

SAN DIEGO GAS & ELECTRIC COMPANY  
GENERAL CONDITIONS AND SPECIFICATIONS  
FOR APPLICANT  
GAS EXTENSION CONSTRUCTION

AUGUST 8, 1986



SAN DIEGO GAS & ELECTRIC COMPANY  
GENERAL CONDITIONS AND SPECIFICATIONS  
FOR APPLICANT  
GAS EXTENSION PIPELINE CONSTRUCTION

This Agreement for gas pipeline construction work is made and entered into by and between SAN DIEGO GAS & ELECTRIC COMPANY (SDG&E) a California corporation, hereinafter called "Utility" and \_\_\_\_\_ hereinafter called "Applicant".

Project Title: \_\_\_\_\_

Location: \_\_\_\_\_

Work Order No: \_\_\_\_\_ Project No: \_\_\_\_\_

SUMMARY OF CONTENTS

- PART I. GENERAL CONDITIONS FOR GAS DISTRIBUTION PIPELINE CONSTRUCTION
- PART II. TRENCHING AND BACKFILLING FOR 60 PSIG SYSTEM
- PART III. INSTALLATION SPECIFICATIONS FOR 60 PSIG PIPELINE SYSTEM



SAN DIEGO GAS & ELECTRIC COMPANY  
GENERAL CONDITIONS AND SPECIFICATIONS  
FOR APPLICANT  
GAS EXTENSION CONSTRUCTION

PART I  
GENERAL CONDITIONS

August 8, 1986



PART I  
GENERAL CONDITIONS  
FOR APPLICANT  
GAS EXTENSION CONSTRUCTION

TABLE OF CONTENTS

	<u>Page</u>
1.0 Scope of general conditions . . . . .	1
2.0 Definitions . . . . .	1
3.0 Ownership of Documents . . . . .	2
4.0 Interpretation of Plans and Specifications . . . . .	3
5.0 Accuracy of Plans and Specifications . . . . .	3
6.0 Contract Documents . . . . .	3
7.0 Warranty of Work . . . . .	4
8.0 Regulations and codes . . . . .	4
9.0 Inspection . . . . .	4
10.0 Coordination . . . . .	5
11.0 Changes in work and compensation . . . . .	6
12.0 Other Work . . . . .	6
13.0 Tools and Work Equipment . . . . .	6
14.0 Risk of Loss or Damage . . . . .	6
15.0 Indemnity . . . . .	7
16.0 Patent Indemnity . . . . .	7
17.0 Liens . . . . .	7
18.0 Public Relations . . . . .	7
19.0 Final Acceptance of Work . . . . .	8
20.0 Insurance Policy and Limits . . . . .	8
21.0 Utility Standards Incorporated by Reference . . . . .	9





PART I  
GENERAL CONDITIONS FOR APPLICANT  
GAS EXTENSION CONSTRUCTION

1.0 SCOPE OF GENERAL CONDITIONS

The scope of these General Conditions is to provide gas pipeline constructors certain stated conditions by which the Applicant shall follow in meeting contractual obligations to the Utility for the trench work and/or the installation of gas distribution pipelines.

1.1 Applicability

These general conditions apply to new gas extensions where the gas facilities being installed by an Applicant or Applicant's contractor are for the operation and maintenance by the Utility.

2.0 DEFINITIONS

1. **"Applicant"** The party or parties contracting with Utility for the extension of gas piping facilities.
2. **"Applicant Representative"** Applicant's Representative (AR) refers to the Applicant designated individual representing Applicant's interest on the utilities Installation job, and who will be the contact for the Utilities Contract Administrator on that job.
3. **"Base" (Padding)** A layer of selected material normally screened sand (also known and hereinafter referred to as padding) placed in the bottom of the trench for the purpose of providing uniform support of the installed underground facilities, and to provide protection from irregularities, rock projections or other trench features which could damage the installed facilities.
4. **"Backfill"** The materials used to fill the trench from the shading material to the ground or street level.
5. **"Bell Hole"** A Hole dug to allow room for workmen to make a connection or repair in buried pipe. Any hole other than a continuous trench, opened for working on or installing a buried facility.
6. **"Contract Administrator"** Contract Administrator (hereinafter referred to as the CA) refers to the individual the Utility has assigned to ensure that the Applicant or Applicant's contractor install the designated facilities in accordance with the contract documents and with the Utility Standards, specifications and policies.

7. **"Contract Documents"** Contracts, Agreements , Specifications, plans and drawings, right of ways, and other papers exchanged for the purpose of construction or pertaining to construction of the gas pipe-line system.
8. **"Final Acceptance"** The Utility's acceptance of all work performed by the applicant. Final Acceptance shall include "as-built" drawings and reconciliation of all material obtained from the Utility. No gas facilities will be energized until after "Final Acceptance".
9. **"Final Grade"** The grade after paving is completed.
10. **"Finish Grade"** The grade shown on plans
11. **"Landowner"** Public or private person or entity other than Applicant whose property is affected in any way by construction performed by APPLICANT.
12. **"Pipeline"** All material and parts of those physical facilities including pipe valves, fittings, special fabricated assemblies and other appurtenances through which gas is conveyed.
13. **"Shading"** A Layer of select material to surround the pipe after the pipe is laid, for the purpose of protecting the pipe from damage by the backfill material.
14. **"Trench"** A long, narrow excavation dug in the earth. A ditch, including bell-holes and excavations for vaults, appurtenances, valves, regulator stations, etc. Relative to the installation of utilities facilities .
15. **"Utilities"** San Diego Gas and Electric Company, Post Office Box 1831, San Diego, California 92112.
16. **"Utility Inspector"** Utility assigned individuals or persons, including the Utility CA, who inspect gas and/or electric facilities for compliance with Utility's installations specifications and standards, and governmental mandatory codes and ordinances.
17. **"Work"** The performing of all labor and the furnishing and installing of all materials, equipment, not otherwise furnished by Utility, and other incidentals necessary or convenient to the successful completion of the specifications and the carrying out of all the duties and obligations imposed by the general conditions and specifications.

