

SPECIFICATION NO. 2988
G. M. NO. GM 98015 & 98818

SPECIFICATIONS
FOR
CONSTRUCTION OF
24" and 20" GAS TRANSMISSION MAINS
FROM
MARTIN STATION TO POTRERO GAS PLANT AND STATION "P"
FOR THE

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

PREPARED BY
DEPARTMENT OF ENGINEERING

APPROVED BY J. A. LOVE (MHC)

DATE June 3, 1948

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Comprising

- Instructions to Bidders
- General Conditions
- Specific Conditions
- Form of Proposal
- Form of Agreement

<p>BIDDER—SIGN HERE TO INDICATE THIS HAS BEEN USED IN PREPARING PROPOSAL</p> <p>SIGNATURE.....</p> <p>DATE.....</p>
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INSTRUCTION AND INFORMATION TO BIDDERS1. LOCATION AND OUTLINE OF WORK

(a) The work for which proposals are requested comprises the construction of approximately 5 miles of 24" and approximately 1 mile of 20" gas transmission mains in San Mateo and San Francisco Counties, California.

The 24" main will commence at Company's Martin Substation located at Geneva and Schwerin Sts., and will terminate at Company's Potrero Gas Plant at the foot of Humboldt Street, San Francisco.

The 20" main, approximately 5,450 ft., is a branch line from the new 24" pipe line at Quint and Evans Aves., to Company's Station "P" steam-electric generating plant at Hunters Point. The routes will be shown on drawings accompanying this specification.

(b) The pipe as specified herein will be wrapped and approximately 11,000 ft. of 24" will be bell end pipe, the balance of the 24" and all the 20" will be plain end pipe beveled for welding. The wall thickness and estimated weight of the pipe are as follows:

<u>Pipe Size</u>	<u>Wall Thickness</u>	<u>Bare</u>	<u>Average Wt. per lineal foot</u>	
			<u>Single Wrap</u>	<u>Double Wrap</u>
24" OD bell end	.28125	71.25#	78.41#	83.65#
24" OD plain "	.3175	79.06	86.22	91.46
20"	.28125	55.00	58.94	61.54

(c) Valve installations and other work not included in this specification but in connection with this installation may be offered for bid during the progress of this Contract.

2. INTENT OF SPECIFICATIONS

The bidder shall make his proposal with the understanding that the specifications and drawings are intended to cover all the work to be performed, and unless expressly excluded, any and all work not mentioned or shown, but which may be necessary to complete any part of the work in a proper, substantial and workmanlike manner, shall be performed by the Contractor.

3. PROPOSALS

(a) Proposals must be made in the general form of the proposal attached, enclosed in a sealed envelope distinctly marked "Proposal" with the title of the work as given and delivered to the Purchasing Agent at the office of the Company, 245 Market Street, San Francisco, at or before the appointed hour.

(b) The proposals must be signed with the full name and local address of the Bidder; if a co-partnership, by a member of the firm with the name and address of each member; if a corporation, by an officer in the corporate name, and with corporate seal.

(c) Unless otherwise stipulated herein, the Company reserves the right to reject any and all proposals, to accept other than the lowest proposal, to accept one part of a proposal and reject the other, to effect a combination of proposals, and to waive any technical informalities in any proposal.

(d) In the event the Bidder to whom the award is made, fails or refuses to execute the agreement, the Company may award the contract in whole or in part to any one of the other Bidders, or it may request new bids.

(e) A Bidder may, without prejudice to himself, withdraw his proposal before the time set for the opening of the bids, provided written request is made to the Purchasing Agent of the Company.

4. INFORMATION TO BE OBTAINED BY BIDDER-VISIT TO SITES

(a) It is necessary that the Bidder visit the site of the work to be performed hereunder and investigate fully all conditions pertaining to said work or affecting his operations. Among other things, the Bidder should inform himself fully regarding; (1) the exact location in the streets where the pipe line is to be laid; (2) the type of pavement and underlying materials to be encountered and (3) the location and nature of all surface and subsurface structures which may be encountered in performing the work. The Bidder is particularly cautioned to investigate railroad, street car, bus, and arterial crossings with regard to traffic, substructures, municipal and railroad companies requirements for performing the work. The Bidder shall investigate fully all hazards and must provide the safeguards for the protection of persons from injury and property from damage.

(b) With respect to all the foregoing, the Bidder shall be solely responsible for the consequences of his neglect or lack of diligence.

5. PAYMENTS

Payments under this contract shall be made as follows:

(a) Monthly progress payments of 85% of the amount earned under this contract to date of the monthly progress report.

(b) Final payment of 15% will be retained by Company until 35 days after completion of work and filing of notice of completion. Subject thereto, said final payment will be made upon satisfactory passing of final pressure test as specified herein, provided, however, that the payment shall not be withheld more than 6 months after the completion of the work, to the satisfaction of the Company.

6. CONTRACTOR'S LICENSE

In order to receive considerations for the work subject to the Contractors License Law of the State of California, the Bidder's proposal must contain a statement that he is licensed under said law and must indicate the number and the date of expiration of his license.

7. WORK BY THE COMPANY

The Company reserves the right to do whatever of its own work is deemed necessary during construction, and the Contractor shall make no claim for alleged damage caused thereby.

8. RESPONSIBILITY OF BIDDER

(a) Each Bidder may be required to furnish evidence satisfactory to the Company, that he has sufficient means and has had sufficient experience in the class of work called for, to enable him to complete the contract satisfactorily.

(b) The Contractor to whom the work is awarded will be required to qualify for a surety and performance bond with a surety selected by the Company.

9. AWARD OF CONTRACT

The successful Bidder will be promptly notified, and within not to exceed 5 calendar days after notification, he shall sign the agreement in duplicate and deliver it to the Company, together with the bond, if required. After the agreement is signed by the Company, one of the executed copies will be delivered to the Contractor.

10. RETURN OF DRAWINGS AND SPECIFICATIONS

The Bidder shall return with his proposal, all drawings, specifications, and other information and data loaned him for use in preparing his estimate and proposal.

11. SIGNATURE OF SPECIFICATIONS AND DRAWINGS

For his own protection, each Bidder shall sign the copy of specifications and each drawing used by him in preparing his proposal, in the space provided therefor.

12. TIME OF COMPLETION

(a) Time is the essence of this contract. It is essential that the entire project shall be completed and placed in operation in the shortest time practicable, but in any case not later than November 1, 1948.

(b) Contractor shall commence work at the Potrero Gas Plant and proceed toward Martin Station and Station "P". He shall, however, complete the 20" Station "P" line and 24" section from Potrero to Quint and Evans Aves. prior to continuing toward Martin Station.

(c) Subject to the foregoing the Bidder is requested to state in his proposal the shortest time in which he will complete the work after notification is given him to commence. The time quoted will be an important factor in the award of the Contract. For the Bidder's information all pipe and other materials to be furnished to Contractor by Company will be available to Contractor at the time he is notified to commence work hereunder.

13. SEGREGATION OF BID PRICES AND ACCOUNTING

(a) Immediately upon notification of the award, Contractor shall submit to Constructor a segregation of all prices quoted in his proposal, listing the estimated separate amounts included in said prices for each class of work involved therein. Such itemization shall include the separate costs for loading, hauling, and distributing of pipe, excavation, backfilling, welding, field coating and wrapping of joints and such other items of work as are included in the quoted prices. This segregation when approved by Constructor will be the basis for determining the value of the work performed for the purposes of estimating progress payments.

