

**STANDARD
SPECIFICATIONS
CITY OF FOWLER
CALIFORNIA**

AUGUST

2009

PREPARED BY



8-20-09

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CIVIL ENGINEERS
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**STANDARD
SPECIFICATIONS**

**CITY OF FOWLER
COUNTY OF FRESNO
CALIFORNIA**

AUGUST 2009

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CITY OF FOWLER
ESTABLISHMENT AND ADOPTION OF THESE
CITY STANDARD SPECIFICATIONS

These standard specifications were adopted by the Council of the City of Fowler on the 1st day of May, 2001.

HOW TO KEEP THESE STANDARD SPECIFICATIONS UP TO DATE

Keeping these specifications up to date is a matter of keeping track of the proper pages. Information concerning the page is found at the bottom. The date on the left is the date that the page was prepared. This number will change as each section or page is updated. The number on the center is the Section number and page number. The numbers on the right is the Section identification.

We are now talking about the pages, not changes in the contents. This we will discuss below. A master copy of the up-to-date specifications is kept at City Hall in the office of Director of Public Works, telephone (559) 834-3113 and are available online at www.fowlercivcity.org. If you doubt that a page is up to date, you may call this number and obtain the information as to what is the latest reprint of this page.

A service is provided to all persons who wish an up-to-date set of specifications. This service provides for the mailing, with instructions, of new pages, when necessary. Carefully following the instructions will insure that you have an up-to-date set of specifications.

HOW TO DETERMINE THE HISTORY OF A PARTICULAR PARAGRAPH,
SECTION, OR SUBSECTION OF THE SPECIFICATIONS

If you have the latest page, the contents of that page will have all the up-to-date changes. If you desire to know either what a particular part once said or the dates when it was changed, refer to the paragraph itself.

HOW TO HANDLE THESE STANDARD SPECIFICATIONS IN CITY CONTRACTS

Following is the format which will be generally followed in City public works' contracts. These specifications will be incorporated in the contracts by use of the pages following this page.

I. PROCEDURAL DOCUMENTS

A. Bid Documents

- 1. Notice to Bidders
- 2. Information to Bidders
- 3. Bid Proposal to the City of Fowler
- 4. Bid Schedule
- 5. Bid Bond

B. Contract Documents

- 6. Contractor's Agreement
- 7. Bond of Faithful Performance
- 8. Labor and Material Bond
- 9. Indemnity Agreement
- 10. Insurance Requirements for Contractors

II. GENERAL CONDITIONS

A. Standard Specifications

- 1. Standard Provisions
- 2. Standard Technical Provisions
- 3. Standard Drawings



These are the City Standard Specifications found in this volume.

B. Federal & State Requirements, etc.

These are other standard required contract items which might be used in a particular contract.

III. SPECIAL PROVISIONS

A. Special Specifications

1. Special Provisions
2. Special Technical Provisions

B. Plans, etc.

} These apply to, and are especially tailored for this contract and project only.

SECTION

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GENERAL CONDITIONS

- 1 DEFINITIONS AND TERMS
- 2 INFORMATION TO BIDDERS
- 3 SCOPE AND CONTROL OF WORK
- 4 CONTROL OF MATERIALS
- 5 UTILITIES
- 6 LEGAL RELATIONS AND RESPONSIBILITY
- 7 PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK
- 8 MEASUREMENT AND PAYMENT

SPECIAL PROVISIONS

- 9 CLEARING AND GRUBBING
- 10 WATERING
- 11 ROADWAY EXCAVATION AND GRADING
- 12 FINISH ROADWAY
- 13 CONCRETE WORK
- 14 AGGREGATE BASE
- 15 ASPHALT CONCRETE
- 16 WATER SUPPLY FACILITIES
- 17 INTERCEPTOR GRAVITY SEWERS, PRESSURE SEWERS
- 18 STORM DRAIN CONSTRUCTION
- 19 ADJUSTMENT TO EXISTING FACILITIES TO FINISH GRADE
- 20 RAILROAD & ROAD CROSSING (TRENCH PROHIBITED) BORING &
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- 21 STREET LIGHTING
- 22 DEMOLITION OF BUILDINGS
- 23 CHAIN LINK FENCE
- 24 PAINTING AND COATING
- 25 TREE PROGRAM FOR CITY STREETS

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M-12	COMMERCIAL AND INDUSTRIAL TRASH ENCLOSURE (5 sheets)
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GENERAL CONDITIONS (SECTIONS 1-8)

SECTION ONE

DEFINITIONS AND TERMS

1.1 ABBREVIATIONS

Whenever in these Specifications, or in any documents or instruments where these Specifications govern, the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

AASHTO	American Association of State Highway and Transportation Officials.
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASA	American Standards Association
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing Materials
AWSC	American Welding Society Code
NBS	National Bureau of Standards
NEC	National Electrical Code
SSS	State Standard Specifications, State of California, Department of Transportation, July 1999 edition
UBC	Uniform Building Code
UFC	Uniform Fire Code
UL	Underwriters Laboratories Inc.
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code

1.2 DEFINITIONS

1. **Acceptance:** The formal written acceptance by the Engineer of an entire contract which has been completed in all respects in accordance with the Plans and Specifications and any modifications thereof previously approved.

2. **Advertisement:** The published notice inviting sealed proposal for the construction of the project.
3. **Bidder:** Any individual, firm, co-partnership, or corporation submitting a proposal for the work contemplated, acting either directly or through properly authorized agents.
4. **Change Order:** A written order to the Contractor, signed by the Engineer, ordering a change that has been found necessary in the work from that originally shown on the Plans and Specifications buy which is still within the general scope of the contract. If the work is of a nature involving an adjustment of unit price, a Supplemental Agreement shall be executed. Change Orders duly signed and executed by the Contractor constitute authorized modifications of the contract.
5. **City Council:** City Council, City of Fowler
6. **Contractor:** Shall mean the Bidder that is awarded the contract for the work.
7. **Contract:** The written agreement covering performance of the work and furnishing of equipment, labor, and materials in the construction or doing of the work. The contract shall be deemed to include all of the following: Notice to Bidders, the accepted Proposal, General Provisions, Special Provisions, Plans and Detailed Drawings, Agreement, Bidders Bond, Faithful Performance Bond, and Labor and Materials Bond, and any and all supplemental agreements amending, decreasing, or extending the work contemplated and which may be required to complete the work in a substantial and acceptable manner.
8. **Date of Acceptance:** The date on which the Agency authorizes the issuance of a certificate of satisfactory completion and acceptance, or the issuance of a warrant to the Contractor in lieu of payment.
9. **Definitions of Words:** Wherever, in these Specifications, the words directed, required, permitted, ordered, designated, or words of like import are used, they shall be understood to mean the direction, requirement, permission, order or designation of the Engineer. Similarly the words approved, acceptable, satisfactory, shall mean approved by, acceptable to, or satisfactory to the Engineer.

The words shown, indicated, noted, called for, shall mean shown, indicated, noted, called for, on the drawings for the work referred to.
10. **Engineer:** Engineer refers to the City Engineer, acting directly or through properly authorized agents.
11. **Equal:** The word 'equal' shall mean "*or equal in the opinion of and approved in writing by the Engineer*".
12. **Contract Bond:** The approved form of security furnished by the Contractor and his surety as a guarantee of good faith and ability on the part of the Contractor to execute the work in accordance with the terms of the Plans, Specifications and contract.

13. **Equipment:** All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the work.
14. **Inspector:** An authorized representative of the Engineer assigned to make all necessary inspection of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
15. **Laboratory:** The official testing laboratories of the Agency or such other laboratories as may be designated by the Engineer.
16. **Notice of Award:** A written notice to the successful bidder stating that his bid has been accepted and that in accordance with the terms of the notice to Contractors and the Specifications, he is required to execute the contract and furnish satisfactory contract bond.
17. **Notice to Proceed:** A written notice to the Contractor of the date on which he is to begin the prosecution of the work for which he has contracted.
18. **Other Specifications:** Wherever in these Specifications, Other Specifications are mentioned, it shall be understood that the materials or methods mentioned therewith shall conform to all requirements of the latest revision of the Specifications so mentioned.
19. **Owner:** City of Fowler, California
20. **Pavement:** The combined surface course, base course and sub-base course considered as a single unit of pavement.
21. **Payment Bond:** The approved form of security furnished by the Contractor and his surety as a guarantee that he will pay in full all bills and accounts for materials and labor used in the construction of the work, as provided by law.
22. **Plans:** The official plans, profiles, typical cross-sections, general cross-sections, working drawings and supplemental drawings, or exact reproductions thereof, approved by the Engineer, which show the location, character, dimensions and details of the work to be done, and which are to be considered as a part of the contract supplementary to these Specifications.
23. **Proposal:** The offer of the Bidder for the work when made out and submitted on the prescribed proposal form, properly signed and guaranteed.
24. **Proposal Form:** The approved form on which the Owner requires formal bids be prepared and submitted for the work.
25. **Right-of-Way:** All lands or other property interests provided or acquired for the construction of the proposed improvements.
26. **Specifications:** The directions, provisions, and requirements contained herein as supplemented by such special provisions as may be necessary, pertaining to the

method and manner of performing the work or to the quantities and qualities of materials to be furnished under the contract.

The Special Provisions are specific clauses setting forth conditions or requirements peculiar to the project under consideration and covering work or materials involved in the proposal and estimate but not satisfactorily covered by these Specifications. Supplemental agreements are written agreements executed by the Contractor and Engineer, covering alterations, amendments or extensions to the contract, as hereinafter provided.

27. **State Standards:** Unless otherwise specified, State Standards shall refer to the Standard Specifications of the State of California, Department of Transportation, current edition, insofar as the same may apply.

In case of conflict between the State Standards and these Special Provisions, the Special Provisions shall take precedence over and be used in lieu of such conflicting portion.

28. **Structures:** As used in these Specifications, structures shall mean steel framing, concrete slabs, footings, piping, paving and other construction which may be encountered in the construction of the improvements.
29. **Subgrade:** The soil which forms the pavement foundation for structures and paving.
30. **Superintendent:** The executive representative for the Contractor present on the work during progress, authorized to receive and fulfill instructions from the Engineer, and who shall supervise and direct the construction.
31. **Surety:** The corporate body or individuals who are bound by the contract bond and the payment bond with and for the Contractor, and which engage to be responsible for the entire and satisfactory fulfillment of the contract and for the payment of all debts incurred in fulfilling the contract.
32. **Surfacing:** The top layer of the pavement.
33. **The Work:** All the work specified in the Special Provisions, proposal of contract, or indicated on the Plans as the contemplated improvement covered by the contract.
34. **Working Day:** A working day shall be any day, other than a legal holiday or Sunday, on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract unless work is suspended for causes beyond the Contractor's control. Sundays and holidays on which the Contractor's forces engage in regular work, requiring the presence of an Inspector, will be considered as working days.
35. **Working Time:** The working time or time for completion, stated in the proposal and the contract, shall be given as a definite number of calendar days and shall be considered an essential part of the contract. Calendar days shall include all Saturdays, Sundays, holidays and vacations.

SECTION TWO

INFORMATION TO BIDDERS

2.1 RECEIPT AND OPENING OF BIDS

Sealed bids will be received at the office of the City Clerk, City of Fowler, 128 S. Fifth Street, Fowler, CA 93625, hereinafter referred to as the OWNER, for:

The referenced project at the time and place as herein before specified in the "Notice To Bidders".

2.2 PREPARATION OF BIDS

All bids must be submitted on the forms provided and properly signed in ink in the proper spaces. Bids shall be submitted in a sealed envelope bearing on the outside the name of the bidder, his address and the name of the project for which the bid is submitted. A bidder may withdraw any proposal he has submitted at any time prior to the hour set for the closing of the bids provided the request for withdrawal is signed in a manner identical with the proposal being withdrawn. No withdrawal or modification will be permitted after the hour designated for closing the bids. Proposals which are incomplete, unbalanced, conditional or obscure with irregularities of any kind or which do not comply with the Information To Bidders may be rejected at the option of the Owner.

2.3 METHOD OF BIDDING

Unit price, unit price with fixed quantities, and lump sum bids as indicated on the Bid Schedule.

2.4 BID SECURITY

Each bid must be accompanied by a certified check or bidder's bond payable to the Owner for 10 percent of the total amount of the bid. As soon as the bid prices have been compared, the Owner will return the check or bond of all except the three lowest responsible bidders. When the contract is awarded, the checks or bonds of the two remaining unsuccessful bidders will be returned. The check or bond of the successful bidder will be retained until the contract and surety bond have been executed and approved, after which it will be returned.

2.5 CONTRACT BONDS

Performance and labor and materials bonds, each in the amount of 100 percent of the contract price, with a corporate Surety approved by the Owner and the Engineer, will be required for the faithful performance to the contract, and the bidder shall state in the proposal the name and address of the surety or sureties who will sign the bonds in case the contract is awarded to him.

2.6 PROOF OF INSURANCE

Each bidder must be prepared to provide insurance certificates and endorsements showing proof of insurance in accordance with requirements as specified in these Specifications.

2.7 METHOD OF AWARD

If sufficient funds are available, the Contract will be awarded to the responsive and responsible bidder submitting the lowest bid in conformance with the terms of the proposal. The Owner may reject any and all bids if deemed excessive, and re-advertise for bids, provide for the work to be done by alternate means, or not construct the project at all. The Owner also reserves the right to waive any informality or irregularity in any bid. Bids may not be withdrawn within sixty (60) days after the actual date of opening thereof.

2.8 EXECUTION OF CONTRACT

The party to whom the contract is awarded will be required forthwith to execute the contract and furnish performance, labor and material bonds and Contractor's Insurance requirements within ten (10) calendar days from the date when the written notice of the award of the contract is mailed to the bidder at the address given by him. In case of failure to do so, the Owner may, at his option, consider that the bidder has abandoned the contract, in which case the certified check or bidder's bond accompanying the proposal shall become the property of the Owner.

2.9 QUALIFICATIONS OF CONTRACTOR

No bid will be considered for award unless the bidder, at the time of the award by the Owner, is licensed by the State of California to enter into contracts to perform the work specified. All applicable federal, state and local laws, codes and ordinances must be complied with.

The Owner may make such investigations as he deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

In compliance with Sections 4100-4107 of the Government Code, Contractor shall file with his bid the name and address of each Subcontractor who will perform more than one-half of one percent of the work. Only one Subcontractor shall be listed for each portion of the work, which portion shall be defined as to its nature and extent. The failure of Contractor to specify a subcontractor shall constitute a statement that Contractor is qualified and intends to perform said work himself.

Designation of subcontractors must be made upon blank forms included with the proposal of forms obtained from the City. The Bidder must give the names of all the subcontractors and the form must be signed by the Bidder.

The Contractor must have the consent of the Council, conveyed in writing, to substitute a Subcontractor other than that designated in the original bid, to permit any subcontract to be assigned or transferred, to allow a subcontract to be performed by other than the original Subcontractor, or to subcontract work for which no Subcontractor was originally designated.

Violation of any of the above provision will be considered a violation of the Contract, and the City may cancel the Contract, assess the Contractor a penalty of not more than 10 percent of the subcontract involved, or cancel the Contract and assess the penalty Notice and hearing, where required by Public Contract Code Section 4110, shall be given.

2.10 OBLIGATION OF BIDDER

Bidders must satisfy themselves by personal examination of the location of the proposed work, by examination of the Specifications and requirements of the work and the accuracy of the estimate of the quantities of the work to be done, and shall not at any time after the submission of the bid dispute or complain of such estimate nor assert that there was any misunderstanding in regard to the nature or amount of work to be done.

2.11 TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work within ten (10) working days after official notice by the Engineer to proceed with the work and to fully complete the project within Forty-five (45) calendar days from the date of Notice to Proceed. Bidder must also agree to pay as liquidated damages the sum of \$1,000.00 for each consecutive calendar day thereafter as hereinafter provided in the General Provisions.

2.12 INTERPRETATION OF DOCUMENTS

If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the Specifications or other Contract Documents, or finds discrepancies in, or omissions from the Specifications, he may submit to the Owner a written request for an interpretation or correction thereof.

The person submitting the request will be responsible for its prompt delivery. Any interpretation or correction of the Contract Documents will be made only by Addendum duly issued and a copy of such Addendum will be mailed or delivered to each Bidder receiving a set of such Contract Documents. The Owner will not be responsible for any other explanations or interpretations of the Contract Documents. No oral interpretations of any provision in the Contract Documents will be made to any Bidder.

2.13 PRE-CONSTRUCTION CONFERENCE

The Contractor shall not commence work until a conference at which representatives of the Contractor, Engineer, Owner, and other appropriate agencies are present.

2.14 INSURANCE AND INDEMNIFICATION

The undersigned Contractor (or supplier) by reason of contracts or purchase orders (and addendum and riders thereto) which have or may be entered into with the designated certificate holder on the reverse side thereof, agrees the following conditions shall apply with respect to any and all work performed for or materials or equipment supplied to designated certificate holder.

With respect to any work required to be done under this contract, the Contractor will indemnify and hold harmless the Owner, Giersch & Associates Inc., County of Fresno, U.S. Department of Housing and Urban Development and all other participating public agencies, whether or not said agencies are named herein, who have jurisdiction within the areas in which the work is to be performed, and all offices and employees of the Owner, Giersch & Associates Inc (City Engineer), County of Fresno, U.S. Department of Housing and Urban Development, and said other participating agencies, against any and all claims, demands, causes of action, damages (including damages to Owner's property or property of the participating agencies), costs or liabilities (including

INSURANCE REQUIREMENTS FOR CONTRACTORS

Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees or subcontractors.

Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence form CG001).
2. Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, Code 1 (any auto).
3. Worker's Compensation insurance as required by the State of California and Employer's Liability Insurance.

Minimum Limits of Insurance

Contractor shall maintain limits no less than:

1. General Liability: \$2,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: \$1,000,000 per accident for bodily injury and property damage.
3. Employer Liability: \$1,000,000 per accident for bodily injury or disease.
4. Bodily Injury Liability: \$500,000 \$1,000,000
 each person each occurrence
5. Property Damage Liability: \$250,000 \$500,000
 each occurrence aggregate

Deductibles and Self-Insured Retention

Any deductibles or self-insured retention's must be declared to and approved by the City of Fowler ("Entity"). At the option of the Entity, either: the insurer shall reduce or eliminate such deductibles or self-insured retention's as respects the **Entity, Giersch & Associates, Inc., U.S. Dept. of Housing & Urban Development, County of Fresno and any officers, officials, employees and volunteers, of the above**; or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Other Insurance Provisions

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. **The Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above**, are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractors. The coverage shall contain no special limitations on the scope of protection afforded to the **Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above**.
2. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the **Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above**. Any insurance or self-insurance maintained by the **Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above** shall be excess of the Contractor's

insurance and shall not contribute with it.

3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the **Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above.**
4. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the **Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above.**

Course of construction policies shall contain the following provisions:

1. **Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above** shall be named as loss payee.
2. The insurer shall waive all rights of subrogation against **Entity, Giersch & Associates, Inc., and any elected or appointed officers, officials, employees, agents or volunteers of the above.**

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII.

Verification of Coverage

Contractor shall furnish the ENTITY with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements are to be on forms provided by the ENTITY, to be received and approved by the ENTITY before work commences. As an alternative to the ENTITY's forms, the Contractor's insurer may provide complete, certified copies of all required insurance policies, including endorsements effecting the coverage required by these specifications.

Subcontractors

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

GENERAL LIABILITY SPECIAL ENDORSEMENT

SUBMIT IN TRIPLICATE

ENDORSEMENT NO. ISSUE DATE(MM/DD/YY)

For City of Fowler (the "Entity") & Giersch & Associates, Inc., and any elected or appointed officials, officers, employees, volunteers, or agents

PRODUCER

Telephone _____

POLICY INFORMATION:

Insurance Company: _____

Policy No: _____

Policy Period: (from) _____ (to) _____

LOSS ADJUSTMENT EXPENSE: Included in limits
 In Addition to limits

NAMED INSURED

Deductible Self-Insured Retention (check which) of \$ _____

With an Aggregate of \$ _____ applies to _____
(which)
coverage. Per Occurrence Per Claim

APPLICABILITY. This insurance pertains to the operations, products and/or tenancy of the named insured under all written agreements and permits in force with the Entity unless checked here in which case only the following specific agreements and permits with the Entity are covered: **ENTITY AGREEMENTS/PERMITS**

TYPE OF INSURANCE

General Liability

Commercial General Liability Claims Made Retroactive Date _____

Comprehensive General Liability Occurrence

Owners & Contractors Protective

OTHER PROVISIONS

COVERAGES

- GENERAL
- PRODUCTS/COMPLETED
- OPERATIONS
- PERSONAL & ADVERTISING
- INJURY
- FIRE DAMAGE

LIABILITY LIMITS IN THOUSANDS \$
EACH OCCURRENCE AGGREGATE

COVERAGES	EACH OCCURRENCE	AGGREGATE
GENERAL	_____	_____
PRODUCTS/COMPLETED	_____	_____
OPERATIONS	_____	_____
PERSONAL & ADVERTISING	_____	_____
INJURY	_____	_____
FIRE DAMAGE	_____	_____

CLAIMS: Underwriter's representative for claims pursuant to this insurance.

Name: _____

Address: _____

Telephone: (_____) _____

In consideration of the premium charged and notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any endorsement now or hereafter attached thereto, it is agreed as follows:

1. **INSURED.** The ENTITY, GIERSCH & ASSOCIATES, INC., COUNTY OF FRESNO, U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT ITS ELECTED OR APPOINTED OFFICERS, OFFICIALS, AGENTS, VOLUNTEERS AND EMPLOYEES OF THE ABOVE are included as insureds with regard to liability and defense of suits arising from the operations, products and activities performed by or on behalf of the named insured.
2. **CONTRIBUTION NOT REQUIRED.** As respects: (a) work performed by the Named Insured for or on behalf of the Entity; or (b) products sold by the Named Insured to the Entity; or (c) premises leased by the Named Insured from the Entity, the insurance afforded by this policy shall be primary insurance as respects the ENTITY, GIERSCH & ASSOCIATES, INC., COUNTY OF FRESNO, U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT ITS ELECTED OR APPOINTED OFFICERS, OFFICIALS, AGENTS, VOLUNTEERS AND EMPLOYEES OF THE ABOVE; or stand in an unbroken chain of coverage excess of the Named Insured's scheduled underlying primary coverage. In either event, any other insurance maintained by the ENTITY, GIERSCH & ASSOCIATES, INC., COUNTY OF FRESNO, U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT, ITS ELECTED OR APPOINTED OFFICERS, OFFICIALS, AGENTS, VOLUNTEERS AND EMPLOYEES shall be in excess of this insurance and shall not contribute with it.
3. **SEVERABILITY OF INTEREST.** This insurance applies separately to each insured against who claim is made or suit is brought except with respect to the company's limits of liability. The inclusion of any person or organization as an insured shall not affect any right which such person or organization would have as a claimant if not so included.
4. **CANCELLATION NOTICE.** With respect to the interests of the ENTITY, this insurance shall not be canceled, or materially reduced in coverage or limits except after thirty (30) days prior written notice by receipted delivery has been given to the ENTITY.
5. **PROVISIONS REGARDING THE INSURED'S DUTIES.** Any failure to comply with reporting provisions of the policy or breaches or violations of warranties shall not affect coverage provided to the ENTITY, GIERSCH & ASSOCIATES, INC., COUNTY OF FRESNO, U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT, ITS ELECTED OR APPOINTED OFFICERS, OFFICIALS, AGENTS, VOLUNTEERS AND EMPLOYEES OF THE ABOVE.
6. **SCOPE OF COVERAGE.** This policy, if primary, affords coverage at least as broad as:
 - (1) Insurance Services Office Commercial General Liability Coverage, "OCCURRENCE" form CG 0001; or
 - (2) If excess, affords coverage which is at least as broad as the primary insurance form CG 0001.
 Except as stated above nothing herein shall be held to waive, alter or extend any of the limits conditions, agreements or exclusions of the policy to which this endorsement is attached.

ENDORSEMENT HOLDER

ENTITY City of Fowler
128 South Fifth St.
Fowler, CA 93625

AUTHORIZED

REPRESENTATIVE Broker/Agent Underwriter _____

I _____ (print/type name), warrant that I have authority to bind the above-mentioned insurance company and by my signature hereon do so bind this company to this endorsement.
Signature _____

(ORIGINAL SIGNATURE REQUIRED)

Telephone: (_____) Date Signed _____

**WORKER'S COMPENSATION AND
EMPLOYEE'S LIABILITY SPECIAL ENDORSEMENT**

SUBMIT IN TRIPLICATE
ENDORSEMENT NO. ISSUE DATE(MM/DD/YY)

For City of Fowler (the "Entity") & Giersch & Associates, Inc., and any elected or appointed officials, officers, employees, volunteers & agents of the above

PRODUCER

Telephone _____

POLICY INFORMATION:

Insurance Company: _____

Policy No: _____

Policy Period: (from) _____

(to) _____

NAMED INSURED

OTHER PROVISIONS

CLAIMS: Underwriter's representative for claims pursuant to this insurance.