### 3.0 Ownership of Documents

The applicant shall at all times keep on the site of the project, a complete set of the plans, drawings, specifications and other documents for the use of inspection and examination by Utility CA.

#### 4.0 Interpretation of Plans and Specifications

In general, the drawings will show dimensions, positions and kind of construction, and the specifications will define materials, qualities, and methods. Any work called for on the drawings and not mentioned in the specifications, or vice versa, shall be performed as though fully set forth in both. Work not particularly detailed, marked, or specified, shall be the same as similar parts that are detailed, marked or specified. No deviations are to be made from the drawings or specifications without previous written authorization from the Utility.

##### 4.1 Drawing Detail

Where on any drawings a portion of the work is drawn out, magnified or detailed and the remainder is indicated in outline, the drawn-out, magnified or detailed parts shall apply also to all other like portions of the work. Where ornament or other detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts in the work, unless otherwise indicated.

#### 5.0 Accuracy of Plans and Specifications

##### 5.1 Omissions

Omissions from the plans and specifications shall not relieve the Applicant from the responsibility of furnishing, making or installing all items required by law or usually furnished, made or installed in a project of the scope and general character indicated by the plans and specifications.

##### 5.2 Field Variance

In the event that modification of the Specifications is required or desired, such modifications may be made by mutual agreement in writing between Applicant and Utility. Such changes may require an engineering fee and revision to the specifications causing a delay in construction. All such inquiries shall be directed to the appropriate Planning Department for implementation. Minor changes in construction resulting from adverse field conditions may be approved in writing at the job site by the Inspector where warranted to facilitate construction. Any cost, including labor, materials and overheads, resulting from such changes in work shall be solely the responsibility of Applicant. No additional work shall be performed by Applicant unless approved in writing by conditions of this section.

#### 6.0 Contract Documents

The Contract Documents, of which these General Conditions are a part, are complementary, and what is called for by any one document shall be as binding as if called for by all. Materials, equipment, or work described in words which so applied have a well-known technical or trade term shall be held to refer to such recognized meanings.

6.1 Given Dimensions

Figured dimensions on the specifications shall govern except that the lateral location and depth of trenches and excavations are subject to changes as necessitated by conflicts, obstacles, or difficult soil conditions revealed by onsite construction or inspection during construction. Work not particularly shown or specified shall be performed in the same manner as similar work that is shown or specified.

6.2 Information Precedence

Large scale details shall take precedence over smaller scale details as to shape and details of construction. Utility Construction Standards shall take precedence over specifications as to materials, workmanship, and methods.

7.0 Warranty of Work

Applicant expressly represents and warrants that all the work performed in meeting applicant's obligations under the Contract Documents are in conformity with the Contract Documents and are free from defects in workmanship. This warranty shall commence upon receipt by Applicant of Utility's final acceptance and shall expire one year from that date. Any breach of this warranty as may become apparent during the period of the warranty may be corrected by Utility at Applicant's expense.

8.0 Regulations and Codes

8.1 Compliance

The Applicant shall perform the work in accordance with requirements of General Order 112-D of the California Public Utilities Commission, Utility Gas Standards, the Occupational Safety and Health Act of 1970, and as become applicable, California Department of Transportation and the American Public Works Association Standard Specifications.

8.2 Conflicts

When the work required by the plans and specifications appears to be in conflict with any law, regulation, order, or ordinance, the Applicant shall notify the Utility and shall not proceed with the work until so ordered.

9.0 Inspection

Utility will be represented by a Utility CA designated by Utility, who shall review and approve each phase of the work during construction and shall be responsible for acceptance of the work when satisfactorily completed.

9.1 Inspection of Materials

All material shall be of the class and grade specified by Utility and shall be subject at all times to approval by the Utility CA. Any workmanship or material which does not meet Utility's Standards as referenced in these General Conditions and Specifications will be rejected, and replacement shall be at no cost to the Utility.

9.2 Interpretation of Specifications for Work

If any question arises regarding interpretation of the specifications for work, the decision of the Utility shall be conclusive and final.

9.3 Relationship of Parties

In assuming and performing the obligations of these Contract Documents, Applicant shall assume full responsibility for the care, custody, and control of work and facilities to be constructed. Suggestions or objections made by the Utility CA shall not constitute or be construed as an exercise of management or supervision over the work or employees of the Applicant nor shall it limit the right of the Utility to reject any part of or all of the work when completed which is not in conformance with the Contract Documents.

10.0 Coordination

The Applicant shall coordinate with Utility CA in regard to the timing and scheduling of construction.

If Utility must perform work in the vicinity of Applicant's work, Applicant agrees to coordinate work between Applicant Representative and Contract Administrator.

10.1 Notification of Start of Work

In order to allow for timely inspection of any portion or phase of the work prescribed in these specifications, the Applicant shall notify the Utility in writing two weeks in advance of the start of work. Applicant shall call for inspection confirmation 24 hours (one work day), prior to the start of the work to be inspected or before any materials or work is permanently concealed by other material or work.

10.2 Overtime Work

When the Applicant intends to carry on the work of the contract at night or on a Saturday, Sunday or Holiday, it shall notify the Utility of such intention reasonably in time or at least 24 hours in advance so that proper inspection may be provided. All overtime and/or premium pay for work, equipment, Utility CA and inspections personnel, shall be at Applicant's expense.

### 10.3 Concealment of Work

If any work is concealed or performed without prior inspection and approval of the Utility CA, that work shall be subject to such tests or exposure as may be necessary to prove to the Utility that the materials used and the work done are in conformity with the Contract Documents, plans, specifications and Utility Construction Standards. All labor and equipment necessary for exposing and testing shall be furnished by the Applicant, at its expense. The Applicant shall replace, at its own expense, any materials or work damaged by exposing and any faulty materials or workmanship evidenced by such exposure or testing.

### 11.0 Changes in Work and Compensation

In the event that modifications of the Specifications is required or desired, such modification may be made by mutual agreement in writing between Applicant and Utility. Minor changes in Construction resulting from adverse field conditions may be approved in writing at the job site by the Utility CA where warranted to facilitate construction. Changes due to adverse field conditions shall be done at the sole expense of the Applicant.