(b) For purposes of said progress payments, Contractor shall maintain a daily account of the work performed and the contract value thereof, on the approved itemized basis and shall segregate the costs as between different accounts as directed by Constructor, Contractor shall furnish daily to Constructor for his approval and files, a duplicate copy of said account and at the end of each month shall submit a summary of the progress for the month.

GENERAL CONDITIONS

1. DEFINITIONS:

Whenever these words occur in the specifications, they shall have the meanings following:

- (a) "Company": the Pacific Gas and Electric Company.
- (b) "Department of Engineering": the Department of Engineering of the Company.
- (c) "Constructor": the Engineer of General Construction of the Company or his duly authorized representative in charge of the work set forth herein.
- (d) "Engineer": the Chief Engineer of the Company or his duly authorized representative in charge of the work set forth herein.
- (e) "Contractor": the party or parties making a contract with the Company for this work.
- (f) "Bidder": the party or parties submitting a proposal for this work.
- (g) "Contract": includes the agreement, bond, specifications, drawings and Contractor's specifications, if any.
- (h) "Specifications": include the Instructions and Information to Bidders, the General and Specific Conditions of the Company, proposal form, if any, and addenda to all of these, if any.
- (i) "As Directed," "As Required," "As Permitted," "Approved," "Acceptable," "Satisfactory," means by or to the Constructor.
- (j) "Work": includes labor or materials, or both, as required hereunder.

2. GENERAL REQUIREMENTS:

- (a) The Contractor shall furnish all work and equipment, and unless otherwise provided shall prepare all shop drawings and pay all freight, cartage and handling charges necessary to complete the work as specified herein, in a manner satisfactory to the Company.
- (b) All contacts between the Contractor and the Company shall be through the Constructor.

3. DRAWINGS AND SPECIFICATIONS:

- (a) Drawings and specifications are supplementary and are to be taken in conjunction. The Contractor shall report to the Constructor in writing, any discrepancy or errors which come to his attention. Necessary work implied as included in the contract shall be included without extra cost to the Company. Figured dimensions shall be followed in preference to scaled dimensions.
- (b) Unless otherwise provided the Contractor shall make any necessary detailed drawings, subject to the approval of the Department of Engineering and shall be responsible for their practicability. Approval of such drawings by the Department of Engineering shall be general only and shall not relieve the Contractor of responsibility for correct construction, and the Contractor shall pay for any alterations required by his errors. All work shall be done in accordance with such approved drawings. Calling the Contractor's attention to errors does not place responsibility upon the Company for correctness of other features not mentioned.
- (c) Subsequent detail drawings shall not operate to modify the contract drawings. The Company will not be responsible for deviations from contract drawings unless a written statement of changes accompanies the drawings when submitted for approval.
- (d) The misplacement, addition or omission of a word or character shall not change the intent of the drawings and specifications, as set forth by the drawings and specifications as a whole.
- (e) At the completion of the work hereunder the Contractor shall return to the Company all drawings and specifications furnished him for use during the progress of the work.

4. NO WAIVER:

None of the provisions of the contract shall be considered waived by the Company except when such waiver is given in writing.

5. DISPUTED QUESTIONS:

These specifications and all annexed papers are intended to be self-explanatory, but should any discrepancy appear or any misunderstanding arise as to any conflict of provisions, or as to the import or meaning of any provision or stipulation contained in these specifications, the matter shall be referred to the Constructor, who shall decide the same. He shall also decide all questions which may arise between the parties relative to the actual work or construction, or the sufficiency of the performance hereunder.

6. LEGAL REQUIREMENTS:

- (a) Any prepaid communication directed to the Contractor at the address given in the proposal, and mailed, or written communication delivered in person to an authorized agent of the Contractor, shall constitute a sufficient service upon the Contractor for all purposes connected with this contract.
- (b) The Contractor, with respect to his own work only, shall obtain permits, serve necessary notices, arrange for inspections, pay fees and deposits, and shall observe all Federal, State, and municipal laws. If the Contractor observes that the drawings and specifications are at variance with

Federal, State, or municipal laws, he shall notify the Constructor in writing at the time of submitting his proposal and adjust his bid accordingly. If the Contractor performs any work knowing it to be contrary to such laws, and without such notice to the Constructor, he shall bear all costs arising therefrom.

(c) The general building permit if required will be obtained by the Company.

7. WAGES AND HOURS:

In performing work hereunder the Contractor shall comply with the provisions of the Federal Fair Labor Standards Act of 1938 (52 U. S. Statutes at Large, page 1060), and any amendments thereto, irrespective of whether the Contractor in performing said work is or is not subject to said Act.

8. DELAYS AND SUSPENSIONS OF WORK:

(a) The Constructor may suspend work or delivery of materials for causes considered by him to be sufficient. Contractor will not be compensated by Company for any expense incurred by him by reason thereof, when such suspension is necessitated by causes arising out of Contractor's negligence, or his failure to comply with requirements of these specifications or for which he is otherwise responsible. However, in the event that said Constructor so suspends work or delivery of materials for causes not in any way connected with Contractor's negligence or failure to comply with said requirements of the specifications, the Contractor will be compensated by Company for the actual expense, if any, as verified by Constructor, that is unavoidably incurred by Contractor solely by reason of said suspension and Company will not be required to pay any further compensation or damage as the result thereof.

(b) If Contractor is delayed by causes beyond his control he may claim an extension of time provided such claim is submitted in writing to Constructor within one week from date of the cause of the delay.

9. MATERIALS AND WORKMANSHIP:

(a) The materials shall be suitable for the work and the best of their respective kinds, and shall be subject to the approval of the Constructor. Articles or materials may be substituted for those specified by trade name, only with the consent of the Constructor. The methods used by the Contractor shall be such as will produce satisfactory work, and in accordance with the best American practice.

(b) The Contractor shall not remove work or equipment from the site without the order and consent of the Constructor.

10. SHIPMENT:

(a) When material is furnished f.o.b. cars or trucks, the Contractor shall pay the costs of adequate packing, crating and blocking. The material shall be so nested and loaded that the freight cost will be a minimum.

(b) Bills of lading shall be furnished the Constructor in triplicate, two being addressed to the San Francisco office and one to the job. In addition a complete list of all material being shipped shall be sent to the job at the time of each shipment.

11. CONTROL AND PROSECUTION OF THE WORK:

(a) The Constructor shall have control over the work to such extent as may be necessary in his opinion to safeguard the interests of the Company, and the Contractor shall comply with his instructions in this respect.

(b) The Contractor shall so schedule and prosecute the work hereunder as to insure its completion within the agreed time. To this end, the efficiency and capacity of the Contractor's organization and plant, and the sequence and methods of his operations, at all times during continuance of this contract, shall be subject to approval of the Constructor and in his opinion, shall be such as will insure fulfillment of the Contractor's obligations hereunder, to the satisfaction of the Company.