Name: _____

Address: _____

Telephone: (_____) _____

EMPLOYERS LIABILITY LIMITS

\$ _____ (Each Accident)

\$ _____ (Disease - Policy Limit)

\$ _____ (Disease - Each Employee)

In consideration of the premium charged and notwithstanding any inconsistent statement in the policy to which this endorsement is attached or any endorsement now or hereafter attached thereto, it is agreed as follows:

- CANCELLATION NOTICE.** This insurance shall not be canceled, or materially reduced in coverage or limits except after thirty (30) days prior written notice by receipted delivery has been given to the ENTITY.
- WAIVER OF SUBROGATION.** The Insurance Company agrees to waive all rights of subrogation against the ENTITY, GIERSCH & ASSOCIATES, INC., U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT, COUNTY OF FRESNO, ITS ELECTED OR APPOINTED OFFICERS, OFFICIALS, AGENTS, VOLUNTEERS AND EMPLOYEES OF THE ABOVE for losses paid under the terms of this policy which arise from the work performed by the Named Insured for the ENTITY.

Except as stated above nothing herein shall be held to waive, alter or extend any of the limits conditions, agreements or exclusions of the policy to which this endorsement is attached.

ENDORSEMENT HOLDER

ENTITY

City of Fowler
128 South Fifth St.
Fowler, CA 93625

AUTHORIZED

REPRESENTATIVE __ Broker/Agent __ Underwriter

I _____ (print/type name), warrant that I have authority to bind the above-mentioned insurance company and by my signature hereon do so bind this company to this endorsement.

Signature _____

(ORIGINAL SIGNATURE REQUIRED)

Telephone: (_____) Date Signed _____

CERTIFICATE OF INSURANCE

Completed Certificate to

TO

Only this Certificate of Insurance form will be accepted

City of Fowler (Entity)
 128 S. Fifth Street
 Fowler, CA 93625
 Attn: David Elias, City Manager

CITY OF FOWLER
 (Entity)

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

Insured _____
 Address _____

Description of operations/locations/products insured (show contract name and/or number, if any): _____

POLICIES AND INSURERS	LIMITS	POLICY NUMBER	EXPIRATION DATE
<p>Workers' Compensation</p> <p>_____ (Name of Insurer)</p> <p>Best's Rating _____</p>	<p>Employers Liability</p> <p>\$ _____</p>		
<p>Check policy type:</p> <p>Comprehensive General Liability _____ or Commercial General Liability _____</p> <p>_____ (Name of Insurer)</p> <p>Best's Rating _____</p> <p>Claims-Made _____ or Occurrence _____</p>	<p>Comprehensive General Liability</p> <p>Each Occurrence \$ _____ Aggregate \$ _____ Non-owned Auto \$ _____</p> <p>-----</p> <p>Commercial General Liability</p> <p>Each Occurrence \$ _____ General Aggregate either per project/location \$ _____ or twice occurrence limit \$ _____ Non-owned Auto \$ _____</p>		
<p>Business Auto Policy</p> <p>Liability Coverage Symbol _____</p> <p>_____ (Name of Insurer)</p> <p>Best's Rating _____</p> <p>Claims-Made _____ or Occurrence _____</p>	<p>Each Person \$ _____ Each Accident \$ _____</p> <p>Each Accident \$ _____</p> <p>or Combined Single Limit \$ _____</p>		
<p>Umbrella Liability</p> <p>_____ (Name of Insurer)</p> <p>Best's Rating _____</p> <p>Claims-Made _____ or Occurrence _____</p>	<p>Occurrence/ Aggregate \$ _____</p> <p>Self Insured Retention \$ _____</p>		

Revised 12/27/90 Note: If commercial general liability insurance is used or if aggregate limits are endorsed to the comprehensive general liability policy form, the general aggregate must apply per location/project or the aggregate limit must be at least twice the occurrence

limit.

The following coverage or conditions are in effect:	YES	NO
THE ENTITY, GIERSCH & ASSOCIATES, INC., COUNTY OF FRESNO, U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT, ITS OFFICIALS, OFFICERS, EMPLOYEES AND VOLUNTEERS OF THE ABOVE, are named on all liability policies described above as insured as respects: (a) activities performed for the Entity by or on behalf of the named insured, (b) products and completed operations of the Named Insured, and (c) premises, owned, leased or used by the Named Insured.		
Products and Completed Operations		
The undersigned will mail to the ENTITY 30 days' written notice of cancellation or reduction of coverage or limits.		
Cross Liability Clause (or equivalent wording)		
Personal Injury, Perils A, B and C		
Broad Form Property Damage		
X, C, U Hazards included		
Contractual Liability Coverage applying to this Contract		
Liquor Liability		
Coverage afforded the ENTITY, GIERSCH & ASSOCIATES, INC., COUNTY OF FRESNO, U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT, ITS OFFICIALS, OFFICERS, EMPLOYEES AND VOLUNTEERS OF THE ABOVE, as Insureds applies as primary and not excess or contributing to any insurance issued in the name of the Entity.		
Waiver of subrogation from Workers' Compensation insurer.		

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

Agency or Brokerage

Insurance Company

Address

Home Office

Name of Person to be Contacted

Authorized Signature

Date

Telephone Number

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of official of insurer.

HOLD HARMLESS AND INDEMNIFICATION AGREEMENT

Contractor shall indemnify and hold harmless ENTITY, GIERSCH & ASSOCIATES, INC., AND ANY OFFICERS, OFFICIALS, EMPLOYEES, AGENTS OR VOLUNTEERS OF THE ABOVE from and against all claims, damages, losses and expenses including attorney fees arising out of the performance of the work described herein, caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, except where caused by the active negligence, sole negligence, or willful misconduct of the Entity.

The State Compensation Insurance Fund has stated that it will not accept the Worker's Compensation Endorsement form titled "Worker's Compensation And Employer's Liability Special Endorsement," as contained in Section titled, "Insurance Requirements for Contractors." Instead, it issues a package of four endorsements, as follows:

- **Certificate of Workers' Compensation Insurance**
- **Additional Insured Employer Endorsement Agreement**
- **Waiver of Subrogation Endorsement Agreement**
- **Certificate Holder's Notice Endorsement Agreement**

Each of the endorsements above must be filled out separately for each of the additional insureds listed below, with one name per endorsement. Additional insureds which require Workers' Compensation Endorsements are as follows:

- **City of Fowler**
128 S. Fifth Street
Fowler, CA 93625
- **Giersch & Associates, Inc.**
421 North "I" Street
Madera, CA 93637
- **U.S. Department of Housing and Urban Development**
(Endorsements to be held by City of Fowler)
- **County of Fresno**
(Endorsements to be held by City of Fowler)

Reproduction of State Compensation
Insurance Fund Form



P. O. Box 420807, San Francisco, California 94142-0807

CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

Date

POLICY NUMBER: Number
CERTIFICATE EXPIRES: Date

ADDITIONAL INSURED
NAME AND ADDRESS

This is to certify that we have issued a valid Workers' Compensation insurance policy in a form approved by the California Insurance Commissioner to the employer named below for the policy period indicated.

This policy is not subject to cancellation by the Fund except upon 30 days' advance written notice to the employer.

We will also give you 30 days' advance notice should this policy be canceled prior to its normal expiration.

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

PRESIDENT (Note: following text is typewritten addition to printed form)

Endorsement #2570 Entitled Waiver of Subrogation effective Date is attached to and forms a part of this policy. Third party name: [Specify third party requesting waiver, one name per endorsement].

ENDORSEMENT # 0015 ENTITLED ADDITIONAL INSURED EMPLOYER EFFECTIVE Date IS ATTACHED TO AND FORMS A PART OF THIS POLICY. ADDITIONAL INSURED EMPLOYER: [Name of additional insured employee, one name per endorsement].

ENDORSEMENT #2065 ENTITLED 30 DAY CANCELLATION NOTICE EFFECTIVE Date IS ATTACHED TO AND FORMS A PART OF THIS POLICY.

Employer's Liability limit including defense cost: \$1,000,000 per occurrence.

EMPLOYER

CERTIFICATE EXPIRES: Date

**Reproduction of State Compensation
Insurance Fund Form**

**STATE
COMPENSATION
INSURANCE
FUND**

ADDITIONAL INSURED EMPLOYER

ENDORSEMENT AGREEMENT

**Home Office
San Francisco**

**All Effective Dates are
at 12:01 AM Pacific
Standard Time or the
Time Indicated at
Pacific Standard Time**

ANYTHING IN THIS POLICY TO THE CONTRARY NOTWITHSTANDING, IT IS AGREED THAT

(NAME OF ADDITIONAL INSURED EMPLOYER: ONE NAME PER ENDORSEMENT)

**IS HEREBY NAMED AS AN ADDITIONAL INSURED EMPLOYER ON THIS POLICY BUT ONLY
AS RESPECTS EMPLOYEES WHOSE NAMES APPEAR ON THE PAYROLL RECORDS OF**

(POLICY NAME)

**(HEREIN CALLED THE PRIMARY INSURED) WHILE THOSE EMPLOYEES ARE ENGAGED IN
WORK UNDER THE SIMULTANEOUS DIRECTION AND CONTROL OF THE PRIMARY INSURED
AND THE ADDITIONAL INSURED EMPLOYER.**

**IT IS FURTHER AGREED THAT THE PAYMENT OF THE FULL PREMIUM DUE AND PAYABLE
UNDER THIS POLICY SHALL REMAIN THE SOLE RESPONSIBILITY OF THE PRIMARY
INSURED.**

**NOTHING IN THIS ENDORSEMENT CONTAINED SHALL BE HELD TO VARY, ALTER, WAIVE
OR EXTEND ANY OF THE TERMS, CONDITIONS, AGREEMENTS, OR LIMITATIONS OF THIS
POLICY OTHER THAN AS STATED. NOTHING ELSEWHERE IN THIS POLICY SHALL BE HELD
TO VARY, ALTER, WAIVE OR LIMIT THE TERMS, CONDITIONS, AGREEMENTS, OR
LIMITATIONS OF THIS ENDORSEMENT.**

COUNTERSIGNED AND ISSUED AT SAN FRANCISCO

0015

**STATE
COMPENSATION
INSURANCE
FUND**

WAIVER OF SUBROGATION

ENDORSEMENT AGREEMENT

**Home Office
San Francisco**

**All Effective Dates are
at 12:01 AM Pacific
Standard Time or the
Time Indicated at
Pacific Standard Time**

**ANYTHING IN THIS POLICY TO THE CONTRARY NOTWITHSTANDING, IT IS AGREED THAT
THE STATE COMPENSATION INSURANCE FUND WAIVES ANY RIGHT OF SUBROGATION
AGAINST:**

(SPECIFY 3RD PARTY REQUESTING WAIVER, ONE NAME PER ENDORSEMENT)

**WHICH MIGHT ARISE BY REASON OF ANY PAYMENT UNDER THIS POLICY IN CONNECTION
WITH WORK PERFORMED BY:**

(POLICY NAME)

**IT IS FURTHER AGREED THAT THE INSURED SHALL MAINTAIN PAYROLL RECORDS
ACCURATELY SEGREGATING THE REMUNERATION OF EMPLOYEES WHILE ENGAGED IN
WORK FOR THE ABOVE EMPLOYER.**

**IT IS FURTHER AGREED THAT PREMIUM ON THE EARNINGS OF SUCH EMPLOYEES SHALL
BE INCREASED BY _____%.**

**NOTHING IN THIS ENDORSEMENT CONTAINED SHALL BE HELD TO VARY, ALTER, WAIVE
OR EXTEND ANY OF THE TERMS, CONDITIONS, AGREEMENTS, OR LIMITATIONS OF THIS
POLICY OTHER THAN AS STATED. NOTHING ELSEWHERE IN THIS POLICY SHALL BE HELD
TO VARY, ALTER, WAIVE OR LIMIT THE TERMS, CONDITIONS, AGREEMENTS, OR
LIMITATIONS OF THIS ENDORSEMENT.**

COUNTERSIGNED AND ISSUED AT SAN FRANCISCO

0015

**STATE
COMPENSATION
INSURANCE
FUND**

CERTIFICATE HOLDERS' NOTICE

ENDORSEMENT AGREEMENT

**Home Office
San Francisco**

**All Effective Dates are
at 12:01 AM Pacific
Standard Time or the
Time Indicated at
Pacific Standard Time**

**ANYTHING IN THIS POLICY TO THE CONTRARY NOTWITHSTANDING, IT IS AGREED THAT THIS POLICY
SHALL NOT BE CANCELED UNTIL:**

(SPECIFY NUMBER) _____ DAYS

**AFTER WRITTEN NOTICE OF SUCH CANCELLATION HAS BEEN PLACED IN THE MAIL BY STATE FUND TO
CURRENT HOLDERS OF CERTIFICATE OF WORKERS' COMPENSATION INSURANCE.**

**NOTHING IN THIS ENDORSEMENT CONTAINED SHALL BE HELD TO VARY, ALTER, WAIVE OR EXTEND ANY
OF THE TERMS, CONDITIONS, AGREEMENTS, OR LIMITATIONS OF THIS POLICY OTHER THAN AS STATED.
NOTHING ELSEWHERE IN THIS POLICY SHALL BE HELD TO VARY, ALTER, WAIVE OR LIMIT THE TERMS,
CONDITIONS, AGREEMENTS, OR LIMITATIONS OF THIS ENDORSEMENT.**

COUNTERSIGNED AND ISSUED AT SAN FRANCISCO

0015

CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)

For City of Fowler (the "Entity") & Giersch & Associates, Inc., and any elected or appointed officials, officers, employees, volunteers, or agents

PRODUCER

THIS CERTIFICATE OF INSURANCE IS NOT AN INSURANCE POLICY AND DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICES BELOW.

COMPANIES AFFORDING COVERAGE

INSURED

COMPANY COMPANY
LETTER A LETTER D
COMPANY COMPANY
LETTER B LETTER E
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LETTER C

COVERAGES THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENTS, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LETTER	TYPE OF INSURANCE	POLICY NO.	POLICY EFFECTIVE (MM/DD/YY)	POLICY EXPIR. DATE(MM/DD/YY)	ALL LIMITS IN THOUSANDS	
	GENERAL LIABILITY				GENERAL AGGREGATE	\$
	- COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OPS AGGREGATE	\$
	- CLAIMS MADE OCCUR.				PERSONAL & ADVERTISING INJURY	\$
	- OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	\$
	- OTHER _____				FIRE DAMAGE (ANY ONE FIRE)	\$
					MEDICAL EXPENSE (ANY ONE PERSON)	\$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	\$
	- ANY AUTO				BODILY INJURY (Per person)	\$
	- ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$
	- SCHEDULED AUTOS				PROPERTY DAMAGE	\$
	- HIRED AUTOS					
	- NON-OWNED AUTOS				EACH OCCURRENCE	\$
	- GARAGE LIABILITY				AGGREGATE	\$
	EXCESS LIABILITY				STATUTORY	
	- UMBRELLA				\$ (EACH ACCIDENT)	
	- OTHER THAN UMBRELLA FORM				\$ (DISEASE-POLICY LIMIT)	
	- WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY				\$ (DISEASE-EACH EMPLOYEE)	
	PROPERTY INSURANCE				AMOUNT OF INSURANCE	\$
	- COURSE OF CONSTRUCTION					

DESCRIPTION OF OPERATIONS/LOCATION/VEHICLES/RESTRICTIONS/SPECIAL ITEMS

THE FOLLOWING PROVISIONS APPLY:

- None of the above-described policies will be canceled, limited in scope of coverage or non-renewed until after 30 days' written notice has been given to the Entity at the address indicated below.
- As respects operations of the named insured performed on behalf of the Entity, the following are added as additional insureds on all liability insurance policies listed above: THE ENTITY, GIERSCH & ASSOCIATES, INC., AND ITS OFFICIALS, EMPLOYEES, AGENTS AND VOLUNTEERS OF THE ABOVE.
- It is agreed that any insurance or self-insurance maintained by the Entity will apply in excess of and not contribute with, the insurance described above.
- The Entity is named a loss payee on the property insurance policies described above, if any.
- All rights of subrogation under the property insurance policy listed above have been waived against the ENTITY.
- Any failure by the insured to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to THE ENTITY, GIERSCH & ASSOCIATES, INC., U.S. DEPT. OF HOUSING & URBAN DEVELOPMENT, FEDERAL AVIATION ADMINISTRATION, UNITED STATES DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT AND ITS OFFICIALS, EMPLOYEES, AGENTS AND VOLUNTEERS OF THE ABOVE.
- The workers' compensation insurer named above, if any, agrees to waive all rights of subrogation against the Entity for injuries to employees of the insured resulting from work for the Entity or use of Entity's premises or facilities.

CERTIFICATE HOLDER/ADDITIONAL INSURED

City of Fowler
128 South Fifth St.
Fowler, CA 93625

AUTHORIZED REPRESENTATIVE

Signature _____

Title _____

Phone No. _____

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

**AMENDMENT - AGGREGATE LIMITS OF INSURANCE
(PER PROJECT)**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

The General Aggregate Limit under LIMITS OF INSURANCE (SECTION III) applies separately to each of your projects away from premises owned by or rented to you.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

**AMENDMENT - AGGREGATE LIMITS OF INSURANCE
(PER LOCATION)**

This endorsement modifies insurance provides under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

The General Aggregate Limit under LIMITS OF INSURANCE (SECTION III) applies separately to each of your projects away from premises owned by or rented to you.

"Location" means premises involving the same or connecting lots, or premises whose connection is interrupted only by a street, roadway, waterway or right-of-way of a railroad.

SECTION THREE

SCOPE AND CONTROL OF WORK

3.1 AUTHORITY OF ENGINEER

The Engineer shall decide all questions which may arise as to the quality or acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of the work; all questions which may arise regarding the interpretation of the Plans and Specifications; all questions concerning the acceptable fulfillment of the contract on the part of the Contractor; and all questions as to compensation. The Engineer's decision shall be final and the Engineer shall have full authority to enforce and make effective such decisions and orders which the Contractor fails to carry out promptly.

3.2 PLANS

The approved plans shall be supplemented by such working drawings that may be necessary to adequately control the work. All authorized alterations affecting the requirements and information given on the approved plans shall be in writing. No changes shall be made on any plan or drawing after the same has been approved by the Engineer, except by his direction. Any shop or working drawings furnished by the Contractor shall be at his own expense and are subject to approval, unless approval be waived by the Engineer. All such plans shall be in conformity with the approved plans, but, although approved by the Engineer, the Contractor shall be responsible for accuracy of dimensions or details.

3.3 CONFORMITY WITH PLANS AND ALLOWABLE DEVIATIONS

Finished surfaces in all cases shall conform with the lines, grades, cross sections and dimensions shown on the approved plans, except those deviations required by the exigencies of construction, which will in all cases be determined by the Engineer and authorized in writing.

3.4 CONSTRUCTION RECORD DRAWINGS

The Contractor shall maintain a neatly marked set of record drawings showing the final locations and layout of all mechanical, electrical, and instrument equipment; piping and conduit, structures, and other facilities. Drawings shall be kept current weekly, with all field instructions and change orders; mechanical, electrical and instrumentation equipment accommodations; and construction adjustment.

Drawings shall be subject to the inspection of the Engineer at all times, and progress payments may be withheld if drawings are not current. At the time of final inspection, the Contractor shall submit to the inspector, for review and comment by the Engineer, one set of marked record drawings. Drawings shall be stamped "AS BUILT", dated and signed by the Contractor. The project will not be formally accepted until the drawings are accepted by the Engineer.

3.5 ASSIGNMENT AND TRANSFER OF CONTRACT

The Contractor shall not assign or transfer this contract or any part thereof or any interest therein without consent in writing of the Owner and the Contractor's surety, and any such assignment or transfer without such written consent shall be null and void.

3.6 SUBCONTRACTORS

The Contractor shall have full responsibility under these conditions, general provisions, and specifications for any subcontracts which he may let.

All persons engaged in the work, including subcontractors, will be considered as employees of the Contractor. The Contractor will be held responsible for their work. The City will deal directly with, and make all payments to the Contractor only.

The Contractor shall be responsible for the coordination of all trades, subcontractors, and materialmen engaged upon the work. Neither the City nor the City Engineer will undertake to settle any differences between the Contractor and his subcontractors or between subcontractors. In this regard, it is recommended to the Contractor that local subcontractors and materialmen be used whenever possible as one of the best methods of maintaining the coordination and activity essential to proper job schedule and completion.

When subcontracted work is not being prosecuted in a manner satisfactory to the City Engineer, the Contractor shall be notified to take corrective action within a specified time. If timely correction is not made on receipt by the Contractor of written instructions from the City Engineer, the subcontractor shall be removed immediately from the work. He shall not be reemployed on the work.

3.7 CONTRACT BONDS

The Contractor shall, within ten (10) days after the receipt of the Notice of Award and before the commencement of any operations hereunder, execute the contract and furnish the Owner with a performance and a labor and materials bond in penal sum equal to the amount of the contract price, conditioned upon the performance by the Contractor of all undertakings, covenants, terms, conditions and agreements of this contract, and upon the prompt payment by the Contractor to all persons applying labor and materials in the prosecution of the work provided by this contract. Such bonds shall be executed by the Contractor and a corporate bonding company licensed to transact such business in the State of California and acceptable to the Owner. The expense of bonds shall be borne by the Contractor. If at any time a surety on such bonds becomes irresponsible or loses its right to do business in the State of California, the Owner may require another surety which the Contractor shall furnish within ten (10) calendar days after receipt of written notice to do so. Evidence of authority of an attorney-in-fact acting for the corporate surety must be provided in the form of a certificate as to his power of attorney and to the effect that it is not terminated and remains in full force and effect on the date of the bonds. The form of the bonds shall be subject to approval by the Owner.

3.8 INSURANCE REQUIREMENT

The Contractor shall, within ten (10) days after the receipt of the Notice of Award and before the commencement of work execute an Agreement and furnish proof of required insurance as specified in the Agreement, the Indemnity Agreement, and the Insurance

Requirements specified in this section. The expense of insurance shall be borne by the Contractor.

3.9 APPROXIMATE ESTIMATE

The quantities given in the proposal and contract are approximate only, and are given as a basis for comparison of bids. The Owner does not, expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary by the Engineer.

3.10 SPECIFICATIONS

A. General

The Contractor shall keep on the job a copy of the Specifications and shall at all times give the Owner and Engineer access thereto. The Contractor shall not take advantage of any errors, discrepancies or omissions which may exist in the Specifications, but shall immediately call them to the attention of the Engineer whose interpretation or correction thereof shall be conclusive.

B. Precedence of Contract Documents

The order of precedence shall be:

- First: Permits from the City of Fowler and other agencies as may be required by law.
- Second: Special Provisions.
- Third: Project Specifications and Standard Drawings.
- Fourth: City Standard Specifications and Details
- Fifth: State Standard Specifications (Current Edition)

Change orders, supplemental agreements and approved revisions to the Specifications will take precedence over documents listed above. Detailed plans shall have precedence over general plans.

Whenever any conflict appears in any portions of the contract, it shall be resolved by application of the order of precedence, unless the Engineer shall otherwise order.

C. Reference Specifications

Reference specifications are those entitled "City of Fowler Standard Specifications" and "Standard Specifications, State of California, Department of Transportation (Current Edition)", hereinafter referred to as the State Standard Specifications. These Specifications are to be considered a part of the contract documents insofar as the various sections thereof are referred to hereinafter.

D. Furnishing Plans and Specifications

Five (5) copies of the Plans and Specifications will be furnished the Contractor without charge. Additional copies will be furnished on request at the cost of reproduction.

3.11 WORK TO BE DONE

The Contractor shall furnish and pay the cost, including sales tax and all other applicable taxes and fees, of all the necessary materials not furnished by the Owner and shall furnish and pay for all the superintendence, labor, tools, equipment and transportation and perform all the work required for the construction of all works listed and itemized under the bid schedule of the Bidder's Proposal in strict accordance with the Specifications and requirements and any amendments thereto and such supplemental plans and specifications which may hereafter be approved.

3.12 RIGHT-OF-WAY

Rights-of-way or easements for the improvement as shown in these Special Provisions will be provided by the Owner. Unless otherwise provided, the Contractor shall make his own arrangements, pay for and assume all responsibility for acquiring, using and disposing of additional work areas and facilities temporarily required by him. He shall indemnify and hold the Owner, Engineer, Fresno County and the U.S. Department of Housing and Urban Development harmless from all claims for damages occasioned by such actions.

3.13 PERMITS

The Contractor shall obtain permits, certificates and licenses required of him by the law for the execution of his work. He shall comply with the federal, state and local laws, ordinances, rules, and regulations related to the performance of the work. All cost shall be included in the bid prices paid for the various items of work and no additional allowance will be made therefor.

3.14 SUPERVISION AND INSPECTION

The Engineer shall have full authority to interpret the Specifications and shall determine the amount, quality and acceptance of the work and supplies to be paid under this contract and every question relative to the fulfillment of the terms and provisions therein. Unless otherwise specifically provided in the Specifications, all workmanship, equipment and materials incorporated in the work are to be of the best grade of their respective kinds for the purpose.

It shall be the duty of the Engineer to enforce the Specifications in a fair and unbiased manner, although he has the right to waive any term of the Specifications if that term is found to be unreasonable and inconsistent with the general spirit of the Specifications. If a variation from any requirement is allowed, the Engineer shall grant the same in writing with the reasons for his action outlined, and such actions will not invalidate or change the contract in any other manner.

The work to be done shall be subject to the review of the Engineer. He may specify the work sequence to obtain the best results and to protect the Owner's interest. The Contractor shall promptly comply with instructions from the Engineer or his authorized representative.

