 2B fit, Gaskets per AWWA spec. C301-64 sec. 3.

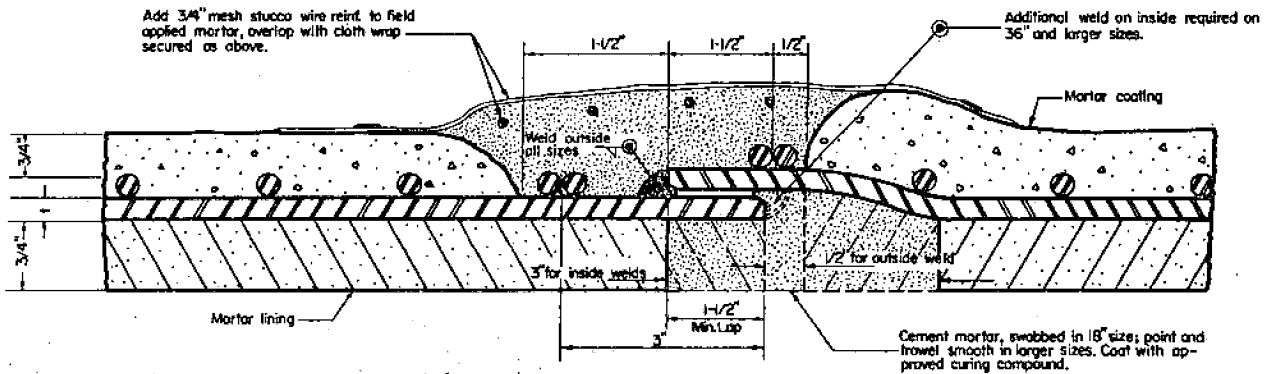
CITY OF SACRAMENTO	
DIVISION OF WATER & SEWERS	
BUTTERFLY VALVE	
STANDARD BURIED INSTALLATION DETAILS	
APPROVED BY: <i>[Signature]</i>	SCALE: NONE
DATE: 1971	SD-10