(c) Whenever it is necessary for the Contractor to perform work at the site in conjunction with others, or to correlate his work with that to be performed subsequently by others, he shall cooperate to the fullest extent with all concerned in order that the entire work shall be properly coordinated, and carried on in an orderly and efficient manner to the earliest completion, with the least friction, delay and inconvenience. He shall so regulate his progress with adequate workmen, supplies, and equipment, as to follow promptly after work of others preceding him, and to cause no delay to other work following and dependent on his progress.

~~(d) The Contractor shall make necessary and proper provisions in each class of work performed by him, to accommodate the work of others, and shall cooperate with all concerned in the exchange of templates, data, and other information as required to insure the proper performance of the entire project.~~

~~(e) The expense of all cutting and patching of masonry, steel, woodwork, and other materials in place, to accommodate work performed hereunder shall be borne by the Contractor. Such work shall be undertaken only after having secured the approval of the Constructor as to the location and extent~~

PACIFIC GAS AND ELECTRIC COMPANY
DEPARTMENT OF ENGINEERING

~~of said work. All cutting and patching shall be in accordance with the best practice in the several trades, and subject to the approval of the Constructor.~~

12. USE OF MATERIALS AND FACILITIES FURNISHED BY COMPANY:

(a) Unless otherwise specified, the Contractor shall provide all necessary tools, equipment, and plant, adequate and suitable to meet all requirements for the work. Said tools, equipment, and plant, at all times, shall be maintained in good repair and efficient operating condition, and any which are deemed by the Constructor to be unfit shall be removed from the job and replaced.

(b) If the Contractor is permitted to use tools, equipment, or plant owned by the Company, they shall be maintained by him in first class condition while in his possession and shall be properly serviced upon their return to Company. The Contractor will be held responsible and shall reimburse the Company for any damage, mis-use or loss of any of the Company's tools, plant, or equipment used by him.

(c) Whenever the Company shall agree that it will, (1) furnish to the Contractor materials to be used by him for temporary construction purposes or for incorporation in permanent structures, (2) provide water, power, air, storage, office, or other facilities or conveniences for use by the Contractor, or (3) permit the Contractor to use the Company's tools, mechanical or electrical equipment or temporary or permanent structures erected by the Company or others, the Contractor shall inspect and determine to his own satisfaction, the safety, security, strength, and adequacy of such materials, structures, facilities, tools, and equipment, and shall assume all risk and responsibility in their use. The Contractor shall indemnify the Company against and hold it harmless from any and all loss and liability for injury, damage, or delay caused by or in any way arising out of the use by the Contractor of said materials, structures, facilities, tools, or equipment.

(d) Whenever the Company shall grant permission to the Contractor, his employees, subcontractors, or agents, to enter or occupy the Company's premises, including buildings and yards such permission shall be on condition that the Contractor assume all risks resulting therefrom.

~~(e) Whenever the Company shall furnish drawings showing details and methods of construction of temporary structures, such as coffer dams, buttresses, lagging, barricades, and other facilities to be constructed by the Contractor incidental to the work hereunder, such drawings shall be considered to represent minimum requirements only and the Company shall not be responsible for their adequacy or safety.~~

13. CHARACTER OF WORKMEN:

If any subcontractor to whom work is let by the Contractor, or any person employed by the Contractor or any of his subcontractors, shall fail or refuse to comply with any instructions which the Constructor may give pursuant to the provisions of Paragraph 11(a), or shall be deemed by the Constructor to be incompetent or to act in a disorderly manner, he shall be immediately removed from the job or with the Constructor's consent, transferred to other work on the job.

14. LAYING OUT WORK:

(a) The Contractor shall obtain at the site, all dimensions not shown on the drawings. He shall make a general check of all lines, dimensions and elevations, and shall make all necessary re-checks during the progress of the work to avoid errors in construction. Furthermore, he shall check each unit of work as it is completed in order to insure the proper installation of subsequent work. The entire responsibility for proper dimensions and fitting of all items of work for all trades being performed by him, shall rest with the Contractor.

(b) Should any discrepancy be found in lines, dimensions, or elevations, they shall be reported to the Constructor immediately.

15. SUBLETTING AND ASSIGNMENT:

(a) The award of subcontracts for work performed hereunder shall be subject to approval of the Constructor, and no subcontract will be recognized unless that part of the original contract which applies is made a part thereof. Such subcontracts shall in no wise relieve the Contractor or the sureties on his bond of liability under this contract. Nothing contained herein shall create any contractual relations between any subcontractor and the Company.

(b) The Contractor shall neither mortgage nor convey title to equipment or material to be used in this work, nor assign the work or any moneys payable under this contract, without the permission of the Company.

16. INFRINGEMENT PROTECTION:

(a) All royalties or other charges for patents for machinery, equipment, or materials furnished by Contractor for the work or for processes or arts employed by Contractor in said work, shall be considered as included in the contract price.

(b) The Contractor hereby agrees to indemnify and save harmless the Company against any and all judgments, costs, damages and expenses which may be awarded against the Company in any suit, action or proceeding brought against the Company for infringement or alleged infringement of any

aforesaid patent, arising out of the use by the Company of the machinery, equipment or materials furnished by the Contractor hereunder in the ordinary course of their use for the purposes hereunder intended, or out of the processes or arts so employed by the Contractor. The Contractor further agrees that if any suit or suits for such infringement be instituted against the Company as above specified, and if promptly notified, the Contractor will assume the defense of such suit or suits and all expenses incident to the defense thereof; but it is expressly understood that in assuming the defense of such suit or suits the Contractor shall have control of same, and the Company shall be kept fully informed as to the progress thereof, and have the right to confer about and give advice and assistance regarding the same.

17. REPRESENTATIVE OF CONTRACTOR:

The Contractor shall maintain a responsible representative in charge of the work at all times during its progress to whom instructions may be given by the Constructor.

18. INSPECTIONS AND TESTS:

(a) Shop inspections and tests will be conducted by the Engineer unless waived. Waiver of either inspections or tests or both shall not relieve the Contractor of responsibility in case of subsequent failure or the development of imperfections. All expenses in connection with inspections or tests which are performed by the Company will be borne by the Company unless otherwise stipulated.

(b) Field work shall be done under the inspection and supervision of the Constructor, or such assistants as he may assign, who shall have authority to reject work which in their opinion is unsatisfactory. Such work shall be remedied at the expense of the Contractor. The failure to reject defective work before estimates for payments are made shall not constitute acceptance of such defective work.

(c) Field tests conducted by the Company shall be made at its own expense, except that the expense of the Contractor's representatives, if any, shall be borne by the Contractor.

(d) The Company shall be notified well in advance of the starting of the work, and the Company's inspectors shall have free access to the work at all times.

(e) The Contractor shall proceed to remove all rejected work from the site within twenty-four (24) hours after receiving written notice from the Constructor, to that effect. Upon his failure to do so after three (3) days' notice, the Constructor may proceed with its removal and charge the cost of substituting proper materials and workmanship to the Contractor, or may retain the work and arrange a fair deduction from the contract price to allow for the decrease in value.

19. INSURANCE AND INDEMNITY:

(a) The Contractor, at his own cost shall procure and maintain in full force and effect during the performance of the work contemplated hereunder, compensation insurance as issued by an insurance carrier acceptable to and approved by the Company, in amount adequately covering the Contractor's full liability for compensation to his employees or to such employees' dependents, as that liability is defined in Division IV of the Labor Code of the State of California and any and all amendments thereof or substitutions therefor. This provision will obviously not apply to work performed outside of the State of California.