All work and materials are subject to inspection and approval of the Engineer. The Contractor shall notify the Engineer before noon of the working day before inspection is required, unless otherwise authorized. Work shall be done only in the presence of the Engineer or his authorized representatives.

Any work done without proper inspection will be subject to rejection. The Engineer and his authorized representatives shall at all times have access to the work during its construction at shops and yards as well as the project site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with these Specifications.

Inspection of the work shall not relieve the Contractor of the obligation to fulfill all conditions of the contract.

No oral agreement of conversation with any officer, agent or employee of the Owner or the Engineer, or with the Engineer, either before or after execution of the contract, shall affect or modify any of the terms or obligations contained in any of the contract documents.

The Contractor shall pay the Owner for all overtime inspection in accordance with existing resolutions or fee schedules of the Owner, unless the charges for such inspection have been specifically waived in the Special Provisions. Overtime charges will be made for all inspections on Saturdays, Sundays and State holidays, and hours worked by the inspector other than those of the normal working day.

3.15 LINES AND GRADES

Surveying adequate for construction will be done by the City Engineer, except for private contracts. The Contractor shall be responsible for preserving construction survey stakes and marks for the duration of their usefulness. If any construction survey stakes or permanent survey monuments or benchmarks are lost or disturbed without the consent of the Engineer, such replacement shall be by the City Engineer at the expense of the Contractor.

The Contractor shall submit a written survey request to the Engineer at least two (2) working days prior to the start of the requested survey work.

- a. Written requests received prior to noon will result in survey work starting before noon of the second business day following, except as noted in subparagraph d below. Written requests received between noon and 4:00 p.m. will result in survey work starting before the end of the second business day following, except as noted in subparagraph d.
- b. Once survey work is started, the time required to complete the survey work will depend on the amount and complexity of the work requested, and may also be affected by site accessibility, weather, interference by construction activity or the general public, or other factors.
- c. Requests for large amounts of survey work shall indicate a requested sequence or priority order.
- d. Contractor is advised that the Engineer employs a single survey crew. Survey work requests will be honored in the order that written requests are received. Once such written request has been received by the Engineer, any delays in completion of survey work due to the Engineer shall be considered delays beyond the Contractor's control

as provided in the "Agreement", and the Contractor shall not be charged liquidated damages for time lost to such delays.

All distances and measurements will be made and given in a horizontal plane. Stakes will be set and stationed by the City Engineer for piping, structures and rough grade and a corresponding cut or fill to finished grade (or flowline) indicated on a grade sheet. Three consecutive points set on the same slope shall be used together so that any variation from a straight grade can be detected. Any such variation shall be reported to the Engineer. In the absence of such report, the Contractor shall be responsible for any error in the grade of the finished work.

Grades for underground conduits will be set at the surface of the ground. The Contractor shall transfer them to the bottom of the trench. The Contractor shall dig all holes necessary for line and grade stakes.

3.16 REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK

All work that has been rejected shall be remedied or removed and replaced by the Contractor in an acceptable manner and no additional compensation will be allowed him for such removal or replacement.

Any work done beyond the lines and grades shown on the plans or established by the Engineer, or any extra work done without written authority, will be considered as unauthorized and will not be paid for. Work so done may be ordered removed at the Contractor's expense.

Upon failure on the part of the Contractor to comply with any order of the Engineer made under the provisions of this article, the Engineer shall have authority to cause defective work to be remedied or removed and replaced and unauthorized work to be removed and to deduct cost of same from any monies due or to become due the Contractor.

3.17 EQUIPMENT

Equipment not suitable to produce the quality of work required will not be permitted to operate on the project. The Contractor shall proceed and maintain adequate and suitable equipment to meet the above requirements and, when ordered by the Engineer, shall remove unsuitable equipment from the premises. All vehicles used to haul materials over existing roadways shall be equipped with pneumatic tires.

3.18 FINAL INSPECTION

The Engineer will not make the final inspection until all work provided and contemplated by the contract has been completed and final cleaning up performed.

3.19 FINAL CLEANUP

Upon completion and before making application for acceptance of the work, the Contractor shall clean the street, road, and all ground occupied by him in connection with the work, of all rubbish, excess materials, temporary structures and equipment and all parts of the work shall be left in a neat and presentable condition.

3.20 MATERIAL GUARANTY

Before any contract is awarded, the Bidder may be required to furnish a complete statement of the origin, composition, and manufacture of any or all materials to be used in the construction of the work, together with samples, which samples may be subjected to the tests provided for in these Specifications or in the Special Provisions to determine their quality and fitness for the work.

3.21 CHANGES IN WORK

The Contractor agrees that the quantities of work, as stated in the Bid Schedule and as indicated on the Plans, are only approximate. During the progress of work, the Owner may find it advisable to omit portions of the work, and to increase or decrease the quantity of an item. The Owner reserves the right to add or deduct from any item as deemed necessary or advisable. The Contractor shall hereby forfeit any claims for anticipation profit or loss of profit, or damages of any kind because of any difference between the quantities of the various classes of work actually done or of the material actually furnished and the said estimated quantities.

Section 4-1.03 of the State Standard Specifications in its entirety shall govern the procedures of processing changes, alteration or deviations in the work. Definitions of changes in the work and extra work and payment for same shall be as described therein.

The Owner reserves the right to contract with any person or firm other than the contractor for any or all extra work. The Contractor's attention is especially called to the fact that he shall be entitled to no claim for damages for anticipated profits on any portion of work that may be omitted.

3.22 CHANGE ORDER

Work added to or subtracted from the Contract shall be covered by Change Order.

3.23 DIFFERING SITE CONDITIONS

Section 5-1.116 of the state Standard Specifications shall apply to this contract.

3.24 MATERIALS FURNISHED BY OWNER

No labor, material, or other facilities shall be provided by the Owner unless otherwise indicated on the Drawings or in the Specifications.

3.25 SUPERVISION BY CONTRACTOR

The contractor shall supervise and direct the work. He shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor shall employ and maintain on the work a qualified supervisor or superintendent who shall have been designated in writing by the Contractor as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the Contractor and all communications given to the supervisor shall be as binding as if given to the Contractor. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the work.

The contractor shall employ only competent workmen for the execution of his work and all such work shall be performed under the direct supervision of an experienced person satisfactory to the City Engineer.

3.26 SEQUENCE OF WORK

The City Engineer shall have the power to direct the order and sequence of the work to the degree necessary to insure that the construction of one part will not interfere with the proper completion of other parts.

If at any time before the commencement, or during the progress of the work, the materials and appliances used or to be used appear to the City Engineer as insufficient or improper for securing the quality of work required, or the required rate of progress, he may order the Contractor to increase efficiency or to improve the quality of the work and the Contractor shall conform to such order. However, the failure of the City Engineer to demand any increase of such efficiency or any improvement shall not release the Contractor from his obligation to secure the quality of work or the rate of progress specified.

3.27 SANITARY PROVISIONS

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the State and Local Department of Health and other agencies having jurisdiction therewith.

3.28 AIR AND WATER POLLUTION

The Contractor shall use suitable precautions to minimize air pollution during the progress of the work. To this end, unpaved haul roads shall be sprinkled as necessary to prevent dust diffusion. Aggregate bins, cement bins, and dry material batch trucks shall be properly covered to prevent loss of material. Quarrying, batching, and mixing operations shall be properly controlled to minimize the spreading of dust.

3.29 SAFETY PROVISIONS

The Contractor shall, at his own expense, furnish, install and maintain all necessary signs, lights, barricades, stairs, railings and bridges and other safety devices, and shall take all other necessary precautions to prevent damage to life or property. To the maximum extent possible, the Contractor shall arrange his work so as to keep two way vehicular traffic open at all times and will direct and supervise traffic as instructed by the City Engineer and/or the Department of Public Works.

Safety regulations as set forth in the State Standards and the State Department "Manual of Traffic Controls", shall be complied with at all times.

In the safe and proper conduct of the work requires the closing to public travel of any public street or way, or any part thereof, with consequent interruption of, or diversion of traffic, or if the work is adjacent to such a street or way, the Contractor shall furnish, erect and maintain through the progress of the work such warning, detour and other signs, barricades, fences, stairs, railings, underpasses, bridges or other temporary structures as may be necessary for the safe and convenient passage of traffic through, past, around

over or under the work. The Contractor shall notify the Fire Department, Police Department and Public Works Department whenever it is necessary to close a street; also, when said street is again open for traffic. The approval of the City Engineer as to type, size and lettering of signs shall be obtained before erection. During the hours of darkness, sufficient red lights or flares shall be maintained in good order on or at all such temporary structures and at a suitable distance there from to warn the approaching traffic, and if necessary such signs and structures shall be artificially illuminated to insure adequate visibility.

The Contractor shall maintain full access to houses, private garages, businesses and other property by carefully constructed, compacted and unyielding entrances, kept in good repair. Where necessary, adequate plank bridges with beveled edges and equipped with hand or guard rails are to be maintained for smooth and safe traffic of pedestrians and vehicles. In order to avoid danger and delay to the public the Contractor shall, when ordered by the City Engineer, provide competent flagmen whose sole duty shall be to direct and control the movement of traffic through or past hazards incident to the work.

The Contractor shall comply with all the provisions of California Labor Code Sections 6705 through 6710. The Contractor shall submit for the City Engineer's approval, in advance of excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of carving ground during the excavation of any trench or trenches five feet or more in depth. The plan shall be carried out in accordance with the approved plans. Nothing in these sections shall be construed to impose tort liability on the City, the City Engineer or any of its officers and employees.

3.30 EXISTING STRUCTURES IN RELATION TO PLANS

Where underground and surface structures are shown on the Plans, the locations, depth and dimensions of such structures are believed to be reasonably correct but are not guaranteed. Such structures are shown for the information and convenience of the Contractor but such information so given is not to be construed as a representation that such structures will, in all cases, be found or encountered just where shown or that they represent all the structures which may be encountered. It shall be the Contractor's responsibility to locate and protect or remove all structures as the case may be.

3.31 PROTECTION OF WORK, PROPERTY AND PERSONS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work. He will take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees on the work and other persons who may be affected thereby, all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection.

The Contractor shall remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor or anyone directly or indirectly, in whole or in part, by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, except damage or loss attributable to the fault of the Contract Documents or to the acts or omissions of the Owner or the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor.

SECTION FOUR

CONTROL OF MATERIALS

4.1 MATERIALS AND WORKMANSHIP

All materials, parts and equipment furnished by the Contractor in the work shall be new, first quality and free from defects. Workmanship shall be in accordance with generally accepted standards. Both materials and workmanship shall be subject to the approval of the City Engineer. Any materials and workmanship not conforming to the requirements of these Specifications shall be considered defective and will be subject to rejection. Defective work or materials, whether in place or not, shall be removed immediately from the site by the Contractor, at his expense, when so directed by the City Engineer. If the Contractor fails to replace any defective or damaged work or material after notice from the City Engineer, the City Engineer may cause such work or materials to be replaced. The replacement expense shall be deducted from the amount to be paid to the Contractor. All materials shall be fully guaranteed against defects for a period of one (1) year from the date of the filing of the Notice of Completion by the City.

Used or secondhand materials, parts and equipment may be used only if specifically permitted in the Special Provisions or Technical Specifications.

4.2 SAMPLES AND TESTS

At the option of the City Engineer, the source of supply of each of the materials shall be approved by him before delivery is started or any of the materials are used in the work. Representative preliminary samples of the character and quality prescribed shall be submitted by the Contractor of all materials to be used in the work for testing or examination as requested by the City Engineer. All tests of materials submitted by the Contractor shall be made in accordance with commonly recognized standards of national organizations and such special methods and tests as are prescribed in these Specifications. The Contractor shall furnish such samples as are requested by the City Engineer, without charge. No material shall be used until it has been approved by the City Engineer. Samples will be secured and tested whenever necessary to determine the quality of the material.

4.3 DEFECTIVE MATERIALS

All materials not conforming to these Specifications shall be considered defective, and all such materials, whether in place or not, shall be rejected and shall be immediately removed from the site of the work, unless otherwise permitted to remain, by the City Engineer. Rejected material, the defects of which have been subsequently corrected, shall not be used until written approval has been obtained from the City Engineer.

4.4 EQUIPMENT AND MATERIAL QUALIFICATIONS

The Contractor shall base his bid on those types of equipment or materials shown on the Drawings, or called for in the Specifications. The City Engineer shall be the sole judge as to whether alternate equipment or materials may be substituted. Written approval must

be obtained from the City Engineer before any alternate equipment or material is purchased.

All materials and equipment installed shall be new. Equipment shall be of recent manufacture (not a discontinued product, incapable of obtaining repair parts), with manufacturer's parts and service facilities within 500 miles of the City of Fowler.

All materials and equipment shall conform to the requirements of the applicable society, institute or association responsible for establishing industry standards and testing procedures.

When two or more units of the same equipment are required, they shall be identical standard products of a single manufacturer, unless otherwise approved in writing by the City Engineer.

4.5 TRADE NAMES AND ALTERNATIVES

The City Standards may require certain types of equipment with no substitutions allowed in order to maintain compatibility with existing City facilities. Wherever a material, article or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue number and an "Or Equal" notation, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The Contractor may recommend the substitution of a material, article or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Engineer, such material, article, or piece of equipment is of equal substance and function to that specified, the Engineer may approve its substitution and use by the Contractor. The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the contract price or contract time.

The Contractor shall, at his expense, furnish tests and data concerning items offered by him as equivalent to those specified. He shall have the material tested as required by the City Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the item will fulfill its intended function.

Test methods shall be subject to the approval of the City Engineer. Test results shall be reported promptly to the City Engineer, who will evaluate the results and determine whether the material offered is equivalent to that specified. The City Engineer's findings shall be final. Adequate time shall be allowed for the City Engineer to make this determination.

Installation and use of a substitute item shall not be made until approved by the City Engineer. If a substitute offered by the Contractor is found to be not equal to the specified material, the Contractor shall furnish and install the specified material.

The specified Contract completion time shall not be affected by any circumstance developing from the provisions of this subsection.

4.6 SUBMITTALS

Within twenty (20) calendar days of the Notice of Proceed the Contractor shall provide six (6) copies of all submittal materials. Three copies of approved submittals will be returned to the Contractor. Five copies of rejected submittals will be returned. The Contractor shall resubmit 6 copies of corrected or revised submittals for approval. Submittals are required for all materials and equipment to be used on the project. Furnishing materials or equipment referenced in the Specifications by trade name does not relieve the Contractor of the requirement to provide submittal information. Manufacturers product changes often requires reexamination of product suitability.

Prior to installation, the Contractor shall submit four (4) copies of corrected Drawings, together with all necessary erection and installation Drawings. Fabrication of equipment shall not be started until submittal material has been reviewed and approved by the City Engineer.

Upon completion of work, the Contractor shall furnish statements from equipment suppliers to the effect that equipment supplied has been correctly installed and is ready for operation. For use in instructing operators and subsequent operation and maintenance, the Contractor shall furnish and place on file six (6) copies of operating and maintenance instructions and parts catalogs supplied by manufacturers for equipment furnished.

4.7 GUARANTEE

The Contractor shall guarantee that all work performed and each item of mechanical equipment furnished will function satisfactorily for a period of one (1) year from the date of the filing of the Notice of Completion. Mechanical parts, materials, equipment or workmanship found to be defective during this period shall be removed, and new materials or equipment furnished and installed without charge by the Contractor. The guarantee period shall then be one (1) year from the date that the work or equipment is restored to full operational service.

4.8 STORAGE OF MATERIALS

The Contractor shall at all times carefully and properly protect all materials of every description both before and after being used in the work, and provide any enclosing or special protection from the weather deemed necessary by the City Engineer, without additional cost to the City. Partial payments will not relieve the Contractor of any of his responsibilities.

Mechanical equipment, with electric motors, bearings or other moving parts, delivered to the job site, shall be housed inside a weather-tight building or enclosure until installed in its operating position.

4.9 INSTALLATION OF EQUIPMENT

All equipment shall be installed complete and ready to operate by the Contractor. In the installation of the equipment, only workmen skilled in the various trades shall be employed.

All machinery shall be set plumb and level in accordance with manufacturer's recommendations.

Oil and grease, of quantities and type in accordance with the manufacturer's recommendations, shall be furnished for initial operation, and for 60 days of operation after final acceptance of equipment.

Welding, where required, shall be by the electric arc process and shall be performed by qualified welders in accordance with the applicable welding code.

Metal work to be embedded in concrete shall be accurately placed and held in correct position while the concrete is being placed. The surface of all metal work to be in contact with concrete shall be thoroughly clean of all rust, dirt, grease, paint, loose scale, grout, mortar, or other foreign substances immediately before concrete is placed.

All foundation and anchor bolts shall be hot-dipped galvanized except for bolts located in a submerged or corrosive environment (i.e., chemical or chlorine gas or solution exposure) which shall be Type 316 stainless steel. Where it is impracticable to set anchor bolts before the concrete is placed, holes may be drilled in the concrete after it is properly set and cinch anchors installed. Foundation bolts for pumping units and such other equipment as may be deemed necessary shall be encased in metal tubing of light wall thickness having a diameter not less than three times the diameter of the bolt. Anchor bolts so noted on the Plans shall be set prior to concrete placement.

Pump and other equipment foundations shall be left three-quarters (3/4") inch below the grade of machine base unless otherwise noted or indicated on the Plans. After the proper setting of machine for alignment and grade, the recess below the base, together with recess between the anchor bolt and the metal tube, shall be grouted and carefully finished.

The Contractor shall make the necessary changes in the structures to fit the equipment or mechanisms purchased. All existing structures, pipe work and mechanisms are believed to be positioned as shown on the Plans, based on the information available. Existing piping and equipment shall be supported in place and the location adjusted when required to make a satisfactory fit to new construction. When new construction is to be joined to existing structures or equipment, all dimensions involved shall be checked by the Contractor. Any cost that may be incurred by the Contractor in carrying out these construction requirements will be considered as having been included in the prices bid for the various items of work and no extra allowance will be made therefore.

Shop coats of paint shall be applied in accordance with the provisions of these Specifications and protected as much as it is practicable during handling, storage and installation. After installation, all exposed surfaces shall be painted as specified under the "Painting and Coatings" section.

4.10 FIELD TESTING

Upon completion of construction and installation of all mechanical and electrical equipment, field tests shall be made of the equipment.

An authorized representative of the company or companies supplying the various pieces of equipment shall check the installation and adjust and test the equipment furnished until such equipment operates properly.

Field performance tests of all pumping units and all other equipment including auxiliaries shall be made in accordance with the appropriate and approved Test Codes of the ASME and the IEEE and as specified in these Specifications. When necessary, process water shall be used in testing the equipment.

The Contractor shall furnish the services of a competent representative of the manufacturer of the various items of mechanical equipment to instruct City Maintenance Personnel in operation and maintenance procedures.

Prior to the initial operation phase, the equipment suppliers shall check out their equipment to determine that it is in proper working order and is ready for integrated operation with other equipment in the plant. Once the final checkout of equipment has started, the manufacturer's representative shall stay at the site until proper operation is attained, unless other arrangements have been made with the City Engineer.

The Contractor's test operation of each piece of mechanical equipment shall continue for not less than eight (8) hours without interruption or for a period of time acceptable to the City Engineer that will permit adequate testing of the equipment to the satisfaction of the City Engineer. All parts shall operate satisfactorily in all respects, under continuous full-load unless the City Engineer approves a reduced load test and in accordance with the specified requirements, for the full duration of the eight-hour test period. If any part of a unit shows evidence of unsatisfactory or improper operation during the eight-hour test period, correction or repairs shall be made and the full eight-hour test operation as specified above shall be completed after all parts operate satisfactorily. The Contractor shall furnish all personnel, power, fuel, oil, grease and all other necessary facilities for conducting the Contractor's test operations. The Contractor shall give continuous, competent supervision at the immediate site of the equipment for the full test period.

After all equipment is installed and tested by the Contractor, the Owner will test the equipment for a period not to exceed seven (7) days by operating, either under actual or simulated operating conditions before final acceptance is given. All defects of material or workmanship that appear during the Owner's test period shall be corrected by the Contractor. After such corrections are made, the Owner's seven day test may be run again before final acceptance if it is deemed advisable by the City Engineer. The Contractor will supply all power, water, oil, grease, auxiliaries and operating personnel required for the Owner's test operation.

4.11 MATERIALS, SERVICES AND FACILITIES

It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the work within the specified time.

Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the work. Stored materials and equipment to be incorporated in the work shall be located so as to facilitate prompt inspection.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

Materials, supplies, and equipment shall be in accordance with samples submitted by the Contractor and reviewed by the Engineer.

Materials, supplies or equipment to be incorporated into the work shall not be purchased by the Contractor or any Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

4.12 INSPECTION AND TESTING

All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents.

The Contractor shall provide, at his expense, the necessary testing and inspection services required by the Contract Documents, unless otherwise provided.

All initial compaction and materials tests shall be performed as part of the bid item for the specified item of work. The cost of each subsequent retest shall be paid for by the Contractor if the first tests fail to meet the required relative compaction or specified strength.

Neither observations by the Engineer nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the work in accordance with the requirements of the Contract Documents.

The Engineer and his representatives will at all times have access to the work. In addition, authorized representatives and agents of the Owner and appropriate Federal or State agencies shall be permitted to inspect all work, materials payrolls, personnel records, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the work and also for any inspection or testing thereof.

If any work is covered contrary to the written request of the Engineer, it must, if requested by the Engineer be uncovered for his observation and replaced at the Contractor's expense.

SECTION FIVE

UTILITIES

5.1 LOCATION

It shall be the Contractors responsibility to obtain the location, size and depth of all existing utilities and improvements located within the improvement limits of work. The City does not guarantee the location or depth of any of the existing utilities and/or improvements. All utilities and/or underground structures must be field located by the Contractor prior to any excavation within the limits of construction.

5.2 PROTECTION

The Contractor shall not interrupt the service function or disturb the supporting base of any utility without authority from the Owner, the Public Works Director or from the Engineer.

The Contractor shall notify the Owner, Engineer and all Owners of utilities prior to construction when his work is in progress and shall make such arrangements as are necessary to make any emergency repair. The Contractor shall be prepared at all times with labor, equipment and materials to make repairs on damaged mains or utilities. The Contractor shall immediately notify the Engineer and the utility owner if he disturbs, disconnects or damages any utility. The Contractor shall bear the cost of repair or replacement. No extra compensation will be made for the repair or replacement. No extra compensation will be made for the repair of any services or mains damaged by the Contractor's labor forces or equipment, nor for any damage incurred through the neglect or failure of providing protective barriers, lights and other devices or means required to protect such existing utilities.

5.3 "CAUTION" - UTILITIES

The Contractor must use caution to protect all the existing utilities during the construction period. All cost for repair will be borne by the Contractor.

5.4 UNDERGROUND NOTIFICATION

It shall be the Contractors responsibility to notify the Owner and the USA Underground Service Alert Organization for utility undergrounding permits per Section 4216 of the Government Code. The Contractor shall obtain all identification numbers and certifications required for underground utility locations prior to starting excavation within the project limits of work. The Underground Service Alert Phone Number is 800-227-2600.

5.5 REMOVAL

Unless otherwise specified, the Contractor shall remove all portions of interfering utilities shown on the Plans as "abandoned" or "to be abandoned in place". Before starting removal operations, the Contractor shall ascertain from the utility owner whether abandonment is complete. The costs involved in the removal and disposal shall be absorbed in the Contractor's bid.

5.6 RELOCATION

When feasible, the Owners responsible for utilities within the area affected by the work will complete their necessary installations, relocations, repairs, or replacements before commencement of work by the Contractor. When the Special Provisions or Plans indicate that a utility is to be relocated, altered or constructed by others, the City will conduct all negotiations with the Owners and the work will be done at no cost to the Contractor.

Utilities, found by the City Engineer to interfere with the permanent project work after award of the Contract, will be relocated, altered, or reconstructed by the Owners, or the City Engineer may order changes in the work to avoid interference.

When the plans or specifications provide for the Contractor to alter, relocate, or reconstruct a utility, all costs for such work shall be absorbed in the Contractor's bid. Temporary or permanent relocation or alteration of utilities desired by the Contractor for his own convenience shall be his responsibility, and he shall make all arrangements and bear all costs. The Contractor may, for his own convenience or to expedite the work, agree with the Owner of any utility to disconnect and reconnect interfering service connections. The City shall not be involved in any such agreement.

5.7 DELAYS

The Contractor is responsible for notifying utility owners in time to prevent delays attributable to utility relocations or alterations. The Contractor shall not be entitled to damages or additional payment if such delay does occur. The City Engineer will determine the extent of the delay attributable to such interference, the effect of the delay on the project as a whole, and any commensurate extension of time.

5.8 COOPERATION

When necessary, the Contractor shall so conduct his operations as to permit access to the work site and provide time for utility work to be accomplished during the progress of the Contract work.

5.9 AVAILABLE UTILITIES

Arrangements for electric power shall be made by the Contractor with Pacific Gas and Electric Company. All costs for providing energy used will be paid by Contractor.

The Contractor shall make all required arrangements for obtaining water for compaction and dust control.

The Contractor is responsible for the protection of any utility and or any damage to any such utility during the prosecution of his work. Any damages to a utility shall be repaired to the satisfaction of the Owner owning the facility. The City reserves the right, if so requested by the Utility Owner, to permit the Owner to repair such damage, and all expenses of whatever nature arising from such damage shall be borne by the Contractor.