### 12.0 Other Work

Utility reserves the right to employ or contract with other entities and/or persons for doing of other work in or about the premises or applicant's construction work areas.

### 13.0 Tools and Work Equipment

The applicant shall be responsible to furnish at his expense all required tools and work equipment needed to safely and efficiently carry out the work.

#### 13.1 Tools and Equipment Quality

The Applicant shall be prepared to demonstrate by documentation, testing or otherwise, that his tools are of the same quality as the Utility's and maintained in good workable condition for the purpose of work designed for.

##### 13.1.1 Tools and Equipment Inspection

Utility reserves the right to request at any time an inspection of the Applicant's tools and equipment to ascertain that the work equipment is the proper equipment for the work contracted for and that it is in a safe workable condition. Tools and equipment found not acceptable to the Utility shall be replaced by the Applicant at his expense.

### 14.0 Risk of Loss or Damage

Applicant shall be responsible for any loss or damage to material and/or equipment furnished by Applicant until final acceptance of the Work by Utility. Applicant shall be liable for the proper care and protection of all equipment and materials delivered and work performed until final acceptance by Utility.

15.0 Indemnity

Applicant will indemnify and save Utility its employees and agents harmless, from any and all claims, demands, loss, liability or expense (including attorney's fees) for injury to or death of any person, or damage to or destruction of any property, in any way connected with performance of the work by the Applicant, its agents, employees, or subcontractors, whether or not tortious conduct of the Utility, its agents, or employee jointly or actively caused said injuries, death, damage or destruction. For purposes of the indemnification, Utility's inspections, objections or comments shall NOT be construed as an exercise of management or supervision over the work.

16.0 Patent Indemnity

Applicant agrees to indemnify and save Utility harmless from and against any and all liability, loss, damage, costs, attorneys' fees, and expense of whatsoever nature or character, arising out of or occasioned by any claim or suit for damages, injunction or other relief, on account of the furnishing or use of any article, material, tool, appliance, method or process, protected by patents, trademarks or copyrights in the performance of the work; provided, however, that Utility shall have the right, at its option, to participate in the defense of any such claim or suit without relieving Applicant of any of its obligations hereunder.

17.0 Liens

Applicant agrees to indemnify and save harmless Utility from and against any loss, liability or expense (including attorneys' fees) in connection with any liens or claims by persons who furnish material or perform work. If, at the time of completion of the work hereunder, Applicant, upon request by Utility does not provide satisfactory evidence that all claims of all such persons have been paid, such amounts as may be necessary to meet any such lien or claim shall be retained from any amount due Applicant hereunder until all such liens or claims have been fully discharged.

18.0 Public Relations

In performing the work, Applicant, its representatives and employees shall conduct themselves in a manner that will result in complete satisfaction to Utility customers, including nearby property owners or tenants. To assure such satisfaction, Applicant shall:

18.1 Clean Job Site

As the work progresses, clean up and dispose of all excess earths, litter and debris around the work area caused by the construction.

18.2 Observe Due Care

Observe due precaution and care of property owners' or tenants' lawns, trees, fences, shrubs, flowers, and other property and structures so that the same will not be damaged due to work on the job.

18.3 Notify Property Owners

Notify all property owners and tenants in advance should work be necessary which will temporarily interfere with their use of walks, driveways, roadways, or entrances.

18.4 Report Disagreements

Promptly report to the Utility CA any disagreements or problems with property owners, tenants, or nearby property owners or tenants in connection with the construction, or any adverse criticism in connection with the work from the general public or public officials .

18.5 Resolve Complaints

The Applicant shall be responsible for resolving complaints from the customers or the government agencies where the work is being performed.

19.0 "Final Acceptance " of Work

Utility shall notify Applicant in writing of final acceptance of work. Final Acceptance by the Utility will be made when Applicant has satisfactorily completed all the work and improvements as called for in the Contract Documents including all reconciliations for materials and other items contracted for.

Applicant shall be required to correct all inferior or defective work, which becomes evident or Applicant has knowledge of, prior to final acceptance by the Utility. The cost of all such repairs, including material, labor, overheads and other cost associated with such corrective repairs, shall be borne by Applicant. Until Final Acceptance notice has been given by the Utility gas facilities installed by Applicant will not be energized. Ownership, custody and control of the work and facilities shall pass to Utility only upon final acceptance.

20.0 Insurance Policies and Limits

Without limiting any of the other obligations or liabilities of Applicant , Applicant shall, at its own expense, secure and maintain in effect during the life of this Agreement the following insurance as with protect Applicant and SDG&E during the performance of work hereunder: (1) Workers' Compensation Insurance in accordance with statutory requirements and limits, including U.S. Longshoremen's and Harbor Workers' Compensation Act coverage, where applicable, (2) Comprehensive General Liability Insurance, including Products Completed Operations Liability, Automobile Liability and Contractual Liability coverage for liability assumed by Applicant in this Agreement, with limits of not less than one Million dollars (\$1,000,000) each occurrence for bodily injury and property damage combined. Such liability insurance shall name SDG&E as additional insured, shall contain a severability of interest or cross liability clause and shall be primary for all purposes. Certificates of insurance evidencing the coverages and provisions required in (1) and (2) above shall be furnished to SDG&E prior to



commencement of work under this Agreement and shall provide that written notice be given to SDG&E at least (30) days prior to cancellation, reduction or not-renewal of any coverage .