(b) The Contractor shall (1) indemnify the Company from all liability for damages on account of injury to or death of persons or damage to property in any way occasioned by him, his agents, or employees, resulting from or arising out of or in any way connected with the performance of the work hereunder, and (2) reimburse the Company for all costs, expense and loss incurred by it in consequence of any claims, demands and causes of action which may be made or brought against it arising out of the performance of said work.

(c) Toward this end the Contractor shall furthermore procure and maintain in full force and effect during the performance of work contemplated hereunder, adequate public liability and property damage insurance to indemnify both himself and the Company for all liability for personal injury, death, or property damage that might be incurred by either in performing the work hereunder. Said insurance shall include, (1) a Contractor's Public Liability policy and, (2) a Contractual Liability policy or its equivalent; insuring the Contractor against risks assumed under this contract. Both policies shall carry property damage endorsements. They shall have limits not less than 100,000... Dollars for damage to property as the result of one accident; not less than 100,000... Dollars for personal injury to or death of one person as the result of one accident, and subject to that limit for each person, not less than 100,000... Dollars for personal injury to or death of more than one person as a result of one accident.

(d) Upon request, policies covering insurance described hereunder shall be submitted for examination by the Company, who may require them to be revised in any respect considered necessary to provide full coverage of the Contractor's risks.

20. ADVERTISING MATTER:

No advertising matter of any kind will be allowed on any part of the work without the consent and approval of the Constructor.

21. CLEANING UP:

With respect to his own operations and responsibility therefor, the Contractor shall maintain the site and related structures and equipment in a clean, orderly condition at all times during progress of his work, and upon its completion he shall remove from the aforesaid property all rubbish and waste material resulting from his operations and shall leave same in clean, presentable condition. If Contractor fails to satisfactorily accomplish these requirements, Constructor may do so after 48 hours notice to Contractor of his intention, and Contractor shall reimburse Company for the cost thereof. The Constructor will be the referee in case of any dispute as to the extent of Contractor's responsibility or as to the ownership of rubbish.

22. EXTRA WORK AND CHANGES:

(a) The Company may make changes, without notice to sureties on the bond, provided the general purpose and extent of the work to be done under the contract is not altered. The Contractor shall undertake changes only upon written orders by the Constructor.

(b) The Company may order the Contractor to furnish additional work not provided for in the contract of a general nature similar to the work to be performed thereunder; may cause a reduction in the work; or may change the specific character of the work provided for in the specifications. All such shall be classed as extra work and will be ordered by the Company in the form of written "Extra Orders" or "Deduction Orders", in which the consideration shall be set forth.

(c) Unless otherwise provided, extra orders involving an increase in the work shall be executed at agreed prices. If prices cannot be agreed upon, or if the Company so directs, said extra orders shall be executed on the basis of actual direct cost of materials, labor and incidental expense as described herein, plus an agreed percentage thereof for the Contractors fee, plus State Sales Tax on materials furnished. Direct costs of labor shall include job foreman expense, Federal Old Age Benefits Tax, Workmen's Compensation Insurance, and State Unemployment Insurance Tax. Direct costs of materials shall be the actual sum paid for materials by the Contractor including transportation expense, but exclusive of State Sales Tax. Incidental direct expense shall include a pro-rata of premiums for the Contractor's bond, if any, and for such insurance as may be required by the Company in addition to insurance required in connection with labor. The percentage fee shall cover the Contractor's profit, superintendence, general overhead, and other general and indirect expense, including the use of all shop tools and equipment and the transportation and use of tools and equipment at the site when their value does not exceed \$25 each.

(d) For extra work performed by sub-contract, the sub-contractor shall be reimbursed on one of the bases specified under (c) above, and the Contractor shall be allowed a fee of 5% of the sub-contract amount to cover his own profit, overhead and other general expense.

(e) For extra work involving the use of mechanical equipment other than the type described under (c) above, such as trucks, cranes, pile drivers, excavators, the Contractor shall be reimbursed for their use at agreed rental prices during the time only when they are performing useful work as authorized. Said rental prices shall include the furnishing of all necessary power or fuel, lubricating oils and greases, rigging, maintenance, and repairs, but unless otherwise specifically agreed to, shall not include labor for operating purposes. For heavy equipment not self-propelled or readily moveable, extra expense for transportation to and from the site will be paid for at agreed prices in addition to rentals. Said rental prices shall determine the complete payment for equipment furnished, including profit, indirect overhead, and all other general expenses.

(f) Extra Orders may also be used to authorize changes in types of equipment or materials which do not involve additional expense for installation, price adjustments to be mutually agreed upon between the Company and the Contractor.

(g) Contractor's invoice for extra work, unless performed at an agreed price, shall be supported by labor payroll and itemized bills of material verified by records acceptable to the Constructor. No payment will be made for extra work which is not authorized by Extra Order, which is necessary to replace or repair defective work, or which, in the opinion of the Constructor, is not reasonably necessary to the performance of authorized work.

(h) Deduction Orders involving a reduction in work, shall be credited to the Company on the basis of unit contract prices for such work or at amounts to be agreed upon between the Contractor and the Constructor.

(i) Payments on Extra Orders will be made in the same manner as provided for contract work under Paragraph 26.

23. CLAIMS AND LIENS:

(a) If the Contractor claims compensation for injuries caused by the Company, he shall submit a detailed written statement of such injuries and the amount of damages claimed, to the Constructor within one week of the time thereof, and unless such statement shall have been so filed, his claim for compensation shall be deemed to have been waived. Neither damages nor extras will be allowed the Contractor for unforeseen difficulties or obstructions.

(b) In case of default by the Contractor in making prompt payments to his employees, materialmen or subcontractors for work performed or material furnished hereunder, the Company may retain from any installments due the Contractor, sufficient sums to pay the amount in default. The Contractor shall reimburse the Company for all such money paid by it for liens or claims against the Contractor.

24. TERMINATION OF CONTRACT:

(a) If the Contractor fails to begin the work within five days after notice to commence, or to carry out the provisions of the contract, he shall be given a three (3) days' written notice to that effect. Upon his further failure to conform to the time requirements or other provisions of the contract, the Company may take over and do all or part of the work, may use the Contractor's equipment and facilities at the site to complete the work and may, at its option, terminate all or part of the contract. The Contractor and his sureties shall be liable for the additional cost arising from his failure to complete the work as agreed upon, as well as for the consequential damages to the Company. The Contractor shall be the sole judge as to whether there has been such non-compliance with the contract as to warrant its termination or its completion without such termination, subject to damages.

(b) In the event that the Company terminates the contract for cause, it will give written notice of its intent to the Contractor who shall vacate the site of the work within 10 days after service of said notice upon him. The Contractor, however, shall not remove any material, plant, or equipment from the site of the work without the approval of the Company.

(c) The surety on the Contractor's bond shall not be entitled to complete the work or deliveries without the written consent of the Company.

25. BOND:

Unless waived by the Company, the Contractor, within five days after the signing of the contract, shall furnish the Company with a Bond of the form attached hereto in the amount of 100 per cent of the contract price with an acceptable Surety Company of the State of California. Any change in work or time provisions with or without notice, or consent of the surety, shall not release the surety on the bond, provided the intent of the contract is not altered thereby.

