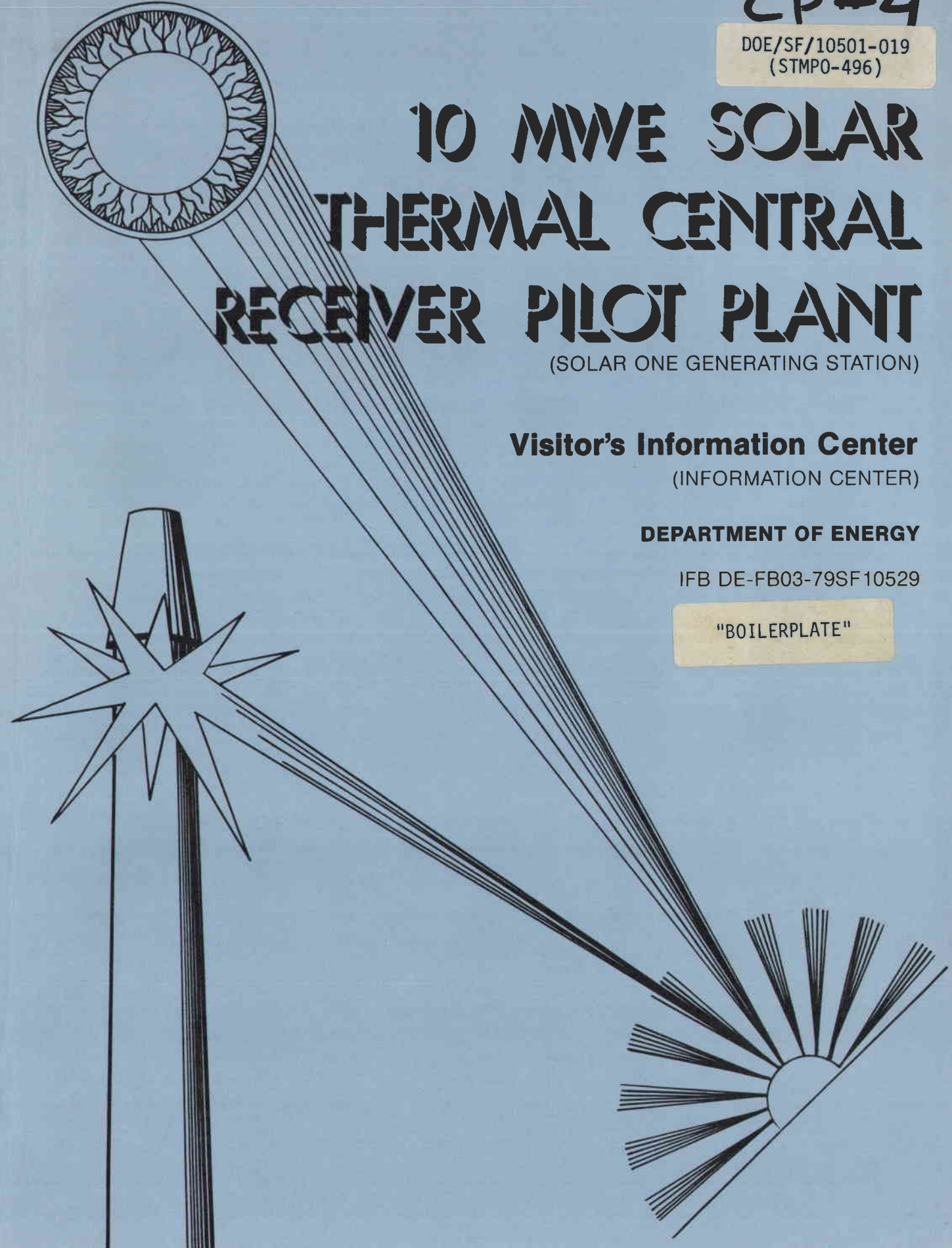


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(STMP0-496)



10 MWE SOLAR THERMAL CENTRAL RECEIVER PILOT PLANT

(SOLAR ONE GENERATING STATION)

Visitor's Information Center
(INFORMATION CENTER)

DEPARTMENT OF ENERGY

IFB DE-FB03-79SF 10529

"BOILERPLATE"



Department of Energy
San Francisco Operations Office
Solar Ten Megawatt Project Office
9550 Flair Drive, Suite 210
El Monte, California 91731

MAR 15 1979

To: Bidders

Subject: Visitors Information Center for the Ten Megawatt Solar Thermal
Central Receiver Pilot Plant IFB DE-FB03-79SF10529

Enclosed for your information and use is the Department of Energy's
Invitation for Bid for the Construction of the Visitor Information Center
for the Ten Megawatt Solar Thermal Central Receiver Pilot Plant at
Daggett, California.

Sincerely,

James C. Corcoran
for Mark Barnes
Procurement Division

Enclosure:
As stated

Amendment at body

1 - 3/28/79

2 - 4/9/79

SEE ADDENDUM # 1

4/16/79

Cancelled 5/24/79

INVITATION FOR BIDS
(CONSTRUCTION CONTRACT)

DATE

March 15, 1979

NAME AND LOCATION OF PROJECT

Visitors Information Center
10 MWe Solar Thermal Central Receiver
Pilot Plant
Daggett, California

DEPARTMENT OR AGENCY

U. S. Dept. of Energy
San Francisco Operations Office
Solar Ten Megawatt Project Office
9550 Flair Drive, Suite 210
El Monte, California 91731

BY (Issuing office) San Francisco Operations Office
Solar Ten Megawatt Project Office
9550 Flair Drive, Suite 210
El Monte, CA 91731

Sealed bids in original and four copies for the work described herein will be received until 2:00 p.m., local time as indicated by the clock on the west wall

at United States Department of Energy
San Francisco Operations Office, Solar Ten Megawatt Project Office
9550 Flair Drive, Suite 201
El Monte, California 91731 on April 11, 1979
and at that time publicly opened.

Information regarding bidding material, bid guarantee, and bonds

A bid guarantee in a form specified in the Instructions to Bidders, SF-22, in a penal sum of not less than 20% of the total bid price will be required with each bid if the bid price is in excess of \$2,000.00. If a surety bond is submitted, it shall be on the U.S. Standard Form 24.

Wage Determination. The wage rates set forth are the minimum rates which may be paid to the classifications of laborers and mechanics designated therein pursuant to the Davis-Bacon Act (Act of March 3, 1931, as amended; 40 U.S.C. 276A et seq.). DOE does not represent that said minimum rates do now, nor that they will at any time in the future, prevail in the locality of the work for such laborers or mechanics; nor that such mechanics or laborers are or will be obtained at said rates for work under this contract; nor that said rates represent the most recent wage determination by the Secretary of Labor with respect to such classifications of laborers or mechanics in the locality of the work.

Description of work

Construction of a Visitors Information Center. The work generally includes site preparation, installation of a water distribution system, area paving, access road, and construction of a pre-engineered metal building of approximately 6000 square feet, complete with all electrical work, plumbing, air conditioning, painting, etc.

NOTE: A SITE INSPECTION WILL BE CONDUCTED AT 10:00 A.M., LOCAL TIME ON MARCH 23, 1979. ALL PERSONNEL WHO PLAN TO VISIT THE SITE SHOULD NOTIFY TOWNSEND AND BOTTUM, INC. 9550 FLAIR DRIVE, SUITE 210, EL MONTE, CA 91731, TELEPHONE (213) 579-7591 BEFORE 4:00 P.M. MARCH 22, 1979, OF THEIR INTENT TO VISIT.

NOTE: THIS IS A SMALL BUSINESS SET-ASIDE.

STANDARD FORM 21
DECEMBER 1963 EDITION
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.401

BID FORM
(CONSTRUCTION CONTRACT)

REFERENCE

Invitation for Bid No.
DE-FB03-79SF10529

Read the Instructions to Bidders (Standard Form 22)
This form to be submitted in **FOUR COPIES**

DATE OF INVITATION

March 15, 1979

NAME AND LOCATION OF PROJECT

Visitors Information Center
10 MWe Solar Thermal Central
Receiver Pilot Plant
Daggett, California

NAME OF BIDDER (Type or print)

(Date)

TO: U. S. Department of Energy
San Francisco Operations Office
Solar Ten Megawatt Project Office
9550 Flair Drive, Suite 210
El Monte, California, 91731

In compliance with the above-dated invitation for bids, the undersigned hereby proposes to perform all work for the construction of a Visitors Information Center. The work generally includes site preparation, installation of a water distribution system, area paving, access road, and construction of a pre-engineered metal building of approximately 6,000 square feet, complete with all electrical work, plumbing, air conditioning, painting, etc.

in strict accordance with the General Provisions (Standard Form 23-A), Labor Standards Provisions Applicable to Contracts in Excess of \$2,000 (Standard Form 19-A), specifications, schedules, drawings, and conditions, for the following amount(s)

The undersigned further agrees that, when reinsurance agreements are completed, all necessary reinsurance agreements will be on Government forms and will be executed and submitted with the bonds. However, when an additional period of 30 days (not to exceed 45 calendar days) is authorized by the procuring activity, reinsurance agreements may be submitted within such period after the execution of the bond.

The undersigned agrees that, upon written acceptance of this bid, mailed or otherwise furnished within 60 calendar days (~~calendar days unless a different period is inserted by the bidder~~) after the date of opening of bids, he will within 5 calendar days (unless a longer period is allowed) after receipt of the prescribed forms, execute Standard Form 23, Construction Contract, and give performance and payment bonds on Government standard forms with good and sufficient surety.

The undersigned agrees, if awarded the contract, to commence the work within 10 calendar days after the date of receipt of notice to proceed, and to complete the work within 150 calendar days after the date of receipt of notice to proceed.

RECEIPT OF AMENDMENTS: The undersigned acknowledges receipt of the following amendments of the invitation for bids, drawings, and/or specifications, etc. (Give number and date of each):

The representations and certifications on the accompanying STANDARD FORM 19-B are made a part of this bid.

ENCLOSED IS BID GUARANTEE, CONSISTING OF

IN THE AMOUNT OF

NAME OF BIDDER (Type or print)

FULL NAME OF ALL PARTNERS (Type or print)

BUSINESS ADDRESS (Type or print) (Include "ZIP Code")

BY (Signature in ink. Type or print name under signature)

TITLE (Type or print)

DIRECTIONS FOR SUBMITTING BIDS: Envelopes containing bids, guarantee, etc., must be sealed, marked, and addressed as follows:

BIDS UNDER INVITATION FOR BID NO. DE-FB03-79SF10529 TO BE OPENED AT 2:00 p.m. local time April 11, 1979, in Room 201. BIDS in sealed envelope shall show the name and address of the bidder, the date and hour of the bid opening, and invitation number. The clock in Room 201 on the west wall will be used to determine the time of bid opening.

BIDS SHALL BE MAILED TO:

IF DELIVERED IN PERSON, DELIVER TO:

Address as shown on facing page

Administrative Officer, at address shown on facing page.

CAUTION—Bids should not be qualified by exceptions to the bidding conditions.

facing page.

REPRESENTATIONS AND CERTIFICATIONS

(Construction and Architect-Engineer Contract)

(For use with Standard Forms 19, 21 and 252)

REFERENCE (Enter same No.(s) as on SF 19, 21 and 252)

NAME AND ADDRESS OF BIDDER (No., Street, City, State, and ZIP Code)

DATE OF BID

In negotiated procurements, "bid" and "bidder" shall be construed to mean "offer" and "offeror."

The bidder makes the following representations and certifications as a part of the bid identified above. (Check appropriate boxes.)

1. SMALL BUSINESS

He is, is not, a small business concern. (A small business concern for the purpose of Government procurement is a concern, including its affiliates, which is independently owned and operated, is not dominant in the field of operations in which it is bidding on Government contracts, and can further qualify under the criteria concerning number of employees, average annual receipts, or other criteria as prescribed by the Small Business Administration. For additional information see governing regulations of the Small Business Administration (13 CFR Part 121)).

2. MINORITY BUSINESS ENTERPRISE

He is, is not a minority business enterprise. A minority business enterprise is defined as a "business, at least 50 percent of which is owned by minority group members or, in case of publicly owned businesses, at least 51 percent of the stock of which is owned by minority group members." For the purpose of this definition, minority group members are Negroes, Spanish-speaking American persons, American-Orientals, American-Indians, American-Eskimos, and American-Aleuts."

3. CONTINGENT FEE

(a) He has, has not, employed or retained any company or person (other than a full-time bona fide employee working solely for the bidder) to solicit or secure this contract, and (b) he has, has not, paid or agreed to pay any company or person (other than a full-time bona fide employee working solely for the bidder) any fee, commission, percentage or brokerage fee, contingent upon or resulting from the award of this contract; and agrees to furnish information relating to (a) and (b) above as requested by the Contracting Officer. (For interpretation of the representation, including the term "bona fide employee," see Code of Federal Regulations, Title 41, Subpart 1-1.5.)

4. TYPE OF ORGANIZATION

He operates as an individual, partnership, joint venture, corporation, incorporated in State of

5. INDEPENDENT PRICE DETERMINATION

(a) By submission of this bid, each bidder certifies, and in the case of a joint bid each party thereto certifies as to his own organization, that in connection with this procurement:

(1) The prices in this bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, in the case of a bid, or prior to award, in the case of a proposal, directly or indirectly to any other bidder or to any competitor; and

(3) No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.

(b) Each person signing this bid certifies that:

(1) He is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein and that he has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above; or

(2) (i) He is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein but that he has been authorized in writing to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above, and as their agent does hereby so certify; and (ii) he has not participated, and will not participate, in any action contrary to (a)(1) through (a)(3) above.

(c) This certification is not applicable to a foreign bidder submitting a bid for a contract which requires performance or delivery outside the United States, its possessions, and Puerto Rico.

(d) A bid will not be considered for award where (a)(1), (a)(3), or (b) above, has been deleted or modified. Where (a)(2) above, has been deleted or modified, the bid will not be considered for award unless the bidder furnishes with the bid a signed statement which sets forth in detail the circumstances of the disclosure and the head of the agency, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

NOTE.—Bids must set forth full, accurate, and complete information as required by this invitation for bids (including attachments). The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

THE FOLLOWING NEED BE CHECKED ONLY IF BID EXCEEDS \$10,000 IN AMOUNT.

6. EQUAL OPPORTUNITY

He has, has not, participated in a previous contract or subcontract to the Equal Opportunity Clause herein, the clause originally contained in Section 301 of Executive Order No. 10925, or the clause contained in Section 201 of Executive Order No. 11114; he has, has not, filed all required compliance reports; and representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained prior to subcontract awards.

(The above representations need not be submitted in connection with contracts or subcontracts which are exempt from the equal opportunity clause.)

7. PARENT COMPANY AND EMPLOYER IDENTIFICATION NUMBER

Each bidder shall furnish the following information by filling in the appropriate blocks:

(a) Is the bidder owned or controlled by a parent company as described below? Yes No. (For the purpose of this bid, a parent company is defined as one which either owns or controls the activities and basic business policies of the bidder. To own another company means the parent company must own at least a majority (more than 50 percent) of the voting rights in that company. To control another company, such ownership is not required; if another company is able to formulate, determine, or veto basic business policy decisions of the bidder, such other company is considered the parent company of the bidder. This control may be exercised through the use of dominant minority voting rights, use of proxy voting, contractual arrangements, or otherwise.)

(b) If the answer to (a) above is "Yes," bidder shall insert in the space below the name and main office address of the parent company.

NAME OF PARENT COMPANY	MAIN OFFICE ADDRESS (No., Street, City, State, and ZIP Code)
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(c) Bidder shall insert in the applicable space below, if he has no parent company, his own Employer's Identification Number (E.I. No.) (Federal Social Security Number used on Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941), or, if he has a parent company, the E.I. No. of his parent company.

EMPLOYER IDENTIFICATION NUMBER OF		PARENT COMPANY	BIDDER
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8. CERTIFICATION OF NONSEGREGATED FACILITIES

(Applicable to (1) contracts, (2) subcontracts, and (3) agreements with applicants who are themselves performing federally assisted construction contracts, exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause.)

By the submission of this bid, the bidder, offeror, applicant, or subcontractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. He certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The bidder, offeror, applicant, or subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. He further agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that he will retain such certifications in his files; and that he will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

A Certification of Nonsegregated Facilities must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

9. CLEAN AIR AND WATER

(Applicable if the bid or offer exceeds \$100,000, or the contracting officer has determined that orders under an indefinite quantity contract in any year will exceed \$100,000, or a facility to be used has been the subject of a conviction under the Clean Air Act (42 U.S.C. 1857c-8(c)(1)) or the Federal Water Pollution Control Act (33 U.S.C. 1319(c)) and is listed by EPA, or is not otherwise exempt.)

The bidder or offeror certifies as follows:

(a) Any facility to be utilized in the performance of this proposed contract has , has not , been listed on the Environmental Protection Agency List of Violating Facilities.

(b) He will promptly notify the contracting officer, prior to award, of the receipt of any communication from the Director, Office of Federal Activities, Environmental Protection Agency, indicating that any facility which he proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities.

(c) He will include substantially this certification, including this paragraph (c), in every nonexempt subcontract.

national defense contracts it receives that are subject to cost accounting standards.

10. COST ACCOUNTING STANDARDS CERTIFICATION -
NONDEFENSE APPLICABILITY

Any negotiated contract in excess of \$100,000 resulting from this solicitation shall be subject to the requirements of the clauses entitled Cost Accounting Standards - Nondefense Contract (FPR sec. 1-3.1204-2(a)) and Administration of Cost Accounting Standards (FPR sec. 1-3.1204-1(b)) if it is awarded to a contractor's business unit which (i) at the time of award is performing a national defense contract or subcontract of \$10 million or more subject to full (4 CFR 331) CAS coverage that was awarded during the contractor's current cost accounting period, (ii) received national defense CAS covered awards during the preceding cost accounting period of \$10 million or more, or (iii) received national defense CAS covered awards during the preceding cost accounting period of under \$10 million but such awards accounted for 10 percent or more of the business unit's sales for the preceding period, except contracts which are otherwise exempt (see FPR sec. 1-3.1203-2(a) and (c)(4)). Otherwise, an award resulting from this solicitation shall be subject to the requirements of the clauses entitled Consistency of Cost Accounting Practices - Nondefense Contract (FPR sec. 1-3.1204-2(b)) and Administration of Cost Accounting Standards (FPR sec. 1-3.1204-1(b)) if the award is (i) the first negotiated contract over \$500,000 in the event the award is to a contractor's business unit that is not performing under any CAS covered national defense or nondefense contract or subcontract, or (ii) a negotiated contract over \$100,000 in the event the award is to a contractor's business unit that is performing under any CAS covered national defense or nondefense contract or subcontract, except contracts which are otherwise exempt (see FPR sec. 1-3.1203-2(a) and (c)(4)). This solicitation notice is not applicable to small business concerns.

Certificate of CAS
Applicability

The offeror hereby certifies that:

- a. It is currently performing a negotiated national defense contract or subcontract that contains a Cost Accounting Standards Clause (4 CFR 331), and it is currently required to accept that clause in any new negotiated

- b. It is currently performing a negotiated national defense or nondefense contract or subcontract that contains a cost accounting standards clause required by 4 CFR 331 or 332 or by FPR Subpart 1-3.12, but it is not required to accept the 4 CFR 331 clause in new negotiated national defense contracts or subcontracts which it receives that are subject to cost accounting standards.
- c. It is not performing any CAS covered national defense or nondefense contract or subcontract. The offeror further certifies that it will immediately notify the Contracting Officer in writing in the event that it is awarded any negotiated national defense or nondefense contract or subcontract containing any cost accounting standards clause subsequent to the date of this certificate but prior to the date of the award of a contract resulting from this solicitation.
- d. It is an educational institution receiving contract awards subject to FPR Subpart 1-15.3 (FMC 73-8, OMB Circular A-21).
- e. It is a State or local government receiving contract awards subject to FPR Subpart 1-15.7 (FMC 74-4, OMB Circular A-87).
- f. It is a hospital.

Note: Certain firm fixed price negotiated nondefense contracts awarded on the basis of price competition may be determined by the Contracting Officer (at the time of award) to be exempt from cost accounting standards (FPR sec. 1-3.1203-2(c)(4)(iv)).

Additional Certification -
CAS Applicable Offerors

- g. The offeror, subject to cost accounting standards but not certifying under d, e, or f above, further certifies that practices used in estimating costs in pricing this proposal are consistent with the practices disclosed

in the Disclosure Statement(s) where they have been submitted pursuant to CASB regulations (4 CFR 351).

DATA REQUIRED - CAS COVERED OFFERORS

The Offeror certifying under a or b above but not under d, e, or f above, is required to furnish the name, address (including agency or department component), and telephone number of the cognizant Contracting Officer administering the offeror's CAS covered contracts. If a above is checked, the offeror will also identify those currently effective cost accounting standards, if any, which upon award of the next negotiated national defense contract or subcontract will become effective upon the offeror.

Name of CO: _____
Address: _____

Telephone Number: _____
Standards not yet applicable: _____

Additional Certification - Consistency of Cost Accounting Practices - Nondefense Contract

- h. The offeror hereby certifies that an award resulting from this solicitation is (i) the first negotiated contract over \$500,000 in the event the award is to a contractor's business unit that is not performing under any CAS covered national defense or nondefense contract or subcontract or (ii) a negotiated contract over \$100,000 in the event the award is to a contractor's business unit that is performing under any CAS covered national defense or nondefense contract or subcontract and full coverage does not apply.

11. COST ACCOUNTING STANDARDS - EXEMPTION FOR CONTRACTS OF \$500,000 OR LESS

If this proposal is expected to result in the award of a contract of \$500,000 or less, the offeror shall indicate whether the exemption to the Cost Accounting Standards clause under the provisions of 4 CFR 331.30(b)(8) is claimed. Failure to check the box below shall mean that the resultant contract is subject to the Cost Accounting Standards clause or that the offeror elects to comply with such clause.

The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 4 CFR 331.30(b)(8) and certifies that he has received notification of final acceptance of all deliverable items on (i) all prime contracts or subcontracts in excess of \$500,000 which contain the Cost Accounting Standards clause, and (ii) any prime contracts or subcontracts of \$500,000 or less awarded after January 1, 1975, which contain the Cost Accounting Standards clause. The offeror further certifies he will immediately notify the Contracting Officer in writing in the event he is awarded any other contract or subcontract containing the Cost Accounting Standards clause subsequent to the date of this certificate but prior to the date of any award resulting from this proposal.

12. AFFIRMATIVE ACTION COMPLIANCE PROGRAM

The bidder represents that (a) he _____ has developed and has on file, _____ has not developed and does not have on file at each establishment affirmative action program as required by the rules and regulations of the Secretary of Labor (41 CFR 60-1) or (b) he _____ has not previously had contracts subject to written affirmative action program requirements of the rules and regulations of the Secretary of Labor because (check as applicable).

_____ Bidder does not have 50 or more employees

_____ Bidder has not had a Government prime contract or subcontract of \$50,000 or more, or

_____ Bidder is exempt under 41 CFR 60-1 (list exemption _____)."

13. ROYALTIES

The bidder represents that there is () is not () included in the proposal price any amount representing the payment of any royalty by the bidder directly to others in connection with the performance of any contract resulting from this solicitation.

14. CERTIFICATION - WAGE AND PRICE STANDARDS

(Applicable to awards in excess of \$5 million, and awards of indefinite delivery type contracts under which cumulative orders are expected to exceed \$5 million.)

(a) By submission of this bid or offer, the bidder or offeror certifies that he is in compliance with the Wage and Price Standards issued by the Council on Wage and Price Stability (6 CFR Part 705, Appendix, and Part 706).

(b) The clause entitled, "Certification - Wage and Price Standards," set forth elsewhere in this solicitation, shall be incorporated in any resulting contract except where waived by agency head involved.

Bidders/Offerors must set forth full, accurate and complete information as required by this solicitation (including attachments).

NOTE: The penalty for making false statements in bids/offers is prescribed in 18 U.S.C. 1001.

15. WOMAN-OWNED BUSINESS

Concern is _____ is not _____ a woman-owned business.

A woman-owned business is a business which is, at least, 51 percent owned, controlled, and operated by a woman or women. Controlled is defined as exercising the power to make policy decisions. Operated is defined as actively involved in the day-to-day management.

For the purposes of this definition, businesses which are publicly owned, joint stock associations, and business trusts are exempted. Exempted businesses may voluntarily represent that they are, or are not, women-owned if this information is available.

16. PERCENT OF FOREIGN CONTENT

The offeror/contractor will represent (as and estimate), immediately after the award of a contract, the percent of the foreign content of the item or service being procured expressed as a percent of the contract award price (accuracy within plus or minus 5 percent is acceptable).

17. SUBCONTRACTOR REPRESENTATIONS AND CERTIFICATIONS

The bidder certifies that it will obtain, as a minimum, the following numbered representations and certifications prior to the award of all applicable subcontracts: 1,2,3,5,6,8, 9, 10,11, 12, 13, and 15.

Bidder/Offeror

By _____

Title _____

Date _____

LABOR STANDARDS PROVISIONS

APPLICABLE TO CONTRACTS IN EXCESS OF \$2,000

1. DAVIS-BACON ACT (40 U.S.C. 276a-276a-7)

(a) All mechanics and laborers, including apprentices and trainees, employed or working directly upon the site of the work shall be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Copeland Regulations, 29 CFR Part 3), the full amounts due at time of payment computed at wage rates not less than the aggregate of the basic hourly rates and the rates of payments, contributions, or costs for any fringe benefits contained in the wage determination decision of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor or subcontractor and such laborers and mechanics. A copy of such wage determination decision shall be kept posted by the Contractor at the site of the work in a prominent place where it can be easily seen by the workers.

(b) The Contractor may discharge his obligation under this clause to workers in any classification for which the wage determination decision contains:

(1) Only a basic hourly rate of pay, by making payment at not less than such basic hourly rate, except as otherwise provided in the Copeland Regulations (29 CFR Part 3); or

(2) Both a basic hourly rate of pay and fringe benefits payments, by making payment in cash, by irrevocably making contributions pursuant to a fund, plan, or program for, and/or by assuming an enforceable commitment to bear the cost of, bona fide fringe benefits contemplated by the Davis-Bacon Act, or by any combination thereof. Contributions made, or costs assumed, on other than a weekly basis shall be considered as having been constructively made or assumed during a weekly period to the extent that they apply to such period. Where a fringe benefit is expressed in a wage determination in any manner other than as an hourly rate and the Contractor pays a cash equivalent or provides an alternative fringe benefit, he shall furnish information with his payrolls showing how he determined that the cost incurred to make the cash payment or to provide the alternative fringe benefit is equal to the cost of the wage determination fringe benefit. In any case where the Contractor provides a fringe benefit different from any contained in the wage determination, he shall similarly show how he arrived at the hourly rate shown therefor. In the event of disagreement between or among the interested parties as to an equivalent of any fringe benefit, the Contracting Officer shall submit the question, together with his recommendation, to the Secretary of Labor for final determination.

(c) The assumption of an enforceable commitment to bear the cost of fringe benefits, or the provision of any fringe benefits not expressly listed in section 1(b)(2) of the Davis-Bacon Act or in the wage determination decision forming a part of the contract, may be considered as payment of wages only with the approval of the Secretary of Labor pursuant to a written request by the Contractor. The Secretary of Labor may require the Contractor to set aside assets, in a separate account, to meet his obligations under any unfunded plan or program.

(d) The Contracting Officer shall require that any class of laborers or mechanics, including apprentices and trainees, which is not listed in the wage determination decision and which is to be employed under the contract shall be classified or reclassified conformably to the wage determination decision, and shall report the action taken to the Secretary of Labor. If the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers or mechanics to be used, the Contracting Officer shall submit the question, together with his recommendation, to the Secretary of Labor for final determination. Apprentices and trainees may be added under this clause only where they are employed pursuant to an apprenticeship or trainee program meeting the requirements of the Apprentices and Trainees clause below.

(e) In the event it is found by the Contracting Officer that any laborer or mechanic, including apprentices and trainees, employed by the Contractor or any subcontractor directly on the site of the work covered by this contract has been or is being paid at a rate of wages less than the rate of wages required by paragraph (a) of this clause, the Contracting Officer may (1) by written notice to the Government Prime Contractor terminate his right to proceed with the work, or such part of the work as to which there has been a failure to pay said required wages, and (2) prosecute the work to completion by contract or otherwise, whereupon such Contractor and Subcontractor and his sureties shall be liable to the Government for any excess costs occasioned the Government thereby.

(f) Paragraphs (a) through (e) of the clause shall apply to this contract to the extent that it is (1) a prime contract with the Government subject to the Davis-Bacon Act, or (2) a subcontract also subject to the Davis-Bacon Act under such prime contract.

2. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT—OVERTIME COMPENSATION (40 U.S.C. 327-333).

This contract is subject to the Contract Work Hours and Safety Standards Act and to the applicable rules, regulations, and interpretations of the Secretary of Labor.

(a) The Contractor shall not require or permit any laborer or mechanic, including apprentices, trainees, watchmen, and guards, in any workweek in which he is employed on any work under this contract to work in excess of 8 hours in any calendar day or in excess of 40 hours in such workweek on work subject to the provisions of the Contract Work Hours and Safety Standards Act unless such laborer or mechanic, including apprentices, trainees, watchmen, and guards, receives compensation at a rate not less than $1\frac{1}{2}$ times his basic rate of pay for all such hours worked in excess of 8 hours in any calendar day or in excess of 40 hours in such workweek, whichever is the greater number of overtime hours. The "basic rate of pay," as used in this clause, shall be the amount paid per hour exclusive of the Contractor's contribution or cost for fringe benefits, and any cash payment made in lieu of providing fringe benefits, or the basic hourly rate contained in the wage determination, whichever is greater.

(b) In the event of any violation of the provisions of paragraph (a), the Contractor shall be liable to any affected employee for any amounts due, and to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including an apprentice, trainee, watchman, or guard, employed in violation of the provisions of paragraph (a) in the sum of \$10 for each calendar day on which such employee was required or permitted to be employed on such work in excess of 8 hours or in excess of the standard workweek of 40 hours without payment of the overtime wages required by paragraph (a).

3. APPRENTICES AND TRAINEES

(a) Apprentices shall be permitted to work as such only when they are registered, individually, under a bona fide apprenticeship program registered with a State apprenticeship agency which is recognized by the Bureau of Apprenticeship and Training, U.S. Department of Labor; or if no such recognized agency exists in a State, under a program registered with the aforesaid Bureau of Apprenticeship and Training. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the Contractor as to his entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate who is not a trainee as defined in paragraph (b) of this clause, and who is not registered as above, shall be paid the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor shall furnish to the Contracting Officer written evidence of the registration of his program and apprentices, as well as of the appropriate ratios allowed and the wage rates required to be paid thereunder for the area of construction, prior to using any apprentices in the contract work. The term "apprentice" means (1) a person employed and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or (2) a person in his first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training, or a State Apprenticeship Council (where appropriate) to be eligible for probationary employment as an apprentice.

(b) Trainees shall be permitted to work as such when they are bona fide trainees employed pursuant to a program approved by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training. The term "trainee" means a person receiving on-the-job training in a construction occupation under a program which is approved (but not necessarily sponsored) by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, and which is reviewed from time to time by the Manpower Administration to insure that the training meets adequate standards.

(c) In connection with contracts in excess of \$10,000, the Contractor agrees as follows:

(1) The Contractor shall make a diligent effort to hire for performance of work under this contract a number of apprentices or trainees, or both, in each occupation, which bears to the average number of the journeymen in that occupation to be employed in the performance of the contract the applicable ratio as set forth in paragraph (c)(7) of this clause.

(2) The Contractor shall insure that 25 percent of such apprentices or trainees in each occupation are in their first year of training, where feasible. Feasibility here involves a consideration of (i) the availability of training opportunities for first year apprentices, (ii) the hazardous nature of the work for beginning workers, and (iii) excessive unemployment of apprentices in their second and subsequent years of training.

(3) The Contractor shall, during the performance of the contract, to the greatest extent possible, employ the number of apprentices or trainees necessary to meet currently the requirements of paragraph (c)(1) and (c)(2) of this clause.

(4) The Contractor shall maintain records of employment on this contract by trade of the number of apprentices and trainees, apprentices and trainees in first year of training, and of journeymen, and wages paid and hours of work of such apprentices, trainees, and journeymen. In addition, the Contractor who claims compliance based on the criterion set forth in paragraph (c)(6)(ii) of this clause shall maintain such records of employment on all his construction work in the same labor market area, both public and private, during the performance of this contract. In each of the above cases the Contractor shall make such records available for inspection upon request of the Department of Labor or the Contracting Officer.

(5) The Contractor shall supply one copy of each of the written notices required in accordance with paragraph (c)(6)(iii) of this clause at the request of the Contracting Officer. The Contractor also agrees to supply at 3-month intervals during the performance of the contract and after completion of contract performance a statement describing steps taken toward making a diligent effort and containing a breakdown by craft, of hours worked and wages paid for first year apprentices and trainees, other apprentices and trainees, and journeymen. One copy of the statement will be sent to the Contracting Officer and one copy to the Secretary of Labor.

(6) The Contractor will be deemed to have made a "diligent effort" as required by paragraph (c)(1) if during the performance of this contract, he accomplishes at least one of the following three objectives: (i) The Contractor employs under this contract a number of apprentices and trainees by craft, at least equal to the ratios established in accordance with paragraph (c)(7) of this clause, or (ii) the Contractor employs, on all his construction work, both public and private, in the same labor

market area, an average number of apprentices and trainees by craft at least equal to the ratios established in accordance with paragraph (c)(7) of this clause, or (iii) the Contractor (A) if covered by a collective bargaining agreement, before commencement of any work on the project, has given written notice to all joint apprenticeship committees, the local U.S. Employment Security Office, local chapter of the Urban League, Workers Defense League, or other local organizations concerned with minority employment, and the Bureau of Apprenticeship and Training Representative, U.S. Department of Labor, for the locality of the work; (B) if not covered by a collective bargaining agreement, has given written notice to all of the groups stated above, except joint apprenticeship committees, and will in addition notify all non-joint apprenticeship sponsors in the labor market area; (C) has employed all qualified applicants referred to him through normal channels (such as the Employment Service, the Joint Apprenticeship Committees and where applicable, minority organizations and apprentice outreach programs who have been delegated this function) at least up to the number of such apprentices and trainees required by paragraph (c)(7) of this clause. The notice, as referred to herein, will include at least the Contractor's name and address, the agency designation, the contract number, job site address, value of the contract, expected starting and completion dates, the estimated average number of employees in each occupation to be employed over the duration of the contract work, and a statement of his willingness to employ a number of apprentices and trainees at least equal to the ratios established in accordance with paragraph (c)(7) of this clause.

(7) The Contractor recognizes that the Secretary of Labor has determined that the applicable ratios of apprentices and trainees to journeymen in any occupation for the purpose of this clause shall be as follows: (i) In any occupation the applicable ratio of apprentices and trainees to journeymen shall be equal to the predominant ratio for the occupation in the area where the construction is being undertaken, set forth in collective bargaining agreements, or other employment agreements, and available through the Bureau of Apprenticeship and Training Representative, U.S. Department of Labor, for the applicable area; (ii) for any occupation for which no ratio is found, the ratio of apprentices and trainees to journeymen shall be determined by the Contractor in accordance with the recommendations set forth in the Standards of the National Joint Apprentice Committee for the occupation, which are on file at offices of the U.S. Department of Labor's Bureau of Apprenticeship and Training; and (iii) for any occupation for which no such recommendations are found, the ratio of apprentices and trainees to journeymen shall be at least one apprentice or trainee for every five journeymen.

4. PAYROLLS AND BASIC RECORDS

(a) The Contractor shall maintain payrolls and basic records relating thereto during the course of the work and shall preserve them for a period of 3 years thereafter for all laborers and mechanics, including apprentices, trainees, watchmen, and guards working at the site of the work. Such records shall contain the name and address of each such employee, his correct classification, rate of pay (including rates of contributions for, or costs assumed to provide, fringe benefits), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Contractor has obtained approval from the Secretary of Labor as provided in paragraph (c) of the clause entitled "Davis-Bacon Act," he shall maintain records which show the commitment, its approval, written communication of the plan or program to the laborers or mechanics affected, and the costs anticipated or incurred under the plan or program.

(b) The Contractor shall submit weekly a copy of all payrolls to the Contracting Officer. The Government Prime Contractor shall be responsible for the submission of copies of payrolls of all subcontractors. The copy shall be accompanied by a statement signed by the Contractor indicating that the payrolls are correct and complete, that the wage rates contained

therein are not less than those determined by the Secretary of Labor, and that the classifications set forth for each laborer or mechanic, including apprentices and trainees, conform with the work to be performed. Submission of the "Weekly Statement of Compliance" required under this contract and the Copeland Regulations of the Secretary of Labor (29 CFR Part 3) shall satisfy the requirement for submission of the above statement. The Contractor shall submit also a copy of any approval by the Secretary of Labor with respect to fringe benefits which is required by paragraph (c) of the clause entitled "Davis-Bacon Act."

(c) The Contractor shall make the records required under this clause available for inspection by authorized representatives of the Contracting Officer and the Department of Labor, and shall permit such representatives to interview employees during working hours on the job.

5. COMPLIANCE WITH COPELAND REGULATIONS

The Contractor shall comply with the Copeland Regulations of the Secretary of Labor (29 CFR Part 3) which are incorporated herein by reference.

6. WITHHOLDING OF FUNDS

(a) The Contracting Officer may withhold or cause to be withheld from the Government Prime Contractor so much of the accrued payments or advances as may be considered necessary (1) to pay laborers and mechanics, including apprentices, trainees, watchmen, and guards employed by the Contractor or any subcontractor on the work the full amount of wages required by the contract, and (2) to satisfy any liability of any Contractor and Subcontractor for liquidated damages under paragraph (b) of the clause entitled "Contract Work Hours and Safety Standards Act—Overtime Compensation."

(b) If any Contractor or subcontractor fails to pay any laborer, mechanic, apprentice, trainee, watchman, or guard employed or working on the site of work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Government Prime Contractor, take such action as may be necessary to cause suspension of any further payments or advances until such violations have ceased.

7. SUBCONTRACTS

The Contractor agrees to insert the clauses hereof entitled "Davis-Bacon Act," "Contract Work Hours and Safety Standards Act—Overtime Compensation," "Apprentices and Trainees," "Payrolls and Basic Records," "Compliance with Copeland Regulations," "Withholding of Funds," "Subcontracts," and "Contract Termination—Debarment" in all subcontracts. The term "Contractor" as used in such clauses in any subcontract shall be deemed to refer to the subcontractor except in the phrase "Government Prime Contractor."

8. CONTRACT TERMINATION—DEBARMENT

A breach of the clauses hereof entitled "Davis-Bacon Act," "Contract Work Hours and Safety Standards Act—Overtime Compensation," "Apprentices and Trainees," "Payrolls and Basic Records," "Compliance with Copeland Regulations," "Withholding of Funds," and "Subcontracts" may be grounds for termination of the contract, and for debarment as provided in 29 CFR 5.6.

9. DISPUTES CONCERNING LABOR STANDARDS

Disputes arising out of the labor standards provisions of this contract shall be subject to the Disputes clause except to the extent such disputes involve the meaning of classifications or wage rates contained in the wage determination decision of the Secretary of Labor or the applicability of the labor provisions of this contract which questions shall be referred to the Secretary of Labor in accordance with the procedures of the Department of Labor.

[4510-27]

DEPARTMENT OF LABOR

Employment Standards Administration

MINIMUM WAGES FOR FEDERAL AND
FEDERALLY ASSISTED CONSTRUCTION

General Wage Determination Decisions

General Wage Determination Decisions of the Secretary of Labor specify, in accordance with applicable law and on the basis of information available to the Department of Labor from its study of local wage conditions and from other sources, the basic hourly wage rates and fringe benefit payments which are determined to be prevailing for the described classes of laborers and mechanics employed in construction activity of the character and in the localities specified therein.

The determinations in these decisions of such prevailing rates and fringe benefits have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of Part 1 of Subtitle A of Title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates, (37 FR 21138) and of Secretary of Labor's Orders 12-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in effective date as prescribed in that section, because the necessity to issue construction industry wage determination frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General Wage Determination Decisions are effective from their date of

publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision together with any modifications issued subsequent to its publication date shall be made a part of every contract for performance of the described work within the geographic area indicated as requested by an applicable Federal prevailing wage law and 29 CFR, Part 5. The wage rates contained therein shall be the minimum paid under such contract by contractors and subcontractors on the work.

MODIFICATIONS AND SUPERSEDEAS DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

Modifications and Supersedeas Decisions to General Wage Determination Decisions are based upon information obtained concerning changes in prevailing hourly wage rates and fringe benefit payments since the decisions were issued.

The determinations of prevailing rates and fringe benefits made in the Modifications and Supersedeas Decisions have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of Part 1 of Subtitle A of Title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's Orders 13-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in foregoing General Wage Determination Decisions, as hereby modified, and/or superseded shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged in contract work of the character and in the localities described therein.

Modifications and Supersedeas Decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5.

Any person, organization, or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Office of Special Wage Standards, Division of Wage Determinations, Washington, D.C. 20210. The cause for not utilizing the rule-making procedures prescribed in 5 U.S.C. 553 has been set forth in the original General Wage Determination Decision.

MODIFICATIONS TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being modified and their dates of publication in the FEDERAL REGISTER are listed with each State.

Alabama:		
AL78-1026	_____	Mar. 24, 1978.
Connecticut:		
CT78-3055	_____	July 28, 1978.
Florida:		
FL78-1062	_____	July 14, 1978.
Louisiana:		
LA78-4072	_____	Do.
LA-4077	_____	Aug. 11, 1978.
Minnesota:		
MN77-2043; MN77-2044; MN77-2045; MN77-2046	_____	May 6, 1977.
MN78-2009	_____	Mar. 10, 1978.
MN78-2062	_____	July 14, 1978.
New Jersey:		
NJ78-3009	_____	Apr. 21, 1978.
Texas:		
TX78-4033; TX78-4037; TX78-4043	_____	Apr. 14, 1978.

SUPERSEDEAS DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being modified and their dates of publication in the FEDERAL REGISTER are listed with each State. Supersedeas decision numbers are in parentheses following the numbers of the decisions being superseded.

Alabama:		
AL77-1083 (AL78-1067)	_____	June 24, 1977.
California:		
CA78-5004 (CA78-5123)	_____	Jan. 27, 1978.
Florida:		
FL77-1049 (FL78-1068)	_____	Apr. 29, 1977.
Pennsylvania:		
PA77-3058 (PA78-3048)	_____	May 13, 1978.
Texas:		
TX78-4075 (TX78-4081)	_____	Aug. 4, 1978.

CANCELLATION OF GENERAL WAGE DETERMINATION DECISIONS

None.

Signed at Washington, D.C., this 11th day of August 1978.

XAVIER M. VELA,
Administrator,
Wage and Hour Division.

AL78-1067 - (Cont'd)

POWER EQUIPMENT OPERATORS:CLASS A
CLASS B
CLASS C
CLASS D

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
9.11	.40	.30		.10
8.57	.40	.30		.10
8.22	.40	.30		.10
7.61	.40	.30		.10

CLASS A: Asphalt plant, asphalt spreader, backhoe, boat operator, (inboard), law tractor, bulldozer, cableways, cherry picker, compressors-2, or more within 200 ft. radius, concrete plants-stationary, mixer operator, concrete pump, conveyor-2 or more up to 4, core driller-crane-derrick-dragline deck hoist on construction barges, crane-hydro, dinky locomotive, distributors-bituminous surface, dredge operator, farm tractor with attachments (30 HP or more-which are an integral part of tractor), fork lift, front end loader, gradall, headhouse operator, heavy duty, mechanic, hoist-2 drums or more, ice plant in connection with concrete, mixers-5 bags or over, motor graders, pile driver, push tractor, quarry master and rock crusher, rollers-asphalt, scraper, scrapers in tandem (operator to receive 25¢ per hour for each additional scraper), shovels, trenching machines and all similar equipment.

CLASS B: Crawler tractor, hoist-1 drum, pumps-2 or more 4 inch & over, under 5 within 200 ft. radius, rollers (other than asphalt), winch truck, well points and other equipment used for dewatering.

CLASS C: Air compressor, blade graders-pull type, farm tractor with attachments finishing machine-screw mounted self-propelled, mixers-under 5 bags.

CLASS D: Outboard boats, air compressor-125 and under, conveyor-one (1) tended by oiler, pumps-under 4 inch-3 or under, welding machines-3 or under, oiler in board boats, deck hand.

SUPERSEDIAS DECISION

STATE: California

COUNTIES: Imperial, Inyo, Kern, Los Angeles, Mono, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura

DECISION NUMBER: CA78-5123

DATE: Date of Publication

Supersedes Decision No. CA78-5004 dated January 27, 1978, in 43 FR 3844
DESCRIPTION OF WORK: Building Construction (does not include single family homes and garden type apartments up to and including 4 stories, heavy and highway construction and dredging).

ASBESTOS WORKERS

BOILERMAKERS

BRICKLAYERS; Stonemasons:

Imperial County

Inyo, Kern and Mono Counties

Los Angeles County (Cities of

Santa Monica, Malibu, Venice,

Pasadena, South Pasadena,

Arcadia, Monrovia and South of

Rosecrans Blvd., including

Long Beach), Orange County

Los Angeles County (except

Cities of Santa Monica, Malibu,

Venice, Pasadena, South Pasadena,

Arcadia, Monrovia and South of

Rosecrans Blvd., including

Long Beach)

Riverside and San Bernardino

Counties

Santa Barbara and San Luis

Obispo Counties

Ventura County

BRICK TENDERS

CARPENTERS:

Carpenters

Saw Filers

Table Power Saw Operators

Shinglers; Piledrivermen,

Bridge or dock Carpenters;

Derrick Bargemen; Rock Slinger

Hardwood Floor Layers

Head Rock Slinger

Pneumatic Nailer

Millwrights

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$ 13.65	\$1.05	\$ 1.27		.06
13.625	1.075	1.00	.75	.02
12.09	1.13	1.34		.12
12.65	1.00	1.45		.07
11.20	1.15	1.45		.30
11.20	1.15	1.45		.30
12.25	1.30	1.65		.05
10.50	1.20	1.85		.07
12.78	1.10	1.50		.05
8.85	1.15	2.45	.80	
10.05	1.49	1.95	1.00	.06
10.13	1.49	1.95	1.00	.06
10.15	1.49	1.95	1.00	.06
10.18	1.49	1.95	1.00	.06
10.25	1.49	1.95	1.00	.06
10.28	1.49	1.95	1.00	.06
10.30	1.49	1.95	1.00	.06
10.55	1.49	1.95	1.00	.06

NOTICES

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
CEMENT MASONS:					
Cement Masons	\$ 9.41	\$1.10	\$ 1.75	\$ 1.00	.08
Cement Floating and Troweling Machine	9.66	1.10	1.75	1.00	.08
DRYWALL INSTALLERS	11.40	1.49	1.95	.90	.07
ELECTRICIANS:					
Imperial County Electricians	14.30	.75	38+1.45		
Cable Splicers	14.50	.75	38+1.45		
Kern (China Lake Naval Ordnance Test Station, Edwards AFB) Electricians; Technicians	15.75	.90	38+1.60	.15	
Cable Splicers	17.33	.90	38+1.60	.15	
Kern County (Remainder of Co.) Electricians; Technicians	13.25	.90	38+1.60	.15	
Cable Splicers	14.50	.90	38+1.60	.15	
Los Angeles County Electricians	13.12	1.15	38+1.95	.12	
Cable Splicers	13.42	1.15	38+1.95	.12	
Traffic Signal and Street Lighting:					
Electricians	13.12	1.15	38+1.95	.12	
Utility Technician No. 1	9.84	1.15	38+1.95	.12	
Utility Technician No. 2	9.10	1.15	38+1.95	.12	
Tunnel:					
Electricians	13.52	1.05	18+1.70	.02	
Cable Splicers	13.82	1.05	18+1.70	.02	
Sound Technicians:					
Sound Technicians (on new building construction)	12.67	.75	38		
Sound Technicians (on modification of existing buildings)	10.74	.75	38		
Orange County Electricians	14.04	.81	38+1.45	.02	
Cable Splicers	14.69	.81	38+1.45	.02	

ELECTRICIANS; (Cont'd)

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Riverside County Electricians	\$ 13.06	.85	38+1.65		.04
Cable Splicers	13.36	.85	38+1.65		.04
Inyo, Mono and San Bernardino Counties Electricians	12.70	1.11	38+2.00		.04
Cable Splicers	13.00	1.11	38+2.00		.04
Tunnel:					
Electricians	13.97	1.11	38+2.00		.04
Cable Splicers	14.27	1.11	38+2.00		.04
San Luis Obispo County Electricians	13.41	1.20	38+1.50		.03
Cable Splicers	14.75	1.20	38+1.50		.03
Santa Barbara County (Vandenberg AFB) Electricians	15.00	1.10	38+1.50		.03
Cable Splicers	16.00	1.10	38+1.50		.03
Remainder of County Electricians	13.25	1.10	38+1.50		.03
Cable Splicers	14.25	1.10	38+1.50		.03
Ventura County Electricians	13.96	1.00	38+1.30		.02
Cable Splicers	15.36	1.00	38+1.30		.02
ELEVATOR CONSTRUCTORS:					
Imperial, Inyo, Kern (South of Tehachapi Range), Los Angeles, Mono, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties Elevator Constructors	13.41	.745	.56	a	.025
Elevator Constructors' Helpers	708JR	.745	.56	a	.025
Elevator Constructors' Helpers (Prob.)	508JR				
Kern County (North of Tehachapi Range) Elevator Constructors	14.82	.745	.56	a	.025

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
ELEVATOR CONSTRUCTORS: (Cont'd)					
Elevator Constructors' Helpers	704JR	.745	.56	a	.025
Elevator Constructors' Helpers (Prob.)	504JR				
GLAZIERS:					
Imperial County	10.90	.67	.90		
Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, San Luis Obispo and Ventura Counties	11.19	.67	1.45		.06
IRONWORKERS:					
Fence Erectors	11.11	1.29	2.47	1.65	.07
Reinforcing	12.00	1.29	2.47	1.65	.07
Ornamental, Structural	12.00	1.29	2.47	1.65	.07
IRRIGATION & LAWN SPRINKLERS:					
Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties	10.45	1.00	1.60	1.30	.10
LATHERS:					
Inyo, Kern and Mono Counties	9.13	.60	1.30	.70	.09
Los Angeles County (except City of Lancaster)	12.50	.70	.90		.03
Ventura County	11.98	1.05	1.13	1.50	.02
San Luis Obispo County	7.72	.87		3.20	
Santa Barbara County	11.67	.82	1.25	1.50	
Orange County	12.50	.85	1.00	.50	.03
LINE CONSTRUCTION:					
Imperial County					
Groundmen	11.44	.75	30+1.45		
Linemen	14.30	.75	30+1.45		
Cable Splicers	14.58	.75	30+1.45		
Kern (China Lake Naval Ordnance Test Station and Edwards AFB)					
Groundmen	12.44	.90	30+1.60		.15
Linemen	15.75	.90	30+1.60		.15
Cable Splicers	17.33	.90	30+1.60		.15
Kern County (Remainder of County)					
Groundmen	9.94	.90	30+1.60		.15
Linemen	13.25	.90	30+1.60		.15
Cable Splicers	14.58	.90	30+1.60		.15

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
LINE CONSTRUCTION: (Cont'd)					
Orange County					
Groundman, 1st year	11.43	.81	30+1.45		.02
Groundman, after 1st year	12.12	.81	30+1.45		.02
Lineman; Heavy Equipment Operators	14.04	.81	30+1.45		.02
Cable Splicers	14.69	.81	30+1.45		.02
Los Angeles County					
Groundmen	9.86	1.25	30+1.95		
Linemen	13.14	1.25	30+1.95		
Cable Splicers	13.44	1.25	30+1.95		
Inyo, Mono and San Bernardino Counties					
Groundmen	9.41	1.11	30+2.00		.04
Linemen	12.72	1.11	30+2.00		.04
Cable Splicers	13.00	1.11	30+2.00		.04
Riverside County					
Groundmen	9.65	.85	30+1.65		.04
Linemen; Line Equipment Operators	13.08	.85	30+1.65		.04
Cable Splicers	13.38	.85	30+1.65		.04
San Luis Obispo County					
Groundmen	9.66	1.00	30+1.35		.03
Linemen; Line Equipment Operators	12.26	1.00	30+1.35		.03
Cable Splicers	13.48	1.00	30+1.35		.03
Ventura County					
Groundmen	12.93	1.00	30+1.05		.02
Linemen	14.21	1.00	30+1.05		.02
Cable Splicers	15.63	1.00	30+1.05		.02
Santa Barbara County (Vandenberg AFB)					
Groundmen	11.69	1.10	30+1.50		.03
Linemen	15.00	1.10	30+1.50		.03
Cable Splicers	16.00	1.10	30+1.50		.03
Remainder of County					
Groundmen	9.64	1.10	30+1.50		.03
Linemen	13.25	1.10	30+1.50		.03
Cable Splicers	14.25	1.10	30+1.50		.03

NOTICES

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
MARBLE SETTERS: Inyo and Mono Counties Imperial County	\$ 11.64 12.34	\$1.50 .81	\$ 1.10 1.17	\$ 1.03	.08
MARBLE, TERRAZZO & TILE SETTERS' HELPERS: Imperial County	9.44	.81	1.17		.08
PAINTERS: Imperial, Orange, Riverside, Los Angeles (Pomona Area), San Bernardino (excluding Western portion)					
Brush; Paint Burners	11.58	1.23	1.28	.75	.07
Paperhangers; Iron, steel and bridge (swing stage); Sheet rock taper	12.58 11.83	1.23 1.23	1.28 1.28	.75 .75	.07 .07
Brush (swing stage); Spray Steeplejack	13.23	1.23	1.28	.75	.07
Inyo, Kern (Lancaster, Mojave, Palmdale, China Lake Naval Ordnance Test Station and Edwards AFB), Los Angeles (except Pomona Area), Mono San Bernardino (west of a line north of Trono including China Lake Area, Johannesburg, Boron, South including the Wrightwood Area)					
Brush	12.05	.66	.80	.60	.02
Structural steel and bridge; Painter Burner	12.17 12.59	.66 .66	.80 .80	.60 .60	.02 .01
Tapers					
Brush Swing Stage (13 stories or less); Paperhangers; Sandblasters; Spray	12.30	.66	.80	.60	.02
Brush swing stage (over 13 stories)	12.42	.66	.80	.60	.02
Structural steel and bridge, swing	12.45	.66	.80	.60	.02

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
PAINTERS: (Cont'd) Spray sandblaster swing stage (13 stories or less); Paste Machine; Special coating	\$ 12.55 13.30	.66 .66	.80 .80	.60 .60	.02 .02
Spray Steeplejack					
Kern County (Remainder of County)					
Brush	9.87	.45	.61		.03
Brush or Roller, swing stage; Paperhangers; Taping joint aneet rock	10.12 10.37	.45 .45	.61 .61		.03 .03
Spray; Sandblasters Steeplejack	11.37	.45	.61		.03
San Luis Obispo, Santa Barbara, and Ventura Counties					
Brush; Pot Tender	11.99	1.07	1.30		.03
Paperhangers; Paste Machine Operators; Iron and steel	12.12 12.37	1.07 1.07	1.30 1.30		.03 .03
Spray; Taper; Sandblasters Sign Painter	11.52 12.87	1.07 1.07	1.30 1.30		.03 .03
Steeplejack					
Parking Lot Striping Work and/or Highway Markers:					
<u>Inyo and Mono Counties</u>					
Striper	10.47	.55	.40	b	
Striper Helper	8.47	.55	.40	b	
Traffic Delineating Device Applicator; Wheel Stop Installer; Traffic Sur- face; Sandblaster	9.37	.55	.40	b	
Helper (traffic delineating device applicator, wheel stop installer, traffic surface sandblaster)	7.97	.55	.40	b	
Slurry Seal Operation Mixer Operator	9.37 8.87	.55 .55	.40 .40	b b	
Squeegee Man	7.97	.55	.40	b	
Applicator Operator	6.90	.55	.40	b	
Shuttlemen	6.47	.55	.40	b	
Top Man					

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NOTICES

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or App. Tr.
PAINTERS: (Cont'd)					
Remaining Counties:					
Traffic Delineating Device Applicator	9.37	.55	.40	b	
Striper; Wheel Stop Installer; Surface Sandblaster	8.98	.55	.40	b	
Helper (striper, wheel stop installer, traffic surface sandblaster)	7.08	.55	.40	b	
Blurry Seal Operations:					
Mixer Operator	8.98	.55	.40	b	
Squeegee Man	7.98	.55	.40	b	
Applicator Operator	7.08	.55	.40	b	
Shuttleman	6.90	.55	.40	b	
Top Man	6.08	.55	.40	b	
PLASTERERS:					
Imperial County	11.03				
Los Angeles and Orange Cos. Riverside and San Bernardino Counties	12.335	.93	1.05		.12
San Luis Obispo County	15.95				.01
Santa Barbara County	12.00				
Ventura County	8.69	.70	1.05		.01
	13.16	.80	2.15		.02
PLASTERERS TENDERS:					
Imperial, Inyo, Mono, Riverside and San Bernardino Counties	11.02	1.15	2.45		
Kern County (China Lake Naval Ordnance Test Station, Edwards AFB)	12.075	1.05	2.45	.60	
Kern County (Remainder of Co.)	9.45	1.05	2.45	.60	
Los Angeles and Orange Cos.	10.975	1.15	2.45	1.10	
San Luis Obispo County	9.43	1.15	2.45	1.00	
Santa Barbara County (except Santa Maria)	10.78	1.15	2.45	.80	
Santa Barbara Co. (Santa Maria)	10.88	1.15	2.45	.80	
Ventura County	11.23	1.05	2.45	1.10	

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or App. Tr.
PLUMBERS; Steamfitters:					
Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties	\$ 13.12	100	160	130	3/40
Inyo, Kern (except east of Los Angeles (Aqueduct) and Mono Counties)	10.88	.95	1.05	1.45	.17
Kern County (East of Los Angeles Aqueduct)	13.38	.95	1.05	1.45	.17
REFRIGERATION & AIR CONDITIONING:					
Riverside and San Bernardino Counties	10.70	.96	.85	1.00	.05
Los Angeles and Orange Counties	12.53	1.85	1.80	1.52	.20
ROOFERS:					
Imperial County	10.79	.80	1.05	1.00	
Inyo, Kern and Mono Counties	10.70	.60	.60		
Riverside and San Bernardino Counties	10.45	.80	.75	1.00	
Los Angeles, Orange and Ventura Counties	12.32	.92	1.10		.065
San Luis Obispo and Santa Barbara Counties	10.43	.535	.34		.0025
SHEET METAL WORKERS:					
Imperial County	13.96	1.04	2.24		.01
Kern County (China Lake Naval Ordnance Test Station and Edwards AFB)	13.67	1.04	1.80		.02
Kern County (Remainder of County and all of Inyo and Mono Counties, Los Angeles County (That portion North of a straight line drawn between Gorman and Big Pines) between Gorman and Big Pines)	11.17	1.04	1.80		.02
Los Angeles County (Remaining portion)	13.65	1.04	2.35		.10
Orange County	11.62	1.04	2.13		.09
Riverside and San Bernardino Counties	10.10	1.04	1.80		.08
San Luis Obispo, Santa Barbara and Ventura Counties	12.73	1.04	2.02		

NOTICES

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
SOFT FLOOR LAYERS:					
Imperial County	\$ 9.55	.60	\$ 1.05		.07
Los Angeles, Orange, Riverside, Santa Barbara, San Luis Obispo, San Bernardino and Ventura Counties	11.72	.70	.97	.63	.06
Kern County, including that portion lying East of the Los Angeles Aqueduct and that portion of Inyo County included within the Inyo-Kern Naval Reservation	10.42	.75	.60	1.18	.07
SPRINKLER FITTERS:					
Imperial Inyo, Kern, Mono, Orange (except Santa Ana), Riverside, San Bernardino (except Ontario, San Luis Obispo, Santa Barbara and Ventura (except Santa Paula, Point Mugu and Port Hueneme)	15.52	.75	1.05		.08
Los Angeles (Los Angeles City and Area within 25 miles and Pomona), Orange (Santa Ana), San Bernardino (Ontario), and Ventura (Santa Paula, Point Mugu and Port Hueneme)	14.66	.66	.90		.09
TERRAZZO WORKERS:					
Imperial County	12.34	.81	1.17		.08
TILE SETTERS:					
Imperial County	12.34	.81	1.17		.08
Los Angeles, Orange and Ventura Counties	12.62	1.00	1.20		.10
San Luis Obispo and Santa Barbara Counties	10.50	1.20	1.85		.07
Riverside and San Bernardino Counties	12.57	1.03	1.75		.07
Inyo, Kern and Mono Counties	11.20	.65	.55		.07
TILE SETTERS' HELPERS:					
Los Angeles, Orange and Ventura Counties	9.96	1.39	1.30		.12

PAID HOLIDAYS:

A-New Year's Day; B-Memorial Day; C-Independence Day;
D-Labor Day; E-Thanksgiving Day; F-Christmas Day.

FOOTNOTES:

- a. Employer contributes 8% of basic hourly rate for over 5 years' service and 6% of basic hourly rate for 6 months to 5 years' service as Vacation Pay Credit. Six Paid Holidays: A through F.
- b. Employer contributes \$.23 per hour to Holiday Fund plus \$.14 per hour to Vacation Fund for the first year of employment, 1 year but less than 5 years \$.34 per hour to Vacation Fund, 5 years but less than 10 years \$.44 per hour to Vacation Fund; over 10 years \$.54 per hour to Vacation Fund.

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
LABORERS (Tunnel)					
BATCH PLANT LABORERS; Bull Gang Mucker, Trackman; Concrete Crew, including Rodders and Spreaders; Changehouseman; Dumpman; Dumpman (outside); Swamper (Brakeman and Switchman on tunnel work); Tunnel materials handling Man; Tool Man	\$ 10.14	\$ 1.15	\$ 2.45	.60	
CABLE TENDER; Chuck Tender; Nipper; Steel form raiser and setter's helper; Vibratorman, jackhammer, pneumatic tools (except drillers); Loading and unloading agitator cars; Pot tender using mastic or other materials	10.26	1.15	2.45	.60	
BLASTER, Driller, Powderman; Chemical grout jetman; Cherry pickerman; Grout gunman; Grout Mixerman; Grout pumpman; Jack-leg miner; Jumbo man; Kemper and other pneumatic concrete placer operator; Miner tunnel (hand or machine); Powderman (primer house); Primer Man; Shotcrete Man; Steel Form Raiser and setter; Timberman; Retimber (wood or steel); Tunnel concrete finisher; Nozzleman; Operating troweling and/or Grouting Machine; Sandblaster	10.42	1.15	2.45	.60	
SHAFT, Raise miner; Diamond driller	10.70	1.15	2.45	.60	

LABORERS (Cont'd)

LABORERS	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Group 1	\$ 9.60	\$1.15	\$ 2.45	.80	.12
Group 2	9.75	1.15	2.45	.80	.12
Group 3	9.95	1.15	2.45	.80	.12
Group 4	10.10	1.15	2.45	.80	.12
Group 5	10.25	1.15	2.45	.80	.12
LABORERS (Gunnite)					
Nozzlemen and Rodmen	10.07	1.15	2.45	.80	
Gunmen	9.57	1.15	2.45	.80	
Reboundmen	8.61	1.15	2.45	.80	

LABORERS

Group 1: Boring Machine Helper (outside); Cleaning and Handling of Panels Forms; Concrete Screeding for rough strike-off; Concrete, water curing; Demolition laborer, the cleaning of brick and lumber; Dry packing of concrete, plugging, filling of Shee-bolt Holes; Fire Watcher, Limbers, Brush Loaders, Pilers and Debris Handlers; Flag-man; Gas, oil and/or water pipeline laborer; Laborer, general or construction; Laborer, general cleanup; Laborer, landscaping; Laborer, jetting, temporary water and air lines; Material Hoseman (walls, slabs, floors and decks); Rigging and signaling; Scaler; Slip Form Raisers; Slurry Seal crews (mixer operator, applicator operator, squeegee man, shuttle man, top man); Striper, asphalt, concrete or other paved surfaces; Tarman and mortar man; Tool crib or tool house laborer; Traffic delineating device applicator; Window cleaner; Wire mesh pulling--all concrete pouring operations

Group 2: Asphalt Shoveler; Cement dumper (on 1 yard or larger mixer and handling bulk cement); Cesspool Digger and Installer; Chucktender; Chute Man, pouring concrete, the handling of the chute from ready-mix trucks, such as walls, slabs, decks, floors, foundations, footings, curbs, gutters and sidewalks; Concrete curer--impervious membrane and form oiler; Cutting torch operator (demolition); Fine grader, highways and street paving, airport, runways, and similar type heavy construction; Gas, oil and/or water pipeline wrapper--pot tender and form man; Guinea chaser; Headerboard Man--asphalt; Laborer, packing rod steel and pans; Power broom sweepers (small); Riprap stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Sandblaster (pot tender); Septic tank digger and installer (leadman); Tank scaler and cleaner; Tree climber, faller, chain saw operator, Pittsburgh chipper and similar type brush shredders; Underground laborer, including caisson bellow

Group 3: Asphalt raker, luteman, ironer and asphalt spreader boxes (all types); Buggymobile man; Concrete core cutter, grinder or sander; Concrete cutting torch; Concrete saw man, cutting, scoring old or new concrete; Driller, jackhammer, 2-1/2 ft. drill steel or longer; Dri Pak-it machine; Gas, oil and/or water pipeline wrapper--6" pipe and over by any method, inside and out; Hydro coater and similar type; Impact wrench, multi-plate; Kettleman, potmen and men applying asphalt, lay-kold, creosote, lime caustic and similar type materials ("applying" means applying dipping, brushing or handling of such materials for pipe wrapping and water-proofing); Operators of pneumatic, gas, electric tools, vibrating machines, pavement breakers, air blasting, come-alongs, and similar mechanical tools not separately classified herein; Pipelayer's Backup man, coating, grouting, making of joints, sealing, caulking, diapering and including rubber gasket joints, pointing and any and all other services; Rock slinger; Rotary scarifier or multiple head concrete chipping scarifier; Steel headerboard man and guideline setter; Tamper, barko, wacker and similar type; Trenching machine, hand propelled

Group 4: Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Head rock slinger; Laser beam; Oversize concrete vibrator operator, 70 lbs. and over; Pipelayer, including water, sewage, solid, gas or air; Prefabricated manhole installer; Sandblaster (nozzlemans), water blasting; Welding in connection with laborers' work

Group 5: Blasters powderman--all work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Driller: All power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all types of mechanical drills

NOTICES

**POWER EQUIPMENT OPERATORS
DREDGING
(Hydraulic Suction Dredges)**

LEVERMAN \$ 11.60
WATCH ENGINEER, Welder 11.02
DECKMATE 10.54
WINCHMAN (Stern winch or dredge) 10.47
BARGE MAN; Deckhand; Fireman;
Oiler; Leveehand 9.93
(Clamshell Dredges)

LEVERMAN 11.60
WATCH ENGINEER 11.02
DECK MATE 10.54
BARGE MATE 10.47
BARGE MAN; Deckhand; Fireman;
Oiler 9.93

POWER EQUIPMENT OPERATORS

Group 1:
Group 2:
Group 3:
Group 4:
Group 5:
Group 6:
Group 7:
Group 8:
Group 9:

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$ 11.60	.95	\$ 2.00	.50	.04
11.02	.95	2.00	.50	.04
10.54	.95	2.00	.50	.04
10.47	.95	2.00	.50	.04
9.93	.95	2.00	.50	.04
11.60	.95	2.00	.50	.04
11.02	.95	2.00	.50	.04
10.54	.95	2.00	.50	.04
10.47	.95	2.00	.50	.04
9.93	.95	2.00	.50	.04
10.70	1.00	2.00	.55	.14
10.98	1.00	2.00	.55	.14
11.27	1.00	2.00	.55	.14
11.41	1.00	2.00	.55	.14
11.63	1.00	2.00	.55	.14
11.74	1.00	2.00	.55	.14
11.86	1.00	2.00	.55	.14
12.03	1.00	2.00	.55	.14
12.14	1.00	2.00	.55	.14

POWER EQUIPMENT OPERATORS

Group 1: Brakeman; Compressor (less than 600 C.R.M.); Engineer Oiler; Generator; Heavy Duty Repairman; Helper; Pump; Signalmn; Switchman

Group 2: Compressor (600 C.P.M. or larger); Concrete Mixer, skip type, Conveyor; Fireman; Hydrostatic Pump; Oiler Crusher (asphalt or concrete plant); Plant Operator; Generator, Pump or Compressor; Rotary Drill Helper (oilfield); Skiploader - wheel type up to 3/4 yd. w/o attachments; Soils Field Technician; Tar Pot Fireman; Temporary Heating Plant; Trenching Machine Oiler; Truck Crane Oiler

Group 3: A-Frame or Winch Truck; Elevator Operator (inside); Equipment Greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter Radioman (ground); Power Concrete Curing Machine; Power Concrete Saw; Power driver Jumbo Form Setter; Ross Carrier (job site); Stationary Pipe Wrapping and Cleaning Machine

Group 4: Asphalt Plant Fireman; Boring Machine; Boxman or Mixerman (asphalt or concrete); Chip Spreading Machine; Concrete Pump (small portable); Bridge type Unloader and Turntable; Dinkey Locomotive or Motorman (up to and including 10 tons); Equipment Greaser (greaser truck); Helicopter Hoist; Highline Cableway Signalmn; Hydra-hammer-aero Stomper; Power Sweeper; Roller (compacting); Screed (asphalt or concrete); Trenching Machine (up to 6 ft.)