21.0 Documents Incorporated by Reference

21.1 Utility Gas Division Standard Practices

- C-11 Handling of Steel Pipe
- M-3 Welding on Gas Pipeline Systems
- C~17 Welding on Gas Piping in the Field
- D-2 Coal Tar Plant Wrapped Pipe
- C-18 Field Wrapping of Underground Pipe
- C-16 Cathodic Protection, Application of
- C-2-1 Polyethylene Pipe Heat Fusion Requirements
- C-2-2 Polyethylene Pipe Direct Burial Construction Requirements
- C-9 Field Mapping of Electric Rough-In and Gas Construction
- C-13 Protection of Existing Utilities Facilities during Excavation
- C-15 Specification for Soil Cement
- C-28-1 Pneumatic Test Standards for Pipeline Operating at or below 60 PSI
- C-35 Specification for Padding and Shading Material
- P-1 Joint Trench Policy with Wet and other Utilities

21.2 Utility Gas Construction Standards

- 2.3 Sheet 1 of 4 12" Valve Box and Extension
- 2.3 Sheet 2 of 4 Cast Iron Cover for 12" Valve Box
- 2.11 Typical Installation - Line Valve Assembly - Valves 2" through 8"
- 2.27 Service Line Valve assembly for ½" Polyethylene Pipe, M&S Cat. No. For complete Assembly 788098
- 2.29 Service Line Valve Assembly for Steel Pipe, M&S Cat. No. for Complete Assembly 788646

- 5.2 Wrapping Procedure for Cathodic Protection
- 18.2 Trenching, Backfilling and Pavement Restoration
- 18.7 Weldhole Dimensions for Gas Main Connections
- 19.1 Underground Distribution (UD) Trenches and Utility Positioning
- 19.3 Joint Gas & Electric Underground Gas Main Location at Concrete Pad 3" Gas Main and Smaller

21.3 Other

American Petroleum Institute Standard 1104, 1980 or latest revision and Supplements (Standard for Welding Pipelines and Related Facilities).

SAN DIEGO GAS & ELECTRIC COMPANY  
GENERAL CONDITIONS AND SPECIFICATIONS  
FOR APPLICANT  
GAS EXTENSION CONSTRUCTION

PART II  
TRENCHING AND BACKFILL  
SPECIFICATIONS FOR  
3-INCH DIAMETER AND SMALLER GAS EXTENSIONS

August 8, 1986



Part II

TRENCHING, PADDING, SHADING AND BACKFILL  
SPECIFICATIONS FOR  
3-INCH DIAMETER AND SMALLER GAS EXTENSIONS

TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction . . . . .	1
1.1 Work Conformance . . . . .	1
1.2 General Conditions Reference . . . . .	1
1.3 Trenching and Backfilling Specifications . . . . .	1
2.0 Scope of Specifications. . . . .	2
3.0 Trenching Requirements . . . . .	2
3.1 Gas Lines Paralleling Wet Utilities.....	2
3.2 Excavations . . . . .	2
3.3 Position and Final Elevation . . . . .	3
3.4 Final Depth of Trench . . . . .	3
3.5 Other Utilities.....	3
3.6 Bottom of Excavations . . . . .	4
3.7 Unstable Soil . . . . .	4
3.8 Trench Maintenance . . . . .	4
4.0 Backfill Requirements . . . . .	5
4.1 Backfill Material . . . . .	5
4.2 Backfill Cover.....	5
4.3 Erosion Prevention.....	5
4.4 Compaction . . . . .	5
4.5 Compaction Methods . . . . .	5
4.6 Impact Method Compaction . . . . .	6
4.7 Compaction Equipment.....	6
4.8 Work in Public Areas.....	6



PART II  
TRENCHING AND BACKFILL SPECIFICATIONS  
FOR 3-INCH DIAMETER AND SMALLER GAS EXTENSIONS

1.0 Introduction

1.1 Work Conformance

All joint trenching and backfilling performed by Applicant for construction of the gas extension shall conform with Utility specifications, construction practices and joint trench space allotments standards. Pertinent parts of these documents are incorporated into these specifications and are listed for convenience in Part I, Item 22.0 of the General Conditions for these specifications. Applicant is responsible for obtaining all excavation and other required permits necessary to perform trenching work for the gas extension. Applicant shall comply with all rules and regulations of the local public agencies during the process of trenching and backfilling pipe installations.

1.2 General Conditions Reference

The General Conditions which outline and define general terms and conditions the Applicant must comply with during trenching, padding, shading and backfilling operations are part of these specifications. Special construction requirements particular to a project will be noted by Utility on Utility installation drawings and/or included in the Contract with the Applicant.

1.3 Trenching and Backfilling Specifications

These trenching and backfilling specification are incorporated by attachment and become part of the General Conditions for Gas Extension Construction whenever trenching excavation and backfill operations are performed by Applicant for utility operated gas pipelines facilities.

## 2.0 Scope of Specifications

The scope of these specifications is to outline conditions and requirements by which the Applicant for Gas Extension excavation shall be governed in the execution and performance of pipeline trenching operations. Any trench related work not performed in accordance with Utility drawings and specifications, shall be immediately so corrected or replaced by the Applicant at no cost to Utility, such that deficiencies are rectified to the satisfaction of the Utility CA.

## 3.0 Trenching Requirements

Applicant is responsible for all trenching relative to the Gas Extension Installation covered in the Contract. Joint trench width shall be as specified in the Utility Gas Construction Standard 19.1. For gas trench only (GTO), the trench shall be wide enough to provide a minimum of 3-inches of sand padded clearance at side of the installed gas pipe. All trenching, joint or GTO shall be performed according to the following requirements:

### 3.1 Gas Lines Paralleling Wet Utilities

Gas distribution pipeline trench paralleling wet utilities, such as sewer, water, storm drains or other similar utilities, shall maintain a minimum distance of five (5) feet separation having a minimum of three (3) feet of undisturbed natural soil between the trenches. In circumstances where the specified separation is not possible, approval must first be obtained from the respective Utilities.

### 3.2 Excavation

Excavations shall be made to dimensions necessary to accommodate the Utility and other permissible joint trench occupants' facilities and to provide the ultimate minimum cover specified herein, regardless of existing field conditions. Trenching excavation shall promptly start at a predetermined date approved by Utility.

#### 3.2.1 Exposure of Existing Utility Facilities

Applicant may expose existing energized gas facilities when specifically authorized by Utility. All existing Utility facilities near or approached by excavation shall first be daylighted by hand-digging operation.

##### 3.2.1.1 Operation and Excavation Method

Operations by Applicant to excavate or expose energized facilities shall be totally carried out in the presence of the utility CA. Only hand-digging excavation will be permitted. Heavy equipment such as backhoes, trenchers, gradalls etc., are expressly prohibited to (Pot) expose Utility Energized Facilities.