26. PAYMENTS:

(a) Payments shall be made only upon the certificate of the Constructor. Prior to the issuance of the certificate for final payment, the Contractor, when requested, shall furnish evidence satisfactory to the Constructor that all claims for labor and materials have been paid, and if no claim shall have been presented to the Company by any person, based upon any act or omission of the Contractor, and no liens or claims shall have been filed or made against said work or property whereon it was done, or against the Company, the Company shall pay to the Contractor all sums retained as provided by the terms of the agreement, less deductions for injury, loss or damage which may have been sustained by an act or omission of the Contractor. If laborers, material dealers or other persons make claims against the Company by reason of any act or omission of the Contractor, the Company may pay said claims from the sums retained. Such payment shall be deemed and treated as though made directly to the Contractor. The acceptance by the Contractor of final payment hereunder shall operate as a release of the Company from all further claims of the Contractor.

(b) The Contractor shall render all invoices in triplicate for payment when due. These shall be forwarded to the Pacific Gas and Electric Company, Engineer of General Construction, 245 Market Street, San Francisco, California.

27. NOTICE OF COMPLETION:

As soon as the improvement as a whole, of which the work hereunder is a part, has been completed to the satisfaction of the Constructor, the Company will make and file a notice of completion of the work under this contract, pursuant to Section 1187, of the Code of Civil Procedure of the State of California, if applicable.

28. GUARANTEES:

(a) In addition to any or all guarantees mentioned in the Specific Conditions, the Contractor shall guarantee to leave the entire installation in satisfactory working order and free from all defects in material, workmanship and finish. He shall guarantee to repair or replace at his own expense any part of his own work that may develop any defects due to faulty material or workmanship within a period of one year after the work is accepted. He shall also guarantee to make good any equipment installed or any work done by others and other work done by himself which was damaged as a result of any such defective apparatus, materials or workmanship.

(b) The signing of the contract for the work covered by these specifications and of which they are a part shall constitute an agreement by the Contractor that the guarantees mentioned above and any or all guarantees mentioned in the Specific Conditions are thereby made effective and binding upon him.

29. SAFETY PRECAUTIONS, PROTECTION OF PROPERTY AND RESPONSIBILITY FOR DAMAGE

(a) The Contractor shall conduct his work in a careful and prudent manner so as to safeguard adequately the public, his own, and other workmen from personal injury, and the property of Company and others from damage. Insofar as practicable Contractor's operations shall be so conducted that a minimum of inconvenience will be caused to the public, and to owners and tenants of property affected by the construction work. Contractor shall cooperate with Constructor in satisfying all reasonable requirements of property owners.

(b) The Contractor is cautioned to give special attention to elimination of hazardous situations that may be unsafe for others as well as for his own workmen, or that may result in inefficient working conditions. The Contractor shall conform to accepted good housekeeping practices at all times and shall take all precautions required by applicable safety regulations of the California State Department of Industrial Relations, Division of Industrial Safety and other state or municipal authorities.

(c) The Contractor's attention is directed to pedestrain, auto, truck, rail traffic which will be encountered during construction and he shall maintain in effect during his operations, sufficient lanterns and flares, warning signs, barricades, bridges of sufficient size and strength, flagmen, and other safeguards as may be necessary to comply with the requirements of this paragraph 29. He shall provide watchmen's services to the extent necessary for protection of the work and of any Company property that is in his charge. To enforce the intent of these specifications, the Constructor may require the Contractor to install additional safeguards and observe such special safety precautions as appear to be necessary. Special instructions given by the Constructor shall not constitute a waiver of the Contractor's responsibility to take all safety precautions necessary to conform to the requirements of the foregoing governmental authorities or to maintain safe and efficient working conditions.

(d) At all times during the performance of this contract, the Contractor shall exercise due care and necessary precautions to prevent damage to property of the Company and others resulting from the Contractor's operations hereunder. The Contractor shall properly use, safeguard and care for any materials, tools, equipment and supplies that are furnished to him by the Company, subsequent to their delivery to him and while such are in his charge. In this connection, all pipe and other materials that are furnished to the Contractor by Company shall be deemed to be in the Contractor's charge from date of receipt until completion and acceptance of the work hereunder. The Contractor shall properly safeguard all work performed by him until its completion and final acceptance.

(e) The Contractor shall promptly repair, replace, or otherwise make good, at his expense, any loss of or damage to any property, including that of Company, resulting from his performance of this contract for which liability is imposed on him by law and for which he shall assume responsibility in accordance with provisions of these specifications. Contractor's responsibility shall include loss or damage resulting from Contractor's failure to comply with requirements of the specifications or from any improper or defective work performed by Contractor and any loss or damage that Contractor must necessarily cause with intent in performing the work.

30. CONSTRUCTION OPERATIONS

(a) The gas pipe line will be installed in street R/W. Company will obtain necessary permits from Municipal and Railroad companies. Contractor shall notify the Company in writing at least five days prior to commencing work on any railway or highway crossings. Except where otherwise permitted by the Constructor, the center line of said construction will follow in accordance with accompanying drawings.

(b) Contractor shall provide, install and maintain bridges of sufficient size and strength at all driveways, walkways, street intersections to permit passage of train, auto, truck and pedestrian traffic. Contractor will be responsible for all damages or injuries sustained due to negligence on his part in this respect.

(c) Contractor will perform work in such a manner that the spoil and equipment will not obstruct traffic movements in streets, intersections, or driveways.

(d) Contractor shall conduct his operations in strict compliance with City and County requirements regarding footage of open trench allowed and compaction of backfill.

31. TRESPASS

The Contractor shall not allow his subcontractors, agents or his or their employees to trespass on the premises or lands in the vicinity of the work, or commit any nuisance or act of vandalism thereon.

32. WATER

The Contractor shall provide all water required for his purposes. Where water is not readily available along or adjacent to the pipe line right of way, the Contractor shall provide water in barrels, tanks, or other suitable containers.

33. SANITATION

The Contractor shall comply with all regulations regarding sanitation, as imposed by Federal, State, Municipal, County or other governmental authority.

SPECIFIC CONDITIONS1. GENERAL

This work is subject to the Instructions and Information to Bidders and the General Conditions and the Contractor shall be governed by all requirements thereunder.

2. WORK TO BE PERFORMED HEREUNDER

(a) The work to be performed hereunder comprises the construction of five miles of 24" OD and approximately one mile of 20" OD high pressure natural gas transmission main in the City and County of San Francisco and the County of San Mateo. Said work shall include:

(1) Installation of approximately 26,400 feet of 24" OD wrapped gas transmission main from Company's Martin Substation located at Geneva Avenue and Schwerin Street, Bay City, San Mateo County to Company's Potrero Gas Plant located at the foot of Humboldt Street, San Francisco, Incorporated.

(2) Installation of approximately 5,450 feet of 20" OD wrapped gas transmission main from the proposed 24" main at Quint St. and Evans Avenue, to Company's Station "P" steam-electric generating plant at Hunters Point Blvd and Jennings Street., approximately 1,600 feet of this pipe will be installed within the station yard.

(3) Installation of approximately 180 feet of 30" OD casing pipe at Bayshore Highway and Thornton Street where the 24" main crosses the Highway. Casing will be furnished bare and in approximately 30 foot sections.