All costs for fees, permits, labor, materials, etc. used to obtain utility services necessary for this Contract shall be arranged and obtained by the Contractor at his expense. There shall not be an extension of Contract time due to the Contractor neglecting to make proper arrangements with the utility company at the beginning of the Contract for said services. Rule 16 underground charges shall be paid by the City.

SECTION SIX

LEGAL RELATIONS AND RESPONSIBILITY

6.1 LAWS TO BE OBSERVED

In all operations connected with the work on this contract, all ordinances of the City, County and all laws of the United States and the State of California, which shall be or become applicable to, and control or limit in any way, the actions of those engaged in any way as principal or agent, shall be respected and strictly complied with. The Contractor shall keep himself fully informed of all State and Federal laws and City and County ordinances and regulations, and revisions thereto, that in any way affect those engaged or employed in or on the work or in any way affecting the conduct of the work, and of all orders or decrees of bodies of officials having jurisdiction or authority over the same. He shall, himself, at all times observe and comply with all such laws, ordinances and regulations, orders and decrees. He shall protect and indemnify the said Owner and Engineer, and its officers, employees and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, orders or decree whether by himself or his employees. If any discrepancy or inconsistency is discovered in the plans, drawings, specifications or contract for the work in relation to any such law, ordinance, regulation, order or decree, the Contractor shall forthwith report the same to the Engineer in writing.

6.2 HOURS OF LABOR

The Contractor shall forfeit, as penalty to the Owner, Twenty-Five Dollars (\$25.00) for each workman employed in the execution of the contract by him or by any subcontractor under him for each calendar day during which any workman is required or permitted to labor more than eight (8) hours in violation of the provisions of the Labor Code and, in particular, Section 1810 of Section 1815 thereof, inclusive.

Overtime and shift work may be established as a regular procedure by the Contractor with reasonable notice and written permission of the Owner. No work other than overtime and shift work established as a regular procedure shall be performed between the hours of 6:00 p.m. and 7:00 a.m., nor on Saturdays, Sundays, or holidays except such work as is necessary for the proper care and protection of the work already performed or in case of emergency.

Contractor agrees to pay costs of overtime inspection except those occurring as a result of overtime and shift work established as a regular procedure. Overtime inspection shall include inspection required during holidays, Saturdays, Sundays, and weekdays. Cost of overtime inspection will cover engineering, inspection, general supervision and overhead expenses that are directly chargeable to the overtime work. Contractor agrees that Owner shall deduct such charges from payments due the Contractor.

6.3 LABOR DISCRIMINATION

Attention is directed to Section 1735 of the Labor Code, as added by Chapter 643, Statutes of 1939, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of the race, color or religion of such persons and every contractor for public works violating this section is subject to all the penalties imposed for a violation of this chapter".

6.4 PREVAILING WAGE

It shall be mandatory upon the Contractor herein and upon any subcontractor to pay not less than the said specified rates to all laborers, workers and mechanics employed by them in the penalty for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing rate for such work or craft in which such worker is employed for any work done under the Agreement by him or by an subcontractor under him, the amount of which is to be determined in accordance with Labor Code section 1775.

The Owner will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rate set forth in the contract. The possibility of prevailing wage increases is one of the elements to be considered by the Contractor in determining his bid, and will not, under any circumstances, be considered as the basis of a claim against the Owner on the contract.

6.5 REGISTRATION AND QUALIFICATION OF CONTRACTORS

Contractors shall be licensed in accordance with the provisions of an act entitled *"An Act Providing for the Registration of Contractors, and defining the Term Contractor; Providing a Method of Obtaining Licenses to Engage in the Business of Contracting, and Fixing the Fees for Such Licenses; Providing a Method of Suspension and Cancellation of Such Licenses; and Prescribing the Punishment for Violation of the Provisions of this Act"*, codified as Chapter 9 of Division III of the Business and Professions Code, Chapter 37 of the Statutes of 1939, as amended.

No bid will be considered for award unless the Contractor certifies, at the time of the award is to be made, that said Contractor holds a valid License by the State of California to enter into contracts to perform the work specified in accordance to Section 2, Chapter 6, *"Awarding of Contracts"* of Section 7040 of the Business and Professional Code. All applicable federal, state and local laws, codes and ordinances must be compiled with.

The Owner may make such investigations as he deems necessary to determine the ability of the Contractor to perform the work, and Contractor shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, said Contractor fails to satisfy the Owner that said Contractor is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

6.6 FAIR LABOR STANDARDS ACT

The attention of Bidders is invited to the fact the Owner has been advised by the Wage and Hour Division, U. S. Department of Labor, the Contractors engaged in public construction work are required to meet the provisions of the Fair Labor Standards Act of 1938 and as amended (52 Stat. 1060).

6.7 PATENTS

All fees or claims for any patented invention, article, or arrangement that may be used upon or in any manner connected with the doing of the herein proposed work or any part thereof shall be included in the price bid for doing the work herein proposed, and the Contractor and his sureties shall protect and hold any and all departments of the Owner and Engineer together with all its officers and employees, harmless against any and all suits and claims brought or made by the holder of any invention, patent, copyright or trademark, or growing out of any alleged infringement of any invention, patent, copyright or trademark, and before final payment is made on account of the contract, the Contractor shall furnish acceptable proof to the Engineer of a proper release from all such fees or claims.

6.8 COOPERATION BETWEEN CONTRACTORS

Where two or more Contractors are employed on related or adjacent work, each shall conduct his operations in such manner as not to cause any unnecessary delay or hindrance to the other. Each Contractor shall be responsible to the other for any damage to work or injury to person or property or for loss caused by failure to complete the work within the specified time for completion.

6.9 LABOR

The Contractor and his subcontractors shall discharge, whenever ordered to do so by the Engineer, any employee who is disorderly or whose conduct, in the opinion of the Engineer, is detrimental to the prosecution of the work. Employees so discharged shall not again be employed on the work.

No person whose age or physical condition is such as to make his employment dangerous to his health and safety or to the health and safety of others shall be employed on the work, and in no event shall any person under the age of sixteen (16) years be employed.

The work shall at all times be executed under safe working conditions, and the conditions of work shall be subject to inspection and correction by the Engineer or safety inspectors of the Owner.

6.10 FORFEITURE OF WAGE UNDERPAYMENTS

The Contractor shall forfeit to the Owner fifty dollars (\$50.00) for each calendar day, or portion thereof, for each workman paid less than the stipulated prevailing rates for any public work done under the Contract by him or by any subcontractor (California Labor Code, Section 1775) and the Owner shall withhold all amounts so forfeited pursuant to Section 1727 of the Labor Code.

6.11 APPRENTICES

Contractor agrees to comply with all provisions of the law regarding the employment of apprentices. (Labor Code sections 1773.3, 1777.5, 1777.6 and 3077 et seq.) These sections require that Contractors and subcontractors employ apprentices in apprenticeable occupations in a ratio of not less than one (1) apprentice for each five (5) journeyman hours, unless an exemption is granted, and that Contractors and subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public work solely on the grounds of race, religious creed, color, national origin, ancestry, sex, or age. Only apprentices who are in training under written apprenticeship agreements will be employed on public works in apprenticeable occupations. The responsibility for compliance with these provisions for all apprenticeable occupations rests with the Contractor.

6.12 PERMITS AND LICENSES

The Contractor shall, at his own expense, procure all permits and licenses, pay all charges and fees and give all notices necessary and incidental to the due and lawful prosecution of the work.

6.13 PROPERTY RIGHTS IN MATERIALS

Nothing in the contract shall be construed as vesting in the Contractor any right of property in the materials used in the work after they have been attached or affixed to the work or soil, but the same shall be and remain the property of the Owner.

6.14 ASSIGNMENT OF ANTI-TRUST ACTION

In entering into a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton act (15 U.S.C., Section 15) or under the Cartwright Act (Ch 2 commencing with Section 16700) or Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

6.15 COMPLIANCE WITH CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

The Contractor shall comply with all applicable standards, orders, or requirements issued under the Clean Air Act (42 U.S.C. 7401 et. seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et. seq., as amended).

6.16 EQUAL EMPLOYMENT OPPORTUNITY

The Contractor shall comply with Executive Order 11246, entitled "Equal Employment Opportunity", as amended by Executive Order 11375, and as supplemented in Department of Labor Regulations (41 CFR Part 60).

6.17 COPELAND ANTI-KICKBACK ACT

The Contractor shall comply with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR, Part 3). This Act provides that the Contractor is prohibited from inducing, by any means, any person employed in the construction completion, or repair of public work, to give up any part of the compensation to which he/she is otherwise entitled.

6.18 PUBLIC CONVENIENCE AND SAFETY

6.18.1 Traffic and Access

The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times.

Public ingress-egress to and from each residence or business shall be maintained except during periods of construction that could cause damage or be unsafe to vehicular travel. Each property owner shall be notified at least 24 hours in advance to street closing. In any case, street closing to vehicular access shall not exceed 8 hours during any period. All street closures must be requested in writing and must be approved by the Superintendent of Public Works and/or City Engineer.

The Contractor shall include all costs for the above items in the various bid items, and no separate payment will be made therefor.

6.18.2 Street Closures

The Contractor shall comply with all applicable State, County and City requirements for closure of streets. He shall provide barriers, guards, lights, signs, temporary bridges, flagmen and watchmen, advising the public of detours and construction hazards. He shall also be responsible for compliance with additional public safety requirements which may arise during construction. He shall furnish and install all safety and notification equipment, signs, etc. and upon completion of the work, promptly remove all signs and warning devices.

6.18.3 Public Safety

The Contractor shall have at the work site copies or suitable extracts of: Construction Safety Orders, Tunnel Safety Orders and General Industrial Safety Orders issued by the State Division of Industrial Safety. He shall comply with provisions of these and all other applicable laws, ordinances and regulations.

Contractors must comply with provisions of the safety and health regulations for construction, promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act, as set forth in Title 29 C.F.R.

The Contractor shall include all costs for the above items in the various bid items and no separate payment will be made therefor.

6.19 PUBLIC NOTIFICATION OF WATER SHUTOFF

At those locations where the work involves shutting off the main water line, the Contractor shall, prior to shutting off the water, do the following:

- a. Determine the valves which will be closed, and verify that said valves are in operable condition.
- b. Prepare notices, written both in English and Spanish, for all residents or businesses who will be impacted by the shutoff, and distribute to these individuals at least forty-eight (48) hours in advance of the water shutoff. A copy of the notice shall be furnished to the Engineer prior to distribution to the public. The notice shall contain the time that the shutoff will commence and the anticipated duration of the shutoff.

6.20 PROJECT SITE MAINTENANCE

Throughout all phases of construction, including suspension of work, and until final acceptance of the project, the Contractor shall keep the work site clean and free from rubbish and debris. The Contractor shall also abate dust nuisance by cleaning, sweeping and sprinkling with water or other means as necessary.

Materials and equipment shall be removed from the site as soon as they are no longer necessary, and upon completion of the work and before final inspection, the entire work site shall be cleared of equipment, unused materials and rubbish so as to present a satisfactory clean and neat appearance. All cleanup, dust control, and project site maintenance costs shall be absorbed in the Contractor's bid.

6.21 DISPOSAL OF MATERIAL

When any materials, including excess or unsuitable excavation are to be disposed of outside of the right-of-way, the Contractor shall first obtain permission in writing from the property owner on whose property the disposal is to be made and shall file a copy of such permit with the City Engineer. Material thus disposed of shall be placed in a neat and uniform manner so as not to have an unsightly appearance and to the satisfaction of the City Engineer. Unless otherwise provided in the Special Provisions, the Contractor shall make his own arrangements for disposal of such materials and shall pay all charges involved. Full costs for disposing of such material shall be included in various items of work and no additional payment will be made therefore.

SECTION SEVEN

PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK

7.1 COMMENCEMENT OF WORK

The Engineer shall decide all questions as to the quality or acceptability of materials furnished and work performed and as to the manner of performance and rate of progress of the work; all questions as to the interpretation of the contract; all questions as to the acceptable fulfillment of the contract on the part of the Contractor; and all questions as to claims for additional compensation on the part of the Contractor, claims for deductions from the contract price on the part of the Owner and the amount of compensation due at each payment period. The Contractor, without delaying the job, shall promptly comply with all decisions of the Engineer and all directions and orders given by the Engineer, and the Engineer shall have the authority to enforce and make effective all such decisions, directives and orders which the Contractor fails to promptly carry out. Unless a decision of the Engineer is fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith, it shall be final and conclusive for all purposes.

The work shall start within **ten (10) days** after the Notice to Proceed is issued and be diligently prosecuted to completion within the time provided in the "Information For Bidders".

7.2 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF WORK

At the pre-construction meeting the Contractor shall submit to the Engineer for approval his proposed construction schedule. The construction schedule shall be in the form of a tabulation, chart, or graph and shall be in sufficient detail to show the chronological relationship of all activities of the project including, but not limited to, estimated starting and completion dates of various activities, procurement of materials, and scheduling of equipment. The construction schedule shall reflect completion of all work under the Contract within the specified time and in accordance with these specifications. The Schedule shall be revised every two (2) weeks as required and submitted to the Engineer in writing. Failure to submit an approved schedule by the Contractor shall be considered a default of the contractor pursuant to Section 8.6 of these Contract Documents.

The time between removal of pavement within the traveled way and placement of aggregate base shall not exceed 5 working days except as previously approved by the Engineer.

The time between removal of existing concrete improvements and installation of new concrete improvements shall not exceed 5 working days when adjacent to residences or business and 10 working days when adjacent to school or vacant property.

7.3 SEQUENCE OF WORK

The Contractor shall schedule work on the streets within the indicated time interval and shall with utmost diligence execute the work expeditiously so as to minimize public inconvenience and possible hazardous conditions.

7.4 EXECUTION OF WORK

To minimize public inconvenience and possible hazard and to restore the site and other work areas to their original condition and/or state of usefulness as soon as practicable, the Contractor shall diligently execute the work to completion. If, in the Engineer's opinion, the Contractor fails to execute the work to the extent that the above purposes are not being accomplished, the Contractor shall, upon orders from the Engineer, immediately take the steps necessary to fully accomplish said purposes. All costs of executing the work as described herein shall be absorbed in the Contractor's bid. Should the Contractor fail to take the necessary steps to fully accomplish said purposes, after orders of the Engineer to do so, the Engineer may suspend the work in whole or in part until the Contractor takes said steps. With or without such suspension, the Engineer may cause such steps to be taken by force account or other means at the Contractor's expense.

As soon as possible under the provisions of these Specifications, the Contractor shall backfill all excavations and restore to usefulness all improvements existing prior to the start of the work.

If work is suspended through no fault of the Owner, all expenses and losses incurred by the Contractor during such suspensions shall be borne by him. If the Contractor fails to properly provide for public safety, and protection of the work site during periods of suspension, the Owner may elect to do so and deduct the cost thereof from monies due the Contractor. Such action will not relieve the Contractor from any liability.

7.5 SUSPENSION OF WORK

The work may be suspended in whole or in part where, in the Engineer's opinion, the suspension is necessary in the interest of the Owner. The Contractor shall comply immediately with any written order of the Engineer suspending work. Such suspension shall be without liability to the Contractor on the part of the Owner. Suspended work shall be resumed upon written order of the Engineer.

7.6 DEFAULT BY CONTRACTOR

If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed to take over his affairs, or if he should fail to prosecute his work with due diligence and carry the work forward in accordance with his work schedule and the time limits set forth in the Contract Documents, or if the Contractor should fail to submit an approved work schedule, or if he should fail to substantially perform one or more of the provisions of the Contract Documents to be performed by him, or if the Contractor's license is revoked, suspended or expires for any reason during the performance of the contract, the Owner may serve written notice on the Contractor and the Surety on his

performance bond, stating its intention to exercise one of the remedies hereinafter set forth and the grounds upon which the Owner bases its right to exercise such remedy.

In any event, unless the matter complained of is satisfactorily cleared within ten (10) days after service of such notice, the Owner may, without prejudice to any other right or remedy, exercise one of such remedies at once, having first obtained a certificate from the Engineer that sufficient cause exists to justify such action.

- A. The Owner may terminate the services of the Contractor, which termination shall take effect immediately upon service of notice thereof on the Contractor and his Surety, whereupon the Surety shall have the right to take over and perform the contract. If the Surety does not commence performance of the contract within ten (10) days after service of the notice of termination, the Owner may itself take over the work, take possession of and use all materials, tools, equipment and appliances on the premises and prosecute the work to completion by such means as it shall deem best. In the event of such termination of his service, the Contractor shall not be entitled to any further payment under his contract until the work is completed and accepted. If the Owner takes over the work and if the unpaid balance of the contract price when the Owner takes over the work exceeds the cost of completing the work, including compensation for any damages or expenses incurred by the Owner through the default of the Contractor, such excess shall be paid to the Contractor. In such event, if such cost, expenses, and damages shall exceed such unpaid balance of the contract price, the Contractor and his Surety shall pay the difference to the Owner. Such cost, expenses and damages shall be certified by the Engineer.
- B. The Owner may take control of the work and either make good the deficiencies of the Contractor itself or direct the activities of the Contractor in doing so, employing such additional help as the Owner deems advisable. In such event, the Owner shall be entitled to collect from the Contractor and his Surety, or to deduct from any payment then or thereafter due the Contractor, the costs incurred by it through the default of the Contractor, provided the Engineer approves the amount thus charged to the Contractor.
- C. The Owner may require the Surety on the Contractor's bond to take control of the work at once and see to it that all the deficiencies of the Contractor are made good with due diligence. As between the Owner and the Surety, the cost of making good such deficiencies shall all be borne by the Surety. If the Surety takes over the work, either upon termination of the services of the Contractor or upon instructions from the Owner to do so, the provisions of the Contract Documents shall govern in respect to the work done by the Surety, the Surety being substituted for the Contractor as to such provisions, including provisions as to payment for the work and provisions of this section is to the right of the Owner to do the work itself or to take control of the work.

7.7 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work shall be stopped under an order of any court or other public authority for a period of three (3) months through no act or fault of the Contractor or of anyone employed by him, then the Contractor may, on seven (7) days' written notice to the Owner and the Engineer, stop work or terminate this contract and recover from the Owner payment for all work executed, any losses sustained on any plant or materials and a reasonable profit. If the Engineer shall fail to issue any certificate for payment within ten (10) days after it is due, or if the Owner shall fail to pay the Contractor within fifteen (15) days after its maturity and presentation of any sum certified by the Engineer, then the Contractor may, on seven (7) days' written notice to the Owner and the Engineer, stop work and give written notice of intention to terminate this contract. If the Owner shall thereafter fail to pay the Contractor within seven (7) days after receipt of such notice, then the Contractor may terminate the contract and recover from the Owner payment for all work executed, any losses sustained upon any plant or materials, and a reasonable profit.

7.8 DELAYS AND EXTENSION OF TIME

If the Contractor be delayed at any time in the progress of the work by an act or neglect of the Owner or the Engineer, or of any employee of either, or by any separate Contractor employed by the Owner, or by changes ordered in the work, or by strike, lockouts, fire, unusual delay in transportation unavoidable casualties, or any causes beyond the Contractor's control, or by delay authorized by the Engineer or by any cause which the Engineer shall decide to justify the delay, then the time of completion shall be extended for such reasonable time as the Engineer may decide.

No such extension shall be made for delay occurring more than seven (7) days before claim therefor is made in writing to the Engineer. In the case of a continued cause of delay, only one claim is necessary.

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

7.9 COMPLETION AND ACCEPTANCE

The work will be inspected by the Engineer and the City for acceptance promptly upon receipt of the Contractor's written assertion that the work has been completed.

If, in the Engineer and the City's judgment the work has been completed in accordance with the specifications and is ready for acceptance, he will so certify to the City Council, which may accept the completed work. The Engineer will in his certification give the date when the Contractor is relieved from responsibility to protect the work. This will also be the date to which any liquidated damages will be computed. Neither the acceptance or the work by the Owner nor the payment of all or any part of the sum due the Contractor hereunder shall constitute a waiver by the Owner of any claim which the Owner may have against the Contractor or Surety under this contract or otherwise.

7.10 CLEANING-UP

Upon completion or termination of the work, the Contractor shall, as directed by the Engineer, remove from the vicinity of the work all equipment and all temporary structures, waste materials and rubbish resulting from his operations, leaving the premises in a neat and presentable condition. In the event of his failure to do so, the same may be done by the Owner at the expense of the Contractor, and his Surety shall be responsible therefor.

7.11 LIQUIDATED DAMAGES

The Contractor shall complete the work called for under the Contract within the time specified in the contract after the issuance of the *"Notice to Proceed"*. It is agreed by the parties to the contract that in case all the work called for under the contract in all parts and requirements is not completed within the number of calendar days as set forth in the Agreement, damage will be sustained by such delay, it is, therefore, agreed that the Contractor will pay to the Owner the sum of **One Thousand Dollars (\$1,000.00)** per day for each and every days' delay in finishing the work in excess of the number of calendar days prescribed, and the Contractor agrees to pay said liquidated damages as herein provided, and in case the same are not paid, agrees that the Owner may deduct the amount thereof from any monies due or that may become due under the contract. It is further agreed that in case the work called for under the contract is not completed in all its parts and requirements within the number of calendar days specified, the Engineer shall have the right to increase the number of working days or not, as may seem best to serve the interest of the Owner, and if the Owner decides to increase the said number of working days, the Owner shall further have the right to charge to the contract, and deduct from the final payment for the work, all or any part as he may deem proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to the contract, except that cost of final surveys and preparation of final estimate shall not be included in such charges. The Contractor shall not be assessed with liquidated damages nor the cost of engineering and inspection during any delay beyond the time named for completion of the work caused by the Acts of God, a public enemy, acts of the Owner or state, fire, floods, epidemics, strikes, quarantine restrictions and freight embargoes or delays of subcontractors due to such causes, provided the Contractor notifies the Engineer in writing of the cause of the delay within ten (10) days from the beginning of such delay. See Section 2-12 and Section 6 Article III "Agreement" of these specifications.

7.12 RIGHT OF OCCUPANCY

The Owner shall have the right, if necessary, to take possession of and to use any completed or partially completed portions of the work, if such use be approved by the Engineer, even if the time for completing the entire work or such portions of the work has not expired and even if the work has not been finally accepted. Such possession and use shall not constitute an acceptance of such portions of the work. The Owner shall not have the right to enter the premises for the purposes of doing work not covered by its contract with the Contractor.

7.13 GUARANTEE

The Contractor shall guarantee that all work performed and each item furnished will function satisfactorily for a period of one (1) year from the date of the filing of the Notice of Completion. Workmanship found to be defective during this period shall be removed, and new materials furnished and installed without charge by the Contractor. The guarantee period shall then be one (1) year from the date that the work or equipment is restored to full operational service.

7.14 SUBCONTRACTORS

The Contractor shall be wholly responsible for the work and shall give his personal attention to the fulfillment of the contract. Subcontractors will not be recognized as such and all persons engaged in the work shall be considered as employees of the Contractor and their work shall be subject to all the provisions of the contract and these Specifications. Should a subcontractor fail to prosecute the work in compliance with these Specifications he may, upon written request to the Contractor by the Engineer, be removed and shall not again be employed on the work. No subcontractors, except whose names were submitted with the proposal, will be permitted to perform any part of the work unless by special permission in writing from the Engineer.

7.15 CHARACTER OF WORKMEN

The Contractor shall neither permit nor suffer the introduction or the use of abusive substance upon or about the work or upon any ground occupied by him in the prosecution of the work. If any subcontractor or person employed by the Contractor fails or refuses to comply with the directions of the Engineer, or conducts himself in a disorderly, improper, or incompetent manner, he shall be immediately discharged upon request in writing of the engineer.

7.16 ASSIGNMENT OF CONTRACT

The Contractor shall not assign this contract or any part thereof, nor any monies due to become due there under with the prior written consent of the Owner. No assignment of this contract shall be valid unless it shall contain a provision that the funds to be paid to the assignee under the assignment are subject to a prior lien for services rendered or material supplied for performance of work called for under this contract in favor of all persons, firms or corporations rendering such services or applying such materials.

7.17 OVERTIME INSPECTION

When inspection services are required during other than normal working hours or on Saturdays, Sundays or holidays, the Contractor shall pay the Owner for all overtime expenses. The amount of overtime expenses shall be deducted by the Owner from the Contractor's payment.

7.18 WAR CLAUSES IN MUNICIPAL CONTRACTS
(Emergency - Additional Time for Performance - Procurement Office)

If, because of war or other declared national emergency, the Federal or State Government restricts, regulates or controls the procurement and allocation of labor or materials, or both, and if solely because of said restrictions, regulations, or controls, the Contractor is, through no fault of his own, unable to perform the Agreement, or the work is hereby suspended or delayed, any of the following steps may be taken:

- A. The Owner may, pursuant to Resolution of the City Council, grant the Contractor additional time for the performance of the Agreement, sufficient to compensate in time, for said delay or suspension.