### 3.2.1.2 Applicant's Liability

Applicant shall be responsible for all damages and repairs resulting from excavation by Applicant to trench near or expose Utility facilities regardless of Utility's permission to excavate or the presence of Utility CA. If damages occur to any Utility owned facilities, Utility shall immediately take over and repair its facilities at the Applicant's expense.

### 3.3 Position and Final Elevation

Applicant shall excavate trenching at such position and depth as indicated by the drawings. Any change necessitated by field conditions or otherwise affecting the position and/or elevation of the pipeline shall first be approved by Utility.

#### 3.3.1 Final Grade

Applicant shall provide assured field grade to within six inches (.5 + - ft.) of final grade before trenching operations begin. The trench depth shall be such that will allow a minimum of 18 inches compacted cover during construction over the pipeline. During construction, Applicant shall not allow heavy equipment to cross over installed gas pipeline facilities until at least the minimum 18 inches compacted cover has been achieved.

### 3.4 Final Depth of Trench

Final depth of excavation shall be measured to finished "final" official grades and/or benchmarks. No pipeline work or portion thereof will be accepted by the Utility where the depth of cover has been changed by undercutting or backfilling over installed gas facilities.

### 3.5 Other Utilities

All existing and proposed substructure data known to Utility such as water, gas, sewer, storm drains, electric conduits, telephone cables, etc. shown on the Construction Drawings are obtained from best available records, but Utility gives no assurance as to the accuracy or completeness of this data. It shall be the responsibility of the Applicant to call for mark-out service and to check for utilities conflicts. The Applicant shall determine the elevation of utilities far enough ahead as to not interfere with or delay trenching operation. If conflicts exist, Applicant shall pothole and daylight facilities by appropriate methods {hand-digging) to determine the position. In all cases, Applicant shall pay for all costs resulting from damage to substructures. Applicant shall make all necessary arrangements for replacing or repairing of substructures with the owners thereof unless specifically relieved of doing so by Utility.

3.5.1 Underground Service Alerts

Applicant shall be responsible to contact the Underground Service Alert (USA) of Southern California to alert utilities of Applicant's intent to dig at least two (2) working days in advance of construction. Applicant shall also be responsible for the coordination of the respective utility mark-out services.

3.5.2 Clearance - Crossing Other Utilities

Applicant shall dig the trench to additional depth where the pipeline approaches and crosses other pipelines, sewers, water mains or telephone conduits, etc., so that the pipeline may be laid under same with at least six (6) inches of free clearance between top of pipe and bottom of Utility being crossed or as specifically directed by Utility or governing agency. Utility's Construction Standards (19.1) specifies a minimum of 12" radial separation with other utilities in the same trench when gas in joint trench is permissible, and 6" vertical separation when the gas pipeline crosses other utilities.

3.6 Bottom of Excavations

Trench bottoms shall be level, flat, and without surface irregularities, and shall be clear and free of debris at the time the trench is made available for placement of padding and pipeline facilities.

Bottom of excavations and trenches shall be free of loose rocks and pockets and shall be graded so that sags will not occur in any pipe facilities placed therein. Any excavation made to an incorrect depth shall be adjusted to the correct depth and thoroughly compacted in accordance with the compaction requirements of the Contract Documents and the governing agencies having jurisdiction.

3.7 Unstable Soil

Where excavations occur in soil which is unstable and unsuitable for adequately supporting the pipe appurtenances or substructures, reinforcement shall be constructed as directed by the Utility CA to accommodate the particular case.

3.8 Trench Maintenance

Applicant is to keep the trench in good condition until the pipe is laid, and no claim is to be made against Utility by reason of its caving either before or after the pipe is laid.

Applicant shall dewater, shore or do what else might be required to excavate the trench and backfill the trench in accordance with these specifications.

### 3.8.1 Trench Breakers

When, field conditions warrant, soil cement trench breakers will be installed by Applicant according to Utility Gas Division Standards Practice C-15.

## 4.0 Backfill Requirements

### 4.1 Backfill Materials

Applicant is responsible for supplying all backfill material. Backfill material shall be any non-expansive soil excavated from the utility trench or from off-site burrow fill material, which in the opinion of the Utility CA is suitable for backfilling. The material shall contain no rocks or clods conforming to Utility Gas Construction Standard 19.1. In the absence of local codes, backfill shall be subject to the approval of Utility CA and compacted per Gas Division Standard Practice 19.1. It is the prerogative of Utility to provide for compaction tests at the Utility CA discretion. Compaction tests by governmental authorities shall be performed at their request coordinated with Applicant at no expense to the Utility.

### 4.2 Backfill Cover

Cover over all gas pipe installations shall be a minimum of 24" for services in private property, and 30" for services in public property and also 30" for all distribution mains, to a maximum of 42" respectively, unless specified otherwise by Utility. The depth of cover shall be measured from the top of the pipe after it has been laid in the trench to finished "final" grade.

### 4.3 Erosion Prevention

In unpaved areas where drainage may be a problem, soil, cement or slurry backfill may be required. The Applicant shall contour the finished grade of the backfilled trench and area adjacent to the trench in order to prevent erosion in this area. On Hillsides, chevron-shaped berms shall be constructed over the trench in order to divert running water away from the trench. In all cases, the final contour of the ground in the trench area shall comply with Utility Standards and Specifications.

### 4.4 Compaction

Compaction of the backfill material shall not begin until a minimum of twelve (12) inches of cover is placed over the facilities.

### 4.5 Compaction Methods

Compaction method commonly acceptable is mechanical tamping with pneumatic or vibrating equipment. The Applicant shall not use any compaction method that may cause damage to Utility and/or other joint trench occupant's facilities. Compaction by water jetting will not be allowed.

**4.6**    Impact Method Compaction

Unless otherwise specified, backfill material shall be compacted in 6 inch minimum to 12 inch maximum lifts. The method of achieving such compaction may be subject to local agencies having jurisdiction thereof.