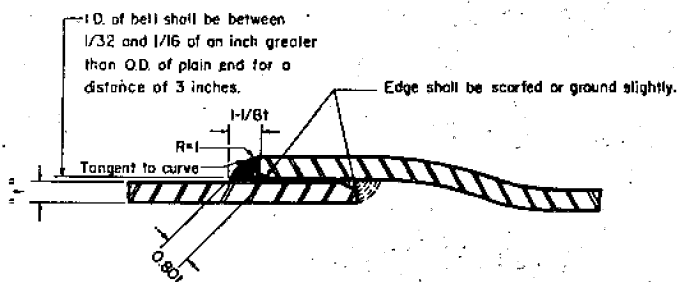
RUBBER GASKET JOINT



WELDED JOINT



ALTERNATE WELDED JOINT



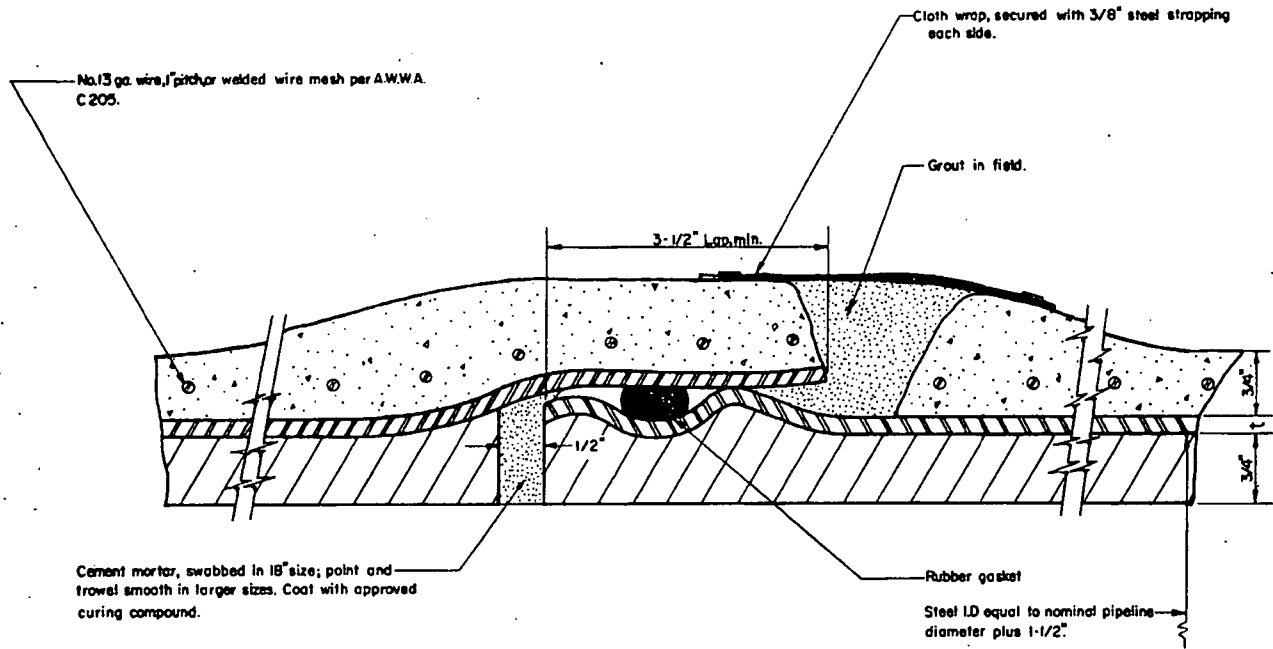
WELDED SLIP JOINT DETAIL

NOTES:

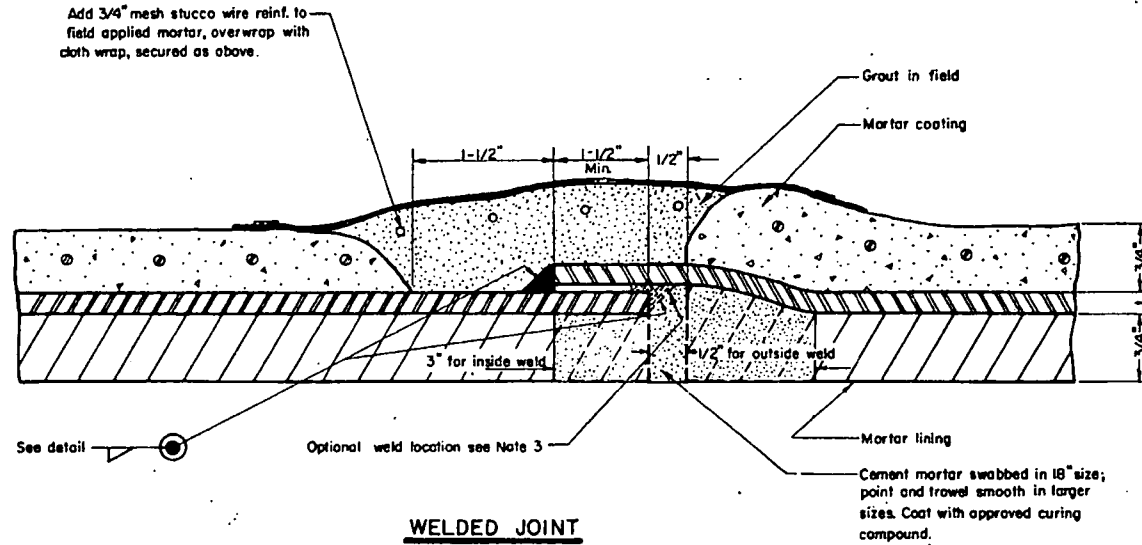
1. See specifications for wall thickness "t".
2. Use spacers to get 1/2" clearance for inside mortar joint on pipes 24" and larger.
3. See special provisions for extra stub length on joint connecting welded to rubber-ring connected piece.

CITY OF SACRAMENTO

DIVISION OF WATER & SEWERS
JOINT DETAILS, PRETENSIONED
CONCRETE CYLINDER PIPE



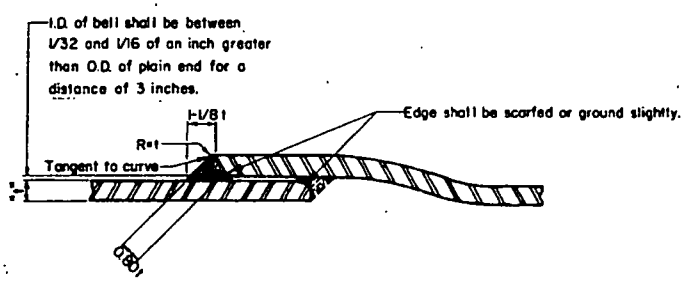
RUBBER GASKET



WELDED JOINT

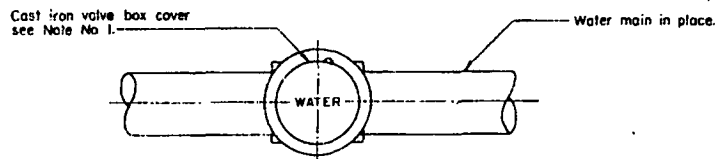
NOTES:

1. See specifications for wall thickness "1".
2. Use spacers to get 1/2" clearance for inside mortar joint on pipe 24" and larger.
3. Fillet welds may be inside or outside for pipe 42" and larger. Fillet weld shall be outside for pipe 36" and smaller.
4. See Spec. Prov. for extra stab length on joint connecting welded to rubber-ring connected piece.

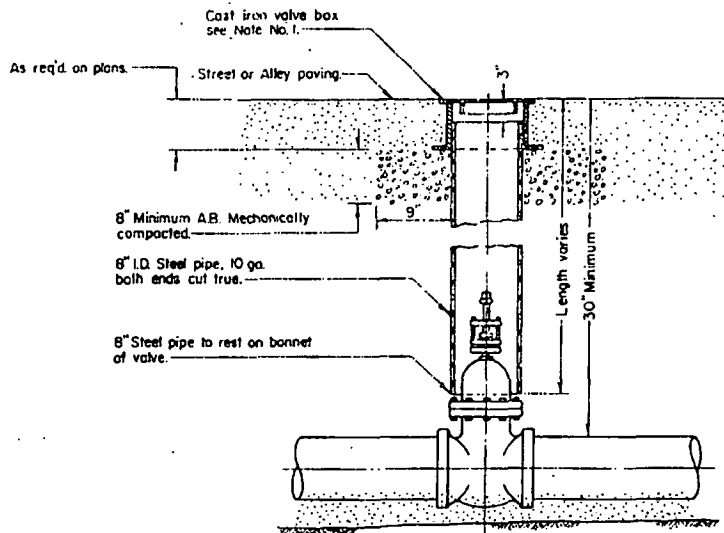


WELDED SLIP JOINT DETAIL

2	2/1/63	Chg. weld dets.
1	3/23/61	Bell changes
REV. NO.	DATE	DESCR.
CITY OF SACRAMENTO		
DIVISION OF WATER & SEWERS		
JOINT DETAILS FOR WELDED STEEL PIPE, MORTAR LINED AND COATED		
APPROVED BY:	<i>[Signature]</i>	SCALE: NONE
DATE: OCT. 10, 1960		DWG. NO. SD-11B



PLAN



ELEVATION

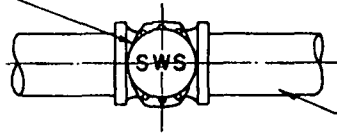
CAST IRON VALVE BOX

NOTES:

1. For specifications on Cast Iron Valve Box and Cast Iron Valve Box Cover see SD-13B & SD-15, City of Sacramento, Division of Water and Sewers.

CITY OF SACRAMENTO	
DIVISION OF WATER & SEWERS	
STANDARD VALVE BOX INSTALLATION IN CITY STREETS & ALLEYS	
APPROVED BY: <i>[Signature]</i>	SCALE: NONE
DATE: 1971	DWG. NO. SD-13A

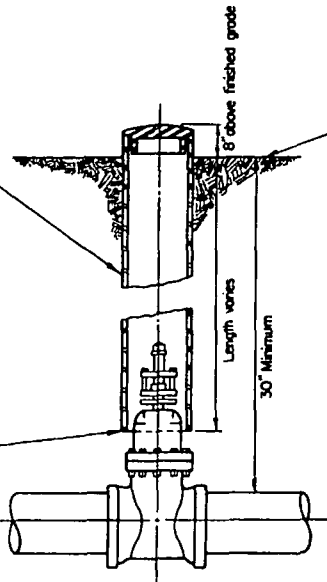
Cast steel valve box cover,
see S.D. -15



Water main in place

PLAN

8" I.D. Steel pipe, 10 ga.
both ends cut true.