To qualify for such extension in time, the Contractor, within ten (10) days of his discovering such inability to perform, shall notify the Engineer in writing thereof, and give specific reasons therefore; the Engineer shall thereupon have sixty (60) days within which to endeavor to procure such needed materials or labor as is specified in the Agreement, or permit substitutes or provide for changes in the work in accordance with other provisions of the Agreement. Substituted materials, or changes in the work, or both, shall be ordered in writing by the Engineer, and the concurrence of the Owner shall not be necessary. All reasonable expenses of such procurement incurred by the Engineer shall be defrayed by the Contractor; or

- B. If such necessary materials or labor cannot be procured through legitimate channels within sixty (60) days after the filing of the aforesaid notice, either party may, upon thirty (30) days' written notice to the other, terminate the Agreement. In such event, the Contractor shall be compensated for all work executed upon the unit price bid in proportion to the amount of the work completed. Materials on the ground, in process of fabrication or en route upon the date of notice of termination specially ordered for the project and which cannot be utilized by the Contractor, shall be compensated for by the Owner at cost, including freight, provided that the Contractor shall take all steps possible to minimize this obligation;
- C. The City of Council, by Resolution, may suspend the Agreement until the cause of inability to perform is removed, but for a period of not to exceed sixty (60) days. If the contract is not canceled, and the ability of the Contractor to perform continues, without fault on his part, beyond the time during which the contract may have been suspended, as hereinabove provided, the Council may further suspend the Agreement, or either party hereto may, without incurring any liability, elect to declare the Agreement terminated upon the ground of impossibility of performance. In the event the Owner declares the Agreement terminated, such declaration shall be authorized by the Council, by resolution, and the Contractor shall be notified in writing thereof within five (5) days after the adoption of such resolution.

Upon such termination, the Contractor shall be entitled to proportionate compensation at the contract unit prices for such portion of the contract as may have been performed; or,

- D. The Owner may terminate the Agreement in which case the Contractor shall be entitled to proportionate compensation at the contract unit prices for such portion of the Agreement as may have been performed. Such termination shall be authorized by resolution of the Council. Notice thereof shall be forthwith given in writing to the Contractor, and the Agreement shall be terminated on receipts of the Contractor of such notice.

In the event of the termination provided in this subparagraph (4), none of the covenants, conditions, or provisions hereof shall prevail and the Owner shall be liable to the Contractor only for the proportionate compensation last herein mentioned.

7.19 LEGAL ADDRESS OF CONTRACTOR

The address given in the Bid Proposal is hereby designated as the legal address of the Contractor, but such address may be changed at any time by notice in writing, delivered to the Owner or Engineer.

The delivering to such legal address or the depositing in the Post Office in a postpaid wrapper, directed to the Contractor at the above address, of any drawing, notice, letter or other communication shall be deemed to be a legal and sufficient service thereof upon the Contractor.

SECTION EIGHT

MEASUREMENT AND PAYMENT

8.1 MEASUREMENT OF QUANTITIES

Unless otherwise specified, quantities of work shall be determined from field measurements by the Engineer in accordance with Section Nine (9) of the State Standard Specifications.

Final Pay Quantities: as described in State Standard Specifications, May 2006, Section 9-1.015

Measurement by volume will be the cubic dimension listed or indicated in the Bid Schedules. Method of volume measurement will be as determined or directed by the Engineer.

Measurement by Area: Measurement by area will be by the square dimension listed or indicated in the Bid Schedules. Method of square measurement will be as determined or directed by the Engineer.

Linear Measurement: Linear measurement will be by the linear dimension listed or indicated in the Bid Schedules. Method of linear measurement will be as determined or directed by the Engineer. Generally, items, components, or work to be measured will be measured at the centerline of the item in place.

Lump Sum Measurement: Lump sum measurement will be for the entire item, unit work, structure, or combination thereof, as listed or indicated in the Bid Schedules. No extra payments shall be made for parts of lump sum items.

Per Each Measurement: Per each measurement will be for the entire item, unit of work, structure or combination thereof, as listed or indicated in the Bid Schedule.

8.2 PAYMENT FOR WORK COMPLETED

Payment for Work Completed: The Owner will make partial payment to the Contractor upon completion of the work, as covered by the contract, in accordance with established City procedures:

- A. Before payment is made the Contractor shall prepare for the Engineer's approval a statement covering the completed work and shall itemize therein all extra work performed under the terms of the contract.
- B. In making such payment, the Owner shall, in accordance with usual practice for retention from progress payments, retain ten percent (10%) of each payment until final completion and acceptance of work covered by the contract. The retained amount is available for the protection and payment of the person, or persons, mechanics, subcontractors, or materialmen who shall perform labor upon the contract of work thereunder, and persons who shall supply supplies for carrying on such work.

- C. All material and work covered by partial payments made shall thereupon become the sole property of the Owner but this provision shall not be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the contract.
- D. The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than ten (10) days from the receipt of each payment the prime contractor receives from the City of Fowler.

Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the City of Fowler. This clause applies to both DBE and non-DBE subcontractors.

- E. Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner, through the Engineer, a complete release of all claims against the Owner arising under and by virtue of this contract, including claims of all subcontractors and suppliers of either materials or labor, other than such claims, if any, as may be specifically accepted by the Contractor. Claims for purposes of this section includes, but is not limited to, any preliminary notices and/or stop notice notices filed with the Owner by any subcontractor or supplier of materials or labor.
- F. Upon completion and acceptance of all work whatsoever required, and the release of all claims, including but not limited to any preliminary notices and stop notices, against the Owner as specified, the Engineer shall file a written certificate of completion with the Owner and with the Contractor as to the entire amount of work performed and compensation earned by the Contractor including extra work and compensation therefor.
- G. The prime contractor agrees further to release retainage payments to each subcontractor within thirty (30) days after the subcontractor's work is satisfactorily completed.

Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the City of Fowler. This clause applies to both DBE and no-DBE subcontractors.

- H. Thirty-five (35) days after the filing of such certificate of completion, the Owner shall pay to the Contractor the amount therein stated, less all prior payments and advances whatsoever to or for the account of the Contractor, except that in the event any claims be filed with the Owner on account of this contract, sufficient sums shall be withheld from the final payments to cover said claims. All prior estimates and payments including those relating to extra work shall be subject to correction by this payment, which is throughout this Contract called Final Payment.

- I. The acceptance by the Contractor of the final payment shall be and shall operate as a release to the Owner of all claims and of all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work, excepting the Contractor's claims for interest upon final payment, if this payment be improperly delayed. No payments, however final or otherwise shall operate to release the Contractor or his sureties from any obligations under this contract or the Performance and Payment Bonds.
- J. Payment for materials delivered and stored at the construction site shall not exceed 50% of the value of the materials and shall be submitted with invoices.

8.3 PAYMENT WITHHELD

The Engineer may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any estimate to such extent as may be necessary to protect the Owner from loss on account of:

- A. Defective work not remedied.
- B. Claims filed or reasonable evidence indicating probable filing of claims.
- C. Failure of the Contractor to make payments properly to subcontractors or for material or labor.
- D. A reasonable doubt that the contract can be completed for the balance then unpaid.
- E. Damage to another Contractor.
- F. Failure of the Contractor to keep his work progressing in accordance with his time schedule.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

8.4 PAYMENT DELAYS

The Contractor is hereby notified that delays of as much as 30 days may occur in his receipt of progress payments and the final payment. The Contractor is urged to process his request for payment and required supporting data in a timely matter to minimize payment delays.

8.5 VALUES OF UNIT PRICES

Except where noted as final pay quantities, the number of units and quantities contained in the Bid Schedule are approximate only, and final payment will be for the actual number of

units and quantities which are incorporated in or made necessary by the work included in this Contract.

In the event that work and materials or equipment are required to be furnished in greater or lesser extent than is indicated by the Contract Drawings and Specifications, such work and materials or equipment shall be furnished in greater or lesser quantities.

8.6 REJECTED MATERIALS

Quantities of material wasted or disposed of in a manner not called for under the Contract; rejected loads of materials, including material rejected after it has been placed by reasons of the Contractor to conform to the provisions of the Contract; material not unloaded from the transporting vehicle; material placed outside the limits indicated on the drawings or established by the Engineer; or material remaining on hand after completion of the work, will not be paid for, and such quantities shall not be included in the final total quantities. No compensation will be permitted for loading, hauling, and disposing of rejected materials.

8.7 CONTRACT PAYMENTS

The Contract payment for the specified items of work as set forth in the Bid Schedule shall be full compensation for furnishing all labor, materials, tools, equipment, transportation, services, documentation and incidentals and for doing all work involved as required by the Plans and Specifications, Special Provisions, State Standards, Legal and Safety Provisions and all other Provisions of the Contract Documents.

Full compensation for all expenses involved in conforming to the requirements for measuring materials or work shall be considered as included in the unit or lump sum prices paid for the materials and work being measured, and no additional compensation will be permitted.

Full compensation for an item of work for which no measure or payment is specified will be considered to be included in the applicable related item of work in the Bid Schedules or incidental to the Contract.

SECTION NINE

CLEARING AND GRUBBING

9.1 GENERAL

Clearing and grubbing shall conform to Section 16 of the State Standard Specifications and these Special Provisions. In case of conflicts, these Special Provisions shall govern.

9.2 PRESERVATION OF PROPERTY

The Contractor shall make such investigations and examinations as are required to determine the existence and locations of all pipes, conduits, and other underground improvements and shall consult with and advise the owners of the utilities before undertaking any work that might endanger them.

The Contractor shall assume full responsibility for any damage to pipes, conduits, poles, or any other structures or utilities. He shall not make any claim for inconvenience, delay or added cost of performing the work which may be attributed in any degree to inaccuracy of information furnished by the City relative to the locations, sizes, dimensions, depths, and character of any pipes, conduits, poles, or other structures and utilities or for failure of the City to furnish any information relative thereto.

At locations where lawn sprinkler systems exist, the Contractor will cut and cap water lines at the property lines or at such point as directed by the City Engineer. All heads and pipe removed shall be salvaged and returned to their respective owners. Full compensation for cutting and capping water lines shall be considered as included in this item.

Existing land subdivision monuments and stakes shall be fully protected from damage or displacement and they shall not be disturbed unless directed by the City Engineer.

9.3 CLEARING AND GRUBBING OPERATIONS

All of the work shown on the Plans and included in these Specifications that is located in the public streets in the City shall be done in accordance with City Ordinances regulating the use of public streets.

Where a portion of an existing concrete facility is to be removed, it shall be cut to its full depth with an abrasive type saw at the first scoring line at or outside the planned joint and removed without damage to any portion that is to remain in place. If curbs and gutters cannot be cut off square and neat, the entire curb and gutter shall be removed to the nearest weakened plane or expansion joint. No patching at expansion joints will be permitted.

All concrete (Portland Cement or Asphalt) and oil dirt within the right-of-way shall be removed by the Contractor unless designated to remain on the Plans. Existing manholes, drain wells, drainage structures, irrigation lines, structures and headwalls to be abandoned shall be removed to at least two (2) feet below the surface and backfilled.

9.4 REMOVAL AND DISPOSAL OF MATERIALS

Within the limits of clearing, all stumps, large roots, buried logs, and all other organic material shall be removed three (3) feet below the existing ground surface.

All material removed during clearing and grubbing shall be disposed of at an approved dump site. The Contractor shall make all arrangements for disposal of material.

Tree branches extending over the roadway which interfere with the work shall be trimmed by the City Public Works Department on the request of the Contractor.

9.5 TRAFFIC CONTROL SIGNS AND STREET SIGNS

All traffic signs and street signs within the limits of the improvement, if required, shall be removed, salvaged and stockpiled at locations designated by the City Engineer. Traffic control signs and street signs shall be replaced upon completion of the work.

The Contractor shall install temporary traffic control devices, if required, at locations designated by the City Engineer and/or Director of Public Works.

SECTION TEN

WATERING

10.1 GENERAL

Watering shall conform to the requirements of Section 17 of the State Standard Specifications. Water may be purchased from the City of Fowler and obtained from a fire hydrant near the jobsite. The Contractor shall contact the City's Public Works Director for arrangements prior to using the water supply.

SECTION ELEVEN

ROADWAY EXCAVATION & GRADING

11.1 GENERAL

Roadway excavation consists of performing all operations necessary to excavate, grade and compact the roadway prism including the area for curbs, gutters and sidewalks.

11.2 CONSTRUCTION

Construction shall be in accordance with the applicable portions of Section 19 of the State Standard Specifications.

Relative compaction shall be determined by test method ASTM D2922, D2937 and D1557.

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

It shall be the Contractor's responsibility to prevent a dust nuisance from originating from the site of the work as a result of his operations during the effective period of this contract.

Preventative measures shall include but shall not be limited to the following:

1. Water shall be applied to all unpaved areas to prevent the surface from becoming dry enough to permit dust formation.
2. Paved surfaces over which vehicular traffic is permitted to travel shall be kept free of dirt.
3. Unpaved areas over which large volumes of vehicular traffic must be permitted to pass, such as street intersections, shall be treated with a dust palliative.

The Contractor shall be responsible for preventing a dust nuisance after normal working hours and on Saturdays, Sundays and holidays as well as during his operations. Temporary suspension of the work, either as a result of an order by the City Engineer or as a result of conditions beyond the control of the Contractor, shall not relieve him from the responsibility for dust control as set forth herein.

Excavation, grading and compaction shall conform to the requirements of Section 19 of the State Standard Specifications. The relative compaction limits specified in the second paragraph of Section 19-5.03, "Relative Compaction (95%)", of the State Standard Specifications are amended to the limits shown on the Typical Cross Section.

Surplus excess materials shall be removed and disposed of in accordance with the requirements of Section 7-1.13 of the State Standard Specifications and these Specifications.

11.3 COMPACTION TESTS

Compaction tests will be required as directed by the City Engineer. Test locations shall be determined by the City Engineer upon notification from the Contractor that the structure sub-base is ready for tests.

All tests shall be performed by a qualified testing laboratory licensed in the State of California, and as required on-site. All tests must meet the minimum requirements of these Specifications and State Specifications. Relative compaction shall be determined by ASTM D-1557 AND D-2937. Payment for compaction testing shall be as specified in the contract documents. Areas that fail shall be retested at the Contractor's expense.

SECTION TWELVE

FINISH ROADWAY

12.1 GENERAL

Finishing roadway shall conform to the requirements of Section 22 of the State Standard Specifications.

12.2 RELOCATION OF MAIL BOXES

Any existing mail boxes located within the limits of work may be temporarily removed and reset to a position to be designated by the City Engineer. All mail boxes temporarily removed shall be temporarily set in accordance to the postal service requirements for continued service until permanently installed in place per these specifications.

12.3 COMPACTION TESTS

Compaction tests will be required as directed by the City Engineer. Test locations shall be determined by the City Engineer upon notification from the Contractor that the structure sub-base is ready for tests.

All tests shall be performed by a qualified testing laboratory licensed in the State of California. All tests must meet the minimum requirements of these Specifications.

SECTION THIRTEEN

CONCRETE WORK

13.1 GENERAL

This work shall consist of furnishing all labor, tools, equipment, materials and incidentals for the construction of storm drain inlet structures, sidewalks, drive approaches, curbs and gutters, radius returns, valley gutters, and ADA sidewalk ramps as specified in the contract documents and the City Standard Drawings.

13.2 MATERIALS

A. Concrete Portland Cement Concrete shall conform to Section 90 of the State Standard Specifications.

B. Reinforcement

Bars: Bars for reinforcing shall be deformed, domestic steel bars conforming to ASTM Designation A615 Grade 40.

Wire: Wire for tying reinforcement in place shall be No. 18 AWG black annealed or heavier.

Wire Fabric: Wire fabric shall consist of No. 10 AWG welded galvanized wire mesh.

13.3 CONSTRUCTION

13.3.1 Concrete Work

Concrete storm drain inlet structures, concrete curbs and gutters, sidewalks, ramps, radius returns, and miscellaneous concrete shall conform to the specifications of Section 73 of the State Standard Specifications and these Special Provisions, except that all concrete shall contain six (6) sacks of cement per cubic yard. Reinforcement shall conform to the City Standard Drawings.

Concrete shall not be poured unless air temperature is above 50° F and rising. Concrete shall not be placed on frozen or ice-coated ground or subgrade, or on ice-coated forms, reinforcing steel, structural steel conduits, pre-cast members or construction joints.

Concrete shall be thoroughly compacted around reinforcement and into corner forms.

Concrete shall be cured in accordance with the State Standards.

Slump shall not exceed three (3) inches.

Minimum compressive strength of concrete at twenty-eight (28) days shall be 3,500 pounds per square inch (psi). At the direction of the City Engineer or contract documents, AASHTO T22 Compressive Strength of Cylindrical Concrete Specimens shall be performed with a specimen at seven (7) days, a specimen at fourteen (14) days, and at least two (2) specimens at twenty-eight (28) days. The Contractor shall be responsible for providing testing and shall incorporate said costs in the appropriate bid item.

Contractor shall be responsible for protecting improvements until acceptance of the project and shall restore damaged work to the satisfaction of the Engineer.

13.3.2 Reinforcement

A. Except where specified otherwise herein or shown otherwise on the Plans, reinforcing steel shall be cleaned, fabricated, placed, tied and supported in accordance with ACI 318-71, and "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI-315). Reinforcing shall not be bent or straightened in any manner that will injure the material. All splices for deformed bars, where not shown otherwise on the Plans, shall be not less than 40 bar diameters.

B. Where not shown otherwise on the Plans, the minimum concrete coverage for steel reinforcement shall be as follows:

Reinforcement for footings where concrete is deposited against ground – 3 inches.

Concrete in forms exposed to earth or weather – 2 inches for #6 and larger, 1 ½ inches for #5 and smaller.

C. Steel reinforcement shall be accurately placed and shall be supported and secured against displacement by the use of adequate and proper supporting and spacing devices, tie wire, etc., so that it will remain in its correct location in the finish work. No supporting devices shall be used that will impede the flow of concrete.

D. The clear spacing between parallel bars shall be not less 1½ times the normal diameter of the maximum size aggregate, and in no case less than 1½ inches except at splices which shall be wired together.

13.3.3 Earthwork

Excavation and backfill necessary for the construction of concrete work shall conform to the Specifications of Section 19 of the State Standard Specifications and these Special Provisions.

SECTION FOURTEEN
AGGREGATE BASE

14.1 GENERAL

This work shall consist of furnishing, spreading, watering and compacting aggregate base.

14.2 MATERIALS

Aggregate base shall be Class 2 and shall conform to the requirements of Section 26 of the State Standard Specifications except that a distinction is made between aggregate base composed of 100% virgin aggregate and aggregate base containing any quantity of recycled or reclaimed aggregate. Recycled aggregate requires structural section modifications per the detail City Standard Drawings.

14.3 CONSTRUCTION

Aggregate base shall be spread, watered, compacted and graded in accordance with the requirements of Section 26 of the State Standard Specifications.

SECTION FIFTEEN
ASPHALT CONCRETE

15.1 GENERAL

This work shall consist of furnishing and mixing aggregate and asphalt binder at a central mixing plant and spreading and compacting the mixture.

15.2 MATERIALS

15.2.1 Aggregate Material

Aggregate material shall be ½ inch or ¾ inch Maximum Medium conforming to Section 39 "Asphalt Concrete" of the State Standard Specifications as specified in the contract specifications.

15.2.2 Asphalt Concrete

Asphalt concrete shall be Type B and conform to Section 39 of the State Standard Specifications, and these Specifications. Asphalt concrete shall have a bituminous binder of paving asphalt and conform to the requirements of Section 92 of the State Standard Specifications.

The amount of bituminous binder to be mixed with the mineral aggregate shall be between 5.2 percent and 7 percent by weight of the weight of the dry mineral aggregate. The exact amount of bituminous binder to be mixed with the mineral aggregate will be determined by the City Engineer.

PG 64-10 paving asphalt shall be used with a minimum paving asphalt content of 5.2 percent by weight.

A self-propelled paving machine may not be required in small, difficult unique areas if approved by the City Engineer.

Sufficient time shall be required in advance of the paving operation to permit inspecting and testing of materials. The Contractor shall furnish the City Engineer a list of his sources of materials and the locations at which such materials will be available for inspection.

Samples of aggregate may be taken and a design test made to determine the exact amount of bituminous binder required.

In addition to the provisions of Section 39 of the State Standard Specifications, the asphalt concrete mixture shall not have a loss greater than that shown below when tested by Test Method No. Calif. 330, Surface Abrasion Test:

15 grams	Loss with rubber balls
32 grams	Loss with steel balls

15.2.3 Paint Binder (Tack Coat)

A paint binder shall be applied to all concrete edges abutting the asphalt surface and on existing asphalt surfacing for overlay transitions in accordance with Section 38-4 of the State Standard Specifications and the following provisions:

- A. Paint binder shall be applied only so far in advance of placing the surface as may be permitted by the City Engineer.
- B. Paint binder shall be furnished and applied in accordance with Section 94, "Asphaltic Emulsions", of the State Standard Specifications. Paint binder shall be applied to all vertical surfaces of existing pavements, curbs, gutters and construction joints in the surfacing against which additional material is to be placed, to existing pavements to be overlaid and to other surfaces designated by the City Engineer.
- C. Paint binder shall be applied in one application at a rate of from 0.02 to 0.10 gallon per square yard of surface covered. The exact rate of application will be determined by the City Engineer.

15.2.4 Seal Coats

A fog seal shall be applied to the asphalt surface areas in accordance with Section 37 of the State Standard Specifications and the following provisions:

- A. Fog seal shall not be applied until the surfacing has been open to public traffic for a period of not less than one week.
- B. Fog seal shall be applied in one application at a rate of from 0.05 gallon per square yard of surface covered.

15.3 CONSTRUCTION

15.3.1 Rolling Equipment

Except as hereinafter specified, rolling equipment shall be as required under Section 39 of the State Standard Specifications. The roller equipment shall include both a steel & rubber roller per State Standard Specifications.

At locations where miscellaneous areas are to be surfaced in accordance with the provisions in Section 39 of the State Standard Specifications and where the width of asphalt concrete to be placed is less than 8 feet or the total thickness of asphalt concrete to be placed is less than 0.1-foot, the required minimum rolling equipment specified in Section 39 of the State Standard Specifications may be reduced to one 8-ton, 2-axle tandem roller for each 100 tons or less. Areas which are inaccessible to an 8-ton, 2-axle roller shall be thoroughly compacted to the lines, grades and cross-section by means of pneumatic tampers or by other methods that will produce the same degree of compaction as specified in Section 39 of the State Standard Specifications.

15.3.2 Spreading

The spreading of asphalt concrete shall comply with the provisions of Section 38-6 of the State Standard Specifications and these Special Provisions.

Connections to both existing surfacing and to existing concrete gutters and valley gutters shall be feathered out to conform to the requirements for smoothness and to avoid abrupt drop offs.

15.3.3 Compaction

The Contractor shall provide qualified personnel to perform compaction testing of asphalt pavement using nuclear gauges to assure that the pavement has attained proper compaction levels. Asphalt testing shall be performed in compliance with California Test 121, found on the following website: http://www.dot.ca.gov/hq/esc/ctms/pdf/CT_121.pdf. All safety procedures must be strictly adhered to. The minimum compaction percentage for in-place asphalt concrete is a minimum 95%.

SECTION SIXTEEN

WATER SUPPLY FACILITIES

16.1 GENERAL

The work to be done consists, in general, of constructing domestic water line including all piping, fire hydrants, connections to existing water mains, fittings, valves, valve boxes and covers, adapters, trenching, backfill, compaction, watering, bacteriological testing, thrust blocks, dust control, clean-up and all appurtenances all in accordance to these Plans and Specifications.

16.2 PRESSURE PIPE

16.2.1 Pipe

Polyvinyl Chloride (PVC) pipe suitable for potable water service shall conform to AWWA C 900, Class 150, as shown on the Plans. PVC Pipe shall be installed in accordance with the manufacturer's recommendations and these Specifications.

The minimum wall thickness of the bell at any point between the ring groove (gasket face) and the pipe barrel shall conform to the DR requirements for the pipe. The minimum wall thickness in the ring groove and entry section shall equal or exceed the minimum wall thickness of the pipe barrel. All rubber gaskets shall be a solid cross section conforming to ASTM D 1869 and F 477.

Each pipe segment shall be marked with the date of manufacture, nominal pipe size and O.D. base, the AWWA pressure class, and the AWWA specification designation (AWWA C900). For potable water applications, the seal of the testing agency that verified the suitability of the material for such service shall be included.

PVC pressure pipe for potable water shall have cast iron diameters suitable for direct connection to C.I. dimensional fittings, both slip joint and mechanical joint.

16.2.2 Ductile Iron and Steel Piping

Ductile iron or fusion-bonded epoxy coated and lined steel piping shall be flanged and used above ground at the locations designated on the Plans. Transition to PVC pipe shall be below ground on the horizontal run using a flanged coupling adapter with PVC restraint or a flanged by mechanical joint fitting with restrained mechanical joint adapter for PVC pipe as shown on the Plans.

Ductile iron pipe shall conform to ANSI A 21.51-96/AWWA C 151. Flanged ductile iron pipe shall conform to ANSI A 21.15-99/AWWA C 115.

The interior of all ductile iron pipe and fittings shall be lined with cement mortar per AWWA C104. Minimum lining thickness shall be 1/8 inch.

For flanged joints, ends of pipe and fittings shall be provided with cast iron flanges conforming to ANSI A 21.10-98 / AWWA C 110, except that flanges for pipe shall be screw-on type with threads conforming to ANSI B 1.20.1. Bolt circle and bolt holes shall conform to ANSI B 16.1 Class 125. Bolts and nuts shall conform to ANSI B 18.2 with

threads conforming to ANSI B 1.1 – course thread series Class 2A and 2B. Gaskets shall be ring style. Flanged connections above ground or underground shall have zylan coated or zinc plated carbon steel bolts, minimum ASTM A307 Grade B, 60,000 psi tensile strength.