Group 5: Asphalt Plant Engineer; Backhoe (up to and including 3/4 yd.); Batch Plant; Bit Sharpener; Concrete Joint Machine (canal and similar type); Concrete Planer; Deck Engine; Derrick-man (oilfield type); Drilling Machine Operator (including water wells); Forklift (under 5-ton capacity); Hydrographic Seeder Machine (straw, pulp or seed); Machine Tool Operator; Maglinn Internal Fill Slab Vibrator; Mechanic Bern, Curb or Gutter (concrete or asphalt); Mechanical Finisher (concrete-Clary, Johnson, Bidwell or similar); Pavement Breaker (truck mounted); Road Oil Mixing Machine; Roller (asphalt or Finish); Rubber-tired Earth Moving Equipment (single engine, up to and including 25 yds. struck); Self-propelled Tar Pipelining Machine; Slip Form Pump (power-driven hydraulic lifting device for concrete forms); Skiploader (Crawler and Wheel type over 3/4 yd. and up to and including 1 1/2 yds.); Stinger Crane (Austin-Western or similar type); Tractor-bulldozer, Tamper Scraper (single engine, up to 100 h.p., flywheel and similar types, up to and including D-5 and similar types); Tugger Hoist 1 drum; Tunnel Locomotive (over 10 and up to and including 30 tons); Welder-general

Group 6: Asphalt or Concrete Spreading (tamping or finishing); Asphalt Paving Machine (Barber Greene or similar type); Bridge Crane Operator; Cast-in-place Pipe Laying Machine; Combination Mixer and Compressor (gunite work); Compactor, self-propelled; Concrete Mixer - paving; Concrete Pump (truck mounted); Crane Operator up to and including 25 ton capacity (Long-boom pay applicable); Crushing Plant; Drill Doctor; Elevating Grader; Forklift (over 5 tons); Grade Checker; Grade-all; Grouting Machine; Heading Shield; Heavy Duty Repairman; Hoist Operator (Chicago Boom and similar type); Rolman Belt Loader and similar type; LeTourneau Blob Compactor or similar type; Lift Mobile; Lift Slab Machine (Vagtborg and similar types); Loader (Athey, Euclid, Sierra and similar type); Material Hoist; Mucking Machine (1/4 yd. rubber tired, rail or track type); Pneumatic Concrete

NOTICES

Placing Machine (Hackley-Presswell or similar type); Pneumatic Heading Shield (tunnel); Pumpcrete Gun; Rotary Drill (excluding caisson type); Rubber-tired Earth Moving Equipment (single engine-Caterpillar, Euclid, Athey Wagon, and similar types with any and all attachments over 25 yds. and up to and including 50 cu. yds. struck); Rubber-tired Earth Moving Equipment (multiple engine, up to and including 25 yds. struck); Rubber-tired Scraper (self-loading-paddle wheel type-John Deere, 1040 and similar single unit); Skiploader (crawler and wheel type-over 14 yds., up to and including 64 yds.); Surface Heaters and Planer; Trenching Machine (over 6 ft. depth capacity); Tower Crane; Tractor Compressor Drill Combination; Tractor (any type larger than D-5-100 flywheel h.p. and over, or similar) Bulldozer, Tamper, Scraper and Push Tractor (single engine); Tractor (boom attachments); Traveling Pipe Wrapping, Cleaning and Bending Machine; Tunnel Locomotive (over 30 tons); Shovel, Backhoe, Dragline, Clamshell (over 3/4 yd. and up to 5 cu. yds. m.r.c.) (Long Boom pay applicable); Self-propelled Curb and Gutter Machine

Group 7: Crane, over 25 ton up to and including 100 tons m.r.c. (long boom pay applicable); Derrick Barge (long boom pay applicable); Dual Drum Mixer; Heavy Duty Repairman-welder Combination; Hoist, Stiff-legs, Guy Derrick or similar type, up to and including 100 tons (long boom pay applicable); Monorail Locomotive (diesel), gas or electric); Motor Patrol-blade Operator (single engine); Multiple Engine Tractor (Euclid and similar type, except quad 9 Cat); Rubber-tired Earth Moving Equipment (single engine, over 50 yds. struck); Rubber-tired Earth Moving Equipment (multiple engine, Euclid, Caterpillar and similar) (over 25 yds. and up to 50 cu. yds. struck); Shovel, Backhoe, Dragline, Clamshell (over 5 cu. yds. m.r.c.) (long boom pay applicable); Tower Crane Repairman; Tractor Loader (crawler and wheel type over 64 yds.); Welder-certified; Woods Mixer and similar Pugmill Equipment

Group 8: Auto Grader; Automatic Slip Form; Crane-over 100 tons (long boom pay applicable); Hoist-stiff Legs, Guy Derrick or similar types (capable of hoisting 100 tons or more) (long boom pay applicable); Mass Excavator - less than 750 cu. yds.; Mechanical Finishing Machine; Mobile Form Traveler; Motor Patrol, multi-engine); Pipe Mobile Machine; Rubber-tired earth moving equipment (multiple engine, Euclid, Caterpillar and similar type over 50 cu. yds. struck); Rubber tired self-loading Scraper (paddle wheel-auger type self-loading-2 or more units); Rubber-tired Scraper - pushing one another w/o Push Cat. Push-pull (50¢ per hour additional to base rate); Tandem Equipment (2 units only); Tandem Tractor (quad 9 or similar type); Tunnel Mole Boring Machine

Group 9: Canal Liner; Canal Trimmer; Helicopter Pilot; Highline Cableway; Remote Controlled Earth Moving Equipment (\$1.00 p/h additional to base rate); Wheel Excavator (over 750 cu. yd.)

TRUCK DRIVERS

Group 1;
Group 2;
Group 3;
Group 4;
Group 5;
Group 6;
Group 7;
Group 8;
Group 9;
Group 10;
Group 11;
Group 12;
Group 13;
Group 14;
Group 15;
Group 16;
Group 17;
Group 18;
Group 19;

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appt. Tr.
\$ 9.52	\$ 1.25	.75	\$1.10	.10
9.60	1.25	.75	1.10	.10
9.66	1.25	.75	1.10	.10
9.75	1.25	.75	1.10	.10
9.78	1.25	.75	1.10	.10
9.80	1.25	.75	1.10	.10
9.84	1.25	.75	1.10	.10
9.85	1.25	.75	1.10	.10
9.90	1.25	.75	1.10	.10
9.93	1.25	.75	1.10	.10
9.98	1.25	.75	1.10	.10
10.00	1.25	.75	1.10	.10
10.05	1.25	.75	1.10	.10
10.30	1.25	.75	1.10	.10
10.55	1.25	.75	1.10	.10
10.65	1.25	.75	1.10	.10
10.75	1.25	.75	1.10	.10
11.05	1.25	.75	1.10	.10
11.55	1.25	.75	1.10	.10

TRUCK DRIVERS

Group 1: Warehouseman and Teamster

Group 2: Driver or vehicle or combinations of vehicles of 2 axes (including all vehicles less than six tons); Traffic Control Pilot Car, excluding moving heavy equipment permit load

Group 3: Truck mounted Power Broom

Group 4: Drivers of vehicles or combination of vehicles of 3 axes

Group 5: Bootman; Cement Distributor; Fuel Truck; Road Oil Spreader Truck; Water Truck, 2 axle

Group 6: Dump, of less than 16 yards

Group 7: Transit-mix, under 3 yards; Dumpcrete, less than 64 yards

Group 8: Truck Repairman Helper

Group 9: Water Truck, 3 or more axes

Group 10: PB and similar type truck when performing within the Teamsters' jurisdiction; Pipeline and Utility working Truck including Winch, but limited to truck applicable to Pipeline and Utility work, where a composite crew is used; Slurry Driver; Truck Greaser and Tireman (50¢ per hour additional for Tireman)

Group 11: Transit-mix, 3 yards or more; Dumpcrete, 64 yards and over

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TRUCK DRIVERS (Cont'd)

- Group 12: Driver of vehicle or combination of vehicles of 4 or more axles
- Group 13: Dump, 16 yards but less than 25 yards
- Group 14: A-Frame or Swedish Crane, or similar type of equipment driver; Fork Lift Driver; Ross Carrier, highway
- Group 15: All-off-highway Equipment within Teamsters jurisdiction (off highway combination of vehicles or equipment with multiple power sources, \$1.00 per hour additional); Dump, 25 yards or more; Truck Repairman
- Group 16: Truck Repairman Welder
- Group 17: Low Bed Driver, 9 axle or over
- Group 18: Water Pull, single engine with attachments
- Group 19: Water Pull, twin engine with attachments

SUPERSEDES DECISION

STATE: Florida COUNTY: Leon
 DECISION NUMBER: FL77-1063 DATE: Date of Publication
 Supersedes Decision No.: FL77-1049 dated April 29, 1977 in 42 FR 22080
 DESCRIPTION OF WORK: Building Construction (excluding single family homes and garden type apartments up to and including 4 stories).

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Asbestos workers	11.27	.45	.55		.04
Bricklayers	7.00				.08+.02
Cement masons	7.05	.30	.30		
Carpenters	6.54				.03
Drywall hangers	6.95	.25			0.5X
Electricians	8.75	.50	3X		
Glaziers	6.43				
Laborers:					
Laborers	4.25	.20			
Concrete cutters, Grouters;					
Gumite workers; Masons tenders;					
Mechanical tool operators;					
Mortar mixers; Pipelayers;					
Plaster tender; Power buggy operators	4.60	.20			
Plumbers	6.96	20X			
Roofers	5.00				.07
Sheet metal workers	8.00	.85	.55		.03
Soft floor layers.	7.10	.25			
Truck drivers	5.04				
Welders - rate for craft.					

DECISION NO. FL77-1063 (cont'd)

POWER EQUIPMENT OPERATORS:

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
GROUP I	9.48	.50	.35		.05
GROUP II	8.30	.50	.35		.05
GROUP III	7.32	.50	.35		.05
GROUP IV	6.21	.50	.35		.05

GROUP I: Cranes, derricks, clam shells, draglines, piledriver (including auger & boring machine for drilling in piling), backhoes, hydra cranes, grade all, shovels, patrols, cableways, tug boat captain (150 H.P. or more), multi-bowl operator (similar to R.G. LeTourneau Model L-60-2 or 3 twenty cu. yd. scraper front end loaders, (over 4 cy. cap.), side boom cats, multi-drum hoist (for rigging), mechanic (heavy equip), tower crane (stationary, climbing & traveling), gantry cranes, locomotive cranes, bridge cranes (over 20 ton cap.), concrete pump with boom (mobile), high lift or fork lift (second floor & higher), locomotive engineer (jobs not covered by railroad unions)

GROUP II: Bulldozers, bridge cranes (20 tons & under), highlift or forklift (up to 2nd floor), straddle buggys, hoists (other than rigging) including winch truck not mobile & used aloft, front end loader (over 2 cy & up to 4 incl., 4 cy cap.), trenching machine (ladder & wheel type) over 6' cut & 24" width, concrete paver & scrapers

GROUP III: Concrete pumps, front end loader (2 cy or less not used as hoist) mobile winch trucks, self-propelled sub-grader, asphalt paving machine concrete mixer, tractors, air compressor plant (2 or more compressors on a common manifold) lubricating engineer (mobile plant), pavement breakers, street sweeping machines

GROUP IV: Tractor operated sweeper, trenching machine (ladder & wheel type maximum cut 6' & maximum width 24"), firemen, self-propelled rollers, wellpoint pump, asphalt distributor, water truck driver, motor boat operator, oiler, mechanics' helpers, pumpman (other than well point up to 4 incl., 5 pumps within 300 ft. radius), self-propelled sweepers, combination pump, compressor & combustion type welding machine

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[4510-27]

DEPARTMENT OF LABOR

Employment Standards Administration

MINIMUM WAGES FOR FEDERAL AND
FEDERALLY ASSISTED CONSTRUCTION

General Wage Determination Decisions

General Wage Determination Decisions of the Secretary of Labor specify, in accordance with applicable law and on the basis of information available to the Department of Labor from its study of local wage conditions and from other sources, the basic hourly wage rates and fringe benefit payments which are determined to be prevailing for the described classes of laborers and mechanics employed in construction activity of the character and in the localities specified therein.

The determinations in these decisions of such prevailing rates and fringe benefits have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of Part 1 of Subtitle A of Title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates, (37 FR 21138) and of Secretary of Labor's Orders 12-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in effective date as prescribed in that section, because the necessity to issue construction industry wage determination frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General Wage Determination Decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Ac-

ordingly, the applicable decision together with any modifications issued subsequent to its publication date shall be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR, Part 5. The wage rates contained therein shall be the minimum paid under such contract by contractors and subcontractors on the work.

MODIFICATIONS AND SUPERSEDEAS DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

Modifications and Supersedeas Decisions to General Wage Determination Decisions are based upon information obtained concerning changes in prevailing hourly wage rates and fringe benefit payments since the decisions were issued.

The determinations of prevailing rates and fringe benefits made in the Modifications and Supersedeas Decisions have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of Part 1 of Subtitle A of Title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's Orders 13-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in foregoing General Wage Determination Decisions, as hereby modified, and/or superseded shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged in contract work of the character and in the localities described therein.

Modifications and Supersedeas Decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5.

Any person, organization, or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be ob-

tained by writing to the U.S. Department of Labor, Employment Standards Administration, Office of Special Wage Standards, Division of Wage Determinations, Washington, D.C. 20210. The cause for not utilizing the rule-making procedures prescribed in 5 U.S.C. 553 has been set forth in the original General Wage Determination Decision.

MODIFICATIONS TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being modified and their date of publication in the FEDERAL REGISTER are listed with each State.

Arizona, AZ78-5114, Aug. 11, 1978
Arkansas, AR78-4063 Jun. 16, 1978; AR78-4064, AR78-4067, AR78-4068, AR78-4069, Jun. 23, 1978.
California, CA78-5123, Aug. 18, 1978.
Connecticut, CT75-2067, Apr. 25, 1978.
Florida, FL78-1043, Apr. 14, 1978.
Hawaii, HI78-5016, Mar. 17, 1978.
Louisiana, LA78-4072, July 14, 1978; LA78-4077, Aug. 11, 1978.
Maryland, MD77-3086, Aug. 5, 1977.
Michigan, MI78-2054, Jun. 2, 1978.
Nevada, NV78-5010, Mar. 10, 1978.
New Jersey, NJ78-3009, Apr. 21, 1978.
North Dakota, ND78-5113, Jul. 21, 1978.
Pennsylvania, PA78-3053, Aug. 11, 1978.
Texas, TX78-4017, Mar. 10, 1978; TX78-4038, Apr. 14, 1978; TX78-4051, May 12, 1978; TX78-4073, Jul. 21, 1978; TX78-4078, TX78-4079, Aug. 11, 1978; TX78-4080, Aug. 4, 1978; TX78-4083, TX78-4084, Aug. 25, 1978.

SUPERSEDEAS DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being modified and their dates of publication in the FEDERAL REGISTER are listed with each State. Supersedeas Decision numbers are in parentheses following the numbers of the decisions being superseded.

Guam, GU78-5021(GU78-5127), Mar. 24, 1978.
Mississippi, MS78-1014(MS78-1079), Feb. 17, 1978.
Nevada, NV78-5009(NV78-5124), Mar. 10, 1978.
Oklahoma, OK77-4036(OK78-4093), Feb. 18, 1977.
Texas, TX77-4139(TX78-4089), Jul. 1, 1977; TX78-4032(TX78-4090), Apr. 14, 1977; TX78-4014(TX78-4091), Feb. 17, 1977; TX78-4042(TX78-4092), Apr. 14, 1977.
Virginia, VA76-3244(VA78-3061), Sep. 1, 1976.

CANCELLATION OF GENERAL WAGE DETERMINATION DECISIONS

None.

Signed at Washington, D.C. this 15 day of September 1978.

DONALD M. ENO
Acting Administrator
Wage and Hour Division

MODIFICATIONS P. 13

DECISION NO. ND78-5113 (Cont'd)

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Line Construction:					
Group 1	\$10.53	.45	3%		1/2%
Group 2	8.46	.45	3%		1/2%
Group 3	7.04	.45	3%		1/2%
Group 4	6.46	.45	3%		1/2%
Plasterers:					
Grand Forks, Walsh and Steele Counties	8.84		.30		
Ward County	8.75				
Roofers:					
Cass and Richland Counties	9.05				
Power Equipment Operators:					
Building Construction:					
Group 1	10.00	.45	.40		
Group 2	9.05	.45	.40		
Group 3	8.45	.45	.40		
Group 4	7.45	.45	.40		
Add:					
Cement Masons:					
Ward County	\$ 8.75				
Glaziers:					
Burleigh County	7.16				
Soft Floor Layers:					
Burleigh County	8.20				
DECISION #PA78-3053 - Mod. # 2 (43 FR 35871 - August 11, 1978) Ducks, Chester, Delaware, Montgomery & Philadelphia Counties, Pennsylvania					
Change:					
Roofers:					
All other work					
Commercial					
Composition, damp and water-proofers	\$12.77	1.40	.95	•	
Roofers Assistant	6.00	1.40	.95	•	

MODIFICATIONS P. 14

DECISION #TX78-4017 - Mod. #3
(43 FR 10272 - March 10, 1978)
Taylor County, Texas

Change:

Electricians - Electricians
Cable splicers

Line construction:

Lineman
Cable splicers
Groundman (over 1 year of experience)
Groundman (under 1 year of experience)
Equipment operator
Flat bed truck driver

Painters:

Brush, tape & bedding, paper hangers
Spray

DECISION #TX78-4038 - Mod. #2
(43 FR 16129 - April 14, 1978)
Harrison County, Texas

Change:

Bricklayers & stonemasons

DECISION #TX78-4051 - Mod. #2
(43 FR 20718 - May 12, 1978)
Ector & Midland Cos., Texas

Change:

Electricians - Zone 1
Zone 2
Zone 3

DECISION #TX78-4073 - Mod. #2
(43 FR 31569 - July 21, 1978)
Bell, Bosque, Coryell, Falls, Hill & McLennan Cos., Texas

Change:

Building Construction:
Glaziers

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Electricians - Electricians	9.80	.60	3%		1/4%
Cable splicers	10.05	.60	3%		1/4%
Line construction:					
Lineman	9.80	.60	3%		1/4%
Cable splicers	10.05	.60	3%		1/4%
Groundman (over 1 year of experience)	7.35	.60	3%		1/4%
Groundman (under 1 year of experience)	5.88	.60	3%		1/4%
Equipment operator	8.04	.60	3%		1/4%
Flat bed truck driver	6.08	.60	3%		1/4%
Painters:					
Brush, tape & bedding, paper hangers	8.00		.35		
Spray	8.875		.35		
Bricklayers & stonemasons	10.25		.25		
Electricians - Zone 1	10.45	.60	3%		1/10%
Zone 2	10.75	.60	3%		1/10%
Zone 3	10.95	.60	3%		1/10%
Building Construction: Glaziers	7.20				

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MODIFICATIONS P. 11

DECISION #NJ78-3009 - Mod. #4
 (42 FR 17223 - April 21, 1978)
 Bergen, Essex, Hudson, Hunterdon,
 Middlesex, Morris, Passaic, Somerset,
 Sussex, Union and Warren Counties
 New Jersey

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Change: Bricklayers, Stone Masons, Cement Masons, & Plasterers Zone 7	12.15	.50	.70		.02
Pipefitters: Bergen & Hudson Counties and the city of Passaic in Passaic County	12.30	1.00	1.00	1.00	.25
Plumbers & Steamfitters: Zone 1	13.25	.75	1.35		.25
Plumbers Zone 5	12.42	.65	1.00	.90	.02
Zone 6	12.30	1.00	1.00	1.00	.25
Steamfitters Plumbers	13.25	.75	1.35		.25
Plumbers & Pipefitters: Zone 2	11.67	1.005	1.36	1.00	.04
Plumbers: Zone 1	13.25	.75	1.35		.25
Zone 2	13.25	.75	1.35		.25
Zone 3	13.25	.75	1.35		.25

MODIFICATIONS P. 12

DECISION NO. ND78-5113 - Mod. #1
 (43 FR 31563 - July 21, 1978)
 Burleigh, Cass, Grand Forks,
 Morton, Richland, Steele,
 Walsh and Ward Counties,
 North Dakota

Change:

Bricklayers; Stonemasons:
 Burleigh and Morton Cos.
 Grand Forks, Steele and
 Walsh Counties
 Cass and Richland Counties
 Carpenters:
 Grand Forks, Steele (Northern
 Area) and Walsh Counties
 Carpenters
 Filedrivermen
 Ward County
 Carpenters
 Filedrivermen
 Cement Masons:
 Grand Forks, Steele and
 Walsh Counties
 Cass and Richland Counties
 Laborers:
 Building Construction:
 Grand Forks and Steele Cos.
 Group 1
 Group 2
 Group 3
 Burleigh and Morton Cos.
 Group 1
 Group 2
 Group 3
 Cass and Richland Cos.
 Group 1
 Group 2
 Group 3
 Ward County
 Group 1
 Group 2
 Group 3

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$10.20		.30		
11.15		.30		
10.95	.60	.30		
9.71		.20		
9.97		.20		
9.23				.02
9.46				.02
8.10		.30		
9.86				
7.47	.35			
7.62	.35			
7.82	.35			
6.90	.35			
7.00	.35			
7.10	.35			
7.04	.35			
7.14	.35			
7.19	.35			
7.04	.35			
7.14	.35			
7.29	.35			

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NOTICES

[4510-27M]

DEPARTMENT OF LABOR

Employment Standards Administration

MINIMUM WAGES FOR FEDERAL AND
FEDERALLY ASSISTED CONSTRUCTION

General Wage Determination Decisions

General Wage Determination Decisions of the Secretary of Labor specify, in accordance with applicable law and on the basis of information available to the Department of Labor from its study of local wage conditions and from other sources, the basic hourly wage rates and fringe benefit payments which are determined to be prevailing for the described classes of laborers and mechanics employed in construction activity of the character and in the localities specified therein.

The determinations in these decisions of such prevailing rates and fringe benefits have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of Part 1 of Subtitle A of Title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates, (37 FR 21138) and of Secretary of Labor's Orders 12-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in effective date as prescribed in that section, because the necessity to issue construction industry wage determination frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General Wage Determination Decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision together with any modifications issued

subsequent to its publication date shall be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR, Part 5. The wage rates contained therein shall be the minimum paid under such contract by contractors and subcontractors on the work.

Modifications and Supersedeas Decisions to
General Wage Determination Decisions

Modifications and Supersedeas Decisions to General Wage Determination Decisions are based upon information obtained concerning changes in prevailing hourly wage rates and fringe benefit payments since the decisions were issued.

The determinations of prevailing rates and fringe benefits made in the Modifications and Supersedeas Decisions have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's Order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of Part 1 of Subtitle A of Title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's Orders 13-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in foregoing General Wage Determination Decisions, as hereby modified, and/or superseded shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged in contract work of the character and in the localities described therein.

Modifications and Supersedeas Decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5.

Any person, organization, or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Office of Special Wage Standards, Division of Wage Determinations, Washington, D.C. 20210.

Dorothy PER
The cause for not utilizing the rule-making procedures prescribed in 5 U.S.C. 553 has been set forth in the original General Wage Determination Decision.

NEW GENERAL WAGE DETERMINATION
DECISIONS

Illinois.—IL78-2199.

MODIFICATIONS TO GENERAL WAGE
DETERMINATION DECISIONS

The numbers of the decisions being modified and their dates of publication in the FEDERAL REGISTER are listed with each State.

Arizona:		
AZ78-5114	.....	Aug. 11, 1978.
California:		
CA78-5122	.....	Do.
CA78-5123	.....	Aug. 18, 1978.
Delaware:		
DE78-3080	.....	Nov. 3, 1978.
Florida:		
FL78-1070	.....	Aug. 25, 1978.
Illinois:		
IL78-2064	.....	Aug. 4, 1978.
IL78-2094; IL78-2105	.....	Oct. 20, 1978.
IL78-2117	.....	Nov. 13, 1978.
IL78-2127	.....	Oct. 27, 1978.
IL78-2139	.....	Nov. 3, 1978.
Kentucky:		
KY78-1098	.....	Dec. 1, 1978.
Louisiana:		
LA78-4099	.....	Oct. 6, 1978.
Nevada:		
NV78-5010	.....	Mar. 10, 1978.
NV78-5018	.....	Mar. 17, 1978.
NV78-5124	.....	Sept. 15, 1978.
NV78-5129	.....	Oct. 27, 1978.
Pennsylvania:		
PA78-3067	.....	Sept. 22, 1978.
PA78-3068	.....	Sept. 29, 1978.
PA78-3069	.....	Oct. 6, 1978.
Vermont:		
VT78-2070	.....	Aug. 11, 1978.
VT78-2091	.....	Oct. 6, 1978.
Virginia:		
VA78-3074; VA78-3075; VA78-3076	.....	Nov. 3, 1978.

SUPERSEDEAS DECISIONS TO GENERAL
WAGE DETERMINATION DECISIONS

The numbers of the decisions being superseded and their dates of publication in the FEDERAL REGISTER are listed with each State. Supersedeas Decision numbers are in parentheses following the numbers of the decisions being superseded.

Arkansas:		
AR78-4068 (AR78-4116)	.....	June 23, 1978.
Illinois:		
IL78-2049 (IL78-2143)	.....	Mar. 24, 1978.
IL78-2107 (IL78-2165)	.....	Oct. 20, 1978.
Indiana:		
IN78-2032 (IN78-2162)	.....	Mar. 10, 1978.
Virginia:		
VA77-3082 (VA78-3100)	.....	June 24, 1978.

CANCELLATION OF GENERAL WAGE
DETERMINATION DECISIONS

NONE

Signed at Washington, D.C. this 1st day of December 1978.

DOROTHY P. COME,
Assistant Administrator,
Wage and Hour Division.

MODIFICATIONS P. 3

DECISION NO. CA78-5122 - Mod. #2
(43 FR 35035 - August 11, 1978)
Imperial, Kern, Los Angeles,
Orange, Riverside, San-
Bernardino, San Luis Obispo,
Santa Barbara and Ventura
Counties, California

Change:

ELECTRICIANS:

Imperial County

Electricians

Cable Splicers

Kern (China Lake Ordnance

Test Station, Edwards AFB)

Electricians, Technicians

Cable Splicers

Kern County (Remainder of Co.)

Electricians, Technicians

Cable Splicers

Los Angeles County

Electricians

Cable Splicers

Orange County

Electricians

Cable Splicers

Riverside County

Electricians

Cable Splicers

San Bernardino

Electricians

Cable Splicer

San Luis Obispo County

Electricians

Cable Splicers

Santa Barbara County

(Vandenberg AFB)

Electricians

Cable Splicers

Remainder of County

Electricians

Cable Splicers

Ventura County

Electricians

Cable Splicers

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$14.90	.75	3%+1.45		
15.18	.75	3%+1.45		
16.75	1.00	3%+1.75		.15
18.43	1.00	3%+1.75		.15
13.75	1.00	3%+1.75		.15
15.13	1.00	3%+1.75		.15
13.62	1.15	3%+2.15		.12
14.22	1.15	3%+2.15		.12
14.79	.81	3%+1.45		.02
15.47	.81	3%+1.45		.02
14.11	.85	3%+2.00		.04
14.61	.85	3%+2.00		.04
13.55	1.21	3%+2.40		.04
14.05	1.21	3%+2.40		.04
14.18	1.23	3%+1.50		.03
15.50	1.23	3%+1.50		.03
16.65	1.10	3%+1.50		.03
17.65	1.10	3%+1.50		.03
14.65	1.10	3%+1.50		.03
15.65	1.10	3%+1.50		.03
14.51	1.00	3%+1.55		.02
15.96	1.00	3%+1.55		.02

MODIFICATIONS P. 4

DECISION NO. CA78-5123 - Mod. #2
(43 FR 36839 - August 18, 1978)
Imperial, Kern, Los Angeles,
Orange, Riverside, San
Bernardino, San Luis Obispo,
Santa Barbara and Ventura
Counties, California

Change:

ELECTRICIANS:

Imperial County:

Electricians

Cable Splicers

Kern (China Lake Naval Ordnance

Test Station, Edwards AFB)

Electricians, Technicians

Cable Splicers

Kern County (Remainder of Co.)

Electricians, Technicians

Cable Splicers

Los Angeles County

Electricians

Cable Splicers

Tunnel:

Electricians

Cable Splicers

Sound Technicians on existing
buildings)

Orange County:

Electricians

Cable Splicers

Riverside County:

Electricians

Cable Splicers

Inyo, Mono and San Bernardino

Counties:

Electricians

Cable Splicers

Tunnel:

Electricians

Cable Splicers

San Luis Obispo County:

Electricians

Cable Splicers

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$14.90	.75	3%+1.45		
15.18	.75	3%+1.45		
16.75	1.00	3%+1.75		.15
18.43	1.00	3%+1.75		.15
13.75	1.00	3%+1.75		.15
15.13	1.00	3%+1.75		.15
13.62	1.15	3%+2.15		.12
14.22	1.15	3%+2.15		.12
14.43	1.15	3%+1.95		.12
14.73	1.15	3%+1.95		.12
9.59	.75	3%		
14.79	.81	3%+1.45		.02
15.47	.81	3%+1.45		.02
14.11	.85	3%+2.00		.04
14.61	.85	3%+2.00		.04
13.55	1.21	3%+2.40		.04
14.05	1.21	3%+2.40		.04
14.91	1.21	3%+2.40		.04
15.21	1.21	3%+2.40		.04
14.18	1.21	3%+1.50		.03
15.60	1.21	3%+1.50		.03

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NOTICES

MODIFICATIONS P. 5

DECISION NO. CA78-5123 (Con't)

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Santa Barbara County (Vandenberg AFB)					
Electricians	\$16.65	1.10	3x+1.50		.03
Cable Splicers	17.65	1.10	3x+1.50		.03
Remainder of County					
Electricians	14.65	1.10	3x+1.50		.03
Cable Splicers	15.65	1.10	3x+1.50		.03
Ventura County					
Electricians	14.51	1.00	3x+1.55		.02
Cable Splicers	15.96	1.00	3x+1.55		.02
DECISION NO. DC78-1089 - Mod. #1 (42 FR 51567 - November 3, 1978) State of Delaware					
Change: Line Construction: Linemen & Cable Splicers					
	12.43	.45	3%		3/4 of 1%
Roofers: Composition, damp, & waterproofing					
	12.77	1.40	.95	h	
Mechanic II (re-roofing)	6.00	1.40	.95	h	
Decision No. F178-1070 - Mod. #2 (43 FR-36277- August 25, 1978) Pinellas County, Florida					
Change: Bricklayers					
	9.85	.45	.50		.10
Plasterers	8.74				

MODIFICATIONS P. 6

DECISION NO. IL78-2064 - MOD #1

(43 FR 34662 - August 4, 1978)

Fulton, Hancock, Henderson, Knox, McDonough, Mercer, Peoria, Stark, Tazwell and Warren Counties, Illinois

CHANGE:

Carpenters & Piledrivers (Carpenters);
Mercer County:
Carpenters

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
	\$11.435	.60	.90		.04
DECISION NO. IL78-2095 - MOD #2 (43 FR 49159 - October 20, 1978) DuPage, Grundy, Kane, Kendall, Lake & McHenry Counties, Illinois					
CHANGE: Laborers: Lake County					
CLASS 1 Building & Plasters Laborers; General Laborers (Bricking & Demolition) Fireproofing & Fire Shop Laborers					
	\$ 9.20	.57	1.10		
CLASS 2 Cement Gun Laborers & Hose					
	9.275	.57	1.10		
CLASS 3 Chimney Laborers (Over 40'); Scaffold Laborers; Wall Men or Wreckers					
	9.30	.57	1.10		
CLASS 4 Stone Derrickmen & Handlers					
	9.40	.57	1.10		
CLASS 5 Jackhammer Men (Tampers & Vibrators) Power Driven Concrete Saws					
	9.425	.57	1.10		
CLASS 6 Calisson Diggers, Well Point System; Chimney Laborers (on Firebrick)					
	9.55	.57	1.10		
CHANGE: Carpenters: DuPage & Lake Counties					
	11.50				

NOTICES

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510-27-(A)

DEPARTMENT OF LABOR

Employment Standards Administration
MINIMUM WAGES FOR FEDERAL AND
FEDERALLY ASSISTED CONSTRUCTION

General Wage Determination Decisions

General Wage Determination Decisions of the Secretary of Labor specified in accordance with applicable law and on the basis of information available to the Department of Labor from a study of local wage conditions and from other sources, the basic hourly wage rates and fringe benefit payments which are determined to be prevailing for the described classes of laborers and mechanics employed in construction activity of the character and in the localities specified therein.

The determinations in these decisions of such prevailing rates and fringe benefits have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 366 following Secretary of Labor's order No. 4-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of part 1 of subtitle A of title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's orders 12-71 and 15-71 (36 FR 8755, 756). The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described herein.

Good cause is hereby found for not utilizing notice and public procedure hereon prior to the issuance of these determinations as prescribed in § 5 U.S.C. 553 and not providing for delay in effective date as prescribed in that section, because the necessity to issue construction industry wage determination frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General wage determination decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision together with any modifications issued subsequent to its publication date shall be made a part of every contract

for performance of the described work within the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR Part 5. The wage rates contained therein shall be the minimum paid under such contract by contractors and subcontractors on the work.

MODIFICATIONS AND SUPERSEDED DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

Modifications and supersedeas decisions to general wage determination decisions are based upon information obtained concerning changes in prevailing hourly wage rates and fringe benefit payments since the decisions were issued.

The determinations of prevailing rates and fringe benefits made in the modifications and supersedeas decisions have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 366 following Secretary of Labor's order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of part 1 of subtitle A of title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's orders 13-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in foregoing general wage determination decisions, as hereby modified, and/or superseded shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged in contract work of the character and in the localities described therein.

Modifications and supersedeas decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5.

Any person, organization, or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Office of Special Wage Standards, Division of Wage Determinations, Washington, D.C. 20210. The cause for not utilizing the rule-making procedures prescribed in 5-

U.S.C. 553 has been set forth in the original General Wage Determination Decision.

MODIFICATION TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being modified and their dates of publication in the FEDERAL REGISTER are listed with each State.

California:	
CA78-5006, CA78-5007	Jan. 27, 1978
CA78-5122	Aug. 11, 1978
CA78-5123	Aug. 18, 1978
Kansas:	
KS78-4007	Feb. 3, 1978
Louisiana:	
LA78-4099	Oct. 6, 1978
LA78-4113	Oct. 12, 1978
New Hampshire:	
NH78-2100, NH78-2101	Oct. 6, 1978
NH78-2164	Dec. 1, 1978
Pennsylvania:	
PA78-3005	Feb. 24, 1978
Rhode Island:	
RI78-3030, RI78-3051, RI78-3052	July 21, 1978
Texas:	
TX78-4017	Mar. 10, 1978
TX78-4034, TX78-4058	Apr. 14, 1978
TX78-4079	Apr. 11, 1978
TX78-4090	Aug. 4, 1978
TX78-4081	Aug. 18, 1978
TX78-4082, TX78-4083, TX78-4084, TX78-4085, TX78-4086, TX78-4087, TX78-4088	Aug. 25, 1978
TX78-4090, TX78-4091	Sept. 15, 1978
TX78-4095, TX78-4096	Sept. 22, 1978
TX78-4114	Oct. 20, 1978
TX78-4115	Dec. 1, 1978

SUPERSEDEAS DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being superseded and their dates of publication in the FEDERAL REGISTER are listed with each State. Supersedeas Decision numbers are in parentheses following the numbers of the decisions being superseded.

District of Columbia:	
DC78-3008(DC78-3098)	Mar. 17, 1978
Maryland:	
DC78-3008(DC78-3098)	Mar. 17, 1978
Pennsylvania:	
PA78-3100(PA78-3099)	July 22, 1978
Virginia:	
DC78-3008(DC78-3098)	Mar. 17, 1978

CANCELLATION OF GENERAL WAGE DETERMINATION DECISIONS

General Wage Determination Decision No. MS77-1062 Lafayette County, Mississippi is cancelled. Agencies with building construction projects pending in this County should utilize the project determination procedure by submitting form SF-308. See Regulations Part 1 (29 CFR), Section 1.5. Contracts for which bids have been opened shall not be affected by this notice, and consistent with 29 CFR 1.7(b)(2), the incorporation of Decision No. MS77-1062 in contract specifications the opening of bids for which is within ten (10) days of this notice need not be affected.

Signed at Washington, D.C. this 8th day of December 1978.

DOROTHY P. COME,
Assistant Administrator,
Wage and Hour Division.

[4510-27-C]

MODIFICATIONS P. 1

DECISION NO. CA70-5006 - Mod. #2 (43 FR 3059 - January 27, 1978) San Diego County, California	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Change: Brick, Block and Stonemasons' Tenders	\$10.62	.77	2.05		
Glaziers	12.10	.95	1.30		
Plumbers, Steamfitters	13.12	1.05	1.65	13%	2%
DECISION NO. CA70-5007 - Mod. #2 (43 FR 3060 - January 27, 1978) San Diego County, California					
Change: Brick, Block and Stonemasons' Tenders	\$10.62	.77	2.05		
Glaziers	12.10	.95	1.30		
Plumbers, Steamfitters	13.12	1.05	1.65	13%	2%
DECISION NO. CA74-5123 - Mod. #3 (43 FR 35045 - August 11, 1978) Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, California					
Change: Plumbers, Steamfitters: Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties	\$10.62	.77	2.05	13%	2%
DECISION NO. CA74-5124 - Mod. #4 (43 FR 35046 - August 11, 1978) Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, California					
Change: Plumbers, Steamfitters: Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties	\$10.62	.77	2.05	13%	2%

MODIFICATIONS P. 2

DECISION NO. K570-4007 - Mod. #2
(43 FR 4928 - February 3, 1978)
Leavenworth, County, KS

DECISION NO. K570-4007 - Mod. #2 (43 FR 4928 - February 3, 1978) Leavenworth, County, KS	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
Asbestos Workers	\$12.67	.60	1.55		.35
Boilermakers	12.00	1.15	1.00		.60
Bricklayers - Stonemasons	11.025	.80	.35	1.00	
Cement Masons	10.925	.65	.50		
Ironworkers	10.80	.70	1.40	1.00	.05
Lathers	11.98	.40			
Marble Setters & Tile Setters	11.95	.54	4.25%		
Pipefitters	12.98	.67	1.50		.10
Plasterers	12.50				
Plumbers	13.14	.85	1.05		.12
Roofers	10.80	.75	.75		.14
Sheet Metal Workers	9.96	.75	.625		.08
Sprinkler Fitters	11.93	.75	1.05		.08
Terrazzo Workers	11.61	.54	4.25%		
DECISION #A478-4099 - Mod. #5 (43 FR 46449 - October 6, 1978) Statewide Louisiana					
Change: Boilermakers	\$11.05	.80	1.00		.02
Electricians: Zone 6 - Electricians Cable splicers	12.05 12.55	1.15 1.15	3% 3%		1% 1%
Line construction: Zone 7: Linemen; Operators Cable splicers	12.05 12.55	1.15 1.15	3% 3%		1% 1%
DECISION #A478-4113 - Mod. #6 (43 FR 47429 - October 13, 1978) Bossier, Caldo & Calcasieu Parishes, Louisiana					
Change: Boilermakers	11.05	.80	1.00		.02
Electricians: Bossier & Caldo Parishes Electricians Cable splicers	12.05 12.55	1.15 1.15	3% 3%		1% 1%

SECTION 1 - IFB

SECTION ITB - INSTRUCTIONS TO BIDDERS (STANDARD FORM 22)

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Exhibits

- A. Bid Bond
- B. Performance Bond
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IFB For Construction

of

Visitors Information Center For
The Solar Ten Megawatt Solar Thermal
Central Receiver Pilot Plant

Section 1	Instructions to Bidders
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INSTRUCTIONS TO BIDDERS

(CONSTRUCTION CONTRACT)

1. Explanations to Bidders. Any explanation desired by a bidder regarding the meaning or interpretation of the invitation for bids, drawings, specifications, etc., must be requested in writing and with sufficient time allowed for a reply to reach bidders before the submission of their bids. Any interpretation made will be in the form of an amendment of the invitation for bids, drawings, specifications, etc., and will be furnished to all prospective bidders. Its receipt by the bidder must be acknowledged in the space provided on the Bid Form (Standard Form 21) or by letter or telegram received before the time set for opening of bids. Oral explanations or instructions given before the award of the contract will not be binding.

2. Conditions Affecting the Work. Bidders should visit the site and take such other steps as may be reasonably necessary to ascertain the nature and location of the work, and the general and local conditions which can affect the work or the cost thereof. Failure to do so will not relieve bidders from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Government will assume no responsibility for any understanding or representations concerning conditions made by any of its officers or agents prior to the execution of the contract, unless included in the invitation for bids, the specifications, or related documents.

3. Bidder's Qualifications. Before a bid is considered for award, the bidder may be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

4. Bid Guarantee. Where a bid guarantee is required by the invitation for bids, failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

A bid guarantee shall be in the form of a firm commitment, such as a bid bond, postal money order, certified check, cashier's check, irrevocable letter of credit or, in accordance with Treasury Department regulations, cer-

tain bonds or notes of the United States. Bid guarantees, other than bid bonds, will be returned (a) to unsuccessful bidders as soon as practicable after the opening of bids, and (b) to the successful bidder upon execution of such further contractual documents and bonds as may be required by the bid as accepted.

If the successful bidder, upon acceptance of his bid by the Government within the period specified therein for acceptance (sixty days if no period is specified) fails to execute such further contractual documents, if any, and give such bond(s) as may be required by the terms of the bid as accepted within the time specified (ten days if no period is specified) after receipt of the forms by him, his contract may be terminated for default. In such event he shall be liable for any cost of procuring the work which exceeds the amount of his bid, and the bid guarantee shall be available toward offsetting such difference.

5. Preparation of Bids. (a) Bids shall be submitted on the forms furnished, or copies thereof, and must be manually signed. If erasures or other changes appear on the forms, each erasure or change must be initialed by the person signing the bid. Unless specifically authorized in the invitation for bids, telegraphic bids will not be considered.

(b) The bid form may provide for submission of a price or prices for one or more items, which may be lump sum bids, alternate prices, scheduled items resulting in a bid on a unit of construction or a combination thereof, etc. Where the bid form explicitly requires that the bidder bid on all items, failure to do so will disqualify the bid. When submission of a price on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(c) Unless called for, alternate bids will not be considered.

(d) Modifications of bids already submitted will be considered if received at the office designated in the invitation for bids by the time set for opening of bids. Telegraphic modifications will be considered, but should not reveal the amount of the original or revised bid.

6. **Submission of Bids.** Bids must be sealed, marked, and addressed as directed in the invitation for bids. Failure to do so may result in a premature opening of, or a failure to open, such bid.

7. **Late Bids and Modifications or Withdrawals.** (This paragraph applies to all advertised solicitations. In the case of Department of Defense negotiated solicitations, it shall also apply to late offers and modifications (other than the normal revisions of offers by selected offerors during the usual conduct of negotiations with such offerors) but not to withdrawal of offers. Unless otherwise provided, this paragraph does not apply to negotiated solicitations issued by civilian agencies.)

(a) Bids and modifications or withdrawals thereof received at the office designated in the invitation for bids after the exact time set for opening of bids will not be considered unless: (1) They are received before award is made; and either (2) they are sent by registered mail, or by certified mail for which an official dated post office stamp (postmark) on the original Receipt for Certified Mail has been obtained and it is determined by the Government that the late receipt was due solely to delay in the mails for which the bidder was not responsible; or (3) if submitted by mail (or by telegram if authorized), it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation: *Provided*, That timely receipt at such installation is established upon examination of an appropriate date or time stamp (if any) of such installation, or of other documentary evidence of receipt (if readily available) within the control of such installation or of the post office serving it. However, a modification which makes the terms of the otherwise successful bid more favorable to the Government will be considered at any time it is received and may thereafter be accepted.

(b) Bidders using certified mail are cautioned to obtain a Receipt for Certified Mail showing a legible, dated postmark and to retain such receipt against the chance that it will be required as evidence that a late bid was timely mailed.

(c) The time of mailing of late bids submitted by registered or certified mail shall be deemed to be the last minute of the date shown in the postmark on the registered mail receipt or registered mail wrapper or on

the Receipt for Certified Mail unless the bidder furnishes evidence from the post office station of mailing which establishes an earlier time. In the case of certified mail, the only acceptable evidence is as follows: (1) Where the Receipt for Certified Mail identifies the post office station of mailing, evidence furnished by the bidder which establishes that the business day of that station ended at an earlier time, in which case the time of mailing shall be deemed to be the last minute of the business day of that station; or (2) an entry in ink on the Receipt for Certified Mail showing the time of mailing and the initials of the postal employee receiving the item and making the entry, with appropriate written verification of such entry from the post office station of mailing, in which case the time of mailing shall be the time shown in the entry. If the postmark on the original Receipt for Certified Mail does not show a date, the bid shall not be considered.

8. **Withdrawal of Bids.** Bids may be withdrawn by written or telegraphic request received from bidders prior to the time set for opening of bids.

9. **Public Opening of Bids.** Bids will be publicly opened at the time set for opening in the invitation for bids. Their content will be made public for the information of bidders and others interested, who may be present either in person or by representative.

10. **Award of Contract.** (a) Award of contract will be made to that responsible bidder whose bid, conforming to the invitation for bids, is most advantageous to the Government, price and other factors considered.

(b) The Government may, when in its interest, reject any or all bids or waive any informality in bids received.

(c) The Government may accept any item or combination of items of a bid, unless precluded by the invitation for bids or the bidder includes in his bid a restrictive limitation.

11. **Contract and Bonds.** The bidder whose bid is accepted will, within the time established in the bid, enter into a written contract with the Government and, if required, furnish performance and payment bonds on Government standard forms in the amounts indicated in the invitation for bids or the specifications.

SUPPLEMENT TO STANDARD FORM 22

12. Bid Preparation Costs

This invitation to Bid does not commit the Government to pay any costs incurred in the submission of a bid or in making necessary studies or preparations thereof.

13. Examination of Solicitation Material

Before submitting any Bid, each Bidder shall examine these "instructions to Bidders," The Request for Bid, the required Bond forms, the Specifications and other documents provided with this solicitation.

14. Addenda

- a. Addenda will be mailed or delivered to all who are known by the Contracting Officer to have received a complete set of Bidding Documents.
- b. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
- c. No Addenda will be issued later than four days prior to the date for receipt of bids except an Addendum, if necessary, postponing the date for receipt of bids or withdrawing the Request for Bids.
- d. Each Bidder shall ascertain prior to submitting his bid that he has received all Addenda issued and he shall acknowledge their receipt in his bid.

15. Site Inspection, Technical Inquiries, and Bid Submittal and Contractual Inquiries

a. Site Inspection

An opportunity shall be afforded the Bidders to visit the site of the proposed Work and observe the site condition so that each may be fully informed as to the materials, labor and workmanship required and the conditions under which the Work must be accomplished. This inspection will be conducted at the time and on the date shown on Standard Form 20 of the Invitation. It is essential that all Bidders visit the site, examine the site conditions and give careful consideration of the performance time and completion sequence for the Work. The Construction Manager, Townsend and Bottum, Inc. will conduct the meeting and make the necessary arrangements to visit the site. All personnel who plan to visit the site should

contact Townsend and Bottum, Inc. at (213) 579-7591, before 4:00 p.m., one working day prior to the site inspection date. During the site inspection, prospective bidders will be given an opportunity to secure clarification and explanation of the technical and non-technical provisions of the contract and to enable the Contracting Officer to inform bidders of the principles and practices which he will follow in the administration of the contract. A record will be made of the conference and a copy will be sent to all those who have requested a copy of the IFB. All bidders are urged to attend the site visit.

- b. Submission of a Bid shall imply that the bidder has made an examination of the Site and is thoroughly familiar with existing conditions. No claim for additional compensation for labor, materials, equipment and for difficulties encountered (which could have been foreseen had such an examination been made) will be paid. Any failure to fully investigate the Site or the Contract Conditions shall not relieve the Bidder from responsibility for estimating properly the difficulty or cost of successfully performing any work.
- c. Inquiries should be directed to:

U.S. Department of Energy
San Francisco Operations Office
Solar Ten Megawatt Project Office
9550 Flair Drive, Suite 210
El Monte, California 91731
(213) 579-7574

16. Notice of Requirement For Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

- a. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
- b. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables--Goals for female participation in each trade by percent

April 1, 1978 until March 31, 1979	3.1
April 1, 1979 until March 31, 1980	5.0
April 1, 1980 until March 31, 1981	6.9

--Goals for minority participation for each trade -- 19.7%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographic area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

c. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

d. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the vicinity of Daggett, San Bernardino County, California.

17. Compliance With Affirmative Action Requirements

The Department of Energy is required to take certain actions in the administration of the equal employment opportunity, affirmative action requirements imposed by this contract.

action requirements imposed by this contract. As determined by the Department of Energy some of these functions may be performed by others on behalf of the DOE.

18. Bonds

(Applicable if the resulting initial contract price exceeds \$25,000)

a. Payment Bond (See Exhibit C)

The Contractor shall furnish either (1) good and sufficient surety or sureties acceptable to the Government for the protection of persons furnishing material or labor in connection with the performance of the work under this contract on U. S. Standard Form No. 25A, or (2) in lieu thereof, to deposit for this purpose one of the types of security listed in Federal Procurement Regulation (41 CFR 1-10.204). The penal sum of such security shall be 50% of the contract price or estimated contract price. If this contract is in excess of \$1 million dollars but not more than \$5 million dollars the penal sum shall be 40% of the contract price or estimated contract price. When the contract price is more than \$5 million dollars, the penal sum shall be \$2,500,000.

b. Performance Bond (See Exhibit B)

The Contractor shall furnish either (1) a performance bond with good and sufficient surety or sureties acceptable to the Government in connection with the performance of the work under this contract on U. S. Standard Form No. 25, or (2) in lieu thereof, to deposit for this purpose one of the types of security listed in Federal Procurement Regulation (41 CFR) 1-10.204. Unless otherwise specified in Division 1, the penal sum of such performance bond shall be 100% of the contract price (or estimated contract price).

c. Date of Bond

Any bonds or other securities required hereunder will be dated as of the same or later date than the date of the contract and will be furnished by the Contractor to the Government at the time the contract is executed.

d. When a performance and/or payment bond is not furnished within the period specified, the contract will be subject to termination for default when in the public interest.

e. Surety Bond Guarantee Assistance

As provided in 13 CFR Part 115, Small Business Administration under certain conditions offers assistance to small business concerns by reimbursing losses a surety may incur relevant to surety bonds required hereunder. Further information on this guarantee program may be obtained from the nearest office of the Small Business Administration.

19. Information Concerning Responsibility

Each Bidder shall, as and to the extent requested by the DOE, prior to award, submit the pertinent information as follows which will be considered by the Contracting Officer in determining whether the Low Bidder is a responsible bidder:

- a. A current financial statement.
- b. Bank Reference(s).
- c. A detailed resume, in chronological order covering the last five years of experience and how it relates to the work offered.
- d. A detailed list covering the last five years of all Government contract awards of whatever nature, if any. The list will include the following:
 - (1) Name of the awarding Government agency
 - (2) Project name
 - (3) Project location
 - (4) Contract Number
 - (5) Date of Award
 - (6) Personnel Resumes of key personnel

20. Working Drawings and Specifications

At the option of the successful bidder, up to ten sets of working drawings and specifications will be furnished after the award of the contract. If the successful bidder requests additional sets, they will be furnished at preestablished rates. Refer to subparagraph 28 of this supplement titled "Procurement of Plans and Specifications".

21. Taxes

Attention of Bidders and their prospective subcontractors is directed to General Provision 31 entitled "Federal, State, and Local Taxes" and to Regulation 1615 relative to Section 6007.5 of the California State Board of Equalization and to Regulation 1521 of the California Revenue and Taxation Code relating to sales of machinery and equipment for delivery under construction

contracts with the United States Government. However, responsibility for determination of the applicability of Regulation 1615 shall rest solely with the bidder, and no representation or guarantee either expressed or implied is made by the Government hereunder as to the application of Regulation 1615.

22. Information Regarding Buy American Act

- a. The Buy American Act (41 U.S.C. 10a-10d) generally requires that only domestic construction material be used in the performance of this contract. (See the clause entitled "Buy American" in Standard Form 23A, General Provisions, Construction Contract.) This requirement does not apply to the following construction material or components:

Antimony	Nickel
Asbestos	Shellac
Bauxite	Tin
Cork	Chrome ore
Mica	or chromite
Graphite	Cobalt
Rubber, crude and latex	Jute and jute burlaps

Logs, veneer, and lumber from balsa, greenheart, lignum vitae, mahogany and teak.

- b. (1) Furthermore, bids or proposals offering use of additional non-domestic construction material may be acceptable for award if the Government determines that use of comparable domestic construction material is impracticable or would unreasonably increase the cost, or that domestic construction material (in sufficient and reasonably available commercial quantities and of a satisfactory quality) is unavailable. Reliable evidence shall be furnished justifying such use of additional non-domestic construction material.
- (2) Where it is alleged that use of domestic construction material would unreasonably increase the cost:
 - (1) Data shall be included, based on a reasonable canvass of suppliers, demonstrating that the cost of each such domestic construction material would exceed by more than 6 percent the cost of comparable non-domestic construction material. (All

costs of delivery to the construction site shall be included, as well as any applicable duty.)

- (ii) For evaluation purposes, 6 percent of the cost of all additional nondomestic construction material, which qualifies under paragraph (i) above, will be added to the bid or proposal.

- (3) When offering additional nondomestic construction material, bids or proposals may also offer, at stated prices, any available comparable domestic construction material, so as to avoid the possibility that failure of a nondomestic construction material to be acceptable, under (i) above, will cause rejection of the entire bid.

23. Notice of Total Small Business Set-Aside

- a. General. If this Invitation for Bids (IFB) is identified as a Small Business Set-Aside, then bids or proposals under this procurement will be solicited only from small business concerns under the Small Business Act. The procurement is to be awarded only to one or more such concerns, organizations or individuals. This action is based on a determination by the Contracting Officer, alone or in conjunction with a representative of the Small Business Administration, that it is in the interest of maintaining or mobilizing the Nation's full productive capacity, or in the interest of war or national defense programs, or in the interest of assuring that a fair proportion of Government procurement is placed with small business concerns, or in the interest of assisting eligible organizations for the handicapped and handicapped individuals. Bids or proposals received from others will be considered nonresponsive.
- b. Definition. The term "small business concern" means a concern, including its affiliates, which is independently owned and operated, is not dominant in the field of operation in which it is bidding on Government contracts, and can further qualify under the criteria set forth in the regulations of the Small Business Administration (13 CFR 121.3-8). In addition to meeting these criteria, a manufacturer or a regular dealer submitting bids or proposals in his own name

must agree to furnish in the performance of the contract end items manufactured or produced in the United States, its territories and possessions, Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, and the District of Columbia, by small business concerns: Provided, That this additional requirement does not apply in connection with construction or service contracts.

24. Late Bids, Modifications of Bids, or Withdrawal of Bids

Paragraph 7, Late Bids and Modifications or Withdrawals, of Standard Form 22 is deleted and the following provision substituted therefor:

- a. Any bid received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and either:

- (1) It was sent by registered or certified mail not later than the fifth calendar day prior to the date specified for the receipt of bids (e.g., a bid submitted in response to a solicitation requiring receipt of bids by the 20th of the month must have been mailed by the 15th or earlier); or
- (2) It was sent by mail (or telegram if authorized) and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation.

- b. Any modification or withdrawal of a bid is subject to the same conditions as in a. above. A bid may also be withdrawn in person by a bidder or his authorized representative, provided his identity is made known and he signs a receipt for the bid, but only if the withdrawal is made prior to the exact time set for receipt of bids.

- c. The only acceptable evidence to establish:

- (1) The date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U. S. Postal Service postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. If neither postmark shows a legible date, the bid, modification, or withdrawal shall be deemed to have

been mailed late. (The term "postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed on the date of mailing by employees of the U.S. Postal Service. Therefore, offerors should request the postal clerk to place a hand cancellation bull's-eye "postmark" on both the receipt and the envelope or wrapper.)

- (2) The time of receipt at the Government installation is the time-date stamp of such installation on the bid wrapper or other documentary evidence of receipt maintained by the installation.

- d. Notwithstanding a. and b. of this provision, a late modification of an otherwise successful bid which makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

25. Bid Guarantee

Paragraph 4, Bid Guarantee, of Standard Form 22 is deleted and the following provision substituted therefor:

- a. Where a bid guarantee is required by the invitation for bids, failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.
- b. A bid guarantee shall be in the form of a firm commitment, such as a bid bond, postal money order, certified check, cashier's check, irrevocable letter of credit or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Bid guarantees, other than bid bonds, will be returned (1) to unsuccessful bidders as soon as practicable after the opening of bids and (2) to the successful bidder upon execution of such further contractual documents and bonds (including any necessary coinsurance or reinsurance agreements) as may be required by the bid as accepted.
- c. If the successful bidder, upon acceptance of his bid by the Government within the period specified therein for acceptance (60 days if no period is specified) fails to execute such further contractual documents, if any, and give

such bond(s) (including any necessary coinsurance or reinsurance agreements) as may be required by the terms of the bid as accepted within the time specified (10 days if no period is specified) after receipt of the forms by him, his contract may be terminated for default. In such event he shall be liable for any cost of procuring the work which exceeds the amount of his bid, and the bid guarantee shall be available toward offsetting such difference.

- d. The bid guarantee must be effective for the entire bid acceptance period plus such time as is reasonably necessary to enable the Government to exercise its rights in the event the bidder fails to comply with the requirement to furnish payment and performance bonds.

26. SAFETY PLAN

In accordance with the General Conditions entitled "Construction Health and Safety Requirements", the successful contractor is required to furnish a safety plan for this project. A written notice to proceed may not be issued until a safety plan, acceptable to the DOE, has been received.

27. Quality Assurance Plan

In accordance with the Technical Specifications, the successful contractor is required to furnish a quality assurance plan for this project. A written notice to proceed may not be issued until a quality assurance plan acceptable to the DOE has been received.

28. Procurement of Plans and Specifications

A complete set(s) of plans and specifications for a charge of Twenty-Five Dollars (\$25) per set, a single copy(ies) of specifications for a charge of Ten Dollars (\$10) per copy, and individual sheets of drawings for a charge of \$1.25, can be obtained from Townsend and Bottum, Inc., 9550 Flair Drive, Suite 210, El Monte, CA 91731, (213) 579-7591. No charge will be made for additional drawings and/or specifications made necessary by addenda. All remittances shall be payable to Townsend and Bottum and should clearly reference this invitation and the purpose for which such payment is intended.

Any payment made is on a nonrefundable basis. However, if this invitation is cancelled or no award is made hereunder, any payment(s) made will be refunded by Townsend and Bottum upon the return to them in good condition of such plans and specifications.

29. Surety Bond Guarantee Assistance

As provided in 13 CFR Part 115, the Small Business Administration under certain conditions offers assistance to small business concerns by reimbursing losses a surety may incur relevant to surety bonds required hereunder. Further information on this guarantee program may be obtained from the nearest office of the Small Business Administration.

All other permits required for the completion of this contract are the responsibility of the contractor.

30. Preparation of Bids

The sealed envelope submitted by each bidder shall contain the following documents:

- a. One completed Bid Form (Standard Form 21)
- b. One completed Representations and Certifications Form (Standard Form 19B)
- c. A bid guarantee in accordance with Supplemental 4 of Instructions to Bidders (Standard Form 24)

The Standard Forms 19B, 21, and 24 are made a part of this Invitation in the section entitled, "Bid Submission Package".

31. Information Regarding Permits

The Construction Manager, Townsend & Bottum, Inc. will obtain the following permits:

	<u>Source</u>	<u>Title</u>
a.	State of California Department of Industrial Relations	
1.	Division of Safety	Pressure Vessel
2.	Occupational Health & Safety Administration	Construction
b.	San Bernardino Department of Building and Safety	
1.		Visitor's Center
2.		Temporary Electric Power
3.		Grading
4.		Warehouse
5.		Sewer-Potable Water
6.		Trailers
c.	San Bernardino County Fire Department	Fire Protection

STANDARD FORM 24 JUNE 1964 EDITION GENERAL SERVICES ADMINISTRATION FED. PROC. REG. (41 CFR) 1-16.801				BID BOND <i>(See Instructions on reverse)</i>		24-103	DATE BOND EXECUTED <i>(Must not be later than bid opening date)</i>	
PRINCIPAL <i>(Legal name and business address)</i>							TYPE OF ORGANIZATION ("X" one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION STATE OF INCORPORATION	
SURETY(IES) <i>(Name and business address)</i>								
PENAL SUM OF BOND					BID IDENTIFICATION			
PERCENT OF BID PRICE	AMOUNT NOT TO EXCEED				BID DATE	INVITATION NO.		
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS					FOR (Construction, Supplies or Services)
<p>KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety (ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: <i>Provided</i>, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.</p> <p>THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the bid identified above.</p> <p>NOW, THEREFORE, if the Principal, upon acceptance by the Government of his bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), shall execute such further contractual documents, if any, and give such bond(s) as may be required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by him, or in the event of failure so to execute such further contractual documents and give such bonds, if the Principal shall pay the Government for any cost of procuring the work which exceeds the amount of his bid, then the above obligation shall be void and of no effect.</p> <p>Each Surety executing this instrument hereby agrees that its obligation shall not be impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government, notice of which extension(s) to the Surety(ies) being hereby waived; provided that such waiver of notice shall apply only with respect to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.</p> <p>IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this bid bond and have affixed their seals on the date set forth above.</p>								
PRINCIPAL								
Signature(s)	1. _____ <i>(Seal)</i>		2. _____ <i>(Seal)</i>		Corporate Seal			
Name(s) & Title(s) <i>(Typed)</i>	1. _____		2. _____					
INDIVIDUAL SURETIES								
Signature(s)	1. _____ <i>(Seal)</i>		2. _____ <i>(Seal)</i>					
Name(s) <i>(Typed)</i>	1. _____		2. _____					
CORPORATE SURETY(IES)								
SURETY A	Name & Address				STATE OF INC.	LIABILITY LIMIT		
	Signature(s)	1. _____		2. _____		Corporate Seal		
	Name(s) & Title(s) <i>(Typed)</i>	1. _____		2. _____				

CORPORATE SURETY(IES) (Continued)						
SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal	
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal	
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal	
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal	
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal	
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal	
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			

INSTRUCTIONS

1. This form is authorized for use whenever a bid guaranty is required in connection with construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. The penal sum of the bond may be expressed as a percentage of the bid price if desired. In such cases, a maximum dollar limitation may be stipulated (e.g., 20% of the bid price but the amount not to exceed _____ dollars).

4. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within

the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses (city and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)", and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

6. The name of each person signing this bid bond should be typed in the space provided.

5 copies-2-sided

STANDARD FORM 25-A JUNE 1964 EDITION GENERAL SERVICES ADMINISTRATION FED. PROC. REG. (41 CFR) 1-16.801	PAYMENT BOND <i>(See Instructions on reverse)</i>	25-203	DATE BOND EXECUTED <i>(Must be same or later than date of contract)</i>
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PRINCIPAL <i>(Legal name and business address)</i>	TYPE OF ORGANIZATION ("X" one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION STATE OF INCORPORATION
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SURETY(IES) <i>(Name(s) and business address(es))</i>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4" style="text-align: center;">PENAL SUM OF BOND</th> </tr> <tr> <td style="width:25%;">MILLION(S)</td> <td style="width:25%;">THOUSAND(S)</td> <td style="width:25%;">HUNDRED(S)</td> <td style="width:25%;">CENT(S)</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td colspan="2">CONTRACT DATE</td> <td colspan="2">CONTRACT NO.</td> </tr> <tr> <td colspan="2"> </td> <td colspan="2"> </td> </tr> </table>	PENAL SUM OF BOND				MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)					CONTRACT DATE		CONTRACT NO.					
PENAL SUM OF BOND																					
MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)																		
CONTRACT DATE		CONTRACT NO.																			