**4.7**    Compaction Equipment

Compacting with a hydra-hammer or heave vehicle shall not be allowed on trench where polyethylene pipe has been installed.

**4.8**    Work in Public Areas

When trenching or excavating in paved streets or sidewalks, all cutting and removal of pavement or concrete shall be performed by methods which meet the requirements of all governmental authorities having jurisdiction.

4.8.1    Traffic Control by Utility

When Utility performs any work within the construction area where traffic has been delineated by the Applicant, Utility shall control and implement additional safety measures in the immediate working area to direct public traffic around Utility crew and equipment.

4.8.2    Pavement Replacement

All Resurfacing of streets or sidewalk and other public and private areas performed by Applicant shall meet the requirements acceptable to landowners and all governmental authorities having jurisdiction thereof.

SAN DIEGO GAS & ELECTRIC COMPANY  
GENERAL CONDITIONS AND SPECIFICATIONS  
FOR APPLICANT  
GAS EXTENSION CONSTRUCTION

PART III  
INSTALLING 60 PSI GAS SYSTEM EXTENSION  
3-INCH DIAMETER AND SMALLER

August 8, 1986



PART III

INSTALLING 60 PSI GAS SYSTEM EXTENSION  
3-INCH DIAMETER AND SMALLER

Table of Contents

.0	Introduction .....	1
2.0	Joining Methods.....	1
3.0	Handling Equipment .....	2
4.0	Construction General .....	2
5.0	Protection of Open Ends of Pipe .....	3
6.0	Repairs.....	3
7.0	Construction Using Steel Pipe .....	3
8.0	Qualification of Welders .....	4
9.0	Welding Procedure .....	4
10.0	Inspection of Welds.....	4
11.0	Protective Coating.....	5
12.0	Inspection and Testing of Coating .....	5
13.0	Lowering in Pipe.....	5
14.0	Leak Test Requirements.....	6
15.0	Construction Using Polyethylene Pipe.....	7
16.0	Gas in Joint Trench .....	8
17.0	Stand-Up Test.....	8
18.0	Final Tie-In and Purging.....	9
19.0	Dead-End and Stubs.....	9
20.0	Final Pipeline Acceptance .....	9





## PART III

### INSTALLING 60 PSI GAS SYSTEM EXTENSION 3-INCH DIAMETER AND SMALLER

#### 1.0 Introduction

The standard gas extension is rated at 60 PSIG and may consist of 2" and smaller steel pipe or 3" and smaller plastic pipe. The material to be used shall be designated by the designer on the specification and drawings supplied by Utility. These specifications and drawings will indicate the size, position and type of pipe, and call out appurtenances such as valve and most major fittings sufficient that the intent of the design is known, but will not detail all fittings, tracer wire or other miscellaneous materials. The other materials and details of construction necessary to accomplish the work shall be determined from the Utility Gas Division Construction Standards and Gas Division Standard Practices. Pertinent parts of these documents are incorporated by reference into these specifications and are listed for convenience in Part I, item 22.0 of these General Conditions. All materials installed shall be supplied and approved by Utility.

- 1.1 These pipeline installation specifications are incorporated by attachment to and become part of the General Conditions (Part I) for Gas Extension Construction whenever 60 PSIG Gas pipelines are installed by the Applicant to be energized and operated by the Utility.

#### 2.0 Joining Methods

##### 2.1 Steel Pipeline

Steel Pipe, fittings and assemblies are joined by butt welding only. Welding is normally by the oxy-acetylene welding method. Permission to arc weld would have to be granted by the Utility. Threaded joints are not permitted underground, even if seal-welded, unless they are in a prefabricated assembly produced by the Utility. All steel pipeline facilities must be cathodically protected as specified by Utility.

##### 2.2 Poly Pipe

Polyethylene pipe, fittings and assemblies are joined by the heat fusion method or by compression fittings as specified by Utility. All joints will be made by the socket fusion method except when joining saddle branching fittings to pipe. The saddle type fittings are joined to the pipe by the saddle-fusion method. Tracer wire must be installed on all polyethylene piping.

### 2.2.1 Exception

An exception to the heat fusion joining is when a compression fitting (steel to Poly) transition is used or when the 1' curb valve assembly is used for ½' CTS PE service pipeline. This is a steel valve assembly which uses compression type transition fittings. This compression fitting is joined to the poly pipe by wrench tightening.

The use of compression fittings for any other purpose is not acceptable.

## 3.0 Handling Equipment

### 3.1 Steel Pipeline

Coated steel pipe shall be handled with equipment designed to prevent damage to the coating. Pipe shall not be rolled from stringing trucks or handled in any manner which would scratch, scar or dent the pipe. Any damage caused to the pipe during the loading, hauling, unloading, stringing, and placing into ditch will be repaired in a manner acceptable to the Utility CA by the Applicant at Applicant's expense. Handling practices shall comply with Gas Division Standard Practice C-11, Handling of Steel Pipe.

### 3.2 Poly Pipeline

Polyethylene pipe shall be handled with equipment designed to prevent damage to the pipe. Handling shall comply with Utility Gas Division Standard Practice C- 2-2, Polyethylene Pipe Direct Burial Construction Requirements.

## 4.0 Construction-General

The Utility CA shall verify the following before the indicated work is to begin or proceed. If any applicable item cannot be verified, the resultant work cannot be accepted.

### 4.1 Before Start of Gas Extension Construction

- Applicant must have clearance to start from Utility
- Fuser Possesses current Utility certification card
- Welder Possesses Current Utility certification card
- All required fusion tools are present and in good working condition
- Heating iron faces are properly coated and of proper dimensions
- Heating iron thermometer has been checked for accuracy
- Heating iron thermostat is properly adjusted and working

- Date of manufacture is within 18 months of intended installation, and the pipe is in good condition
- Pipe handling equipment is of a type which will protect the pipe from external damages
- Fittings and other materials are of approved specifications, quality, and in good condition

#### 4.2 Before Putting Pressure Test on the Pipeline Extension

- All non-acceptable materials and/or workmanship have been corrected
- Installation is according to design, or per Utility CA authorized changes
- Recording pressure gauges have current calibration - calibration certificate must be attached to gauges

#### 5.0 Protection of Open Ends of Pipe Strings

After two or more lengths of pipe have been welded or fused together, the ends shall be closed by a covering which will effectively prevent any foreign matter from getting inside the pipe. Each end of every section must be kept closed until it is ready to be joined into the line.