Fusion-bonded epoxy coated steel pipe may be used in lieu of ductile iron and shall be used at designated locations on the Plans. Steel pipe shall conform to AWWA C200-97 and ASTM A 36 or A 139. Pipe shall have a minimum wall thickness of 0.250 inches (6.4mm) and a minimum working pressure rating of 150 psi (1034 kPa). Flanges shall conform to AWWA C 207-01 Class D full face except that faces shall have a fusion epoxy smooth finish instead of a serrated finish. Welding shall conform to AWS D 1.1.

Welding shall be performed by certified welders with current and valid certifications. Back welding shall be used where possible or full penetration weld used from the exterior. Pipe shall be previously hydrostatically tested and all shop welds shall be dye penetrant tested before lining and coating. Fusion-bonded epoxy coatings for the interior and exterior shall conform to AWWA C213-01. Minimum thickness shall be 12 mils. Steel shall be near white grit blasted per SSPC-SP10 and all splatter, slag, burrs and surface irregularities removed before coating.

Field welding shall not be allowed. Fusion epoxy coating and lining shall be factory applied. Coating and lining shall conform to AWWA C 213-01. Coating shall be Scotchkote 206N fusion bonded powder or approved equal. Field repairs of small defects in the fusion applied coating shall be made before the finish coating is applied using Scotchkote 323 liquid epoxy or approved equal. Repair coating shall not be used to correct deficient thickness of fusion coating.

Pipe shall be prepared and finish coated after field installation in accordance with Section 09900.

16.2.3 Galvanized Steel Pipe

Galvanized steel piping shall be Schedule 40 conforming to ASTM A 53.

Fittings shall be hot dip galvanized, malleable iron or cast iron. Malleable iron fittings shall be 150 lb., standard, conforming to ANSI B 16.3 and ASTM A 47. Cast iron fittings shall be 125 lb., standard, conforming to ANSI B 16.4 and ASTM A 126.

Fitting threads shall conform to ANSI B 2.1. Galvanizing shall conform to ASTM A 153.

All galvanized steel pipe and conduit below ground shall be wrapped with a corrosion-protective tape coating, Polyken 910 or approved equal. Contractor shall install a primer prior to tape installation. Primer shall be Polyken 1027, or approved equal. Both primer and tape shall be installed in strict accordance with the manufactures recommendations.

16.2.4 Fittings for PVC (C900) Piping

Flanged and mechanical joint, fittings for potable water pipe shall be ductile iron conforming to ANSI A 21.10-98/AWWA C 110, ANSI A 21.11-95/AWWA C 111 and ANSI A 21.53-94/AWWA C 153. Flanged fittings may be fusion bonded epoxy coated

and lined steel and shall be used at the locations designated on the plans. Steel fittings shall conform to AWWA C200-97 and ASTM A 36 or A 139, AWWA C207-01, C208-01, and C213-01.

The interior of all ductile iron fittings shall be lined with cement mortar per AWWA C104. Minimum lining thickness shall be 1/8 inch.

Fittings for PVC potable water pipe shall have flanged or mechanical joint ends as indicated on the Plans. Fittings shall be suitable for use with AWWA C 900 or 905 pipe. Gaskets and lubricants shall conform to ANSI A 21.11-95/AWWA C 111 and pipe manufacturer's requirements. Flange bolt circle and holes shall conform to ANSI B 16.1 Class 125. Gaskets shall be 1/16th inch ring type, non asbestos, comprised of synthetic fibers and elastomeric binders suitable for potable water service, with a yield pressure rating of 3600 psi minimum. Flanged joint connections above ground or underground shall have zylan coated or zinc plated carbon steel bolts, minimum ASTM A307 Grade B, 60,000 psi tensile strength. Mechanical joint connections shall have T-bolts and nuts conforming to AWWA C111 and shall be Cor-Blue bolts and nuts with a ceramic filled, baked on fluorocarbon resin for corrosion resistance.

Mechanical joint coupling adapters shall be ductile iron with joint restraint incorporated in the design of the follower gland, where indicated on the drawings. Multiple gripping surfaces shall be used to securely hold the pipe with a minimum working pressure of 250 psi (1724 kPa) and 2:1 safety factor. The gland shall conform to AWWA C 111 and C 153. Mechanical Joint Coupling adapters shall be manufactured by EBAA Iron, Inc., or approved equal.

Joint restraint harnesses shall be split ring-type ductile iron with joint restraint incorporated into the design of the inner surface of the ring. Multiple gripping surfaces shall be used to securely hold the pipe with a minimum working pressure of 250 psi (1724 kPa) and 2:1 safety factor. Joint restraint used in a casing shall have a double nut rod to limit expansion and compression. Joint restraint harnesses shall be manufactured by EBAA Iron, Inc., or approved equal.

Flanged coupling adapters shall be ductile iron with individual gripping surfaces to hold the pipe securely with a 250 psi (1724 kPa) working pressure and a 2:1 safety factor. Bolt circles shall meet ANSI B 16.1 – 125 lbs. Flanged joint coupling adapters shall be manufactured by EBAA Iron, Inc., or approved equal.

Transition couplings for connection of dissimilar pipe materials and outside diameters shall have ductile iron center and end rings conforming to ASTM C 219-96. Gaskets shall conform to ASTM D 2000. Bolts and nuts shall be stainless steel. Couplings shall be ROMAC, Smith Blair, or approved equal. Contractor shall be responsible for exposing existing piping and facilities to ascertain in-place materials for the provision of appropriate gaskets and appurtenances for installation with minimal impact (downtime) of water supply facilities.

The Contractor may use fusion epoxy lined and coated steel fittings in lieu of ductile iron. Dimensions and tolerances shall conform to AWWA C-208 or C-111. Flanged fittings shall conform to AWWA C-207 Class D. Steel body shall conform to AWWA C-200 and M-11. Welding shall conform to AWS B3.0. Coating and lining shall conform to AWWA C-213. Fittings shall have a minimum working pressure rating of 150 psi.

16.3 VALVES

16.3.1 Gate Valves

Gate valves shall be resilient wedge type conforming to AWWA C 509A-95 except that valve stem shall be stainless steel. Body shall be cast iron with epoxy coating inside and out. Wedge shall be ductile iron encased and fully vulcanized with EDPM rubber. Ductile iron wedge shall have opening to prevent solids build-up in stem cavity. Valve shall have a smooth unobstructed waterway free from any sediment pockets. Stem shall be stainless steel with double "O" ring seals and anti-friction thrust washers above and below the thrust collar to minimize operating torque. Wedge nut shall be bronze. Seal between the stuffing box and bonnet shall be nitrile rubber. Valves shall be manufactured by AVK or approved equal. Valves shall open left and have 2-inch operating nut or hand wheel as specified on the Plans. Operating extensions shall be provided at locations where the top of the valve is greater than 4 feet below finish grade.

The dimension of the hubs on the valves shall conform to the requirements of the pipe manufacturer. Valves designated for mechanical joint pipe shall have bell dimensions which conform to ANSI A 21.11-95 / AWWA C 111.

The ends of flanged valves shall conform in dimension and drilling to ANSI B 16.1 for cast iron flanges and flanged fittings, Class 125.

Gate valves shall be furnished complete with all glands, gaskets and necessary bolts. Flanged joint connections above ground or underground shall have zylan coated or zinc plated carbon steel bolts, minimum ASTM A307 Grade B, 60,000 psi tensile strength. Mechanical joint connections shall have T-bolts and nuts conforming to AWWA C111 and shall be Cor-Blue bolts and nuts with a ceramic filled, baked on fluorocarbon resin for corrosion resistance.

Valves shall be supplied with suitable operating keys, levers, extension rods or handwheels as required for proper operation.

Valves shall be carefully installed in their respective positions, free from all distortion and strain, with joints made as specified and left in satisfactory operating condition. All gate valves shall have their stems in a vertical position, except as noted on the Plans.

All valves and all other materials shall be protected from damage and corrosion before installation and until completion of work. After installation, all valves except bronze valves and those underground shall be painted in accordance with the painting requirements and color code of the pipelines of which they are a part.

16.3.2 Air Release Valve

Air release valves shall release air entrained in water under pressure. The piping shall be threaded 1/2-inch, standard. The discharge for the air release valve shall include piping and fittings as shown on the City Standard Drawings, including bug screens. An isolation ball valve shall be included with each valve. Valves shall be Valmatic VM-15A, APCO #55, or approved equal.

16.3.3 Miscellaneous Valves

A. Gate Valves 1 ½-Inch or Smaller

Gate valves 1 ½-inch or less shall be all bronze except the handwheel, double disc type with rising stems and rated for 200 psi.

B. Ball Valves 2-Inch or Smaller

Ball valves shall have bronze or brass bodies, stainless steel shaft and ball, and PTFE seats and packing.

C. Hose Bibbs

Hose bibbs ¾-inch in size or larger shall be bronze or brass, wedge disc, 200 psi cold water class with full diameter seat opening.

D. Corporation Stops and Angle Meter Stops

Corporation stops and angle meter stops shall be bronze with Teflon coated ball, Buna-N seat and double O-ring seals as manufactured by Ford, Mueller, or approved equal.

16.4 WATER SERVICES/METERS

Water service materials and installation shall conform to City Standard Drawings.

16.5 THRUST BLOCKS

Thrust blocks shall be constructed at all bends or angle points of the water mains over 5 degrees that do not utilize joint restraints, at designated locations, and at fire hydrants. Thrust blocks shall be constructed in accordance to the City Standards.

16.6 VALVE BOXES AND COVERS

Valve boxes and covers shall conform to the Detail City Standards.

16.7 FIRE HYDRANTS

Fire hydrants shall conform to the City of Fowler Standard detail drawings.

Fire hydrants shall have two 2-1/2 inch hose nozzles and one 4-1/2 inch pumper nozzle. All hose nozzles shall use National Standard threads. Fire hydrants shall be AVK, American Series 2780 or approved equal. New installations shall include fire hydrant, bury, tee, transition couplings, 6-inch flanged by mechanical joint valve, joint restraint, valve box and cover, pipe, thrust blocks, trenching, backfill, watering, compaction, asphalt trench resurfacing, setting hydrant and valve boxes to grade, pressure testing, disinfection, bacteriological testing, and all other appurtenant items required for a complete and operative hydrant. At designated locations, replacement hydrants shall include all items noted above except for the tee and transition couplings and isolation valves with boxes will be required as noted on the plans.

Fire hydrant extension sections shall be installed, as required, at ground line, between the flanges of upper and lower barrels. When the hydrant is placed directly behind the curb, the hydrant barrel shall be set so that no portion of the hydrant will be less than twelve (12) inches nor more than seven (7) feet from the back face of the curb. When the hydrant is set between the sidewalk and the property line, no portion of the hydrant or nozzle cap shall be within 6 inches of the sidewalk.

No water services shall be installed between tee and hydrant units.

When an existing fire hydrant is to be removed/abandoned, the work shall include removing the hydrant and all branch materials to the main line tee and capping the tee with suitable cap and thrust block. Trench backfill and restoration shall be per City Standards and these specifications.

Fittings and valves used in the placement of fire hydrants and connections to the main will be considered part of the fire hydrant installation, and no additional compensation shall be provided. Hydrants shall be installed in a manner which will provide complete accessibility and the minimum possibility of damage from vehicles or injury to pedestrians.

16.8 WARNING TAPE MARKER AND TRACER WIRE

The Contractor shall install with the pipe, a polyethylene tape suitable to warn of its location after project completion. Tape shall be installed 12 inches above the top of the pipe during backfill. Tape shall be installed continuously within the limits of new pipe furnished and installed. In addition, Contractor shall install a 10 gauge, solid core, insulated copper tracing wire attached to the top of the pipe and looped into each valve box. At tee locations without valves, provide a loop coiled on top of the tee for use in future valve boxes.

16.9 PIPE SUPPORTS

Pipe supports shall conform to the Detail Drawings. Saddles shall be cast iron or carbon steel. Reducer shall be cast iron. Straight thread pipe shall be carbon steel. Components shall be manufactured by Tolco, Grinnel, Piping Technology and Products, or approved equal. Tie down straps shall be used at designated locations. Concrete pipe supports with tie down straps will be used at designated locations and shall conform to the detail drawings.

16.10 INSTALLATION OF PIPE

16.10.1 General

Proper implements, tools and facilities satisfactory to the City Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of the work. All pipe, fittings, and valves shall be carefully lowered into the trench by means of a derrick or other suitable tools or equipment in such a manner as to prevent damage to the pipe or fittings. The pipe shall be adjusted accurately to the required line and grade. Any damage to the pipe or fittings shall be repaired by the Contractor at his expense. The Contractor shall be responsible for the safety of all materials to the time of acceptance of the finished work.

Precautions shall be taken to protect the interiors of pipes, fittings, and valves against contamination in accordance with AWWA C651. All of the pipe shall be thoroughly cleaned of all dirt, rock and other debris that may be found in the interior of the pipe prior to installation. If considered necessary by the City Engineer, he may direct the Contractor to swab the pipe to clean it.

Contractor shall secure the ends of all water main pipe being installed each and every time the work site is left unattended, i.e., during lunch breaks, overnight, etc. Only water tight plugs in accordance with Section 4.1 of AWWA C651 will be allowed.

Each pipe shall have a firm bearing for its full length in the trench except at the bell holes and field joints.

Whenever necessary to deflect the pipe from a straight line either in vertical or horizontal plane to avoid obstructions, or where long radius curves are permitted, the degree of deflection of joints shall be one degree or less for a minimum radius of 1150 feet and approved by the City Engineer. Deviation of any pipe section from the line and grade established by the City Engineer shall not exceed 1/2 inch.

The gasket shall be wiped clean with a cloth and a thin film of lubricant shall then be applied to the inside surface of the gasket that will come in contact with the entering pipe.

The plain end of the entering pipe shall be wiped clean and placed in proper alignment with the bell of the pipe to which it is to be joined. It may be desirable to apply a thin film of lubricant to the outside of the plain end.

The joint shall then be made by exerting sufficient force on the entering pipe (by methods approved the City Engineer) so that its plain end is moved past the gasket until the bell is flush with the reference mark on the spigot end of the entering pipe.

When it is necessary to cut pipe in the field, the newly cut end shall be conditioned by tapering the end back about 1/2 inch at an angel of 30 degrees with the center line of the pipe. This shall be done with a coarse file or a portable grinder. This operation shall remove any sharp or rough edges that might otherwise injure the gasket.

16.10.2 Excavation

Pavement shall be cut accurately to the correct line without unnecessarily disturbing the pavement beyond the trench line. All excavations shall be made in accordance with the Trench Construction Safety Orders issued by the Division of Industrial Safety of the Department of Industrial Relations of the State of California including Chapter 9, Section 6705 and following of the California Labor Code.

The width of trenches at approximately the level of the top of the pipe to be installed shall be not more than the allowable limits specified by the pipe manufacturer. The clearances may be increased to accommodate shoring and also provide space for banding at points required.

Excavation for structures shall be at least 12 inches beyond dimensions of structures as shown on the Plans and shall conform to the elevations as shown on the Plans.

If the Contractor is unable to maintain the trench width allowed in previous paragraph, the Contractor shall provide additional bedding to compensate for the additional loading on the pipe. Such additional bedding may require crushed rock or other suitable granular bedding material or concrete encasement as necessary to obtain satisfactory pipe support.

Where the pipe is to be laid on sand having less than optimum moisture, as determined by the City Engineer, the Contractor shall apply sufficient water and compact the sand prior to placing the pipe.

All existing water mains, public utilities, conduits, sewers and other structures which are not, in the opinion of the City Engineer, required to be changed in location shall be carefully supported and protected from injury by the Contractor, and they shall be restored by him, without additional compensation, to as good a condition as that in which they were found.

The Contractor shall provide, without additional compensation, suitable temporary channels for the water that may flow along or across the site of the work when necessary.

If all excavated material cannot be stored within the work area in such a manner as to maintain access to property along side of the work, the surplus material shall be removed from the work and stored until needed for backfill at which time it shall be brought back. If the surplus material is to be stored on other than private property, prior approval must be obtained from the City Engineer for the site to be used. The cost of removing and returning material shall be at the Contractor's expense.

Trench excavation for pipe shall be in open cut except as indicated and shall include the removal of all materials or objects of any nature that would interfere with the execution of the work. The trench shall be braced and drained when necessary so that workman may work therein safely and efficiently.

The location of subsurface obstructions found in the field may necessitate a variance in the depth of the pipe. The depth shall be approved by the City Engineer. It shall be the responsibility of the Contractor to locate all substructures, piping and utilities that may affect the installation of the new water main.

The completed trench shall be uniformly graded to a flat bottom conforming to the grade to which the pipe is to be laid. Any portion of the trench excavated below the approved grade shall be corrected and brought up to grade with an approved material thoroughly compacted. Material excavated from the trench shall be placed so as to offer the minimum obstruction to traffic. Any exceptions must be approved by the City Engineer.

The bottom of the trench shall be excavated or backfilled so that the barrel of the pipe shall have uniform bearing for its entire length, except for the area necessary for bell holes. All adjustment of pipe to line and grade must be made by scraping away or filling and tamping. The use of blocks as supports is forbidden. An additional depth and width

shall be hand dug at joint or bell locations of sufficient depth to relieve the bell of any load and to allow ample space for making the joint.

All trench plates and shoring are the responsibility of the Contractor, where required.

16.10.3 Backfill Procedure at Pipe Zone

Select earth backfill material free from lumps, hardpan, paving material or other unsuitable materials shall be placed in accordance to the Standard Drawings. The backfill material shall be moistened sufficiently to produce maximum compaction. Minimum relative compaction at the pipe zone shall be 90%.

16.10.4 Backfill Procedure Above Pipe Zone

Succeeding layers of the backfill may contain coarse materials but shall be free from lumps, hardpan chunks, paving materials, organic material or other objectionable matter that would prevent proper consolidation or that might cause subsequent settlement. Backfill and compaction shall conform to the City Standard Details and Specifications.

No free water shall be allowed in the top 12 inches of backfill. Compaction shall be determined by ASTM Method D-3937 and D-1557. The top 24 inches below the subgrade surface in paved areas shall be compacted to 95% as determined by ASTM Method D-3937 and D-1557. Each trench section must be backfilled, compacted and resurfaced within thirty (30) days from start of trenching for that section.

16.10.5 Connection to Existing Mains

Connection to existing mains for straight-line continuation shall require the installation of couplers, blind test plate, saddles or tees, and temporary plumbing including reduced pressure principle (R.P.) backflow prevention assembly and water meter. Connection shall also include a plug installed in end of existing pipes to be abandoned in place.

The Contractor shall maintain the existing water supply system until the new water mains are ready for connection to the existing mains. Contractor shall schedule with the City Engineer's representative, at least 5 days in advance, any shutdown of the system. All existing water system valves are to be opened and closed by City forces only. Water system shutdown in excess of 2 hours will require that the Contractor notify all affected residences and businesses.

Contractor shall use a USC-approved Reduced Pressure Principle (R.P.) backflow prevention assembly for connection between the existing City water main and newly installed water mains which have not yet been chlorinated and passed bacteriological tests in accordance with these Specifications. The City Engineer's representative shall be present during the time of connection. The R.P. assembly shall be checked, approved by an AWWA-certified tester, and written certification submitted to the City Engineer's representative after installation and prior to any connection to a newly installed water main.

16.10.6 Pressure Test, Water Main

Pressure tests shall be performed after all backfill and compaction have been completed and compaction tests approved except under special conditions specified in the Specifications. If the Contractor so desires, he may pretest the lines at his own expense, but final testing for pipe damage and/or leaks must be performed after compaction is approved. The pipe and fittings shall be subjected to a hydrostatic test pressure of 100 psi. Tests shall be made at least (7) days after the last concrete thrust or reaction backing has been cast with standard cement, or 36 hours using high early strength cement.

The duration of each pressure test shall be one hour unless otherwise directed by the City Engineer.

Each section of pipeline shall be slowly filled with water, and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the City Engineer. The pump, pipe connection, and all necessary apparatus shall be furnished by the Contractor.

During the filling of the pipe and before applying the specified test pressure, all air shall be expelled from the pipeline. To accomplish this, taps shall be made, if necessary, at point of highest elevation, and after completion of the test the taps shall be tightly plugged unless otherwise specified.

During the test, all exposed pipes, fittings and couplings will be carefully examined. If any of these items are found to be cracked or defective, they shall be removed and replaced by the Contractor at no additional cost. The test shall then be repeated until satisfactory to the City Engineer.

All labor, equipment, power and materials required for the tests herein specified shall be adequate for the purpose and shall be furnished by the Contractor at his sole expense. All such tests shall be made in the presence of the City Engineer or authorized representative. The Contractor shall notify the City Engineer of his intention to make the tests specified in this section 48 hours in advance of the actual tests.

16.10.7 Chlorination

Before being placed in service, all new pipelines, valves and hydrants shall be cleansed and sterilized in accordance with the current edition of AWWA C651, and water passing through shall be proven safe by bacteriological tests acceptable to the Department of Public Health and the City of Fowler. Water samples will be taken by City Agents and initial testing will be paid for by the City. All retests due to failure for bacteria presence will be paid for by the Contractor. Prior to sterilization, the lines shall be thoroughly flushed through their extremities by means of fire hydrants or temporary blowoffs until all foreign or extraneous material shall have been removed from said mains.

The water mains shall be sterilized by the introduction into the mains of a chlorinating agent which shall produce a chlorine residual of between 50 and 100 parts of chlorine per million. The Contractor shall submit in writing to the City Engineer, for approval, a method by which the chlorinating agent will be introduced into the mains.

Tests with an Orthotolidine reagent shall be made to determine the chlorine residual. The recommended time schedule for the sterilizing of the water mains is as follows:

1. Chlorine agent to produce between 50 and 100 parts of chlorine per million is introduced into the water mains.
2. Twenty-four hours after chlorination, water in the new mains is tested for chlorine residual of 10 ppm or greater. If chlorine residual level is approved, Contractor shall flush new pipelines and hydrants until chlorine residual is equal to City residual as tested and verified by the City Engineer's representative. Gate valves shall then be closed to maintain isolation.
3. Forty-eight hours after flushing and isolating the new main, City will sample for bacteriological analysis.
4. Upon approval of bacteriological test, Contractor shall remove R.P. assembly and blow off assembly and make final connection to City water mains. Final connection piping and fittings shall be swabbed with a 1% hypochlorite solution in accordance with AWWA C651. City Engineer shall be notified 24 hours in advance and the City Engineer's representative shall be present during connection procedure.
5. Contractor shall flush new water main (both ways if possible) through fire hydrant and/or blow off assembly immediately after all connections have been made to the existing water main. The City Engineer's representative will then verify a residual equivalent to the distribution system. The contractor shall then close all valves, in the presence of the City Engineer's representative, to achieve isolation of the newly installed water system.
6. After 24 hours, the City will sample for bacteriological analysis. If any bacteria are present in any samples taken, the Contractor shall immediately submit to the City Engineer a corrective action plan for rechlorination and retesting.
7. The Contractor shall reimburse the City for all costs incurred by the City for bacteriological re-testing required after failure to pass initial tests.
8. Upon approval, Contractor shall fully open all new mainline valves and fire hydrant valves. The City Engineer's representative must verify and approve this procedure prior to implementation.

16.10.8 UV Protection

PVC piping and vents exposed to sunlight shall be protected from UV radiation as noted on the Detail Drawings.

Steel piping with fusion bonded epoxy coating shall be prepared and coated with a finish coating per Section 09900 to protect the epoxy coating from UV radiation.

16.10.9 Watering

The Contractor shall apply water for dust control as frequently as may be required by the City Engineer. This includes Saturdays, Sundays and Holidays. If dust control is not adequate in the opinion of the City Engineer, this work shall be done by others and the cost shall be reimbursed to the City. All dust control equipment and vehicles shall be properly marked in accordance with all Local, County, State and Federal Safety Requirements.

16.10.10 Cleanup

The Contractor shall remove all excess spoil, dirt, rubble and any other material left over as a result of the work performed. The streets shall be left broom-clean upon completion of the work. All excess material shall be disposed of at an approved dumpsite.

16.10.11 Compaction Tests

Compaction tests will be required at all locations determined by the City Engineer upon notification from the Contractor that the trenches are ready for tests. Tests shall conform to ASTM D-3937 and D-1557.

All tests shall be performed by a qualified testing laboratory licensed in the State of California. All tests must meet the minimum requirements of these Specifications.

SECTION SEVENTEEN

INTERCEPTOR GRAVITY SEWERS, PRESSURE SEWERS

17.1 GENERAL

All work for the construction of wastewater facilities within the City of Fowler shall be in conformance with all the requirements and conditions of the *Wastewater Sewer Design and Construction Standards* of the Selma-Kingsburg-Fowler County Sanitation District.

Selma-Kingsburg-Fowler County
Sanitation District
1301 E. Conejo Avenue
P. O. Box 158
Kingsburg, CA 93631
(559) 897-6500

SECTION EIGHTEEN

STORM DRAIN CONSTRUCTION

18.1 GENERAL

The work to be done consists, in general, of constructing a storm drain system including but not limited to all piping, connections, drain inlets, safety and shoring, trenching, backfill, compaction, watering, dust control, clean-up and all appurtenances all in accordance with the City Standards, Plans and Specifications.