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety(ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: *Provided*, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above;

NOW, THEREFORE, if the Principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived, then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this payment bond and have affixed their seals on the date set forth above.

PRINCIPAL			
Signature(s)	1. _____	2. _____	Corporate Seal
	<i>(Seal)</i>	<i>(Seal)</i>	
Name(s) & Title(s) <i>(Typed)</i>	1. _____	2. _____	

INDIVIDUAL SURETY(IES)			
Signature(s)	1. _____	2. _____	
	<i>(Seal)</i>	<i>(Seal)</i>	
Name(s) <i>(Typed)</i>	1. _____	2. _____	

CORPORATE SURETY(IES)			
SURETY A	Name & Address	STATE OF INC.	LIABILITY LIMIT
	Signature(s)	1. _____	2. _____
	Name(s) & Title(s) <i>(Typed)</i>	1. _____	2. _____
			Corporate Seal

CORPORATE SURETY(IES) (Continued)						
SURETY B	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.			
SURETY C	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.			
SURETY D	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.			
SURETY E	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.			
SURETY F	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.			
SURETY G	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) <i>(Typed)</i>	1.	2.			

INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, shall be used whenever a payment bond is required under the act of August 24, 1935, 49 Stat. 793, as amended (40 U.S.C. 270a-270e). There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of the form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses (city

and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY (IES)", and in the space designated "SURETY (IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this payment bond should be typed in the space provided.

STANDARD FORM 25 JUNE 1967 EDITION GENERAL SERVICES ADMINISTRATION FED. PROC. REG. (41 CFR) 1-16.801	PERFORMANCE BOND (See Instructions on reverse)	DATE BOND EXECUTED (Must be same or later than date of contract)
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PRINCIPAL (Legal name and business address)	TYPE OF ORGANIZATION ("X" one) <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> PARTNERSHIP <input type="checkbox"/> JOINT VENTURE <input type="checkbox"/> CORPORATION STATE OF INCORPORATION								
SURETY(IES) (Name(s) and business address(es))	PENAL SUM OF BOND <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">MILLION(S)</td> <td style="width: 25%;">THOUSAND(S)</td> <td style="width: 25%;">HUNDRED(S)</td> <td style="width: 25%;">CENT(S)</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> CONTRACT DATE CONTRACT NO.	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)				
MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)						

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety(ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: *Provided*, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above;

NOW, THEREFORE, if the Principal shall:

- (a) Perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived; and
- (b) If the said contract is subject to the Miller Act, as amended (40 U.S.C. 270a-270e), pay to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished; then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL						
Signature(s)	1. _____	2. _____	Corporate Seal			
	(Seal)	(Seal)				
Name(s) & Title(s) (Typed)	1. _____	2. _____				
INDIVIDUAL SURETY(IES)						
Signature(s)	1. _____	2. _____	Corporate Seal			
	(Seal)	(Seal)				
Name(s) (Typed)	1. _____	2. _____				
CORPORATE SURETY(IES)						
SURETY A	Name & Address	1. _____	STATE OF INC.	LIABILITY LIMIT	Corporate Seal	
	Signature(s)	1. _____	2. _____			
	Name(s) & Title(s) (Typed)	1. _____	2. _____			

CORPORATE SURETY(IES) (Continued)						
SURETY B	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY C	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY D	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY E	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY F	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			
SURETY G	Name & Address			STATE OF INC.	LIABILITY LIMIT	<i>Corporate Seal</i>
	Signature(s)	1.	2.			
	Name(s) & Title(s) (Typed)	1.	2.			

BOND PREMIUM	▶	RATE PER THOUSAND \$	TOTAL \$
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INSTRUCTIONS

1. This form is authorized for use in connection with contracts for construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm; partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses (city and State) shall be inserted in the spaces

(Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)", and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this performance bond should be typed in the space provided.

SECTION 2- IFB

SECTION GP - GENERAL PROVISIONS (STANDARD FORM 23A
APRIL 1975)

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GENERAL PROVISIONS

(Construction Contract)

1. DEFINITIONS

(a) The term "head of the agency" or "Secretary" as used herein means the Secretary, the Under Secretary, any Assistant Secretary, or any other head or assistant head of the executive or military department or other Federal agency; and the term "his duly authorized representative" means any person or persons or board (other than the Contracting Officer) authorized to act for the head of the agency or the Secretary.

(b) The term "Contracting Officer" as used herein means the person executing this contract on behalf of the Government and includes a duly appointed successor or authorized representative.

2. SPECIFICATIONS AND DRAWINGS

The Contractor shall keep on the work a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy either in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at his own risk and expense. The Contracting Officer shall furnish from time to time such detail drawings and other information as he may consider necessary, unless otherwise provided.

3. CHANGES

(a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make any change in the work within the general scope of the contract, including but not limited to changes:

(1) In the specifications (including drawings and designs);

(2) In the method or manner of performance of the work;

(3) In the Government-furnished facilities, equipment, materials, services, or site; or

(4) Directing acceleration in the performance of the work.

(b) Any other written order or an oral order (which terms as used in this paragraph (b) shall include direction, instruction, interpretation, or determination) from the Contracting Officer, which causes any such change, shall be treated as a change order under this clause, provided that the Contractor gives the Contracting Officer written notice stating the date, circumstances, and source of the order and that the Contractor regards the order as a change order.

(c) Except as herein provided, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment hereunder.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the contract modified in writing accordingly: *Provided, however,* That except for claims based on defective specifications, no claim for any change under (b) above shall be allowed for any costs incurred more than 20 days before the Contractor gives written notice as therein required: *And provided further,* That in the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with such defective specifications.

(e) If the Contractor intends to assert a claim for an equitable adjustment under this clause, he must, within 90 days after receipt of a written change order under (a) above or the furnishing of a written notice under (b) above, submit to the Contracting Officer a written statement setting forth the general nature and monetary extent of such claim,

unless this period is extended by the Government. The statement of claim hereunder may be included in the notice under (b) above.

(f) No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

4. DIFFERING SITE CONDITIONS

(a) The Contractor shall promptly, and before such conditions are disturbed, notify the Contracting Officer in writing of: (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this contract. The Contracting Officer shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.

(b) No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above; provided, however, the time prescribed therefor may be extended by the Government.

(c) No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

5. TERMINATION FOR DEFAULT—DAMAGES FOR DELAY—TIME EXTENSIONS

(a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with such diligence as will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within such time, the Government may, by written notice to the Contractor, terminate his right to proceed with the work or such part of the work as to which there has been delay. In such event the Government may take over the work and prosecute the same to completion, by contract or otherwise, and may take possession of and utilize in completing the work such materials, appliances, and plant as may be on the site of the work and necessary therefor. Whether or not the Contractor's right to proceed with the work is terminated, he and his sureties shall be liable for any damage to the Government resulting from his refusal or failure to complete the work within the specified time.

(b) If fixed and agreed liquidated damages are provided in the contract and if the Government so terminates the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If fixed and agreed liquidated damages are provided in the contract and if the Government does not so terminate the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until the work is completed or accepted.

(d) The Contractor's right to proceed shall not be so terminated nor the Contractor charged with resulting damage if:

(1) The delay in the completion of the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, acts of the public enemy, acts of the Government in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subcontractors or suppliers arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any such delay (unless the Contracting Officer grants a further period of time before the date of final payment

under the contract), notifies the Contracting Officer in writing of the causes of delay.

The Contracting Officer shall ascertain the facts and the extent of the delay and extend the time for completing the work when, in his judgment, the findings of fact justify such an extension, and his findings of fact shall be final and conclusive on the parties, subject only to appeal as provided in Clause 6 of these General Provisions.

(e) If, after notice of termination of the Contractor's right to proceed under the provisions of this clause, it is determined for any reason that the Contractor was not in default under the provisions of this clause, or that the delay was excusable under the provisions of this clause, the rights and obligations of the parties shall, if the contract contains a clause providing for termination for convenience of the Government, be the same as if the notice of termination had been issued pursuant to such clause. If, in the foregoing circumstances, this contract does not contain a clause providing for termination for convenience of the Government, the contract shall be equitably adjusted to compensate for such termination and the contract modified accordingly; failure to agree to any such adjustment shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes."

(f) The rights and remedies of the Government provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

(g) As used in Paragraph (d) (1) of this clause, the term "subcontractors or suppliers" means subcontractors or suppliers at any tier.

6. DISPUTES

(a) Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the Contracting Officer shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the head of the agency involved. The decision of the head of the agency or his duly authorized representative for the determination of such appeals shall be final and conclusive. This provision shall not be pleaded in any suit involving a question of fact arising under this contract as limiting judicial review of any such decision to cases where fraud by such official or his representative or board is alleged: *Provided, however*, That any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

(b) This Disputes clause does not preclude consideration of questions of law in connection with decisions provided for in paragraph (a) above. Nothing in this contract, however, shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

7. PAYMENTS TO CONTRACTOR

(a) The Government will pay the contract price as hereinafter provided.

(b) The Government will make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates approved by the Contracting Officer. If requested by the Contracting Officer, the Contractor shall furnish a breakdown of the total contract price showing the amount included therein for each principal category of the work, in such detail as requested, to provide a basis for determining progress payments. In the preparation of estimates the Contracting Officer, at his discretion, may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site may also be taken into consideration (1) if such consideration is specifically authorized by the contract and (2) if the Contractor furnishes satisfactory evidence that he has acquired title to such material and that it will be utilized on the work covered by this contract.

(c) In making such progress payments, there shall be retained 10 percent of the estimated amount until final com-

pletion and acceptance of the contract work. However, if the Contracting Officer, at any time after 50 percent of the work has been completed, finds that satisfactory progress is being made, he may authorize payment in full of each progress payment for work performed beyond the 50 percent stage of completion. Also, whenever the work is substantially complete, the Contracting Officer, if he considers the amount retained to be in excess of the amount adequate for the protection of the Government, at his discretion, may release to the Contractor all or a portion of such excess amount. Furthermore, on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, payment may be made therefor without retention of a percentage.

(d) All material and work covered by progress payments made shall thereupon become the sole property of the Government, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work or as waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(e) Upon completion and acceptance of all work, the amount due the Contractor under this contract shall be paid upon the presentation of a properly executed voucher and after the Contractor shall have furnished the Government with a release of all claims against the Government arising by virtue of this contract, other than claims in stated amounts as may be specifically excepted by the Contractor from the operation of the release. If the Contractor's claim to amounts payable under the contract has been assigned under the Assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C. 15), a release may also be required of the assignee.

8. ASSIGNMENT OF CLAIMS

(a) Pursuant to the provisions of the Assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C. 15), if this contract provides for payments aggregating \$1,000 or more, claims for moneys due or to become due the Contractor from the Government under this contract may be assigned to a bank, trust company, or other financing institution, including any Federal lending agency, and may thereafter be further assigned and reassigned to any such institution. Any such assignment or reassignment shall cover all amounts payable under this contract and not already paid, and shall not be made to more than one party, except that any such assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in such financing. Unless otherwise provided in this contract, payments to an assignee of any moneys due or to become due under this contract shall not, to the extent provided in said Act, as amended, be subject to reduction or setoff. (The preceding sentence applies only if this contract is made in time of war or national emergency as defined in said Act; and is with the Department of Defense, the General Services Administration, the Energy Research and Development Administration, the National Aeronautics and Space Administration, the Federal Aviation Administration, or any other department or agency of the United States designated by the President pursuant to Clause 4 of the proviso of section 1 of the Assignment of Claims Act of 1940, as amended by the Act of May 15, 1951, 65 Stat. 41.)

(b) In no event shall copies of this contract or of any plans, specifications, or other similar documents relating to work under this contract, if marked "Top Secret," "Secret," or "Confidential," be furnished to any assignee of any claim arising under this contract or to any other person not entitled to receive the same. However, a copy of any part or all of this contract so marked may be furnished, or any information contained therein may be disclosed, to such assignee upon the prior written authorization of the Contracting Officer.

9. MATERIAL AND WORKMANSHIP

(a) Unless otherwise specifically provided in this contract, all equipment, material, and articles incorporated in the work covered by this contract are to be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in this contract, reference to any equipment, material, article, or patented process, by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the Contractor may, at his option, use any equipment, material, article, or process, which, in the judgment of the Contracting Officer, is equal to that named. The Contractor shall furnish to the Contracting Officer for his approval the name of the manufacturer, the model number,

and other identifying data and information respecting the performance, capacity, nature, and rating of the machinery and mechanical and other equipment which the Contractor contemplates incorporating in the work. When required by this contract or when called for by the Contracting Officer, the Contractor shall furnish the Contracting Officer for approval full information concerning the material or articles which he contemplates incorporating in the work. When so directed, samples shall be submitted for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles installed or used without required approval shall be at the risk of subsequent rejection.

(b) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may, in writing, require the Contractor to remove from the work any employee the Contracting Officer deems incompetent, careless or otherwise objectionable.

10. INSPECTION AND ACCEPTANCE

(a) All work (which term includes but is not restricted to materials, workmanship, and manufacture and fabrication of components) shall be subject to inspection and test by the Government at all reasonable times and at all places prior to acceptance. Any such inspection and test is for the sole benefit of the Government and shall not relieve the Contractor of the responsibility of providing quality control measures to assure that the work strictly complies with the contract requirements. No inspection or test by the Government shall be construed as constituting or implying acceptance. Inspection or test shall not relieve the Contractor of responsibility for damage to or loss of the material prior to acceptance, nor in any way affect the continuing rights of the Government after acceptance of the completed work under the terms of paragraph (f) of this clause, except as hereinabove provided.

(b) The Contractor shall, without charge, replace any material or correct any workmanship found by the Government not to conform to the contract requirements, unless in the public interest the Government consents to accept such material or workmanship with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(c) If the Contractor does not promptly replace rejected material or correct rejected workmanship, the Government (1) may, by contract or otherwise, replace such material or correct such workmanship and charge the cost thereof to the Contractor, or (2) may terminate the Contractor's right to proceed in accordance with the clause of this contract entitled "Termination for Default—Damages for Delay—Time Extensions."

(d) The Contractor shall furnish promptly, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspection and test as may be required by the Contracting Officer. All inspection and test by the Government shall be performed in such manner as not unnecessarily to delay the work. Special, full size, and performance tests shall be performed as described in this contract. The Government reserves the right to charge to the Contractor any additional cost of inspection or test when material or workmanship is not ready at the time specified by the Contractor for inspection or test or when reinspection or retest is necessitated by prior rejection.

(e) Should it be considered necessary or advisable by the Government at any time before acceptance of the entire work to make an examination of work already completed, by removing or tearing out same, the Contractor shall, on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or his subcontractors, he shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, an equitable adjustment shall be made in the contract price to compensate the Contractor for the additional services involved in such examination and reconstruction and, if completion of the work has been delayed thereby, he shall, in addition, be granted a suitable extension of time.

(f) Unless otherwise provided in this contract, acceptance by the Government shall be made as promptly as practicable after completion and inspection of all work required by this contract, or that portion of the work that the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except as regards latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the Government's rights under any warranty or guarantee.

11. SUPERINTENDENCE BY CONTRACTOR

The Contractor, at all times during performance and until the work is completed and accepted, shall give his personal superintendence to the work or have on the work a competent superintendent, satisfactory to the Contracting Officer and with authority to act for the Contractor.

12. PERMITS AND RESPONSIBILITIES

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any applicable Federal, State, and municipal laws, codes, and regulations, in connection with the prosecution of the work. He shall be similarly responsible for all damages to persons or property that occur as a result of his fault or negligence. He shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. He shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire construction work, except for any completed unit of construction thereof which theretofore may have been accepted.

13. CONDITIONS AFFECTING THE WORK

The Contractor shall be responsible for having taken steps reasonably necessary to ascertain the nature and location of the work, and the general and local conditions which can affect the work or the cost thereof. Any failure by the Contractor to do so will not relieve him from responsibility for successfully performing the work without additional expense to the Government. The Government assumes no responsibility for any understanding or representations concerning conditions made by any of its officers or agents prior to the execution of this contract, unless such understanding or representations by the Government are expressly stated in the contract.

14. OTHER CONTRACTS

The Government may undertake or award other contracts for additional work, and the Contractor shall fully cooperate with such other contractors and Government employees and carefully fit his own work to such additional work as may be directed by the Contracting Officer. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other contractor or by Government employees.

15. SHOP DRAWINGS

(a) The term "shop drawings" includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract.

(b) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate his approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate his approval or disapproval of the shop drawings and if not approved as submitted shall indicate his reasons therefor. Any work done prior to such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (c) below.

(c) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation(s), he shall issue an appropriate contract modification, except that, if the variation is minor and does not involve a change in price or in time of performance, a modification need not be issued.

16. USE AND POSSESSION PRIOR TO COMPLETION

The Government shall have the right to take possession of or use any completed or partially completed part of the work. Prior to such possession or use, the Contracting Officer shall furnish the Contractor an itemized list of work remaining to be performed or corrected on such portions of the project as are to be possessed or used by the Government, provided that failure to list any item of work shall not relieve the Contractor of responsibility for compliance with the terms of the

contract. Such possession or use shall not be deemed an acceptance of any work under the contract. While the Government has such possession or use, the Contractor, notwithstanding the provisions of the clause of this contract entitled "Permits and Responsibilities," shall be relieved of the responsibility for the loss or damage to the work resulting from the Government's possession or use. If such prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment in the contract price or the time of completion will be made and the contract shall be modified in writing accordingly.

17. SUSPENSION OF WORK

(a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work for such period of time as he may determine to be appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Contracting Officer in the administration of this contract, or by his failure to act within the time specified in this contract (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent (1) that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or (2) for which an equitable adjustment is provided for or excluded under any other provision of this contract.

(c) No claim under this clause shall be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of such suspension, delay, or interruption, but not later than the date of final payment under the contract.

18. TERMINATION FOR CONVENIENCE OF THE GOVERNMENT

If not physically incorporated elsewhere, the clause in Section 1-8.703 of the Federal Procurement Regulations, or paragraph 7-602.29(a) of the Armed Services Procurement Regulation, as applicable, in effect on the date of this contract is hereby incorporated by reference as fully as if set forth at length herein.

19. PAYMENT OF INTEREST ON CONTRACTORS' CLAIMS

(a) If an appeal is filed by the Contractor from a final decision of the Contracting Officer under the Disputes clause of this contract, denying a claim arising under the contract, simple interest on the amount of the claim finally determined owed by the Government shall be payable to the Contractor. Such interest shall be at the rate determined by the Secretary of the Treasury pursuant to Public Law 92-41, 85 Stat. 97, from the date the Contractor furnishes to the Contracting Officer his written appeal under the Disputes clause of this contract, to the date of (1) a final judgment by a court of competent jurisdiction, or (2) mailing to the Contractor of a supplemental agreement for execution either confirming completed negotiations between the parties or carrying out a decision of a board of contract appeals.

(b) Notwithstanding (a) above, (1) interest shall be applied only from the date payment was due, if such date is later than the filing of appeal; and (2) interest shall not be paid for any period of time that the Contracting Officer determines the Contractor has unduly delayed in pursuing his remedies before a board of contract appeals or a court of competent jurisdiction.

20. PRICING OF ADJUSTMENTS

When costs are a factor in any determination of a contract price adjustment pursuant to the Changes clause or any other provision of this contract, such costs shall be in accordance with the contract cost principles and procedures in Part 1-15 of the Federal Procurement Regulations, (41 CFR 1-15) or Section XV of the Armed Services Procurement Regulation, as applicable, which are in effect on the date of this contract.

21. PATENT INDEMNITY

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and em-

ployees against liability, including costs and expenses, for infringement upon any Letters Patent of the United States (except Letters Patent issued upon an application which is now or may hereafter be, for reasons of national security, ordered by the Government to be kept secret or otherwise withheld from issue) arising out of the performance of this contract or out of the use or disposal by or for the account of the Government of supplies furnished or construction work performed hereunder.

22. ADDITIONAL BOND SECURITY

If any surety upon any bond furnished in connection with this contract becomes unacceptable to the Government, or if any such surety fails to furnish reports as to his financial condition from time to time as requested by the Government, or if the contract price is increased to such an extent that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer, the Contractor shall promptly furnish such additional security as may be required from time to time to protect the interests of the Government and of persons supplying labor or materials in the prosecution of the work contemplated by this contract.

23. EXAMINATION OF RECORDS BY COMPTROLLER GENERAL

(a) This clause is applicable if the amount of this contract exceeds \$10,000 and was entered into by means of negotiation, including small business restricted advertising, but is not applicable if this contract was entered into by means of formal advertising.

(b) The contractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of 3 years after final payment under this contract or such lesser time specified in either Appendix M of the Armed Services Procurement Regulation or the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of the contractor involving transactions related to this contract.

(c) The Contractor further agrees to include in all his subcontracts hereunder a provision to the effect that the subcontractor agrees that the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of 3 years after final payment under the subcontract or such lesser time specified in either Appendix M of the Armed Services Procurement Regulation or the Federal Procurement Regulations Part 1-20, as appropriate, have access to and the right to examine any directly pertinent books, documents, papers, and records of such subcontractor, involving transactions related to the subcontract. The term "subcontract" as used in this clause excludes (1) purchase orders not exceeding \$10,000 and (2) subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public.

(d) The periods of access and examination described in (b) and (c), above, for records which relate to (1) appeals under the "Disputes" clause of this contract, (2) litigation or the settlement of claims arising out of the performance of this contract, or (3) costs and expenses of this contract as to which exception has been taken by the Comptroller General or any of his duly authorized representatives, shall continue until such appeals, litigation, claims, or exceptions have been disposed of.

24. BUY AMERICAN

(a) *Agreement.* In accordance with the Buy American Act (41 U.S.C. 10a-10d), and Executive Order 10582, December 17, 1954 (3 CFR, 1954-58 Comp., p. 230), as amended by Executive Order 11051, September 27, 1962 (5 CFR, 1959-63 Comp., p. 635), the Contractor agrees that only domestic construction material will be used (by the Contractor, subcontractors, materialmen, and suppliers) in the performance of this contract, except for nondomestic material listed in the contract.

(b) *Domestic construction material.* "Construction material" means any article, material, or supply brought to the construction site for incorporation in the building or work. An unmanufactured construction material is a "domestic construction material" if it has been mined or produced in the United States. A manufactured construction material is a "domestic construction material" if it has been manufactured in the United States and if the cost of its components which have been mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. "Component" means any article, material, or supply directly incorporated in a construction material.

(c) *Domestic component.* A component shall be considered to have been "mined, produced, or manufactured in the

United States" (regardless of its source in fact) if the article, material, or supply in which it is incorporated was manufactured in the United States and the component is of a class or kind determined by the Government to be not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality.

25. EQUAL OPPORTUNITY

The following clause is applicable unless this contract is exempt under the rules, regulations, and relevant orders of the Secretary of Labor (41 CFR, ch. 60.)

During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Equal Opportunity clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the contractor's commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended, in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (f) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however*, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

26. COVENANT AGAINST CONTINGENT FEES

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

27. OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or resident Commissioner shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

28. CONVICT LABOR

In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor except as provided by Public Law 89-176, September 10, 1965 (18 U.S.C. 4082(c)(2)) and Executive Order 11755, December 29, 1973.

29. UTILIZATION OF SMALL BUSINESS CONCERNS

(a) It is the policy of the Government as declared by the Congress that a fair proportion of the purchases and contracts for supplies and services for the Government be placed with small business concerns.

(b) The Contractor agrees to accomplish the maximum amount of subcontracting to small business concerns that the Contractor finds to be consistent with the efficient performance of this contract.

30. UTILIZATION OF MINORITY BUSINESS ENTERPRISES

(a) It is the policy of the Government that minority business enterprises shall have the maximum practicable opportunity to participate in the performance of Government contracts.

(b) The Contractor agrees to use his best efforts to carry out this policy in the award of his subcontracts to the fullest extent consistent with the efficient performance of this contract. As used in this contract, the term "minority business enterprise" means a business, at least 50 percent of which is owned by minority group members or, in case of publicly-owned businesses, at least 51 percent of the stock of which is owned by minority group members. For the purposes of this definition, minority group members are Negroes, Spanish-speaking American persons, American-Orientals, American-Indians, American-Eskimos, and American-Aleuts. Contractors may rely on written representations by subcontractors regarding their status as minority business enterprises in lieu of an independent investigation.

31. FEDERAL, STATE, AND LOCAL TAXES

(a) Except as may be otherwise provided in this contract, the contract price includes all applicable Federal, State and local taxes and duties.

(b) Nevertheless, with respect to any Federal excise tax or duty on the transactions or property covered by this contract, if a statute, court decision, written ruling, or regulation takes effect after the contract date, and—

(1) Results in the Contractor being required to pay or bear the burden of any such Federal excise tax or duty or increase in the rate thereof which would not otherwise have been payable on such transactions or property, the contract price shall be increased by the amount of such tax or duty or rate increase: *Provided*, That the Contractor if requested by the Contracting Officer, warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price as a contingency reserve or otherwise; or

(2) Results in the Contractor not being required to pay or bear the burden of, or in his obtaining a refund or drawback of, any such Federal excise tax or duty which would otherwise have been payable on such transactions or property or which was the basis of an increase in the contract price, the contract price shall be decreased by the amount of the relief, refund, or drawback, or that amount shall be paid to the Government, as directed by the Contracting Officer. The contract price shall be similarly decreased if the Contractor, through his fault or negligence or his failure to follow instructions of the Contract-

ing Officer, is required to pay or bear the burden of, or does not obtain a refund or drawback of, any such Federal excise tax or duty.

(c) No adjustment pursuant to paragraph b above will be made under this contract unless the aggregate amount thereof is or may reasonably be expected to be over \$100.00.

(d) As used in paragraph b above, the term "contract date" means the date set for the bid opening, or if this is a negotiated contract, the date of this contract. As to additional supplies or services procured by modification to this contract, the term "contract date" means the date of such modification.

(e) Unless there does not exist any reasonable basis to sustain an exemption, the Government, upon request of the

Contractor, without further liability, agrees, except as otherwise provided in this contract, to furnish evidence appropriate to establish exemption from any tax which the Contractor warrants in writing was excluded from the contract price. In addition, the Contracting Officer may furnish evidence to establish exemption from any tax that may, pursuant to this Clause, give rise to either an increase or decrease in the contract price. Except as otherwise provided in this contract, evidence appropriate to establish exemption from duties will be furnished only at the discretion of the Contracting Officer.

(f) The Contractor shall promptly notify the Contracting Officer of matters which will result in either an increase or decrease in the contract price, and shall take action with respect thereto as directed by the Contracting Officer.

SUPPLEMENT A TO STANDARD FORM 23A
(April 1975 Edition)

The following alterations in or additions to the provisions of Standard Form 23A, General Provisions of this contract were made prior to execution of this contract by the parties:

1. Clause 1 entitled "Definitions" is revised to add the following as paragraph (c), (d) and (e) thereto:

"(c) The term "DOE" means the United States Department of Energy or any duly authorized representative thereof, including the Contracting Officer except for the purpose of deciding an appeal under the Article entitled "Disputes."

(d) Unless otherwise indicated, wherever in the specifications or upon the drawings the words "directed," "required," "approved," "accepted," or words of like import are used, it means the direction, requirement, approval, acceptability of, or to, the Contracting Officer.

(e) The term "DOEPR" means ERDAPR."

2. Clause 7 entitled "Payments to Contractor" is deleted in its entirety and replaced with the following:

"CLAUSE 7 PAYMENTS TO CONTRACTOR

(a) The Government will pay the contract price as hereinafter provided.

(b) The Government will make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates approved by the Contracting Officer. If requested by the Contracting Officer, the Contractor shall furnish a breakdown of the total contract price showing the amount included therein for each principal category of the work, in such detail as requested, to provide a basis for determining progress payments. In the preparation of estimates the Contracting Officer, at his discretion, may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site may also be taken into consideration (1) if such consideration is specifically authorized by the contract and (2) if the Contractor furnishes satisfactory evidence that he is has acquired title to such material and that it will be utilized on the work covered by this contract.

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(c) In making such progress payments, there shall be retained 10 percent of the estimated amount until final completion and acceptance of the contract work. However, if the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, he may authorize such payment to be made in full without retention of a percentage. Also, whenever the work is substantially complete, the Contracting Officer shall retain an amount he considers adequate for protection of the Government and, at his discretion, may release to the Contractor all or a portion of any excess amount. Furthermore, on completion and acceptance of each separate building, public work, or other division of the contract, on which the price is stated separately in the contract, payment may be made therefor without retention of a percentage.

(d) All material and work covered by progress payments made shall thereupon become the sole property of the Government, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work, or as waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(e) Upon completion and acceptance of all work, the amount due the Contractor under this contract shall be paid upon the presentation of a properly executed voucher and after the Contractor shall have furnished the Government with a release of all claims against the Government, arising by virtue of this contract, other than claims in stated amounts as may be specifically excepted by the Contractor from the operation of the release. If the Contractor's claim to amounts payable under the contract has been assigned under the Assignment of Claims Act of 1940, as amended (31 U.S.C. 203, 41 U.S.C. 15), a release may also be required of the assignee."

3. Clause 20 entitled "Pricing of Adjustments" is deleted in its entirety and replaced with the following:

"CLAUSE 20 PRICING OF ADJUSTMENTS

When costs are a factor in any determination of a contract price adjustment pursuant to the "Changes" clause or any other provision of this contract, such costs shall be in

accordance with the contract cost principles and procedures in Subpart 1-15.2 of the Federal Procurement Regulations (41 CFR 1-15.2) as supplemented or modified by DOEPR Part 9-15.2 (41 CFR 9-15.2) in effect on the date of the contract."

4. Clause 21 entitled "Patent Indemnity" is deleted in its entirety and replaced with the following:

"CLAUSE 21 PATENT INDEMNITY

If the amount of this contract is in excess of \$10,000, the Contractor shall indemnify the Government and its officers, agents, and employees against liability, including costs, for infringement of any United States letter patent (except letters patent issued upon an application which is now or may hereafter be kept secret or otherwise withheld from issue by order of the Government) arising out of the manufacture or delivery of supplies or out of construction, alteration, modification, or repair of real property (hereinafter referred to as "construction work") under this contract, or out of the use of disposal by or for the account of the Government of such supplies or construction work. The foregoing indemnity shall not apply unless the Contractor shall have been informed as soon as practicable by the Government of the suit or action alleging such infringement, and shall have been given such opportunity as is afforded by applicable laws, rules, or regulations to participate in the defense thereof; and further, such indemnity shall not apply to:

- (a) An infringement resulting from compliance with specific written instructions of the Contracting Officer directing a change in the supplies to be delivered or in the materials or equipment to be used, or directing a manner of performance of the contract not normally used by the Contractor;
 - (b) An infringement resulting from addition to, or change in, such supplies or components furnished or construction work performed which addition or change was made subsequent to delivery or performance by the Contractor; or
 - (c) A claimed infringement which is settled without the consent of the Contractor, unless required by final decree of a court of competent jurisdiction."
5. Clause 28, "Convict Labor" is deleted in its entirety and replaced with the following:

"CLAUSE 28 CONFLICT LABOR

In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment except as provided by Public Law 89-176, September 10, 1965 (18 U.S.C. 4082(c)(2)) and Executive Order 11755, December 29, 1973."

6. Clause 29 "Utilization of Small Business Concerns" and Clause 30 "Utilization of Minority Business Enterprises" are deleted in their entirety and replaced with the following:

"CLAUSE 29 UTILIZATION OF SMALL BUSINESS CONCERNS AND SMALL BUSINESS CONCERNS OWNED AND CONTROLLED BY SOCIALLY AND ECONOMICALLY DISADVANTAGED INDIVIDUALS

- (a) It is the policy of the United States and the Department of Energy that small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals shall have the maximum practicable opportunity to participate in the performance of contracts let by the Department.
- (b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with the efficient performance of this contract. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the Department of Energy as may be necessary to determine the extent of the Contractor's compliance with this clause.
- (c) As used in this contract, the term "small business concern" shall mean a small business as defined pursuant to section 3 of the Small Business Act (15 U.S.C. 632) and relevant regulations promulgated pursuant thereto including Section 1-1.701 of the Federal Procurement Regulations. The term "small business concern owned and controlled by socially and economically disadvantaged individuals" shall mean a small business concern:
 - (1) which is at least 51 per centum owned by one or more socially and economically disadvantaged individuals; or in the case of any publicly-owned business, at least 51 per centum of the stock of which

is owned by one or more socially and economically disadvantaged individuals; and

- (2) whose management and daily business operations are controlled by one or more of such individuals.

The Contractor shall presume that socially and economically disadvantage individuals include Black Americans, Hispanic Americans, Native American and other specified minorities, or any other individual found to be disadvantaged by the Small Business Administration pursuant to section 8(a) of the Small Business Act.

- (d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as either a small business concern or a small business concern owned and controlled by socially and economically disadvantaged individuals."

7. The following clauses are hereby added:

"CLAUSE 32 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA - PRICING ADJUSTMENTS

- (a) This clause shall become operative only with respect to any modification of this contract which involves aggregate increases and/or decreases in costs plus applicable profits in excess of \$100,000 unless the modification is priced on the basis of adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation. The right to price reduction under this clause is limited to defects in data relating to such modification.
- (b) If any price, including profit or fee, negotiated in connection with any price adjustment under this contract was increased by any significant sums because:
 - (1) The Contractor furnished cost or pricing data which was not accurate, complete and current as certified in the Contractor's Certificate of Current Cost or Pricing Data;
 - (2) A subcontractor, pursuant to the clause of this contract entitled "Subcontractor Cost or Pricing Data" or Subcontractor Cost or Pricing Data - Price Adjustments" or any subcontract clause therein

required, furnished cost or pricing data which was not accurate, complete and current as certified in the subcontractor's Certificate of Current Cost or Pricing Data;

- (3) A subcontractor or prospective subcontractor furnished cost or pricing data which was required to be accurate, complete and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which was not accurate, complete and current as of the date certified in the Contractor's Certificate of Current Cost of Pricing Data; or
- (4) The Contractor or a subcontractor or prospective subcontractor furnished any data, not within (1), (2) or (3) above, which was not accurate, as submitted; the price shall be reduced accordingly and the contract shall be modified in writing as may be necessary to reflect such reduction. However, any reduction in the contract price due to defective subcontract data of a prospective subcontractor, when the subcontractor was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor: Provided the actual subcontract price was not affected by defective cost or pricing data.
- (c) Failure to agree on a reduction shall be a dispute concerning a question of fact within the meaning of the "Disputes" clause of this contract.

(NOTE: Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with certain subcontracts, it is expected that the Contractor may wish to include a clause in each such subcontract requiring the subcontractor to appropriately indemnify the Contractor. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by his lower tier subcontractors.)

CLAUSE 33 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT

- (a) The performance of work under this contract may be terminated by the Government in accordance with this clause in whole, or from time to time in part, whenever the Contracting Officer shall determine that such termination is in the best interest of the Government. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of work under the contract is terminated and the date upon which such termination becomes effective.
- (b) After receipt of a Notice of Termination, and except as otherwise directed by the Contracting Officer, the Contractor shall:
- (1) Stop work under the contract on the date and to the date and to the extent specified in the Notice of Termination;
 - (2) Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portion of the work under the contract as is not terminated;
 - (3) Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination;
 - (4) Assign to the Government, in the manner, at the times, and to the extent directed by the Contracting Officer, all of the right, title, and interest of the Contractor under the orders and subcontracts so terminated, in which case the Government shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;
 - (5) Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the Contracting Officer to the extent he may require, which approval or ratification shall be final for all the purposes of this clause;
 - (6) Transfer title to the Government and deliver in the manner, at the times, and to the extent, if any, directed by the Contracting Officer, (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced as a part of, or acquired in connection with the performance of, the work terminated by the Notice of Termination and (ii) the completed or partially completed plans, drawings, information, and other property which, if the contract had been completed, would have been required to be furnished to the Government;
 - (7) Use his best efforts to sell, in the manner, at the times, to the extent, and at the price or prices directed or authorized by the Contracting Officer, any property of the type referred to in (6) above: Provided, however, That the Contractor (i) shall not be required to extend credit to any purchaser, and (ii) may acquire any such property under the conditions prescribed and at a price or prices approved by the Contracting Officer: And provided further, that the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the Government to the Contractor under this contract or shall otherwise be credited to the price or cost of the work covered by this contract or paid in such other manner as the Contracting Officer may direct;
 - (8) Complete performance of such part of the work as shall not have been terminated by the Notice of Termination; and
 - (9) Take such action as may be necessary, or as the Contracting Officer may direct, for the protection and preservation of the property related to this contract which is in the possession of the Contractor and in which the Government has or may acquire an interest.

At any time after expiration of the plant clearance period, as defined in Subpart 1-8.1 of the Federal Procurement Regulations (41 CFR 1-8.1), as the definition may be amended from time to time, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of any or all

items of termination inventory not previously disposed of, exclusive of items the disposition of which has been directed or authorized by the Contracting Officer, and may request the Government to remove such items or enter into a storage agreement covering them, but not later than fifteen (15) days thereafter, the Government will accept title to such items and remove them or enter into a storage agreement covering the same: Provided, that the list submitted shall be subject to varification by the Contracting Officer upon removal of the items or, if the items are stored, within forty-five (45) days from the date of submission of the list, and any necessary adjustment to correct the list as submitted shall be made prior to final settlement.

- (c) After receipt of a Notice of Termination, the Contractor shall submit to the Contracting Officer his termination claim, in the form and with the certification prescribed by the Contracting Officer. Such claim shall be submitted promptly but in no event later than one year from the effective date of termination, unless one or more extensions in writing are granted by the Contracting Officer upon request of the Contractor made in writing within such one-year period or authorized extension thereof. However, if the Contracting Officer determines that the facts justify such action, he may receive and act upon any such termination claim at any time after such one-year period or extension thereof. Upon failure of the Contractor to submit his termination claim within the time allowed, the Contracting Officer may, subject to any review required by the contracting agency's procedures in effect as of the date of execution of this contract, determine, on the basis of information available to him the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined.
- (d) Subject to provisions of paragraph (c), and subject to any review required by the contracting agency's procedures in effect as of the date of execution of this contract the Contractor and the Contracting Officer may agree upon the whole or any part of the amount or amounts to be paid to the Contractor by reason of the total or partial termination of work pursuant to this clause, which amount or amounts may include a reasonable allowance for

profit on work done: Provided, that such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. The contract shall be amended accordingly, and the Contractor shall be paid the agreed amount. Nothing in paragraph (e) of this clause, prescribed the amount to be paid to the Contractor in the event of failure of the Contractor and the Contracting Officer to agree upon the whole amount to be paid to the Contractor by reason of the termination of work pursuant to this clause, shall be deemed to limit, restrict, or otherwise determine or affect the amount or amounts which may be agreed upon to be paid to the Contractor pursuant to this paragraph (d).

- (e) In the event of the failure of the Contractor and the Contracting Officer to agree as provided in paragraph (d) upon the whole amount to be paid to the Contractor by reason of the termination of work pursuant to this clause, the Contracting Officer shall, subject to any review required by the contracting agency's procedures in effect as of the date of execution of this contract, determine, on the basis of information available to him the amount, if any, due to the Contractor by reason of the termination and shall pay to the Contractor the amounts determined as follows:
- (1) With respect to all contract work performed prior to the effective date of the Notice of Termination, the total (without duplication of any items) of -
- (i) The cost of such work;
- (ii) The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in paragraph (b)(5) above, exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the subcontractor prior to the effective date of the Notice of Termination of work under this contract, which amounts shall be included in the cost on account of which payment is made under (i) above; and

(iii) A sum, as profit on (i), above, determined by the Contracting Officer pursuant to Subpart 1-8.303 of the Federal Procurement Regulations (41 CFR 1-8.303), in effect as of the date of execution of this contract, to be fair and reasonable: Provided, however, that if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, no profit shall be included or allowed under this subdivision (iii) and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss, and

- (2) The reasonable cost of the preservation and protection of property incurred pursuant to paragraph (b)(9); and any other reasonable cost incidental to termination of work under this contract, including expense incidental to the determination of the amount due to the Contractor as the result of the termination of work under this contract.

The total sum to be paid to the Contractor under (1) above shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. Except for normal spoilage, and except to the extent that the Government shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor under (1) above, the fair value, as determined by the Contracting Officer, of property which is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer pursuant to paragraph (b)(7).

- (f) Costs claimed, agreed to, or determined pursuant to paragraphs (c), (d), and (e) of this clause shall be in accordance with the contract cost principles and procedures in Subpart 1-15.2 of the Federal Procurement Regulations (41 CFR 1-15.2) as supplemented or modified by DOEPR Part 9-15.2 (41 CFR 9-15.2) in effect on the date of this contract; and

(g) The Contractor shall have the right of appeal, under the clause of this contract entitled "Disputes," from any determination made by the Contracting Officer under paragraph (c) or (e) above, except that, if the Contractor has failed to submit his claim within the time provided in paragraph (c) above and has failed to request extension of such time, he shall have no such right of appeal. In any case where the Contracting Officer has made a determination of the amount due under paragraph (c) or (e) above, the Government shall pay to the Contractor the following: (1) if there is no right of appeal hereunder or if no timely appeal has been taken, the amount so determined by the Contracting Officer, or (2) if an appeal has been taken the amount finally determined on such appeal.

- (h) In arriving at the amount due the Contractor under this clause there shall be deducted (1) all unliquidated advance or other payments on account theretofore made to the Contractor, applicable to the terminated portion of this contract, (2) any claim which the Government may have against the Contractor in connection with this contract, and (3) the agreed price for, or the proceeds of sale of, any materials, supplies, or other things kept by the Contractor or sold, pursuant to the provisions of this clause, and not otherwise recovered by or credited to the Government.

(i) If the termination hereunder be partial prior to the settlement of the terminated portion of this contract, the Contractor may file with the Contracting Officer a request in writing for an equitable adjustment of the price or prices specified in the contract relating to the continued portion of the contract (the portion not terminated by the Notice of Termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices, however, nothing contained herein shall limit the right of the Government and the Contractor to agree upon the amount or amounts to be paid to the Contractor for the completion of the continued portion of the contract when said contract does not contain an established contract price for such continued portion.

- (j) The Government may from time to time, under such terms and conditions as it may prescribe, make partial payments and payments on account against costs incurred by the Contractor in connection with the terminated portion of

this contract whenever in the opinion of the Contracting Officer the aggregate of such payments shall be within the amount to which the Contractor will be entitled hereunder. If the total of such payments is in excess of the amount finally agreed or determined to be due under this clause, such excess shall be payable by the Contractor to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury pursuant to Pub. L. 92-41 (50 U.S.C. App. 1215(b)(2)) for the Renegotiation Board, for the period from the date such excess payment is received by the Contractor to the date on which such excess is repaid to the Government: Provided, however, That no interest shall be charged with respect to any such excess payment attributable to a reduction in the Contractor's claim by reason of retention or other disposition of termination inventory until 10 days after the date of such retention or disposition, or such later date as determined by the Contracting Officer by reason of the circumstances.

- (k) Unless otherwise provided for in this contract, or by applicable statute, the Contractor, from the effective date of termination and for a period of three years after final settlement under this contract, shall preserve and make available to the Government at all reasonable times at the office of the Contractor, but without direct charge to the Government, all his books, records, documents, and other evidence bearing on the costs and expenses of the Contractor under this contract and relating to the work terminated hereunder, or, to the extent approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions thereof.

CLAUSE 34 DISABLED VETERANS AND VETERANS
OF THE VIETNAM ERA

- (a) The Contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans status in all employment practices such as the

following: employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

- (b) The Contractor agrees that all suitable employment openings of the Contractor which exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract and including those occurring at an establishment of the contractor other than the one wherein the contract is being performed but excluding those of independently operated corporate affiliates, shall be listed at an appropriate local office of the State employment service system wherein the opening occurs. The contractor further agrees to provide such reports to such local office regarding employment openings and hires as may be required.

State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service, but are not required to provide those reports set forth in paragraphs (d) and (e).

- (c) Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and nonveterans. The listing of employment openings does not require the hiring of any particular job applicant or from any particular group of job applicants, and nothing herein is intended to relieve the contractor from any requirements in Executive orders or regulations regarding nondiscrimination in employment.
- (d) The reports required by paragraph (b) of this clause shall include, but not be limited to, periodic reports which shall be filed at least quarterly with the appropriate local office or, where the contractor has more than one hiring location in a State, with the central office of that State employment service. Such reports shall indicate for each hiring location (1) the number of individuals hired during the reporting period, (2) the number of nondisabled

veterans of the Vietnam era hired, (3) the number of disabled veterans of the Vietnam era hired, and (4) the total number of disabled veterans hired. The reports should include covered veterans hired for on-the-job training under 38 U.S.C. 1787. The contractor shall submit a report within 30 days after the end of each reporting period wherein any performance is made on this contract identifying data for each hiring location. The contractor shall maintain at each hiring location copies of the reports submitted until the expiration of one year after final payment under the contract, during which time these reports and related documentation shall be made available, upon request, for examination by any authorized representatives of the Contracting Officer or of the Secretary of Labor. Documentation would include personnel records respecting job openings, recruitment, and placement.

- (e) Whenever the contractor becomes contractually bound to the listing provisions of this clause, it shall advise the employment service system in each State where it has establishments of the name and location of each hiring location in the State. As long as the contractor is contractually bound to these provisions and has so advised the State system, there is no need to advise the State system of subsequent contracts. The contractor may advise the State system when it is no longer bound by this contract clause.
- (f) This clause does not apply to the listing of employment openings which occur and are filled outside the 50 States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.
- (g) The provisions of paragraphs (b), (c), (d) and (e) of this clause do not apply to openings which the contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of his own organization or employer-union arrangement for that opening.
- (h) As used in this clause:
 - (1) "All suitable employment openings" includes, but is not limited to, openings which occur in the following job categories: production and non-production; plant and office;

laborers and mechanics; supervisory and non-supervisory; technical; and executive, administrative, and professional openings that are compensated on a salary basis of less than \$25,000 per year. This term includes full-time employment, temporary employment, temporary employment of more than 3 days' duration, and part-time employment. It does not include openings which the contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement nor openings in an educational institution which are restricted to students of that institution. Under the most compelling circumstances an employment opening may not be suitable for listing, including such situations where the needs of the Government cannot reasonably be otherwise supplied, where listing would be contrary to national security, or where the requirement of listing would otherwise not be for the best interest of the Government.

- (2) "Appropriate office of the State employment service system" means the local office of the Federal/State national system of public employment offices with assigned responsibility for serving the area where the employment opening is to be filled, including the District of Columbia, Guam, Puerto Rico, and the Virgin Islands.
- (3) "Openings which the contractor proposes to fill from within his own organization" means employment openings for which no consideration will be given to persons outside the contractor's organization (including any affiliates, subsidiaries, and the parent companies) and includes any openings which the contractor proposes to fill from regular established "recall" lists.
- (4) "Openings which the contractor proposes to fill pursuant to a customary and traditional employer-union hiring arrangement" means employment openings which the contractor proposes to fill from union halls, which is part of the customary and traditional hiring relationship which exists between the contractor and representatives of his employees.

- (i) The contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
 - (j) In the event of the contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
 - (k) The contractor agrees to post in conspicuous places available to employees and applicants for employment notices in a form to be prescribed by the Director, provided by or through the Contracting Officer. Such notice shall state the contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era for employment, and the rights of applicants and employees.
 - (l) The contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding that the contractor is bound by terms of the Vietnam Era Veteran's Readjustment Assistance Act and is committed to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era.
 - (m) The contractor will include the provisions of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to the Act, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.
- employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, lay-off or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
- (b) The contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Rehabilitation Act of 1973, as amended.
 - (c) In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.
 - (d) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, Office of Federal Contract Compliance Programs, Department of Labor, provided by or through the Contracting Officer. Such notices shall state the contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.
 - (e) The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.
 - (f) The contractor will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Director, Office of Federal Contract Compliance Programs, may direct to enforce such provisions, including action for noncompliance.

CLAUSE 35 EMPLOYMENT OF THE HANDICAPPED

- (a) The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all

CLAUSE 36 CLEAN AIR AND WATER

(Applicable only if the contract exceeds \$100,000, or the Contracting Officer had determined that the orders under an indefinite quantity contract in any one year will exceed \$100,000, or a facility to be used has been the subject of a conviction under the Clean Air Act (42 U.S.C. 1857c-8(c)(1)) or the Federal Water Pollution Control Act (33 U.S.C. 1319(c)) and is listed by EPA, or the contract is not otherwise exempt.)

(a) The Contractor agrees as follows:

- (1) To comply with all the requirements of Section 114 of the Clean Air Act, as amended (42 U.S.C. 1857, et. seq., as amended by Public Law 91-604) and Section 308 of the Federal Water Pollution Control Act (33 U.S.C. 1251 et. seq., as amended by Public Law 92-500), respectively, relating to inspection, monitoring, entry, reports, and information, as well as other requirements specified in Section 114 and Section 308 of the Air Act and the Water Act, respectively, and all regulations and guidelines issued thereunder before the award of this contract.
- (2) That no portion of the work required by this prime contract will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date when this contract was awarded unless and until the EPA eliminates the name of such facility or facilities from such listing.
- (3) To use his best efforts to comply with Clean Air Standards and Clean Water Standards at the facilities in which the contract is being performed.
- (4) To insert the substance of the provisions of this clause in any nonexempt subcontract, including this paragraph (a)(4).

(b) The terms used in this clause have the following meanings:

- (1) The term "Air Act" means the Clean Air Act, as amended (42 U.S.C. 1857 et. seq., as amended by Public Law 91-604).
- (2) The term "Water Act" means Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq., as amended by Public Law 92-500).

- (3) The term "clean air standards" means any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, or other requirements which are contained in, issued under, or otherwise adopted pursuant to the Air Act or Executive Order 11738, an applicable implementation plan as described in Section 110(d) of the Clean Air Act (42 U.S.C. 1857c-5(d)), an approved implementation procedure or plan under Section III(c) or Section III(d), respectively, of the Air Act (42 U.S.C. 1857c-6(c) or (d)), or an approved implementation procedure under Section 112(d) of the Air Act (42 U.S.C. 1857(d)).
- (4) The term "clean water standards" means any enforceable limitation, control, condition, prohibition, standard, or other requirement which is promulgated pursuant to the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program, as authorized by Section 402 of the Water Act (33 U.S.C. 1342), or by a local government to ensure compliance with pretreatment regulations as required by Section 307 of the Water Act (33 U.S.C. 1317).
- (5) The term "compliance" means compliance with clean air or water standards. Compliance shall also mean compliance with a schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency or an air or water pollution control agency in accordance with the requirement of the Air Act or Water Act and regulations issued pursuant thereto.
- (6) The term "facility" means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations, owned, leased, or supervised by a Contractor or subcontractor, to be utilized in the performance of a contract or subcontract. Where a location or site of operations contains or includes more than one building, plant, installation, or structure, the entire location shall be deemed to be a facility except where the Director, Office of Federal Activities, Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.

CLAUSE 37 NOTICE AND ASSISTANCE REGARDING
PATENT AND COPYRIGHT INFRINGEMENT

The provisions of this clause shall be applicable only if the amount of this contract exceeds \$10,000.

- (a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.
- (b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Government when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.
- (c) This clause shall be included in all subcontracts.

CLAUSE 38 REPORTING OF ROYALTIES

If this contract is in an amount which exceeds \$10,000 and if any royalty payments are directly involved in the contract or are reflected in the contract price to the Government, the Contractor agrees to report in writing to the patent counsel (with notification by Patent Counsel to the Contracting Officer) during the performance of this contract and prior to its completion or final settlement the amount of any royalties or other payments paid or to be paid by it directly to others in connection with the performance of this contract together with the names and addresses of licensors to whom such payments are made and either the patent numbers involved or such other information as will permit the identification of the patents or other basis on which the royalties are to be paid. The approval of DOE of any individual payments or royalties shall not stop the Government at any time from contesting the enforceability, validity or scope of, or title to, any patent under which a royalty or payments are made.

CLAUSE 39 RENEGOTIATION

If this contract is subject to the Renegotiation Act of 1951, as amended, the following provisions shall apply:

- (a) This contract is subject to the Renegotiation Act of 1951 (50 U.S.C. App. 1211, et seq.), as amended, and to any subsequent act of Congress providing for the renegotiation of contracts. Nothing contained in this clause shall impose any renegotiation obligation with respect to this contract or any subcontract hereunder which is not imposed by an act of Congress heretofore or hereafter enacted. Subject to the foregoing, this contract shall be deemed to contain all the provisions required by section 104 of the Renegotiation Act of 1951, and by any such other act, without subsequent contract amendment specifically incorporating such provisions.
- (b) The Contractor agrees to insert the provisions of this clause, including this paragraph (b), in all subcontracts, as that term is defined in section 103g of the Renegotiation Act of 1951, as amended.

CLAUSE 40 PRICE REDUCTION FOR DEFECTIVE COST
OR PRICING DATA

If any price, including profit or fee, negotiated in connection with this contract or any cost reimbursable under this contract was increased by any significant sums because:

- (a) The Contractor furnished cost or pricing data which was not accurate, complete and current as certified in the Contractor's Certificate of Current Cost or Pricing Data;
- (b) A subcontractor, pursuant to the clause of this contract entitled "Subcontractor Cost or Pricing Data" or "Subcontractor Cost or Pricing Data - Price Adjustments" or any subcontract clause therein required, furnished cost or pricing data which was not accurate, complete and current as certified in the subcontractor's Certificate of Current Cost or Pricing Data;
- (c) A subcontractor or prospective subcontractor furnished cost or pricing data which was required to be accurate, complete and current and to be submitted to support a subcontract cost estimate furnished by the Contractor but which was not accurate, complete and current as of the date certified in the Contractor's Certificate of Current Cost or Pricing Data; or
- (d) The Contractor or a subcontractor or prospective subcontractor furnished any data, not within (a), (b) or (c) above, which was not accurate as submitted; the

price or cost shall be reduced accordingly and the contract shall be modified in writing as may be necessary to reflect such reduction. However, any reduction in the contract price due to defective subcontract data of a prospective subcontractor when the subcontract was not subsequently awarded to such subcontractor, will be limited to the amount (plus applicable overhead and profit markup) by which the actual subcontract, or actual cost to the Contractor if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor: Provided, The actual subcontract price was not affected by defective cost or pricing data.

(Note: Since the contract is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with certain subcontracts, it is expected that the Contractor may wish to include a clause in each such subcontract requiring the subcontractor to appropriately indemnify the Contractor. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by his lower tier subcontractors.)

CLAUSE 41 PERFORMANCE OF WORK BY CONTRACTOR

The Contractor shall perform on the site, and with his own organization, work equivalent to at least (twelve) percent (12%) of the total amount of work to be performed under the contract. If, during the progress of the work hereunder, the Contractor requests a reduction in such percentage, and the Contracting Officer determines that it would be to the advantage of the Government, the percentage of the work required to be performed by the Contractor may be reduced with the written approval of the Contracting Officer.

CLAUSE 42 USE OF U. S. FLAG COMMERCIAL VESSELS

(a) The Cargo Preference Act of 1954 (Pub. L. 664, August 26, 1954, 68 Stat. 832, 46 U.S.C. 1241 (b)), requires that Federal departments or agencies shall transport at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) of equipment, materials, or commodities which may be transported on ocean vessels on privately owned United States flag commercial vessels. Such transportation shall be accomplished whenever:

- (1) Any equipment, materials, or commodities, within or outside the United States, which may be transported by ocean vessel, are:
 - (A) Procured, contracted for, or otherwise obtained for the agency's account; or
 - (B) Furnished to or for the account of any foreign nation without provision for reimbursement.
- (2) Funds or credits are advanced or the convertibility of foreign currencies is guaranteed in connection with furnishing such equipment, materials, or commodities which may be transported by ocean vessel.

Note - This requirement does not apply to small purchases as defined in 41 CFR 1-3.6 or to cargoes carried in the vessels of the Panama Canal Company.

(b) The Contractor agrees as follows:

- (1) To utilize privately owned United States flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved whenever shipping any equipment, material, or commodities under the conditions set forth in (a) above pursuant to this contract to the extent such vessels are available at fair and reasonable rates for United States flag commercial vessels.

Note - Guidance regarding fair and reasonable rates for United States flag vessels may be obtained from the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, D. C. 20230: Area Code 202, phone 377-3449.

- (2) To furnish, within 15 working days following the date of loading for shipments originating within the United States or within 25 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill of lading in English for each shipment of cargo covered by the provisions in (a) above to both the Contracting Officer (through the prime contractor in the case of subcontractor bills of lading) and

to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, D. C. 20230.

- (3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract except for small purchases as defined in 41 CFR 1-3.6.

CLAUSE 43 AUDIT

(a) General.

The Contracting Officer or his representatives shall have the audit and inspection rights described in the applicable paragraphs (b), (c) and (d) below.

(b) Examination of costs.

If this is a cost-reimbursement type, incentive, time and materials, labor hour, or price redeterminable contract, or any combination thereof, the Contractor shall maintain, and the Contracting Officer or his representatives shall have the right to examine books, records, documents, and other evidence and accounting procedures and practices, sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of this contract. Such right of examination shall include inspection at all reasonable times of the Contractor's plants or such parts thereof, as may be engaged in the performance of this contract.

(c) Cost or pricing data.

If the Contractor submitted cost or pricing data in connection with the pricing of this contract or any change or modification thereto, unless such pricing was based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation, the Contracting Officer or his representatives who are employees of the United States Government shall have the right to examine all books, records, documents and other data of the Contractor related to the negotiation, pricing or performance of such contract, change or modification, for the purpose of evaluating the accuracy, completeness and currency of the cost or pricing data submitted.

Additionally, in the case of pricing any change or modification exceeding \$100,000 to formally advertised contracts, the Comptroller General of the United States or his representatives who are employees of the United States Government shall have such rights. The right of examination shall extend to all documents necessary to permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

(d) Availability.

The materials described in (b) and (c) above, shall be made available at the office of the Contractor, at all reasonable times, for inspection, audit or reproduction, until the expiration of 3 years from the date of final payment under this contract or such lesser time specified in Part 1-20 of the Federal Procurement Regulations (41 CFR Part 1-20) and for such longer period, if any, as is required by applicable statute or by other clauses of this contract, or by (1) and (2) below:

- (1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for a period of 3 years from the date of any resulting final settlement.
- (2) Records which relate to appeals under the "Disputes" clause of this contract, or litigation or the settlement of claims arising out of the performance of this contract, shall be made available until such appeals, litigation, or claims have been disposed of.

- (e) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (e), in all subcontracts hereunder except altered as necessary for proper identification of the contracting parties and the Contracting Officer under the Government prime contract.

CLAUSE 44 SUBCONTRACTOR COST OR PRICING DATA

- (a) The Contractor shall require subcontractors hereunder to submit, actually or by specific identification in writing, cost or pricing data under the following circumstances:

- (1) Prior to the award of any subcontract the amount of which is expected to exceed \$100,000 when entered into;
 - (2) Prior to the pricing of any subcontract modification which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000; except where the price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation.
- (b) The Contractor shall require subcontractors to certify, in substantially the same form as that used in the certificate by the Prime Contractor to the Government, that to the best of their knowledge and belief, the cost and pricing data submitted under (a) above is accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract change or modification.
 - (c) The Contractor shall insert the substance of this clause including this paragraph (c) in each subcontract hereunder which exceeds \$100,000 when entered into except where the price thereof is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation. In each such excepted subcontract hereunder in excess of \$100,000, the Contractor shall insert the substance of the following clause:

SUBCONTRACTOR COST OR PRICING DATA -
PRICE ADJUSTMENTS

- (a) Paragraphs (b) and (c) of this clause shall become operative only with respect to any modification made pursuant to one or more provisions of this contract which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000. The requirements of this clause shall be limited to such contract modifications.
- (b) The Contractor shall require subcontractors hereunder to submit, actually or by specific identification in writing, cost or pricing data under the following circumstances:

- (1) Prior to award of any subcontract, the amount of which is expected to exceed \$100,000 when entered into;
 - (2) Prior to the pricing of any subcontract modification which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$100,000; except where the price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation.
- (c) The Contractor shall require subcontractors to certify, in substantially the same form so that used in the certificate by the Prime Contractor to the Government, that to the best of their knowledge and belief the cost and pricing data submitted under (b) above is accurate, complete and current as of the date of agreement on the negotiated price of the subcontract or subcontract change or modification.
 - (d) The Contractor shall insert the substance of this clause including this paragraph (d) in each subcontract hereunder which exceeds \$100,000 when entered into.

CLAUSE 45 SUBCONTRACTING PLAN FOR SMALL BUSINESS CONCERNS AND SMALL BUSINESS CONCERNS OWNED AND CONTROLLED BY SOCIALLY AND ECONOMICALLY DISADVANTAGED INDIVIDUALS (applicable if this contract exceeds \$500,000)

- (a) The Contractor agrees to comply in good faith with the small and small disadvantaged business concerns subcontracting plan approved by the Contracting Officer which is hereby incorporated in and made a part of this contract as Attachment F. In this connection, the Contractor shall:
 - (1) Use his best effort to attain such percentage goals as may be set forth in the plan;
 - (2) Designate an individual who will:
 - (i) maintain liaison with the Government on matters relating to small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals;
 - (ii) supervise compliance with the clause entitled "Utilization of Small Business Concerns and

Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals;" and (iii) administer the Contractor's plan.

- (3) Provide adequate and timely consideration of the potentialities of small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals in all "make-or-buy" decisions.
- (4) Assure that small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals will have an equitable opportunity to compete for subcontracts, particularly by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation of such concerns. Where the Contractor's lists of potential subcontractors which are small business and small business concerns owned and controlled by socially and economically disadvantaged individuals are excessively long, reasonable effort shall be made to give all such concerns an opportunity to compete over a period of time.
- (5) Maintain records showing: (i) whether each prospective subcontractor is a small business concern or a small business concern owned and controlled by socially and economically disadvantaged individuals; (ii) procedures which have been adopted to comply with the plan and the policies set forth in this clause; and (iii) with respect to the letting of any subcontract (including purchase orders) exceeding \$10,000, information substantially as follows:
 - (A) Whether the award went to large business, small business, or small business owned and controlled by socially and economically disadvantaged individuals.
 - (B) Whether small business concerns or small business concerns owned and controlled by socially and economically disadvantaged individuals were solicited.

(C) The reason for nonsolicitation of small business concerns or small business concerns owned and controlled by socially and economically disadvantaged individuals if such was the case.

(D) The reason for failure of small business concerns or small business concerns owned and controlled by socially and economically disadvantaged individuals to receive the award if such was the case when such firms were solicited.

The records maintained in accordance with (5)(iii) above may be in such form as the Contractor may determine, and the information shall be summarized quarterly and submitted by the purchasing department of each individual plant or division to the Contractor's cognizant liaison officer for small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals. Such quarterly summaries will be considered to be management records only and need not be submitted routinely to the Government; however, records maintained pursuant to this clause will be kept available for review by the Government until the expiration of one year after the expiration of this contract, or for such longer period as may be required by any other clause of this contract or by applicable law or regulation.

- (6) Notify the Contracting Officer before soliciting bids or quotations on any subcontract (including purchase orders) in excess of \$10,000 if (i) no small business concern or small business concern owned and controlled by socially and economically disadvantaged individuals is to be solicited, and (ii) the Contracting Officer's consent to the subcontract (or ratification) is required by a "Subcontracts" clause in this contract. Such notice will state the Contractor's reasons for nonsolicitation of small business concerns or small business concerns owned and controlled by socially and economically disadvantaged individuals and will be given as

early in the procurement cycle as possible so that the Contracting Officer may give Small Business Administration (SBA) timely notice to permit SBA a reasonable period to suggest potentially qualified small business concerns or small business concerns owned and controlled by socially and economically disadvantaged individuals through the Contracting Officer. In no case will the procurement action be held up when to do so would, in the Contractor's judgment, delay performance under the contract.

- (7) Include the "Utilization of Small Business Concerns and Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals" clause in all subcontracts which offer further subcontracting opportunities.
 - (8) Cooperate in any studies or surveys of the Contractor's subcontracting procedures and practices as may be required by the Department of Energy or the Small Business Administration.
 - (9) Submit quarterly reports of subcontracting to small business concerns and small business concerns owned and controlled by socially and economically disadvantaged individuals on such forms as may be specified elsewhere in this contract.
- (b) The Contractor agrees that, in the event he fails to comply in good faith with his contractual obligations concerning the plan or the clause entitled "Utilization of Small Business Concerns and Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals" this contract may be terminated, in whole or in part, for default.
- (c) The Contractor further agrees to insert in all subcontracts hereunder (except those with small business concerns) which contain the clause entitled "Utilization of Small Business Concerns and Small Business Concerns Owned and Controlled by Socially and Economically Disadvantaged Individuals" and which may exceed \$1,000,000 in the case of a subcontract for the construction of any public facility or in excess of \$500,000 in the case of all other subcontracts provisions which shall conform substantially to the language of this clause,

including this paragraph (c), and to notify the Contracting Officer of the names of such subcontractors.

- (d) The provisions of this clause shall not apply to small business concerns.

CLAUSE 46 COMPETITION IN SUBCONTRACTING

The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum practicable extent consistent with the objectives and requirements of the contract.

CLAUSE 47 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES

- (a) Whenever the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice thereof, including all relevant information with respect thereto, to the Contracting Officer.
- (b) The Contractor agrees to insert the substance of this clause, including this paragraph (b), in any subcontract hereunder as to which a labor dispute may delay the timely performance of this contract; except that each such subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the subcontractor shall immediately notify his next higher tier subcontractor, or the Prime Contractor, as the case may be, of all relevant information with respect to such disputes.

CLAUSE 48 RIGHTS IN TECHNICAL DATA

- (a) Definitions
 - (1) "Technical data" means recorded information regardless of form or characteristic, of a scientific or technical nature. It may, for example, document research, experimental, developmental, or demonstration, or engineering work, or be usable or used to define a design or process, or to procure, produce, support, maintain, or operate materiel. The data may be graphic or pictorial delineations in media such as drawings or photographs, text in specifications or related performance of design type documents or computer software (including computer programs, computer

software data bases, and computer software documentation). Examples of technical data include research and engineering data, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identification, and related information. Technical data as used herein does not include financial reports, cost analyses, and other information incidental to contract administration.

- (2) "Proprietary data" means technical data which embody trade secrets developed at private expense, such as design procedures or techniques, chemical composition of materials, or manufacturing methods, processes, or treatments, including minor modifications thereof, provided that such data:

- (i) Are not generally known or available from other sources without obligation concerning their confidentiality;
- (ii) Have not been made available by the owner to others without obligation concerning its confidentiality; and
- (iii) Are not already available to the Government without obligation concerning their confidentiality.