#### 6.0 Repairs

Repairs found necessary before energizing the gas extension shall be made at no cost to Utility. Within the warranty period, any repairs found necessary due to faulty workmanship after the extension is energized shall be made by Utility personnel and equipment at the Applicant's expense.

#### 7.0 Construction Using Steel Pipe

##### 7.1 Aligning Pipe

Every length of pipe shall be clean and free from foreign matter including dust and rust, and obstructions before it is welded to the adjoining length. If the ends of the pipe are bent or damaged, they must be cut off and then beveled before welding.

##### 7.2 Welding

Type: The Applicant shall weld the pipe together by means of oxyacetylene or electric arc fusion methods approved by the Utility.

## 8.0 Qualification of Welders

The Applicant is to use only skilled workmen for welding. Each Welder employed by the applicant shall be required to pass the Utility's welding test for the type and methods of welding he will do. No welder shall do any phase of welding on the pipeline for which he has not been tested and accepted as qualified by Utility. Qualifying test or tests shall be as outlined in Utility Gas Division Standard Practices M-3 Requirements and Procedures.

The qualifying tests shall be made in accordance with the requirements of API Standard 1104 latest revision. The Applicant shall furnish welding materials and equipment the same as those to be used on the line. The welder's expense and wages while qualifying shall be paid by the Applicant. Utility will furnish test nipples and same as to be used on the coupon cutting machine and testing equipment. The welder shall make test welds under simulated field conditions, and the weld shall be examined and tested by Utility. In the event Utility is not satisfied with the results of the qualifying test, the welder shall not be employed to perform welder's work duties and shall not be permitted to weld on pipeline facilities, no cause to join any part of the pipeline, fittings, valves, or portions hereof.

## 9.0 Welding Procedure

All welding shall conform to the Utility Gas Division Standard Practice No C-17, Welding on Gas Piping in the Field.

## 10.0 Inspection of Welds

In order that the character of welded joints made by the Applicant may be tested, the Utility reserves the right to order short lengths of pipe, including a weld, to be cut out at any time deemed necessary and the Applicant shall deliver it to the Utility CA. The Applicant shall replace the length removed, or close the gap and join the ends with a single weld if sample is taken while line is being installed, and in the opinion of Utility, it is practicable to move the line back into position, otherwise, two welds will be made by fitting in a "pup joint", having a length of not less than 2 feet. Coupons shall be cut from the welded joint as directed by the Utility.

### 10.1 Tension Tests

Coupons tested to destruction by tension shall break in the pipe wall, or if the break is in the weld, the pipe shall have been stressed to its minimum specified ultimate strength.

### 10.2 Reverse Bend Tests

Coupons tested by the reverse bend test, that is, by being bent to an angle of 180° with the root inside of the weld in tension, shall show no defects due to lack of fusion between the weld metal and the pipe. Should cracks other than small surface cracks develop, indicating lack of fusion, penetration, slag or gas pockets, the weld shall be considered unsatisfactory.

## 11.0 Protective Coating

All metallic pipe, valves and fittings shall be installed with a protective coating.

### 11.1 Cleaning

The ends of the shop-applied coatings shall be trimmed to remove any damaged coating. The pipe shall be kept off the ground with supports that cushion the pipe until the protective coating is completely applied. Welding slag, rust, scale and dirt shall be removed by wire brushing from the pipe surface to be coated. When the pipe surface is free from loose rust, dust, sand, or other foreign matter, the protective coating shall be applied with materials furnished by the Applicant in a manner designated by the Utility CA.

## 12.0 Inspecting and Testing of Coating

The Applicant shall, in the presence of the Utility CA, use a pipe wrap holiday detector prior to lowering the pipe in the trench. The holiday detector shall be provided by the Applicant. The minimum voltage will be 11,000 volts. Any defects disclosed by this test, including places where the Shop applied coating has been damaged by resting on skids or other causes, shall be repaired by the Applicant at his expense.

### 12.1 Utility Right to Inspect

The Applicant agrees that the Utility has the right to inspect any or all of the backfilled installations with a Pearson Electronic Coating Inspector. Any coating defects indicated by this device shall be investigated, uncovered and repaired by the Applicant at his expense. In cases where the Applicant uncovers pipe at the Utility's request and it is found that the signal indicated by the Pearson Electronic Coating Inspector was due to some cause other than coating defect or violation of backfill specifications, the Applicant shall be compensated for this work in conjunction with each bell-hole dug.

## f3.0 Lowering In Pipe

### 13.1 Trench Preparation

Immediately before lowering the pipe into trench, the trench bottom shall be cleared of all rocks greater than ¼ inch in diameter and all foreign materials. In hard, dried-out soils such as adobe, where there are hard ridges in the trench bottom caused by excavating equipment which may damage the pipe coating, the Applicant shall "pad" the trench bottom prior to lowering in any sections of pipe. Sufficient padding earth (sand) shall be used to smooth out the hard ridges of soil before pipe is lowered into the trench. The pipe, when in place, shall be in contact with the bottom of the trench throughout its entire length having uniform support without any possibility of voids or sagging.

### 13.2 Padding and Shading Material

All trench padding and pipe shading material utilized shall meet the Utility specifications outlined in the Utility Gas Division Standard Practice C-035 and Utility Gas Construction Standard 19.1.

Shading and padding material shall be compacted per requirements of Utility Gas Division Standard Practice C-35

#### 13.2.1 Depth of Padding (Base)

For GTO trench, the depth of trench padding shall be three (3) inches or sufficiently deep to protect the pipe, when in place, from the rock or gravel trench bottom and sides. For joint trench, the depth of padding shall be in compliance with the Utility Gas Division Standard Practice 19.1.