The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. A schedule of work shall be submitted to the City Engineer for approval prior to start of construction.

The Contractor shall backfill all trenches and excavations at the end of each working day. In trenches, the Contractor shall place and compact backfill as required to obtain a stable foundation for traffic use until the work is completed. In paved areas, a temporary 3 inch of SC-800 "cold mix" shall overlay the compacted backfill or other approved materials. Temporary paving work shall be completed to the satisfaction of the City Engineer. There shall be no exceptions to this requirement.

Public ingress-egress to all streets, residence, and businesses shall be maintained except during periods of construction that could cause damage or be unsafe to pedestrian access and/or vehicular travel unless otherwise approved in writing by the City Engineer.

When necessary, the Contractor shall place and compact fill for ramps to facilitate access. All street closures must be requested in writing and must be approved by the City Engineer.

18.2 STORM DRAIN PIPE

18.2.1 General

Storm drain piping shall consist of performing all operations necessary to furnish and install all piping complete in place. Storm drain piping shall conform to the provisions of the State Standard Specifications, Plans and the City Standards.

Storm Drain Pipe may consist of any of the following materials as shown on the plans or as directed by the City Engineer.

- A. Rubber Gasket Reinforced Concrete Pipe (RGRCP) - Shall conform to the provisions of Section 65 of the State Standard Specifications, the Plans and these Special Provisions. RCP shall be **Class III** conforming to ASTM C-76, with rubber gasketed joints conforming to Section 65-1.06 B of the State Standard Specifications.
- B. HDPE material shall comply with and be installed in conformance with ASTM F 894 or AASHTO M-252, M-294 and/or MP-7. The HDPE material for pipe and

fittings shall meet ASTM D-3350 with a minimum cell class of 335420C.

HDPE pipe conforming to ASTM F-894 shall meet the hydrostatic design criteria of ASTM D-2837. The pipe shall have a minimum pipe stiffness constant of 100 minimum. The pipe joints shall be bell/spigot with rubber gaskets meeting ASTM F-477. The manufacturer of the HDPE pipe shall provide test reports by an independent testing laboratory that the joints have been tested to the full protocol of ASTM D-3212 at 10.8 pounds per square inch (psi).

The gasket installation shall be done in accordance with the pipe manufacturer's instruction using all the necessary materials, lubricants and equipment recommended by the manufacturer.

Connections to existing lines shall be made by coupling a piece of smooth wall HDPE profile pipe to the existing line. The coupling shall be a flexible rubber boot with stainless steel clamps, such as FERNCO or equivalent. The coupling is to be encased in cement stabilized sand, grout or concrete.

- C. PVC pipe shall conform to ASTM F794 or ASTM F949. The minimum pipe stiffness shall be 50 psi. Sampling and testing of pipe shall conform to ASTM F794.

The open profile PVC pipe shall have gaskets with at least 2 sealing points and be designed to prevent rolling out during installation into the bell.

18.2.2 Pipe Joints

Pipe joints for HDPE, PVC, or RCP shall be watertight.

Field assembly of the joints shall be made in strict accordance with the recommendations of the pipe manufacturer and by workers experienced in the installation of this type of joint.

18.2.3 Storm Drain Construction

Trenching, pipe laying, backfill, watering and compaction shall conform to the applicable portions of Sections 19, 63, 64 and 65 of the State Standard Specifications and these Special Provisions.

Compaction of the trenches shall be accomplished during backfill. The relative compaction limits for all trenches shall be 95% for the pipe zones, 90% from the pipe zone to within 24 inches of the finish surface, and 95% within the top 24 inches. Relative compaction shall be determined by test method ASTM D-2937 and D-1557.

For PVC and HDPE, upon completion and acceptance of compaction, the Contractor shall pull an approved deflectometer or mandrel through the installed line to demonstrate that the deflection does not exceed five percent (5%) of the inside diameter of the pipe. If the deflection of the pipe obstructs passage of the mandrel or exceeds five percent, the Contractor shall excavate and make suitable repairs.

All of the pipe shall be thoroughly cleaned of all dirt, rock and other debris that may be found in the interior of the pipe as stockpiled. If considered necessary by the City Engineer, he may direct the Contractor to swab the pipe to clean it. At the end of each day's work, each end of the pipe shall be closed.

All pipe shall be laid to true line and grade. The allowable angle of deflection at any joint shall not exceed the amount recommended by the pipe manufacturer for the particular pipe size used. Deviation of any pipe section from the line and grade established by the City Engineer shall not exceed 1-inch.

18.3 STORM DRAIN INLETS

18.3.1 General

Storm drain inlets shall be constructed at the locations shown on the Plans and consist of a concrete structure, pipe connections, cast iron frame, cover and/or grate, and appurtenances complete in place. Drain inlets shall conform to the minimum requirements of the City Standard Drawings.

18.3.2 Material

Concrete shall contain six (6) sacks of cement per cubic yard and conform with Section 90 of the State Standard Specifications, May 2006 Edition.

Reinforcing steel shall be ASTM Designation A615 Grade 60 furnished and placed in accordance with Section 52 of the State Standard Specifications.

18.3.3 Construction

Concrete construction shall conform to Section 51 of the State Standard Specifications and these Specifications.

Fabricated steel frame and cover shall conform to the requirements of the City Standard Drawings.

Structure excavation, embankment, watering, and compaction shall conform to Section 19 of the State Standard Specifications. Compaction of all structure backfill shall be 90% to within twenty-four (24) inches of finish grade. The top 24 inches shall be compacted to 95%.

18.4 MANHOLES

Manholes shall be constructed in accordance with the City Standard Detail Drawings.

Pre-cast concrete pipe manholes shall consist of a poured-in-place concrete base section, a reinforced-concrete pipe section, a reinforced concrete taper section, grade rings and cast iron frame and cover.

Pre-cast reinforced concrete manhole sections shall conform to ASTM Designation C-478 (latest revision).

Each section of the reinforced concrete manhole set in place including the taper sections and grade rings shall be grouted to form a water tight connection between the sections.

The cement used for mortar shall conform to ASTM C150, Type II. Water for cement mortar shall be clean and free from injurious amounts of oil, alkali, organic matter or other deleterious substance. Mortar sand shall consist of clean, hard, sharp grained particles, all passing a No. 4 sieve. Mortar shall consist of one part by volume of cement, one and one half parts by volume of sand with sufficient water added to bring the mixture to a workable consistency. Mortar which has begun to set shall not be used. All joints shall be water tight. Particular care must be taken to protect the manholes from damage and to keep rock, dirt, and debris from getting into the pipe.

Concrete for the base section shall contain 6 sacks of cement per cubic yard.

Each manhole shall be complete with a cast iron frame and cover in conformance with the standard drawings, cover shall have wording cast in the cover, "**Storm Drain**".

"Jiffy Rings" for raising manholes will be allowed. Frames and cover shall be machined where they bear one on another to insure a close fit so as not to be loose and wobbly. Manhole cover frame shall be adjusted to street grade prior to trench resurfacing or paving.

18.5 WATERING

The Contractor shall apply water for dust control as frequently as may be required by the City Engineer. This includes Saturdays, Sundays and Holidays. If dust control is not adequate in the opinion of the City Engineer, this work shall be done by others and the cost shall be reimbursed to the City.

All dust control equipment and vehicles shall be properly marked in accordance with all Local, County, State and Federal Safety Requirements.

Watering shall conform to Section 17 of the State Standard Specifications. The Contractor shall make arrangements for obtaining water for use on the project.

18.6 PIPE PLUGS

When pipe plugs are shown installed in pipe ends on the plans, they shall be installed in a manner that does not damage the pipe. Method of pipe plugging shall be approved in advance by the City Engineer.

18.7 COMPACTION TESTS

Compaction tests will be required at intervals not to exceed 300 feet. Test locations shall be determined by the City Engineer or his/her authorized representative, upon notification from the Contractor that the trenches are ready for testing. Areas that fail compaction requirements shall be reworked and retested at the contractor's expense.

All tests shall be performed by a qualified testing laboratory licensed in the State of

California. All tests must meet the minimum requirements of the Specifications, City Standards and Contract Documents.

18.8 TESTING

Although no hydrostatic testing of pipe leakage is required under the terms of this section, the Contractor shall install pipe in a workmanlike manner in complete conformance with the Details Drawings, Plans and Specifications. The City reserves the right to make video or other inspections of the work at its expense.

18.9 PERMANENT TRENCH RESURFACING

The Contractor shall clean, remove temporary SC-800 surfacing, and re-grade all trench surface areas to the depth shown on the Plans in existing paved areas to remain. Where applicable, the trench edge shall be cleaned and asphalt emulsion tack coated. Trenches shall be surfaced as specified in the City Standards or Construction Details Plan, or as required by the City Engineer.

18.10 CLEANUP

The Contractor shall remove all excess soil, dirt, rubble and other material left over as a result of the work performed. The streets shall be left broom-clean upon completion of the work. All excess material shall be disposed of at an approved disposal site.

18.11 SHORING AND SAFETY

All excavations shall be made in accordance with the Trench Construction Safety Orders issued by the Division of Industrial Safety of the Department of Industrial Relations of the State of California including Chapter 9, Section 6705 and following of the California Labor Code.

SECTION NINETEEN

ADJUSTMENT TO EXISTING FACILITIES TO FINISH GRADE

19.1 GENERAL

Existing structures including all utility and or survey monuments within the roadway area shall be adjusted to finish grade in accordance with Section 15-2.05A of the State Standard Specifications and/or City of Fowler Standards.

SECTION TWENTY

RAILROAD AND ROAD CROSSING (TRENCHING PROHIBITED) BORING AND JACKING CASING

20.1 GENERAL

The work to be done consists, in general, of constructing a road or railroad crossing including all excavation, shoring and safety, casing, installation of casing, jacking equipment, jacking pipe in place, pavement resurfacing, cleanup and appurtenances all in accordance to the State Standard Specifications and the City Standard Drawings, Plans and Specifications.

20.2 SUBMITTALS

Contractor shall submit materials certification and calculations demonstrating that the thickness of casing provided is adequate to withstand jacking forces.

20.3 STEEL CASINGS

Steel casings shall be high carbon, straight seam, fusion butt welded, copper bearing (0.20% minimum), conforming to ASTM A36 or A283 (Grade C or D).

The thickness of casing designated in the contract item will be the minimum thickness permitted. Any heavier thickness of casing or other facilities required to withstand jacking pressure shall be determined and furnished by the Contractor at his expense. Casing length shall equal auger length.

20.4 PIPE SKIDS

Pipe Skids shall be Calpico Insulator Model M-8-SS with skid height, as required to center the carrier pipe and adjust grade within the casing. PVC bell end joint restraints shall be provided to prevent over bellling of the carrier pipe during jacking. The Calpico casing insulator may be mounted to prevent over bellling of the pipe.

20.5 EXCAVATION, BACKFILL, AND WATERING

Excavation, backfill, and watering shall conform to the appropriate sections of the City Standard Specifications.

20.6 BORE PIT

Bore pit shall be located as indicated on the Plans or as required by the appropriate permit. Bore pit shall be barricaded and shored to provide maximum safety to pedestrians, railroad and vehicle traffic and workmen safety, and shall conform to all the requirements of the City, Caltrans, the railroad company, all Health and Safety laws of the city, county, state, and federal governments, and these Specifications.

All pits shall have crushed-rock and sump areas to clear groundwater and water used to clean the casing. Pits shall be lined with filter fabric when groundwater is found and pumping is required.

20.7 BORING AND JACKING

Boring and jacking consists of drilling the soil out by rotating an auger "boring" inside of a casing while "jacking" the casing simultaneously. The casing will instantly support the sides of the hole, thereby minimizing the chance of bore hole collapse.

Wing cutters (if used) shall add a maximum of 1-inch diameter to the outside diameter of the casing pipe.

Casing lengths shall be joined by field welding in conformance with the provisions of Section 49-5.02, "Splicing," of the State Standard Specifications.

The diameter of the excavated hole shall not be more than 1 inch greater than the outside diameter of the casing pipe. Sluicing or jetting with water will not be permitted. When material tends to cave in from outside these limits a shield shall be used ahead of the first section of pipe or the face of excavation shall not extend beyond the end of the pipe more than 1.5 feet, unless otherwise permitted by the Engineer.

Voids resulting from caving or excavating outside the above limits shall be backfilled with sand or mortar by a method that will fill the voids.

20.8 VARIATION IN ALIGNMENT

Steel casing pipe of the minimum size and thickness specified on the Plans shall be installed in place to grades required to install the carrier pipe at the design grade. The Contractor's attention is called to the fact that extreme care will be required in placing the casing pipe so as to permit construction of the carrier pipe to the lines and grades as shown on the Plans. It shall be the Contractor's responsibility for selecting a size of casing, at or above the minimum specified, in order that the jacking may be done with a sufficient degree of accuracy to permit installation of the carrier pipe to the grades shown on the Plans within the tolerances set forth in these Specifications for the particular carrier pipe installed. Any and all increases in cost resulting from the Contractor's use of steel casing with a greater diameter or thickness than the minimum shall be borne by the Contractor. The carrier pipe insulator skid height may be adjusted to correct the carrier pipe grade within the casing. The skid height must be sufficient so as to prevent the pipe bell from contacting the casing.

20.9 PERMITS AND SPECIAL REQUIREMENTS

Permits and special requirements shall be as set forth in the Special Provisions of the Specifications and Contract Documents.

SECTION TWENTY ONE

STREET LIGHTING

21.1 GENERAL

Street lighting work shall consist of furnishing and installing, modifying or removing one or more street lighting systems, partial installations for future systems, electrical equipment on poles or pedestals, or combinations thereof, all in accordance with the Plans, Specifications and these Special Provisions.

The locations of foundations, standards, services, pull boxes and other appurtenances shown on the Plans are approximate. Exact locations and grades will be established by the City Engineer in the field.

The materials furnished and used shall be new, except such used materials as may be specifically provided for on the Plans or in these Special Provisions.

Where an existing system is to be modified, the existing material shall be reused in the revised system, removed, salvaged and stockpiled, or abandoned as shown on the Plans, as specified in these Special Provisions, or as directed by the City Engineer. No existing equipment shall be reused unless specifically called for in the Specifications or on the Plans.

"Standard Details", as used in this section means the Standard Drawings.

21.2 RULES AND REGULATIONS

All work and materials shall be in full accordance with the latest rules and regulations of the National Board of Fire Underwriters, and local ordinance or State laws, the State of California Industrial Accident Commission's Safety Orders, and Regulations of the Pacific Gas and Electric Company pertaining to service equipment and installations thereof. All work shall comply with the City and County electrical ordinances and National Electrical Manufacturer's Association Standards. Nothing in these Plans and Specifications shall be construed to permit work not complying with these codes.

21.3 EXCAVATING AND BACKFILLING

The excavations required for the installations of conduit, foundations, and other appurtenances shall be performed in such a manner as to avoid any unnecessary damage to streets, sidewalks, landscaping, and other improvements.

The trenches shall not be excavated wider than necessary for the proper installation of the electrical appurtenances and foundations. Excavation shall not be performed until immediately before installation of conduit and other appurtenances. The material from the excavation shall be placed in a position that will not cause damage or obstruction to vehicular and pedestrian traffic nor interfere with surface drainage.

The excavations shall be backfilled in conformance with the provisions of these Standard Specifications.

Excavations in the street or highway shall be performed in such a manner that not more than one traffic lane is restricted in either direction at any time, unless otherwise provided in these Special Provisions.

Concrete removal and installation shall comply with the provisions of these Standard Specifications.

21.4 FOUNDATIONS

Foundations for lighting equipment shall be of six sack Portland Cement per cubic yard and shall comply with applicable portions of Section 90 of the State Standard Specifications, or better, and shall conform to the details shown on the Plans.

Foundations shall be poured against undisturbed earth where practicable. The exposed portion shall be formed and finished to present a neat appearance. Where obstructions or other conditions prevent construction of planned foundations, the Contractor shall construct an effective foundation satisfactory to the City Engineer.

The bottom of concrete foundations shall rest on firm ground. Forms shall be true to line and grade, rigid and securely braced in place, and they shall not be removed until the concrete has thoroughly set. When placing the foundations, the Contractor shall place all conduit ends in their proper position, at the correct heights and shall securely bond them together with conduit ground wire attached to grounding bushings and standard ground lugs. Poles Standards shall be bonded to the steel conduit system.

Both forms and earth to be in contact with foundations shall be thoroughly moistened before placing concrete.

Sidewalk surface finish shall be applied to all exposed surfaces of concrete.

Anchor bolts shall be galvanized and shall extend above the finished base as shown on the Plans. Pole leveling shall be accomplished by means of leveling nut, as shown. All nuts, washers, screws and other post hardware shall be galvanized. Anchor bolts and conduits shall be held in place by means of a template until concrete sets.

Poles, standards and pedestals shall not be erected until the foundation concrete has set at least seventy-two hours and shall be plumbed or raked as directed by the City Engineer. Top of concrete foundations shall be finished relative to curb or sidewalk grade as shown on the Plans or as directed by the City Engineer.

In unpaved areas a raised concrete pad, four inches deep and not to exceed sixteen square feet in area, shall be placed in front of each controller as directed by the City Engineer.

21.5 STANDARDS, STEEL PEDESTALS AND POSTS

Standards for electronics and steel pedestals and posts for cabinets and other equipment shall be as shown on the Plans and in the Standard Details. Locations shown on the Plans are schematic. Exact locations and grades will be staked in the field.

21.6 CONDUIT

21.6.1 Rigid Steel

Conduit shall be of rigid type, conforming to Article 346 of the National Electrical Code. All conduit and fittings shall be hot dip galvanized. Each length shall bear the labels of Underwriters Laboratories, Inc. Installations shall conform to appropriate Articles of the Code.

The ends of all conduits shall be well reamed to remove burrs and rough edges. When nipples or pieces of conduit are cut, the ends shall be reamed and made square and true. Where two pieces of conduit are to be jointed together and a standard coupling cannot be used, running threads will not be permitted; an approved galvanized conduit union shall be used. All threads shall be well painted with approved pipe thread compound before couplings are made up. All couplings shall be well screwed up so that good electrical and mechanical connection will be made throughout the entire length of the conduit run.

Where the coating on the conduit has been injured in handling or installing, such injured places shall be thoroughly painted with an approved paint or coating.

All conduit ends shall be threaded and capped with standard conduit caps until wiring is started. When caps are removed, the threaded ends shall be provided with approved conduit bushings equipped with grounding lugs.

The size of conduit used shall be as shown on the Plans. Conduit smaller than one inch electrical trade size shall not be used, except that grounding jumpers at service points may be enclosed in one-half inch diameter conduit.

It shall be privilege of the Contractor at his own expense to use larger size conduit if desired, and where larger size conduit is used, it shall be for the entire length of the run from outlet to outlet. No reducing couplings will be permitted.

All conduit shall be laid to a depth of not less than twenty-four inches nor greater than thirty-six inches below the curb grade in the sidewalk areas and below the finished surface in street areas. Conduits in sidewalk areas parallel to curb shall not be installed more than twenty-four inches from inside of curb line toward property line.

Conduit shall be placed under existing pavement by approved jacking methods. Pavement shall not be disturbed without the written permission of the City Engineer and then only in the event insurmountable obstructions are encountered. Excessive use of water, such that pavement might be undermined, or subgrade softened, will not be permitted.

Conduit terminating in pole or pedestal bases shall extend vertically four inches above the foundations. All conduit bends shall be made with the largest radii practicable in the particular circumstances. No conduit couplings shall be installed within a concrete foundation, nor within six inches of the tangent point of a conduit bend.

Conduit runs shown on the Plans are for bidding purposes and may be changed, with permission of the City Engineer and at the Contractor's expense to avoid underground obstructions.

21.6.2 Rigid PVC:

Rigid PVC conduits are permitted in all underground locations and below vapor barrier of slabs unless otherwise noted on plans. They shall be Underwriters Laboratories tested, 10' lengths, Schedule 40 polyvinyl chloride conduit. Conduit shall be installed in accordance with manufacturer's recommendations and accepted trade practices.

Where conduit rises above ground in exposed locations the riser bend and riser shall be of rigid metal conduit installed according to Paragraph 1 above.

PVC conduit will not be permitted in exposed locations.

All PVC conduits shall carry a bond wire with the size determined by applicable codes for the ampacity of the circuit being transported.

21.7 PULL BOXES

Concrete pull boxes shall be located as shown on the Plans or as directed by the City Engineer and shall conform to the State Standard Specifications insofar as they may apply, and the Standard Details.

21.8 CONDUCTORS

Unless otherwise specified, single conductors for connection in multiple circuits shall be Underwriters' Laboratories approved, with Type THW or THWN and shall carry a voltage rating of 0-600 volts. Conductors shall be solid or stranded copper of the AWG size called for on the Plans. Single conductors shall be color coded as called for on the Plans.

Conductors for series street lighting service shall be (minimum) No. 8 AWG solid copper with 10/64" minimum insulation and 4/64" neoprene sheath and shall be rated for 5,000 volt operation.

A Certificate of Compliance conforming to State Standard Specifications Section 6-1.07 shall be submitted by the Contractor covering all 5,000 volt series street lighting conductors when such certificate is required by the City Engineer.

21.9 WIRING

Wiring and wiring methods shall conform to the provisions of the applicable Codes.

Conductors shall be pulled into conduits by hand. The use of winches, capstans or other

strain increasing devices will not be allowed unless such use is specifically approved by the City Engineer and supervised by him. An approved, chemically inert, non-solidifying wire lubricant shall be used where the required pulling strain can be expected to exceed, or does exceed, the pulling capability of one man pulling "hand over hand".

When cables are pulled into the conduit, all ends of the cables shall be taped to exclude moisture, and shall be so kept until the splices are made or terminal appliances attached.

A minimum of three feet of slack in each single conductor and cable run shall be left at each lighting standard and in each pull box.

Series street lighting cables shall be run from ballast to ballast and from ballasts to the service without splices in the runs. Splices will be permitted only by approval of the City Engineer in special circumstances.

When splices are made on series street lighting conductors the splice shall be "in line" and the connection shall be made by means of a compression type sleeve and its mating indenting or staking tool. Insulation of the splice shall conform to "Method B" of Section 86 of the State Standard Specifications.

Conductors of No.6 AWG size and larger shall be spliced by means of compression type sleeve and its mating indenting or staking tool. In-line, tap, tee and pig-tail splices in multiple circuits shall be insulating and adhesive padding material, rated for 600 volts, molded closely about the splice and the adjacent conductor insulations. Care shall be taken to eliminate skips and voids. The splice shall then be wrapped with one layer of "all weather" type, plastic backed, pressure sensitive electrical tape, leaving no adhesive material exposed.

21.10 FUSED SPLICE CONNECTORS

In each electrolier pole, immediately inside the hand hole, a fused, disconnect, in-line, fuse holder shall be installed in each ungrounded conductor connecting the luminaire ballast to a multiple circuit. Conductor slack shall be arranged so that the fuse holders may be readily withdrawn through the hand hole.

Fuses shall be standard midget, ferrule type. Fusing for 400-watt lamps shall be 5-ampere for 480-volt circuits, 10-ampere for 240-volt circuits and 15-ampere for 120-volt circuits. Fusing for 700-watt lamps shall be 10-ampere for 480-volt circuits, 20 ampere for 240-volt circuits and 30-ampere for 120-volt circuits.

For 240-volt and 480-volt circuits, each connector shall be designed so that both ungrounded conductors are disconnected simultaneously. When disconnected, the fuses shall be retained in the load side section of the holder.

The splice connector shall completely enclose the fuse and shall protect the fuse against damage from water and weather. The contact between the fuse and fuseholder shall be by spring pressure. Springs shall not be a part of the current carrying circuit.

The terminals of the splice connector shall be rigidly crimped on to the line conductors

and the conductors to the ballasts and shall be insulated and made waterproof in accordance with this Section.

Fused splice connectors shall not be used in series circuits.

21.11 BONDING AND GROUNDING

Bonding and grounding shall comply with the provisions in Section 86 of the State Standard Specifications.

21.12 SERVICES

Where new service points or service equipment are shown on the plans, the Contractor shall conform with the provisions of the applicable Codes.

Where service equipment is to be mounted on a P.G. & E. Company pole, the Contractor shall consult the company and follow its requirements as to pole quadrant and location of equipment.

21.13 PAINTING

Street lighting poles, standards and posts shall be factory prime coated with zinc chromate or equal primer. Damaged prime coat shall be restored in the field to the satisfaction of the City Engineer.

Over the clean and undamaged prime coat, all steel poles, standards and posts shall be given two coats of Glidden Company #592, or approved equal, aluminum paint, allowing 24 hours minimum drying time between coats.

All scuff marks and blemishes shall be repainted after installation to the satisfaction of the City Engineer.

21.14 CONTROLLERS

All street lighting lamps shall be equipped with an approved photo-electric cell.

21.15 RAILROAD PRE-EMPTION

The Contractor shall request Plans and Specifications from the Railroads Owners for the inclusion of Railroad pre-emption equipment and controllers. The installation thereof shall comply with Section 86 of the State Standard Specifications.

21.16 SALVAGED MATERIAL AND CARE OF EQUIPMENT

All material of value removed from the existing electrical installation, and surplus to the final installation, shall be cared for by the Contractor and delivered by him to the City's representative at its corporation yard.