- (3) "Contract data" means technical data first produced in the performance of the contract, technical data which are specified to be delivered under the contract, technical data that may be called for under the Additional Technical Data Requirements clause of the contract, if any, or technical data actually delivered in connection with the contract.

- (4) "Unlimited rights" means rights to use, duplicate, or disclose technical data, in whole or in part, in any manner and for any purpose whatsoever, and to permit others to do so.

(b) Allocation of rights

- (1) The Government shall have:

- (i) Unlimited rights in contract data except as otherwise provided below with respect to proprietary data.

- (ii) The right to remove, cancel, correct or ignore any marking not authorized by the terms of this contract on any technical data furnished hereunder, if in response to a written inquiry by DOE concerning the propriety of the markings, the Contractor fails to respond thereto within 60 days or fails to substantiate the propriety of the markings. In either case DOE will notify the Contractor of the action taken.

- (iii) No rights under this contract in any technical data which are not contract data.

- (2) The Contractor shall have:

- (1) The right to withhold proprietary data in accordance with the provisions of this clause; and

- (ii) The right to use for its private purposes, subject to patent, security or other provisions of this contract, contract data it first produces in the performance of this contract provided the data requirements of this contract have been met as of the date of the private use of such data. The Contractor agrees that to the extent it receives or is given access to proprietary data or other technical, business or financial data in the form of recorded information from DOE or a DOE contractor or subcontractor, the Contractor shall treat such data in accordance with any restrictive legend contained thereon, unless use is specifically authorized by prior written approval of the Contracting Officer.

- (3) Nothing contained in this "Rights in Technical Data" clause shall imply a license to the Government under any patent or be construed as affecting the scope of any licenses or other rights otherwise granted to the Government under any patent.

(c) Copyrighted material

- (1) The Contractor shall not, without prior written authorization of the Contracting Officer, establish a claim to statutory copyright in any contract data first produced in the performance of the contract. To the extent such authorization is granted, the Government reserves for itself and others acting on its behalf a royalty-free, non-exclusive, irrevocable, world-wide license for Governmental purposes to publish, distribute, translate, duplicate, exhibit and perform any such data copyrighted by the Contractor.
- (2) The Contractor agrees not to include in the technical data delivered under the contract any material copyrighted by the Contractor and not to knowingly include any material copyrighted by others without first granting or obtaining at no cost a license therein for the benefit of the Government of the same scope as set forth in paragraph (c)(1) above. If such royalty-free license is unavailable and the Contractor nevertheless determines that such copyrighted material must be included in the technical data to be delivered, rather than merely incorporated therein by reference, the Contractor shall obtain the written authorization of the Contracting Officer to include such copyrighted material in the technical data prior to its delivery.

(d) Subcontracting

It is the responsibility of the Contractor to obtain from its subcontractors technical data and rights therein, on behalf of the Government, necessary to fulfill the Contractor's obligations to the Government with respect to such data. In the event of refusal by a subcontractor to accept a clause affording the Government such rights, the Contractor shall:

- (1) Promptly submit written notice to the Contracting Officer setting forth reasons for the subcontractor refusal and other pertinent information which may expedite disposition of the matter; and
- (2) Not proceed with the subcontract without the written authorization of the Contracting Officer.

(e) Withholding of proprietary data

Notwithstanding the inclusion of the "Additional Technical Data Requirements" clause in this contract or any provision of this contract specifying the delivery of technical data, the Contractor may withhold proprietary data from delivery, provided that the Contractor furnishes in lieu of any such proprietary data so withheld technical data disclosing the source, size, configuration, mating and attachment characteristics, functional characteristics and performance requirements ("Form, Fit and Function" data, e.g., specification control drawings, catalog sheets, envelope drawings, etc.) or a general description of such proprietary data where "Form, Fit and Function" data are not applicable. The Government shall acquire no rights to any proprietary data so withheld except that such data shall be subject to the "inspection rights" provisions of paragraph (f), and, if included, the "Limited rights in proprietary data" provisions of paragraph (g) and the "Contractor licensing" provisions of paragraph (h).

(f) Inspection rights

Except as may be otherwise specified in this contract for specific items of proprietary data which are not subject to this paragraph, the Contracting Officer's representatives, at all reasonable times up to three (3) years after final payment under this contract, may inspect at the Contractor's facility any proprietary data withheld under paragraph (e) and not furnished under paragraph (g) for the purposes of verifying that such data properly fell within the withholding provision of paragraph (e), or for evaluating work performance.

CLAUSE 49 AUTHORIZATION AND CONSENT

The Government hereby gives its authorization and consent (without prejudice to any rights of indemnification) for all use and manufacture, in the performance of this contract or any part hereof or any amendment hereto or any subcontract hereunder (including any lower-tier subcontract), of any invention described in and covered by a patent of the United States:

- (a) Embodied in the structure of composition of any clause the delivery of which is accepted by the Government under this contract, or

- (b) Utilized in the machinery, tools or methods the use of which necessarily results from compliance by the Contractor or the using subcontractor with (i) specifications or written provisions now or hereafter forming a part of this contract, or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clauses, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

CLAUSE 50 GOVERNMENT-FURNISHED PROPERTY

- (a) The Government shall not be obligated to furnish any property whatever to the Contractor except to the extent, if any, that provision is explicitly made in the technical sections of the specifications, or the drawings for the furnishing by the Government to the Contractor, as free issue, of property to be incorporated or installed in the work or used in its performance. The following provisions shall be applicable if the Government is to furnish any property to the Contractor.
- (b) The construction schedules set forth in this contract are based upon expectation that the Government-furnished property, referred to in the SCHEDULE OF GOVERNMENT-FURNISHED MATERIALS paragraph of the Technical Information to the specifications of this contract, will be delivered on or before the estimated date available as set forth in the Schedule. In the event that such Government-furnished property is not delivered to the Contractor by such time, the Contracting Officer shall, if requested by the Contractor, determine if any delay has been occasioned the Contractor thereby, and if so shall grant a reasonable extension of the time for completion of performance. The Government shall not be liable to the Contractor for damages or loss of profit by reason of any delay in delivery of said Government-furnished property, except that in case of such delay, upon written request of the Contractor, an equitable adjustment shall be made in the construction schedule of this contract, or price, or both, and in other contractual provisions affected thereby, in accordance with the procedures provided for in the Clause entitled "Changes".
- (c) Title to all Government-furnished or Contractor-acquired property shall remain in the Government. Title thereto shall not be affected by the incorporation or attachment thereof to any property not owned by the Government, nor shall any such property, or any part thereof, be or become a fixture or lose its identity as personalty by reason of affixation to any realty. The Contractor shall maintain adequate property control records of such property consistent with good business practice and as may be prescribed by the Contracting Officer; and shall cause all such property to be clearly marked (if not so marked) to show that it is the property of the Government.
- (d) Government-furnished or Contractor-acquired property shall be used only for the performance of this contract.
- (e) The Contractor shall, in accordance with sound industrial practice and without additional cost to the Government, maintain in operating condition, repair, protect, and preserve such Government-furnished or Contractor-acquired property until disposed of by the Contractor in accordance with this Article. Should any replacement of such property become necessary during the term of this contract other than by reason of the negligence or fault of the Contractor, the same shall be made by the Contractor at the direction of, and for the account, and at the cost of, the DOE and the title thereto shall vest in the Government and any delay occasioned thereby shall be considered an excusable delay under this contract.
- (f) Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss of or damage to Government-furnished property or Contractor-acquired property in its possession, except for reasonable wear and tear and except to the extent that such property is consumed in the performance of this contract.
- (g) The Government shall at all times have access to the premises wherein any Government-furnished or Contractor-acquired property is located.

(h) Upon completion of this contract, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government-furnished or Contractor acquired property not consumed in the performance of this contract (including any resulting scrap), or not theretofore delivered to the Government, and shall hold the same at no charge to the DOE for a period of 60 days, unless the period of time is extended by mutual agreement. At the expiration of such period or upon the Contracting Officer's earlier order, the Contractor shall dismantle, prepare for shipment and shall store or deliver said property to the DOE on cars or trucks at Contractor's plant at the expense of the DOE, or make such other disposal of said property as may be directed by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid over as the Contracting Officer may direct.

(i) Except as specified elsewhere in the contract such property will be furnished f.o.b. truck at the project site, or in storage at or near the jobsite, and the Contractor will be required to accept delivery when made. All such property will be installed and/or incorporated into the work at the expense of the Contractor unless otherwise indicated herein. Any property so furnished which is in excess upon completion of the work, shall remain the property of the Government. The Contractor shall check the quantity and condition of such Government-furnished property when delivered to him, acknowledge receipt in writing to the Contracting Officer, and in case of damage to, or shortage of, such property, he shall within 24 hours, report in writing such damage and/or shortage to the Contracting Officer.

CLAUSE 51 CONFLICT PROVISIONS

In the event of conflict or ambiguity between any of the documents which are a part of this contract either by direct inclusion or inclusion by reference, the order of precedence of the documents shall be in the following order:

1. General Provisions
2. General Conditions
3. Special Conditions
4. Technical Sections and Drawings

In the case of conflict between the technical sections and drawings, the technical sections shall govern.

Where no inconsistency or conflict exists, a requirement stipulated in one document shall be considered to have been stipulated in all documents.

Unless otherwise specified, the latest revisions (current at the time of the bid opening specified in the Invitations for Bid for this contract) of specifications, publications, standards, technical societies, or testing organizations included as a part of the contractual requirements shall govern.

CLAUSE 52 PREFERENCE FOR U. S. FLAG AIR CARRIERS

- (a) Pub. L. 93-623 requires that all Federal agencies and Government contractors and subcontractors will use U. S. flag air carriers for international air transportation of personnel (and their personal effects) or property to the extent service by such carriers is available. It further provides that the Comptroller General of the United States shall disallow any expenditure from appropriated funds for international air transportation on other than a U. S. flag air carrier in the absence of satisfactory proof of the necessity therefor.
- (b) The Contractor agrees to utilize U. S. flag air carriers for international air transportation of personnel (and their personal effects) or property to the extent service by such carriers is available.
- (c) In the event that the Contractor selects a carrier other than a U. S. flag air carrier for international air transportation, he will include a certification on vouchers involving such transportation which is essentially as follows:

CERTIFICATION OF UNAVAILABILITY OF U. S. FLAG AIR CARRIERS

I hereby certify that transportation service for personnel (and their personal effects) or property by certificated air carrier was unavailable for the following reasons: (state reasons).

- (d) The terms used in this clause have the following meanings:

- (1) "International air transportation" means transportation of persons (and their personal effects) or property by air between a place in the United States and a place outside thereof or between two places both of which are outside the United States.
 - (2) "U. S. flag air carriers" means one of a class of air carriers holding a certificate of public convenience and necessity issued by the Civil Aeronautics Board, approved by the President, authorizing operations between the United States and/or its territories and one or more foreign countries.
 - (3) The term "United States" includes the fifty states, Commonwealth of Puerto Rico, possessions of the United States, and the District of Columbia.
- (e) The Contractor shall include the substance of this clause, including this paragraph (e), in each subcontract or purchase hereunder which may involve international air transportation.

SECTION 3- IFB

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SECTION 3 - SPECIFICATIONS

SECTION GC - GENERAL CONDITIONS

GC.01 GENERAL

A. Location of Work

This work is to be performed on land owned by Southern California Edison Company, approximately twelve (12) miles southeast of Barstow at Daggett, California in San Bernardino County; approximately one hundred twenty (120) miles northeast of Los Angeles, California.

B. Intent

1. It is the intent of these specifications to describe the quality and character of the materials and equipment to be used and the manner in which work shall be performed.
2. It is intended that the drawings and specifications include everything necessary to finish the entire work properly. Every item necessarily involved may not be specifically mentioned or shown. All systems shall be complete and operable unless clearly indicated otherwise. Items of work or materials which are not intended to be furnished and installed by the Contractor will be marked N.I.C. (Not in Contract). Materials which are furnished by the Government, but are to be installed by the Contractor, will be listed under Government-Furnished Property in the Technical Information.

C. Arrangement of Specifications

1. These specifications have been separated into GENERAL PROVISIONS, GENERAL CONDITIONS, AND TECHNICAL INFORMATION. Such separations are arranged to correspond to the several major work areas, but are not intended to make, nor do they make, the Government an arbiter to establish limits between the Contractor and/or its subcontractors. The arrangement of these specifications in no way relieves the Contractor of the responsibility to provide a complete job.
2. No responsibility whatever, either expressed or implied, is assumed by the Government, or its employees or agents, for omissions or duplications by the Contractor due to errors, if any, in arrangement of these specifications.

3. Specific items listed under "Scope," "Scope of Work," or "Work Included," "Work Specified Elsewhere," or "Work Not Included," for each subsidiary specification or section are not necessarily all inclusive.

GC.02 INTERPRETATION OF TERMS

Definitions

- A. The word "Contractor" used in the specifications shall mean the Contractor executing the Contract.
- B. The words "Administration," "Government," "ERDA," or "DOE," as used in the specifications shall mean, and include, the U.S. Department of Energy, San Francisco Operations Office, 1333 Broadway, Oakland, California 94612.
- C. In the specifications, the use of the term "Construction Manager" shall mean the duly authorized representative of the Contracting Officer. Communications with the Construction Manager shall be addressed to: Townsend and Bottum, Inc., 9550 Flair Drive, Suite 210, El Monte, California 91631.
- D. A subcontractor is defined as one who contracts with the Contractor to furnish materials and labor, or labor only, for performance of any portion of the work to be performed under this contract. A Sub-subcontractor is defined as the next tier below the subcontractor. Suppliers of materials only, for the purpose of this listing, are not deemed to be subcontractors.
- E. The words Solar Facility Design Integrator (SFDI) as used in the specifications shall mean McDonnell Douglas Astronautics Company acting under its Contract with DOE.

GC.03 PROGRESS CHARTS AND PROSECUTION OF THE WORK

A. Progress Charts

1. Within fifteen (15) days after the date of receipt of written Notice to Proceed, the Contractor shall submit six (6) copies of a practicable schedule of its proposed construction progress through the Construction Manager for the Contracting Officer's approval.
2. The progress schedule shall show the order in which the Contractor proposes to accomplish the project's salient features by use of a bar chart or graphic network diagram. A sample of one of these is furnished in the GENERAL CONDITIONS. If a bar chart is used, a bar

shall represent each major cost item, show a start and completion date, and shall indicate the percentage of work scheduled for completion at monthly progress intervals. A composite "S" curve shall be superimposed over the bar chart to indicate total progress. If a graphic network diagram is used, the diagram shall consist of an arrow diagram or a geometric figure and connector diagram, which clearly depicts the order and interdependency of activities planned by the Contractor. The diagram shall be printed neatly and legible drawn to a time scale. The diagram shall show the time for starting and completing each activity and indicate what percentage of the total pay item that each major activity represents. A composite "S" curve shall be used to indicate total progress.

B. Prosecution of the Work

1. The Contractor shall furnish sufficient forces, construction plant, and equipment, and shall work such hours, including night shifts, overtime operations, and Sunday and holiday work as may be necessary, to insure the prosecution of the work in accordance with the approved progress schedule. Before commencing work, the Contractor shall furnish a program of shifts, hours and days per week to be worked, and the approximate number of persons per shift. The Contractor shall notify the Contracting Officer 48 hours in advance of any change to the program.
2. If, in the opinion of the Contracting Officer, the Contractor falls behind the progress schedule, the Contractor shall take such steps as may be necessary to improve his progress, and the Contracting Officer may require him to increase the number of shifts, or overtime operations, days of work, or the amount of construction plant, or all of them, and to submit for approval such supplementary schedules or schedules in chart form as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the Government.
3. Failure of the Contractor to comply with the requirements of this provision shall be grounds for determination by the Contracting Officer that the Contractor is not prosecuting the work with such diligence as will insure completion of the contract within the time specified (see the clause of the General Provisions entitled "Termination for Default - Damages for Delay - Time Extensions").

GC.04 LISTING OF SUBCONTRACTORS

In accordance with the General Provisions, the Contractor shall deliver within ten (10) days after date of receipt of written Notice to Proceed, six (6) copies of a complete list of subcontractors and sub-subcontractors, including names, addresses, and telephone numbers to the Construction Manager. If changes in the List of Subcontractors or Sub-subcontractors are made subsequent to the initial submittal, a corrected list shall be submitted on an expedited basis.

GC.05 BREAKDOWN OF CONTRACT PRICE

- A. In accordance with Article 7 of the General Provisions, the Contractor shall submit to the Contracting Officer no later than fifteen (15) days after date of receipt of written Notice to Proceed seven (7) copies of a breakdown on the contract price for each work item and for outside utilities, itemizing the estimated cost and quantities of each class of work, the total of which shall equal the Contract Price. Mobilization, preparatory work, costs of performance and payment bonds, profit, and supervision costs shall be prorated to each appropriate work item.
- B. The breakdown, when approved, shall become the basis for determining the value of work performed for purposes of partial progress payment. Three (3) copies of the "Breakdown" of Contract Price" shall be submitted to the Construction Manager with each monthly progress pay estimate (See Exhibit I).
- C. The Contracting Officer shall have the right to revise the breakdown submitted, prior to his approval, if in his opinion, the items indicated do not conform to their true value. The breakdown will be revised at the same time revisions become necessary in the progress schedule.
- D. Progress payments will be computed on a basis of their percentage of completion of the work in place, multiplied by the lump-sum contract price, the percentage of completion representing the ratio of the value of that portion of the work completed to the total price, as determined by the application of prices shown in the approved breakdown of bid.
- E. No payment(s) will be made to the Contractor until the breakdown of bid and the progress schedule have been submitted to and approved by the Contracting Officer.

GC.06 CONSTRUCTION HEALTH AND SAFETY REQUIREMENTS

- A. All site work performed under this Contract shall be performed in a safe and orderly manner so as not to create a hazard to Health and Property. All Work shall be conducted in accordance with the established safety orders of Title 8, California Administrative Code, Subchapter 4, Construction Safety Order.
- B. The Contractor is required to submit for approval by the Contracting Officer a descriptive outline of his Safety Program; his past injury, accident, fire and property damage, including major vehicles and insurance rates for these risks; and the name and qualifications of the management official assigned responsibility for the administration of the Safety Program. (The minimum acceptable plan shall encompass criteria of Exhibit II, "Construction Safety Program," attached.) Three (3) copies of this Safety Program shall be submitted as soon as possible, but not later than ten (10) calendar days after receipt of written notice to proceed.
- C. A safety engineer from the Construction Manager's organization will be assigned to the project to evaluate the safety of the Contractor's operations as work proceeds and to advise the Contractor, either directly or through the Contracting Officer, on matters of industrial health and safety concerning the Work performed under the Contract. The evaluation given shall be deemed advisory only and shall not relieve the Contractor from his responsibility for Safety.
- D. Contractor employees, who could be exposed to significant concentration of hazardous or toxic materials which are potentially injurious while performing such tasks as noted in (C) above, shall submit to physical examinations if so requested by the Contracting Officer. Physical examinations, if required, will be performed at no charge to the Contractor.
- E. DOE may make inspections and obligate corrective actions commensurate with the deficiencies. Willful violation or refusal or failure to abate violations of Safety and Health standards or rules may be justification for Contract termination.
- F. The Contractor shall appropriately maintain certain records and submit reports covering experience of both its direct employees and that of its subcontractors. Reports required are as follows:

1. Maintain Log Form 200 (on all reportable injuries or illnesses in accordance with instruction thereon).
2. Quarterly Tabulation of DOE and DOE Contractor Occupational Injuries and Illnesses. Form ERDA-102A will be prepared per instructions and forwarded in duplicate to:

Townsend & Bottum, Inc.
Post Office Box
Daggett, California 92327
Attention: Construction Manager

GC.07 PROJECT BULLETIN BOARD

- A. The Contractor shall furnish, install, and maintain, during the entire period covered by this contract, a protected bulletin board approximately 3 feet high and 5 feet long constructed to prevent damage from wind and rain to contents. It shall be mounted in a conspicuous place, as approved by the Construction Manager, accessible to all employees of the Contractor and Subcontractors. This bulletin board will remain the property of the Contractor.
- B. The following notices shall be displayed at all times on this board by the Contractor (the bulletin board may also be used for other notices):
 1. Equal Employment Opportunity Poster.
 2. Schedule of Minimum Wage Ranges as required by the Davis-Bacon Act (Appendix A to the General Provisions hereunder).
 3. California State Safety Poster "Notice to Employeee."
 4. Emergency information to include name, address, and telephone number of: doctor, insurance carrier, ambulance service, fire department, and any other requested by Government.
 5. Site Rules.

GC.08 DATUM

- A. The Contractor shall lay out his work from base lines and grades established by the Government and the Contractor shall be responsible for all measurements in connection therewith. The Contractor will be held responsible for the proper execution of the work to such lines and grades required by the horizontal and vertical control noted on the drawings.

B. If, through the negligence of the Contractor, any such permanent monument is moved or destroyed, it shall be replaced by the Construction Manager at the expense of the Contractor.

GC.09 PRESCRIBED CODES, STANDARDS, AND PERMITS

A. All work performed shall be in accordance with the requirements of the latest edition of the codes and standards listed below which shall be considered minimum requirements (as applicable).

Standards and Codes

1. 29 CFR Part 1926, Safety and Health Regulations for Construction, Department of Labor.
2. 29 CFR Part 1910, Occupational Safety and Health Standards, Department of Labor.
3. American National Standards for Safety (ANSI), as applicable.
4. National Fire Codes (NFPA).
5. Federal, State, and Local Pollution Regulations.
6. Uniform Building and Mechanical Codes (International Conference of Building Officials), Volumes I and II.
7. Uniform Plumbing Code (International Association of Plumbing and Mechanical Officials).
8. California Division of Highways Standard Specifications.
9. General Order No. 95, State of California, Public Utilities Commission, Power Lines and Poles.
10. ASME Boiler and Pressure Vessel Code, Sections I-IX, California Administrative Code, Title 8, Construction Safety Orders, Subchapter 4.
11. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE).

B. Where difference exist between codes, standards, and referenced specification, the one affording the greatest protection shall govern.

C. Other codes or standards may be involved elsewhere in the construction specifications and drawings and shall apply as if repeated here.

D. Any variances from the codes and standards observed by the Contractor in the specifications and drawings shall be brought to the Construction Manager's attention immediately by notification in writing.

E. All special licenses, permits, and inspections, as may be required for performance and completion of the work under this contract, shall be obtained by the Constructor at his own cost and expense with the exception of those identified in the instructions to bidders.

F. Materials shall be listed by, or bear the seal of, the Underwriter's Laboratories where U.L. requirements apply.

GC.10 CONSTRUCTION LIMITS

The Contractor shall confine his operations to the immediate area within the Construction Limits shown on the drawings. When access to areas other than those designated is required, permission must first be obtained through the Construction Manager.

GC.11 PROTECTIONS

A. The Contractor shall provide and maintain suitable temporary barricades, fences, or other structures as required for the protection of public traffic and employees; provide walks around any obstructions; and maintain on, or near, the construction area sufficient light to protect all personnel from injury. All barricades must have electrically operated warning lights during hours of darkness. No open flame lights will be permitted.

B. The Contractor shall furnish and install protective closure facilities, such as roofing, canopies, seals at existing buildings where connections or modifications are being made to assure each day that the entry of rain and the elements of weather are guarded against, so that equipment, facilities, and structures are protected and retained in operating condition.

GC.12 LIABILITY FOR DAMAGES

The Contractor shall be responsible for all injury or damage to persons or property (including damage to underground property of underground utilities, which are properly indicated in the specifications and/or drawings, or the existence of which is otherwise made known to the Contractor) that occurs as a result of the fault or negligence of the Contractor, or his agents, servants, employees, or subcontractors, in connection with the prosecution of the work; shall be responsible for all materials delivered and work performed until completion and final

acceptance of the construction; and shall protect, defend, indemnify, and hold harmless the U. S. Department of Energy and Townsend and Bottum, Inc., and their employees, and against all claims or suits based upon any such injury or damage arising from said fault or negligence of the Contractor, its agents, servants, employees, or subcontractors.

GC.13 MODIFICATION OR CONNECTION TO EXISTING UTILITIES

If modifications or connections to existing utilities (i.e. water, steam, air, gas, etc.) require an interruption of services, the Contractor must give the Construction Manager written notice four (4) calendar days prior to the desired modification or connection. Four (4) days advance written notice for either temporary or permanent use is required for interruptions to existing electrical services.

GC.14 SHOP, ASSEMBLY, ERECTION DRAWINGS, AND VENDOR DATA

A. Submittals

1. Shop drawings, assembly drawings, erection drawings, and vendor data as required by the specifications, or as otherwise requested by the U.S. Government of Energy, shall be submitted by the Contractor for review, no later than 20 calendar days after the Notice to Proceed, in accordance with the instruction herein. Each submittal shall contain identification for each separable piece of material or equipment literature with respect to job title, contract number, section number, and the specific paragraph of the specifications under which the item is to be furnished.
2. Shop drawings shall also be submitted by the Contractor for proposed rearrangements of equipment and materials. These shop drawings shall be uniform in quality, size, and detail with the contract drawings. All costs resulting from such changes shall be the responsibility of the Contractor.
3. The Contractor shall establish a schedule and procedure for the submittal of shop drawings and vendor data that will insure their timely submittal and follow-up on their approval.
4. It shall be the responsibility of the Contractor to advise the Construction Manager of any submittal which appears to have been delayed and which might, if further delayed, extend completion of the project.

5. Six (6) copies of all shop drawings or vendor data shall be promptly submitted as follows:

Shop Drawings, one (1) copy

Transmittal letter, original, and five (5) copies to:

McDonnell Douglas Astronautic Company
5301 Bolsa Avenue
Huntington Beach, CA 92647
ATTN: R. W. Hallet, Jr.

6. The shop drawings or vendor data may be prepared by the Contractor or its suppliers, but shall be submitted as the instruments of the Contractor. Therefore, prior to submittal, the Contractor shall ascertain that:
 - a. Equipment and/or materials covered by submittals meet all requirements of contract drawings and specifications and conform to structural and space conditions.
 - b. Requests for substitutions are sufficiently complete in all details to establish equality.
2. Two (2) copies of the shop drawings and vendor data will be returned to the Contractor with appropriate stamps and notations. The Contractor shall, when directed, make indicated changes and corrections, promptly resubmitting six (6) copies as many times as required to obtain approval. If additional marked copies are required by the Contractor, the original submittal shall be increased accordingly.

GC.15 OPERATING INSTRUCTIONS

- A. The Contractor shall furnish the Construction Manager copies of all brochures, operating manuals, including lubrication and maintenance instructions, parts lists, certified wiring and/or piping diagrams, drawings, and relevant data issued by vendors or manufacturers of all fabricated equipment and components included in these specifications. These data must be received by the Construction Manager at least two weeks prior to the operation and testing of the equipment involved. Failure to submit these items, as herein prescribed, will be justification for withholding approval of progress payments.
- B. Each submittal shall contain identification for each separable piece of material or equipment literature with respect to job title, contract number, and the section

number of the specifications under which the item is to be furnished and shall be bound in notebook form.

GC.16 COORDINATION

- A. It shall be the Contractor's responsibility to closely coordinate all phases of its work to insure that its work will proceed rapidly and in an orderly manner.

GC.16 COORDINATION

- A. It shall be the Contractor's responsibility to closely coordinate all phases of its work to insure that its work will proceed rapidly and in an orderly manner.
- B. The Contractor shall prepare and furnish such drawings, sketches, written explanations, etc., as may be necessary to inform all interested parties of the work. The Contractor shall especially include all pertinent information concerning the attachment and/or passing of the respective trades work in conjunction with other trades.

GC.17 CLEAN-UP

- A. During the construction period, the materials to be used in the work shall be kept in an orderly manner, neatly stacked and piled. The Contractor shall keep the project Site clean at all times of all scrap and surplus materials, rubbish, and debris of all descriptions by removal from the Site. Special attention shall be given to location and removal of combustible debris that represents a fire or safety hazard.
- B. Upon completion of the work as a whole, the Contractor shall remove from the site all of its excess construction materials, tools, construction sheds, and equipment. The Contractor shall collect all scrap materials and debris of every description from the site and make suitable disposal off the site or as otherwise directed. The Contractor shall leave the premises in a clean and orderly condition ready for operation.
- C. All work performed under these specifications shall be left thoroughly cleaned of dirt, dust, splatterings of paint, and foreign matter of every description. Cleansing agents shall be of a type which will not be injurious to the surfaces on which they are used. This work shall include cleaning of all glass.

GC.18 INSPECTION AND ACCEPTANCE

- A. The work will be performed under the inspection of an authorized representative of the Contracting Officer to insure strict com-

pliance with the contract plans and specifications. The presence or absence of an inspector shall in no way relieve the Contractor from compliance with the contract plans and specifications. Contractor shall make no changes in or deviate from the requirements of the drawings and specifications except by written permission from the Contracting Officer.

- B. The Government reserves the right to inspect materials and workmanship, in whole or in part, at either the place of production, manufacture, shipment, or at the site. Any such inspection and/or acceptance made, after prior written notice, at the place of production, manufacture, or shipment shall be provisional only with final inspection and acceptance to be at the construction site.
- C. Upon receipt of written notice from the Contractor that the work is completed and ready for final inspection and acceptance, the Contracting Officer's Representative, together with the Contractor, shall make a joint inspection of the contract work and note deficiencies, if any. If there are no deficiencies, or when there are only a few minor deficiencies, a final inspection report, stating that the work under the contract has been substantially completed, in accordance with the contract plans and specifications, will jointly be signed.

GC.19 WARRANTY

- A. Except as otherwise expressly provided in this contract, the Contractor warrants all work performed to be in accordance with contract requirements and free from defects for one year from the date of final acceptance of the work by the Government. The warranty is supplemental and additional to any specific guarantees or warranties provided for in any other provisions of this contract, and it applies to designs, materials, equipment, and workmanship furnished or performed by the Contractor or any of its subcontractors or suppliers at any tier. The warranty shall not apply to Government-furnished design, or to Government-furnished material or equipment except as to such work as may be performed thereon under the contract. In the event that the Government takes possession of a part of the work prior to final acceptance, the one-year warranty period, with respect to such part of the work, shall run from the date the Government takes such possession.
- B. Upon receipt of written notice from the Government that any part of the work under this contract is defective or has failed, the Contractor shall within a reasonable time and at its own expense (1) remedy all

defects, (2) remedy damage to site, equipment, buildings, or contents thereof owned or under the control of the Government, which is the result of such failure or defect, and (3) restore any work damaged in fulfilling the terms of this clause.

- C. In any case where in fulfilling the requirements of the contract or of any warranty embraced in or required thereby, the Contractor damages any work guaranteed under another contract, it shall at its own expense remedy such damaged work to a condition satisfactory to the Contracting Officer and warrant such remedied work to the same extent as it was warranted under such other contract.
- D. Should the Contractor fail to remedy any failure or defect described in A, B, or C above within a reasonable time after receipt of notice thereof, the Government shall have the right to replace, repair, or otherwise remedy such failure or defect at the Contractor's expense. This warranty shall not delay final acceptance of or final payment for the contract work.
- E. In addition to the foregoing and without limitation to a one-year period, all subcontractors', manufacturers' and suppliers' warranties and guarantees, expressed or implied, respecting any part of the work and any materials or equipment used therein shall be deemed obtained - and shall be enforced - by the Contractor for the benefit of the Government without the necessary of separate transfer or assignment thereof. If directed by the Contracting Officer, the Contractor shall require such subcontractors, manufacturers, and suppliers to execute such warranties and guarantees in writing to the Government.
- F. Except as provided in C. above, any work remedied pursuant to this clause shall also be subject to the provisions of this clause to the same extent as work originally performed.
- G. The rights and remedies of the Government provided in this clause are in addition to and do not limit any rights afforded to the Government by any other clause of this contract.

GC.20 ENVIRONMENTAL POLLUTION CONTROL

- A. The Contractor or its Subcontractors shall not dispose of any construction or other wastes (solid, liquid, or gaseous) in such a manner or in locations that will violate Federal, State, or Local Government Air and Water Pollution Control standards, rules, or regulations, or those at the site where work is being done.

- B. Fuels, oils, chemicals, and other materials used in connection with the contract will be stored, handled, and used in such a manner that their accidental release to the atmosphere or to surface or ground water will not violate Federal, State, or Local Government Air and Water Pollution standards, rules, or regulations or those at the site where work is being done.

GC.21 NOTIFICATION, INVESTIGATION, AND REPORTING OF ACCIDENTS

The Contractor will immediately notify the Construction Manager or his representative, of any injury-producing accident in which the injured is unable to return to work the next scheduled shift. He will also, upon request, participate in necessary investigations concerning accidents as determined by the U.S. Department of Energy. The Contractor will also submit to the Construction Manager, by the 10th of each month, a listing of the monthly average number of employees on the job and the number of man-hours expended for the previous month.

GC.22 SITE ACCESS REGULATIONS

General

Access to the construction site is subject to certain regulations described herein. Permission for access will be revoked for any and all persons who violate Site Access Regulations. All Contractor's personnel, operating forces, and persons not regularly assigned for work at the site shall be made aware of and shall comply at all times with the following regulations:

- A. All posted speed limits are enforced and must be observed.
- B. All signs and posted notices must be observed. They are for the safety of all personnel on the site.
- C. Without the approval of the Construction Manager, no objects will be picked up or removed from the limits of the site except the Contractor's construction materials, or materials removed in construction and designated by the specification to be removed from the site.
- D. All materials for installation shall be brought in and the work so conducted as to minimize interference with other activities of the Government and with other construction work on the site.
- E. Points of access to the work for vehicles and personnel will be as designated on the drawings applying to this contract.

GC.23 PARKING

A. Contractor's vehicles:

1. Parking of Contractor's vehicles will be permitted only in areas designated for parking. Vehicles shall not be parked within fifteen feet of any security fence.
2. Cranes, booms, drilling rigs, and similar tall equipment must be kept clear of overhead electrical conductors. The Contractor is responsible for any damage or injury caused by unsafe acts of his operators.

B. Personal Vehicles:

Parking of personal vehicles shall be within the established parking lot. Personal vehicles are not allowed in construction areas.

C. Use of Existing Roads

1. Only vehicles with pneumatic tires will be allowed on existing roads.
2. All motorized heavy equipment shall be equipped with mufflers.
3. Use of site roads for heavy traffic must be kept to a minimum.
4. Certain existing roads within the site will be designated for use by the Contractor during the execution of his work. Use of other roads shall not be allowed without prior permission.
5. Access to and traffic on the existing site roads must be maintained at all times. When obstruction in or alterations to the existing site roads are required because of construction, detours, or other temporary measures, they must be completed prior to the starting of work. The Contractor must have the approval of the Construction Manager prior to starting work.

GC.24 ACCESS BADGE REQUIREMENTS

A. Access Badges

1. Forty-eight hour notice shall be given to the Construction Manager at the site by the Contractor prior to his initial entry to the Site. At this time, the Contractor shall state the number of people, including Subcontractors' personnel, to be processed. This procedure will expedite Badge processing.

2. Sufficient badges will be furnished to the Contractor at no cost to him. Badges shall remain the property of the Government and the Contractor and his personnel must return the badges to the Badge Office upon termination of employment at the Site. While working within the limits of the Site, badges must be worn above the waist and in plain sight at all times. Personnel making normal truck deliveries for vendors will not be required to be processed, but will be issued a temporary truck pass.
3. Processing of Contractor personnel will be done without charge to the Contractor. The Contractor will not be reimbursed for the cost of "Lost time" required for the processing of his personnel.
4. Contractor's personnel will be limited to the construction Site within the Construction Limits. Personnel working on walks, paving utilities, piping, or similar outside projects are prohibited from entering any buildings within the area of the work, except when granted permission by the Construction Manager.

B. Prohibited Items

1. Except as otherwise provided herein, the following items shall not be brought within the limits of the Site:
 - a. Firearms, explosives, and incendiary devices and other weapons.
 - b. Narcotics and dangerous drugs, marijuana, LSD, and other hallucinatory substances.
 - c. Alcoholic beverages.
 - d. Poisonous or corrosive solids, liquids, or gases.
2. If any of the items listed are required by the Contractor for the execution of his work, he must receive written permission from the Construction Manager for each item brought into the Site. Those items permitted must be removed from the Site immediately upon the termination of their need or the termination of the period stated in the Contractor's request. All items listed above may be confiscated if they are brought into the Site without permission or if they are being used for other purposes than those stated in the request.

3. The Contractor's employees and vehicles driven by Contractor's employees may be subject to search at the discretion of the Construction Manager upon entering and leaving the Site. In addition, sub-contractors, sub-subcontractors, material persons and vendors entering and leaving the Site shall also be subject to search.

C. Working Hours

Construction operations shall be limited to the hours between 7:30 a.m. and 5:00 p.m., Mondays through Fridays, except holidays. A request must be made to the Construction Manager forty-eight (48) hours in advance for approval to work days or hours other than those stated above. Provision for emergency entry may be made during off-working hours through the Construction Manager.

D. Storage and Materials

No storage of materials, parking of vehicles or equipment, job offices or temporary storage building will be allowed within fifteen feet of any fences.

E. Fence Penetrations

The Contractor shall not make any penetration over, under, or through existing security fences located within, or on the perimeter of, the Site without the permission of the Construction Manager.

GC.25 JOB OFFICE, STORAGE, AND SHOP

A. Contractor's Construction Office

The Contractor may provide a construction office on the Site for his use. A telephone may be installed by the Contractor at his expense. Pay telephones are also available at the Site for use by the Contractor. Whether or not the Contractor elects to provide an office, a complete set of plans, specifications, and shop drawings shall be maintained at the Site.

B. Storage and Shop

During the construction period, the materials to be used in the work shall be kept in an orderly manner neatly stacked and/or piled. The Contractor shall provide all temporary storage and shop room that may be required at the Site for the safe and proper storage of tools, materials, etc.

C. Location and Removal

These facilities shall be constructed only in the locations approved by the Construction

Manager and must in no way interfere with the proper installation and completion of other work. These facilities shall remain the property of the Contractor, and shall be removed by the Contractor within three days after having been notified by the Construction Manager that such removal is necessary.

GC.26 TEMPORARY UTILITIES

A. Toilet Facilities

Toilet facilities will be furnished by the Construction Manager at the Construction Site.

B. Water Service

1. Non-potable water will be furnished by the Construction Manager at the Construction Site.

2. Drinking water will be furnished by the Construction Manager at the Construction Site

C. Electrical Service

480 volt three phase power will be available to the Contractor.

D. Solid Waste Disposal

The Construction Manager will provide and maintain metal Dumpsters for use by the Contractor without charge. The number of Dumpsters and their locations will be determined solely by the Construction Manager. No provision has been made for a Site Dump or "Bone Yard."

E. Conditions

1. The expense of connections of water and electricity from Site sources defined above shall be borne by the Contractor.

2. The Contractor shall exercise reasonable care to conserve water and power furnished by the Government.

3. The Government does not guarantee amounts available nor will the Government be responsible for interruption of service.

4. Temporary services installed by the Contractor shall be removed and utilities restored to their initial condition by the Contractor at the completion of the Site work.

GC.27 EMERGENCY REPAIRS

The Government reserves the right to make emergency repairs as required to keep equipment in

operation without voiding the Contractor's guarantee or relieving the Contractor of his responsibilities.

GC.28 MANUFACTURER'S WRITTEN INSTRUCTIONS

Where any materials are called for to be installed "according to manufacturer's written instructions", the Contractor shall furnish the Construction Manager with six (6) copies of such required instructions at least two (2) weeks prior to the installation of the material.

GC.29 TIME EXTENSION - WEATHER CONDITIONS

In accordance with the General Provisions No. 5 of the contract, time extensions will be considered for unusually severe weather conditions which actually delay the completion of the work. Examples of some types of unusually severe weather conditions are as follows:

- A. The number of calendar days having precipitation of 0.1 inch or more recorded by the U.S. Weather Bureau which exceed the eight-year normals reported by the U.S. Weather Bureau for the Barstow/Daggett area.
- B. Extreme muddy site conditions, unusually high winds, or unusual temperatures, etc., may be cause for time extension consideration.

The Contractor shall submit to the Contracting Officer the inclusive dates when unusually severe weather delayed progress and the definite number of days the work as a whole was affected. Official Weather Bureau reports showing departures from normal expectancy should accompany any claim of delay.

GC.30 PROGRESS MEETINGS

- A. Construction Progress meetings will be held weekly or more frequently as determined by the Construction Manager. Attendance by the Contractor for these meetings is required. The Contractor shall make all arrangements to have his own forces and his principal subcontractors represented at these meetings by individuals with authority to make commitments for and act for the concerns represented. The purpose of these meetings shall be primarily to:
 1. Advise the Contractor of administrative matters and procedures in connection with the Contract, which will include, but not be limited to, contract administration, correspondence, payrolls, security, equal employment opportunity, inspection, and safety.
 2. Discuss and resolve construction problems.

3. Review current and proposed work schedules and progress.

- B. The Contractor shall assume full responsibility to act for and commit any subcontractor employed by the Contractor, whether such subcontractor is present or not at the meeting.
- C. Each principal representative at these weekly meetings shall be prepared to indicate the proposed work schedule for the period immediately following the meeting date and to indicate anticipated difficulties for resolution by the group as a whole.

GC.31 USE OF THE GOVERNMENT'S FIRST-AID FACILITIES

A. Contractor's Use of the First-Aid Facilities

1. The Government will provide and maintain First-Aid facilities at the project site. Such facilities may be used by the Contractor without charge for the treatment of his employees who may be injured or become ill while engaged in the performance of the work under the Contract Documents.
2. If the Contractor uses the First-Aid facilities for his employees, then, in consideration for the use of such facilities and the receipt of such services, the Contractor hereby agrees that:
 - a. He will defend, indemnify, and hold harmless the Government, Townsend and Bottum, their authorized representatives, successors or assigns, and all of their officers and employees against any and all claims, demands or liabilities arising from the receipt of such services by the Contractor's employees or the use of such facilities by Contractor's employees.
 - b. Upon receipt of notice from the Government or Townsend and Bottum of any such claim, demand or liability being pursued against the Government or their authorized representatives, successors or assigns, or any of their officers and employees, the Contractor will undertake the defense of such claim, demand or liability and will upon entry of judgment make any and all payments necessarily thereunder.
 - c. In the event any of Contractor's employees are transported to a physician or hospital by means of ambulance service, the Contractor will promptly pay for such services

directly to the company or hospital rendering the service.

- d. Should any of the Contractor's employees require the services of a physician or hospitalization, the Contractor will promptly pay all charges therefore directly to the attending physician and the admitting hospital.
- e. All of the conditions herein this clause shall extend to cover Lower-tier Subcontractors and suppliers employed by the Contractor. The Contractor shall be responsible for informing its Subcontractors and suppliers of these requirements.

GC.32 GUIDELINES FOR MINORITY BUSINESS ENTERPRISE PARTICIPATION

10 MWe SOLAR PILOT PROGRAM

A. DOE Policy

See Utilization Of Small And Minority Business.

B. Standards For Evaluating Minority Group Membership

- 1. Bona fide minority group membership is generally established on the basis of the individual's claim that he or she is a minority group member. However, if a question is raised by DOE, a grantee or another party, recognition as a minority group member shall be granted to an individual who demonstrates some minority ancestry from among the eligible minority groups as defined in the following, plus some self and community identification of lifelong or long-standing duration.
- 2. Definition of Minority Groups. (See Standard Federal EEO Construction Contract Specifications).

C. Minority Business Enterprises Ownership and Control

A Minority Business Enterprise is a business which is at least 50 percent owned and controlled by minority group members or other minority business enterprises, or in the case of a publicly owned business, at least 51 percent of the stock which is owned and controlled by minority group members. In a joint venture formed by a minority-owned firm and a non-minority firm, the minority-owned firm must:

- 1. Satisfy all requirements for bona fide MBE participation in its own right.
- 2. Share at least 50 percent in the ownership management, responsibilities, risks, and profits of the joint venture, and
- 3. Be responsible for a clearly defined portion of work to be performed.

The MBE must satisfy all requirements for bona fide MBE participation as of the closing date for submission of bids in the normal bidding process. A determination of bona fide MBE participation shall be made by looking beyond the form to the substance of the MBE according to these standards. The degree of minority control of the MBE must be given to newly-formed and partially minority-owned firms in evaluating whether true minority ownership and control exist.

Long-established, wholly minority-owned MBEs will necessitate a lesser degree of evaluation than MBEs which are newly created and meet only minimum ownership requirements. The minority ownership of an MBE must be real, substantial, and continuing. DOE will not credit contracts toward the prescribed share if nonminority interests dominate operation of the MBE. A determination as to whether an MBE possesses true minority ownership and control shall be made by balancing all relevant factors which shall include, but are not limited to, the following factors:

- 1. The period of time minority ownership interests have existed.
- 2. The contribution of capital or expertise by minority owners to acquire their interests in the MBE. Contributions should be real and substantial. Examples of insufficient contributions include the following:
 - a. A promise to contribute capital;
 - b. A note payable to the MBE;
 - c. Mere ability to work as a laborer.
- 3. The previous continuing employer-employee relationships that exist among present MBE owners. Whereas as previous employer-employee relationship between or among present MBE owners will not be looked upon favorably, a previous and continuing employer-employee relationship will be looked upon unfavorably.

4. The minority owners' role in the management and control of the business. The minority owners' role in the management and control of the business should be as real as extensive as the nonminority owners' role in the everyday management of the business.
5. The share of risks and profits of the MBE taken by minority owners. The share of risks and profits of minority owners should be commensurate with their ownership interests and no less than 50 percent. Inasmuch as a formal agreement for division of profits and losses does not necessarily demonstrate an actual sharing, examination of the substance rather than form of arrangements will be made to determine whether the nonminority owners have the power to control the amounts to be shared as profits and losses.
6. The relationship between the MBE and another pre-existing firm that has an interest in the MBE.

D. The Prescribed Share

The Contractor/Subcontractor commits itself to a minority business enterprise utilization prescribed share of no less than ten percent (10%) of its total contract dollar amount, under this project.

The prescribed share can be fulfilled by expenditures for supplies, architectural and engineering services, or other eligible non-construction expenses, as well as by construction contracts or subcontracts.

E. Contractor's Response to Bid

When a contractor submits his bid to DOE for the portion of the project he proposes to develop/construct, it shall include the dollar amount and the expected percentage of MBE utilization that will be counted toward the fulfillment of the MBE prescribed share.

In order to ensure that the maximum number of relevant MBEs are informed of the project and its minority business utilization goals, the contractor shall post in noticeable places posters announcing the availability of opportunities for MBEs. The Contractor is encouraged to publish a similar notice in the newspapers in its area which are normally used for public notice purposes and in minority owned newspapers serving its area. The Contractor shall send copies of notices to minority and nonminority contractors' association or service organizations whose members or clients might reasonably be expected to seek contracts or subcontracts for the projects, and any organization which

requests a copy should be sent one. In addition, copies of the documents should be disseminated to Contractor's services such as the Dodge Reports. The dissemination efforts of the contractor shall include but is not limited to the above.

F. Pre-examination of Subcontractors

Prime contractors, when formulating their bids, will have to decide for themselves whether a particular subcontractor is qualified.

The U.S. Department of Energy (DOE) will not pre-examine or pre-qualify subcontractors.

Prime contractors who wish assistance in choosing qualified subcontractors should contact support organizations such as the Small Business Administration (SBA), the Office of Minority Business Enterprise (OMBE), and Minority Contractors' Associations.

The role of the support organizations is strictly informational. A report indicating no detrimental information on a subcontractor, or even a favorable report, should not be taken as providing qualification of the subcontractor.

G. Submission of Bids

All bids must contain a statement of MBE utilization in the recommended amount. The DOE shall determine who the "apparent" low responsive bidder is after submission of bids. The name of this bidder and the amount of his bid, together with the names and bids of the other bidders shall be announced at that time.

The apparent low responsive bidder shall, if necessary, be accorded one week after the DOE determination to deliver to DOE a signed statement that he has signed contracts with MBE's sufficient in dollar amount to carry-out his promise to utilize MBE. The bidder will also submit a certificate signed by each MBE with which it has contracted. The certificate shall state that a contract exists between the prime contractor and the MBE and shall state the dollar amount of the contract and the work to be performed. In addition, a certification statement for each MBE, signed by the MBE, must be submitted. The certification statement will be a form provided by DOE. The form will require information about the MBE in order that the prime contractor and the DOE will be able to determine MBE eligibility in accordance with the standards set out in Parts A. and B. of the above.

To protect itself, the bidder is advised to provide in its contracts with each MBE that the bidder will be held to the contract's terms only if he (the bidder) is successful in obtaining award of the prime contract.

Bidders are further advised to locate and negotiate with minority subcontractors well in advance of the time that the name of the apparent low responsive bidder is announced. Time will be needed to find minority firms. In addition, these firms must have sufficient time to fill out certification statements, which the bidder must then apprise in order to make an informed decision whether the firms are qualified to participate in the MBE program.

If sufficient minority subcontractors are not found in the week following the announcement of the apparent low responsive bidder, the bidder will be declared non-responsive, unless he can adequately demonstrate with sufficient written documentation that he has made a good faith effort towards the attainment of the MBE goal. An effort by the bidder which may be defined as in good faith shall include at a minimum, but not limited to, the following:

1. The contractor's efforts in working with the DOE and Townsend and Bottum Small and Minority Business Officers.
2. Whether the contractor has advertised his desire for MBE participation in majority and minority newspapers.
3. The Contractor working with MBE support organizations such as SBA, OMBE, and local business development centers.
4. The Contractor's efforts in utilizing industry "word of mouth" methods to locate subcontractors.

H. Waiver

Any Contractor/Subcontractor may request a complete or partial waiver of the MBE requirement.

The grant of a waiver is discretionary with the DOE and the request will not be considered unless good cause, supported by complete documentation, is demonstrated by the Contractor/Subcontractor.

Exhibit I

EXHIBIT I

Monthly Requisition
Progress Payment Cost Breakdown

Page 1 Of _____

Estimate No. _____

For: _____

From _____ To _____

By: _____

Project No. _____

Date Prepared _____

ITEM		TOTAL CONTRACT AMOUNT	PREVIOUS BILLING		THIS BILLING		TOTAL TO DATE		REMAINING BALANCE	
Section No.	DESCRIPTION		%	\$	%	\$	%	\$	%	\$
1.	FOUNDATION & EXTERIOR WORK		XXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX
	a.									
	b.									
	c.									
	d.									
	e.									
	f.									
	g.									
	h.									
	i.									
	j.									
	k.									
	l.									
	m.									
2.	CONCRETE SUPERSTRUCTURE	XXXXXXXX	XXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX
	TOTAL THIS PAGE									

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CONSTRUCTION SAFETY PROGRAM

(To Be Typed On Contractor Letterhead)

DATE _____

Solar Ten Megawatt Project

Contracting Officer

The Department of Energy

1333 Broadway

Oakland, California 94612

Room _____

Gentlemen:

The following Safety Program Outline and Company Experience information are furnished pursuant to the General Provisions Clause 63 "Safety And Health" and to the General Conditions Clause 21 "Construction Health And Safety Requirements" of the Ten Megawatt Solar Thermal Central Receiver Pilot Plant Project Construction Contract

Safety Program Outline

_____ under Contract _____

(Name Of Company)

CONSTRUCTION OF SAFETY PROGRAM (cont'd)

to the San Francisco Operations Office of the United States Department of Energy hereby recognizes its obligation to provide and administer a Safety Program that will: protect employees, affiliates, subcontractors, and the general public from hazards arising in connection with the work; prevent accidental damage, fire or loss to property on or adjacent to the construction site; and avoid adverse effects on the environment.

In the Conduct of this program _____
(Name of Company)
shall implement compliance with all applicable Federal (29 CFR 1926 and 1904), State and DOE prescribed construction safety standards, Codes and laws (including record keeping and reports).

The Management Official assigned responsibility for administration of the Safety Program is _____.

His qualifications for the responsibility are as follows: _____
(May _____
include position or tenure in Company and responsibility for
_____ knowledge of Safety criteria and authority to take prompt
_____ corrective action.)

All of _____ management
(Name of Company)

Construction Safety Program (cont'd)

chain is responsible for the adequacy of safety planning, and incorporation in the Work process (to include, but not be limited to, providing a safe work place, conditions and explicit instructions to workers relevant to hazards, controls, use of protection equipment, etc.).

The Health and Safety program of _____
(Name of Company)
_____ shall:

1. Assure that construction equipment (e.g., earth moving equipment, cranes, pressure vessels, portable electric tools, etc.) furnished for the DOE construction is certified to be and is maintained in safe operating condition and that the operators are qualified.
2. Assure that adequate emergency aid is provided and/or is available at the job site and emergency preparedness actions are recognized and communicated to personnel.
3. Provide routine review of the work site by Management Official(s) and/or Safety Representative to recognize and correct unsafe conditions or practices.
4. Provide a safety orientation for all new hires and conduct safety meetings for all employees on a weekly basis.

The orientation shall specifically include review of: employee rights and responsibilities per Form ERDA 627 "Notice to

Construction Safety Program (cont'd)

Employees"; actions in event of injury; emergency signals and plan.

5. Provide personal protective equipment as needed to protect against Work hazard where it cannot be compensated by built-in protection. Usage instructions shall be communicated to users (including maintenance thereof).
6. Include Safety considerations in work planning with cognizance of minimum requirements. Exceptions to standards shall be processed for approval before being implemented. Permits or clearances shall be initiated for specialized activities e.g., involvement with other Contractor operations, use of explosives, high voltage electrical, power activated tools, etc.
7. Pursuant to Title 29 CFR 1904 recognize the Contract Work place at the Southern California Edison Dagget, California property as the "Establishment" for purposes of: posting Form ERDA 627 "Notice to Employees"; availability of complaint Form ERDA 628; posting Form ERDA-102A with calendar year summary during the month of February each year; maintaining OSHA Form No. 101 and supplemental Form No. 200 for all recordable injury/illness occurrences (including that of subcontractor employees) in the course of work under this Contract; completing and submitting quarterly Forms ERDA 102 A & B with all applicable form attachments; notification to the Construction Manager (Telephone

Construction Safety Program (cont'd)

No. _____) of injury/illness occurrences (other than first aid) and losses to Government Property.

8. Not be limited to the above listing, but will incorporate such other features as applicable to the work and as may be obligated by Contract standards, codes and regulations. (Note: Attachments as may be provided herewith illustrate supplementary Company actions to implement safety.)

Company Experience Information
(Preceding 12-month period)

Injury:

Number Workmen's Compensation Cases- _____

Average Number of Employees- _____

Current Insurance Rate- _____

Fire:

Describe any fire loss

Property Damage Motor Vehicle:

Describe any significant loss experience

v

Construction Safety Program (cont'd)

Insurance Rate - _____

(Signature - Company Official)

(Title)

Note:

1. Provide explanation where above entries cannot be completed or any supplementary information desired.
2. Three (3) copies of this Safety Program shall be submitted no later than ten (10) calendar days after receipt of written notice to proceed.

CONSTRUCTION PROGRESS CHART

CONTRACT NO.:

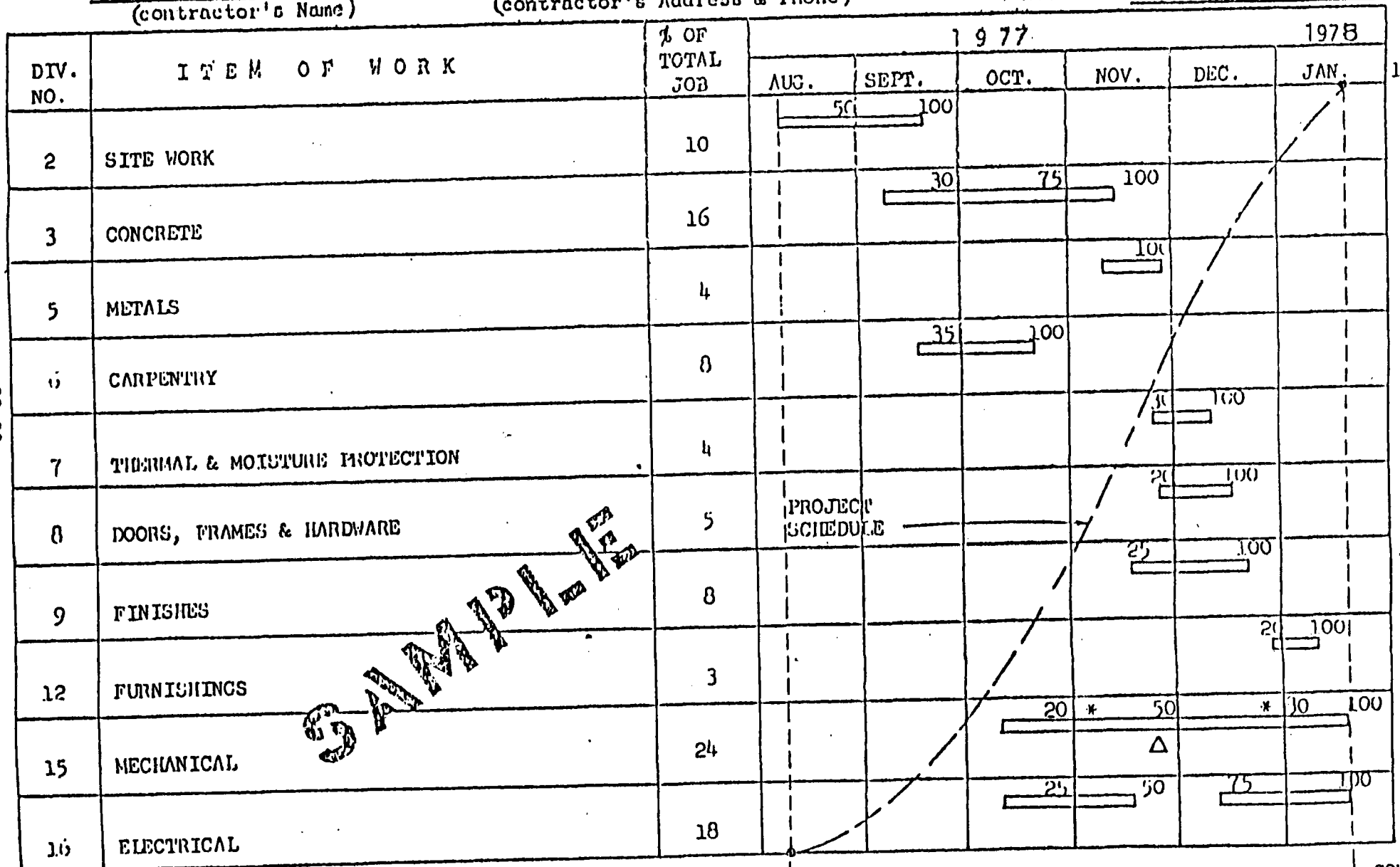
LAWRENCE LIVERMORE LABORATORY (contract Title)

DATE:

(contractor's Name)

(contractor's Address & Phone)

REV. NO.:



SAMPLE

LEGEND:

- * Utility Tie-In
- Δ University Equipment Required at Site

NOTICE TO PROCEED DATE _____

120 CALENDAR DAYS

COMPLETION DATE _____

(To be filled in)

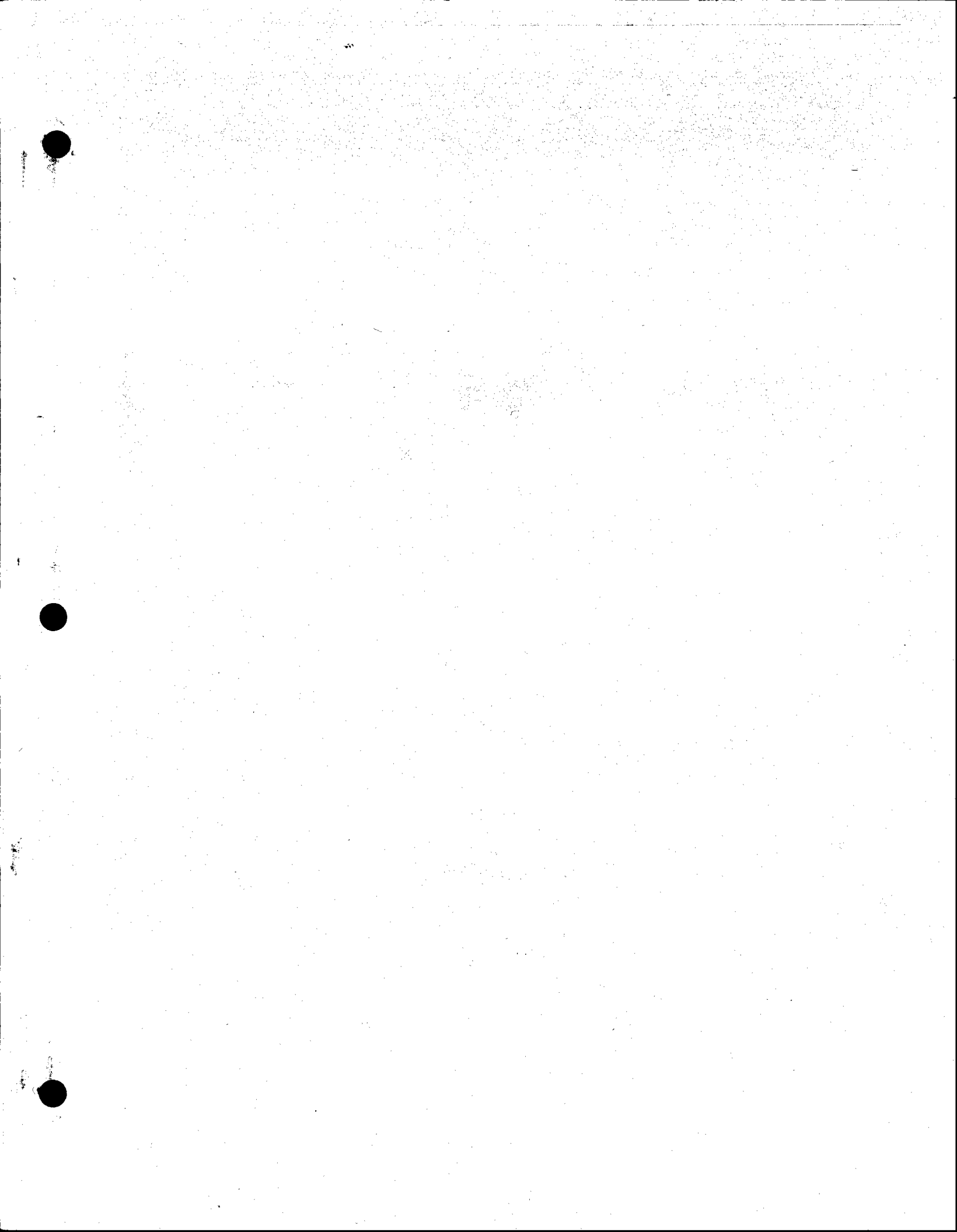
10 90 _____ Indicates % Planned in This Division by End of Each Month

Exhibit III

GC-33

SECTION 4 - IFB
TECHNICAL INFORMATION

The Drawings and Specifications prepared by the Southern California Edison Company for the Department of Energy, entitled Information Center Solar One Generating Station constitute the Technical Information Section of this Invitation for Bid No. DE-FB03-79SF10529.





Department of Energy
San Francisco Operations Office
1333 Broadway
Oakland, California 94612

March 28, 1979

Ladies and Gentlemen:

Enclosed for your information and use is the Department of Energy's Amendment No. 1 to the Invitation for Bid (IFB) No. DE-FB03-79SF10529 for the Visitors Information Center for the Ten Megawatt Solar Thermal Central Receiver Pilot Plant at Daggett, California. Your attention is drawn to the instructions on the Amendment form (Standard Form 30) regarding acknowledgment of receipt of the enclosed Amendment 1.

Sincerely,

A handwritten signature in cursive script that reads "Mark A. Barnes".

Mark A. Barnes
Contract Negotiator
Procurement Division

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. AMENDMENT/MODIFICATION NO.	2. EFFECTIVE DATE 03-28-79	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
-------------------------------	-------------------------------	-------------------------------------	--------------------------------

ISSUED BY Department of Energy San Francisco Operations Office 1333 Broadway Oakland, CA 94612	CODE	6. ADMINISTERED BY (If other than block 5) Department of Energy Solar Ten Megawatt Project Office 9550 Flair Drive, Suite 210 El Monte, CA 91731	CODE
--	------	--	------

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code)	CODE	FACILITY CODE	8. AMENDMENT OF SOLICITATION NO. <input checked="" type="checkbox"/> IFB DE-FB03-79SF10529 DATED _____ (See block 9) MODIFICATION OF CONTRACT/ORDER NO. <input type="checkbox"/> DATED _____ (See block 11)
---	------	---------------	--

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers is extended, is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning one copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) This Supplemental Agreement is entered into pursuant to authority of _____
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

The following amendments are hereby made a part of the subject IFB:

A. The hour and date for receipt of sealed bids as described on Standard Forms 20 and 21 of the IFB is hereby extended from 2:00 P.M. April 11, 1979 to 2:00 P.M. April 18, 1979 at which time the bids will be publicly opened.

B. The enclosed attachment (Attachment A) entitled "List of Business Organizations" is attached for informational purposes to assist you in complying with paragraph GC32D of the General Conditions of the IFB.

C. The enclosed copy (Attachment B) of the Department of Labor Modification to General Wage Determination Decision No. CA78-5123 (dated Friday March 16, 1979) is made a part of this IFB and modifies that same Wage Determination contained herein.

D. Section 13A.7 of the specifications is deleted in its entirety.

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. <input type="checkbox"/> CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT <input type="checkbox"/> CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE			
NAME OF CONTRACTOR/OFFEROR	17. UNITED STATES OF AMERICA		
BY _____ (Signature of person authorized to sign)	BY _____ (Signature of Contracting Officer)		
15. NAME AND TITLE OF SIGNER (Type or print)	16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print)	19. DATE SIGNED

E. The following alterations in or additions to the General Conditions (GC's) of this contract are hereby made:

1. GC01: Delete the words "...owned by the Southern California Edison Company..."
2. GC02C: The zip code in the last line is corrected to read "91731".
3. GC09B: In line two, the incorrect spelling of the word "specification" is corrected.
4. GC14A5: The existing address is deleted in its entirety and replaces with the following address:

Southern California Edison Company
9650 Flair Drive
El Monte, CA 91731
Attn: L. Travis

In addition, the paragraph numbered "2" following GC14A6 is changed to read "B".