Ground surface

Length varies

30" Minimum

8" Steel pipe to rest on bonnet
of valve.

ELEVATION

STEEL VALVE BOX

CITY OF SACRAMENTO

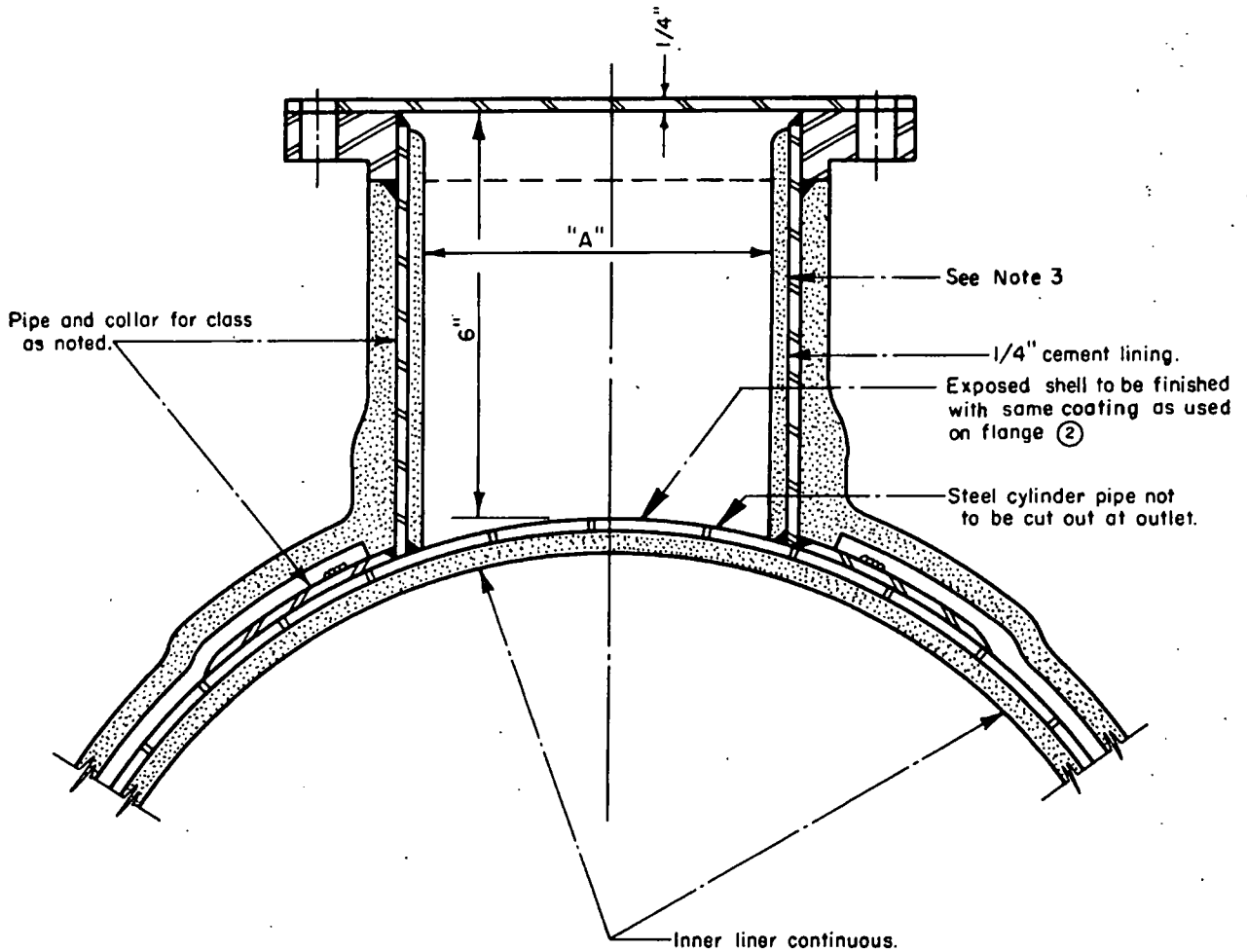
DIVISION OF WATER & SEWERS

**STANDARD VALVE BOX INSTALLATION
IN PUBLIC UTILITY EASEMENTS**

APPROVED BY: *[Signature]* SCALE: NONE

DATE: 1971

DWG. NO. SD-14



NOTES:

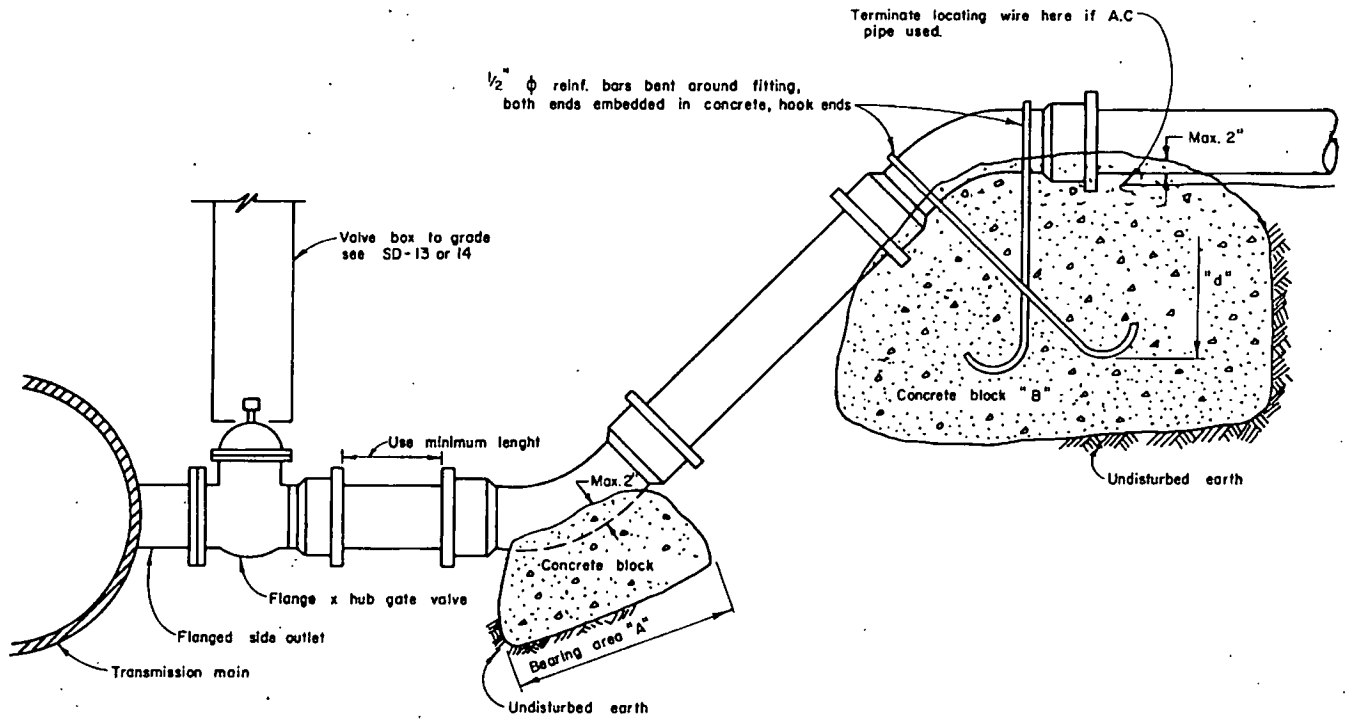
1. Use this detail on all blind flanged outlets on water transmission mains, on either welded steel or modified pre-stressed concrete cylinder pipe.

2. Clear dimension "A" for outlets of various sizes is required as shown below to clear tapping tool

Outlet size (nom.)	6"	8"	10"	12"
"A" (in.)	5.85	7.85	9.85	11.85

3. Size I.D. of Mortar Lining exactly with Mandrel to provide clearance for tapping drill.

4	5/25/65	NOTE 3
3	9/20/64	OUTLET LENGTH
2	2/28/64	(2)
1	1/10/63	BLIND FLG.
REV. NO.	DATE	DESCR.
CITY OF SACRAMENTO		
DIVISION OF WATER & SEWERS		
FLANGED OUTLET, 6"-12"		
WHERE BLIND FLANGED ON INSTALLATION		
APPROVED BY: <i>[Signature]</i>		SCALE: NONE
DATE: JUNE 29, 1961		DWG. NO. SD-16