The Contractor shall exercise care and diligence in removing, relocating or salvaging

electrical equipment and parts during the prosecution of his work. The Contractor shall replace, at his expense any lighting, or other electrical equipment which is lost, damaged or destroyed as result of his operations.

21.17 FIELD TESTS

Prior to acceptance of the work, the Contractor shall cause the following tests to be made:

1. For continuity of each circuit.
2. For freedom from accidental grounds.
3. An insulation resistance test (minimum 1 megohm).
4. A functional test in which it is demonstrated that each and every part of the system functions as specified or intended herein.

The Contractor shall correct any defects indicated by these tests and make such adjustments as the City Engineer may direct.

21.18 TRAFFIC CONTROL

The Contractor shall furnish and install all signs and barricades in conformity with these Standard Specifications, Plans and Special Provisions. Signs, barricades, flashers, warning devices and any other traffic control equipment shall be placed where and as required and approved by the City Engineer and/or the City Superintendent.

21.19 GUARANTEE

The Contractor guarantees the installation called for to be free from electrical and mechanical defects. He agrees to replace or repair, without cost to the owner and to the satisfaction of the City Engineer, any part of the installation which might fail or fail to operate properly within a period of one year from the date of final acceptance, provided such failure is due to defective materials or workmanship or to failure to follow the plans and specifications.

SECTION TWENTY TWO

DEMOLITION OF BUILDINGS

22.1 GENERAL

This section covers the demolition of buildings, foundations, underground and surface utilities and appurtenances, concrete slabs and asphalt concrete. In the absence of limiting provisions in the special conditions, all such facilities shall be removed.

22.2 PUBLIC SAFETY

All work shall conform to the requirements of Chapter 33 of the Uniform Building Code. The Contractor shall comply with all local, State and Federal regulations pertaining to structure demolition, and the general performance of the Contract.

The Contractor will immediately cease work in the area of discovered but previously unknown storage tanks or other environmental contaminants, and notify the City Engineer promptly.

22.3 UTILITIES

The Contractor shall notify all utility companies 48 hours in advance of demolition so utility mains can be protected and discovered.

22.4 PERMITS

The Contractor shall secure and pay appropriate fees for all permits which may be required, including a building demolition permit from the City. A demolition permit release from the SJVUAPCD must be obtained by the Contractor for each site at his/her expense.

22.5 DISPOSITION OF DEBRIS

The Contractor shall be responsible for making all arrangements, obtaining permits and paying all costs for hauling and disposing of materials at sites approved for the nature of materials being disposed.

The Contractor shall not dispose of any hazardous material at recycle centers permitted and operated to receive only inert, non-hazardous material such as concrete or clean wood. In addition, the Contractor shall not violate the conditional use permit or permits issued by EPA, Cal EPA, or other regulation agencies by disposing of unapproved materials at such sites.

All materials to be disposed of at landfills shall comply with applicable Federal, State and Local Restrictions regarding material disposed therein.

22.6 BASEMENTS

All basements shall be backfilled. The material used for backfill shall have a minimum R-value of 55. Tests for "R" value shall be made in accordance with Test Method No. Calif. 301 of the State Standard Specifications and shall be at the expense of the Contractor. The backfill shall have a relative compaction of 90% except when the basement is within the street right-of-way, the top two feet of backfill shall have a relative compaction of 95% as determined by ASTM Methods D-2937 and D-1557 in lieu of Test Method No. Calif. 216 of the State Standard Specifications. All concrete will be removed before backfilling.

SECTION TWENTY THREE

CHAIN LINK FENCE

23.1 GENERAL

The work to be done consists, in general, of constructing a chain link fence and gate complete with steel posts, wire fabric, braces, guides, anchors, concrete, adaptor and appurtenances.

23.2 CHAIN LINK FENCE

Fencing shall be first quality, new chain link fence with the following characteristics:

Corner, pull or terminal posts shall be 2-7/8 inch O.D. Standard weight galvanized pipe; line posts shall be 2-3/8 inch O.D. galvanized pipe; fabric shall be 2-inch mesh 11 ga. galvanized steel fabric conforming to the Specifications of AASHO Designation M 181. The fabric shall be not-dip galvanized after weaving or aluminum coating per ASTM Specification A-491 or zinc coating Class I or II per ASTM Specification A-392. Fabric shall be connected to line posts with 6 ga. wire every 14 inches; to terminal, corner, and gate posts by using 1/4" x 3/4" stretcher bars and 1/8" x 1" stretcher bar bands spaced at one foot intervals and 3/8" diameter bolts and nuts; to tension wire with 11 ga. hog rings closed with ends overlapping ever 24 inches. The tensile strength of the fabric wire shall be 80,000 psi minimum. Gate posts shall be 4" I.D., 10.8 lb./Ft galvanized pipe.

Barbed wire shall be 3 strand of either aluminum coated with a minimum coating of 0.30 ounces per square foot of wire surface and aluminum barb, or steel with Class III galvanized coating per ASTM Specification A 121. The barbed wire consists of two 12-1/2 ga. stranded line wires 14 ga. round wire barbs in a 4 point pattern on 5-inch centers.

All fence and gate materials shall be coated to prevent corrosion, pipe posts shall have tops which exclude moisture, posts shall be set in concrete all in accordance to these Specifications and the Standard Drawings.

Height of the chain link fence shall be 6' - 0", unless otherwise noted on the drawings.

Chain link fence gate and appurtenances shall conform to the minimum requirements of the Standard Drawings and these Specifications.

At locations where a mow strip is required, a concrete footing six (6) inches wide by twelve (12) inches deep shall be constructed for the full length of the fence and gate.

Concrete shall be five sacks of Portland Cement per cubic yard, 2500 psi @ 28 days, and shall comply with applicable portions of Section 90 of the State Standard Specifications.

SECTION TWENTY FOUR

PAINTING AND COATING

24.1 GENERAL

24.1.1 Summary

The Contractor shall furnish all labor, materials, tools, equipment, incidentals, apparatus, scaffolding and do all the work involved to prime and paint piping, clean, prime, and paint all equipment, miscellaneous steel, supports and components, complete as specified.

Contractor shall provide color samples for approval by the Engineer and Owner.

Painting or interior finishing shall not be done under any conditions which may endanger the appearance or quality of the painting or finishing in any way. The Engineer shall have the right to reject all unsatisfactory material or work, and require replacement of either or both at the expense of the Contractor.

Necessary steps to protect the work of others shall be taken by the Contractor while his own work is in progress. Furthermore, the Contractor shall be responsible for any and all damage to the work. Paint shall be applied only during favorable environmental conditions.

All materials specified for use under these Specifications shall be delivered unopened at the job site in their original containers and shall not be opened until inspected by the Engineer. No paint, varnish or stain shall be reduced or applied in any way except as herein specifically called for or if not specifically called for, then it shall be applied in accordance with the manufacturer's recommendation.

The following surfaces in general shall not be painted.

1. Ferrous metals having approved factory paint finishes.
2. Nonferrous metals, unless otherwise noted or indicated. In no case shall any concrete, wood, metal or any other surface requiring protection be left unpainted, even though not specifically defined herein.
3. Stainless steel
4. Concealed ducts, pipes and conduits

24.1.2 Reference Specifications and Standards

Without limiting the generality of other requirements of these Specifications, all cleaning surface preparation, painting and coating of surfaces shall conform to the applicable requirements of the Steel Structures Painting Manual, Volume 2, Systems and Specifications (current edition), as published by the Steel Structures Painting Council.

24.1.3 Coating Applicator

The Subcontractor applying coatings shall be a licensed Contractor with a C-33 license.

24.1.4 Submittals

Product Data: Manufacturer's descriptive data fully describing each product to include solids by volume, manufacturer's recommendations for mixing, thinning, application and curing, and materials data safety sheets (MSDS).

Certificates of Compliance: Manufacturers certificates of compliance with specifications.

24.1.5 Alternates

The Contractor may submit for consideration paint materials of manufacturer's other than those specified herein. The Contractor shall provide satisfactory documentation from the firm manufacturing the proposed material that the material meets the specified requirements and is equivalent to or better than the listed materials in the following properties:

1. Quality
2. Durability
3. Resistance to abrasion and physical damage
4. Life expectancy
5. Ability to recoat in the future
6. Solids content by volume
7. Dry film thickness per coat
8. Compatibility with other coatings
9. Suitability for the intended service
10. Resistance to chemical attack
11. Temperature limitations in service and during application
12. Type and quality of recommended undercoats and topcoats
13. Ease of application
14. Ease of repairing damaged areas
15. Stability of colors

24.1.6 Project Conditions

No coating shall be applied when the surrounding air temperature, measured in the shade, is below 50 degrees F. No coating shall be applied when the temperature of surface to be painted is below 50 degrees F. Coating shall not be applied to wet or damp surfaces and shall not be applied in rain, snow, fog or mist, or when the relative humidity exceeds 60 percent. No coating shall be applied when it is expected that the relative humidity will exceed 60 percent or that air temperature will drop below 50 degrees F. within 18 hours after the application of the coating. Dew or moisture condensation should be anticipated

and if such conditions are prevalent, coating should be delayed until mid-morning to be certain that the surfaces are dry. Further, the day's coating should be completed well in advance of the probable time of day when condensation will occur, in order to permit the film a sufficient drying time prior to the formation of moisture.

24.1.7 Safety and Health Requirements

GENERAL: In accordance with the requirements of OSHA Regulations for Construction, the Contractor shall provide and require the use of personal protective and lifesaving equipment for all persons working in or about the project.

HEAD AND FACE PROTECTION AND RESPIRATORY DEVICES: Such equipment shall include protective helmets conforming to the requirements of ANSI 89.2-1971 which shall be worn by all persons at all times while in the vicinity of the work. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices meeting the requirements of ANSI 287.1-1968 and air purifying half-mask or mouthpiece respirator with appropriate filter.

VENTILATION: Where ventilation is used to control potential exposures to workers as set forth in Section 1910.94 of the OSHA Regulations for Construction, ventilation shall be adequate to reduce the concentration of the air contaminant to the degree that a hazard to the worker does not exist. Methods of ventilation shall meet the requirements set forth in ANSI 9.2-1960.

SOUND LEVELS: Whenever the occupational noise exposure exceeds the maximum allowable sound levels set forth in Table D-2 of Subpart C, Section 1926.52 of the OSHA Regulations for Construction, the Contractor shall provide and require the use of approved ear protective devices.

ILLUMINATION: Adequate illumination shall be provided while work is in progress. Whenever required by the Inspector, the Contractor shall provide additional illumination and necessary supports sufficient to cover all areas to be inspected. The level of illumination required for inspection purposes shall be determined by the Inspector.

TEMPORARY LADDERS AND SCAFFOLDING: All temporary ladders and scaffolds shall conform to the applicable requirements of Subpart L, Sections 1926.45 and 1926.424 of the OSHA Regulations of Construction. They shall be erected where requested by the inspector to facilitate proper inspection and be moved by the Contractor to locations requested by the Inspector.

24.1.8 Color Scheme

The Owner shall select colors for the project. The Contractor shall submit a current chart of the manufacturer's available colors to the Owner's Representative well in advance of coating and painting operations.

Color-coding shall be used for structures and piping. The colors listed are general types only. Final selection will be made based upon the color charts submitted.

- | | | |
|--|---|--------|
| 1. Electrical Equipment Pad Cover | - | White |
| 2. Guard Posts | - | Yellow |
| 3. Sewage Piping, Valves, Fittings, and Supports | - | Green |
| 4. Water Piping, Valves, Fittings, and Supports | - | Blue |

24.2 MATERIALS

24.2.1 General

Products specified herein are those which have been thoroughly evaluated for the specific service. In no case will a request for product substitution be approved for products with less than substantiated five-year service record on projects of a similar nature. Within a given service condition, products used shall be from the same manufacturer.

All materials shall be brought to the job site in the original sealed containers. They shall not be opened or used until Owner's representatives have physically inspected contents and obtained necessary data from information printed on containers or label.

Surfaces to receive protective or decorative materials shall be coated or painted in conformance with the applicable systems specified herein.

24.2.2 Coating System A

Ferrous metals (Non-Submerged)

Prime Coat: Epoxy Primer, Devco Devran 203 Waterborne Epoxy Primer, or approved equal. 3 – 4 mils DFT.

Finish Coat: Aliphatic Acrylic Urethane, Devco Devthane 379UVA Aliphatic Urethane Gloss Enamel, or approved equal. 2-3 mils DFT.

This coating system may be used on exterior fusion bonded epoxy coated steel pipe. The epoxy coating must be scuff sanded or lightly dust blasted to dull the gloss finish before the primer is applied.

24.2.3 Coating System B

Ferrous metals (Submerged or Intermittently Submerged)

Prime Coat: Devco Coatings Bar-Rust 233H Multi-Purposed Epoxy Coatintg. 4.0-6.0 mils DFT, or approved equal.

Finish Coat: Devco Coatings Bar-Rust 233H Multi-Purposed Epoxy Coatintg. 4.0-6.0 mils DFT, or approved equal.

24.2.4 Coating System C

Non-Ferrous metals and Galvanized Metals under non-immersion conditions

Prime Coat: Epoxy Primer, Devoe Devran 203 Waterborne Epoxy Primer, or approved equal. 3 – 4 mils DFT.

Finish Coat: Aliphatic Acrylic Urethane, Devoe Devthane 379UVA Aliphatic Urethane Gloss Enamel, or approved equal. 2-3 mils DFT.

24.2.5 Coating System D

Specified concrete subject to intermittent or full submergence in, or in the immediate vicinity of, corrosive liquids, shall receive the following coating materials.

Sealer: Devoe Coatings Pre-Prime 167 Sealer. 1.0 mils DFT, or approved equal.

Intermediate Coat: Devoe Coatings Devran 224HS High Build Epoxy. 4.0-6.0 mils DFT, or approved equal.

Finish Coat: Devoe Coatings Devran 224HS High Build Epoxy. 4.0-6.0 mils DFT, or approved equal.

24.3 EXECUTION

24.3.1 General

All coating and painting shall conform to the applicable requirements of the Steel Structures Painting Council Manual. Any material applied upon improperly prepared surfaces shall be removed and redone to the satisfaction of the inspector at the sole expense of the Contractor.

All work shall be done by skilled craftsmen who are qualified to perform the required work in a manner comparable with the best standards of practice found in that trade.

The Contractor shall provide a supervisor to be at the work site during blast cleaning and coating operations. The supervisor shall have the authority to sign change orders, coordinate the work and make other decisions pertaining to the fulfillment of their contract.

All dust, dirt, oil, grease or any foreign matter which would affect the adhesion or durability of the finish coating must be removed before painting by washing with clean rags dipped in a grease solvent and wiped with clean dry rags. Slag and weld metal accumulation and spatters shall be removed by chipping and grinding. All sharp edges shall be peeled, ground or otherwise blunted as required and directed by the inspector.

The Contractor's coating and painting equipment shall be designed and suitable for the application of the specific materials herein specified. It shall be kept in first class working conditions at all times. Compressors shall have suitable traps and filters installed to remove water and oils from the air. The Contractor's equipment shall be subject to the approval of the Owner's representative and/or manufacturer.

Sandblasting and priming shall be completed on any particular area within the period of an eight hour working day. Any sandblasted area not painted within said eight-hour period shall be re-sandblasted prior to priming.

The application of the primer shall follow immediately after surface preparation and cleaning and prior to formation of any form of corrosion. All prime coatings may be shop applied or field applied. As indicated elsewhere in this section, some prime coatings must be applied prior to erection. The Contractor shall provide a prime coat compatible with the finish coat as specified.

Any prime coatings that are damaged or contaminated during fabrication, transportation, or erection shall be thoroughly cleaned and touched up in the field as specified. The Contractor shall use repair procedures that insure the complete protection of all adjacent primer.

The specified repair method and equipment may include wire brushing, hand or power tool cleaning or dry air blast cleaning as permitted by the coating manufacturer. In order to prevent injury to surrounding painted areas, blast cleaning may require use of lower air pressure, smaller nozzle, smaller abrasive particle sizes, short blast nozzle distance from surface, shielding, and masking. If damage is too extensive or uneconomical to repair, the item shall be re-cleaned and coated or painted as necessary to provide a quality coating.

Prior to assembly, all surfaces that will be made inaccessible after assembly shall be prepared as specified herein and shall receive the paint or coating system as specified herein.

Adequate cure time shall be allowed between coats.

24.3.2 Surface Preparation

The following referenced surfaces preparation specifications of the Steel Structures Painting Council shall form a part of this Specification:

1. Surface Preparation Commentary (SSPC-SP COM).
2. Solvent Cleaning (SSPC-SP1): Removal of oil, grease, soil and other contaminants by using solvents, emulsion, cleaning compounds, steam cleaning or similar materials and methods, which involve a solvent or cleaning action.
3. Hand Tool Cleaning (SSPC-SP2): Removal of loose rust, loose mill scale and loose paint to degree specified by hand chipping, scraping, sanding and wire brushing.
4. Power Tool Cleaning (SSPC-SP5): Removal of loose rust, loose mill scale and loose paint to degree specified by power wire brushing, power impact tools or power sanders.
5. Commercial Blast Cleaning (SSPC-SP6): Blast Cleaning until at least two-thirds of each element of surface area is free of all visible residues.
6. Brush-Off Blast Cleaning (SSPC-SP7). Blast Cleaning until the entire surface is free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and

loose coating. Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife.

7. Near-White Blast Cleaning (SSPC-SP10): Blast Cleaning to nearly white metal cleanliness, until at least 95 percent of each element of surface area is free of all visible residues.
8. Power Tool Cleaning to Bare Metal (SSPC-SP11). Power tool cleaning to produce a bare metal surface and to retain or produce a surface profile.

Maximum particle size of the abrasive particles used in blast cleaning shall be that which will produce a height profile in accordance with the recommendations of the manufacturer of the protective coating which is to be applied to the surface being cleaned.

Field Blast Cleaning for all surfaces shall be accomplished by dry sandblasting method unless otherwise directed.

At all times during the blast cleaning operations, adequate means shall be employed to absolutely insure that existing protective coatings shall not be exposed to abrasion from blast-cleaning operations.

The Contractor shall at all times keep the area of his work in reasonably clean condition and shall not permit blasting materials to accumulate in an uncontrolled manner such as to constitute a nuisance or hazard to the satisfactory prosecution of the work (or operation of the existing facilities).

All blast-cleaned surfaces shall be carefully dry-cleaned prior to application of specified coatings. No coatings or paint shall be applied over damp or moist surfaces. All welds shall be neutralized with a suitable solvent compatible with the specified Coating System Materials.

Specific Surface Preparation: Surface preparation for the specific Service Condition shall be as follows:

1. Coating System A: All Surfaces shall be field sandblasted in conformance with Steel Structures Painting Council Specification SSPC-SP6. All surfaces shall be free of dirt, dust, grease or other foreign matter before coating.
2. Coating System B:
 - a) New Surfaces. All surfaces shall be field sandblasted in conformance with Steel Structures Painting Council Specification SSPC-SP10 (Near-White Blast Cleaning). Blast-cleaned surfaces shall have a surface profile that is appropriate for the specific primer and coating system as recommended by the coating manufacturer.
 - b) Recoating. When existing coatings have not deteriorated extensively and the new coating system will adhere to and is compatible with the existing coating, all corrosion products and deteriorated coatings shall be removed by spot blasting to SSPC SP10 and the entire surface

shall be cleaned by SSPC SP7. When existing coatings have deteriorated extensively or the new coating system is not compatible with the existing coating, all existing coatings shall be removed and the surfaces cleaned to SSPC SP10. Blast-cleaned surfaces shall have a surface profile that is appropriate for the specific primer and coating system in accordance with the coating manufacturer's recommendations.

3. Coating System C and D: All Surfaces shall be dry, clean, and free of oil, grease, dust, mildew, form release agents, curing compounds, laitance or other foreign matter before coating.

24.3.3 Application

General:

1. Each application of paint or coating shall be applied at the proper consistency and spread evenly, free of marks, sags, runs, with no evidence of poor workmanship. Care shall be exercised to avoid lapping on glass or hardware. Paint shall be sharply cut to lines. Finished surfaces shall be free from defects or blemishes.
2. Protective coverings or drop cloths shall be used to protect floors, fixtures and equipment. Care shall be exercised to prevent paint or coating from being splattered onto surfaces which are not to be painted.

Surfaces from which such material cannot be removed satisfactorily shall be painted or repainted, as required to produce a finish satisfactory to the Engineer.
3. Whenever two coats of a paint or coating are specified, the first coat shall contain sufficient additional pigment to act as an indicator of proper coverage, or the two coats must be of contrasting color.
4. All welds and irregular surfaces shall receive a coat of the specified product prior to application of the first complete coat.
5. Coating Systems Application: After completion of surface preparation as specified for the specific Service Condition, paint and coating materials for the specific Coating System shall be applied per manufacturer's recommendations.

42.3.4 Coating System Application

1. Coating System A, B, C & D shall be applied for items identified in the detail drawings and contract documents.

24.3.5 Protective Tape Coatings

All galvanized steel pipe and conduit below ground shall be wrapped with No. 310 Multi-temperature corrosion-protective tape or equal. Tape shall conform to the minimum requirements of ASTM D 149, D 257, D 1,000, E 96B, G8(A), E 96-(13), D1228, D 882, D 36, and D 903. Tape shall be installed in conformance to manufacturer requirements.

24.3.6 Inspection

General

1. Concrete, non-ferrous metal and wood surfaces shall be visually inspected to insure that proper and complete coverage has been attained. Ferrous metal surfaces shall be mechanically inspected with an approved dry film thickness gauge. Ferrous metals under Systems A and B shall then be electrically inspected with an approved wet sponge continuity detector. Insufficient or defective areas shall be reworked accordingly, the final result being in 100 percent accordance with this Specification.

Thickness and Holiday Checking

1. Thickness of coatings shall be checked with a non-destructive, magnetic type thickness gauge. Coating integrity of interior coated surface shall be tested with an approved holiday detection unit. All pinholes shall be marked, repaired in accordance with the coating manufacturer's printed recommendations and retested. No pinholes or other irregularities will be permitted in the final coating. In cases of dispute concerning film thickness or "holidays", the Owner or his representative's properly calibrated instruments and measurements shall predominate and the Contractor shall abide by their decision. Wide film thickness discrepancies shall be measured and verified with a micrometer or other standard approved measuring instrument.

Inspection Devices

1. The Contractor shall furnish, until final acceptance of such coatings, inspection devices in good working condition for the detection of holidays and measurement of dry-film thickness of protective coatings. The Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of dry film thickness gauge and certified instrumentation to test accuracy of holiday detectors.
2. Dry film thickness gauges shall be made available for the inspector's use at all times while coating is being done, until final acceptance of such coatings. Holiday detection devices shall be operated only in the presence of the inspector.

Acceptable Devices

1. Acceptable devices include but are not limited to, Tinler-Razor Models AP and AP-W holiday detectors for coating in excess of twenty mils (0.50 mm) dry film thickness, Model M-1 67 non-destructive holiday detector for coatings to 20 mils (0.50 mm) dry film thickness and Mikrotest units for dry film thickness gauging inspection devices shall be operated in strict accordance with the manufacturer's printed instructions.

24.3.7 Cleanup

Upon completion of the work, all staging, scaffolding and containers shall be removed from the site or destroyed in an approved manner. Coating spots, oil, or stains upon adjacent surfaces shall be removed and the entire job left clean. All damage to surfaces resulting from the work of this section shall be cleaned, repaired, or refinished to the complete satisfaction of the inspector at no cost to the Owner.

SECTION TWENTY FIVE

TREE PROGRAM FOR CITY STREETS

25.1 GENERAL

The adopted street tree program provides for the removal and replacement of existing street trees and for new plantings in park strips in developed areas where no trees now exist.

25.2 REMOVAL AND REPLACEMENT OF EXISTING STREET TREES

City forces will remove an existing street tree at the property owner's request only if the tree is:

- * dead
- * dying, decayed or hazardous
- * diseased or borer infested beyond reclamation
- * directly in the way of new sidewalks, curbs or driveway approaches
- * destroying sidewalks or curbs

In all cases of street tree removal by City forces the property owner must supply a new tree of an approved type and planting materials for replanting if the area is suitable for replanting. City forces will replant the new tree. The Director of Public Works is charged with the responsibility of determining whether or not a tree should be removed and whether or not it should be replaced.

25.3 NEW PLANTINGS

Where no trees exist on street rights-of-way fronting improved areas and when property owners wish trees to be planted, City forces will plant trees of an approved type provided the adjoining property owner purchases the tree stock and materials for planting.

If you are interested in obtaining these services, call the office of the Superintendent of Public Works at 834-3113 for details.

25.4 TIPS FOR SUCCESSFUL TREE PLANTING

- * Plant during the dormant season (December-February).
- * Never plant on hot, dry or windy days.
- * Buy well established nursery stock.
- * Make hole twice as large as tree roots.
- * Loosen subsoil at bottom of hole and put in 3 to 4 inches layer of crushed rock.
- * Add 3 or 4 inches of decayed manure mixed with an equal amount of soil.
- * To avoid root burn, cover the manure with 2 or 3 inches of topsoil.

- * Hold tree in place and gradually fill topsoil about roots tamping with

shovel handle or heavy stick.

- * When hole is 3/4 full, pour in water so soil washes about roots and eliminates air pockets.
- * Leave a ridge of soil about base of tree a few weeks to hold water.
- * Special Note-Box plantings are recommended for deep rooting.