5. GC16A appears twice and the first occurrence is hereby deleted.
6. GC24: Delete paragraphs A, B3, D and E in their entirety.
7. GC 25A: Delete the second sentence beginning with "Pay telephones...."
8. GC 26: Delete in its entirety
9. GC 31: Delete in its entirety

BUSINESS ORGANIZATIONS

- (1.) East Los Angeles Business Development Center
A Division of TELACU
1437 S. Atlantic Blvd.
East Los Angeles, Ca. 90022
213/269-2131
Contact: Rufino G. Cruz
Construction Dept. Director
- (2.) Los Angeles Economic Development Corp.
1411 West Olympic Blvd., Suite 200
Los Angeles, Ca. 90015
213/385-0351
Contact: Howard Berman
Contract Officer
- (3.) Operation Second Chance, Inc.
Business Development Office
341 West 2nd. St., Ste. 1
San Bernardino, Ca. 92401
714/884-8764 or 884-9052
Contact: M.G. Heaviside or
Keith Lee
Management & Tech. Specialists
- (4.) United Indian Development Association
1541 Wilshire Blvd., Ste. 307
Los Angeles, Ca. 90017
213/483-1460
Contact: Russell E. McDonald
Mfg - Construction Specialist
- (5.) Minority Business Opportunity Committee
of Los Angeles
11777 San Vicente Blvd., Ste. 800
Los Angeles, Ca. 90049
213/824-7684
Contact: Larry D. Burton
Executive Director
- (6.) NEDCO Inc.
A Nevada Economic Development Co.
618-20 E. Carson
Las Vegas, Nev. 89101
702/384-3293
Contact: Horacio Lopez
- (7.) Business Development Center of
Southern California
2651 So. Western Ave., Ste. 300
Los Angeles, Ca. 90018
213/731-2131
Contact: Cleveland O. Neil
President

or Gary Morikawa
- (8.) Minority Contractors Association
of Los Angeles
945 So. Western Ave., Ste. 201
Los Angeles, Ca. 90006
213/737-7952
Contact: Noel Brown
Construction Manager
- (9.) North Los Angeles Business
Development Center
65 W. Green St.
Pasadena, Ca. 91105
213/681-8469
Contact: Thomas Nelson
Procurement Specialist

or Mort Wickholm
Construction Specialist
- (10.) National Economic Development Assoc.
Van Owen Professional Bldg.
14411 Van Owen Street
Van Nuys, Ca. 91405
213/988-9250
Contact: Sal Ayala
Procurement Officer

[4510-27-M]

DEPARTMENT OF LABOR

Employment Standards Administration, Wage
and Hour DivisionMINIMUM WAGES FOR FEDERAL AND
FEDERALLY ASSISTED CONSTRUCTION

General Wage Determination Decisions

General wage determination decisions of the Secretary of Labor specify, in accordance with applicable law and on the basis of information available to the Department of Labor from its study of local wage conditions and from other sources, the basic hourly wage rates and fringe benefit payments which are determined to be prevailing for the described classes of laborers and mechanics employed in construction activity of the character and in the localities specified therein.

The determinations in these decisions of such prevailing rates and fringe benefits have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's order No. 24-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of Part 1 of Subtitle A of Title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's Orders 12-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in effective date as prescribed in that section, because the necessity to issue construction industry wage determination frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General Wage Determination Decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision together with any modifications issued subsequent to its publication date shall be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR, Part 5. The wage rates contained therein

shall be the minimum paid under such contract by contractors and subcontractors on the work.

MODIFICATIONS AND SUPERSEDEAS DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

Modifications and supersedeas decisions to general wage determination decisions are based upon information obtained concerning changes in prevailing hourly wage rates and fringe benefit payments since the decisions were issued.

The determinations of prevailing rates and fringe benefits made in the modifications and supersedeas decisions have been made by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR 1.1 (including the statutes listed at 36 FR 306 following Secretary of Labor's order No. 224-70) containing provisions for the payment of wages which are dependent upon determination by the Secretary of Labor under the Davis-Bacon Act; and pursuant to the provisions of part 1 of subtitle A of title 29 of Code of Federal Regulations, Procedure for Predetermination of Wage Rates (37 FR 21138) and of Secretary of Labor's orders 13-71 and 15-71 (36 FR 8755, 8756). The prevailing rates and fringe benefits determined in foregoing general wage determination decisions, as hereby modified, and/or superseded shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged in contract work of the character and in the localities described therein.

Modifications and supersedeas decisions are effective from their date of publication in the FEDERAL REGISTER without limitation as to time and are to be used in accordance with the provisions of 29 CFR Parts 1 and 5.

Any person, organization, or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Office of Government Contract Wage Standards, Division of Wage Determinations, Washington, D.C. 20210. The cause for not utilizing the rulemaking procedures prescribed in 5 U.S.C. 553 has been set forth in the original General Wage Determination Decision.

NEW GENERAL WAGE DETERMINATION DECISIONS

South Carolina—SC78-1048.

MODIFICATIONS TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being modified and their dates of publica-

tion in the FEDERAL REGISTER are listed with each State.

Alaska:		
AK79-5105	.....	Feb. 9, 1979.
Arkansas:		
AR79-4025	.....	Feb. 2, 1979.
California:		
CA78-5107	.....	July 7, 1978.
CA78-5123	.....	Aug. 18, 1978.
Florida:		
FL78-1021	.....	Jan. 30, 1978.
FL78-1065	.....	Aug. 11, 1978.
FL78-1070	.....	Aug. 25, 1978.
Illinois:		
IL78-2117	.....	Nov. 13, 1978.
IL78-2122	.....	Oct. 20, 1978.
IL78-2128	.....	Oct. 27, 1978.
Iowa:		
IA78-4109; IA78-4112	.....	Nov. 24, 1978.
Montana:		
MT79-5101	.....	Feb. 9, 1979.
Nevada:		
NV78-5124	.....	Sept. 15, 1978.
North Dakota:		
ND78-5113	.....	July 21, 1978.
Pennsylvania:		
PA78-3014	.....	Mar. 24, 1978.
PA78-3016	.....	Apr. 14, 1978.
PA78-3037	.....	Apr. 21, 1978.
PA78-3043	.....	May 12, 1978.
South Carolina:		
SC78-1040	.....	Apr. 14, 1978.
SC78-1085	.....	Sept. 29, 1978.
Texas:		
TX78-4086	.....	Aug. 25, 1978.
TX78-4090; TX78-4091; TX78-4092	.....	Sept. 15, 1978.
TX78-4114	.....	Oct. 20, 1978.
TX78-4115	.....	Dec. 1, 1978.
TX78-4003; TX78-4004; TX78-4005; TX78-4008; TX78-4009	.....	Jan. 5, 1979.
TX78-4010; TX78-4011	.....	Jan. 5, 1979.
West Virginia:		
WV78-3018	.....	June 9, 1978.
Wisconsin:		
WI78-2108; WI78-2110; WI78-2116	.....	Oct. 20, 1978.

SUPERSEDEAS DECISIONS TO GENERAL WAGE DETERMINATION DECISIONS

The numbers of the decisions being superseded and their dates of publication in the FEDERAL REGISTER are listed with each State. Supersedeas Decision numbers are in parentheses following the numbers of the decisions being superseded.

Alabama:		
AL78-1095 (AL79-1046)	.....	Dec. 1, 1978.
Arizona:		
AZ78-5115 (AZ79-5110)	.....	July 28, 1978.
Guam:		
GU78-5127 (GU79-5111)	.....	Sept. 15, 1978.
Massachusetts:		
MA78-2082 (MA79-2008)	.....	Sept. 22, 1978.
North Carolina:		
NC78-1095 (NC79-1077)	.....	Sept. 3, 1978.
Pennsylvania:		
PA77-3126 (PA79-3005)	.....	Sept. 9, 1977.
PA77-3129 (PA79-3004)	.....	Sept. 16, 1977.
South Carolina:		
SC78-1038 (SC79-1047)	.....	Mar. 21, 1978.
South Dakota:		
SD78-5001 (SD79-5113)	.....	Jan. 20, 1978.
Texas:		
TX78-4038 (TX79-4032); TX78-4039 (TX79-4049)	.....	Apr. 14, 1978.
TX78-4080 (TX79-4033)	.....	Aug. 11, 1978.
TX78-4081 (TX79-4031)	.....	Aug. 18, 1978.
TX78-4085 (TX79-4038)	.....	Aug. 25, 1978.
TX78-4094 (TX79-4053); TX78-4095 (TX79-4039)	.....	Sept. 22, 1978.
TX79-4007 (TX79-4048); TX79-4006 (TX79-4050)	.....	Jan. 5, 1979.
Wyoming:		
WY78-5014 (WY79-5106); WY78-5015 (WY79-5109)	.....	Mar. 10, 1979.

CANCELLATION OF GENERAL WAGE DETERMINATION DECISIONS

None.

Signed at Washington, D.C. this 9th day of March 1979.

DOROTHY P. COME,
Assistant Administrator,
Wage and Hour Division.

NEW DECISION

STATE: South Carolina COUNTY: Spartanburg
 DECISION NUMBER: SC79-1048 DATE: Date of Publication
 DESCRIPTION OF WORK: Building Construction Projects (does not include single family homes and garden type apartments up to and including 4 stories).

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W	Pensions	Vacation	Education and/or Appr. Tr.
BRICKLAYERS	\$6.00				
CARPENTERS	5.20				
CEMENT MASONS	4.62				
ELECTRICIANS	6.69				
GLAZIERS	5.73				
IRONWORKERS, Structural & Ornamental	8.60				
LABORERS:					
Laborers, unskilled	3.00				
Pipelayers	3.50				
PAINTERS, Brush	4.00				
PLUMBERS & Pipefitters	6.00				
ROOFERS	4.25				
SHEET METAL WORKERS	4.75				
SPRINKLER FITTERS	8.25	.75	1.05		.08
TILE SETTERS	5.40				
TRUCK DRIVERS	3.50				
WELDERS - Rate for craft.					
POWER EQUIPMENT OPERATORS:					
Backhoes	4.10				
Concrete pumps	5.08				
Cranes, derricks, draglines	6.35				
Front end loaders	5.00				
Motor graders	4.00				
Rollers	3.20				
Scrapers - Fans	4.25				
Tractors	3.80				

MODIFICATIONS P. 1

DECISION NO. AK79-5105 - Mod. #1
 (44 FR 8476 - February 9, 1979)
 Statewide, Alaska

Change:

Carpenters:

 Area 1:

 Filedrivermen

 Areas 2 and 3:

 Filedrivermen

Sprinkler Fitters

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$16.12	.90	2.25		.10
16.37	.90	2.25		.10
17.52	.75	1.05		.08

DECISION NO. AR79-4025 - Mod. #1
 (44 FR 6864 - February 2, 1979)
 Statewide, Arkansas

CHANGE:

Bulldozer operator, rough

Finishing machine operator

\$4.25				
4.30				

MODIFICATIONS P. 2

DECISION NO. CA78-5107 - Mod. #4

(43 FR 29444 - July 7, 1978)
 Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, Eldorado, Fresno, Glenn, Humboldt, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Sierra, Siskiyou, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, and Yuba Counties, California

Change:

ELECTRICIANS:
 Alameda County
 Electricians
 Cable Splicers

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$15.16	1.30	3%+1.65		.069
17.06	1.30	3%+1.65		.069

DECISION NO. CA78-5123 - Mod. #5

(43 FR 36839 - August 18, 1978)
 Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara and Ventura Counties, California

Change:

PAINTERS:
 Imperial, Orange, Riverside, Los Angeles (Pomona Area), San Bernardino (excluding Western portion)
 Brush; Paint Burners; Spray
 Paperhanger; Spray (swing stage)
 Brush (swing stage); Spray (swing stage)
 Steeplejack
 Iron, Steel and Bridge (ground work and spray ground work)
 Iron, Steel and Bridge (swing stage and spray swing stage)

\$12.37	1.23	1.38	.75	.07
12.67	1.23	1.38	.75	.07
12.62	1.23	1.38	.75	.07
14.02	1.23	1.38	.75	.07
13.12	1.23	1.38	.75	.07
13.27	1.23	1.38	.75	.07

MODIFICATIONS P. 3

DECISION #FL76-1021 - Mod. #4

(41 FR 4748 - January 30, 1976)
 Bay, Escambia, Gulf, Okaloosa, Santa Rosa, and Walton Counties, Florida

Change:

Mod. #2 as published on February 16, 1979 in 44 FR 10215 to read: Mod. #3

DECISION No. FL78-1065 - Mod. #3

(43 FR 35809 - August 11, 1978)
 Brevard and Volusia (excluding Cape Canaveral; Kennedy Space Flight Center, Patrick Air Force Base, and Melabar Radar Site), Lake, Orange, Osceola, Polk, and Seminole Counties, Florida

Change:

Carpenters
 Cement Masons

Basic Hourly Rates	Fringe Benefits Payments			
	H & W	Pensions	Vacation	Education and/or Appr. Tr.
\$6.79				
6.44				

DECISION #FL78-1070 - Mod. #3

(43 FR 38277 - August 25, 1978)
 Pinellas County, Florida

CHANGE:

Sprinkler Fitters

\$10.61	.75	1.05		.10
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March 26, 1979

Plan Holders List

U.S. Department of Energy

10 MWe Solar Thermal Central Receiver Pilot Plant

Visitor's Information Center
IFB DE-FB03-79SF10529

1. Fontana Steel
17190 Valley Blvd.
Fontana, Calif. 92335
2. Equinox - Malibu
5402 Horizon Drive
Malibu, Calif. 90265
3. Harco Corporation
16102 Gothard St.
Huntington Beach, Calif. 92647
4. Electrical Contracting Eng., Inc.
3508 Atlantic Ave.
Long Beach, Calif. 90807
5. ~~Millwright Local # 1113
P.O. Box 1423
1750 San Bernardino Ave.
Colton, Calif. 92324~~ *Returned*
6. L.B. Foster Company
P.O. Box 3721
San Francisco, Calif. 94119
7. Buckner - Wilson Fabricators
3033 East Ave. 1
P.O. Box 1749
Lancaster, Calif. 93534
8. Paige Electric Company
380 West Athol
San Bernardino, Ca. 92408
9. Stang Hydronics Inc.
767 North Main St.
P.O. Box 5767
Orange, Calif. 92667
10. E.L. Yeager Construction Co., Inc.
P.O. Box 87
Riverside, Calif. 92502
11. Ashland Construction Co.
P.O. Box 2867
42330 N. 10th St. West
Lancaster, Calif. 93534
12. ~~Chlorinators & Controls, Inc.
740 Metcalf St. No. 30
Escondido, Calif. 92025~~ *Returned*
13. Carson Controls Company
555 Riverdale Drive
Glendale, Calif. 91204
14. Donald - Lussier Coating Corp.
2185 Walnut Ave.
Long Beach, Calif. 90806
15. ~~G.W. Andersen Const. Co.
910 South Brookhurst, Ste. 205
Anaheim, Ca. 92804~~ *Returned*
16. Jess B. Worthington, Inc
3235 F. Street
San Diego, Calif. 92102
17. Henderson & Barnes, Inc.
111 Cal. Ave.
Barstow, Calif. 92311
18. Benel Plumbing Co., Inc.
25003 E. 5th Street
San Bernardino, Calif. 92410

March 26, 1979

U.S. Department of Energy
10 MWe Solar Thermal Central Receiver Pilot Plant

Visitor's Information Center
IFB DE-FB03-79SF10529

Plans and Specifications Furnished To Following Plan Rooms:

1. Barstow Chamber of Commerce
270 E. Virginia Way
Barstow, Calif. 92311
2. Operation Second Chance
341 W. 2nd. St.
San Bernardino, Calif. 92401
3. Nevada Economic Dev. Council
618 E. Carson
Las Vegas, Nev. 89101
4. Minority Contractors Association
945 S. Western Ave.
Los Angeles, Calif. 90044
5. East Los Angeles Bus. Dev. Center
1437 S. Atlantic Blvd.
East Los Angeles, Calif. 90022
6. National Economic Dev. Assoc.
14411 Van Owen St.
Van Nuys, Calif. 91405
7. United Indian Dev. Assoc.
1541 Wilshire Blvd.
Los Angeles, Calif. 90017
8. F.W. Dodge Company
3200 Wilshire Blvd, So. Tower
Los Angeles, Calif. 90010
9. F.W. Dodge Company
532 N. Mountain View Ave.
San Bernardino, Calif. 92402
10. F.W. Dodge Company
1540 E. Edinger St.
Santa Ana, Calif. 92705
11. F.W. Dodge Company
3355 W. Spring Mt. Rd., Ste.33
Las Vegas, Nev. 89114
12. F.W. Dodge Company
7990 Dagget St. Ste. 106
San Diego, Calif. 92111
13. F.W. Dodge Company
2450 17th St.
San Francisco, Calif. 94119
14. F.W. Dodge Company
333 W. Indian School Rd.
Phoenix, Az. 85067
15. Business Development Center
of Southern Calif.
2651 S. Western Ave. #300
Los Angeles, Calif. 90018
16. North Los Angeles Bus. Dev. Center
65 W. Green St.
Pasadena, Calif. 91105
17. L.A. Econ. Dev. Corp.
1411 West Olympic Blvd. Ste. 200
Los Angeles, Ca. 90015
18. Asian Amer. Nat. Bus Alliance
c/o Equivest Associates
9550 Flair Drive, Ste. 409
El Monte, Calif. 91731

Page 2
Plan Holders List

19. ~~Foundation Constructors, Inc.
P.O. Box 5754
Compton, Ca. 90222~~ *Returned*
20. Cyprus Specialty Steel Co.
1500 South 7th Street
P.O. Box 1552
Phoenix, Az. 85001
21. CGI
15944 S. Downey Ave.
Paramount, Ca. 90723
22. ~~Jenkin Construction Co.
2694 Lime Ave.
P.O. Box 1427
Long Beach, Ca. 90801~~ *Returned*
23. R.G. Crawford
P.O. Box 8134
San Marino, Ca. 91108
24. The Shirley Company
31320 Via Colinas, Ste. 101
Westlake Village, Ca. 91361
25. Joseph D. Gee Enterprises
900 East Main Street
Barstow, Ca. 92311
26. Masco Survey Company
1417 Georgia Street
Los Angeles, Ca. 90015
27. B.W. Kuhn
5640 Via San Jacinto
Riverside, Ca. 92506
28. Pascal & Ludwig, Inc.
1500 West Ninth Street
P.O. Box 1210
Upland, Ca. 91786
29. Riverton Ind. Steel Construction
10130 Adella Ave.
South Gate, Ca. 90280
30. Maecon, Inc.
13546 East Imperial Hwy.
Santa Fe Springs, Ca. 90670
31. Pennant Construction Co.
8505 Passons Blvd.
Pico Rivera, Ca. 90660
32. AEC Los Angeles
4253 Eagle Rock Blvd.
Los Angeles, Ca. 90065
33. Mallcraft, Inc.
P.O. Box 68
La Canada, Ca. 91011
34. Desert Construction Co.
P.O. Box 779
Victorville, Ca. 92392
35. Fred A. Thorngate III
P.O. Box 476
1581 Twin Lakes
Wrightwood, Ca. 92397
36. Paragon Enterprises
304 Broadway
Barstow, Ca. 92311
37. KDH Corporation
5947 Jasmine
Riverside, Ca. 92504
38. Super Mex Electric, Inc.
545 Rodier Drive
P.O. Box 3665
Glendale, Ca. 91201

BUSINESS ORGANIZATIONS

- (1.) East Los Angeles Business Development Center
A Division of TELACU
1437 S. Atlantic Blvd.
East Los Angeles, Ca. 90022
213/269-2131
Contact: Rufino G. Cruz
Construction Dept. Director
- (2.) Los Angeles Economic Development Corp.
1411 West Olympic Blvd., Suite 200
Los Angeles, Ca. 90015
213/385-0351
Contact: Howard Berman
Contract Officer
- (3.) Operation Second Chance, Inc.
Business Development Office
341 West 2nd. St., Ste. 1
San Bernardino, Ca. 92401
714/884-8764 or 884-9052
Contact: M.G. Heaviside or
Keith Lee
Management & Tech. Specialists
- (4.) United Indian Development Association
1541 Wilshire Blvd., Ste. 307
Los Angeles, Ca. 90017
213/483-1460
Contact: Russell E. McDonald
Mfg - Construction Specialist
- (5.) Minority Business Opportunity Committee
of Los Angeles
11777 San Vicente Blvd., Ste. 800
Los Angeles, Ca. 90049
213/824-7684
Contact: Larry D. Burton
Executive Director
- (6.) NEDCO Inc.
A Nevada Economic Development Co.
618-20 E. Carson
Las Vegas, Nev. 89101
702/384-3293
Contact: Horacio Lopez
- (7.) Business Development Center of
Southern California
2651 So. Western Ave., Ste. 300
Los Angeles, Ca. 90018
213/731-2131
Contact: Cleveland O. Neil
President

or Gary Morikawa
- (8.) Minority Contractors Association
of Los Angeles
945 So. Western Ave., Ste. 201
Los Angeles, Ca. 90006
213/737-7952
Contact: Noel Brown
Construction Manager
- (9.) North Los Angeles Business
Development Center
65 W. Green St.
Pasadena, Ca. 91105
213/681-8469
Contact: Thomas Nelson
Procurement Specialist

or Mort Wickholm
Construction Specialist
- (10.) National Economic Development Assoc
Van Owen Professional Bldg.
14411 Van Owen Street
Van Nuys, Ca. 91405
213/988-9250
Contact: Sal Ayala
Procurement Officer



2 11

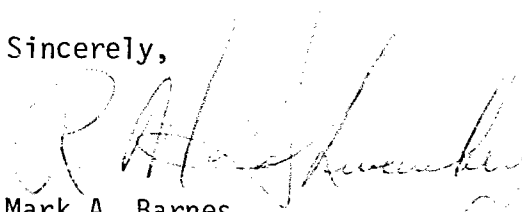
Department of Energy
San Francisco Operations Office
Solar Ten Megawatt Project Office
9550 Flair Drive, Suite 210
El Monte, California 91731

April 9, 1979

Ladies and Gentlemen:

Enclosed for your information and use is the Department of Energy's Amendment No. 2 to the Invitation for Bid (IFB) No. DE-FB03-79SF10529 for the Visitor's Information Center for the Ten Megawatt Solar Thermal Central Receiver Pilot Plant at Daggett, California. Your attention is drawn to the instructions on the Amendment form (Standard Form 30) regarding acknowledgment of receipt of the enclosed Amendment 2.

Sincerely,

for 
Mark A. Barnes
Contract Negotiator
Procurement Division

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. AMENDMENT/MODIFICATION NO. 2	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
5. ISSUED BY Department of Energy San Francisco Operations Office 1333 Broadway Oakland, CA 94612		6. ADMINISTERED BY (If other than block 5) Department of Energy Solar Ten Megawatt Project Office 9550 Flair Drive, Suite 210 El Monte, CA 91731	

7. CONTRACTOR NAME AND ADDRESS (Street, city, county, state, and ZIP Code)	CODE	FACILITY CODE	8. AMENDMENT OF SOLICITATION NO. IFB DE-FB03-79SF10529 <input checked="" type="checkbox"/> AMENDMENT OF SOLICITATION NO. _____ DATED _____ (See block 9) <input type="checkbox"/> MODIFICATION OF CONTRACT/ORDER NO. _____ DATED _____ (See block 11)
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9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers is extended, is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

(a) By signing and returning one copies of this amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10. ACCOUNTING AND APPROPRIATION DATA (If required)

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) This Change Order is issued pursuant to _____
The Changes set forth in block 12 are made to the above numbered contract/order.

(b) The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.) set forth in block 12.

(c) This Supplemental Agreement is entered into pursuant to authority of _____
It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/MODIFICATION

The following amendments are hereby made a part of the subject IFB:

A. The enclosed attachment (Attachment A) entitled "Supplement A to Standard Form 19-A, November 1972 edition" is made a part of this IFB and supplements the Labor Standards Provisions contained herein.

B. The enclosed attachment (Attachment B) entitled "Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)" is made a part of this IFB.

C. The enclosed attachment (Attachment C) entitled, "Construction Contract, Standard Form 23" will be used to award a contract to the successful bidder resulting from this IFB. It is being provided at this time for information purposes only.

D. There is added to Standard Form 21 at the end of the third paragraph on page 2 (reverse side) after the words ". . . of notice to proceed" the following:
"provided, however, that the period of performance of the landscape and irrigation

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. <input type="checkbox"/> CONTRACTOR/OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT <input type="checkbox"/> CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN <u>one</u> COPIES TO ISSUING OFFICE			
14. NAME OF CONTRACTOR/OFFEROR BY _____ (Signature of person authorized to sign)	17. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		
15. NAME AND TITLE OF SIGNER (Type or print)	16. DATE SIGNED	18. NAME OF CONTRACTING OFFICER (Type or print)	19. DATE SIGNED

maintenance program set forth in Part 2 F of the Technical Information Section of this IFB DE-FB03-79SF10529 shall begin at the time of acceptance by the DOE of that portion of the Irrigation and Landscape work set forth in Part 2D and E of said Technical Information."

STANDARD FEDERAL EQUAL
EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U. S. Treasury Department Form 941.
 - d. "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

- d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the

Contractor's EEO policy with other Contractors and Sub-contractors with whom the Contractor does or anticipates doing business.

- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

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

L2-86

SUPPLEMENT A TO STANDARD FORM 19-A, NOVEMBER 1972 EDITION

Clause 3 "Apprentices and Trainees" and Clause 4 "Payrolls and Basic Records" are deleted in their entirety and the following clauses are substituted therefor:

"(3) APPRENTICES AND TRAINEES

- (a) Apprentices shall be permitted to work at less than the predetermined rate for the work they performed (1) when they are employed and individually registered in a bona fide apprenticeship program registered with the U. S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or (2) if a person is employed in his first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the Contractor as to his entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not a trainee as defined in paragraph (b) of this clause and who is not registered, or otherwise employed as stated above, shall be paid the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor shall furnish to the Contracting Officer or a representative of the Wage-Hour Division of the U. S. Department of Labor written evidence of the registration of his program and apprentices as well as the appropriate ratios allowed and wage rates (expressed in percentages of the journeyman hourly wages) for the area of construction, prior to using any apprentices on the contract work. The wage rate paid apprentices shall not be less than the appropriate percentage of the journeyman's rate contained in the applicable wage determination.
- (b) Except as provided in 29 CFR 5.15 trainees shall not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal

certification, by the U. S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training. The term "trainee" means a person registered and receiving on-the-job training in a construction occupation under a program which has been approved in advance by the U. S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training, as meeting its standards for on-the-job training programs and which has been so certified by the Bureau. The ratio of trainees to journeymen shall not be greater than the ratio permitted under the plan approved by the Bureau of Apprenticeship and Training. Every trainee must be paid at not less than the rate specified in the approved program for his level of progress. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Bureau of Apprenticeship and Training shall be paid not less than the wage rate determined by the Secretary of Labor for the classification of work he actually performed. The Contractor shall furnish the Contracting Officer or a representative of the Wage-Hour Division of the U. S. Department of Labor written evidence of the certification of his program, the registration of the trainees, and the ratios and wage rates prescribed in that program. In the event the Bureau of Apprenticeship and Training withdraws approval of a training program, the Contractor shall no longer utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (c) The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- (d) If at any time the Bureau of Apprenticeship and Training determines, after opportunity for a hearing, that the standards of a training program have not been complied with, or that such a program fails to provide adequate training for participants, the Contractor shall not utilize trainees at less than the predetermined rate for the classification of work actually performed until an acceptable program is approved. If the Contractor brings an appeal pursuant to 29 CFR 5.17 within 30 days of his receipt of a certified letter withdrawing the Bureau

of Apprenticeship and Training's approval, the effect of the withdrawal of approval of the program will be delayed until a decision is rendered on the appeal pursuant to 29 CFR 5.17.

(4) PAYROLLS AND BASIC RECORDS

- (a) The Contractor shall maintain payrolls and basic records relating thereto during the course of the work and shall preserve them for a period of three years thereafter for all laborers and mechanics, including apprentices, trainees, watchmen, and guards working at the site of the work. Such records shall contain the name and address of each such employee, his correct classification, rate of pay (including rates of contributing for or costs assumed to provide, fringe benefits), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Contractor has obtained approval from the Secretary of Labor as provided in paragraph (c) of the clause entitled "Davis-Bacon Act," he shall maintain records which show the commitment, its approval, written communication of the plan or program to the laborers or mechanics affected, and the costs anticipated or incurred under the plan or program.
- (b) The Contractor shall submit weekly a copy of all payrolls to the Contracting Officer. The Government Prime Contractor shall be responsible for the submission of copies of payrolls for all subcontractors. The copy shall be accompanied by a statement signed by the Contractor indicating that the payrolls are correct and complete, that the wage rates contained therein are not less than those determined by the Secretary of Labor, and that the classifications set forth for each laborer or mechanic, including apprentices and trainees, conform with the work he performed. Submission of the "Weekly Statement of Compliance" required under the contract and the Copeland Regulations of the Secretary of Labor (29 CFR Part 3) shall satisfy the requirement for submission of the above statement. The Contractor shall submit also a copy of any approval by the Secretary of Labor with respect to fringe benefits which is required by paragraph (c) of the clause entitled "Davis-Bacon Act." Contractors employing apprentices or trainees under approved programs shall

include a notation of the first weekly certified payrolls submitted to the contracting agencies that their employment is pursuant to an approved program and shall identify the program.

- (c) The Contractor shall make the records required under this clause available for inspection by authorized representatives of the Contracting Officer and the Department of Labor, and shall permit such representatives to interview employees during working hours on the job."

STANDARD FORM 23
JANUARY 1961 EDITION
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.401

CONSTRUCTION CONTRACT

(See instructions on reverse)

CONTRACT NO _____
DATE OF CONTRACT _____

NAME AND ADDRESS OF CONTRACTOR _____

CHECK APPROPRIATE BOX

- Individual
- Partnership
- Joint Venture
- Corporation, incorporated in the State of _____

DEPARTMENT OR AGENCY _____

CONTRACT FOR (*Work to be performed*) _____

PLACE _____

CONTRACT PRICE (*Express in words and figures*) _____

ADMINISTRATIVE DATA (*Optional*) _____

The United States of America (hereinafter called the Government), represented by the Contracting Officer executing this contract, and the individual, partnership, joint venture, or corporation named above (hereinafter called the Contractor), mutually agree to perform this contract in strict accordance with the General Provisions (Standard Form 23-A), Labor Standards Provisions Applicable to Contracts in Excess of \$2,000 (Standard Form 19-A), and the following designated specifications, schedules, drawings, and conditions:

WORK SHALL BE STARTED _____

WORK SHALL BE COMPLETED _____

Alterations. The following alterations were made in this contract before it was signed by the parties hereto:

In witness whereof, the parties hereto have executed this contract as of the date entered on the first page hereof.

THE UNITED STATES OF AMERICA

CONTRACTOR

By _____

(Name of Contractor)

(Official title)

By _____

(Signature)

(Title)

INSTRUCTIONS

1. The full name and business address of the Contractor must be inserted in the space provided on the face of the form. The Contractor shall sign in the space provided above with his usual signature and typewrite or print his name under the signature.

2. An officer of a corporation, a member of a partnership, or an agent signing for the Contractor shall place his signature and title after the word "By" under the name of the Contractor. A contract executed by an attorney or agent on behalf of the Contractor shall be accompanied by two authenticated copies of his power of attorney or other evidence of his authority to act on behalf of the Contractor.



SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

SPECIFICATION 40-0146

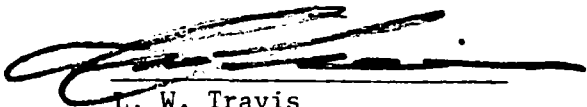
SPECIFICATION FOR
INFORMATION CENTER
SOLAR ONE GENERATING STATION

March 6, 1979

ADDENDUM NO. 1

April 16, 1979

Approved for Issue:


L. W. Travis
Architect

Date 4.16.79

CHANGE SUMMARY

<u>Change</u>	<u>Date</u>	<u>Description</u>
	March 6, 1979	Original Issue
Addendum No. 1	April 6, 1979	Page 1-8, Table 1-2, Revisions added to Drawing Numbers.
		Page 13A-6, Para. 13A.6 - Deleted
		Page 13A-7, Para. 13A.7 - Deleted
		Page 15B-9, Para. 15B.15.3 - First sentence revised.
		Page 15B-9, Para. 15B.15.4 - Terminal Boxes Added.
		Page 15B-12, Para 15B.20 changed to 15B.21. Para. 15B.20.1 changed to 15B.21.1.
		Page 15B-12, Para. 15B.20, Controls added.
		Page 15B-13, Para. No's changed to reflect insert of new Para. 15B.20.

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

SPECIFICATION 40-0146

SPECIFICATION FOR
INFORMATION CENTER
SOLAR ONE GENERATING STATION

ADDENDUM NO. 1

The following changes and additions are hereby incorporated into Specification 40-0146:

1. Page 1-7, Table 1-1, Documentation Submittal Schedule

The following item No. 48 is added:

48. HVAC Control Scheme 15B.20.3 1 R - - - Prior to
ordering

2. Page 1-8, Table 1-2, List of Engineering Drawings

The following drawing numbers have a -1 added to indicate revisions to the drawings:

5133419-1	Reflected Ceiling Plan
5133345-1	Schedules, Legends, Partial Roof Plan and Sections
5133346-1	HVAC Floor Plan
5133396-1	Lighting Fixture Schedule and Electrical Symbol List
5133397-1	Electrical Plot Plan
5133399-1	Receptacle, Power and Communication Plan

3. Page 13A-6, Paragraph 13A.6 Insulation

This Paragraph 13A.6 is deleted in its entirety.

4. Page 13A-7, Paragraph 13A.7, Interior Liner Panels

This Paragraph 13A.7 is deleted in its entirety.

CHANGE SUMMARY

5. Page 15B-9, Paragraph 15B.15.3 AUTOMATIC DAMPERS

The first sentence is changed to read as follows:

15B.15.3 AUTOMATIC DAMPERS - Motorized automatic dampers, as shown on the drawing, shall be opposed ---

6. Page 15B-9, Added Paragraph 15B.15.4

The following paragraph is added:

15B.15.4 TERMINAL BOXES - Motorized terminal boxes shall be provided as shown on the drawings. Exposed terminal boxes shall have the same general exterior appearance as the adjoining duct work. If metal, the box shall be covered with duct board. The motorized units shall be connected to their respective control thermostat. Flow capacity range for the terminal boxes shall be as shown on the drawings and shall be adjustable.

7. Page 15B-12, Paragraph 15B.20, BALANCING OF AIR DISTRIBUTION SYSTEM

This paragraph number is changed to Paragraph 15B.21.

Paragraph 15B.20.1 is changed to Paragraph 15B.21.1.

8. Page 15B-12, Added Paragraph 15B.20 CONTROLS

The following paragraphs are added:

15B.20 CONTROLS

15B.20.1 EXHIBIT AREA - A thermostat shall be installed in the Exhibit Area, as shown on the drawings, that will be capable of controlling the HVAC unit and the two terminal boxes in accordance with the selector switch setting. The thermostat shall be adjustable.

15B.20.2 SEMINAR AREA - A thermostat shall be installed in the Seminar Area, as shown on the drawing, that will be capable of controlling the HVAC unit and the motorized damper in accordance with the Selector Switch setting. The thermostat shall be adjustable.

15B.20.3 SELECTOR SWITCH - A three-way selector switch shall be installed in the Office Area, as shown on the drawing, that will allow manual selection of the thermostat that will provide dominant control of the HVAC unit. An escutcheon plate shall be installed with three selector indications

CHANGE SUMMARY

labeled EXHIBIT AREA, SEMINAR AREA, and DUAL MODE. The escutcheon plate shall be labeled HVAC CONTROL MODE SELECTOR SWITCH.

The Contractor shall submit the control scheme to the Construction Manager for approval prior to procurement.

15B.20.4 OPERATION

A. Exhibit Area - When the Selector Switch is set to EXHIBIT AREA, the thermostat in the Exhibit Area shall provide dominant control over the HVAC unit. The thermostat in the Seminar Area shall only modulate the motorized damper to vary air flow to the Seminar Area. The motorized damper will divert unneeded air back to the HVAC return system.

B. Seminar Area - When the Selector Switch is set to SEMINAR AREA, the thermostat in the Seminar Area shall provide dominant control over the HVAC unit. The thermostat in the Exhibit Area shall only modulate the terminal boxes to vary the quantity of air flow into the Exhibit Area. The motorized terminal boxes shall divert the unneeded in back to the HVAC return system.

C. Dual Mode - When the Selector Switch is set to DUAL MODE, control of the HVAC unit shall be governed by the thermostat with the lowest setting for cooling or the highest setting for heating. The thermostat not providing dominant control shall modulate the motorized terminal boxes or the motorized damper accordingly, as described in previous paragraphs A and B.

15B.20.5 THERMOSTATS AND LOGIC - The HVAC control thermostats and logic shall compliment the features of the HVAC unit so as to operate in all its various modes, including the economizer, exhaust fans, 50 percent and 100 percent refrigeration capacity.

9. Page 15B-13, Paragraph Number Changes

The numbers of the following paragraph titles are changed as follows:

15B.21.2 TEST DATA -

15B.21.2.1 ROOF TOP AIR HANDLING UNIT

15B.21.2.2 AIR VOLUME AT SUPPLY OUTLETS

CHANGE SUMMARY

15B.21.2.3 TOTAL EXTERNAL STATIC PRESSURE

15B.21.2.4 FAN SPEED, MOTOR INPUT AMMETAR READINGS

15B.21.2.5 ENTERING AND LEAVING TEMPERATURE

15B.22 MOTOR TESTS

15B.22.1 GENERAL

15B.22.2 MOTOR LOAD TESTS

END ADDENDUM NO. 1

SOUTHERN CALIFORNIA EDISON COMPANY
Rosemead, California

PREPARED FOR THE DEPARTMENT OF ENERGY

SPECIFICATION 40-0146

SPECIFICATION FOR
INFORMATION CENTER
SOLAR ONE GENERATING STATION

March 6, 1979

Approved for Issue:



L. W. Travis
Architect

3/6/79
Date

SPECIFICATION 40-0146

INFORMATION CENTER
SOLAR ONE GENERATING STATION

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Information Center
Solar One

DIVISION 1

WORK REQUIREMENTS

DIVISION 1
Overall Work Requirements

1.1 SCOPE OF WORK

This specification is intended to cover all work required to construct an Information Center at the proposed Solar One, Solar Generating Station. The Contractor shall furnish all labor, material, and equipment required to perform all work shown on the drawings and described in this specification. The work includes site preparation, installation of paving, and construction of the building complete with all electrical work, plumbing, air conditioning, painting, etc.

1.2 ENVIRONMENTAL CONDITIONS

Elevation: Approximately 1,960 feet above sea level
Temperature: Min. 15°F, Max. 120°F
Wind: Avg. Max. 50 MPH
Atmospheric Conditions: Normal desert conditions of blowing dust and sand.

1.3 PROTECTION OF MATERIAL

- 1.3.1 The Contractor shall be responsible for the care, custody and protection of its equipment and all material on the jobsite until acceptance of the completed work to be performed under this Contract.
- 1.3.2 Contractor shall provide all temporary storage rooms and shops that it may require at the jobsite for the safe and proper storage of its materials, tools, etc. These rooms shall be constructed only in locations approved by the Construction Manager and shall in no way interfere with the work of any other contractors.
- 1.3.3 At such times as these rooms interfere with the proper installation and completion of the work, they shall be removed by the Contractor, at its own expense, within three days after having been notified by the Construction Manager that such removal is necessary.
- 1.3.4 Contractor shall replace, at no expense to the Government, any damaged or stolen material or material deemed unsatisfactory for use in the work as determined by the Construction Manager.

1.4 CLEANUP

- 1.4.1 During progress of the work, Contractor shall keep the jobsite in a neat, clean, and safe condition.

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Information Center
Solar One

OVERALL WORK REQUIREMENTS

- 1.4.2 On completion of the work, Contractor shall at its own expense remove all debris and unused materials from the jobsite and be responsible for disposal of same. The jobsite shall be left in a neat, clean, and safe condition to the satisfaction of the Construction Manager.

1.5 UTILITIES

- 1.5.1 WATER AND SANITATION - Contractor shall furnish all water and sanitation units required for the work and which shall be available to Government employees on the jobsite.
- 1.5.2 TEMPORARY LIGHTING - Contractor shall provide temporary electric power and lighting required for the work.

1.6 AS-BUILT (RECORD) DRAWINGS

Contractor shall provide and keep up to date a complete as-built (record) set of blue line prints, which shall be corrected daily and indicate every change from the original design drawings and this specification, and exact as-built locations, sizes and kinds of equipment. These deviations from original particulars of construction do not change the intent of the design or necessitate engineering redesign, but they require approval by the Construction Manager. Such changes shall be recorded on the "as-built" set of design drawings as they are instituted. Light green pencil shall be used to indicate deletions; red to show additions and changes. This set of drawings shall be kept at the Jobsite and shall be used only as a record set. The complete set of "as-built" drawings, fully marked-up, shall be submitted to the Construction Manager within one week after completion and acceptance of the work.

1.7 DOCUMENTATION SUBMITTALS

A compilation of all documentation to be submitted to the Construction Manager is listed in Table 3-1, Documentation Submittal Schedule.

1.8 TESTS

The Government shall perform the following tests:

1. Soil Compaction Tests
2. Concrete Slump Tests and providing cylinders for same.
3. Concrete Test Cylinders

OVERALL WORK REQUIREMENTS

All other tests shall be performed by the Contractor at no expense to the Government.

1.9 WORKMANSHIP

The Contractor shall employ only competent and skilled employees. All workmanship shall be first class in all respects and shall be performed to the satisfaction of the Construction Manager.

1.10 CODES AND STANDARDS

All work, material, and testing shall be performed in compliance with the codes and standards, as amended to the date of this specification, specified throughout this specification.

1.11 FIRE PROTECTION

Fire protection for material, facilities, and equipment shall be furnished and maintained by Contractor. No fire protection equipment or personnel shall be provided by Government.

NOTE

Wherever the words Construction Manager are used, it is intended that it will be the Contracting Officer's duly authorized representative which is Townsend and Bottum, Inc.

ITEM	TYPE OF DOCUMENTATION REQUIRED	REFERENCE SECTION	NUMBER AND TYPE OF SUBMITTALS AFTER AWARD OF CONTRACT					REMARKS
			FOR APPROVAL		AFTER APPROVAL		APPROVAL DOCUMENTS REQUIRED NO. OF DAYS AFTER AWARD	
			QTY.	PREP. FORM	QTY.	PREP. FORM		
1.	Work Schedule	1.4	1	R	1	R	10	
2.	As-Built Drawings	1.8	--	--	1	N	--	On Completion of all work
3.	Grade Report	2A.5	1	R	--	--	--	On Completion of grading
4.	50 lb. Fill Sample	2A.6.3	--	--	--	--	--	Prior to placement of fill material
5.	Asphaltic Concrete	2C.3.1	--	--	--	--	--	On completion of work
6.	Certification of mix	2C.3.2	--	--	--	--	--	On completion of work
7.	Sieve Analysis	2C.3.3	--	--	--	--	--	On completion of work
8.	Irrigation System Operating and Maintenance Manual	2E.3.2	3	N	--	--	--	On completion of work
9.	Irrigation System Controller Chart	2E.3.3	--	--	--	--	--	Installed in each controller
10.	Irrigation System As-Built	2E.16	1	R	--	--	--	On completion of work
11.	Source of plants	2F.4	1	R	--	--	--	Prior to planting
12.	Certificate of inspection of plant materials	2F.5	1	R	--	--	--	Prior to planting
13.	Landscape Maintenance Report	2G.4	1	R	--	--	--	Biweekly during maintenance

LEGEND: N - Nonreproducible, R - Reproducible, A - 35 mm Aperture Card

TABLE 1-1 DOCUMENTATION SUBMITTAL SCHEDULE

ITEM	TYPE OF DOCUMENTATION REQUIRED	REFERENCE SECTION	NUMBER AND TYPE OF SUBMITTALS AFTER AWARD OF CONTRACT				APPROVAL DOCUMENTS REQUIRED NO. OF DAYS AFTER AWARD	REMARKS
			FOR APPROVAL		AFTER APPROVAL			
			QTY.	PREF. FORM	QTY.	PREF. FORM		
14.	Written Notice of Completion of Maintenance	2G.6	1	R	--	--	--	At end of maintenance period
15.	Potential Alkali Reactivity Tests	3C.4.1	4	--	--	--	--	Prior to mixing cement
16.	Petrographic Analysis	3C.4.2	1	R	--	--	--	Prior to mixing cement
17.	Millwork Shop Drawings	6A.3.1	4	1	--	--	--	Prior to fabrication
18.	Millwork Samples	6A.3.2	--	--	--	--	--	Prior to ordering
19.	Installation Samples	7A.2	--	--	--	--	--	Two samples of each type
20.	Shop Drawings of Metal Doors & Frames	8A.2	4	R	--	--	--	Prior to manufacture
21.	Shop Drawings of Wood Doors	8B.2	4	R	--	--	--	Prior to manufacture
22.	Samples and Certification of Glass	8C.4	--	--	--	--	--	Prior to installing
23.	Anodized Finish Certification	8D.4	1	R	--	--	--	Prior to installation
24.	Ceramic Tile Samples	9B.3	--	--	--	--	--	Prior to ordering
25.	Samples of Acoustical Ceiling	9C.3.1	--	--	--	--	--	2 samples each type
26.	Manufacturer Installation Recommendation	9C.3.2	1	--	--	--	--	Prior to installing

LEGEND: N - Nonreproducible, R - Reproducible, A - 35 mm Aperture Card

TABLE 1-1 DOCUMENTATION SUBMITTAL SCHEDULE

ITEM	TYPE OF DOCUMENTATION REQUIRED	REFERENCE SECTION	NUMBER AND TYPE OF SUBMITTALS AFTER AWARD OF CONTRACT				APPROVAL DOCUMENTS REQUIRED NO. OF DAYS AFTER AWARD	REMARKS
			FOR APPROVAL		AFTER APPROVAL			
			QTY.	PREF. FORM	QTY.	PREF. FORM		
27.	Acoustical Ceiling Panels	9C.4	--	--	--	--	--	One Box, 24 panels for replacement
28.	Samples Resilient Flooring	9D.2.1	--	--	--	--	--	Prior to ordering
29.	Maintenance Flooring	9D.2.2	--	--	--	--	--	5% for replacement
30.	Paint Material List	9E.4.1	1	R	--	--	--	Prior to ordering
31.	Color Samples	9E.4.2	2 ea.	--	--	--	--	Prior to ordering
32.	Carpet Samples	9F.2.1	+	--	--	--	--	One sample prior to ordering
33.	Manufacturer's Approval of Carpet Installer	9F.2.2	1	R	--	--	--	Prior to installing
34.	Toilet Comp. Shop Drawings	10B.2.1	4	R	--	--	--	Prior to ordering
35.	Man. Certificate of Compliance	10B.2.2	1	R	--	--	--	Prior to installation
36.	Toilet Accessories Material List	10C.3	1	R	1	R	30	
37.	Signs Submittals	10E.2	1	R	--	--	30	
38.	Pre-Engineered Steel Bldg. Submittals	13A.2	1	R	1	N	--	Prior to ordering
39.	HVAC Electrical Diagram	15B.10	1	R	--	--	--	Prior to installation

LEGEND: N - Nonreproducible, R - Reproducible, A - 35 mm Aperture Card

TABLE 1-1 DOCUMENTATION SUBMITTAL SCHEDULE

ITEM	TYPE OF DOCUMENTATION REQUIRED	REFERENCE SECTION	NUMBER AND TYPE OF SUBMITTALS AFTER AWARD OF CONTRACT					REMARKS
			FOR APPROVAL		AFTER APPROVAL		APPROVAL DOCUMENTS REQUIRED	
			QTY.	PREF. FORM	QTY.	PREF. FORM	NO. OF DAYS AFTER AWARD	
40.	Notice of HVAC Tests	15B.11.1	1	R	--	--	--	3 days prior to tests
41.	HVAC Maint. and Operating Manuals	15B.12	4	N	--	--	--	On completion of HVAC work
42.	Fiberglass Duct Detail Drawings	15B.14.4	1	R	--	--	--	On Completion of HVAC work
43.	HVAC Equipment Certification	15B.19.1	--	--	1	N	--	On Completion of HVAC work
44.	HVAC Maint. and Performance Information	15B.19.3	1	R	1	N	--	Prior to Ordering
45.	Statement of Experience of Air Balancing Specialist	15C.20.1	1	R	--	--	--	Prior to air balancing
46.	Air Balancing Test Data	15C.20.2	1	R	--	--	--	On completion of air balancing
47.	Power Panel Drawings	16A.1	1	R	--	--	30	
END DIVISION 1								

LEGEND: N - Nonreproducible, R - Reproducible, A - 35 mm Aperture Card

TABLE 1-1 DOCUMENTATION SUBMITTAL SCHEDULE

OVERALL WORK REQUIREMENTS

<u>Drawing No.</u>	<u>Title</u>
40 A 700 5133416 A-1	Site Plan
40 A 700 5133417 A-2	Floor Plan
40 A 700 5133418 A-3	Elevations and Sections
40 A 700 5133419 A-4	Reflected Ceiling Plan
40 A 700 5133420 A-5	Finish and Door Schedules, interior elevations, details and window types
40 A 700 5133421 A-6	Roof Plan, door and window details
40 A 700 5133422 A-7	Exterior and interior signs
40 A 700 5133425 A-8	Master Color Schedule
40 A 700 5133423 L-1	Planting plan, plant list and details
40 A 700 5133424 L-2	Irrigation plan, legend and details
40 S 700 5133431 C-1	Grading, paving and vicinity plan
40 S 700 5133432 C-2	Grading and paving, sections and details
40 S 700 5133433 C-3	Sanitary sewer system details
40 S 700 5133434 S-1	Foundation plan and general notes
40 S 700 5133435 S-2	Foundation sections and details
40 S 700 5133436 S-3	Miscellaneous details
40 M 700 5133344 P-2	Plumbing floor plan, legend and schedules
40 M 700 5133345 M-1	Schedules, legends, partial roof plan and sections
40 M 700 5133346 M-2	HVAC Floor Plan
40 E 700 5133396 E-1	Lighting fixture schedule and electrical symbol list
40 E 700 5133397 E-2	Electrical Plot Plan
40 E 700 5133398 E-3	Lighting Plan
40 E 700 5133399 E-4	Receptacle, power and communication plan

TABLE 1-2

LIST OF ENGINEERING DRAWINGS

SPECIFICATION 40-0146
 Information Center
 Solar One

DIVISION 2

SITWORK

DIVISION 2
SITWORK

PART 2A - EARTHWORK

2A.1 GENERAL PROVISIONS

The Contractor shall furnish all labor, material, and equipment required to perform the earthwork as shown on the drawings and described herein. The earthwork includes preparation and grading of the site, and excavations for foundations.

2A.2 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

ASTM D-1557-70 - Tests for Moisture - Density Relations of Soils,
Using 10-lb. (4.5 -kg) Rammer and 18-in. (457-mm)
Drop. Method D.

2A.3 CONTRACTOR'S RESPONSIBILITIES

The jobsite of the proposed facility is presently vacant. The location of any underground utilities shown on the drawings is approximate. Contractor shall be responsible for determining if any other underground utilities exist and shall be responsible for any damage to underground utilities during performance of the work. The Contractor shall inspect the entire jobsite prior to starting the work and shall be responsible for determining the character of materials to be encountered and all conditions affecting the work.

2A.4 JOBSITE PREPARATION

Contractor shall remove all vegetation, rubbish, debris, and other such objectionable materials from the building site being developed.

2A.5 GRADING

All areas, including excavated and filled sections and adjacent areas, shall be uniformly smooth-graded to the lines, grades, and sections indicated on the drawings. The finished surface shall be compacted to 90% density in accordance with ASTM D-1557, reasonable smooth, and free from irregularities or discontinuities in surface level. The degree of finish shall be that ordinarily obtained from either blade-grader or scraper operations, except as otherwise specified. The finished surface shall be not more than 0.2 ft. above or below the required grade or approved cross-section. The 0.2 ft. variation above or below the required grade shall not occur in a horizontal distance of less than 50 ft. Ditches and gutters shall be finished to ensure adequate drainage.

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Before the work is accepted, the Contractor shall submit a written grade report to the Construction Manager with certification that all grading requirements have been met. The Construction Manager will make a grid check of finished grade elevations before the work is accepted.

Discrepancies in finished grade elevations that exceed the allowable tolerances shall be corrected by the Contractor at no additional expense.

2A.6 FILL MATERIALS

2A.6.1 ON-SITE FILL - Fill materials developed from on-site earth shall be free of rocks larger than three inches in any dimension, objectionable substances, broken concrete and paving and any other debris.

2A.6.2 IMPORTED FILL - Imported fill material shall consist of approved, well-graded granular material of which not more than 20% passes a No. 200 screen and the maximum size does not exceed three inches. Material present at the jobsite may be used for compacted fill if approved by the Construction Manager.

2A.6.3 SUBMITTAL SAMPLE - A representative fifty-pound sample of all imported fill material proposed for use shall be submitted, as directed by the Construction Manager, for testing and approval at least 10 days in advance of the scheduled placement of fill.

2A.7 EXCAVATION

All existing fill materials shall be excavated. In the areas where paving or floor slabs are to be placed on fill, the upper foot of natural material shall be scarified and recompact to 90% density in accordance with ASTM D-1557. Acceptable excavated materials, as defined in previous Sections 2A.6.1 and 2A.6.2, shall be transported to and placed in fill or embankment areas within the limits of the project. Unsatisfactory materials encountered within the limits of the project shall be excavated below grade and replaced with satisfactory materials as directed by the Construction Manager. Unsatisfactory excavated material shall be disposed of by the Contractor. Material required for fill or embankment in excess of that produced by excavation within the grading limits shall be obtained from an approved source.

2A.8 COMPACTION OF FILL MATERIAL

Compaction under footings shall be 95%; compaction under AC paving, cement slabs and other areas shall be 90%.

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EARTHWORK

2A.8.1 PLACEMENT OF FILL - No fill material shall be placed during inclement weather. All required fill shall be placed in loose lifts not more than eight inches in thickness and compacted to at least 90% (unless otherwise noted on drawings) of the maximum density obtainable by ASTM D-1557. The moisture content at the time of compaction shall be brought to within 2% of optimum moisture content and rolled with heavy compaction equipment.

2A.8.2 LAMINATIONS - If the compacting equipment produces laminations in the fill being placed, the surface of each compacted layer shall be loosened by scarifying or by other approved means before the next layer is placed.

2A.9 TESTING OF COMPACTED SOIL

At least one soil density test shall be made for each two ft. depth of compacted soil. Additional or reduced rolling for compaction of the soil may be ordered by the Construction Manager on the basis of test results.

2A.10 EXCAVATIONS FOR FOOTINGS

2A.10.1 All excavations for footings, walls, slabs and other concrete work shall be made to the depths indicated and of sufficient width to permit erection and removal of forms and placing of concrete. Bottoms of excavations shall be brought to the proper grades shown, cut level, formed true to dimension and wet down before concrete is placed.

2A.10.2 Contractor shall notify Construction Manager at least 48 hours prior to completion of excavation for inspection of excavation prior to starting forming work.

2A.10.3 Should any excavation for concrete work be carried beyond the proper depth indicated on drawings, the excessive depth shall be filled with concrete and the cost borne by the Contractor.

NOTE

All excavations shall be kept free from water during the placement of concrete.

EARTHWORK

2A.11 BACKFILL

- 2A.11.1 Backfill at footings and foundation walls shall be placed in 8-in. thick layers (maximum), and brought to optimum moisture content and compacted to a solid, dense mass with compaction equipment of the Contractor's choice. Flooding of backfill adjacent to foundation walls shall not be allowed.
- 2A.11.2 The Contractor shall place backfill only after all forms, shoring, bracing and wood parts have been removed, after all exposed concrete work has been inspected by the Construction Manager for rock pockets and other defects and these defects, if any, have been repaired and corrected.
- 2A.11.3 Utility trench backfills in slab and paving areas shall be thoroughly compacted to a relative compaction of at least 90 percent.

2A.12 FINISH GRADING

- 2A.12.1 The surface of all excavations, embankments, and subgrades shall be finished to a reasonably smooth and compact surface substantially in accordance with the lines, grades, and cross sections or elevations shown. The degree of finish for all graded areas shall be within \pm 0.2 ft.
- 2A.12.2 Gutters and ditches shall be finished in a manner that will result in effective drainage. Finish grades shall drain away from buildings, unless otherwise specified.

2A.13 APPLICATION OF WEED KILLER

Contractor shall sterilize all areas to receive concrete and be surfaced with asphaltic pavement using Poly-Bor-Chlorate, or Construction Manager approved equivalent. Poly-Bor-Chlorate shall be mixed at the ratio of one pound to one gallon of water and applied to the finished subgrade at the rate of four gallons to 100 square feet. Approved equivalent weed killer products shall be applied as directed by the Manufacturer's instructions. The higher rate shall be used where hard to kill weeds are known to be present in the area. Spray equipment that provides good agitation and an even coverage shall be used. Such work shall not be performed in windy or adverse weather nor in any manner that permits the weed killer to spread beyond property lines. Paving may be applied immediately after the weed killer has dried on the soil.

EARTHWORK

Contractor shall be responsible for any loss, cost, damages, or expenses occasioned by the weed killer spreading beyond the confines of the premises and damaging property of others.

END PART 2A

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DIVISION 2
SITWORK

PART 2B - SEWERS

2B.1 GENERAL PROVISIONS

The Contractor shall furnish all labor, material and equipment required to install and test the sewer system shown on the drawings and described herein.

2B.2 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

ASTM A-74 - Specification for Cast Iron Soil Pipe and Fittings.

ASTM C-12 - Recommended Practice for Installing Vitrified Clay Sewer Pipe.

ASTM C-425 - Specification for Compression Joints for Vitrified Clay Bell-and-Spigot Pipe.

ASTM C-443 - Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.

ASTM C-478 - Specification for Vitrified Clay Liner Plates.

ASTM C-700 - Specification for Extra Strength and Standard Strength Clay Pipe and Perforated Clay Pipe.

Federal Specification

RR-F-621C - Manhole Frames, Covers, Gratings, Steps, Sump and Catch Basin.

2B.3 MATERIALS AND METHODS

2B.3.1 PIPE MATERIALS - Vitrified clay and perforated vitrified clay pipes shall be extra strength, unglazed, bell and spigot, in minimum lengths of 4-1/2 ft., conforming to ASTM C-700. Joints shall be compression type, factory-applied, conforming to ASTM C-425.

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Pipe from the building to the septic tank shall be cast iron soil pipe and fittings, extra heavy, hub and spigot, conforming to ASTM A-74. Joints shall have rubber gaskets complying with the chemical and physical requirements of ASTM C-443. The configuration of the gasket shall be as recommended by the pipe manufacturer for the particular type of pipe joint. The gasket shall be installed so as to provide a tight fit.

2B.3.2 SEPTIC TANK - The septic tank and distribution box shall be of the size, material, and design shown on the drawings, and as manufactured by the M. C. Nottingham Company of Irwindale, California, or an equivalent approved by the Construction Manager.

2B.4 ABSORPTION FIELD

The absorption field aggregate shall be clean, hard, durable, sound broken stone or crushed gravel; of uniform quality and free of disintegrated vegetable, or other deleterious materials; and well-graded, varying in size from 3/4 to 2-1/2 in. It shall be placed in the trench to the depth and grade shown on the drawings.

2B.5 TRENCHES

The width of the trench (other than absorption field) at and below the top of the pipe shall be such that the clear space between the barrel of the pipe and the trench wall will not exceed 8 in. on either side of the pipe. The width of the trench above that level shall be as wide as necessary for sheeting and bracing and the proper performance of the work. In case of overwidth excavation, cave-ins, or widening from whatever cause, Contractor shall fill the over excavation with aggregate. The unacceptable portion of the trench shall be filled with clean approved material compacted to a minimum of 90% of maximum density, and the trench reexcavated to the approved limits.

2B.6 SEPTIC TANK

Septic tank and distribution box excavation shall be kept to a minimum, consistent with necessary access during construction. The base area of the septic tank shall be over-excavated six in. and backfilled with clean, well-graded on-site sand or silty sand to present a level surface.

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2B.7 PIPE LAYING

- 2B.7.1 PIPES - Pipes shall be inspected for chips, cracks, breaks or other harmful defects prior to installation. Pipes shall be laid with the bells upgrade, and to the line and grade shown on the drawings. Pipe laying and backfilling of trenches shall conform to ASTM C-12. Perforated pipe shall be laid with the perforations down.
- 2B.7.2 COUPLINGS - Compression couplings and/or adapters shall be used as required. Metal parts shall be stainless steel.
- 2B.7.3 OPEN ENDS - Prior to backfilling or testing, all open ends shall be closed tightly as shown on the drawings, or by other method approved by the Construction Manager.

2B.8 TESTING OF SEWERS

Sewer lines shall be checked by the Construction Manager to determine whether or not any displacement of the pipe has occurred. The test shall consist of a bright light shown through the pipe. If the illuminated interior of the pipeline shows poor alignment, displaced pipe, or any other defects, the defects as designated shall be remedied by Contractor at its expense.

2B.9 INSPECTION

The Contractor shall notify the Construction Manager orally or in writing that said work is ready for inspection. Such notification shall be given not less than 24 hours before the work is to be inspected. The Contractor shall ensure that the work will stand the test prescribed before giving the notification. Tests shall be conducted in the presence of the Construction Manager or his duly appointed representative. If Construction Manager finds that the work will not pass the test, necessary corrections shall be made and the work shall then be resubmitted for test or inspection.

- 2B.9.1 If test is by water, every opening shall be tightly plugged except the highest opening of the section under test. Each section shall be filled with water, but no section shall be tested with less than 10 ft. head of water; so that no joint or pipe in the building shall have been submitted to a test of less than a 10 ft. head of water. The water shall be kept in the system, or in the portion under test, for at least 15 minutes before inspection starts; the system shall then be tight at all points.

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2B.10 MANHOLES AND CLEANOUT

- 2B.10.1 GENERAL - Manholes shall be constructed of precast concrete rings, with cast-iron frames and covers as indicated. The invert channels shall be smooth and semicircular in section, conforming to the inside of the adjacent sewer section. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in size and grade of the channels shall be made gradually and evenly. The invert channels shall be formed directly in the concrete of the manhole bases, or shall be half tile laid in concrete, or shall be constructed by laying full-section sewer pipe through the manhole and breaking out the top half after the surrounding concrete has hardened. The floor of the manhole outside the channels shall be smooth and shall slope toward the channels not less than one in. per ft. nor more than two in. per ft.
- 2B.10.2 CONCRETE - Precast concrete manhole barrel, cone and collar shall conform to ASTM C-478. Cast-in-place concrete shall attain a minimum compressive strength of 3000 psi at 28 days.
- 2B.10.3 JOINTING AND PLASTERING - Mortar for joints shall consist of 1 part portland cement and 2 parts fine sand. The quantity of water in the mixture shall be sufficient to produce a stiff workable mortar, but shall in no case exceed 7 gallons of water per sack of cement. Water shall be clean and free of injurious acids, alkalies, and organic impurities. The mortar shall be used within 30 minutes from the time the ingredients are mixed with water. The joints shall be completely filled, and shall be smooth and free from surplus mortar on the inside of the manhole.
- 2B.10.4 FRAMES AND COVERS - Frames and covers shall conform to those indicated on drawings. Approved standard castings differing in nonessential details will be acceptable. The frames and covers shall have a combined weight as indicated and shall conform to Federal Specification RR-F-621. The word "SEWER", with letters at least one in. high, shall be stamped or cast flush with the top of cover so as to be plainly visible. The frames and covers shall be set so that the top of the cover will be at the elevation indicated.

END PART 2B

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PART 2C - ASPHALTIC CONCRETE PAVING

2C.1 GENERAL PROVISIONS

The work shall include furnishing and placing asphaltic concrete paving and performing related work, including fine grading, in all areas as shown on the drawings.

2C.2 CODES AND STANDARDS

Uniform Building Codes (1976) - Pertinent Sections

Uniform Pacific Coast Specifications for Paving Asphalts,
Grade AR-4000

American Society for Testing and Materials (ASTM)

ASTM D-1557 Tests for Moisture-Density Relations of Soils,
Using 10-lb. Rammer and 18-in. Drop.

ASTM D-1559 Test for Resistance to Plastic Flow of Bituminous
Mixtures Using Marshall Apparatus

ASTM D-2922 Test for Density of Soil and Soil-Aggregate in
Place by Nuclear Methods (Shallow Depth)

California State Department of Transportation Standard Specifications
Section 38 - Road Mixed Asphalt Surfacing
Section 39 - Asphaltic Concrete

American Public Work Association Standard Specifications for Public
Work (Construction) -1976-
Section 200-2 Aggregate Bases

In the event of conflict between this specification and the above listed codes and standards and drawings, the more stringent requirements shall govern.

2C.3 SUBMITTALS

Contractor shall furnish the following submittals to the Construction Manager on completion of this work.

2C.3.1 Asphalt - A verification of the total number of tons of asphaltic concrete mixture used.

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2C.3.2 Certification of Mix - A certificate of verification that asphaltic concrete was mixed in compliance with this specification.

2C.3.3 Sieve Analysis - Submittal of a sieve analysis report.

2C.4 MATERIALS

Reference the California State Department of Transportation Standard, Section 39, Type A, Surface Courses.

2C.4.1 Aggregate

Clean, hard durable broken stone or crushed gravel, or both, conforming to the following gradings:

<u>Sieve Size</u>	<u>Percent Passing Sieve</u>
1-1/2 inch	-
1 inch	100
3/4 inch	95-100
3/8 inch	60-75
No. 4	30-55
No. 8	20-35
No. 30	12-22
No. 200	3-6
Percentage of Bituminous Binder to be Added (by dry aggregate weight)	4-6

2C.4.2 Sand and Filler - Clean hard-grained, moderately sharp particles containing a maximum of 3 percent loam, clay, or other organic matter; and free from excessive amounts of mica. Diatomaceous earth or other undesirable material shall not be used. Finely powdered lump-free limestone, portland cement or powdered mineral dust shall be used as a filler if the sand is deficient in fines.

2C.4.3 Paving Asphalt - Grade AR 4000, unless otherwise designated by the Construction Manager.

2C.5 GRADING

Grade, as required, to leave the subgrade smooth and compact to not less than 90 percent of maximum density as determined by ASTM D-1557.

ASPHALT CONCRETE PAVING

2C.6 FILL

Materials shall be approved by the Construction Manager. Materials shall be free of organic or frozen material, and rocks with maximum dimensions greater than three inches. All fill shall be compacted to a minimum of 90 percent. Filling shall not commence before the surface is inspected and approved by the Construction Manager. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, or other equipment approved by Construction Manager. Rammers shall be used only where lack of space prohibits use of rollers.

Moisture shall be added to each uncompacted layer to provide a moisture content of the material within two percent of optimum. Should the distribution of moisture be uneven, the fill shall be harrowed or reworked otherwise to obtain an even moisture distribution within the layer. If the compacting equipment produces laminations in the fill being placed, the surface of each compacted layer shall be loosened by scarifying or by other approved means before the next layer is placed. No fill shall be placed during heavy rain.