(4) All breaking and replacing of pavement except as set forth under paragraph 18 following

(b) Approximately 11,000 feet of the 24" pipe will be furnished with bell ends. The remainder of the 24" and all of the 20" will be plain ended. All pipe will have the ends beveled for welding. The 24" pipe will be furnished in random 30 foot lengths and 20" in random 40 foot lengths. All pipe will be wrapped with rag felt and asphalt.

(c) Contractor shall furnish all labor, tools fully operated, construction equipment and facilities required to perform this work in compliance with these specifications. Contractor shall furnish all material for said work except such materials as are specified under paragraph 4 following, which will be furnished by Company.

3. WORK NOT INCLUDED

(a) Furnishing of those materials which are specified under paragraph 4 to be furnished by Company.

(b) Wrapping of the pipe, except as hereinafter specified for factory bends, field joints, and for patching.

3. (c) Installation of all valves, meter sets, regulators and appurtenances.

(d) All connections to any existing gas pipe lines.

4. MATERIALS AND EQUIPMENT TO BE FURNISHED BY COMPANY

(a) Company will furnish free to Contractor at specified delivery points, all materials as are specified herein and called for on the drawings that are required to be incorporated in or to become a permanent part of the aforesaid sections of gas line and its accessories to be constructed hereunder. Company will not furnish any materials for construction or maintenance of driveways, walkways, railroad crossings, roadways and construction of protection facilities which are not a permanent component of the gas pipe line, among which are such items as formwork, shoring, lagging, flumes, culverts, bridges, walkways, skids, blocking, barricades, and the like, including nails, and rough hardware for same. Company will not furnish any rock, gravel or other backfill or paving materials.

(b) The items of material to be furnished by Company for the gas pipe line will include the following:

(1) Transmission pipe, which will be furnished in size and of type as specified under Paragraph 1, of the Instructions and Information to Bidders.

(2) Split electric type, chill rings for the 11,000 feet of bell ended pipe and for butt joints in cut "factory bends" as shown on drawing entitled "Method of Installing Manufactured Bends."

(3) Company will furnish factory bends for 24" pipe in the following amounts and degrees; 8-20°, 12-15°, 25-10°, and 69-5°. The factory bends will not be wrapped and will have double bell ends. Contractor is referred to Paragraph 8 hereinafter regarding the use of factory bends.

(4) 24" and 20" 90° weld ells for changes in direction of 15° or more. Ells should be cut to the desired deflection.

(5) Fleetweld #5 electrodes in 5/32" and 3/16" sizes.

(6) All necessary protective wrapping and coating materials required to be applied by Contractor on field joints in the transmission pipe and fittings, factory bends, on any fitting and accessories which are furnished without protective wrapping, or coating and patching of any damaged wrapping or coating.

(c) The 24" bell end pipe, welding rod, wrapping materials and fittings, will be made available to Contractor at a storage yard located at Company's Martin Substation, San Francisco

4. (d) The 24" plain end pipe will be available at Western Pipe and Steel Company, South San Francisco or Martin Substation at the Company's option. The 20" pipe will be available at Martin Substation.

(e) Contractor shall check all materials delivered to him by Company against an inventory thereof, which will be presented to him by Constructor at the time of delivery. Contractor shall satisfy himself as to the condition of the materials when delivered, and shall sign a copy of said inventory, indicating his receipt in good condition of the materials listed, if such is the case. Contractor will be held responsible for said materials after they are delivered to him and shall reimburse Company for the value of any that become lost or that are destroyed, damaged, wasted, or that are mis-used by him. Any of the materials furnished by Company that are not used in the work, shall be returned to Company in good condition, upon completion of the contract.

5. RECEIVING, HANDLING AND TRANSPORTING PIPE AND MATERIALS

(a) Contractor shall load, haul, unload and distribute at the job location all materials except as set forth hereinafter. Materials will be available to Contractor at the locations specified in Paragraph 4 foregoing. Contractor shall employ for said hauling a licensed hauling contractor or contractors meeting the Constructors approval. Company may at its option load and haul all or a portion of the pipe to job site. Should Company at its option load and haul the pipe to the job, Contractor shall be required to unload and string the pipe along the P/W and shall be allowed one hour free time for each truck load of pipe. This free hour includes time for unloading the pipe and standby time for pipe truck, if any. Any charges made by the pipe hauler for standby or unloading time over and above the one hour free time shall be paid by Contractor.

(b) The Contractor is referred to Paragraph 29 of the General Conditions regarding his responsibility for the care of pipe and other materials furnished by the Company. The Contractor accordingly shall exercise care in handling pipe and accessories to avoid damage to the pipe coating and to avoid stressing the pipe beyond its safe working stress.

6. TEST HOLES AND PROSPECTING

(a) The existing underground structures such as duct lines, sewers, and major gas and water pipe lines that are known to the Company, which cross or are in the immediate vicinity of alignment of the gas pipe line to be installed, are indicated on an attached drawing. While the foregoing information is to be the best of Company's knowledge, substantially correct, Company does not assume any responsibility in connection therewith. Accordingly, Contractor shall not make any claims against Company, nor shall he be entitled to any compensation by Company over and above the contract consideration, for any damages suffered by him by reason of any inaccuracies in the information shown on the drawings or specifications, or any data concerning any existing structures, pipe or duct lines or other appurtenances or conditions that may be encountered, either above or below ground

6. (b) The Contractor shall locate and expose by excavating test holes, all substructures within proposed trench line prior to trenching with equipment. If conditions are revealed by the test hole or holes that rerouting of trench is necessary, the exact location shall be determined by the Contractor at the time of Construction. Contractor shall not claim reimbursement for additional expense for rerouting his trench or for any reconstruction of work already installed due to encountering obstructions where such additional expense was brought about by failure to excavate test holes.

7. TRENCH WORK AND EXCAVATION

(a) All trench and valve pits shall be excavated to the proper depth and width, before gas pipe line is installed or forms placed in position.

(b) The width of the trench shall be at least 10" greater than the outside diameter of the pipe to be installed.

(c) Contractor will be required without additional charge to excavate to a depth of 72" for limited distances. The minimum depth of trench shall be 54". Should a depth of trench greater than 72" be required by Company representative, Contractor shall be reimbursed as set forth under item 3 of the proposal. The depth of the trench shall be determined as the distance between the top of the pipe and the surface of the street or sidewalk, as measured at the lower side of the trench plus the pipe diameter. The width of trench for determining the price for extra depth shall be the diameter of the pipe plus 10".

(d) Contractor shall excavate trench so a minimum of 3" clearance is obtained between gas line and existing substructures.

(e) Shoring, trench bracing, and forms where necessary, shall be furnished and installed by the Contractor. He shall keep the trench in good condition and no claim for extra work will be allowed by reason of caving of the trench.

(f) All exposed pipes or structures shall be adequately supported.

(g) The Contractor shall furnish and place necessary foot and traffic bridging, guard rails, barricades, warning signs etc. at crossings so as not to obstruct traffic and to safeguard the public.

(h) The Contractor shall be responsible for all damages to structures and property of the Company and others, due to his operations and he shall repair any damage at his own expense. Such structures include sewers, gas, and water pipe lines, electric and telephone ducts, signal systems and the like.

(i) The Contractor shall not interfere with any structures of the Company or others without first securing permission of the party or parties concerned.