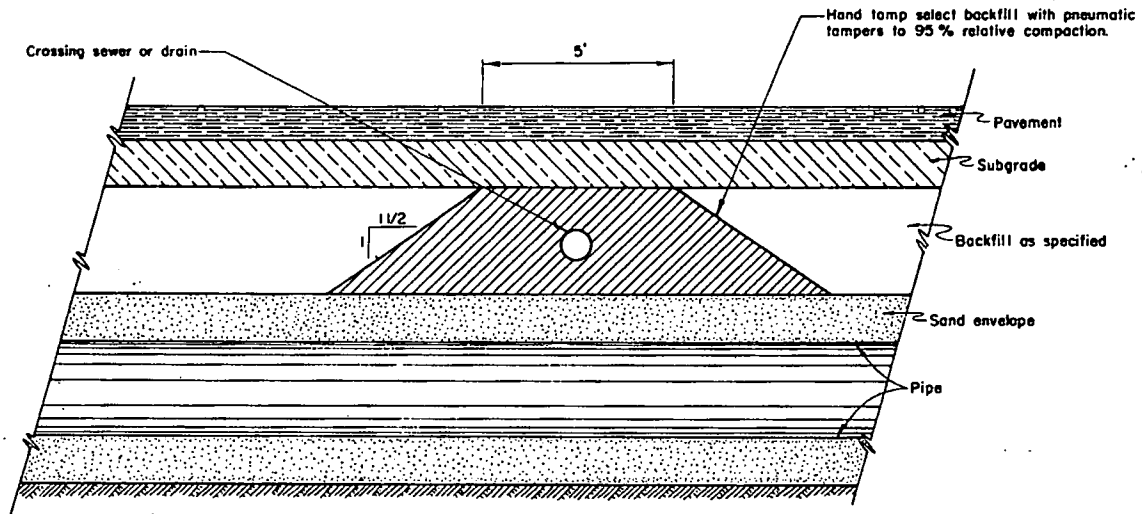


Size of Pipe →	6"	8"	10"	12"
Minimum depth "d"	6"	8"	12"	20"
Yds. concrete necessary to provide weight, block "B"	$\frac{2}{3}$	$1 \frac{1}{4}$	$1 \frac{3}{4}$	3
Bearing area "A", sq. ft.	1.5	2.5	3.5	5.0

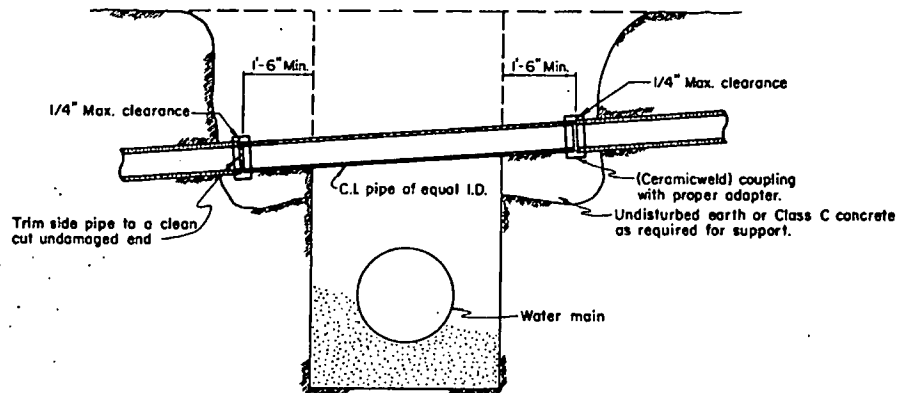
CITY OF SACRAMENTO
DIVISION OF WATER & SEWERS

TIES TO TRANSMISSION MAINS

APPROVED BY: *[Signature]* SCALE: NONE
DATE: 1971 DWG. NO. SD-17



SECTION ALONG PIPE



SECTION ACROSS PIPE

NOTES:

1. Contact Sewer Division for all lateral or main line breaks.
2. Alteration of sewer grades will be permitted only after permission has been received from the Project Engineer.

REV. NO.	DATE	DESCR.
1	3/13/63	Added new detail
CITY OF SACRAMENTO		
DIVISION OF WATER & SEWERS		
BACKFILL AND REPAIR AT SEWER AND DRAIN UTILITY CROSSINGS		
APPROVED BY: <i>Kay A. Jones</i>		SCALE: NONE
DATE: FEBRUARY 1, 1963		DWG. NO. SD-26