All fill shall be placed in horizontal layers not exceeding eight inches in uncompacted thickness when machine or equipment-compacted, and four inches when hand-compacted. Each layer shall be compacted by hand or machine tampers or by other suitable equipment to at least the specified required density. Any structure, utility, or culvert that is damaged by Contractor during backfilling or any other stage of construction shall be repaired, or replaced at the option of the Construction Manager, at the expense of Contractor.

2C.7 SUBGRADE AND SUBGRADE REPAIR

Contractor shall perform whatever fine grading is necessary for the proper placement of the pavement. Fine grading shall leave the subgrade smooth and compact at not less than 90 percent of maximum density as determined by ASTM D-1557.

2C.7.1 Elevations - Fill and trim the subgrades smoothly to elevations which shall not exceed 0.00 ft. above, and 0.10 ft. below, the subgrade elevations indicated on the drawings. The drawings show elevations of top of paving, so thicknesses of paving shall be subtracted therefrom to obtain subgrade elevations. Discrepancies in finished grade elevations that exceed the allowable tolerances shall be corrected by Contractor at no cost to the Government.

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- 2C.7.2 Drainage - Work areas shall be continually and effectively drained. Water shall not be permitted to accumulate in areas of compacted fill. Contractor shall construct suitable dikes, drains or provide pumping equipment, as required, to divert water flows away from the work areas.
- 2C.7.3 Underground Utilities - Before filling the subgrade, Contractor shall check with the Construction Manager to ensure that all culverts, piping, conduits, and other features under the subgrade have been installed.

2C.8 ASPHALT MIXING AND PLACEMENT

- 2C.8.1 MIXING - Conform all mixing operations to the requirements of the California State Department of Transportation Standard Specifications, Sections 38 and 39.
- 2C.8.2 PRODUCTION REQUIREMENTS - The following summarizes the more important plant production requirements.
- 2C.8.2.1 Aggregate shall be dried for a sufficient time and at a sufficiently high temperature to reduce the average moisture content to not more than one percent.
- 2C.8.2.2 The mineral aggregate and bituminous binder shall be mixed at a central mixing plant.
- 2C.8.2.3 The temperature of the mineral aggregate at the time of adding bituminous binder shall not be less than 275°F, nor more than 325°F.
- 2C.8.2.4 Paving asphalt shall be added to the mineral aggregate at a temperature of not less than 275°F, nor more than 350°F.
- 2C.8.2.5 Mixing shall proceed until each particle of aggregate is thoroughly coated with asphalt; but in any case, for not less than 30 seconds.
- 2C.8.2 PLACEMENT - Unless otherwise shown on the drawings, the asphaltic concrete pavement shall be a minimum of three inches thick, after compaction on roadways, and two inches thick, after compaction, on the walkways.

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- 2C.8.2.1 Pavement edges shall be vertical and straight.
- 2C.8.2.2 The mixture may be spread in one layer. Temperature shall be 250°F minimum.
- 2C.8.2.3 Do not spread the mixture in inclement weather, or if the base is wet.
- 2C.8.2.4 Minimum surface temperature for placement of hot-mix asphalt: 50°F and rising.
- 2C.8.2.5 If the surface temperature of the base falls below 50°F, employ the necessary precautions to adequately control the temperature of the delivered material and compaction of the mix.

2C.8.3 ROLLING AND TAMPING -

- 2C.8.3.1 ROLLING - Roll each course immediately after being spread until the surface is smooth, close grained, and true to grade, and the paving mixture is compacted to 90 percent of maximum density, determined in accordance with ASTM D-1559.
- 2C.8.3.2 TAMPING - Tamp with approved hot-iron tampers all areas which are inaccessible to the roller. Tamp to the requirements specified for rolling.

2C.9 INSPECTION

The finished surface will be inspected by the Construction Manager for defects, such as cracks, checks, hollows, and protrusions greater than 1/2 inch under a ten foot straightedge, and for correct grade.

- 2C.9.1 Inspection will also be made at a representative number of locations for correct thickness and compaction of pavement and subgrade.
- 2C.9.2 All defective work shall be repaired by Contractor at the Contractor's sole expense. Repair work shall meet all standards of this specification and shall be equal to the approved work in durability and appearance. Skin patch repairs shall not be accepted.
- 2C.9.3 In place density measurements shall be performed in accordance with ASTM D-2922.

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2C.10 PARKING AREA STRIPING

Contractor shall apply 3 in. wide, white striping as shown on Drawing No. A-1, using Sinclair No. 70 traffic lacquer or Socony 18-W-3329.

END PART 2C

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PART 2D- IRRIGATION SYSTEM

2D.1 GENERAL PROVISIONS

Contractor shall furnish and install all material and perform all trenching and other associated work required to install the complete irrigation sprinkler system as shown on the drawings and described herein.

During installation of the irrigation system Contractor shall not cover up or otherwise remove from view any work performed without prior approval of the Construction Manager.

2D.2 CODES AND STANDARDS

National Electrical Code (NEC), 1978 Edition

California Electrical Safety Orders

2D.3 SUBMITTALS

2D.3.1 OPERATING INSTRUCTIONS - Three sets of operating and maintenance instructions shall be submitted on completion of the work.

2D.3.2 CONTROLLER CHART - A Controller Chart shall be mounted in the cover of each controller.

2D.4 MATERIAL

2D.4.1 PLASTIC PIPE

- A. Plastic pipe shall be extruded from 100 percent virgin polyvinyl chloride (PVC). Outside diameter of plastic pipe shall be the same size as iron pipe, with plain ends.
- B. The pipe shall be continuously and permanently marked with the following information: Manufacturer's Name; Nominal Pipe Size; PVC Type; SDR or pressure rating.
- C. Pressure lines shall be PVC Schedule 40 Solvent Weld.
- D. Lateral lines shall be 1120 PVC Class 200.
- E. Plastic fittings shall be manufactured by pipe manufacturer or by Sloan Manufacturing Company. Fittings shall be Type II, Schedule 40, NSF approved. All threaded fittings shall be Schedule 80.

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- F. Solvent and primer shall be as recommended by the pipe manufacturer.
- G. Threaded PVC pipe shall be Schedule 80.
- 2D.4.2 UNIONS - Galvanized unions shall be installed with galvanized equipment and galvanized piping.
- 2D.4.3 GALVANIZED PIPE AND FITTINGS - Galvanized pipe and fittings where shown or required shall be schedule 40. All pipe and fittings shall be double wrapped with .010 thick heavy duty plastic vinyl electrical tape.
- 2D.4.4 GENERAL SERVICE VALVES - General service valves shall be as located on drawings.
- 2D.4.5 SPRINKLER HEADS - Sprinkler heads shall be as specified on the drawings. Any substitution shall be approved by Contracting Officer. In no case will a substitution be allowed which does not meet the originally specified performance specifications.
- 2D.4.6 DRIP EMITTERS - The drip emitters shall be pressure compensating as manufactured by the Sub-Terrain Irrigation Company.
- 2D.4.7 AUTOMATIC CONTROLLER - The automatic controller shall be as noted on the drawing irrigation legend.
- 2D.4.8 AUTOMATIC CONTROL VALVE - The automatic control valves shall be as noted on the drawing legend.
- 2D.4.9 VACUUM BREAKER - The vacuum breaker shall be as noted on the drawing legend.
- 2D.4.10 QUICK COUPLERS - The quick couplers shall be as noted on the drawing legend.
- 2D.4.11 VALVE BOX - The valve box shall be concrete as manufactured by Brooks Products, Inc.
- 2D.4.12 ELECTRICAL CONNECTIONS (120 Volt) - Contractor shall make the necessary 120 V electrical connections to the Automatic controller from the electrical supply provided at Controller location. All work shall conform to the National Electrical Code, the State of California Electrical Safety Orders, and manufacturer's recommended practices.

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2D.4.13 CONTROL WIRING - Connections between the existing control wires and remote control valves shall be made by means of direct burial with 18 in. minimum cover, 24-volt solid copper wire, AWG-UF type, installed in the same trench as the pressure line in accordance with the valve manufacturer's wire chart and specifications.

2D.5 EXCAVATION

Excavations shall be open vertical construction sufficiently wide to provide free working space around work installed and to provide ample space for backfilling and tamping. Trenches for pipe shall be cut to required grade lines, and compacted to provide an accurate grade and uniform bearing for the full length of the line. When two pipes are to be placed in the same trench, a two inch minimum space between pipes shall be maintained. Depth of trenches shall be sufficient to provide an exact cover above the top of the pipe as follows:

1. 18 in. over main line, under pressure.
2. 8 in. over nonpressure lateral lines.
3. 18 in. over control wire.
4. 24 in. under all driveways for all new sleeves required. Trench shall be compacted to 90 percent relative density. Contractor shall use existing sleeves as noted on the plan. All pressure lines, lateral lines, and control wire shall be installed in sleeves.

2D.6 INSTALLATION

Contractor shall be familiar with any and all methods of assembling, joining, and installing of the various types of pipe to be used for work. Work shall be performed in strict accordance with manufacturer's recommended guidelines.

2D.6.1 PIPE FITTINGS AND GALVANIZED PIPE

- A. All galvanized piping shall be cut by a power hacksaw or a circular cutting machine using an abrasive wheel. No piping shall be cut with a metallic wheel cutter of any description. All pipe shall be reamed and rough edges or burrs removed so that a smooth and unobstructed flow is obtained.
- B. Reducing fittings shall be used where any change in pipe size occurs. Galvanized bushings shall not be used unless specifically authorized by Construction Manager.

IRRIGATION SYSTEM

- C. Joint compound shall be best quality teflon and shall be carefully and smoothly placed on the male threads only. All screwed joints shall be tightened with tongs or wrenches, and caulking of any kind shall not be permitted.
- D. As fast as lines have been installed, cap or plug all openings to prevent the entrance of materials that would obstruct the pipe. Leave in place until removal is necessary for completion of installation.

2D.6.2 PLASTIC PIPE AND FITTINGS - Contractor shall exercise care in handling, loading, unloading, and storing plastic pipe and fittings. Material shall be stored under a weatherproof roofed structure before using and shall be transported in a vehicle with a bed long enough to allow the length of pipe to lay flat so as not to be subject to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged shall not be used until the damaged section of pipe is cut out and the remaining sections are rejoined with a coupling.

- A. All lumber, rubbish, and rocks shall be removed from the trenches and removed from the jobsite by Contractor. Pipe shall have a firm uniform bearing for the entire length of each pipeline to prevent uneven settlement. Wedging or blocking of pipe shall not be permitted. Blocking under riser T's shall be done only if specified on the drawings. Pad trenches with soil as necessary to provide uniform bearing surface.
- B. Snake pipe in trench from side to side to allow for expansion and contraction.
- C. All changes in direction of pipe shall be made with fittings, not by bending.
- D. Make solvent joints with a nonsynthetic bristle brush in the following sequence:
 - 1. Apply an even coat of primer, wipe clean, then apply solvent to the inside of the fitting.
 - 2. Apply a liberal, even coat of primer, wipe clean, then apply solvent to the outside of the pipe, making sure that the coated area is equal to the depth of the fitting socket.

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3. Insert the pipe quickly into the fitting and turn pipe approximately one-quarter turn to distribute the solvent and remove air bubbles. Hold the joint for approximately fifteen seconds so the fitting does not push off the pipe.
 4. Exercise care in going to the next joint so that the pipe is not twisted, thereby disturbing the last completed joint.
 5. Allow at least fifteen minutes setup time for each welded joint before moving.
- E. When damaged, plastic pipe shall be replaced by cutting out entire damaged area and replacing with the same schedule and type of pipe. The plastic pipe shall be thoroughly dry when the replacement is made.
- 2D.6.3 AUTOMATIC CONTROL VALVES - Automatic Control Valves shall be installed as specified on the drawings.
- 2D.6.4 SPRINKLER HEADS - Sprinkler Heads shall be installed as indicated on drawings and shall not exceed spacing shown unless prior written approval is obtained from Construction Manager.
- 2D.6.5 DRIP EMITTERS - Drip emitters shall be installed as shown in the details and in locations shown on the drawings.
- 2D.6.6 MAIN LINES - The main lines shall be installed according to size and location on the drawings. Routing of pipe on plan does not specifically indicate exact locations. Use concrete thrust blocks as specified by the pipe manufacturer.
- 2D.6.7 LATERAL LINES - Lateral Lines shall be installed per size and as schematically diagrammed on plan.
- 2D.6.8 CONNECTIONS - Make connection to existing points of connection as source of water supply. Provide all fittings and adapters required.
- 2D.6.9 QUICK COUPLER - Quick Coupler shall be installed per drawings. Supply three coupler keys.
- 2D.6.10 AUTOMATIC CONTROLLER - Mount Automatic Controller on concrete slab as detailed on the drawings.

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2D.6.11 GENERAL SERVICE VALVES - Any equipment installed by Contractor and deemed to be for Government's use in various situations (i.e., gate valves, control valves, garden valves, etc.) shall be so installed to be readily accessible and quickly operable. Equipment deemed by Construction Manager to be inoperable for its intended purpose shall be reinstalled by Contractor in an operable position before approval will be given.

2D.7 CONTROL WIRING

- 2D.7.1 All control wire connections shall be made with Rainbird pen-tite wire connectors, or a Government approved equivalent, installed and sealed according to the manufacturer's recommendations. An expansion curl shall be provided within three feet of each wire connections and at least every 100 ft. of wire length on runs of more than 100 ft. in length. Expansion curls shall be formed by wrapping at least five turns around a one-inch diameter pipe, or larger, then withdrawing the pipe.
- 2D.7.2 All splices shall be located in remote control valve or junction boxes, as manufactured by Intercontinental Plastics, Inc., or a Government approved equivalent.
- 2D.7.3 All common wiring shall be white in color and marked in junction boxes as to controller designation, with 1/4 in. embossed plastic labeling tape, secured to wire.
- 2D.7.4 All pilot wiring shall be of any color except white, and marked in junction boxes as to station number and controller designation, with 1/4 in. embossed plastic labeling tape, secured to wire.
- 2D.7.5 All control wiring shall be routed with or adjacent to main distribution lines wherever possible.
- 2D.7.6 All control wiring shall be bundled and taped with plastic electrical tape, at ten foot intervals, throughout the entire wire length.
- 2D.7.7 The controller shall be wired, set, and adjusted and labeled as indicated by the drawings and as directed by Construction Manager. Each solenoid valve shall be wired separately to the automatic controller. Parallel connections of solenoid valves shall be located in the Automatic Controller Box only.

IRRIGATION SYSTEM

- 2D.8 CONCRETE - Concrete for Controller Pedestals and thrust blocks shall be Class B, 3000 psi at 28 days. All pedestals slabs shall have a smooth trowel finish.
- 2D.9 PRESSURE TEST - All pressure lines shall be tested under hydrostatic pressure of 85 pounds per square inch, and all nonpressure lines shall be tested under the existing static pressure and both shall be proved watertight. Contractor shall provide all equipment required for hydrostatic tests. Existing static pressure is approximately 55 psi. Pressure shall be sustained in the line for not less than four hours. If leaks develop, the joints shall be replaced and the test repeated until the entire system is proved watertight. The pressure test shall be observed and approved by Construction Manager prior to backfill.
- Upon completion of each phase of Work, Contractor shall check and adjust each sprinkler head to meet the site requirements and plan.
- 2D.10 BACKFILLING - Backfill shall not be placed until the installed sprinkler irrigation system has been inspected and approved by Construction Manager. Backfill material shall be approved soil. Material that contains clods and rocks over 2-1/2 in. in size, shall be removed from the premises and disposed of legally at no cost to Government. All backfilling shall be done carefully and shall be properly tamped to avoid settling. Surplus earth remaining after backfilling shall be disposed of on the premises as directed by the Construction Manager.
- 2D.11 COVERAGE TEST - When the sprinkler system is completed, Contractor, in the presence of the Construction Manager, shall perform a coverage test of water afforded the planting areas to ensure that coverage is complete and adequate and that the drip emitters are working properly. Contractor shall furnish up to three sprinkler heads of each kind as noted on the schedule and all materials to perform work required to correct any inadequacies of the coverage disclosed at no cost to Government. Contractor shall inform the Construction Manager of any deviation from the plan required due to wind, planting, soil or site conditions to ensure proper coverage.
- 2D.12 INSTRUCTION - After the system has been completed, Contractor shall instruct the Construction Manager in the operation and maintenance of the system and shall furnish three complete sets of operating instructions.
- 2D.13 TEMPORARY REPAIRS - Government reserves the right to make temporary repairs as necessary to keep the irrigation system equipment in operating condition. The exercise of this right shall not relieve Contractor of its responsibilities under the terms of the guarantee as herein specified.

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2D.14 AS-BUILT DRAWINGS - On the as-built drawings, Contractor shall dimension from two permanent points of reference, building corners, sidewalk, or road intersections, etc., the location of the following items:

1. The routing of the sprinkler main lines.
2. Connections to the existing water lines.
3. Sprinkler control valves and general service valves.

2D.15 CONTROLLER CHART

Contractor shall provide and mount a chart in the cover of each controller consisting of an As-Built Plot Plan of areas controlled, showing buildings, roads, walls, sprinkler heads, valves, quick couplers, and mainline. Contractor shall number all valves to match operation schedule and drawings and provide a photographic reduction of this plan to a size that will fit the controller cover. The reduced plan shall be securely mounted to the cover in hermetically sealed plastic.

END PART 2D

DIVISION 2
SITWORK

PART 2E - LANDSCAPING

2E.1 GENERAL PROVISIONS

The Contractor shall furnish and plant all items as shown on the drawings and described herein and perform all associated work pertaining to the landscaping work.

2E.2 OVERALL REQUIREMENTS

Permission to shut off any supply water lines must be obtained from the Construction Manager who will make the necessary arrangements. Disruption of existing systems shall be kept to a minimum.

2E.3 REDWOOD HEADERS

Headers shall be placed as shown on the drawing. Lumber for the headers and stakes shall be construction heart rough redwood in the sizes specified. Nails, lag screws and miscellaneous hardware shall be galvanized commercial quality material. Headers shall be 2 in. x 6 in. except that two, 1 in. x 4 in. boards shall be supplied for laminations on turns and curves. Header stock shall be at least 10 ft. long. Stakes for headers shall be pointed 2 x 4 in., at least 18 in. long. Joint splicing lumber shall be 1 x 4 in., 2 ft. long.

2E.4 SUBMITTALS

Source of plants and materials

Certificates of Inspection

2E.5 SAMPLES, TESTS, AND INSPECTIONS

Plants shall be subject to inspection prior to and after delivery and shall be approved by Construction Manager for quality, size and variety. The source of the material shall be furnished to the Construction Manager for quality, size and variety. The source of material shall be furnished to the Construction Manager. Rejected plants shall be removed from the jobsite and replaced immediately.

Sampling, testing or inspection costs shall be borne by Contractor. Contractor shall furnish the Construction Manager with certificates of inspection of plant materials as may be required by the County, State or other authorities.

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2E.6 MATERIALS

2E.6.1 PLANTS

- 2E.6.1.1 For nomenclature see list of plant materials as shown on the planting plan.
- 2E.6.1.2 The condition of the plants shall be symmetrical, typical for variety and species, sound, healthy, vigorous, free from plant disease, insect pests or their eggs, and shall have healthy, normal root systems, well filling their containers but not to the point of being root bound. Plants shall not be pruned prior to delivery except as authorized by the Construction Manager. In no case shall trees be topped before delivery.
- 2E.6.1.3 Plants shall be identified by the variety and size shown on the plans, and shall conform to the requirements specified herein. One of each bundle or lot shall be tagged with plant name in accordance with recommendations of the American Association of Nurserymen.
- 2E.6.1.4 All plants shall have a habit of growth that is normal to the species. Tree trunks shall be sturdy and well hardened off. Plants shall be grown in nurseries which have been inspected by the State Department of Agriculture and have complied with its regulations.
- 2E.6.1.5 Root conditions of plants will be determined by the Construction Manager by removal of earth from the roots of at least two plants but not more than 2 percent of the total number of each species or variety obtained from each separate source. Should plants inspected be found root bound or defective, the Construction Manager reserves the right to reject any or all lots represented by the defective samples. Any plant rendered unsuitable for planting shall be replaced at the Contractor's expense.
- 2E.6.1.6 Plants not conforming to the requirements herein specified shall be considered defective and such plants, whether in place or not, shall be rejected and shall immediately be removed from the jobsite and replaced with new plants.

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2E.6.2 SOIL AMENDMENTS - Soil amendments shall be delivered in sacks with manufacturer's label showing weight and analysis attached to each sack. The Construction Manager shall be present at delivery of all soil amendments and shall reconcile delivered quantities with Bills of Lading. The following soil amendments shall be used:

2E.6.2.1 Nitrogen stabilized organic amendment shall be finely ground Redwood sawdust with the following properties:

- A. Salinity shall be no higher than 1.0 milliohms centimeter at 25 degrees centigrade as measured by saturation extract conductivity.
- B. Nitrogen content - 0.5 percent.
- C. All values based on dry weight.
- D. Particle size - Minimum 95 percent passing No. 4 mesh screen.

2E.6.2.2 Agricultural gypsum - Approved standard brand agricultural calcium sulfate as commonly applied to soils.

2E.6.2.3 Commercial Fertilizer shall be 12-12-12.

2E.6.2.4 Soil sulfur.

2E.6.3 GUYING - Trees shown on the drawings shall be guyed using guy wire of pliable zinc coated iron of gauge as noted on drawings, unless otherwise approved or directed. Anchors (deadmen) for holding guys shall be hardwood or Maxwell guying anchors, 48 in. long. Holding guys shall be covered with 18 in. of white P.V.C., Class 160, for safety.

2E.6.4 TREE STAKES - Tree stakes shall be 2 in. x 2 in. by 10 ft. construction heart redwood for all 15 gallon trees and smaller. Stakes shall be free of knots. Refer to the details on the drawings.

2E.6.5 TREE TIES - Tree ties shall be as noted on the drawings.

LANDSCAPING

2E.7 FINE GRADING AND SOIL PREPARATION

2E.7.1 Prior to soil conditioning, all weeds and grasses shall be dug out by the roots and disposed of off the jobsite. Contractor is responsible to bring all planted areas to finish grade which shall be one inch below adjacent paving, curbs, headers, etc. All rock areas shall be four inches below adjacent paving.

2E.7.2 Soil conditioning of planting areas shall consist of the following:

- A. Six cubic yards nitrolized redwood shavings per 1,000 square ft.
- B. 15 pounds 12-12-12 commercial fertilizer per 1,000 square ft.
- C. 100 pounds Agricultural gypsum per 1,000 square ft.
- D. 20 pounds soil sulfur per 1,000 square ft.

The above materials shall be thoroughly incorporated into the top four to six inches of native soil using a rototiller.

2E.7.3 Contractor shall remove all extraneous matter and grade to facilitate runoff of surface water.

2E.8 SCHEDULING PLANTING - Planting shall not commence until completion of all construction Work, grading, soil preparation, and sprinkler installation.

2E.9 SPACING - When plant material is spaced in rows, the total dimension shall be verified and the plants equally spaced within the designated area. Where plant material is shown in a "loose" pattern, Contractor shall space the material as shown on the plan and as desired by the Construction Manager. Groundcover material shall be at the spacing indicated on the drawings and shall be planted in an off-set pattern and not in straight rows.

2E.10 SETTING - Plants shall bear the same relation to soil level when planted as they did when in the container. Each plant shall be placed in the center of the plant pit. The soil shall be firmly pressed around each plant, and excess soil removed from the crown. Cultivation shall occur at least once every two weeks.

2E.11 PLANT PITS

2E.11.1 Spot plants per plan and secure approval before digging pits.

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- 2E.11.2 Plant pits shall be dug with level bottoms, width twice the diameter of the root ball, and the exact depth of root ball. Prior to planting, liberally dust agricultural gypsum on all sides and bottom of pit.
- 2E.11.3 Plant pits for trees shall be dug with level bottoms, width twice the diameter of the root ball and the exact depth of root ball. The prepared backfill mix shall be brought up to the desired plant level and compacted to a density of 85 percent.
- 2E.11.4 Planting pits for ground covers shall be 4 in. x 4 in.
- 2E.12 PIT BACKFILL - Plant mix for trees and shrubs shall consist of the following formula:
1. 6 parts by volume on-site soil.
 2. 4 parts by volume nitrolized redwood shavings.
 3. 1 pound 12-12-12 commercial fertilizer per cubic yard of mix.
 4. 2 pounds iron sulfate per cubic yard of mix.
- 2E.13 BACKFILL PROCEDURE - Backfill material in plant pits shall be tamped firm, and a shallow basin formed around the plant to hold enough water to saturate the root ball and backfill. Water plants immediately after planting. Do not raise basin rim above surrounding grade. On slopes, shrubs and trees shall be basined with a berm four inches in height, on downhill side, above crown of root ball.
- 2E.14 REMOVAL FROM CONTAINERS - Open canned stock by cutting can vertically on two opposite sides of can with approved instrument for the purpose. Using an axe or spade shall not be permitted.
- 2E.15 HANDLING - No canned plant material shall be planted if the ball is broken or cracked either before or during the process of planting.
- 2E.16 STAKING, GUYING AND VINE TYING - Tree staking, guying and vine tying shall be accomplished in accordance with the details as shown on the plans.
- 2E.17 PRE-EMERGENCE WEED CONTROL - All post or pre-emergence weed control shall be applied subject to the approval of Company. All applications shall be performed by an operator licensed in the State of California.
- 2E.18 PROTECTION - Contractor shall carefully and continuously protect all items, including existing trees and shrub material included in the contract, until acceptance of the work by the Construction Manager.

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2E.19 CLEANUP - After all planting operations are completed, Contractor shall remove all trash, excess soil, empty plant containers, or other accumulated debris from the jobsite at no extra cost to Government.

Contractor shall repair all scars, ruts or mars resulting from work operations. All walks, curbs, and gutters shall be free of debris. Area shall be left in a neat and orderly condition.

END PART 2E

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DIVISION 2
SITWORK

PART 2F - LANDSCAPE AND IRRIGATION MAINTENANCE

2F.1 GENERAL PROVISIONS

Contractor shall furnish all labor, supervision, material, tools, equipment and processes required for a complete and efficient 180 day maintenance program. The maintenance program shall include maintenance of all landscaping and the irrigation system as herein specified.

2F.2 OVERALL REQUIREMENTS

2F.2.1 DISRUPTION OF SERVICES - Permission to shut off any water lines shall be obtained from the Construction Manager who will make the necessary arrangements. Disruption of existing systems shall be kept to a minimum.

2F.2.2 DAMAGE - Control of gophers and moles shall be by trapping or by other means, as necessary and as approved. Restoration and replanting of any areas disturbed by trapping shall be made by Contractor. Contractor shall be responsible for replacement of damaged material with like material and repairing any damage to other work caused by its negligence. Contractor shall be responsible to immediately establish a program for pest, fungus and weed control. All applications or insecticides, fungicides, and herbicides shall be made by an operator licensed by the State of California to perform such work. All materials used in this work shall be as approved by the State of California and any other governmental agencies having jurisdiction.

2F.3 WORK DESCRIPTION

2F.3.1 GROUND COVER AND SHRUB BEDS

- A. Measures to eliminate undesirable conditions shall be performed in accordance with recognized and accepted landscape maintenance practices.
- B. Trimming, pruning, thinning, removing, transplanting, and training of ornamental plants, shall be done as needed or required to maintain a pleasing appearance. Plant material under stress should be trimmed to reduce evaporation.
- C. Soil of foliage or flower beds shall be kept weed free at all times and in a loose, cultivated condition. Cultivation shall be performed biweekly.

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LANDSCAPE AND IRRIGATION MAINTENANCE

- D. Deep water all trees every ten days during June through October to required depth with a probe; remaining months on a monthly basis. A periodic check of moisture content in the root zone of trees shall be made and deep watering adjusted as deemed necessary. In fall and winter the deep watering of trees shall be avoided when the danger of a windstorm is anticipated.
- E. All areas shall be kept litter free.

2F.3.2 IRRIGATION MAINTENANCE

- A. Contractor shall have on the jobsite at all times a repair kit and spare parts for plastic pipe and irrigation heads. Shrubs and groundcover growth shall require raising of heads, in 6-in. increments, etc., as determined by the Construction Manager.
- B. Contractor shall, after turning on a valve, inspect visually each sprinkler head in the section to make certain of no clogage by dirt or rock particles. If damage occurs to any sprinkler head caused by other types of equipment, thus causing an irreparable effect, the damaged part shall be replaced with a new part of the same manufacture by Contractor.
- C. If leakage occurs around junction of bonnet and body of sprinkler control valves, hose bibbs or gate valves, correct by replacing the gasket between the two parts. If leakage occurs at the point where the valve stem emerges through the top of the bonnet, correct by tightening the packing nut against the bonnet.

NOTE

- Tighten only enough to cause the leak to stop. Replace packing if necessary.
- D. Irrigation timing, tests, and schedules shall be performed as follows:
 - 1. Supervised watering of grounds shall follow a preplanned schedule differing only as required by the season of the year. A winter and summer watering schedule shall be submitted to the Construction Manager.

LANDSCAPE AND IRRIGATION MAINTENANCE

2. The criterion for developing a schedule for irrigation is the proper maintenance of soil moisture. Contractor shall adjust and improve the schedule as necessary and as directed by the Construction Manager.
3. Contractor shall make precipitation and soil moisture tests as directed by the Construction Manager.

2F.3.3 PAVED AREAS

- A. All paved areas and their perimeters shall be kept weed free throughout. Walks around Information Center shall be washed down periodically.
- B. Weeds growing around or through paved areas may be treated with a chemical weed killer providing that material used does not migrate by any reason in or onto areas not intended to be so treated. Use of such chemicals is so elective with Contractor, subject to prior approval by the Construction Manager or other authorized representative as necessary and shall be guaranteed by Contractor to perform as specified. Use of toxic chemicals shall require proof of municipal permit for use on the jobsite.
- C. Accomplishment of above weed control measures shall be performed at least as growth indicates, as needed, or required.

2F.3.4 FERTILIZING AND PRUNING PROGRAM

Contractor shall submit a written 180 day maintenance program to the Construction Manager for approval describing its intended fertilizing and pruning maintenance program. The maintenance program shall state the steps that Contractor shall perform through fertilization to ensure proper growth of the plants.

2F.4 MAINTENANCE REPORT

Contractor shall submit biweekly maintenance report to the Construction Manager. The attached form, Exhibit 2F-1, is a sample form for the report. Failure to submit reports as specified shall be construed as an interruption of the maintenance period and will extend the completion date of the maintenance contract accordingly.

2F.5 INSPECTIONS

- A. Contractor shall give 7 hours notice and set appointments for all inspection by the Construction Manager.

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LANDSCAPE AND IRRIGATION MAINTENANCE

- B. A biweekly inspection shall be conducted by the Construction Manager and with Contractor throughout the maintenance period.
- C. A final inspection shall be made at the end of the maintenance period for full approval of all work.

2F.6 WRITTEN NOTICE

At the end of the specified maintenance period, Contractor shall present written notice to the Construction Manager that it has completed the required maintenance, and that any further maintenance will be the responsibility of the Government.

END DIVISION 2

DIVISION 3

CONCRETE

DIVISION 3
CONCRETE

PART 3A - CONCRETE FORMWORK

3A.1 GENERAL PROVISIONS

Contractor shall be responsible for installing the formwork to ensure the placed concrete conforms accurately to the dimensions shown on the drawings.

3A.2 CODES AND STANDARDS

American Concrete Institute (ACI)

ACI 347, Recommended Practice for Concrete Formwork

ACI 301, Specification for Structural Concrete for Buildings

West Coast Lumber Inspection Bureau (WCLIB)

Standard Grading and Dressing Rules

3A.3 MATERIALS

3A.3.1 FORM LUMBER

- A. Form lumber for exposed concrete surfaces shall be form grade, five-ply plywood, 3/4 inch thick, in widths and lengths adequate to achieve joint layouts shown on the drawings.
- B. Sheathing boards for concealed concrete surfaces shall be Douglas fir, No. 2 sheathing, one- by six-inch, or better, as required to sustain imposed loads on the formwork.
- C. Plastic covered or other type forms may be used only upon approval of the Construction Manager.

3A.3.2 TIES

Sure-Grip, Universal Twisteyes, Richmond Snap-Type or approved equal.

3A.4 CONSTRUCTION OF FORMS

Construct forms in a substantial, unyielding, true-to-line, level manner, sufficiently tight to prevent the leakage of mortar. They shall conform accurately to the dimensions shown for the finished concrete. Place the finished side of the wood toward the concrete. Place chamfer

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CONCRETE FORMWORK

strips in the angles of all forms to bevel the sharp edges of the concrete. Stud spacing for plywood forms shall not exceed 12 inches center-to-center, unless otherwise indicated on the drawings. Horizontal joints shall be made exactly flush. Vertical joints of plywood and boarding shall be staggered.

3A.5 PLACEMENT OF INSERTS

Properly locate and secure to the forms all anchor bolts, structural members, piping, and conduit to be embedded in concrete. Suspend anchor bolts from substantial templates and rigidly attach to the forms in such a manner that they will not be dislocated during placement of concrete. Form recesses, seats, pockets, reglets, and rebates required to receive frames, hardware, saddles, and other details in accordance with precise positions and dimensions obtained directly from the trades furnishing the work to be received. All embedded items shall be inspected by the Construction Manager prior to placing concrete.

3A.6 BRACING AND SHORING

Shoring and bracing shall be adequate in strength, and shall be so designed and placed that the load from successive parts of the structure will be transmitted directly through the falsework without creating bending or shearing stresses in the concrete. Shores shall be constructed in such a manner that they can be taken down without injury to the structure.

3A.7 CLEANING AND LUBRICATION

Before use, thoroughly clean and lubricate all forms with a nonstaining mineral oil. This shall be done before reinforcing steel is placed. Wipe off excess oil after lubrication.

3A.8 REMOVAL OF FORMS

Removal of forms shall comply with the requirements of ACI 347 and ACI 301.

END OF PART 3A

DIVISION 3

CONCRETE

PART 3B - CONCRETE REINFORCEMENT

3B.1 GENERAL PROVISIONS

Contractor shall furnish and install all reinforcing steel in accordance with ACI 315-74, Chapter 2, Section 2.9, as detailed on the drawings and described herein. No welding will be allowed without specific permission of the Construction Manager.

3B.2 CODES AND STANDARDS

American Concrete Institute (ACI)

ACI 315 - Manual of Standard Practice for Detailing Reinforced Concrete Structures, Chapter 2, Section 2.9, Detailing to Fabricating Standards

ACI 318 - Building Code Requirements for Reinforced Concrete

American Society for Testing and Materials (ASTM)

ASTM A-185 - Welded Steel Wire Fabric for Concrete Reinforcement

ASTM A-615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement - Grade 40

3B.3 MATERIAL

3B.3.1 REINFORCING STEEL - Reinforcing bars shall be new billet steel, deformed bars, Grade 40, conforming to ASTM A-615. Steel shall be clean, free from rust, flaws, cracks, excessive mill scale, paint, oil, grease, or other deleterious matter which could reduce bond.

3B.3.2 WIRE FABRIC - Wire fabric reinforcement shall comply with the requirements of ASTM A-185.

3B.4 FABRICATION

Steel reinforcement shall be fabricated in accordance with ACI 315. Before placement all steel shall be cleaned of loose mill scale, excessive rust, oil, and coatings which would reduce bond. Reinforcements shall be accurately positioned and secured against displacement during placing and vibration of concrete.

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CONCRETE REINFORCEMENT

Bars shall be securely tied at intersection with No. 16 gauge annealed wire. Reinforcement shall be provided and placed as detailed on the drawings.

END OF PART 3B

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DIVISION 3
CONCRETE

PART 3C - CONCRETE

3C.1 GENERAL PROVISIONS

Work includes furnishing, placing and performing all concrete work indicated on the drawings and detailed herein. All embedded items shall be maintained in accurate position during concrete placement. Once placed, concrete shall not be cut to place work omitted by oversight unless approved by the Construction Manager. Contractor shall be responsible for placement of omitted items.

3C.2 CODES AND STANDARDS

American Concrete Institute (ACI)

- ACI 304-73 - Measuring, Mixing, Transporting, and Placing Chapter 5 - Transporting
- ACI 305-72 - Recommended Practice for Hot Weather Concreting
- ACI 306-72 - Recommended Practice for Cold Weather Concreting

American Society for Testing and Materials (ASTM)

- ASTM C-33 - Specification for Concrete Aggregates
- ASTM C-94 - Specification for Ready Mixed Concrete
- ASTM C-114 - Chemical Analysis of Hydraulic Concrete
- ASTM C-136 - Sieve or Screen Analysis of Fine and Coarse Aggregates
- ASTM C-150 - Specification for Portland Cement, Type II
- ASTM C-289 - Test for Potential Reactivity of Aggregates (Chemical Method)
- ASTM C-295 - Recommended Practice for Petrographic Examination of Aggregates for Concrete
- ASTM D-1190 - Specification for Concrete Joint Sealer, Hot Poured Elastic Type
- ASTM D-1751 - Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)

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CONCRETE

3C.3 CONTROL

- 3C.3.1 CONCRETE SAMPLES - All field tests and sampling of concrete will be performed by the Construction Manager. Samples shall be obtained when the concrete is being placed and shall be tested for strength slump and other properties required by the Contract to verify compliance with this Specification. All sampling and testing shall be performed in accordance with applicable ASTM Standards.
- 3C.3.2 TESTING - Samples, consisting of three 6 inch by 12 inch standard cylinders, shall be taken from selected batches of concrete, including a sample in the last 25 percent of the batch at the discretion of the Construction Manager. The samples shall be tested at the age of 7 and 28 days at a testing laboratory.
- 3C.3.3 CURING OF SAMPLES - Cylinders shall be cured under laboratory conditions, except when the air temperature is less than 40°F. When the air temperature is less than 40°F, samples shall be cured under jobsite conditions.

3C.4 SUBMITTALS

- 3C.4.1 POTENTIAL ALKALI REACTIVITY TESTS - Contractor shall submit to the Construction Manager four certified copies of test data indicating potential alkali reactivity of cement and aggregate combinations in accordance with ASTM C-289. Data from tests performed during a period of three months previous to the start of work shall be accepted upon verification by an accredited testing laboratory approved by the Construction Manager.
- 3C.4.2 PETROGRAPHIC ANALYSIS - Contractor shall submit to the Construction Manager a petrographic analysis of fine and coarse aggregates to be used for concrete in accordance with ASTM C-295. Recent examination of aggregate, performed within a period of six months previous to the start of work, will be accepted upon verification by an accredited testing laboratory approved by the Construction Manager. These tests shall indicate conclusively the suitability of the aggregates for the use intended.

CONCRETE

3C.5 MATERIALS

- 3C.5.1 CEMENT - Cement shall be Type II portland cement meeting the requirements of ASTM C-150, with the additional requirement that alkali content shall not exceed six tenths percent (0.6%), measured as equivalent sodium oxide by test in compliance with ASTM C-114. Only tested cement shall be used in the work. Contractor shall submit to Construction Manager certified copies of potential alkali reactivity of cement and aggregate combination tests, as detailed in previous Section 3C.4, Submittals.
- 3C.5.2 AGGREGATES - All aggregate material shall be natural sand and gravel, or crushed rock, or a combination of both, in compliance with ASTM C-33. Aggregates shall be from a source approved by the Construction Manager. Contractor shall submit to Construction Manager certified copies of petrographic analysis of fine and coarse aggregates, as detailed in previous Section 3C.4, Submittals. If Contractor selects San Gabriel River aggregate, a nonreactive statement will not be necessary.
- A. Fine aggregate shall be natural sand of uniform gradation conforming to the sections on fine aggregate in ASTM C-33. It shall be tested in accordance with ASTM C-136. Ninety-five to 100 percent of particles shall pass a No. 4 screen and contain not less than two percent nor more than 10 percent of material passing a No. 100 screen, as shown in Sieve Analysis Table in ASTM C-33.
- B. Coarse aggregate shall conform to the sections on coarse aggregate in ASTM C-33. It shall be well graded washed gravel or crushed rock consisting of hard, strong, durable pieces, free from weak laminations, cleavages and adherent coatings. It shall pass a 1-1/2 inch screen and be retained on a No. 4 screen. The maximum size of coarse aggregate shall not be larger than 3/4 of the minimum clear spacing between reinforcing bars; in no instance exceeding 1-1/2 inches.
- 3C.5.3 WATER - Water for mixing concrete shall be of potable quality. It shall be fresh, clean and free from oil, acid, alkalies, salt organic matter and other detrimental substances.
- 3C.5.4 ADDITIVES - No admixture shall be used without permission of the Construction Manager, except as otherwise provided in this specification.

CONCRETE

3C.6 DESIGN OF MIX

All proportioning shall be by weight of loose dry material. Mixes shall be designed by a laboratory approved by the Construction Manager and paid for by Contractor. Minimum strength of concrete shall be as specified herein.

3C.6.1 INGREDIENTS - Concrete mix shall consist of portland cement, pozzolan (see mix), fine aggregate, coarse aggregate, and water proportioned to meet the requirements that follow.

3C.6.2 STRENGTH - All concrete shall attain a minimum compressive strength of 3,000 pounds per square inch at age of 28 days, unless otherwise specified on the drawings.

3C.6.3 MIX - Substitute 10 percent, by weight, of the cement with pozzolan.

3C.6.4 CONSISTENCY - Unless otherwise allowed by the Construction Manager, the slump of concrete shall be 1-1/2 inches minimum and three inches maximum at reinforced foundation walls and footings and the slump of concrete shall be two inches minimum and four inches maximum at slabs.

3C.7 MIXING

3C.7.1 MIXER - Mixing shall be by approved truck mixers in accordance with ACI 304. Mixer shall produce a uniform distribution of material within the specified time and discharge the concrete without segregation. Concrete for drives and walks shall be air entrained.

3C.7.2 MEASURING EQUIPMENT - All concrete material shall be batched by weight, except as noted. Spring scales shall not be permitted. Cement shall be measured to within one percent and aggregates to within three percent of nominal required weights. Unbroken sacks of cement may be taken as containing 94 pounds of cement. The amount of moisture in aggregates shall be determined by ACI recommended practices.

3C.7.3 MIXING TIME

A. For mixers having a capacity of one cubic yard or less, the mixing time shall be not less than one minute after all ingredients have been charged in the mixer. For mixers of larger capacities, the minimum mixing time shall be increased by 15 seconds for each additional half cubic yard of mixer capacity, or fraction thereof.

CONCRETE

- B. Concrete delivered to the jobsite shall be mixed enroute. Cement shall be adequately protected from moisture and contamination while in transit to and in storage at the jobsite. Reclaimed cement or cement containing lumps or detrimental matter shall not be used in the work.
- C. Mixing shall conform to ASTM C-94. Mixing shall be rigorously controlled for agitating time, mixing time, and overall time upon arrival at the jobsite. Concrete shall be in final place in forms within 1-1/2 hours after introduction of the water to the cement and aggregate.
- D. No concrete shall be placed which requires the addition of water beyond that specified in the design mix, regardless of whether the specified time limit of 1-1/2 hours has elapsed or not.

3C.8 PREPARATION OF BASE SURFACE

3C.8.1 CLEANING EARTH - Earth surfaces shall be cleaned of all foreign matter and loose particles. Any free water that may be present in the forms shall be removed before placement of new concrete. Absorbent surfaces shall be just sufficiently wetted to prevent appreciable absorption of moisture from the freshly placed concrete.

3C.8.2 CLEANING PREVIOUSLY PLACED CONCRETE - Base concrete that has already hardened shall be cleaned of all laitance and loose particles (to the approval of the Construction Manager) and given a scrubbed-on coat of dry cement immediately before placement of fresh concrete. Work joints at the end of a day's work shall be roughened during the interval between the initial and permanent set and cleaned of all loose particles.

3C.9 PLACEMENT

3C.9.1 PRELIMINARY MEASURES - No concrete shall be placed until the foundations and forms have been checked and approved by the Construction Manager. Debris, foreign matter, and loose particles of soil shall be removed from the excavation before the concrete is placed.

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All surfaces against which concrete will be placed shall be moistened to prevent loss of moisture from the concrete through absorption. Free water shall be removed from excavations before concrete is placed.

3C.9.2 DEPOSITING - Concrete shall be proportioned, mixed, placed, and finished in such a manner as to provide freedom from honeycomb, segregation, and other defects of workmanship. Concrete shall be placed about reinforcement in such a manner as to prevent separation of the coarse aggregate from the mortar or displacement of the reinforcement or imbeds. All reinforcement shall be thoroughly embedded. Concrete shall be deposited in such a manner that the surface is maintained level throughout, and the flow of concrete from one location to another is kept to a minimum. Corners shall be filled in such a manner as to eliminate rock pockets and bring a slight excess of mortar to the exposed surface of the concrete.

3C.9.3 COMPACTION - High speed internal vibrators of an approved type shall be used to thoroughly settle and compact the concrete into a dense, homogeneous mass. Care shall be taken to prevent the displacement of embedded reinforcing steel or other inserts. Excessive vibration shall be avoided. During the time that concrete is being placed, Contractor shall have on hand at least one spare vibrator.

3C.10 SLAB CONSTRUCTION

Substantial metal screeds shall be used to indicate the correct finish surface of slabs. Screeds shall be properly spaced and firmly supported on chairs or special devices with top surface set securely. All building floor slabs shall be steel troweled.

3C.11 EXPANSION JOINTS

Expansion joints shall be formed in accordance with the details shown on the drawings. Preformed expansion joint filler shall conform to ASTM D-1751, and shall be an elastomer premolded expansion joint filler. Joint sealer shall conform to ASTM C-1190, and the polysulfide base sealant based on liquid polymer, as manufactured by Thiokol Chemical Corp. Horizontal joints shall be made exactly flush. Vertical joints of plywood and boarding shall be staggered.

CONCRETE

3C.12 CONTRACTION JOINTS

Contraction joints shall conform to the State of California State Standard, as detailed on the drawings. Locations of contraction joints shall be as indicated on the drawings.

3C.13 TEMPERATURE CONSIDERATIONS

During hot weather, concrete shall be placed in accordance with ACI 305. The temperature of concrete when placed shall not exceed 90°F. Contractor shall employ effective means to maintain the temperature of the concrete within the specified limits, such as precooling aggregates and mixing water, using ice as a part of the mixing water, providing shade for aggregates, and placing at a time of day when ingredients will not produce concrete temperature over 90°F. During cold weather, concrete shall be placed in accordance with ACI 306.

3C.14 CARE AND CURING

3C.14.1 CURING - Forms supporting concrete shall be kept continually wet for not less than seven days. As soon as unformed surfaces of concrete have hardened sufficiently to prevent damage by curing, an intermittent fine spray of water shall be applied as necessary to keep such surfaces continually moist for not less than seven days. As an alternate, surfaces may be covered for not less than seven days with asphalt-impregnated waterproof paper, with all seams overlapped and sealed with tape.

Where approved by the Construction Manager, exposed surfaces of concrete may be sealed with a heavy spray coat of clear Hunt's Process sealer as follows:

Unformed surfaces shall be sealed within four hours after finishing.

Formed surfaces shall be sealed immediately upon removal of forms.

3C.14.2 PROTECTION - During the curing period, concrete shall not be subjected to any loading vibration, abrasion, or other abuse. After curing and for the remainder of the construction period, concrete shall not be subjected to undue loading, vibration, abrasion, or other abuse within the control of the Contractor. Effective measures shall be taken to prevent water from any source from intermixing with or scouring the green concrete.

CONCRETE

3C.15 FINISHING CONCRETE

All foundation base slabs shall be wood trowelled. All building floor slabs shall be steel trowelled. Steel trowelled walks shall be broom finished.

3C.15.1 STEEL-TROWEL FINISH - Slabs shall be steel-trowel finished to provide a smooth, flat surface. Troweling shall be performed when the concrete has hardened just enough to prevent water or fines from being brought to the surface when worked. No cement or water shall be sprinkled on the surface during troweling. No surface protrusions or depressions greater than 1/4 inch under a 10-foot straightedge will be allowed in a level floor slab.

3C.15.2 FLOOR SEALER - The concrete slab shall be treated with a floor seal as manufactured by A Better Floor Service Co., Inc., or equivalent approved by the Construction Manager.

3C.16 REMOVAL OF FORMS

- A. Forms shall not be disturbed or removed until the concrete has hardened sufficiently to permit their safe removal without any damage to the concrete surface. Forms shall not be removed sooner than three days from foundation walls and walks and seven days from concrete slabs.
- B. All exposed cast-in-place concrete shall be sacked to fill minor pits and to produce a smooth, uniform finished surface. Sacking shall be done after all major surface defects have been repaired.
- C. Backfill shall not be placed against concrete before the 7th day strength has been attained.

3C.17 REPAIR OF DEFECTIVE WORK

At the discretion of the Construction Manager, any concrete that has insufficient strength, is improperly formed, contains rock pockets, or is otherwise defective, shall be repaired in a manner approved by the Construction Manager or shall be removed and replaced, as required, at Contractor's expense. Repairs, if ordered, shall be completed within 48 hours of stripping of forms.

END DIVISION 3

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DIVISION 4

MASONRY

(Not Applicable)

DIVISION 5

METALS

DIVISION 5
METALS

PART 5A - STRUCTURAL STEEL

5A.1 GENERAL PROVISIONS

The work covered by this division of the specification includes providing all labor, material, and equipment to detail, fabricate, deliver and erect all structural steel and miscellaneous metalwork.

5A.2 OVERALL REQUIREMENTS

Material detailing, fabrication, and erection shall be performed in accordance with the American Institute of Steel Construction (AISC), 7th Edition, First Revised Printing.

5A.3 CODES AND STANDARDS

American Institute of Steel Construction (AISC)
Manual of Steel Construction - 7th Edition, First Revised Printing

American Society for Testing and Materials (ASTM)

ASTM A-36 - Specification for Structural Steel

ASTM A-53 - Specification for Welded and Seamless Steel Pipe

ASTM A-307 - Specification for Carbon Steel externally and internally Threaded Standard Fasteners

ASTM A-501 - Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing

5A.4 BASIC MATERIALS AND METHODS

5A.4.1 STRUCTURAL STEEL AND PIPE - Structural steel shall conform to ASTM A-36, and structural pipe to ASTM A-53, Grade B, Type B or S. Acid Bessemer steel shall not be used.

5A.4.2 BOLTS AND NUTS - Bolts and nuts shall comply with ASTM A-307, unless otherwise noted on the drawings. Anchor bolts and nuts shall be galvanized.

5A.4.3 STRUCTURAL STEEL TUBING - Structural steel tubing shall conform to ASTM A-501.

5A.4.4 MISCELLANEOUS STEEL - Miscellaneous steel shall comply with the requirements for structural steel as indicated on the drawings and detailed herein, except that door frames shall be No. 18 gauge prime quality rolled steel.

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STRUCTURAL STEEL

5A.4.5 BITUMASTIC COATING -

Koppers Company - Bitumastic Coating
Bitumastic Super Service Black

5A.4.6 OIL -

Golden Bear Oil Company - Oil Code No. 9914

5A.4.7 GALVANIZING REPAIR -

Subox Coating - Galvanox

5A.5 FABRICATION

5A.5.1 DEVIATIONS - No deviations shall be made from the design drawings without prior written approval. Contractor shall be responsible for dimensions and strength of details not shown or indicated on the design drawings. Connections designed by Contractor shall be in compliance with the AISC manual.

5A.5.2 DRAWINGS - Contractor shall furnish complete erection drawings showing erection marks and field welding details, if field welds are indicated on the Contractor's drawings.

5A.5.3 DETAILING - Detailing and fabrication shall be such that erection shall be convenient and free from interferences, drilling or cutting. All holes shall be provided for installation of equipment, etc. based on information shown on the design drawings.

5A.5.4 FRAMING CONNECTIONS - All beam framing connections shall be common bolted unless welding or high strength bolts are noted on the design drawings. Bolted connections shall use two 3/4 in. bolts, unless otherwise shown on the design drawings.

5A.5.5 HORIZONTAL WEB MEMBERS - Elevations shown on drawings are top of steel framing, unless otherwise noted. Provide 3/8 in. holes, 42 in. maximum on center, in the center of horizontal web members where moisture may be trapped. Covers shall be provided with thumb holes, which shall have all sharp edges removed.

5A.5.6 FIELD WELDED CONNECTIONS - Contractor shall furnish and shop-connect all erection plates or angles required. Said plates or angles, and the members to be field connected, shall have matching holes. Each connection shall be designed for at least half of the beam weight.

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STRUCTURAL STEEL

5A.6 MISCELLANEOUS METALWORK

This work consists of fabrication and installation of inserts, anchor bolts, curb angles, ladders, platform steel, and guard rails.

5A.7 ERECTION AND INSTALLATION

5A.7.1 PLACEMENT ON SUPPORTS - Work shall be made and erected square, plumb, straight and true, and securely and accurately fastened. Where structural steel is placed on concrete supports, the steel area in actual contact with the concrete shall first be coated with one coat of either No. 50 Bitumastic Coating or Bitumastic Super Service Black. The coating shall not be splashed onto other exposed steel surfaces or the concrete. After baseplates are accurately positioned, the space between the plate and the concrete foundation shall be filled with dry-packed mortar or liquid grout.

5A.7.2 CONTACT SURFACES - Contact surfaces of joints shall be cleaned of foreign materials and dirt before assembly. All field connections shall be bolted, unless otherwise shown on drawings. Prior to inserting, nuts on all high-strength bolts shall be dipped in Oil Code No. 9914. Welding shall be by the electric-arc process. Welding shall be performed by certified welders in accordance with the requirements of the American Welding Society.

5A.7.3 INSTALLING BOLTS - Abnormal drifting or reaming of holes or driving of bolts to correct mismatched holes shall not be allowed. Wrenches that deform the nuts or damage the galvanized coatings by flaking or cutting shall not be used.

END PART 5A

DIVISION 5
METALS

PART 5B - MISCELLANEOUS METALWORK

5B.1 GENERAL PROVISIONS

Contractor shall furnish and install all miscellaneous metalwork as shown on the drawings and described herein. Miscellaneous metalwork includes inserts, anchor bolts, curb angles, ladders, floor plates, metal brackets, and similar metalwork.

5B.2 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

ASTM A-36 - Specification for Structural Steel

Southern California Edison Company (SCE)

Material Standard No. 25 - Specification for Galvanizing Steel and Iron Products.

5B.3 MATERIAL

5B.3.1 STEEL - Except as otherwise indicated on the drawings, all steel shall be in compliance with ASTM A-36. Where galvanizing is indicated, steel shall be hot dipped galvanized.

5B.3.2 LADDERS - Steel ladders shall be fabricated and anchored as shown on the drawings.

5B.4 JOINT SURFACES OF DISSIMILAR METALS

Joint surfaces between dissimilar metals shall be cleaned with mineral spirits and fine sandpaper, and then painted with one coat of zinc-chromate primer.

5B.5 DAMAGED OR CUT GALVANIZED PARTS

Damaged galvanized coatings and all exposed bare metal on galvanized parts shall be repaired using Galvanox Type 1, manufactured by Subox, Inc. distributed by R. E. Cunningham and Son, South El Monte, or Koppers Company Organic Zinc, applied in accordance with manufacturer's instructions.

END, DIVISION 5

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DIVISION 6

WOOD AND PLASTICS

DIVISION 6
WOOD AND PLASTICS

PART 6A - INTERIOR FINISH AND MILLWORK

6A.1 GENERAL PROVISIONS

Contractor shall furnish and install millwork and finish carpentry as shown on the drawings and described herein.

6A.2 CODES AND STANDARDS

Woodwork Institute of California

Manual of Millwork for Premium Grade Doors

U. S. Commercial Standard (CS)

CS 171-58 - Hardwood Veneered Doors

6A.3 SUBMITTALS

6A.3.1 SHOP DRAWINGS - Submit four copies of shop drawings to the Construction Manager for approval prior to fabrication.

6A.3.2 SAMPLES - Submit to the Construction Manager for approval plastic laminate samples prior to ordering.

6A.4 MATERIAL STORAGE

Millwork material shall not be delivered to the jobsite until the building is in proper condition and arrangements are made to properly handle the material.

All items of interior finish when received at the jobsite shall be stored in a suitably protected location, stacked on timber supports, under cover, in accordance with best current practice. Separators shall be placed between all units and all milled surfaces, and edges shall be protected from damage.

6A.5 MATERIAL

6A.5.1 COUNTER TOPS - Laminated plastic as manufactured by Formica or Construction Manager approved equivalent, applied over 3/4-in. thick plywood. Corners shall be self-edged and sanded to a smooth finish.

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INTERIOR FINISH AND MILLWORK

6A.5.2 CABINETS

- A. All sliding and swinging doors shall be paint grade birch plywood. The outer edges shall be finished with 3/4 in. x 3/4 in. hardwood strips properly cemented to plywood.
- B. All shelving shall be 3/4 in. Point Grade Birch Plywood. The outer edges shall be finished with 3/4 in. x 3-1/4 in. hardwood strips properly cemented to the plywood.
- C. All vertical members shall be 3/4 in. paint grade birch plywood with 3/4 in. x 3/4 in. hardwood edge band as required for exposed edges.
- D. All drawer facings shall be 3/4 in. paint grade birch.
- E. Cabinet backs shall be min. 1/2 in. paint grade birch plywood.
- F. Provide locks on cabinets as indicated on the drawings.
- G. Hardware shall be as indicated on the drawings.
- H. Provide plastic laminate on cabinets where called for on the drawings. (See also Counter Top, Section 6A.5.1.)
- J. All cabinets shall be made in accordance with detail drawings. Required drawers shall have metal drawer slides and shall operate easily, without excessive play.

6A.6 FIELD MEASUREMENTS

Obtain field measurements as may be required and report any discrepancies between the drawings and field dimensions to the Construction Manager.

6A.7 MILLWORK AND TRIM

- A. All millwork shall be fitted, mitered at corners, and joined in accordance with best current mill practice. All joints shall be close and tight. Trim shall be applied with finishing nails properly set and spaced. Where necessary, the trim shall have screw fastenings.
- B. All finish throughout shall be hand sealed after setting by the carpenter on the job. Permanently joined material shall have surfaces painted or glued before assembly.

INTERIOR FINISH AND MILLWORK

C. All exposed surfaces of millwork and trim shall be belt sanded and hand finished so as to be free from machine and tool marks. Finish lumber shall be secured with finishing nails with heads set for putty stopping. All cuts shall be primed before installation.

6A.8 BACK PAINTING

All trim, doors, casings, and other such finished wood surfaces that will be concealed in the finish work shall be back-painted.

6A.9 DOORS AND FRAMES

Door frames and adjacent molding shall be set plumb and true, be well joined, and secured in correct position at all corners and at intermediate points in accordance with best current standards. Doors shall be well fitted into frames and hung in a vertical plane in all positions.

6A.10 MISCELLANEOUS ITEMS

Miscellaneous items shall be manufactured in accordance with good current mill practice. In general, regardless of grade, all finish material shall be straight, uniform in appearance, accurately milled, and free from blemish or damage at time of delivery to the site.

END OF DIVISION 6

DIVISION 7

THERMAL AND MOISTURE PROTECTION

DIVISION 7
THERMAL AND MOISTURE PROTECTION

PART 7A - INSULATION

7A.1 GENERAL PROVISIONS

The Contractor shall furnish and install thermal insulation in all exterior walls and roof decks as indicated on the drawings and described herein.

7A.2 SUBMITTAL

Submit two samples of each insulation material to be used and such other items as may be requested by Construction Manager. The completed work shall match the approved samples.

7A.3 MATERIAL DELIVERY AND STORAGE

All insulation materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall not be accepted for use on the project by Construction Manager and shall be removed from the jobsite.

7A.4 MATERIAL

7A.4.1 SOUND ATTENUATION BLANKETS - Sound attenuation blankets shall be as manufactured by United States Gypsum or Construction Manager approved equivalent. Material shall conform to FS HH-I-521 D, Type I. Sound attenuation blankets shall be 3-1/2 in. thick x 24 in. wide x 48 in. in length, 2.5 pcf density.

7A.4.2 BATT THERMAL INSULATION - Insulation material shall be as specified in the following, or as approved by Construction Manager.

- A. Roof - ITP Insul/Liner by Johns-Manville with a "U" factor of 0.05 BTU/Hr Ft.². Assembly shall include ITP 1-1/8 in. thick vinyl faced board, purlin "Money Clip" extrusion, cross purlin "T" section, with 5-1/2 in. batt in conjunction with 3 in. faced Microlite "L".
- B. Wall - The interior walls shall be filled to a minimum net depth of 7 in. from the exterior siding with Rapco Foam by the Homefoamers Co., or as approved by the Construction Manager. The thermal conductivity (BTU/Hr. In. °F) "K" at 70°F shall be 0.23, at 35°F it shall be 0.21.

INSULATION

7A.4.3 ROOF TOPPING - Finish surface of roof shall receive a snowcoat application.

7A.5 INSTALLATION

Installation shall be in accordance with the insulation manufacturer recommendations and the best standard practices of the trade.

END PART 7A

DIVISION 7
THERMAL AND MOISTURE PROTECTION

PART 7B - WEATHERSEALING

7B.1 GENERAL PROVISIONS

Contractor shall furnish and apply all weathersealing as shown on the drawings and described herein.

7B.2 CODES AND STANDARDS

American Standards for Testing and Materials (ASTM)

ASTM D-925 - Testing for Rubber Property-Staining of Surfaces
(Contact, Migration, and Diffusion)

Federal Specification (FS)

FS TT-S-001543 - Sealing Compound: Silicone Rubber Base for
Caulking, Sealing, and Glazing in Buildings and
Other Structures) Grade A or B.

FS TT-S-00227E - Sealing Compound: Elastomeric Type, Multi-Component
(for Caulking, Sealing, and Glazing in Buildings and
Other Structures) Class A or B.

FS TT-S-00230C - Sealing Compound: Elastomeric Type, Single
Component (for Caulking, Sealing, and Glazing in
Buildings and Other Structures) Class A or B.

7B.3 MATERIALS

7B.3.1 SEALANT - The following construction type sealants conform to the listed standards and are acceptable to the Construction Manager. Sealant shall be any of sealant manufacturer's standard colors selected by Construction Manager. No oil-based caulking compounds shall be used on the Work.

- A. Dow Corning 780 Building Sealant, manufactured by Dow Corning Corporation, Midland, Michigan.
- B. PRC Rubber Caulk 5000 Sealant, manufactured by Products Research & Chemical Corporation, Burbank, California.
- C. Silicone Sealant SCS-1300 or SCS-1600 manufactured by General Electric Company, Silicone Products Department, Waterford, New York.

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WEATHERSEALING

7B.3.2 JOINT FILLER - Backing for sealing compound shall be flexible polyurethane, polyethylene, polysulfide, polyvinyl chloride, sponge rubber, neoprene or butyl rod manufactured for this purpose; glass fiber roving; or vinyl tubing of a slightly greater diameter than width of joint to be sealed. No asphaltic materials shall be used for this purpose. Back-up material shall be approved for compatibility with weathersealing compound by weathersealing compound manufacturer and designated as nonstaining when tested in accordance with requirements of ASTM D-925. The following joint filler materials are acceptable to the Construction Manager.

- A. Ethafoam SB brand Sealant Backer Rod, manufactured by the Dow Chemical Corporation, Midland, Michigan.
- B. Foam Joint Filler 88 and Round Joint Filler 89, manufactured by Pecora Chemical Corporation, Philadelphia, Pennsylvania.
- C. Poly-Tite, manufactured by Sandell Manufacturing Company, Inc., Cambridge, Massachusetts.
- D. Ropax, manufactured by Presstite Division, Interchemical Corporation, St. Louis, Missouri.
- E. StanPro Foam Neoprene, StanPro Foam Polyethylene and StanPro Vinyl Backing Strip, manufactured by the Standard Products Company, Cleveland, Ohio.

7B.4 APPLICATION

7B.4.1 Joints indicated on drawings to be caulked or customarily required to be caulked or required by the Construction Manager to be caulked shall be thoroughly cleaned of dust, dirt, scale, corrosion, grease, lacquer, paint and anything else that might interfere with adhesion of sealant. Nonporous surfaces such as metal or glass may be cleaned either mechanically or chemically but should solvent be used to clean nonporous surfaces, solvent shall be wiped off with clean cloths before it dries and redeposits contaminants.

7B.4.2 Should joints be deeper than 1/4-in., they shall be packed to within 1/4-in. of face surface with one of the compressible joint fillers specified; final 1/4-in. shall be filled with sealing compound. If possible, joints to be caulked shall be built up or be cut out square down sides so as not to be vee shaped.

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WEATHERSEALING

- 7B.4.3 Surfaces to be caulked shall be primed with primer recommended by printed literature of manufacturer of sealant being used in accordance with sealant manufacturer's application instructions with respect to various types of materials to which sealant will be applied. Should ambient temperature be so low that a film of moisture forming on cold substrate would prevent a strong bond with sealant, appropriate measures shall be taken to dry the substrate before application of sealant.
- 7B.4.4 Primer, joint filler and any other material used in conjunction with sealant shall be of such composition that it will not cause staining of sealant or materials to which it is applied. Surfaces adjacent to joints shall be masked to obtain a clean, neat line. Masking tape shall be removed immediately after tooling sealant.
- 7B.4.5 Weathersealing materials shall be applied in accordance with sealant manufacturer's recommendations. The compound shall not be modified by addition of liquids or powders to alter the flow properties of sealant. Compound shall not be used on this work if date of manufacture on container indicates that material is more than one year old.
- 7B.4.6 Sealant shall be applied before final coat of paint is applied to adjacent work. Compound shall be applied with a hand gun with a nozzle of the proper size to fit the joints. Material shall be driven in with sufficient pressure to solidly fill the joints. Superficial painting of joints with a skin bead shall not be acceptable. Finish of weathersealing on flush surfaces shall be neatly painted flush or be tooled with a beading tool. Excess material shall be removed.
- 7B.4.7 Weathersealing shall be uniformly smooth, free of wrinkles, flush with adjacent surfaces and absolutely watertight. Adjacent surfaces which have been soiled by application of sealing compound shall be wiped clean and be left neat. The work shall be judged defective should sealant harden, crack, crumble, melt, shrink, leak or run.

END PART 7B

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DIVISION 7
THERMAL AND MOISTURE PROTECTION

PART 7C - SHEET-METAL WORK

7C.1 GENERAL PROVISIONS

Contractor shall furnish and install all sheet-metal work shown on the drawings and described herein.

7C.2 SCOPE OF WORK

The work includes but is not limited to the installation of the following:

Coping
Flashing and counterflashing
Metal trim molding

7C.3 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

ASTM A-525 - Specification for Steel Sheet, Zinc-Coated
(Galvanized) by the Hot-Dip Process, General
Requirements

ASTM B-32 - Specification for Solder Metal

7C.4 MATERIAL

7C.4.1 SHEET METAL - Minimum 24 gauge galvanized with 1.25 ounces coating per square ft., in accordance with ASTM A-525.

7C.4.2 SOLDER - Solder shall be 50-50 solder, meeting the requirements of ASTM B-32. Soldering paste or flux shall be noncorrosive type which will not discolor metal.