#### 13.2.2 Trench Padding Operation

The trench cleaning and padding operation shall be kept ahead of the pipeline installing operations far enough as to not interfere in any way with the progress of the pipe-laying operations.

#### 12.2.3 Shading Depth and Operation

Upon completion of the installation of gas piping systems, the Applicant will install sufficient "shading" material to provide, at a minimum, protective cover over the piping as specified in Utility Gas Construction Standard 19.1.

The shading shall be done the same day that the piping is installed whenever practical, but not later than the following day, provided Applicant has received approval from Utility for shading to begin.

### 13.3 Damage to Pipe Coating

Coated pipe shall be handled with equipment designed, maintained and operated to prevent damage to the coating. If the protective coating is damaged during the lowering-in operation, the pipe coating shall be repaired by the Applicant.

### 13.4 Top of Pipe Elevation

As the piping system is laid in the trench and before shading, top of pipe elevation shall be taken for As-Built information as required or when and where requested by the Utility.

### 14.0 Leak Test Requirements

The Applicant shall perform a leak test on all installations. Utility CA shall witness all such tests.

14.1 Leak Tests

All welds will be tested prior to the installation of the field wrapping material. This shall be done with soap suds while the section containing the weld being tested is pressurized to a minimum of 100 PSIG with air. Use clear soap liquid to check for fizz leaks. All soap residual is to be washed off the pipe before it dries.

14.2 Leak Repair

The Applicant will repair any leaks in welds disclosed by the soap suds testing. Prior to wrapping the field joint, all soap suds will be rinsed from the pipe with cold water.

15.0 Construction Using Polyethylene Pipe

15.1 Fusing Qualifications

The applicant shall not permit any fuser to join polyethylene material until the fuser has first passed Utility qualifying tests, the tests approved and that person certified by the Utility.

15.2 Compression Connection Qualification

The Applicant shall not permit any pipeline joiner personnel to make compression type connections until the joiner has passed Utility qualification test and the person is certified by the Utility.

15.3 Qualifications Tests

Qualification tests shall be conducted and administered by the Utility at a location designated by the Utility.

Materials for tests to qualify pipeline joiner personnel will be furnished by Utility at the Applicant's expense. Other materials, equipment, transportation, wages and any other expenses incurred by the Applicant's qualifying personnel shall be at the Applicant's expense.

Utility shall absorb salaries expense incurred by Utility personnel to conduct and administer the qualifying tests.

15.4 Qualification Cards

Utility shall issue a card or written certificate to qualified polyethylene pipe joiners passing the qualification tests. The card or certificate will state the name, date of test, expiration date, and type of material the joiner is qualified for. Qualification Card holder shall have their cards readily available on the job site and surrender the card to the Utility CA upon request for examination or upon expiration of term.

## 15.5 Procedures for Pipe Handling

The procedures for handling, fusing and laying in of polyethylene pipe and appurtenances are described in the following Utility documents, in which, by reference, are made a part of the General Conditions and specifications, except as omitted or modified as noted on the documents.

### 15.5.1 Utility Gas Division Standard Practices

No. C-2-1	Polyethylene Pipe Heat Fusion Requirements
No. C-2-2	Polyethylene pipe Direct Burial Construction Requirements

## 16.0 Gas In Joint Trench

Unless otherwise directed by the Utility CA the gas extension shall be placed in joint trench in accordance with Utility Gas Construction Standard 19.1, Underground Distribution (UD) Trenches and Utility Positioning.

### 16.1 Joint Trench with wet Utilities

Gas Pipeline facilities shall not be installed in joint trench with sewer, water and storm drains, or with any other wet utilities (Utility Standard Practice P-1).

### 16.2 Joint Trench With Other Gas Lines

Where more than one gas line is installed in the same trench the larger main shall be installed at the bottom, and the smaller line (usually Poly) on top having 12" minimum radial separation from the lower gas line. The small line on top shall be placed 3" to 4" from the side of the trench on the short side of the property line, where there is no near property line it shall be placed on the West or South side of the trench.

### 16.3 Gas Trench Only (GTO)

Where gas facilities are installed alone in the trench they must be placed in such a position as to achieve acceptable support on the trench bottom, and at a depth as to provide minimum dimensions for padding, shading, backfill cover and separation specified by these specifications and Utility Standards.

## 17.0 Stand-Up Test

Stand-up Tests shall be performed in accordance with Utility Gas Division Standard Practice C-28-1. In addition to the soap suds testing, a stand-up test with dry air at a minimum of 100 PSIG shall be performed on all gas extensions prior to energizing. The duration of the test after the pressure has stabilized will be specified on Utility Construction Specifications in compliance with the Utility Standard Practice. Thereafter, the pressure shall be kept at 100 PSIG and held until Utility crews examine the pressure charts and make final tie-in. Pressure charts shall be sealed and removed only in the presence of the Utility CA.



### 17.1 Recording Gauges and Charts

The Applicant shall provide the necessary recording gauges and show proof to the Utility of the instruments accuracy traceable to the National Bureau of Standards at 100 PSIG, and obtain a pressure chart of the stand-u test. The chart will be submitted to the Utility CA for approval, who will forward it with the construction order.

#### 17.1.1 Indicated leaks

Any leak in the pipeline system indicated by a pressure drop on the charts or by other means shall be found and repaired by the Applicant.

### 18.0 Final Tie-In and Purging

Final tie-in to the existing Utility gas system shall be done by the Utility with its own force and equipment. Purging the gas system of air shall be performed by Utility's crew personnel.

### 19.0 Dead-Ends and Stubs

Applicant shall provide As-Built information for all pipeline dead-ends such as depth, length and correct positions, including tie-points if necessary to facilitate future location of the stubs. Whenever stubs or any part of the pipeline system is temporarily backfilled, marking tape shall be attached to the piping and the tape exposed above ground to easily locate the pipeline.

### 20.0 Final Pipeline Acceptance

Final Acceptance by Utility will be made when Applicant has satisfactorily completed all pipeline facilities installation and related work, including corrections, in conformance with all regulatory codes, Utility specifications, General Conditions in Part I, and all other related Contract documents.