7. (j) In the event of any damage to property of any nature whatsoever, he shall report immediately by phone to owner involved. He shall then make a complete written report of time and date of accident including the name and address of the person to whom the phoned report was made and submit to Company's representative.

(k) The Contractor shall break out and remove from the site such pavement as may be required for the performance of all work hereunder. He shall confine the width of cut to 36" for 24" pipe and 30" for 20" pipe unless otherwise authorized by the Constructor. The broken edges shall be clean cut and followed the alignment of the pipe line.

(l) Contractor shall so schedule and conduct his operations that not more than 2 blocks of trench are open at one time, unless otherwise authorized by the Constructor. He shall prospect ahead of trenching operations a sufficient distance to insure a thorough knowledge of existing structures so that proper grade and trench alignment may be determined prior to machine or hand trenching.

(m) The excavated material removed from the first two blocks and any excess accumulated in subsequent excavation shall be removed from the job site at not extra expense to the Company.

(n) Contractor shall notify Fire Department where excavation is being done, and at no time cause any fire hydrant to be inaccessible to fire equipment.

8. LINING OF PIPE

(a) Each section of pipe shall be accurately lined up on skids or in such a manner, so as to be in concentric alignment with the proceeding section. When lined up for tack welding, the abutting ends of all pipe shall be concentric. The pipe section will be held securely in position for tack welding with a gas of not less than 1/16" nor more than 3/32" between the abutting ends. For this purpose, Contractor shall provide and use suitable line-up clamps equipped with spacers of a type approved by Constructor, to hold the pipe in position for tack welding.

(b) The pipe shall be handled and lined in such a manner that the protective coating is not injured. If wrapping or coating has been injured, it shall be repaired before lowering the pipe in the trench at the expense of Contractor.

9. ANGLES

(a) Factory bends for the 24" pipe will have bell ends and will be furnished in angular deflections of 5, 10, 15, and 20 degrees in the amounts set forth in paragraph 4(b). Where deflections are to be made with these bends, the bell end of the factory bend shall be placed over the end of the pipe to form a bell and spigot joint. The joint shall be welded both inside and outside. Deflections greater than 20° shall be made by a combination of factory bends in which case the joints between the bends will be bell and bell and chill ring shall be used. For deflections less than 5 degrees the bend shall be mitred.

9. (b) Welding elbows for the 20" pipe and for the 24" pipe after the factory bends are used, will be available in 90° angular deflections. These shall be cut to form the required deflections. Angular deflections of less than 15° may be mitred, provided the oxy-acety angle cutting machine is used to cut miter.

10. CLEANING OF PIPE BEFORE WELDING

(a) A suitable method, approved by the Constructor shall be used for thoroughly cleaning that portion of the pipe on which the weld is to be made before the actual welding operation. All dirt, rust, scale, grease, or other injurious substance shall be removed. Hand wire brushing alone will not suffice. Torch cut bevels shall be cleaned to bright metal with a power grinder.

(b) Before lengths of pipe are tack welded together, all loose rust, debris, and dirt shall be removed from the inside of the pipe by thoroughly swabbing each section after which the line-up foreman must visually inspect the inside of each pipe section, before the tack weld is made.

11. WELDING

(a) All field joints of transmission pipe line shall be arc welded. Fittings and accessories shall be welded where called for on drawings. The Contractor shall employ only competent electric arc welders thoroughly experienced in pipe line welding. He shall provide all necessary equipment of suitable type and size for the work. The Company will furnish "Fleetweld No. 5" electrodes to Contractor for the work hereunder. The Contractor shall at all times, use the proper amount of current for the size electrode being used. Welding machines shall be equipped with voltmeters and ammeters, which shall be maintained in proper working condition.

(b) All welding shall be done by the electric arc process and either the "stove pipe" or roll weld method may be used. Tack welds and first beads shall be applied with 5/32" electrodes and shall thoroughly penetrate to inner surface of the pipe or chill rings as the case may be, and shall be free from pin holes. Should tack weld break before stringer bead has been run, the tack shall be completely cut out and rewelded. Succeeding passes shall be made with 3/16" electrodes. Bell and spigot welds shall be made in not less than two passes inside and two passes outside. Sufficient passes shall be made on all welds to completely fill the root and throat of the weld and to provide a convex reinforcing such that the overall weld thickness is at least greater than the plate thickness except that the size of the fillet welds on bell and spigot joints shall be 3/8". No under cutting at the toe of the fillet or washing at the bell edge will be acceptable. Each pass shall be thoroughly cleaned of scale, oxides and other matter detrimental to good welding by using a hammer type pointed scaling tool followed by a thorough brushing with a steel brush. No valleys or under cutting of the butt weld will be acceptable.

11. (c) When directed by Company's engineer test welds shall be cut by Contractor from line at such locations as may be designated. Should the coupons cut from such welds, when tested, fail to equal the plate strength of the pipe the cost of cutting out, testing and replacing the defective weld shall be borne by the Contractor. The expense of cutting out, testing and replacing welds which comply with the strength requirements will be paid by the Company.

11. (d) Each welder shall be assigned a number and each weld must be stamped with this number near the weld, and within 2" of a longitudinal seam, to identify the weld as being the work of a specific welder or welders who performed the work.

(e) Welding shall not be done when in the Constructor's opinion the weather is unfit therefor. Ends of completed pipe sections shall be closed by the Contractor by means of tightly fitting plugs, bulkheads, or caps which will keep materials and water out of pipe. Stuffing the ends with rags or sacks will not be acceptable and will be considered cause for discharge of the responsible person.

12. FIELD WRAPPING

(a) Before application of Primer (Pabco #3972) all surfaces shall be thoroughly cleaned of rust, scale, grease, and dirt to the satisfaction of the Constructor, and shall be thoroughly dry.

(b) Welds shall be primed with Pabco #3972 primer as soon as weld is sufficiently cool to take a satisfactory coat. After priming and subsequent to testing of gas pipe lines as specified under Paragraph 16 (a) (1), Contractor shall apply the protective covering materials on all exposed bare metal of the transmission pipe at the field joints and on all exposed bare metal of factory bends and on those fittings and necessary parts of said gas pipe lines which are to be wrapped and buried. Before lowering any pipe line section into the trench, Contractor shall carefully inspect all protective covering thereon over its entire length and any of such covering that may be cracked, torn, loose, improperly bonded or otherwise defective shall be removed and such areas shall be patched. If any protective covering is damaged in lowering the pipe line into the trench, the damaged covering shall be removed and the area shall be patched at expense of Contractor.

12. (c) Field wrappings shall be applied in accordance with the best accepted practice. Wraps shall be tightly bonded to the pipe, without sags, pockets or voids. Paper (Pabco #190) shall be pulled tight until floatine has sufficient "set" to prevent sag or pockets and secured with box strapping. Particular care shall be taken that the weld is thoroughly tarred and that no air spaces exist under the wrap.

13. LOWERING

(a) All pipe shall be inspected by Contractor after it has been lowered into the trench and all joints and abraded or damaged portions of the protective coating shall be wrapped or repaired to the satisfaction of the Constructor.

(b) Particular care shall be taken in installing pipe under railroad and street car tracks and existing structures that the wrapping is not damaged in any manner and no foreign material allowed to enter pipe.