7C.4.3 FASTENINGS - Fastenings shall be of the same material as the sheet-metal being fastened, or corrosion-resistant metal compatible with the sheet-metal being used.

7C.5 FABRICATION

7C.5.1 Shop fabricate and deliver the sheet metal in sections, ready to install.

SHEET-METAL WORK

- 7C.5.2 Form fabricated section pieces on a machine to the full length of the brake where possible.
- 7C.5.3 Ensure that all angles and surfaces are straight, unwarped and unstrained.
- 7C.5.4 Provide mechanical expansion joints as necessary.
- 7C.5.5 Adequately solder and buff smooth all corner returns.

7C.6 SURFACE PREPARATION

Broom clean all surfaces which are to receive sheet-metal work.

Set all projections (nails, fins, and other protrusions) flush with the surface, or remove such projections as required or directed by the Construction Manager.

7C.7 INSTALLATION

7C.7.1 GENERAL - Install the work watertight and weathertight throughout. Provide for expansion and contraction, free from undue stress in any part of the completed work.

7C.7.2 JOINTS

7C.7.2.1 Lap a minimum of 4 in. all joints in metal heavier than 24 gauge, and rivet with No. 2 rivets spaced a minimum of 3 in. on center.

7C.7.2.2 Close the ends of all expansion joints, separation joints, and similar installations by an approved method which will provide adequate weathertightness and allow for expansion and contraction.

7C.7.2.3 Joints in flat sheets shall be lock seam type, folded flat and sweated full of solder to form a smooth, flat joint.

7C.7.2.4 Longitudinal joints shall not be accepted.

7.C.7.3 SECURING THE WORK - Where practical, secure the work by means of cleats to avoid nailing through the exposed face of the metal. Space nails, rivets or screws a minimum of eight in. on center. Where fastenings are exposed to the weather, use screws and lead washers.

SHEET-METAL WORK

7.C.7.4 SOLDERING - Thoroughly clean all surfaces prior to soldering. Flat lock seams shall be a minimum of 1/2 in. wide, and where they are not soldered they shall be a minimum 3 in. wide.

END PART 7C

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DIVISION 8

DOORS AND WINDOWS

DIVISION 8
DOORS AND WINDOWS

PART 8A - METAL DOORS AND FRAMES

8A.1 GENERAL PROVISIONS

Contractor shall furnish and install all hollow metal doors and frames and associated hardware as detailed on the drawings and described herein.

8A.2 SUBMITTALS

Submit four copies of shop drawings of all items specified herein to the Construction Manager for approval. Obtain approval of drawings prior to proceeding with manufacturing. Shop drawings shall indicate: elevations of each door type; details of each frame type; location in the building for each item; conditions at openings with various wall thickness and material; typical and special details of construction; methods of assembling sections; location and installation requirements for hardware; size, shape and thickness and materials; joints and connections.

8A.3 CODES AND STANDARDS

Commercial Standard (CS)

CS 242-62 - Standard Stock Commercial 1-3/4 in. thick steel doors and frames

8A.4 MATERIAL SHIPMENT, AND HANDLING

8A.4.1 FRAMES

- A. For welded type frames, provide temporary steel spreaders fastened across bottom of frames; where construction will permit concealment, leave spreaders in place until installation; otherwise remove spreaders after frames are set and anchored.
- B. In place of spreaders, frames may be strapped together in pairs with heads inverted for bracing during shipment. Before shipping, label each frame with metal or plastic tags to show their location, size, door swing and other pertinent information.

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METAL DOORS AND FRAMES

8A.5 DOOR MANUFACTURERS

Metal doors and frames shall be as manufactured by the following or a Construction Manager approved equivalent:

Overly Manufacturing Company
Kreiger Metal Products

8A.6 METAL FRAMES

8A.6.1 LOCATION AND TYPE - All metal frames for doors shall be formed of steel to sizes and shapes indicated. Frames shall be combination type with integral trim and fabricated with full welded unit type construction at joints.

8A.6.2 TYPE AND GAUGES OF METAL

- A. Metal for frames shall be mill quality cold-rolled steel sheets with clean smooth surfaces. Interior and exterior frames shall be constructed from 16 gauge prime quality steel free from defects.
- B. Provide concealed metal reinforcements for hardware as required. The gauges of metal for reinforcement shall be in accordance with the manufacturer's recommendations for the type of hardware and the thickness and width of doors to be hung in the frame, provided that the gauges used are not lighter than those required by CS 242-62.

8A.6.3 WORKMANSHIP - The finish work shall be strong and rigid, neat in appearance and free from defects. Fabricate moulded members straight and true with corner joints well formed, in true alignment and fastenings concealed where practicable. Where exterior frames are shown to be set in masonry, metal frames shall be constructed to allow sufficient space between back of trim and masonry to receive caulking compound.

8A.6.4 FORMING CORNER JOINTS - Joints for welded type frames shall be mitered or butted and continuously arc-welded for full depth and width of frame and trim. All contact edges shall be closed tight and all welds on exposed surfaces dressed smooth and flush.

8A.6.5 PROVISIONS FOR HARDWARE - Frames shall be prepared at the factory for the installation of hardware. Welding of hinges to frames shall not be permitted. Frames shall be mortised, reinforced, drilled and tapped to templates to receive all mortised hardware; where surface applied hardware is shown,

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METAL DOORS AND FRAMES

frames shall be provided with reinforcing plates only. Where concealed overhead doors closers are shown in frame members, the necessary additional space, cut-outs, reinforcement and provisions for fastenings shall be made in heads of frames to receive the closers. Provide cover boxes in back of all hardware cut-outs. Door frames shall be punched to receive rubber or vinyl door silencers; provide three silencers on lock side of single doors and one silencer for each leaf in heads of double door frames; furnish the required number and type of silencers with the frames. Lock strikes shall be set out and adjusted to provide clearance for silencers.

8A.6.6 WALL ANCHORS

- A. Provide metal anchors of shapes and sizes required for the adjoining type of wall construction. Fabricate jamb anchors of steel not lighter than No. 14 gauge. Locate anchors on jambs near the top and bottom of each frame and at intermediate points not over 24 in. apart.
- B. Where frames are shown to be set in metal stud partitions: Weld, or otherwise securely fasten anchors to back of frames at jambs; make provision for securing anchors to steel studs with two 1/4-in. machine screws, hex nuts and lock washers, or by welding.

8A.6.7 FLOOR ANCHORS - Provide floor clips of not less than No. 4 gauge steel and weld to bottom of each jamb member for anchoring frame to floor construction with two 3/8-in. bolts into slab.

8A.6.8 PRIMED FINISH - Apply a primed finish to all ferrous metal surfaces furnished under this division. Clean and chemically treat metal surfaces to assure maximum paint adherence; follow with a dip or spray coat of rust-inhibitive metallic oxide, zinc chromate, or synthetic resin primer on all exposed surfaces. Finished surfaces shall be smooth and free from irregularities and rough spots. Each coat of paint shall be separately baked, or oven dried. The time and temperature for drying shall be in accordance with manufacturer's recommendations for developing maximum paint adherence.

8A.6.9 INSTALLATION - Set frames in position, plumb, align and brace securely until permanent anchors are set. Anchor bottom of frames to floors with expansion bolts, or with power fasteners. Build wall anchors into walls, or secure to adjoining construction as indicated or specified. Where frames require ceiling struts or other structural overhead bracing, they shall be anchored securely to structural framing above.

METAL DOORS AND FRAMES

8A.7 FLUSH METAL DOOR

- 8A.7.1 GENERAL REQUIREMENTS - Door shall be flush hollow metal with mineral core. Core shall be of incombustible mineral sections. Door shall be prepared to receive the hardware specified in Division 10, Part 10A, Finish Hardware.
- 8A.7.2 CONSTRUCTION - Construct door of two outer steel sheets not lighter than No. 18 gauge and with edges finished flush. Seams or joints shall not be permitted on door faces. Top and bottom of door may be either welded flush or be closed with recessed spot welded enclosures. The outer face sheets shall be reinforced with either No. 22 gauge interlocking vertical channels or z-shaped members spaced not more than 8-1/2 in. apart and spot welded to outer sheets, or with No. 24 gauge horizontal U-shaped sections spaced in parallel rows not over 8-1/2 in. on center and welded in alternating sequence to the inside face of each outer sheet so that a horizontal stiffening occurs approximately 17 in. on each face sheet. Provide approved sound absorbing material on inside of door to eliminate the metallic sound. Mouldings shall be of steel, not lighter than No. 18 gauge.
- 8A.7.3 TYPE AND GAUGES OF METAL - Metal for doors shall be cold-rolled, stretcher leveled steel sheets with clean smooth surfaces. The gauges of metal shall be as hereinafter specified under the various door types. Metal shall be phosphate treated prior to painting.
- 8A.7.4 WORKMANSHIP - The finished work shall be rigid, neat in appearance and free from defects. Form moulded members straight and true, with joints coped or mitered, well formed, and in true alignment. All welded joints on exposed surfaces shall be dressed smooth so they are invisible after finishing.
- 8A.7.5 DOOR SIZE AND CLEARANCE - Door shall be of the type, size and design indicated; 1-3/4-in. thick unless designated otherwise. The clearance for doors, except fire doors, shall be 1/8-in. at jambs and heads, 1/8-in. at meeting stiles of pairs of doors, and 1/2-in. at bottom (above concrete) unless indicated or specified otherwise. The clearances for approved fire doors shall be as required by the authority having jurisdiction.
- 8A.7.6 STILE EDGES - The lock edges of stiles shall be beveled 1/8-in. in 2 in. for hollow metal doors; (double beveled and straight edge doors are acceptable providing they will swing free under all operating conditions).

METAL DOORS AND FRAMES

- 8A.7.7 WEATHER SEAL FOR EXTERIOR DOORS - The top and bottom edges of all hollow metal exterior doors shall be closed to provide a weather seal. This seal may be provided as part of the door construction or by the addition of inverted steel channels or other suitable shapes welded to the face sheets.
- 8A.7.8 PROVISIONS FOR HARDWARE - Mortise, reinforce, drill and tap doors at factory to receive all mortise type hardware. Where doors are shown to receive surface applied hardware, drilling and tapping for surface applied hardware will be done in the field. Provide metal reinforcing plates for locks and all mortised hardware; provide reinforcing plates for surface applied hardware as required. The gauges of metal for reinforcing plates shall comply with manufacturer's recommendations for the type of hardware used and the size and thickness of doors, provided that the gauges used are not lighter than those required by CS 242-62. Where concealed overhead door closers are shown, the necessary cut-outs, reinforcement and provisions for fastenings shall be made in heads of doors.

8A.8 CLEANING

Upon completion, metal surfaces of doors and frames shall be thoroughly cleaned and touched up.

END PART 8A

DIVISION 8
DOORS AND WINDOWS

PART 8B - WOOD DOORS

8B.1 GENERAL PROVISIONS

Contractor shall furnish and install all wood doors shown on the drawings and specified herein.

8B.2 SHOP DRAWINGS

Contractor shall submit four copies of shop drawings of wood doors and related items specified herein to the Construction Manager for approval and shall obtain approval of drawings before proceeding with manufacturing or shipment.

Shop drawings shall indicate the arrangement or pattern, edge details, thickness, size of parts, size of openings in doors, moulding profile, face veneers and core construction.

8B.3 STANDARDS AND MANUFACTURERS

To establish a standard of quality, wood doors shall be as manufactured by Weyerhaeuser Company and as specified in this Part 8B. Other manufacturers, of equivalent doors, are U.S. Plywood Corporation and General Veneer.

All work specified herein shall be coordinated with the specifications of other sections of this Specification affecting the furnishing and installation of doors.

8B.4 SOLID CORE DOORS

Solid Core Doors shall be DPC-1 in sizes and thicknesses as shown on drawings, which meet or exceed NWMA industry standard 1.S.1-76 and Architectural Woodwork Institute for Type C core faces 1, 4, 5. Face doors with good grade, plain sliced, natural birch, or 1/8 in. plastic laminate as shown on drawing. Crossband shall be hardwood veneer 1/16 in. thick (omit at plastic laminate face). Side edges shall be 1-1/2 in. laminated hardwood, outer strip shall match face veneer (1/16 in. plastic laminate applied to strike stile only, after face) (hinge stile shall be painted to match laminated plastic color). Top and bottom edges shall be 1-1/4 in. hardwood. Core shall be "timblend" with average density of 30-32 lbs. per cu. ft. and shall comply with Commercial Standard CS-236. Core assembly adhesives shall be Type II (water-resistant). Face adhesives shall be Type I (waterproof) for wood and Type II (water-resistant) for plastic laminate.

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WOOD DOORS

8B.5 GLASS PANELS

Contractor shall provide glass panels where required as shown on the drawings.

8B.6 INSTALLATION

The utility or structural strength of the door shall not be impaired in the fitting of the door, the application of hardware, or cutting and altering the door for lights, louvers or other special details. Carefully seal all edges immediately after fitting, including areas routed for concealed closers and other hardware.

END PART 8B

DIVISION 8
DOORS AND WINDOWS

PART 8C - GLASS AND GLAZING

8C.1 GENERAL PROVISIONS

Contractor shall furnish and install all glass indicated on the drawings and described herein, including glass in doors. Installation shall be performed by experienced and skilled glaziers in accordance with the best trade practice.

8C.2 GLASS SIZES

8C.2.1 The sizes of glass indicated on drawings are approximate only. Actual sizes shall be determined by measuring frames to receive the glass at the jobsite, or from guaranteed dimensions provided by the frame supplier. Dimensions for glass and glass holding surrounds shall be coordinated to provide the following minimum clearances:

- A. At perimeter edge of glass on all four sides provide clearance equal to glass thickness for single glass.
- B. The sealer space between face of glass and fixed or applied glazing stops, both indoors and outdoors, shall be not less than 1/16 in. plus glass and sash tolerance, but 1/8 in. minimum.

8C.2.2 No attempt shall be made to change the size of tempered glass units after they leave the factory. Nipping to remove flares or to reduce oversized dimensions of any type of glass shall not be permitted.

8C.3 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

ASTM C-542 - Specification for Lock-Strip Gaskets

Federal Specification (FS)

DD-G-451c - Glass, Flat for Glazing Purposes

American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)

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GLASS AND GLAZING

8C.4 SUBMITTALS

8C.4.1 Submit samples (in duplicate) of each type of glass specified and of the following glazing materials and accessories to the Construction Manager for approval: Approval shall be obtained prior to delivery or fabrication.

- A. Solar grey double glazed glass
- B. Polished plate tempered glass

8C.4.2 Contractor, if requested, shall furnish an affidavit from the manufacturer, certifying that the materials or products delivered to the jobsite meet the requirements specified. However, such certification shall not relieve Contractor from the responsibility of complying with any added requirements specified herein.

8C.4.3 When glass is not cut to size by the manufacturer, and is furnished unlabeled as "stock to cut," Contractor shall submit an affidavit, or other satisfactory evidence, stating the quality, thickness, type and manufacturer of the glass furnished. All glazing compounds shall arrive at the jobsite in labeled containers which have not been opened.

8C.5 MATERIAL

8C.5.1 GLASS FOR GLAZING - All glass for glazing purposes shall be standard brand complying with the Federal Specification, DD-G-451c.

8C.5.2 EXTERIOR GLASS - Exterior glass shall be solar grey, double glazed glass, 1 in. thick with 1/2 in. airspace and each glaze 1/4 in. with the following properties is typical unless otherwise shown on the drawings.

Transmittance

Average Daylight	37%
Total Solar	34%

Reflectance

Average Daylight	6%
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GLASS AND GLAZING

Relative Heat Gain (BTU/Hr/Ft²)

*Air Space 1/2 in. 115

U-Values (BTU/Hr/Ft²/°F)

Summer .57

**Winter .49

Shade Coefficients

No shade .53

*Based on an ASHRAE Solar Gain Factor of 200 BTU/Hr/Ft² and on outdoor temp. of 140°F higher than indoor.

**Winter U-values are based on an outdoor temp. of 0°F and indoor temp. of 70°F, a 15 MPH wind velocity, and no sun. Summer U-values and shading coefficients are based on an outdoor temp. of 90°F, an indoor temp. of 75°F, and a solar intensity of 250 BTU/Hr/sq. ft.

8C.5.3 INTERIOR GLASS - Interior glass shall be 1/4 in. clear tempered plate glass manufactured by PPG Industries, Inc.

8C.6 INSPECTION AND PREPARATION

All sash, frames, and surrounds to be glazed shall be inspected for defects, proper materials, defective workmanship or other conditions which could affect satisfactory installation of glass. Do not proceed with glazing until such conditions have been corrected. Later claims of defects in such work shall not relieve the Contractor from responsibility to produce satisfactory work. The following work shall be completed before starting glazing work:

- A. Sash and frames shall be firmly anchored in proper position, plumb and square within 1/8 in. of nominal dimensions on approved shop drawings.
- B. All rivet, screw, bolt or nail heads, welding fillets and other projections shall be removed from glazing rabbets to provide the specified clearance.
- C. All corners and fabrication intersections shall be sealed and sash and frames shall be weathertight.

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GLASS AND GLAZING

- D. All rabbets at sills shall weep to outside and all rabbets shall be of sufficient depth and width to receive the glass and provide the required overlap of the glass.
- E. All sealing surfaces of steel frames shall be prime painted.

8C.7 INSTALLATION OF GLASS

- 8C.7.1 Apply glazing compound and gaskets uniformly with accurately formed corners and bevels. Remove excess compound from glass and sash. Use only recommended thinners, cleaners and solvents. Make good contact with glass and frame when glazing and facing off. Do not set glass in steel frames until frames have been primed and paint is dry. Do not apply any compound at temperatures lower than 40°F or on a damp, dirty or dusty surface.
- 8C.7.2 Clean all sealing surfaces at perimeter of glass and the sealing surfaces of rabbets and stop beads before applying any glazing compound or gaskets. Use only the approved solvents and cleaning agents recommended by the compound manufacturer.
- 8C.7.3 Center glass in glazing rabbet to maintain specified clearances at perimeter on all four sides. Maintain centered position of glass in rabbet and provide the required sealer thickness (1/8 in. minimum) on both sides of glass. Whenever glass dimensions are larger than 50 united inches, provide setting blocks one quarter way in from each end of glass.
- 8C.7.4 Secure stop beads in place with suitable fastenings. After the heel bead of sealant has taken its initial set, back fill the glazing space to site line of stop bead with elastic glazing compound. Strip excess tape and compound from glass and frame. Tool compound and trim or tool tape at a slight angle to shed water and produce clean straight sight lines.

END PART 8C

DIVISION 8
DOORS AND WINDOWS

PART 8D - WINDOW WALL AND GLASS DOORS

8D.1 GENERAL PROVISIONS

Contractor shall furnish and install window walls and glass doors indicated on the drawings and described herein.

8D.2 SCOPE OF WORK

Contractor shall perform all work associated with installation of the following:

- A. Aluminum wall framing
- B. Tempered glass doors, including aluminum door frame and integral hardware
- C. Glass and glazing
- D. Anchors, clips, shims, and fasteners for complete installation

8D.3 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

- ASTM B-137 - Measurement of Weight of Coating on Anodically Coated Aluminum.
- ASTM B-221 - Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
- ASTM B-244 - Measurement of Thickness of Anodic Coatings on Aluminum with Eddy-Current Instruments.

8D.4 SUBMITTALS

Contractor shall submit a certification attesting that anodized finishes meet specifications.

8D.5 MATERIALS

For purposes of designating type and quality for work of this part, drawings and specifications are for the Core-Thermal Core framing and/or entrance material as manufactured by Kawneer Company, Inc.

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WINDOW WALL AND GLASS DOORS

Doors shall be Kawneer Aluminum wide stile, Series '500'.

Entrance frame and glass framing shall be 1-3/4 in. x 3-3/4 in. Core-Thermal Core frame with transom for 1/4 in. thick or 1 in. thick glazing.

8D.6 MATERIALS AND CONSTRUCTION

8D.6.1 Framing members, doors, transition members, mullions, adapters and mountings shall be extruded of aluminum with alloy and temper consistent with the method of manufacture. These members shall be extruded aluminum alloy 6063-T5 (ASTM B-221-54T alloy G.S. 10A-T5). All screws, miscellaneous fastening devices and internal components shall be of stainless steel, or plated or corrosion-resistant materials of sufficient strength to perform the functions for which they are used.

8D.6.2 Glass framing members and doors shall provide for flush glazing on all sides with through sight lines, and no projecting stops. Doors shall be glazed with 1/4 in. tempered plate glass and 1 in. tempered plate glass.

8D.6.3 The system shall provide fully resilient settings for glass and panels by use of E.P.D.M. Elastomeric Glazing gaskets on both sides of the glass.

8D.6.4 Door moldings shall be accurately fitted to flush hairline joints and mechanically fastened with screw-and-spline joinery at door corners and sub-frame intersections.

8D.7 FINISH

8D.7.1 All exposed doors and grid framing members shall be free of scratches and other serious surface blemishes.

8D.7.2 Finish shall be Permanodic Color Black, which is an Architectural Class 1 Anodic Coating and Integral Color AA-M12C22A42.

WINDOW WALL AND GLASS DOORS

8D.7.3 Permanodic Color shall be obtained by giving all aluminum sections a caustic etch followed by an anodic treatment to produce a high density aluminum oxide coating. The minimum coating thickness shall be 0.7 mill (0.0007") when measured per ASTM B-244, and the density shall be at least 32 mg. per square in. when measured per ASTM B-137. The Permanodic Color coating shall then be given a complete seal.

8D.8 INSTALLATION

- 8D.8.1 All items under this heading shall be set in their correct locations as shown in the details and shall be level, square, plumb, and at proper elevations and in alignment with other work.
- 8D.8.2 All joints between interior metal and between interior glass and entrance framing and mullion members shall be tightly caulked in order to secure a watertight job.
- 8D.8.3 When moldings are joined, they shall be accurately cut and fitted to result in a tightly closed joint.
- 8D.8.4 After erection, Contractor shall adequately protect exposed portions of the aluminum work from damage by grinding and polishing machines, plaster, lime, acid, cement or other harmful compounds.

END OF DIVISION 8

DIVISION 9

FINISHES

DIVISION 9
FINISHES

PART 9A - GYPSUM DRYWALL

9A.1 GENERAL PROVISIONS

Contractor shall furnish, install, and finish all gypsum drywall surfaces as specified herein and as shown on the drawings, including joint taping and cementing, and metal accessories as required to make a complete installation.

9A.2 OVERALL REQUIREMENTS

Materials and workmanship shall comply with all pertinent requirements of the Uniform Building Code, 7th Edition, 1976 which is hereby made a part of this specification.

9A.3 STORAGE AND HANDLING

Stockpile wallboard at jobsite flat on floor in piles, with care against loading beyond limits of floor. Leave in original wrappings or containers until ready for actual use.

9A.4 MATERIAL

9A.4.1 GYPSUM WALLBOARD - Gypsum wallboard shall be 5/8 in. sheetrock, Fire Code "C", as manufactured by U.S. Gypsum Company, or other Government approved equal. Government approved equal shall be approved by Government in writing prior to starting of the installation.

9A.4.2 EDGES - Edges shall be tapered and sheets shall be in lengths as long as practical to minimize the number of joints. Thickness: 5/8-in. unless shown otherwise on the drawings.

9A.4.3 METAL CORNERS - Metal corner reinforcing members shall be U.S. Gypsum "Dura-Bead".

9A.4.4 JOINTS - All joints shall be finished with U.S. Gypsum "Perf-A-Tape" adhesive, "Perf-A-Tape" cement.

9A.5 SURFACE PREPARATION

All surfaces shall be in proper condition to receive the finish specified. All surfaces shall be clean, dry, and adequately protected from dampness and shall be smooth, even and true to plane, and free of any material or irregularity which could adversely affect this work. All spaces shall be broom clean before gypsum wallboard work is started.

GYPSUM DRYWALL

9A.6 INSTALLATION

- 9A.6.1 Gypsum wallboard, 5/8 in., Fire Code "C", shall be installed in all interior walls or as shown on the drawing.
- 9A.6.2 Sheets shall be installed in lengths as long as practical to minimize the number of joints. Edges shall be tapered.
- 9A.6.3 Salient corners shall be installed with U.S. Gypsum "Dura-Bead" or equal; metal corner reinforcing members.
- 9A.6.4 All joints shall be filled and taped, 3 coat finish typical.
- 9A.6.5 During application of wallboard, temperature within building shall be maintained at not less than 50°F. Ventilation shall be provided as required to prevent moisture build-up.
- 9A.6.6 Wallboard shall fit closely and neatly at all plumbing fixtures and around electrical outlets, pipes, and fittings so that cover plates or escutcheons will overlap wallboard properly.
- 9A.6.7 At corners, edges of panels shall be concealed by the over-lapping of abutting panel edges. Panels shall be so staggered that the corners of any four panels will not meet at a common point except at vertical corners. Joints on opposite sides of partitions shall be so arranged as to occur on different framing members. All ends joints shall be supported over framing members.
- 9A.6.8 All outside corners, exposed edges and edges where wallboard abuts other materials shall have square edge metal trim.
- 9A.6.9 All joints, fastener heads and metal trim shall be three-coat finished, each coat feathered beyond the preceding. Sand lightly as required to leave a smooth finish flush and in alignment with adjacent wallboard surface.

END PART 9A

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DIVISION 9
FINISHES

PART 9B - CERAMIC TILE

9B.1 GENERAL PROVISIONS

Contractor shall install all ceramic tile, including lathing and scratch coat, as shown on the drawings and specified herein. The tile work shall be a cement mortar-type application in the toilet area.

9B.2 CODES AND STANDARDS

American National Standards Institute (ANSI)

ANSI A136.1 - Organic Adhesives for Installation of Ceramic Tile,
Type I and Type II

American Society for Testing and Materials (ASTM)

ASTM C-35 - Specification for Inorganic Aggregates for Use in
Gypsum Plaster

ASTM C-150 - Specification for Portland Cement

ASTM C-206 - Specification for Special Finishing Hydrated Lime

ASTM C-207 - Specification for Hydrated Lime for Masonry Purposes

ASTM D-250 - Specification for Asphalt-Saturated Asbestos Felts
for Use in Waterproofing and in Constructing Built-Up
Roofs

Tile Council of America - 1975 Handbook for Ceramic Tile Insulation

Federal Specification (FS)

FS QQ-L-101 - Specification for Lath, Metal, and other Metal
Plaster Bases

9B.3 SUBMITTAL OF SAMPLES

Contractor shall submit to the Construction Manager, for review and approval, duplicate samples of each kind and color of tile in the quality specified. The tile samples shall be marked with the name of the manufacturer and the room or area in which the tile is to be installed. After approval, one sample of each kind will be returned to Contractor, the other will be retained by the Construction Manager.

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CERAMIC TILE

9B.6.4 WATER - Water shall be clean and potable.

9B.6.5 PROPORTIONS - The mortar setting bed mixes shall be a mixture of Portland Cement, sand, and hydrated lime in proportions by volume as follows:

Tile Type	Location	Portland Cement	Dry Sand	Damp Sand	Lime
Unglazed Ceramic Mosaic	Floors	1	6	or 7	1/10
Glazed Interior	Walls	1	4	or 5	1/2

9B.7 PREPARATION OF MORTAR

Mortar Materials shall be measured in approved containers which will ensure that the specified proportions of materials will be controlled and accurately maintained during the progress of the work. Measuring materials with shovel (shovel count) shall not be permitted. The quantity of water shall be controlled accurately and uniformly. The aggregates shall be introduced and mixed in such manner that the materials will be distributed uniformly throughout the mass. A sufficient amount of water shall be added gradually, and the mass further mixed until a mortar of the plasticity necessary for the purpose intended is obtained. Mortar boxes, pans, floor slabs, and mixer drums shall be kept clean and free from debris and dried mortar. Mortar shall be used before the initial setting of the cement has occurred. Retempering of mortar in which cement has started to set shall not be permitted. Anti-freeze compounds, salts, or other substance used to lower the freezing point of mortar shall not be permitted.

9B.8 RELATED TILE MATERIALS

9B.8.1 SATURATED FELTS - Saturated felts shall comply with ASTM D-250.

9B.8.2 METAL LATH - Metal lath shall comply with FS QQ-L-101, Type F or FR. Metal lath on vertical supports which are spaced not over 16 in. on centers shall be minimum 3.4 pounds per square yard, expanded from copper-bearing steel sheets and coated with rust-inhibitive paint after fabrication, or expanded from galvanized steel sheets.

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CERAMIC TILE

9B.8.3 GROUT - Commercial cement grout consisting of a mixture of portland cement and other ingredients to produce a water-resistant, uniformly colored material. Grout for walls and other vertical surfaces shall contain white portland cement.

9B.9 TEMPERATURE

The ambient temperature of the area in which the work is to be performed shall be at least 50°F and rising, and is maintained above 50°F without interruption while the work is being done and for at least three days after the completion of the work.

9B.10 INSTALLATION OF TILE

9B.10.1 Where possible, lay out work so that no tile less than half size occurs. For heights stated in feet and inches, maintain full courses to produce nearest attainable heights without cutting tile. Align joints in wall tile vertically and horizontally with joints in integral trim units with base. Align joints in floor tile at right angles to each other and straight with walls to conform to patterns selected.

9B.10.2 Tile units shall be layed out to minimize cutting tiles. All unmounted tiles, except impervious and vitreous, shall be soaked in clean water for a minimum of one-half hour before they are set. No free water shall remain on the tiles at the time of setting. Before the initial set has taken place in the setting bed, a skim coat of neat portland cement mortar, 1/32 to 1/16 in. thick, shall be troweled or brushed over the setting bed or the back of the tile, or a thin layer of portland cement, 1/32 or 1/16 thick, may be hand-dusted uniformly over the setting bed and worked lightly with a trowel or brush until thoroughly damp. The tiles or sheets shall then be pressed firmly upon the setting bed and beaten into the mortar until true and even with the plane of the finished wall or floor line. Beating and leveling shall be completed within one hour after placing tiles or sheets. Borders and defined lines shall be laid before the field or body of the floor. Where floor drains are provided, the floors shall be sloped to drain properly to the drains. Intersections and returns shall be formed accurately. Cutting of floor tile, where necessary, shall be done along the outer edges of the floor. Where cutting of wall tile is necessary, it shall be done at the internal angles of walls or wainscots. As far as practicable, no tiles of less than half sizes shall be used. Cutting and drilling of tiles shall be done neatly without marring the tile surfaces. The cut edges of tile

CERAMIC TILE

against trim, bases, thresholds, pipes, built-in fixtures, and similar surfaces shall be ground and jointed carefully. Tile shall fit closely and neatly at all plumbing fixtures and around electrical outlets, pipes, and fittings so that cover plates or escutcheons will overlap the tiles properly. Tiles shall be secured firmly in place, and loose tiles or tiles sounding hollow shall be removed and replaced. The inner edges of boarders shall be kept straight, and, where practicable, shall form right angles at all returns. The paper and glue shall be removed from mounted tile, without using excess water, within one hour after installing tile. Bases, caps, bull nose corners, and all other trimmers, moulded or shaped features, and accessories shall be backed thoroughly with mortar and set firmly in place. All lines shall be kept straight and true, and all finished surfaces brought to true and even planes, straight and plumb, and internal corners squared and external corners rounded. Horizontal joints shall be maintained level and vertical joints plumb and in alignment. The completed work shall be free of broken, cracked, damaged, or otherwise faulty tiles.

9B.11 INSTALLATION OF WALL TILE IN PORTLAND CEMENT MORTAR

- 9B.11.1 Scratch coats on metal lath as backing for wall tile shall be applied not less than 24 hours or more than 48 hours before tile is to be set. Scratch coat shall be applied in the thickness indicated, or as necessary to bring the face of the tile to the required plane, but not less than 1/4 in. from the face of the metal lath. Scratch coat shall be applied after substantial grounds, plugs, hangers, and other accessories have been installed for plumbing fixtures, electrical outlets, and other fixtures and fittings which are to be secured to tile surfaces.
- 9B.11.2 Scratch coat shall be applied with sufficient pressure to ensure a proper bond and key with the base, and a proper base for the setting bed. While the mortar is still plastic, the scratch coat shall be cut with a trowel at all internal vertical angles for the depth of the coat and the full height of the tile bed, and shall be scored horizontally, or cross-scratched, on one-inch centers for the extend of the tile bed. Mortar for scratch coats shall be used within one hour after mixing, and at no time shall the mortar be retempered. Scratch coat shall be protected and kept moist during curing period. A leveling coat shall be applied over scratch coat when necessary to level the surface within a tolerance of 1/4 in. in 10 ft., or to provide a base coat thickness of more than 3/4 in. Leveling coat shall be scratched, and cured for 24 hours.

CERAMIC TILE

9B.11.3 MORTAR SETTING BED - Immediately preceding the installation of the mortar setting bed, the scratch coat specified shall be moistened thoroughly but not saturated. Temporary screeds shall be applied to the scratch coat with mortar to provide a true and plumb surface the proper distance back from the finished wall line. The setting bed shall be applied, rodded, and floated flush with the screeds over an area no greater than will be covered with tile while the bed remains plastic. The thickness of the setting bed shall not exceed $3/4$ in. and the mortar shall not be retempered. The setting bed shall be cut with a trowel at all internal angles for the depth of the coat and the full height of the setting bed.

9B.11.4 For installation of tile to walls and wainscots, tile shall be layed out to minimize cutting of tiles and to determine exact locations of accessories before installing wall tile. Unmounted tiles, except impervious and vitreous, shall be soaked in clean water a minimum of one-half hour before they are set.

9B.12 INSTALLATION OF TILE FLOORING IN PORTLAND CEMENT MORTAR

9B.12.1 Structural floor surfaces to receive the tile shall be clean, free of dust, dirt, oil, grease, and other deleterious substances and shall have a level surface within a tolerance of $1/4$ in. in 10 feet. Floor tile operations in spaces receiving wall tile shall not be started until after wall tile installation has been completed.

9B.12.2 Mortar Setting Beds shall be a minimum thickness of $3/4$ in. and a maximum thickness of $1-1/4$ in. The structural concrete slab shall be soaked thoroughly with clean fresh water on the day before the setting bed is to be applied. Immediately preceding the application of the setting bed, the structural slab shall again be wetted thoroughly, but no free water shall be permitted to remain on the surface. A skim coat of neat portland cement mortar shall then be applied not more than $1/16$ in. thick. The mortar shall be spread until its surface is true and even, and thoroughly compacted, either level or sloped uniformly for drainage, as the case requires.

9B.12.3 A setting bed, as large as can be covered with tile before the mortar has reached its initial set, shall be placed in one operation; but in the event that more setting mortar has been placed than can be covered, the unfinished portion shall be removed and cut back to a clean beveled edge.

CERAMIC TILE

9B.12.4 Metal Dividing Strips shall be installed in the mortar setting bed while it is still in a plastic state. The dividing strips shall be set accurately in straight, unbroken lines, flush with the unfinished floor surface.

9B.13 GROUTING AND POINTING

Absorptive tile shall be wetted if they have become dry before applying grout. Joints 1/8 in. or less in width shall be grouted with a neat portland cement grout of the consistency of cream. Other joints shall be pointed with mortar consisting of one part portland cement and two parts pointing portland cement. The grout for walls and other vertical surfaces shall contain white portland cement. Grout and pointing mortar shall be forced into joints by using trowel, squeegee, brush, or finger application. Before the grout or mortar sets, the joints of cushion edge tile shall be struck or tooled to the depth of the cushion, filling all skips or gaps and the joints of square edge tile shall be filled completely flush with their surface. Dark cement shall not show through grouted white joints. Care shall be taken to avoid scratching glazed finishes. All surplus mortar or grout shall be removed before it has set or hardened.

9B.14 CURING

Floors shall be covered with waterproof paper with all points lapped at least 4 in. and the laps tape-sealed or held down with planks or other weights, and allowed to damp cure for at least 72 hours before foot traffic is permitted thereon.

9B.15 CLEANING

All completed tile work shall be thoroughly sponged and washed diagonally across joints, and finally polished with clean, dry cloths.

9B.16 PROTECTION OF FINISHED WORK

Finished tile floors shall be covered with clean building paper before foot traffic is permitted. Board walkways shall be placed on floors that are to be continuously used as passageways by workers. Tiled vertical outside corners (external angles) shall be protected with board corner strips in areas used as passageways by workers.

END PART 9B

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PART 9C - ACOUSTICAL CEILING

9C.1 GENERAL PROVISIONS

Contractor shall furnish and install all acoustical tile suspension systems and ceilings as indicated on the drawings and as specified herein.

9C.2 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

ASTM A-366 - Specification for Steel, Carbon, Cold-Rolled Sheet, Commercial Quality

ASTM E-84 - Test for Surface Burning Characteristics of Building Materials

9C.3 SUBMITTALS

9C.3.1 Submit two full size samples of each type of acoustical unit to illustrate color and range of appearance. Submit one full size sample of each moulding.

9C.3.2 Submit for the Construction Manager's review the manufacturer's published recommendation for installation of the system.

9C.4 MAINTENANCE MATERIALS

Contractor shall provide one extra box, containing a minimum of 24 panels, of each type of acoustical panels used on the work.

9C.5 MATERIAL

9C.5.1 ACOUSTICAL TILE UNITS - Units shall be 5/8 in. thick, 2 ft. by 4 ft. in size, having a noise reduction range (NRC) of 0.65-0.75, and cast a light reflection of 0.75 or more. Flame spread rating shall be 0-25 in accordance with ASTM E-84. The type shall be Minaboard panels, fissured design as manufactured by Armstrong Cork Company.

9C.5.2 SUSPENSION SYSTEM - Exposed grid members, cold-rolled steel shapes shall conform to ASTM A-366, and shall be "SNAP-GRID 500 SERIES" manufactured by the Chicago Metallic Corporation or a Government approved equal. For acoustical tile ceiling, all exposed surfaces shall be finished in baked-on non-glare white. For luminous ceiling, all exposed surfaces shall be furnished in baked-on non-glare black.

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ACOUSTICAL CEILING

Main tee members: 48 in. on centers, type 500.

Cross members: 24 in. on centers, type 502.

Wall angle: Type 1409, designed to interlock with tees.

Hanger wires: No. 8-gauge soft annealed-steel.

NOTE

No. 8 gauge hanger wire shall not be secured to the metal decking. Adequate provisions for securing the suspended ceiling to the building shall be provided.

9C.6 TEMPERATURE REQUIREMENTS

Install acoustical materials only when normal temperatures and humidity conditions closely approximate the interior conditions of the building which will exist when the building is occupied.

Areas to receive acoustical tile shall be maintained at a temperature of at least 65°F for a minimum of 48 hours prior to and during installation. Temperature control shall be continued until final acceptance of the work.

9C.7 ARRANGEMENT OF ACOUSTICAL CEILINGS

9C.7.1 Arrange acoustical units in a manner that units less than one-half width do not occur, unless otherwise indicated or required to suit construction conditions.

9C.7.2 Arrange acoustical ceilings with exposed suspension system so that the centerline of the acoustical units center on lighting fixtures, air diffusers, and other ceiling fixtures.

9C.7.3 Arrange acoustical tile so that joints are parallel with room axis, in both directions, straight, and in alignment.

9C.7.4 Arrange exposed runners so that the main runners are parallel with the room axis indicated, straight, and in alignment.

9C.8 INSTALLATION (EXPOSED T-BAR)

9C.8.1 GENERAL - Contractor shall install suspended ceiling system in accordance with manufacturer's printed instructions, approved shop drawings and descriptive data, and as specified herein. Hanger wires shall be in all cases vertical. Hanger wires shall be secured to the bottom of steel structural members either by wire-tying in a secure manner or by metal clips especially designed for the purpose.

ACOUSTICAL CEILING

- 9C.8.2 FRAMING OPENINGS FOR CEILING FIXTURES - Support members shall be provided at ceiling openings for ceiling fixtures, such as recessed lighting fixtures, air duct outlets, and as indicated. Support members shall be of the size required to support the load of the ceiling fixtures, wiring, conduit, acoustical units, and other components without permitting deflection of the ceiling in excess of the performance requirements for suspension system structural classification herein specified. Intermediate supports and hanger wires shall be provided if required.
- 9C.8.3 CEILING GRIDS - Exposed main runners shall be spaced at 48 in. on centers, and exposed cross runners at 24 in. on centers.

END PART 9C

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PART 9D - RESILIENT FLOORING

9D.1 GENERAL PROVISIONS

Contractor shall furnish and install resilient flooring as shown on the drawings and as specified herein.

9D.2 SUBMITTALS

9D.2.1 SAMPLES - Submit duplicate samples of the following materials to the Construction Manager for approval prior to installation:
(1) Floor Tile (2) Topset cove base (3) Carpet base (4) Adhesive (literature only).

9D.2.2 MAINTENANCE MATERIALS - Provide Government with five percent of the total required quantity of floor tile.

9D.3 MATERIALS

Materials shall be best quality, new stock. All colors shall be in accordance with the Master Color Schedule.

9D.3.1 VINYL ASBESTOS TILE - Vinyl asbestos tile shall be 12 in. x 12 in. x 1/8 in., Kentile Beaux Arts Series as manufactured by Kentile Floors Inc. or Construction Manager approved equivalent. Color shall be as noted in the Master Color Schedule.

9D.3.2 RUBBER BASE - Rubber topset cove base shall be 4 in. Burke Rubber. Color shall be as noted in the Master Color Schedule.

9D.3.3 ADHESIVES - As recommended by the manufacturer of the products used.

9D.4 TEMPERATURE

In areas where resilient flooring is stored and is to be installed, maintain a minimum temperature of 70°F for 24 hours before installing and at least 48 hours after installing. Thereafter, maintain a temperature of 55°F or above.

RESILIENT FLOORING

9D.5 SURFACE PREPARATION

- 9D.5.1 Thoroughly sweep and clean all under surfaces, remove all dirt, paint, oil and foreign material and leave the surfaces dry, flush, smooth and suitable in all respects for installation of the flooring.
- 9D.5.2 Fill all cracks and imperfections as required to make a smooth installation. Surfaces receiving resilient flooring shall not vary more than 1/8 in. in any 6 ft. distance, nor more than 1/16 in. within any one-ft. distance. Any deviation from this tolerance shall be filled with underlayment material approved for use under the adhesive and resilient flooring specified herein.

9D.6 INSTALLATION

- 9D.6.1 Adhesive shall be mixed and installed in accordance with the manufacturer's instructions. Cover area evenly, and only to the extent which can be covered with resilient material in the recommended working time of the adhesive. Remove any adhesive which dries or films over. Apply with trowel notched according to recommendations of manufacturer. Clean and rework trowel notches as necessary to ensure proper application of adhesive. Exercise caution to prevent soiling walls, bases, and adjacent areas with adhesives.
- 9D.6.2 Set floor tiles at right angles to adjoining walls in a pattern selected by the Construction Manager. Spread cement as recommended by the manufacturer of the materials used. When sufficiently bonded to the floor, the tiles shall be immediately bonded thereon. The tiles shall be set true to line, and square with all intersecting corners brought together, and in alignment with tile pattern.
- 9D.6.3 Place flooring so that fields or patterns center on an area. Except as required in irregularly shaped rooms, no tile shall be less than one half the width of field tile.
- 9D.6.4 Fit flooring neatly into breaks and recesses against walls, around pipes, under saddles or thresholds and around permanent cabinets and fixtures. Fit flooring with tight, aligned joints.

RESILIENT FLOORING

9D.6.5 Firmly cement topset base to wall. Press down so that bottom cove edge follows floor. Form internal and external corners by use of pre-molded corners. Scribe base accurately to abutting material.

9D.7 CLEANING AND WAXING

9D.7.1 Remove surplus cement from exposed joints and seams immediately following application. Remove cement from tile as recommended by the manufacturer. The surfaces shall be left smooth and free from foreign substances.

9D.7.2 After floors have set sufficiently to become seated, apply one coat of high-grade wax and thoroughly polish.

9D.8 INSPECTION

The entire installation of floor covering shall be subject to inspection by the Construction Manager during the course of the work.

END PART 9D

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PART 9E - PAINTING

9E.1 GENERAL PROVISIONS

Contractor shall furnish and apply all paint, stain, and enamel required and all scaffolding and equipment necessary to perform all painting indicated on the drawings and specified herein.

9E.2 SCOPE OF WORK

The work to be performed includes but is not limited to the following:

1. All exposed sheet metal and metal doors, mullions and trim, except aluminum.
2. All exposed exterior and interior wall surfaces and soffits.
3. All exposed interior woodwork, walls and ceilings.
4. All surfaces, inside and outside, unless specifically indicated as unfinished.
5. All exposed air conditioning duct.

9E.3 CODES AND STANDARDS

Steel Structures Painting Council (SSPC)

SSPC SP1 - No. 1 - Solvent Cleaning
SSPC SP6 - No. 6 - Commercial Blast Cleaning
SSPC SP10 - No. 10 - Near White Blast Cleaning

9E.4 SUBMITTALS

9E.4.1 MATERIAL LIST - Within 30 days after award of the Contract, submit to the Construction Manager complete list of all materials to be used in the painting. Include in the list the name and number of the manufacturer, trade name, or brand, and any other information pertinent to identification of the materials.

9E.4.2 SAMPLES - Submit to the Construction Manager for approval two, 8 in. x 10 in. samples of each color (on appropriate surfaces) prior to commencing the work. In the event of material substitutions, submit substitute color samples for comparison and approval.

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9E.5 MATERIAL DELIVERY AND STORAGE

- 9E.5.1 Materials shall be delivered to the jobsite in original, unopened containers, plainly marked with the product name, batch number, color, manufacturer's directions, and name of manufacturer.
- 9E.5.2 Segregate flammable and volatile materials from other materials and take every reasonable precaution to prevent explosion and fire. All rags containing solvent, oils, and paint shall be removed from the storage area at the end of each day and spread out to dry or shall be disposed in an approved manner.

9E.6 DESIGNATED MATERIALS

- 9E.6.1 Where names of specific products are designated in this section or on the drawings, the intent is to state the type and quality of product desired without ruling out use of other materials of equal type and quality, provided that use of such materials of equal type and quality have been approved by the Construction Manager.
- 9E.6.2 All materials shall be pure, unadulterated, and of the manufacturer's first quality and best grade.
- 9E.6.3 Paint shall not be diluted by the addition of thinners except as may be recommended by the manufacturer's label instructions.
- 9E.6.4 Job mixing shall not be permitted.
- 9E.6.5 Tinting colors shall be as recommended by manufacturer for the specific type of finish.

9E.7 EXTERIOR PAINT PROCESS

All paint numbers and system numbers are Sinclair.

9E.7.1 METAL TRIM (GALVANIZED)

Pretreatment	12 Galva Wash
First Coat	25 Zinc Dust Primer
Second Coat	248 Sash and Trim Primer
Third Coat	250 Sash and Trim Enamel

PAINING

9E.7.2 STRUCTURAL STEEL AND MISCELLANEOUS METALS, INCLUDING
DOORS AND FRAMES (FACTORY PRIMED)

First Coat	15 Chrome Oxide Primer
Second Coat	250 Sash and Trim Enamel
Third Coat	250 Sash and Trim Enamel

9E.7.3 STRUCTURAL STEEL AND MISCELLANEOUS METAL
(NO FACTORY PRIME)

First Coat	15 Chrome Oxide Primer
Second Coat	250 Sash and Trim Primer
Third Coat	250 Sash and Trim Enamel

9E.7.4 WOOD (FLAT FINISH)

First Coat	289 Exterior Wood Primer
Second Coat	1300 STUC-O-LIFE
Third Coat	1300 STUC-O-LIFE

9E.8 INTERIOR PAINT PROCESS

All paint numbers and system numbers are Sinclair.

9E.8.1 STRUCTURAL STEEL AND MISCELLANEOUS METALS, INCLUDING
DOORS AND FRAMES (FACTORY PRIMED)

First Coat	15 Chrome Oxide Primer
Second Coat	250 Sash and Trim Enamel
Third Coat	250 Sash and Trim Enamel

9E.8.2 STRUCTURAL STEEL AND MISCELLANEOUS METAL
(NO FACTORY PRIME)

First Coat	20 Red Lead Primer
Second Coat	975 Sinco Prime Undercoater
Third Coat	600 Sintec Enamel

9E.8.3 GYPSUM DRYWALL

First Coat	1770 Pigmented P.V.A. Sealer
Second Coat	975 Sinco Prime Undercoater
Third Coat	782 Semi Gloss Stipple

9E.8.4 WOOD - ENAMEL FINISH

First Coat	975 Sinco Prime Undercoater
Second Coat	975 Sinco Prime Undercoater
Third Coat	2200 Porcelain Eggshell Enamel

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PAINTING

NOTE

All exposed interior and exterior metalwork, metal supports, metal panels, grilles, inside metal exposed to view through grilles, vents, plumbing and heating pipes, iron and steel work and galvanized iron shall, unless otherwise specified, and in addition to the shop or primer coat, receive two coats of Sinclair 600 Sintec Enamel.

9E.9 PROTECTION OF ADJACENT AREAS, HARDWARE AND ACCESSORIES

9E.9.1 Special care shall be taken not to injure or splatter adjacent work with cleaners, paint, stain or varnish. Protect all work of other trades against damage, injury or soil from materials, tools or utensils used for this work. Use drop cloths, free of holes and of adequate size as necessary to protect, and cover all finished work of other trades.

9E.9.2 Remove and protect hardware, accessories, device plates, lighting fixtures, factory finished work, and similar items; or provide ample in-place protection. Upon completion of each space, carefully replace all removed items. Remove electrical panel box covers and doors before painting wall. Paint separately and reinstall after all paint is dry.

9E.10 PREPARATION OF SURFACES

9E.10.1 All surfaces that are to be treated shall be in a proper condition to receive the specified finish, and no paint or stain shall be applied until the surface has been inspected and approved by the Construction Manager. All dust, fingermarks, dirt, loose old paint, and suchlike, shall be removed.

9E.10.2 After structural or miscellaneous steel has been erected, all grease, dirt, oil, rust, loose or blistered paint, and the like shall be removed by approved means and any damage to the shop prime coat, whether caused during shipment, during erection, or after erection, shall be spot-primed with the same paint as specified for the shop prime coat and lightly sanded. All welds shall be primed. Other metal surfaces (except galvanized) shall be washed with mineral spirits immediately before they are painted to remove dirt and grease.

9E.10.3 All woodwork that is to be painted or stained shall be sanded and cleaned of dust before receiving the first coat.

9E.10.4 All nail holes, open joints, cracks, and imperfections shall be filled with putty, smooth, and flush with the surface, and of a color to match the finish.

PAINING

NOTE

It shall be Contractor's responsibility to ensure that all surfaces are completely prepared to receive the specified paint. Contractor shall replace, at its own expense, any paint that shows indications of checking, blistering, or peeling for a period of one year from the date of final acceptance of the completed project by Government.

9E.11 APPLICATION PROCEDURES

9E.11.1 GENERAL - Painting shall be performed as scheduled, using hand scrubbing or rollers for all coats. The use of paint sprayers shall not be accepted. Covers or masking material shall be used where necessary for protection of other work. Except as otherwise specified, paints shall be applied only to thoroughly dry surfaces. Painting shall be done only when humidity and temperature of the atmosphere, in combination with the condition of the surfaces to be painted, will cause evaporation, rather than condensation. In no case shall any paint be applied during rainy or misty weather, or to surfaces covered with frost or condensed moisture. All paint, when applied, shall be at approximately the same temperature as that of the surface to which it is applied.

9E.11.2 BRUSHING - Paint shall be applied in such a manner as to produce a smooth, uniform coating of full thickness in tight contact with base surfaces or previous coating. Paint shall be thoroughly worked into all joints and crevices. Only high-quality brushes and rollers, clean and free from dirt, shall be used for application. All paints and oils shall be carefully strained before use.

9E.11.3 THINNING PAINT - Paint shall be thoroughly stirred before use and applied full-body, unless otherwise noted or unless approved by the Construction Manager. Only thinning material and methods recommended by the paint manufacturer shall be used. Accelerated warming of paint may be performed only by immersion in water at a temperature no higher than 125°F.

9E.11.4 COVERAGE

A. Prime coats shall be applied to provide a minimum dry-film thickness of 3 mils on all exterior steel surfaces. On exterior steel surfaces the intermediate coat shall be applied to obtain a minimum dry-film thickness (DFT) of 3 mils and a topcoat finish shall be applied to obtain a minimum DFT of 1.5 mil. The total DFT for exterior exposed steel shall be a minimum of 7.5 mils. Undercoat and finish coat applications on surface other than exterior steel shall

PAINTING

be made to a maximum coverage of 400 square feet per gallon (1-1/2 mils dry-film thickness per coat). The total dry-film thickness of a completed job shall be minimum of 6 mils, as measured by the Construction Manager with an Elecometer or other dry-film thickness gauge.

- B. All parts of mouldings and ornaments shall be left clean and true to details, and without excess paint in corners and depressions.
- C. All edges of paint of adjoining other materials or colors shall be sharp, straight and clean, and without overlapping.
- D. Each coat shall vary in color.
- E. Remove the doors and paint tops and bottom edges with two coats of the finish.
- F. Sand interior woodwork to a smooth surface after each coat except the final coat.

9E.11.5 BACK PAINTING AND PRIMING - Door frames, interior and exterior wood finish, frames, and fixed wood cabinets shall be thoroughly primed and/or back primed and bottom painted with priming coats, except as specified under Division 6, Interior Finish and Millwork.

9E.11.6 FINISHES - Apply finishes and processes to all surfaces as scheduled, specified or as normally required to finish or protect the materials of construction. Surfaces or materials not specified shall be treated in a manner equal to those specified with a process standard to the trade and approved by the Construction Manager.

9E.11.7 DRYING TIME

- A. Additional coats shall be applied only after the previous coat has dried throughout the full thickness of the paint film. In general, the drying time shall be not less than recommended by the manufacturer of the material applied. In addition, when using catalyzed epoxy coating, each coat shall be applied within two days of the previous coat. This timing includes the non-epoxy finish coat.
- B. In cases where a shop coat epoxy has been applied some time before the application of the field coat, it may be necessary to pretreat the shop coat with a softener like Cellosolve or MIBK. An example of a proprietary type solvent is Carboline Surface Preparation No. 1. The coating manufacturers should be consulted in this regard.

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NOTE

The ideal method of application when epoxy coatings are involved is to complete the entire procedure including the finish coat in the fabricators shop. Touch-up, when necessary, may be done in the field.

9E.12 INSPECTION

Each coat of paint or enamel shall be separately inspected by the Construction Manager before the next coat is applied. Twenty-four hour minimum notice that work is ready for inspection shall be given to the Construction Manager. Should such notice not be given, an additional coat shall be applied if so directed by the Construction Manager. If a portion of the finish on a wall or surface has been damaged or is unsatisfactory, the whole wall shall be refinished rather than spot finishing.

END PART 9E

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DIVISION 9

FINISHES

PART 9F - CARPETING

9F.1 GENERAL PROVISIONS

Contractor shall furnish and install all carpeting as shown on the drawings and described herein. Carpet installer shall be approved by the carpet manufacturer and have been in the carpet installation business for at least five years. Installer shall be required to furnish a list of previous installation work. Contractor shall carefully check all dimensions in the field and shall be responsible for the proper fitting of the carpeting.

9F.2 SUBMITTALS

9F.2.1 Prior to purchasing carpet, Contractor shall submit to Construction Manager one, 18 in. x 27 in. sample of the carpet and binding edge samples of each carpet described.

9F.2.2 Submit to Construction Manager a written verification of approval of installer from the carpet manufacturer and a list of installer's previous installation work.

9F.3 CODES AND STANDARDS

American Society for Testing Materials (ASTM)

ASTM E-84 - Test for Surface Burning Characteristics of Building Materials

U.S. Department of Commerce

Doc FF 1-70 (Pill Test)

9F.4 CARPET

Carpet Material shall be success preview P-1547 as manufactured by Milliken Floor Covering with the following listed minimum requirements:

Construction:	1 Level loop.
Yarn:	100% Antron III CFN With Static Control Yarn Added.
Ply:	Co-mingled

CARPETING

Gauge: 1/8 in.
Stitchrate: 8.6 stitches per in.
Pile Height: 0.131
Face Weight: 20 oz.
Primary back: 3.5 oz. Polybac
Secondary back: 3.3 oz. Actionbac
Width: 12.0 ft.
Flammability: Meet accepted Criterion of U.S. Department of
Commerce - DOC FF 1-70 (Pill Test)
Success Meets the Requirements of the Steiner
Tunnel Test (ASTM E-84) as required by the
Hill Burton Act.
Flame Spread - 60
Fuel Contribution - 50
Smoke Density - 120
Color Pattern: No. 8 charcoal

9F.5 CARPET REDUCER

Equivalent to Mercer, 3/16 in. thick by 1 in. wide. Color to match carpet.

9F.6 ADHESIVE

Shall be glue-down type in accordance with the carpet manufacturer recommendations.

9F.7 CUSHION

The backing (base) shall be guaranteed permanently resilient for the life of the carpet.

9F.8 CLEANING

After installation is complete, clean-up all dirt and debris and clean carpet of all spots with proper spot remover. Remove all loose threads with sharp scissors and broom or vacuum clean.

END DIVISION 9

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DIVISION 10

SPECIALTIES

DIVISION 10
SPECIALTIES

PART 10A - FINISH HARDWARE

10A.1 GENERAL PROVISIONS

The Contractor shall furnish all finish hardware required to complete the work as indicated on the drawings and as herein specified. Contractor shall provide all trim, attachments, and fastenings specified or required for proper and complete installation.

10A.2 SUBMITTALS

- 10A.2.1 Within 15 days after award of the Contract, Contractor shall prepare a hardware list (eight copies) and submit list to the Government for approval. The list shall identify each hardware item by manufacturer, manufacturer's catalog number and exact location in the work. Hardware list shall be in suitable form to facilitate ready checking and approval by Government. Approval of the hardware schedule by the Government does not relieve the Contractor of the responsibility of furnishing the job complete. Computer and horizontal type schedules shall not be acceptable.

10A.3 SHIPPING AND STORAGE

Each unit of hardware, as hereinafter specified, shall be individually packaged, complete with proper fastenings and all appurtenances. Each package shall be clearly marked on the outside to show the contents and specific location in the work.

10A.4 MATERIAL

In order to ensure proper placement and fit, all hardware for metal doors and/or frames shall be made to template. Templates, or physical hardware items, shall be furnished to manufacturers concerned and shall be furnished sufficiently in advance to avoid delay in the work.

- 10A.4.1 LOCK UNIFORMITY - Except where otherwise specified, all locksets, padlocks, latchsets, cylinders and component parts, as specified hereinafter, shall be by one manufacturer.

Unless otherwise specified, all locks and latches shall be Heavy Duty Cylindrical Type New Model 76 Chassis. Knobs: Heavy cold forged, .100 reinforced (.050 shell x .050 liner). Roses: Wrought, .100 reinforced (.035 shell x .065 liner).

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FINISH HARDWARE

- 10A.4.2 KEYING AND MASTERKEYING - All locksets, padlocks and cylinders shall be keyed and masterkeyed to existing P&F Corbin system as directed by the Construction Manager. Furnish a minimum of three change keys for each cylinder. Master Keys shall be required. All cylinders shall have a minimum of six pins.
- 10A.4.3 DOOR HARDWARE - Hand of lock shall be as indicated on the drawings. If door hand is changed during construction, Contractor shall make necessary changes in hardware at no additional expense to Government.
- 10A.4.4 LOCK STRIKES - All lock strikes shall be boxed and shall have a curved lip of sufficient length to protect the trim and/or jamb. ASA strikes shall not be permitted.
- 10A.4.5 LOCK DESIGN - Lock design shall be Global No. 863.
- 10A.4.6 DOOR BUTTS - The sizes of door butts shall be as specified or as required to clear the trim. Exterior door butts on doors swinging out shall have security studs and set screw in the barrel to prevent the removal of the pin when door is closed.
- 10A.5 MANUFACTURERS
- | | | | |
|-----|--------------------------|----|--------------------------|
| S | - Stanley Works | C | - P&F Corbin |
| R | - Rixson | AR | - Adams Rite |
| P | - Pemko Mfg. Co. | Q | - Quality Hdwe. Mfg. Co. |
| CHC | - Construction Hdwe. Co. | | |
| B | - Builders Brass Works | | |
- 10A.6 SUBSTITUTES
- | | |
|-----------------------|---|
| Butts | - McKinney TB2714 Series |
| Closers | - Russwin 500 Series & 2810 Series |
| Kickplates | - Builders Brass Works |
| Stops & Miscellaneous | - P&F Corbin |
| Floor Closers | - Dor-O-Matic 2600 Series & 2500 Series |

FINISH HARDWARE

10A.7 HARDWARE LIST

HW 1

Pair of Doors 1

EACH PAIR SHALL HAVE:

2	ea	Rixsons 27105 x LFP x US19	(R)
2	ea	Intermediate Pivots M19 x US 19	(R)
1	ea	Lock MS1851AW x RC119	(AR)
1	ea	Header Bolt 4085 x RC119	(AR)
1	ea	Threshold Bolt 4015 x RC119	(AR)
1	ea	Security Collar MS4043 (Outside Only) x RC119	(AR)
1	ea	Exit Indicator 4089 x RC119	(AR)
2	ea	Cylinders 5253 x 1-1/8 BS x AR Cam x US19	(C)
2	ea	Overhead Stops 1-331 x US19	(R)
1	pc	Threshold 3 x 700 x 200 x 301 x Length as Required x Bronze	(R)
4	ea	Push-Pulls 521 x Mounted Back to Back x US28 Anodized Black	(S)

HW 2

Door 2

EACH DOOR SHALL HAVE:

1 1/2	pr	Butts FBB179 4 1/2 x 4 x Security Studs x NRP x USP	(S)
1	ea	Exit Alarm 70 x 733 Paddle x US26D	(A)
1	ea	Cylinder 5211 x US26D	(C)
1	ea	Closer J110-4 x 722-10 x SBL	(C)
1	ea	Kickplate 48 10 x 2" LDW x US32D	(Q)

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HW 2 (Cont'd)

1	ea	Overhead Stop 1-331 x US26D	(R)
1	pc	Threshold 180AV x MSA x Length as Required	(P)
3	ea	Mutes 33	(C)
1	ea	Door Bottom Seal 217AV x Length as Required	(P)
		Weatherstrip 332AR x Head & Jambs x Lengths as Required	(P)

HW 3

Door 3

EACH DOOR SHALL HAVE:

1	ea	Rixons 2790 x LFP x US19	(R)
1	ea	Intermediate Pivot M-19 x US19	(R)
1	ea	Lock MS1851AW x RC119	(AR)
2	ea	Cylinders 5253 x 1-1/8 BS x AR Cam x US19	(C)
1	ea	Security Collar MS4043 x RC119 (Outside Only)	(AR)
1	ea	Stop 433ES x US19	(Q)
1	pc	Threshold 3 x 700 x 200 x 301 x Length as Req'd x Bronze	(R)
1	ea	Push 521 (Inside Only) x US28 Anodized Black	(Q)
1	ea	Exit Indicator 4089 x RC119	(AR)

FINISH HARDWARE

HW 4

Door 4

EACH DOOR SHALL HAVE:

1	ea	Rixson 2790 x LFP x US19	(R)
1	ea	Intermediate Pivot M-19 x US 19	(R)
1	ea	Lock MS1851AW x RC119	(AR)
2	ea	Cylinder 5253 x 1-1/8 BS x AR Cam x US19	(C)
1	ea	Exit Indicator 4089 x RC119	(AR)
1	ea	Stop 433ES x US19	(Q)
1	pc	Threshold 3 x 700 x 200 x Length as Req'd x Brz	(R)
1	ea	Push 521 (Outside Only) x US28 Anodized Black	(Q)

HW 5

Door 5

EACH DOOR SHALL HAVE:

1	ea	Rixson 2790 x LFP x US19	(R)
1	ea	Intermediate Pivot M-19 x US19	(R)
1	ea	Lock MS1851AW x RC119	(AR)
2	ea	Cylinders 5253 x 1-1/8 BS x AR Cam x US19	(C)
1	ea	Security Collar MS4043 (Outside Only) x RC119	(AR)
1	ea	Exit Indicator 4089 x RC119	(AR)
1	ea	Stop 433ES x US19	(Q)
1	pc	Threshold 3 x 700 x 200 x 301 x MSA x Length as Required	(R)
2	ea	Pulls 521 x Mounted Back to Back x US28 Anodized Black	(Q)

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FINISH HARDWARE

HW 6

Pair of Doors 6

EACH PAIR SHALL HAVE:

2	ea	Rixsons 27105 x LFP x 1/2" Longer Spindle x US19	(R)
2	ea	Special Cover Plates 846 x Bronze	(R)
2	ea	Intermediate Pivots M-19 x US19	(R)
4	ea	Push & Pulls 521 x Mounted Back to Back x US28 Anodized Black	(Q)
2	ea	Overhead Stops 1-331 x US19	(R)

HW 7

Doors 7, 9

EACH DOOR SHALL HAVE:

1 1/2	pr	Butts FBB179 4 1/2 x 4 x US26D	(S)
1	ea	Pull 163 x US32D	(Q)
1	ea	Push 40 8 x 16 x US32D	(Q)
1	ea	Closer P500SH-4 x Sex Bolts x SBL	(C)
1	ea	Kickplate 48 10 x 2" LDW x US32D	(Q)
1	ea	Stop 431ES x US26D	(Q)
3	ea	Mutes 33	(C)

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FINISH HARDWARE

HW 8

Doors 8

EACH DOOR SHALL HAVE:

1 1/2 pr	Butts F179	4 1/2 x 4 x US26D	(S)
1 ea	Lockset 863-451	x 3-3/4 BS x US26D	(C)
1 ea	Stop 431ES	x US26D	(Q)
3 ea	Mutes 33		(C)

HW 9

Door 10, 14

EACH DOOR SHALL HAVE:

1 1/2 pr	Butts FBB179	4 1/2 x 4 x US26D	(S)
1 ea	Push Plate 40	4 x 16 x US32D	(Q)
1 ea	Pull 163	x US32D (Dr 10 Only)	(Q)
1 ea	Closer 500SH-3	x Sex Bolts (Dr 10)	(C)
1 ea	Closer P500S-4	x Sex Bolts (Dr 14)	(C)
1 ea	Kickplate 48	10 x 2" LDW x US32D	(Q)
1 ea	Stop 431ES	x US26D	(Q)
3 ea	Mutes 33		(C)

FINISH HARDWARE

HW 10

Doors 11, 12

EACH DOOR SHALL HAVE:

1 1/2 pr	Butts FBB179	4 1/2 x 4 x US26D	(S)
1 ea	Push Plate 40	8 x 16 x US32D	(Q)
1 ea	Pull 4510A	4 x 16 x US32D	(Q)
1 ea	Closer 500S-2	x Sex Bolts x SBL	(C)
1 ea	Kickplate 48	10 x 2" LDW x US32D	(Q)
1 ea	Stop 431ES	x US26D	(Q)
3 ea	Mutes 33		(C)

HW 11

Door 13, 18

EACH DOOR SHALL HAVE:

1 1/2 pr	Butts F179	4 1/2 x 4 x US26D	(S)
1 ea	Lockset 863-451	x 3-3/4 BS x US26D	(C)
1 ea	Stop 431ES	x US26D	(Q)
3 ea	Mutes 33		(C)

HW 12

Pair of Doors 15

EACH PAIR SHALL HAVE:

3 pr	Butts F179	4 1/2 x 4 x US26D	(S)
2 ea	Flush Bolts 1348	x US26D	(Q)
1 ea	Dustproof Strike 5048	x US26D	(B)
1 ea	Deadlock 421	x WBX x US26D	(C)

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FINISH HARDWARE

HW 12 (Cont'd)

2	ea	Flush Pulls 1459 x US26D	(Q)
1	ea	Stop 775D x US26D (RHR Leaf)	(C)
1	ea	Stop 431ES x US26D (LHR Leaf)	(Q)
4	ea	Mutes 33	(C)

HW 13

Door 16

EACH DOOR SHALL HAVE:

1	ea	Rixson 2790 x LFP x 1/2" Longer Spindle x US19	(R)
1	ea	Special Cement Pan 846 x Bronze	(R)
1	ea	Intermediate Pivot M-19 x US19	(R)
1	ea	Push Bar 521 x US28 Anodized Black	(Q)
1	ea	Stop 433ES x US19	(Q)

HW 14

Door 17

EACH DOOR SHALL HAVE:

1	ea	Rixson 533 x M-19 Top Pivot x US26D	(R)
1	ea	Intermediate Pivot M-19 x US26D	(R)
1	ea	Quick Spotter 183	(R)
1	ea	Flush Pull 1459 x US26D (Mount on Rm 16 Side)	(Q)
1	ea	Deadlock 421 x WBX x US26D x Less Cylinder	(C)
1	ea	Thumbturn Cylinder 264 (Mount on Rm 16 Side)	(C)
1	ea	Stop 431Es x US26D	(Q)

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FINISH HARDWARE

HW 15

Gates & Lift-Up Counter Tops -- Reception Area

EACH SHALL HAVE:

- | | | |
|------|--|-----|
| 1 ea | Rixson 350 Series Unit x US26D | (R) |
| 1 pc | Piano Hinge 311 1/4 x 2" x Length as Required
x US26D | (S) |

END PART 10A

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DIVISION 10
SPECIALTIES

PART 10B - TOILET COMPARTMENTS

10B.1 GENERAL PROVISIONS

Contractor shall furnish and install all metal toilet compartments and screens as shown on the drawings and specified herein.

10B.2 SUBMITTALS

10B.2.1 SHOP DRAWINGS - Contractor shall submit four copies of shop drawings of toilet compartments and related items specified herein to the Construction Manager for approval and shall obtain approval of drawings before proceeding with manufacturing or shipment.

10B.2.2 CERTIFICATE OF COMPLIANCE - A certificate of compliance shall be furnished by the toilet compartment manufacturer stating that materials, construction, and finish of compartments and screens conform to the requirements of this specification.

10B.3 MATERIAL FABRICATION

10B.3.1 TOILET COMPARTMENTS - Minimum 20 gauge furniture steel. Sanymetal Academy floor mounted partitions.

10B.3.2 DOORS AND PARTITIONS - Doors and partitions shall be made of two face plates with formed edges, cemented under pressure to a dense, sound-deadening, insulative core and joined by welding the abutting edges at suitable intervals. Edges shall be bound with die-drawn moulding interlocked under tension.

A. Doors: Minimum 22 gauge furniture steel, one in. thick. Each door shall be fitted with standard chromium-plated hardware consisting of a concealed latch assembly and a rubber-tipped combination coat hook and bumper. Coat hooks shall be attached with theft-resistant screws.

Exposed slide-bolt or vertical lift latches shall not be accepted.

B. Partitions: Minimum 20 gauge furniture steel. Partitions shall finish at least one in. thick.

10B.3.3 URINAL SCREENS - Minimum 20 gauge furniture steel, 18 in. x 42 in., wall mounted, and matching the toilet compartments in construction and finish.

TOILET COMPARTMENTS

10B.4 FINISH

10B.4.1 TOILET COMPARTMENTS - Toilet compartments shall have baked enamel finish. Color shall be as specified in the Master Color Schedule.

10B.4.2 DOORS AND PARTITIONS - Metal finish on doors and partitions shall consist of sanding the steel, washing and galvanizing, bonderizing, and baking on two coats of enamel.

10B.4.3 URINAL SCREENS - Finish to be same as toilet compartments.

10B.5 PRODUCTS

Fiat Products Department, Formica Corporation, Cincinnati, Ohio

Global Steel Products Corporation, Deer Park, New York

The Mills Company, Cleveland, Ohio

The Sanymetal Products Company, Inc., Cleveland, Ohio

10B.6 INSTALLATION

Installation of all items shall be in accordance with manufacturer's instructions. Partitions shall be installed in a sturdy, substantial manner, straight and plumb, and fit rigidly to walls and floor. Evidence of drilling, cutting and fitting shall be concealed in the finished work. Doors shall not be curved or warped out of a true vertical plane. They shall be hung on concealed gravity hinges with the upper hinge mounted in a recess in the edge of the door. Hinges shall be adjusted so that each door will remain two inches ajar when compartment is not in use.

END PART 10B

DIVISION 10
SPECIALTIES

PART 10C - TOILET ACCESSORIES

10C.1 GENERAL PROVISIONS

Contractor shall furnish and install all toilet room accessories as shown on the drawings and as specified herein.

10C.2 CODES AND STANDARDS

Federal Specification (FS)

DD-G-451c - Glass Plate, Sheet, Figured, Float, Flat, for Glazing, Corrugated, Mirrors and Other Uses.

10C.3 SUBMITTALS

Within 30 days after Award of Contract, Contractor shall submit to the Construction Manager a list of all items to be furnished, including manufacturers name and model number, specifications, installation instructions, and catalog cuts or product literature for each type of accessory specified.

10C.4 TOILET ACCESSORIES

In order to establish the standard of quality, appearance and durability of the toilet accessories, the specified accessories have been selected from the catalog of the Bobrick Company. Other toilet accessory manufacturers will be acceptable upon approval by the Construction Manager.

10C.4.1 Bobrick B-352 recessed combination feminine napkin-tampon vendor coin mechanism (10 cents).

10C.4.2 Bobrick B-354 (or equal), where shown on drawings, dual partition mounted feminine napkin disposal.

10C.4.3 Bobrick B-2994 (or equal), where shown on drawings, combination utility shelf, dual toilet tissue dispenser and ash tray.

10C.4.4 Bobrick B-301 (or equal), where shown on drawings, recessed toilet seat cover dispenser.

10C.4.5 Bobrick B-322 (or equal), where shown on drawings, recessed multi-purpose unit with flush mirror shelf and soap dispenser.

10C.4.6 Bobrick B-3910 (or equal), where shown on drawings, recessed combination mirror, paper towel dispenser and waste receptacle (omit paper cup dispenser).

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TOILET ACCESSORIES

10C.4.7 Bobrick B-450 x 30 in. and B-450 x 48 in. (or equal), where shown on drawings, stainless steel grab bars.

10C.5 INSTALLATION

Toilet accessories shall be installed in accordance with manufacturer's directions. Mirrors shall be installed in accordance with manufacturer's directions using a concealed attachment method.

END PART 10C

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DIVISION 10
SPECIALTIES

PART 10D - FLAGPOLE, PARKING BUMPERS, ROOF HATCH

10D.1 GENERAL PROVISIONS

Contractor shall furnish and install all material and equipment necessary to complete all miscellaneous work required as shown on the drawings and as specified herein. Major items of Work described herein that are to be incorporated in the work include, but are not necessarily limited to, the flagpole and flag, precast concrete parking bumpers and the roof access hatch.

10D.2 FLAGPOLE

The flagpole and all required accessories shall be standard-type as manufactured by Flag Poles Unlimited, Sargentville, Maine 0473 (Local distributor: Harco Co., 127 S. Garfield, Los Angeles, CA 91754).

10D.2.1 TYPE - Ground set type cone tapered fiberglass flag poles. Pole shall be MFP30', exposed 29 ft. 9 in., overall 33 ft. 0 in., butt 5-1/2 in., top 3-1/2 in., with an average wall thickness of 0.200 in. at base.

10D.2.2 MATERIAL - Constructed from polyester and fiberglass woven cloth with a compressive strength of 21,500 psi and a modulus of elasticity of 1.48×10^6 psi. The pole shall remain non brittle to temperatures of -60°F, be resistant to acids, petroleum, salt water. Flame retardant. Barcol Hardness after 30 days, 30. Color of polyester same as color of finish.

10D.2.3 FOUNDATIONS - The foundation shall be in accordance with the drawings. Base installation shall be as directed by Manufacturer using a fiberglass ground tube length.

10D.2.4 BALL - The ball shall be gold anodized aluminum set on 1/2-in. seamless aluminum rod.

10D.2.5 TRUCK - The truck shall be double revolving nonfouling cast aluminum.

10D.2.6 HALYARD - The halyard shall be braided 5/16-in. polypropylene.

10D.2.7 CLEATS - Cleats shall be cast nylon fastened with 5/16-in. aluminum flat headed bolts.

FLAGPOLE, PARKING BUMPERS, ROOF HATCH

10D.2.8 FINISH OF POLE - Pole finish shall be Dura polyester. Color shall be as specified in the Master Color Schedule. Color shall be impregnated permanently in pole.

10D.2.9 SLEEVE - The pole shall be equipped with a sleeve for setting in concrete, and with a wedge or cone centering device in the bottom.

10D.2.10 SNAP HOOKS - Snap hooks shall be of cast nylon.

10D.2.11 FLAG - Furnish and install one flag as manufactured by Allied Flag and Banner Company. Flag shall be the American flag. The flag shall be stitched to be 5 ft. 0 in. x 9 ft. 6 in. and made of 95% nylon and properly hemmed with durable nylon stitching. Grommets shall be noncorrosive rustproof. Colors shall be fast, nonfading and durable.

10D.3 PRECAST CONCRETE PARKING BUMPERS

Precast concrete parking bumpers shall be six ft. in length, manufactured by Shafer's Parking Lot Service, Paramount, California, or equivalent.

10D.4 ROOF ACCESS HATCH

Roof access hatch shall be manufactured by Metal-Tite Products, Los Angeles, or equivalent, complete with all hardware and accessories.

END PART 10D

DIVISION 10
SPECIALTIES

PART 10E - SIGNS

10E.1 GENERAL PROVISIONS

Contractor shall furnish and install all signs as shown on the drawings and specified herein.

10E.2 SUBMITTALS

Within 30 days after award of Contract, Contractor shall submit to the Construction Manager a list of all items to be furnished, including, manufacturers name and model numbers, specifications, installation instructions and details, and catalog cuts or product literature for each type of sign specified.

10E.3 SIGNS

In order to establish the standard of quality, appearance and durability of the signs, the specified signs have been selected from the catalog of Architectural Signing, Inc. (ASI), Marina del Rey, California. Other sign manufacturers will be acceptable upon approval of the Construction Manager.

10E.3.1 EXTERIOR SIGNS - Shall be 811 series, fiberglass sign panel with integral molded returns and encapsulated core material. Graphics shall be as shown on drawings (color, white) on an opaque background. Extruded aluminum post(s) with matching hardware system, installed as shown on drawings.

10E.3.2 INTERIOR SIGNS - Type 1, shall be 270 series, single or double face, consisting of rigid vinyl face laminated to acrylic plastic (matte finish). Graphics shall be as shown on drawings (color, white). Extruded aluminum "T" bracket shall have concealed fasteners (color, matte black).

10E.3.3 INTERIOR SIGNS - Type 2, shall be SP series, consisting of rigid vinyl face laminated to acrylic plastic (matte finish). Graphics shall be as shown on drawings (color, white). Mounting shall be with 1/32 in. thick, double faced vinyl tape.

END DIVISION 10

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The Following Divisions are not Applicable to this Specification

DIVISION 11

EQUIPMENT

DIVISION 12

FURNISHINGS

DIVISION 13

SPECIAL CONSTRUCTION

DIVISION 13
Special Construction

PART 13A - PRE-ENGINEERED STEEL BUILDING

13A.1 GENERAL PROVISIONS

Contractor shall furnish and erect the pre-engineered steel building and perform all associated work. The pre-engineered steel building shall be designed and constructed in accordance with the configuration and parameters detailed and described herein. Design is based on "Mainstreeter II" by Soule Steel Company. Girts shall be same depth as columns.

13A.2 DRAWING SUBMITTALS BY MANUFACTURER

Prior to fabrication, the Contractor shall submit to the Construction Manager for approval; design calculations, erection, installation and assembly shop drawings including anchor bolt setting plan, roof plan, elevation, cross section, etc., as required to assemble all parts, components, and accessories. Drawings shall indicate the piece marks of all parts to be erected or assembled.

13A.3 BUILDING CONFIGURATION

Outside dimensions of the building portion shall be approximately as follows:

1. 50 ft. wide x 100 ft. long, eave height 14 ft. 0 in. (nominal).
2. Width of 50 ft. shall be measured out-to-out of sidewall girts and shall be spanned by clear span rigid frames.
3. Length of 100 ft. shall be measured centerline to centerline of endwall girts and is comprised of 5 bays of 20 ft. each.
4. Eave height of 14 ft. 0 in. shall be measured from bottom of sidewall columns to intersection of roof and sidewall sheets and shall provide a minimum clearance of 12 ft. 0 in. under the lowest point of the rigid frame rafters.
5. Roof slope shall be 1:25 on each side of a single centered 100 ft. long ridge line.

PRE-ENGINEERED STEEL BUILDING

6. Cross bracing shall occur in roof and sidewalls per code requirements.
7. Both endwalls shall be of rigid frame design.

13A.4 CODES AND STANDARDS

Metal Building Manufacturer's Association (MBMA)

Uniform Building Code

American Society for Testing and Materials (ASTM)

ASTM A-307 - Carbon Steel Externally and Internally Threaded Standard Fasteners

ASTM A-325 - High Strength Bolts For Structural Steel Joints

ASTM A-446 - Sheet Steel, Live Coated (Galvanized) by Hot Dip Process

Association of Iron and Steel Engineers (AISC)

AISC Design, Fabrication, and Erection of Steel Buildings

AISC Design of Light Gauge Cold Formed Steel Structural Members

Federal Specification TT-P636

Standard Qualification Procedures of the American Welding Society

13A.5 DESIGN AND ERECTION

13A.5.1 FOUNDATION AND ANCHORAGE

- A. Anchor bolts shall be in strict accordance with the building manufacturer's anchor bolt setting plan unless otherwise specified. Anchor bolts shall be unpainted rods, threaded to receive nuts for tying down the base of the columns.
- B. Anchor bolts shall comply with ASTM A-307.

13A.5.2 PRIMARY FRAMING

- A. All structural steel sections and welded plate members shall be designed in accordance with the AISC, "Specifications for the Design, Fabrication, and Erection of Steel Buildings." All light gauge cold formed structural members shall be designed in accordance with the AISI, "Specification for the Design of Light Gauge Cold Formed Steel Structural Members."

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PRE-ENGINEERED STEEL BUILDING

- B. Steel used in the fabrication of rigid frames shall have a minimum yield of 42,000 psi.
- C. Steel used in the fabrication of light gauge cold formed structural members shall have a minimum yield of 50,000 psi.
- D. Design load shall be the dead load plus the following:
 - 1. The building shall be designed to meet requirements of the Uniform Building Code.
 - 2. Roof live load shall be 20 lb. applied to the horizontal building projection, UL Class 90.
 - 3. Wind loads shall be 15 PSF applied to the frame in accordance with the Uniform Building Code.
 - 4. 2-1/4 PSF for suspended acoustic tee-bar ceiling dead load on all purlins and rigid frames (includes; grid, panels, insulation and light fixtures).

13A.5.3 STRUCTURAL STEEL FABRICATION

- A. All structural steel members shall be cut, formed, punched, welded and painted in the manufacturer's plant.
- B. All rigid frame members shall be shop fabricated to provide holes for the attachment of secondary structural members and bracing. Flanges and webs of built-up welded members shall be joined by a continuous automatic submerged arc welding process. All other shop welding shall be by operators qualified as prescribed in the "Standard Qualification Procedure of the American Welding Society."
- C. All building parts shall carry an identifying mark for easy field identification.

13A.5.4 SECONDARY MEMBERS

- A. Purlins and girts shall be precision roll formed "Z" and "C" sections, respectively, of 50,000 psi minimum yield Hi-strength steel, 7 in. deep for girts, 9 in. deep for purlins, with 3-3/8 in. wide flanges and flange stiffeners. Stiffeners shall be formed into the flanges to permit nesting during shipping and to allow an overlap to provide a continuous member. Purlins shall be overlapped at rafters a minimum of 3 ft. 0 in. to provide a continuous roof member.

PRE-ENGINEERED STEEL BUILDING

- B. Eave struts shall be precision roll formed "G" sections of 50,000 psi minimum yield Hi-strength steel. The member shall be installed such that the open portion of the "G" is facing the wall panels to give the appearance of a closed box member.
- C. Bracing to provide lengthwise rigidity against wind and seismic forces shall be furnished by smooth rods with adjusting nuts both ends.
- D. End frames shall be of post and beam design. The rafters shall be precision roll formed "Z" or "C" sections of Hi-strength steel with a minimum yield of 50,000 psi.

13A.5.5 FIELD SPLICES AND CONNECTIONS

- A. All building parts shall be shop punched for bolted field assembly. Field welding, burning, etc., shall not be permitted unless otherwise specified.
- B. Rigid Frame Connectors
 - 1. Flange splice connectors shall be ASTM A-325 Hi-strength bolts.
 - 2. Frame knee web connectors shall be ASTM A-325 Hi-strength bolts.
 - 3. All other frame connectors to be ASTM A-305 machine bolts, cadmium plated.
- C. All connectors for secondary members shall be 1/2 in. minimum cadmium plated machine bolts unless otherwise noted.

13A.5.6 ROOF AND WALL COVERING

- A. All roof and wall covering shall match. Gauge and color which is prime hot-dip galvanized steel not less than No. 26 gauge, having a minimum of 1.25 oz. of zinc; rolled formed into panels of required length to minimize end laps. Primary ribs shall not be less than 1 in. deep and shall be spaced in pairs not more than 12 in. on center, with a secondary rib not less than 1/4 in. deep between pairs. Flat areas shall not exceed 2-3/4 in. between any rib. Roof and wall panels shall provide 36 in. wide coverage.

PRE-ENGINEERED STEEL BUILDING

- B. Roof panels shall be lapped at ends not less than 8 in., with laps occurring over purlins. Side laps shall lap two ribs and provide a double siphon break and gutter for positive mechanical water seal. Side laps shall be secured by locating one switch screw midway between supporting members in the crown of the panels, to prevent water leakage through screws.
- C. Wall panels shall be continuous where possible from base to eave and shall have the same double lap as the roof sheets.
- D. Roof sheet fasteners shall be applied at every purlin. Holes will be field drilled in the crown of the sheets and supporting structural member to insure perfectly matched holes. They shall not exceed 12 in. center-to-center at intermediate bearings. At roof sheet endlaps, fasteners shall be installed at two per ft.
- E. Ridge flashing shall be formed by shaping roof panels over the ridge.

13A.5.7 TRIM

- A. All metal trim shall be No. 26 gauge galvanized steel sheets with the same type coatings as the panels. Trim shall be formed and lapped to provide a complete weathertight installation.

13A.5.8 OPTIONAL CLOSURES

- A. All closure strips shall be pre-formed and shall conform to the contour of the roof and wall covering panels.
- B. Closure materials shall be expanded polyethylene.
- C. Closure strips shall be installed installed at the bottom edge of wall panels, at the intersection of the roof panel and the eave trim and between the gable trim and the endwall panels. Closure strips shall be "inside type" or "outside type" as appropriate for the location and as shown on the drawings.
- D. Closure strips shall be installed before panel or trim fasteners are applied to firmly hold the strips in place.

PRE-ENGINEERED STEEL BUILDING

13A.5.9 MASTIC (STANDARD)

- A. Mastic shall be provided for installation at all roof panel enlaps.
- B. All mastic shall be 1/4 in. extruded single bead.
- C. When specified, mastic shall be additionally provided for installation at all roof panel sidelaps.

13A.5.10 STANDARD FASTENERS

- A. Wall fasteners shall be No. 14 x 3/4 in. Hex Washer Head sheet metal screws with separate metal and bonded plastic washer, cadmium plated. These fasteners shall also be installed at roof panel side laps.
- B. Roof fasteners shall be No. 14 x 1-3/4 in. Hex Washer Head self-tapping screws with separate metal and bonded plastic washer, cadmium plated.

13A.5.11 OPTIONAL WALL FASTENERS

- A. No. 14 x 3/4 in. Hex Head Type 305 stainless steel sheet metal screws with separate metal and bonded plastic washer, cadmium plated.
- B. No. 12, 14 x 1 in. Hex Head self-drilling screws with steel backed separate metal and bonded plastic washer, cadmium plated.
- C. No. 14 x 3/4 in. Hex Head sheet metal screws with painted heads to match wall color and separate metal and bonded plastic washer, cadmium plated.

13A.5.12 OPTIONAL ROOF FASTENERS

- A. No. 14 x 1-3/4 in. Hex Head Type 305 stainless steel.

13A.6 INSULATION

The roof and all exterior walls shall be insulated on the interior side of the exterior panels with 3-5/8 in. thick x 0.6 lb. density semi-rigid fiberglass blanket insulation with a 4 mil white vinyl facing.

Blankets shall be 4 ft. wide with 2 in. tabs on each side which shall be folded and stapled per manufacturer's instructions. Blankets shall be installed in tension with seams centered over 4 in. wide white sheet metal seam strips to provide a smooth, taut installation.

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PRE-ENGINEERED STEEL BUILDING

13A.7 INTERIOR LINER PANELS

The interior side of all exterior walls shall be covered with existing, to be relocated, liner panels of No. 26 gauge steel protected by a 1.25 ounce galvanized coating with a factory applied white baked enamel finish on the exposed side and an off-white finish on the non-exposed backside.

Existing interior liner panels shall be nominal three ft. wide x ten ft. high above finish floor line and of a vertical rib configuration where indicated on the drawings.

13A.8 PAINTING OF STRUCTURAL MEMBERS

All structural steel members and parts shall be thoroughly cleaned of all loose mill scale, oil, dirt and other foreign matter and given one shop coat of Soule' Structural Iron Oxide Rust Inhibiting Primer in accordance with Federal Specifications TTP-636. Primer shall be applied in such a manner to fill all joints and exposed edges, or as specified in Division 9, Finishes.

13A.9 COLOR COATING OF PANELS

- A. Color coating shall be applied to both sides of hot dipped galvanized steel panels with 1-1/4 oz. coating (ASTM A-446). The metal shall be chemically pre-treated and conversion coated (similar to bonderizing). After thorough drying, a zinc-chromate epoxy primer shall be applied and baked on the metal after which the finish coating shall be applied and baked on the surface.
- B. The exterior finish coating of all roof panels shall be Frost White Silicone Enamel.
- C. The exterior finish coating of all wall panels shall be Frost White Silicone Polyester Enamel solid color selected from Standard Desert Shade Colors as manufactured by Soule Steel Company.
- D. The interior finish coating of all panels shall be off-white polyester.

END OF PART 13A

END DIVISION 13

DIVISION 14

CONVEYING SYSTEMS

(Not Applicable)

DIVISION 15

MECHANICAL

DIVISION 15

MECHANICAL

PART 15A - PLUMBING

15A.1 GENERAL PROVISIONS

Contractor shall furnish and install all plumbing and plumbing fixtures as shown on the drawings and described herein.

15A.2 CODES AND STANDARDS

American Society for Testing and Materials (ASTM)

ASTM A-74 - Specification for Cast Iron Soil Pipe and Fittings.

ASTM A-48 - Specification for Gray Iron Castings.

ASTM A-120 - Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses.

ASTM B-88 - Specification for Seamless Copper Water Tube.

Uniform Plumbing Code (UPC)

Uniform Building Code (UPC)

15A.3 PLUMBING FIXTURES

15A.3.1 WATER CLOSET (WC-1) - The water closet shall be floor mounted siphon jet elongated, vitreous china American Standard "Triber" 2342.012 with #2342.012 top spud, #5321.070 with solid moltex plastic heavy duty seat with stainless steel check hinge. "Sloan Royal" 110 valve.

15A.3.2 LAVATORY (LV-1) - The lavatory shall be wall hung, size 19 in. x 17 in. enameled cast iron American Standard "Regalyn" 4867.016 with 8 in. O.C. drilling. 2279.016 aquameter single faucet, chrome finish, slow self-closing metering handle.

15A.3.3 SINKS (SS-1) - Sinks shall be wall hung, size 28 in. x 28 in. enameled cast iron American Standard Florwell #7740.020 with stainless steel rim guard and \$7593.148 sink faucet with stops in shanks and vacuum breaker, 7798.176 3 in. trap standard with 7721.020 strainer.

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- 15A.3.4 URINAL (U-1) - The urinal shall be wall hung vitreous china American Standard "Trimbrook" #6560,015 with 3/4-in. top spud, "Sloan Royal" 186-11 flush valve.
- 15A.3.5 FLOOR DRAIN (FD-1) - Floor drain shall be J. R. Smith #2010 AHPX cast iron drain with adjustable 5 in. diameter extra-heavy duty nickel bronze heel-proof top with 1/4 in. square holes. Size as indicated on drawings.
- 15A.3.6 WALL CLEANOUTS (WC-1) - Wall cleanouts shall be J. R. Smith #4512 cast iron C. O. Tee with acorn No. 8211-3 AK, prime coated steel concealed hinge T-type access covers with removable door on all except tile walls. Tile walls use Smith No. 4512 with Acron No. 8211-1 AK, with 18.8 No.4 finish stainless steel access cover.

15A.4 PIPING MATERIALS

15A.4.1 SOIL, WASTE AND VENT PIPING

15A.4.1.1 Piping - 2 in. and larger shall be standard weight cast iron soil pipe and fittings conforming to ASTM A-74. Piping 1-1/2 ins. and smaller shall be Schedule 40 continuous weld or butt welded galvanized steel pipe conforming to ASTM A-120 with cast iron drainage pattern fittings.

15A.4.1.2 Flashing - Joints at the roof around vent pipes shall be made water tight by use of lead flashings. Counter flashing shall not restrict the required internal cross-sectional area of the vent.

15A.4.2 DOMESTIC COLD WATER PIPING

Domestic cold water piping shall be copper water tube with wrought copper soldered fittings conforming to ASTM B-88. Piping below grade shall be Type "K" hard copper with silver solder joints. Piping above grade shall be Type "L" copper water tube with 95-5 solder joints.

15A.4.3 VALVES

Unless otherwise specified, valves shall be as follows:

PLUMBING

15A.4.3.1 Gate Valves - Gate valves shall be of the wedge disc type, shall permit straight line flow and complete shut-off and shall be so designed that the valve can be packed under pressure when wide open.

Valves 1-1/2 in. and smaller shall be bronze with ends to suit pipe, nonrising stem and 150 psi working pressure.

15A.4.3.2 Globe Valves - Globe valves shall permit control of flow rate from full flow to complete shut-off and shall be so designed that the valve can be packed under pressure when wide open.

Valves 1-1/2 in. and smaller shall be bronze with ends to suit pipe and 150 psi working pressure.

Valves 2 in. and larger shall be iron body, bronze mounted, with ends to suit pipe and 125 psi working pressure.

15A.4.4 PIPE SLEEVES

Sleeves shall be used where piping passes through masonry walls and shall be steel pipe of a size to provide ample installation clearance for the greatest outside diameter of pipe or fittings. Spaces between pipes and sleeves shall be caulked with jute to within 1 in. from ends of sleeves. Where pipes pass through foundation walls or through floor slab on grade the spaces shall be sealed with bituminous compound in addition to caulking. Where pipes pass through sleeves in other locations, the spaces shall be sealed with a nonstaining caulking compound. Where exposed piping passes through walls, openings shall be finished with chrome plated escutcheons.

15A.5 INSTALLATION

15A.5.1 GENERAL - All work shall conform to UPC and OSHA requirements. Work shall be free of obvious defects and in accordance with manufacturer's printed instructions, where available. Piping shall be installed in conformance with building and structure conditions and concealed in furred spaces where possible. Exposed piping shall be parallel with or at right angles to walls of the structure. Where exposed piping passes through walls, openings shall be finished with chrome plated excutcheons. Piping systems shall be mounted so that nofrmal expansion and contraction will not result in undue stress.

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PLUMBING

15A.5.2 SUPPORTS - Suspended pipe shall be held by adjustable, expansion-type pipe hangers having bolted, hinged loops and turnbuckles, or other approved devices. Chain or flat steel strap hangers will not be acceptable. Hangers for uninsulated copper pipe shall be copper plated and provided with padded felt insulation between hanger and pipe. Galvanized sheet metal insulation saddles, 12 gauge, shall be applied to bottom one half of insulated piping 2 in. and larger diameter at each hanger. Saddles shall be at least 12 in. long. Hangers shall be large enough for pipe insulation and saddles, where used.

At the Contractors' option, parallel pipe runs may be supported by a common support ("trapeze hanger") with individual rollers. All hangers shall be secured to structural steel supports in ceiling.

Pipe Support Spacing

<u>Size</u>	<u>Spacing</u>	<u>Hanger Rod</u>
1 in. and smaller	- 5 ft. intervals	3/8 in. dia.
1-1/4 in.	- 8 ft. intervals	3/8 in. dia.
1-1/2 in. & 2 in.	- 9 ft. intervals	3/8 in. dia.

15A.5.3 SHUT-OFF VALVES - Shut-off valves or stops shall be provided on water lines at all fixtures and equipment and on branch lines serving more than one fixture or piece of equipment. Unless noted otherwise, valves shall be same size as pipe.

15A.5.4 CLEANOUTS - Cleanouts shall be installed where indicated on the drawings and where required by the UPC. Concealed cleanouts shall have access covers flush with adjoining surfaces.

15A.6 TESTING AND STERILIZING PIPING SYSTEMS

15A.6.1 GENERAL - All plumbing systems shall be tested by the Contractor, who shall be totally responsible for furnishing the data required by the procedures outlined in these specifications.

15A.6.2 DRAIN AND VENT TEST - All building drain, vent, and roof drain piping shall be tested by the water test method as described in

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the UPC. A minimum head of ten feet of water shall be used and all joints shall be inspected and proved tight.

15A.6.3 DOMESTIC WATER - All water piping shall be hydrostatically tested at 150 psi for two hours with no drop in pressure. All joints shall be tested for leaks. Line shall be thoroughly flushed with water before testing.

END PART 15A

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DIVISION 15
MECHANICAL

PART 15B - HEATING, VENTILATION, AIR CONDITIONING

15B.1 GENERAL PROVISIONS

The Contractor shall furnish and install all materials required to provide the complete heating, ventilating, and air conditioning system shown on the drawings and described herein.

15B.2 SCOPE OF WORK

15B.2.1 GENERAL - The Contract drawings indicate the extent and general arrangement of the various mechanical systems. If any departure from the Contract drawings are deemed necessary by the Contractor, detail drawings and specifications for such departures and the reasons therefor shall be submitted as soon as practicable to the Construction Manager for approval. No such departures shall be made without prior written approval of the Construction Manager. The dimensions of the equipment rooms or areas are as indicated on the drawings. Equipment, ductwork, and piping arrangements shall provide adequate and acceptable clearances for entry, servicing, and maintenance.

15B.2.2 VERIFICATION OF DIMENSIONS - The Contractor shall be responsible for the coordination and proper relation of its work to the building structures and to the work of all trades. The Contractor shall visit the premises and thoroughly familiarize himself with all details of the work and working conditions, to verify all dimensions in the field, and to advise the Construction Manager of any discrepancy before performing any work.

15B.2.3 COOPERATION WITH OTHER TRADES - The Contractor shall take all measurements necessary to prevent conflict between mechanical work and other work. The Contractor shall provide adequate dimensioned and detailed drawings and wiring diagrams and templates to others as required to construct foundations, provide openings, set anchor bolts and sleeves, provide supports, make plumbing and electrical connections, and to wire all equipment forming part of the mechanical systems. The Contractor shall be responsible for delays, errors, and additional expenses resulting from failure to supply drawings, diagrams, templates, and other necessary data or items within the time required to avoid delays. The Contractor shall supervise the construction and installation of foundations, connections, supports, sleeves and openings for mechanical equipment and for connections or passage of piping to or through

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structural elements; and shall inspect for satisfactory conditions upon completion of preparatory work. In the event of displacement or other unsatisfactory results, the Contractor shall take immediate steps to correct deficiencies.

15B.2.4 EQUIPMENT SCHEDULE - All major items of equipment are specified in the Mechanical Equipment List on the Contract drawings.

15B.3 CODES AND STANDARDS

Air Diffusion Council (ADC)

American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

American Society for Testing and Materials (ASTM)

ASTM A-525 - Specification for Steel Sheet, Line-Coated (Galvanized) by the Hot-Dipped Process

ASTM C-423 - Test for Sound Absorption of Acoustical Materials in Reverberation Rooms

American National Standards Institute (ANSI)

ANSI A13.1 - Scheme for the Identification of Piping Sections

Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

National Fire Protection Association (NFPA)

NFPA 90A - Standard for the Installation of Air Conditioning and Ventilating Systems

NFPA 90B - Standard for Installation of Warm Air Heating and Air Conditioning Systems

Uniform Mechanical Code (UMC)

Uniform Plumbing Code (UPC)

California Administrative Code - Title 24

Part 6, Article 2 - Energy Conservation Standards for New Nonresidential Buildings

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Division 5

- T20 - 1508 - Air Handling Duct System Installation
- T20 - 1509 - Duct Construction
- T20 - 1518 - Responsibility of Equipment Supplier

15B.4 WORKMANSHIP - Mechanical equipment shall be installed in accordance with the recommendations of the manufacturer and the specified requirements. The installation shall be accomplished by workmen skilled in the specified type of work. Where mechanical items require preparations by other trades, the Contractor shall furnish the details of its requirements to such trades in time so as not to delay any other portion of the work.

15B.5 DRIVE UNITS

15B.5.1 GENERAL - Drive units shall be designed for 24-hour continuous duty service and shall be constructed so that oil leakage around shafts is precluded.

15B.5.2 MOTOR RATING - The nameplate horsepower rating of each drive motor shall be at least equal to the theoretical brake horsepower required to drive the equipment under full load for the conditions specified, including all losses in speed reducers and power transmission.

15B.5.3 PREVENTION OF GALVANIC CORROSION - Each joint between cuprous, ferrous, and aluminum materials shall be made by means of approved insulating fittings and materials. Such fittings shall not be brittle and shall be designed to take the imposed stresses. Contact surfaces of dissimilar metals shall be separated by nonconducting coating or sheet.

15B.6 INITIAL LUBRICATION, ADJUSTING AND FILLING SYSTEMS

15B.6.1 GENERAL - Before operating any mechanical system, all bearings shall be lubricated and belts, pulleys, and other moving parts shall be checked for alignment and tolerances in accordance with manufacturer's operating instructions. All piping and liquid systems shall be flushed out and filled with the operating fluids.

15B.6.2 AFTER TESTS - After tests, valves and other parts of the work shall be adjusted for quiet operation. Filters shall be cleaned or replaced. Vibrations and noise shall be isolated or suppressed.

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15B.7 IDENTIFICATION AND VALVE TAGS

15B.7.1 VALVE TAGS - Provide a tag consisting of a two-inch diameter, 20 gauge brass disk for each main and branch line shutoff valve or cock. Tags shall be fastened in place by a continuous 1/8 in. brass ring around the stem of valves and around the pipe for cocks. Disks shall be stamped with the service designation.

15B.7.2 PIPE IDENTIFICATION - After completion of piping and finish painting, and before lines are connected to equipment or fixtures, each individual pipe including pipes concealed above ceiling shall be marked for easy identification and direction of flow. Coding shall comply with ANSI A31.1.

15B.8 INSTALLATION CHECK

The Contractor shall have an authorized representative of the manufacturer or supplier of the roof top air handling unit and condensing unit visit the site of the work and inspect, check, adjust if necessary, and approve the equipment installation. In each case, the equipment supplier's representative shall be present when the equipment is placed in operation. The Contractor shall have the equipment supplier's representative revisit the jobsite as often as necessary until all trouble is corrected and the equipment installation and operation is satisfactory to the Construction Manager.

15B.9 CLEANING

At the completion of the work, all parts of the installation shall be thoroughly cleaned. All equipment, pipe, valves, and fittings shall be cleaned of grease, metal cuttings, and sludge that may have accumulated by operation of the system for testing. Any stoppage or discoloration or other damage to parts of the buildings, its finish, or furnishings, due to the Contractor's failure to properly clean the mechanical systems, shall be repaired by the Contractor without additional cost to the Government. Ducts, plenums, and casings shall be thoroughly cleaned of all debris and blown free of all small particles of rubbish and dust before installing outlet faces. Equipment shall be wiped clean, with all traces of oil, dust, dirt, or paint spots removed. Temporary filters shall be provided for all fans that are operated during construction, and after all construction dirt has been removed from the building, new filters shall be installed. Bearings shall be properly lubricated with oil or grease as recommended by the manufacturer. Belts

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shall be tightened to proper tension. All miscellaneous equipment requiring adjustment shall be adjusted to setting indicated or directed. Fans, and other motor driven equipment shall be adjusted to the speed indicated by the manufacturer to meet specified conditions.

15B.10 ELECTRICAL WORK

All manual or automatic control and protective or signal devices required for the operation of equipment herein specified and any wiring required but not indicated on the electrical drawings shall be furnished and installed. Electrical work shall conform to the Division 16, Electrical. A complete electrical connection diagram for each piece of mechanical equipment having more than one automatic or manual electrical control device shall be submitted to the Construction Manager for approval, and after approval shall be included in the operation and maintenance manuals. Electric-motor-driven equipment specified in mechanical sections shall be provided complete with motors, motor starters, and controls, except where motor control centers are specified in the electrical work section. Electric equipment and wiring shall be in accordance with the Division 16, Electrical. Electrical characteristics shall be indicated. Motor starters shall be provided complete with properly sized thermal-overload protection and other appurtenances necessary for the motor-control specified. Each motor shall be of sufficient capacity to drive the equipment at the specified duty without exceeding the nameplate rating of motor when operating at proper electrical system voltage. Manual or automatic control and protective or signal devices required for the operation specified and any control wiring required to control and operate devices, but not shown on the electrical plans, shall be provided with the equipment.

15B.11 TESTING

15B.11.1 GENERAL - The Contractor shall furnish all material and equipment, including meters, pumps and compressors, and all labor necessary to test the work. The Construction Manager, the Government and the agency having jurisdiction shall be invited to observe all tests. Notice of test shall be issued to be received at least three days before date scheduled for test. The results of all tests required, as well as reports of initial lubrication, adjustment, and filling shall be reported in quadruplicate.

15B.11.2 OPERATING TESTS - After the installation has been completed and systems proven satisfactory, general operating tests shall be conducted in the presence of the Construction Manager. The general operating tests shall be made during a continuous period of not less than 72 hours under normal

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operating conditions for each system, and shall demonstrate that all equipment is functioning in accordance with the specifications. In addition, and as directed by the Construction Manager, various service conditions and malfunctions shall be simulated and the system shall adjust, recover, or shut down as required.

15B.12 OPERATION AND MAINTENANCE INSTRUCTIONS

When work is completed and all systems are operating satisfactorily, the Contractor shall provide four bound copies of operation and maintenance instructions.

15B.13 HEATING AND VENTILATING

15B.13.1 INSTALLATION - All parts of the installation shall be installed in a neat and workmanlike manner, as shown on the drawings.

15B.13.2 COORDINATION - Routing of ductwork, piping and/or any other part of the installation, shall be coordinated with other trades. All ductwork, piping and other parts of the installation shall be arranged accordingly, providing any fittings, duct offsets and/or other accessories required to meet field conditions, without additional cost to the Government.

15B.13.3 MATERIALS AND EQUIPMENT - All materials and equipment shall be new, free of defects, of recent manufacture, and of the make, brand, and quality specified or approved as equal by the Construction Manager.

15B.13.4 PERFORMANCE

15B.13.4.1 WINTER OPERATION - Indoor temperature of 75°F with an outside minimum temperature of 26°F.

15B.13.4.2 SUMMER OPERATION - Outdoor temperature of 106°F, dry bulb, and 71°F, wet bulb, with an indoor temperature of 75°F.

15B.13.4.3 PERFORMANCE DATA - Contractor shall provide performance data for conditions specified herein and on the drawings, per Title 24 Section T20-1518.

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15B.14 DUCTWORK

- 15B.14.1 GENERAL - Details of construction, sheet metal gauges, stiffeners, supports and material, where not specifically specified herein, shall be in accordance with the recommendations in ASHRAE and SMACNA Metal and Air Conditioning Contractors National Association, Inc. "Low Velocity Duct Construction Standards" and Title 24 Section T20-1509."
- 15B.14.2 MATERIALS AND CONSTRUCTION OF GLASS DUCTWORK CONSTRUCTION - All materials used in fabrication of rectangular ducts or plenums shall be fiber glass duct board J-M Type 475 Micro-Aire or equal in all areas as shown on the drawings. The duct board shall meet the requirements of NFPA 90A and 90B and shall have a UL 181 Class I air duct listing label. The duct board shall have dual density factory molded male/female edges. The type A75 duct board shall have a thermal conductance factor of 0.23 at 75°F mean, and a noise reduction coefficient (NCR) of 0.70 as per ASTM C-423 using a No. 6 mounting and an air friction correction factor of 1.1 max. at 2000 FPM and oversized accordingly. All fabrication details shall be in accordance with SMACNA fibrous glass manual, duct construction standards, J-M fabrication manual FG-359 or equal. All transverse and longitudinal seams shall be stapled with 9/16 in. minimum outward clinch staples approximately 2 in. on center. Duct board shall be fabricated as a complete duct system.
- 15B.14.3 CLOSURE S - The fiberglass duct board system shall be closed with a UL listed glass fabric and mastic system, UL listed J-M therm-lock or SMACNA AFTS-100 and 101. All connections to equipment shall utilize approved mechanical fasteners or sheet metal screws and washers.
- 15B.14.4 SUBMITTALS - If fiberglass ducts are installed, Contractor shall submit to Construction Manager on completion of the work detailed drawings of each fitting, reinforcement, hangers, end caps, and all interior hardware and accessories to be utilized on the work.
- 15B.14.5 INSTALLATION - The duct board system shall be installed in accordance with manufacturer's recommendations. All joints shall be firmly seated, any tears in the glass surface shall be heavily buttered with approved adhesive, and care shall be taken to repair any and all accidental damage to jacketing material with approved closure material.
- 15B.14.5.1 Ductwork shall be supported at all fittings and change in direction. For straight runs, support every 48 in. where duct span is 24 in. or more,

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and every 96 in. where duct span is less than 24 in. Hanger straps shall be 1 in. x 22 gauge sheet metal to 60 in. span and 1 in. x 18 gauge over 60 in. span or 12 gauge wire.

15B.14.5.2 All materials used in fabrication of round ducts shall be 1 in. thick, performed rigid round fiberglass duct J-M Type Micro-Aire HU-3 Rigid Round, or equal in all areas, as shown on the drawings. Ducting shall comply with the requirements of NFPA 90A and 90B and each section shall bear a factory applied UL #181, Class 1 label and have a thermal conductance factor of C.23.

15B.14.5.3 The duct shall have high density M/F slip joint ends; a factory applied, fully adhered tough fire-resistant skrim reinforced foil jacket, and a friction correction factor not greater than 1.05 at 3000 fpm. Ducts having a higher correction factor shall be oversized accordingly by the Contractor.

15B.14.6 APPLICATION - Sections shall be assembled using premolded M/F slip joints or field cut M/F joints. All joints and connections shall be sealed with J-M Therm-Lock or pressure sensitive tape which meets the SMACNA specifications and are listed on the J-M fabrication sheet. All surfaces of the duct shall be prepared for adhesion of tape in accordance with SMACA Fibrous Glass Duct Construction Standards. Ducts up to 7 in. I.D. shall be supported 3 ft. on centers and over 7 in. I.D. 6 ft. on centers. Support shall be 3/4 in. wide galvanized sheet metal strap. The fiberglass duct system shall be fabricated and installed in accordance with J-M recommendations and the J-M Installation Instruction Sheet FG373A. All joints shall be firmly seated and care shall be taken to repair any and all accidental damage to jacketing material with approved closure material.

15B.15 DAMPERS

15B.15.1 MANUAL DAMPERS - Install manual balancing dampers as shown on drawings and as necessary for balancing the system. Dampers shall be equipped with external quadrants for setting and locking them in position. After air balance has been completed, a paint mark shall be placed on duct or insulation opposite indicator arrow to mark balance position.

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DIVISION 16

ELECTRICAL

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PART 16A - ELECTRICAL, GENERAL

16A.1 GENERAL PROVISIONS

Contractor shall furnish and install all electrical work as shown on the drawings and described herein. All workmanship shall be first class in all respects and shall be performed in a manner satisfactory to the Construction Manager. All equipment shall be listed by UL.

Contractor shall submit detailed dimension drawings of the power panelboards to the Construction Manager within 30 days of award of the Contract.

16A.2 CODES AND STANDARDS

National Electrical Code (NEC), 1978 Edition California Administrative Code, Title 24 Occupational Safety and Health Act (OSHA). All applicable local codes and ordinances.

16A.3 SCOPE OF WORK

Contractor shall furnish and install the following electrical work, except as specifically indicated that work or material shall be performed by others:

- A. 400 Amp. 120/240V, 3-phase, 4-wire delta light and power main switchboard; except furnishing of current transformers and meters.
- B. 120/240 volts, 3-phase, 4-wire Delta system for general lighting, power, heating, and air conditioning equipment.
- C. Complete lighting and receptacle system consisting of 120/240 volt, 1-phase wire circuit breaker panels, conduit, wiring, wiring devices, lighting fixtures and lamps as specified herein or indicated on the drawings.
- D. Conduits, outlets, cabinets and pull wires for telephone system. Empty conduit system only.
- E. Conduit, wiring, and wiring devices, 240V, 3-phase and 120V single phase, for the entire air conditioning, ventilation, and heating system. Empty conduits only with pull wires for low voltage control wiring.
- F. Temporary light and power for construction.
- G. Complete secondary service conduit and trench system, including backfill in accordance with Southern California Edison Company Service Requirements.

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- H. Furnishing and installation of and secondary service cables light and power to the main switchboard, including termination.
- J. Low voltage control wiring for heating and air conditioning system.
- K. All work and materials expressly or obviously belonging to others and neither specified nor indicated on the drawings as part of this contract.
- L. Parking area lighting system, including lighting standards and conduit system.
- M. All painting, except as otherwise specified.

16A.4 EQUIPMENT AND SERVICES FURNISHED BY OTHERS

The following equipment and services, and any other so designated on the drawings, shall be installed or performed by others. Contractor shall make all necessary provisions for attaching or connecting its work thereto. Contractor shall set all necessary equipment and materials and shall furnish others with all drawings and directions necessary to enable them to properly construct and perform their work so that the entire system shall be properly connected.

All wiring, cable, terminal strips, equipment and instruments for use in connection with the telephone system.

16A.5 MATERIAL

16A.5.1 CONDUIT - All wiring, except where specifically mentioned otherwise, shall be installed in conduit. Conduit shall be rigid steel, galvanized or sheradized, standard thickness, equal to General Electric white or Walker "Dualcote" Sheradized, except short sections of flexible metallic conduit at motor connections, and "Sealtight" for weatherproof requirements. Flexible metallic conduit or electrical metallic tubing may be used for concealed work only where permitted by the authorities having jurisdiction. Rigid conduit, as specified above, shall be used for all runs in slab, underground or where exposed.

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16A.5.2 MAIN SERVICE AND DISTRIBUTION SWITCHBOARD

- A. Contractor shall furnish and install the main light and power switchboards together with their distribution sections as indicated on the drawings. They shall be Square D service section switchboards with service riser sections as indicated on the drawings, or equal type approved by the Construction Manager, as made by Federal Pacific Electric Products company, General Electric, Westinghouse, ITE, or Sylvania Electric Products. These switchboard sections shall comply with the Southern California Edison Company Service Requirements and shall be dead front, dead rear construction with all bussing and equipment accessible from the front; constructed in accordance with the feeder diagram and details.
- B. The switchboard shall be formed steel cabinet construction. Each section of breakers and equipment shall be assembled in die formed steel sections with top plates and required braces and gussets all welded together in such a manner that the cabinets will be absolutely rigid, plumb and uniform in size. Each section shall be a separate and independent unit with all assembly holes die stamped or jig drilled and openings and interconnections so placed that the sections may be assembled without drilling or cutting holes on the job.
- C. Contractor shall deliver the switchboard to the site in completely assembled sections and shall provide all required assembly bolts and blanking plates. The front plates shall be die formed steel, not less than No. 12 gauge steel, completely removable.
- D. Provide pull compartments at sides, tops and bottom of the sections for feeder cables. Conduits entering the board shall be terminated in the upper and lower pull compartments.
- E. Adjacent to the main light and power service panels, provide 12 in. wide vertical pull compartments, full height and depth of the board for the incoming power and lighting services. Service entrances shall be into the bottom of the board.
- F. Provide space in the board for the service meter and current transformers indicated in the feeder diagram.

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- G. All distribution circuit breakers and main service breakers shall be enclosed thermal magnetic type and of trip ratings indicated in the feeder diagram. Branch circuit breakers shall be Square D, 240 volt Type LA, KH, FH or equal type as approved by the Construction Manager, as made by Federal Pacific Electric Products Company, General Electric, Westinghouse, ITE or Sylvania Electric Products. The switchboard shall be braced for not less than 50,000 A.
- H. All line side bussing of the board shall be done with the flat busbar copper. Current density in busbars shall not exceed 1000 amperes per square inch. All busbar connections shall be ground flat and fastened with bolts and lock washers. Busbars shall be rigidly supported and spaced in accordance with the NEC standards for bare busbars. Line bussing shall be extended behind filler or spare spacers, full height of the sections.
- J. Provide a neutral bus in the switchboard section connected to the service neutral. Provide a separate lug on the neutral bus for each neutral conductor and label with the number of the feeder. These lugs shall be spaced as not to exceed three inch intervals.
- K. Provide a nameplate for each circuit breaker and meter on the board. These plates shall be bakelite or other Government approved material, and shall bear the designation of the services controlled by the equipment.

16A.5.3 LIGHTING PANELBOARDS - Lighting panelboards shall be Square D Type "NQO" or equal approved by the Construction Manager as made by Federal Electric Products Company, General Electric, ITE, Westinghouse or Sylvania Electric Products, with branch circuit breakers as indicated on the drawings. A typed panel schedule of circuits shall be mounted on the back of the panel door. The panel schedules shall have metal frames with sheet lucite covers.

16A.5.4 DISCONNECTING SWITCHES - Safety switches shall be quick-make-quick-break 600V enclosed (NEMA Type 1), externally operable, and unfused, except where otherwise shown on the drawings. Switches shall be of the proper ampere and voltage ratings, with the number of poles required to open all ungrounded conductors simultaneously. Where exposed to the weather, they shall have NEMA 3R weatherproof enclosures or be installed in a weatherproof housing.

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- 16A.5.5 RELAYS - Contractor shall provide and install auxiliary control relays for miscellaneous controls and interlocking of the air conditioning and heating system. These relays shall be of the front connected, machine tool type, for installation in the air conditioning and heating control cabinets. Time delay relays shall be of the type as manufactured by M. H. Rhodes or Construction Manager approved equivalent.
- 16A.5.6 TIME SWITCHES - Provide where shown on drawings, or as required, time switches with number of poles required and with seven day astronomic dial as indicated on the drawings. Time switches shall be as manufactured by Intermatic, Paragon or Construction Manager approved equivalent.
- 16A.5.7 WIRING SYSTEMS - The lighting and power system shall be 120/240V, three-phase, 4-wire delta 60 Hertz. All neutral wires shall be white and equipment ground wires shall be green as approved by NEC.
- 16A.6 WORK INCLUDED
- 16A.6.1 CUTTING AND PATCHING - Contractor shall do all drilling, cutting and patching of the general construction work, rough finish and trim which may be required for the installation of its equipment. All patching shall be of the same materials, workmanship and finish as the original work, and shall accurately match all surrounding work.
- 16A.6.2 EXCAVATION AND BACKFILL - Contractor shall do all necessary excavation for the installation of all work included in the Contract. After the work has been installed, inspected and approved, all excavations shall be backfilled and compacted in accordance with Part 2A, Earthwork, in this specification.
- 16A.6.3 SLEEVES AND INSERTS - Contractor shall furnish and install all required sleeves and inserts prior to the pouring of concrete.
- 16A.6.4 CONDUIT BENDS - All conduit bends used in the electrical services installation shall be of long radius.
- 16A.6.5 CLOSING-IN OF UNINSPECTED WORK
- A. Contractor shall not allow nor cause any of its work to be enclosed or covered up until it has been inspected, tested and approved by the Construction Manager and all legally constituted authorities having jurisdiction.

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- B. Should any of its Work be enclosed or covered up before such inspection and test, Contractor shall uncover the work and, after it has been inspected, tested and approved, it shall make all repairs with like materials necessary to restore all work and that of others to its original condition.

16A.6.6 CLEANUP OF PREMISES AND EQUIPMENT - During the progress of the work, Contractor keep the premises and equipment free of debris, packaging and the like and, upon completion of the work, remove debris and surplus material from the premises and leave broom clean.

16A.7 INSTALLATION OF BUILDING CONDUIT

- A. All conduit above ceilings and in walls shall be installed and concealed except as otherwise indicated on the drawings.
- B. All conduit, outlet boxes, junction and pull boxes, etc., shall be installed so as not to interfere with piping, fixtures or equipment of other trades. Contractor shall familiarize itself with the locations of pipes and equipment of other trades before installation.
- C. All conduit one inch trade size and smaller may be installed within the floor slabs as approved by the Construction Manager. Conduit larger than one inch trade size shall be installed in the earth below the floor slab as specified and indicated.
- D. Conduits approved for an exposed installation shall be grouped in neat parallel lines, properly supported, following the lines of the building structure as closely as possible and as directed.
- E. Conduit shall not be run through structural members of the building, except as specifically approved by the Construction Manager.
- F. Conduit shall not be installed less than six inches from any hot water pipe.
- G. Connectors for flexible metallic conduit shall be "Tite-Bite", "Tomic", "Jake" or Construction Manager approved equal type. Set screw type connectors shall not be acceptable.
- H. All conduit to be installed in concrete shall be carefully laid and rigidly supported in the forms, as directed, in such a manner as to provide proper clearances, and so that all boxes and outlets will be in exact locations after concrete has set and forms are removed.

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- J. The joints in all conduit installed in the masonry and below the floor slabs on the ground shall be made liquid tight. The outside of each coupling and all wrench abrasions shall be coated with asphaltum compound.
- K. All conduit larger than one inch trade size to be installed below the floor slabs on the ground shall be made up of full length uncut sections where possible and joints thoroughly red leaded. Conduit shall be thoroughly coated with black asphaltum paint before burial.
- L. Run die over all factory threads to ensure that they are perfectly clean, free from all coating material so that conduit will make perfect metallic contact with the fittings. No running threads shall be permitted in the conduit installation.
- M. The ends of all conduit shall be cut square, carefully reamed out to full size and shouldered in the fittings.
- N. Upon completion of any run of conduit, test the run and see that it is dry and perfectly free from all obstructions. Plug each end with conduit pennies and bushings and leave plugged until ready to pull wire.

16A.8 INSTALLATION OF YARD CONDUIT

- A. All yard conduit shall be installed so as not to interfere with existing yard piping or new piping and equipment of other trades.
- B. All buried metallic conduits shall be made up of full length, uncut sections where possible and joints thoroughly red leaded. Conduit shall be thoroughly coated with black asphaltum paint before burial. No conduit shall be run less than 18 in. below the ground and the trench shall be backfilled with firmly compacted earth.
- C. All buried metallic conduits shall be 3/4 in. size or larger.
- D. Buried rigid PVC conduit (Schedule 40) may be used for yard lighting, power and control circuits as directed by the Construction Manager. Provide code size ground conductors.

16A.9 UNDERGROUND DUCTS

- A. PVC or ABS encased in a three inch concrete envelope as directed by the Construction Manager is acceptable as underground ducts for power and communication feeders.
- B. Minimum slope for duct runs shall be two inches per 100 ft.

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16A.10 SUPPORT OF CONDUIT AND OUTLETS

- A. Outlet boxes shall be accurately placed, independently and securely fastened to the structure, and in concealed work shall be set flush with the finished surfaces of the walls or ceilings.
- B. Bar hangers fitted with fixture studs shall be used to support outlet boxes in stud partitions and furred or plastered ceilings.
- C. Concealed or exposed conduit one inch and smaller shall be supported to the building structure with pipe straps, spaced not to exceed five foot intervals, and at outlet boxes as required by code.
- D. All concealed or exposed conduit larger than one inch shall be suspended with pipe hangers or grouped in racks.

16A.11 OUTLET AND JUNCTION BOXES

- A. All outlet boxes and covers shall be galvanized or sherardized, one-piece pressed steel, knockout type, of aproved make, except boxes marked weatherproof shall be Crouse-Hinds Type "FS" or "FD".
- B. The size of each box for light outlets and junction boxes shall be determined by the number of wires or conduits, or size of conduits entering the box, but shall be not less than four inches square.
- C. Outlet boxes and junction boxes shall be equipped with plaster rings, extension rings or fixture studs as may be required.
- D. Outlet boxes for local gang shall be 4 or 4-11/16 in. square with switch plaster rings for one or two-gang. Use 4-11/16 in. square boxes with switch plaster rings where two-gang switches occur.
- E. Outlet boxes for receptacles, telephones, etc., shall be four inches square or larger if necessary with single gang plaster rings.
- F. Approved factory made knockout seals shall be used in all boxes in unused openings or where knockouts are not intact.
- G. All outlet boxes shall be used as pull boxes wherever possible. Special junctions and pull boxes shall be installed only in Construction Manager approved locations or an indicated on the drawings.

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- H. The locations of electrical machinery, outlets and equipment indicated on the drawings are approximately correct. However, Contractor shall consult the Construction Manager prior to installation for the exact location of outlets. The Construction Manager reserves the right to make any reasonable changes in location of the outlets, apparatus or equipment up to the time of rough-in without additional costs. Locations of connections to electrical equipment furnished by others shall be taken from shop drawings of such equipment.

16A.12 FITTINGS

- A. Contractor shall furnish and install all fittings, special devices and materials which may be required for the proper installation of the conduit systems.
- B. Elbows, locknuts, bushings and couplings shall be of the same make, quality and finish as the conduit used.
- C. Special fittings as may be required shall be Appleton or Crouse-Hinds.
- D. Fittings for thin wall conduit shall be watertight, compression type.

16A.13 PLATES

- A. Furnish and install plates, stainless steel, as made by Sierra Electric "S" line on all outlets for local switches, receptacle, telephone, junction boxes, etc., for flush installations.
- B. Telephone outlet plates shall be Sierra Electric devices. Standard horizontal split wall plates for cable lead in. One gang Cat #S-753. Provide ten extra spare cover plates.
- C. Plates for devices mounted in "FS" or "FD" boxes shall be sheet steel.

16A.14 WIRE AND CABLE

- A. Furnish and install all wire and cable as indicated and as required to complete the installation.
- B. Conductors in all runs shall be 600V insulated copper. Use type THW for all 240V feeders and in damp locations. For all other locations, use type TW.

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- C. No wire smaller than No. 12 AWG gauge shall be used in the light and power wiring. No. 8 AWG gauge and larger shall be stranded.
- D. Cable and wires shall be Anaconda, General Cable, General Electric, Rome or Triangle wire and cable. Deliver wire to jobsite in unbroken packages, bearing the Underwriter's and Manufacturer's labels, showing the date of manufacture and the maximum allowable voltage.

16A.15 INSTALLATION OF WIRE AND CABLE

- A. Wire and cable shall not be installed until all debris and moisture is removed from the conduits, boxes and cabinets. No lubricants shall be used except powdered soapstone to pull in wires and cables.
- B. Provide pigtail splices with eight inch long leads in all light, power and equipment outlet boxes for connections to lighting fixtures, receptacles, etc.

16A.16 WIRE JOINTS AND TAPING

- A. Joints in wires smaller than No. 6 AWG shall be made with M.M.&M "Scotchlok" solderless spring connectors or with ideal "Wire-Nut" or "Wing-Nut" solderless spring connectors. Joints in wires NO. 6 AWG and larger shall be made with approved solderless connectors.
- B. Make connections to switch or busbar lugs with similar approved solderless copper lugs for all wires No. 6 AWG and larger.
- C. Joints shall be insulated and taped. Use half wrap rubber or varnished cambric and two layers of half wrap approved friction tape. Insulation on joints shall be built up to equal that on the wire and outside painted with approved compound. Scotch tape #33 applied in a minimum of two layers of half wrap or built up to match the overall thickness of insulation of the cable may be used in lieu of above insulation and tape.

16A.17 TAGGING

- A. All branch circuits shall be left tagged in the panelboards and in all ceiling junction boxes for the purpose of identifying the various circuits.
- B. Feeders and mains shall be tagged in the switchboards.

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- C. The method of tagging shall be with Brady adhesive-type markers as distributed by Graybar Electric Company.
- D. Circuit shall be identified in the following manner, for example: "LA-1", "EA-1", "Grnd.", etc.
- E. Markers shall be applied after wire is installed in the conduit.
- F. Where it is impractical to use printed markers on certain wires or cables, use blank type with identification marked thereon with indelible pencil.

16A.18 GROUNDING

Provide and install grounding systems for the main service switchboard in accordance with NEC, 1978 Edition. Refer to Article 250, Grounding, Section H, 250-81(c), known as the UFER grounding systems. In addition, provide bonding to the cold water system. Permanently and effectively ground all conduits, fixtures, motors, and other equipment as required by applicable codes and ordinances.

16A.19 EQUIPMENT CONNECTIONS

All outlets, devices, equipment, etc., furnished and installed under this Contract shall be completely connected to the circuits and feeders. Contractor shall provide all fittings, flexible conduits, etc., required to complete the connection of all devices, motors and equipment including the complete connections to the heating, ventilation and air-conditioning equipment. Low voltage control wiring for heating, ventilation and air-conditioning equipment is not included in this part. (See Division 15, Mechanical)

16A.20 RECEPTACLES

Receptacles shall be Hubbell as specified on the drawings and The Electrical Symbol List. Furnish and install duplex convenience receptacles in the locations as indicated on the drawings. Weatherproof receptacle shall be used on roof top.

16A.21 LOCAL SWITCHES

Furnish and install Toggle type switches as indicated on the Electrical Symbol List with composition bases and ivory handles at all local switch outlets indicated in the building. Specified ampere rating are at 120 volts.

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16A.22 LIGHTING FIXTURES AND LAMPS

- A. Contractor shall furnish, install and connect all new lighting fixtures at all fixture locations and at all lighting outlets indicated on the drawings. These fixtures shall be complete with glassware, fitters, canopies, sockets, reflectors, wiring and accessories necessary for their complete installation.
- B. All fluorescent fixtures shall be furnished complete with C.B.M. and E.T.L. "P" rated approved high power factor ballasts and standard warm-white, rapid start, T-12 fluorescent lamps.
- C. The incandescent lamps shall be 125 V inside frosted.
- D. Lamp sizes shall be governed by the wattages at outlets as indicated on the drawings.
- E. Contractor shall furnish and install all fixture supports.
- F. All fixtures to be furnished are listed and described in the fixture schedule.
- G. Exit lights, including self-contained power supply and battery.

16A.23 NAMEPLATES

Contractor shall provide and install nameplates for panelboards, heating and ventilation control panels, disconnect switches, motor starters and other major equipment. The nameplates shall bear the apparatus designation and shall be as approved by the Construction Manager. Nameplates shall be bolted on apparatus.

16A.24 CLOCKS

Contractor shall furnish and install clock outlets as shown on the drawings.

16A.25 TESTS

Contractor shall furnish all necessary instruments and equipment required for making tests and shall make tests of all wiring for shorts, open circuits, grounds, etc., and shall immediately correct any defective work. When the entire installation has been completed and all lighting equipment has been installed, Contractor shall test out all circuits and all switches, and demonstrate that the operation of the systems are in accordance with the Contract.

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16A.26 TELEPHONE SYSTEM

Contractor shall furnish and install a complete system of conduits and outlets for the telephone system as indicated on the drawings. Provide 3/4-in. plywood in the telephone equipment closet for the attachment of telephone cables terminal blocks and equipment as shown on the drawings. Terminate the telephone service and feeder conduits in the telephone closet against the plywood covered wall coupling flush with finished floor. Provide coupling and bushings. Furnish and install a No. 12 gauge galvanized iron pull wire in the main telephone service conduits and No. 14 gauge galvanized iron pull wires in all other telephone conduits. All conduit runs shall have long radius bends as approved by the telephone company.

END PART 16A

END OF SPECIFICATION

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DEPARTMENT OF ENERGY
SAN FRANCISCO OPERATIONS OFFICE

CONTRACTOR REQUEST FOR PATENT CLEARANCE
FOR RELEASE OF UNCLASSIFIED DOCUMENT

Prime Contract No. DE-AC03-77SF10501
Subcontract No. NA
Report No. (STMPO 496) DOE/SF10501-019
Date of Report March 1979
Name & Phone No. of DOE Technical Representative Mike Lopez (415) 273-4264

TO: Roger S. Gaither, Asst. Chief for Prosecution
Office of Patent Counsel/Livermore Office
P.O. Box 808, L-376
Livermore, California 94550

FROM: Southern California Edison
P.O. Box 800
Rosemead, CA 91770

- Document Title: **Technical Specification, Visitors Information Center, Construction Package No. 4**
- Type of Document: Technical Report, Conference Paper, Journal Article, Abstract or Summary, Copy of Oral Presentation, Other (please specify): _____
- In order to meet a publication schedule or submission deadline, patent clearance by (Routine) would be desired.

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 - Contractor Invention Docket No. _____
 - A disclosure of the invention was submitted to DOE on _____ (date)
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6. **Please provide copy of clearance to:** So. California Edison Co.
P.O. Box 800
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Reviewing/Submitting Official: Name (Print/Type) Bill von KleinSmid
Title Solar One Program Director
Signature William von KleinSmid/jw Date 9-25-84

TO: INITIATOR OF REQUEST

FROM: ASSISTANT CHIEF FOR PROSECUTION
Office of Patent Counsel/Livermore Office

- No patent objection to above-identified release.
- Please defer release until advised by this office.

Signed Harold M. Dixon Date Mailed 10/19/84