14. BACKFILLING

(a) No pipe shall be backfilled until it has been properly installed to the satisfaction of the Constructor and has satisfactorily passed all tests required to be made prior to backfilling.

14. (b) Backfill material for all pipe shall be earth placed to a thickness of at least 3" entirely surrounding the pipe. The remainder of the trench may be filled with the excavated material and all backfill material shall be compacted in such manner as to conform to the specifications and satisfaction of the City Engineer and the Constructor.
- (c) Broken pavement and surplus excavated material shall be disposed of by Contractor and at his expense.
- (d) Provisions shall be made by the Contractor to prevent erosion during construction of the pipe line.
- (e) The Contractor shall dig and properly backfill all "bell holes" which are necessary for the welding, painting, wrapping, and bedding of the pipe. He shall also properly backfill around valve pits and other appurtenant structures with earth or other suitable material which shall be tamped into place. Bell holes for tie-ins, excavation for underground vaults or connections at street intersection shall be barricaded on all sides of the excavation from the time excavation commences until the backfill has been completed.

15. TESTS AND ACCEPTANCE

(a) Contractor shall test all pipe to determine to the satisfaction of the Company's representative in charge, if any leakage occurs. Tests shall be made as follows.

(1) Before the pipe joints are wrapped and coated, air shall be introduced into the pipe at 100 lbs / sq. in. While air pressure is maintained all welded field joints shall be tested with soap suds as directed.

(2) After pipe lines are completed and in place in the trench, air shall be introduced into the lines at 100 lbs/ sq in. The pressure shall be maintained without any loss for a continuous period of 48 hours. A suitable recording device shall be used which will record on a chart the fluctuation and intensity of the air pressure during the test period.

(b) Should any leaks or breaks occur, they shall be repaired by the Contractor to the complete satisfaction of the Constructor and if said leaks or breaks are in the Constructors opinion due to any fault of the Contractor, the expense of such repair shall be borne by the Contractor. The repair of leaks or breaks which are not the fault of the Contractor will be paid for by Company in accordance with the provisions of Paragraph 22 of the General Conditions.

(c) Acceptance of the work will be conditioned upon the pipe line being free from leaks and breaks after introductions of gas into the completed pipe lines at the required working pressures.

16. RATE OF PROGRESS

Contractor will be required to complete a minimum of 500 feet of pipe line per day. Should the Contractor not maintain his schedule through no fault of the Company, the Company reserves the right to cancel the Contract, and take such action as is necessary to complete the work on schedule. However, should such delay be due to factors which in the opinion of the Contractor are not the fault of the Contractor, he may claim an extension of time provided such claim is filed within one week from date of the cause of the delay.

17. CLEAN UP

Upon completion of backfilling, the Contractor shall do all necessary work including sweeping, to leave the street or sidewalk in a presentable condition through out its length. He shall maintain in proper condition all trench surface not repaved until completion of contract.

18. PAVING

Contractor shall, if required, replace pavement and sidewalks where removed as a result of his operations. He shall replace the surfacing in a manner and with materials, satisfactory to the City and County agencies having jurisdiction and shall guarantee the surfacing against settling, cracking or other defects, for a period of one year. In the event of such failure he shall repair or replace the damaged surface at no cost to the Company. Paving shall be replaced within one week subsequent to backfilling unless an extension of time is permitted by Company's representative in charge.

Should Company, at its option,, replace surfacing, Contractors responsibility with regard to the surfacing, shall be limited to adequate compaction of backfill. He shall guarantee his work against settlement for a period of one year. Should the replaced surface settle due to insufficient compaction, Contractor shall remove pavement, add and compact fill material and resurface to the satisfaction of agency having jurisdiction.

For purposes of computing the area of surface replaced, the maximum width of strip for which payment will be allowed will be the pipe diameter, plus 10"; unless specifically excepted by Company's representative in charge. The length shall be the actual footage of pipe line installed under the respective surfaces.

CONSTRUCTION
OF
24" AND 20" GAS DISTRIBUTION MAINS
MARTIN SUBSTATION TO POTRERO GAS PLANT
FOR THE
PACIFIC GAS AND ELECTRIC COMPANY
& PROPOSAL

May 27, 1948

Purchasing Agent
Pacific Gas and Electric Co.
245 Market Street
San Francisco, California

Dear Sir:

Having carefully examined the drawings and Specification No. 2988, for the construction of 24" and 20" gas transmission mains in San Mateo and San Francisco Counties, California, the undersigned agrees to furnish all labor, fully operated equipment, tools, and such materials as are not supplied by Company to complete the work as indicated and described in and in accordance with the drawings and specifications attached hereto, for the following sums in lawful money of the United States.

Item 1. For complete installation of all 24" O.D. wrapped gas pipe line including highway and railroad crossings, a price per lineal foot
\$ _____

Item 2. For complete installation of all 20" O.D. wrapped gas pipe line, a price per lineal foot
\$ _____

Above items include unloading and stringing of all materials and the loading and hauling of all materials, except pipe, which is covered under Items 4 and 5.

Item 3. For additional depth of trench over 6'0" deep, as may be ordered by Constructor, under the provisions of paragraph 7 (c) of the specifications, prices as follows:

(a) Machine Work

- (1) Normal soil—a unit price per cubic yard removed of: \$ _____
(2) Rocky soil —a unit price per cubic yard removed of: \$ _____

(b) Hand Work

- (1) Normal soil—a unit cost per cubic yard removed of: \$ _____
(2) Rocky soil —a unit cost per cubic yard removed of: \$ _____

Payment under this item will be made on the basis of the total length of pipe line installed at the extra depths.

Item 4. For loading and hauling all 24" and 20" pipe from Martin Substation to the job site: a price per foot
\$ _____

Item 5. For loading and hauling 24" pipe from Western Pipe and Steel Company South San Francisco to the job site: a price per foot.
\$ _____

Note: Both items 4 and 5 will be based on the amounts installed. Company may exercise its option to haul the pipe from either or both locations in which event the items affected will be automatically cancelled.

- Item 6. For replacement of surfacing, if ordered by Constructor, a price per square foot of surface for:
- | | | |
|--|----------|-------------|
| (a) 6" black base with 2" topping | \$ _____ | per sq. ft. |
| (b) 6" concrete: | \$ _____ | " " " |
| (c) 9" concrete base with 2" asphalt wearing surface | \$ _____ | " " " |
| (d) 3" cold lay asphalt | \$ _____ | " " " |
| (e) Concrete sidewalk | \$ _____ | " " " |

Item 7. For "extra work", if directed by Constructor, actual direct cost of labor and incidental expenses as described below, plus _____% thereof.

Direct costs of labor shall include foremen expense, Federal Old Age Benefit Tax, Workman Compensation Insurance and State Employment Insurance Tax.

Incidental expense shall include a prorata of premiums for the Contractor's bond, if any, and such insurance as may be required by the Company in addition to insurance in connection with labor.

_____ hereby certify that _____ am/are licensed under Contractor's License Law of the State of California, the number of the license is _____ and its date of expiration is _____.

_____ agree to commence work hereunder within 5 days after notification to do so, and to complete said work within _____ calendar days.

Signature _____

Address _____

Signatures of Individual Members of Firm:

Signature of President of Corporation _____

Signature of Secretary of Corporation _____

Corporation is organized under the laws of the State of _____