

# SPECIFICATION AND BID FORMS

**PROJECT**

ROOF REPLACEMENT, SW WING  
CIA HEADQUARTERS BUILDING  
MC LEAN, VA

**PROJECT NO.**

**VOLUME**

I OF II

**CONTRACT NO.**

GS- 03B-63544



**GENERAL SERVICES ADMINISTRATION**

*Public Buildings Service*

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<p>GENERAL SERVICES ADMINISTRATION Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7</p> <p><b>TITLE PAGE—SPECIFICATION</b> (CONSTRUCTION CONTRACT)</p>	<p>REFERENCE 2. PROJECT NO.* 3. CONTRACT NO. <b>GS-03B-63544</b> 4. DATE OF INVITATION <b>JAN 26 1977</b></p>
<p>5. PROJECT TITLE AND LOCATION Roof Replacement, Southwest Wing CIA Headquarters Building, McLean, Virginia</p> <p><input type="checkbox"/> CONSTRUCTION <input checked="" type="checkbox"/> REPAIR &amp; IMPROVEMENT</p>	<p>6. BIDS TO BE OPENED Bids will be opened <u>1:30</u> P.M. local time at place of bid opening, on <u>1977</u> <b>FEB 24 1977</b></p>
<p>7. ISSUING OFFICE (Address, room, and telephone No.) <b>GENERAL SERVICES ADMINISTRATION PUBLIC BUILDINGS SERVICE**</b> Contract Services Branch, 3POC 7th and D Streets, SW. Washington, DC 20407 Telephone (202) 472-1033</p>	<p>BID DOCUMENTS The Specifications and Drawings, for which a refundable deposit has been made, shall be returned without marks, notes or mutilations, within 20 days after the Bid Opening date.</p>
<p>8. EXPLANATION TO BIDDERS: Requests for clarification or interpretations of bid documents must be submitted in "Sufficient Time" (which, for the purposes of this Invitation, shall mean not less than _____ calendar days prior to date for receipt of bids) and in accordance with requirements of Standard Form 22, Instructions to Bidders, and modifications thereto.</p>	<p>9. REQUESTS FOR CLARIFICATION OR INTERPRETATION OF BID DOCUMENTS PRIOR TO DATE OF BID OPENING SHOULD BE ADDRESSED TO:  <b>General Services Administration** Public Buildings Service Room 7065-B - ROB 7th and D Streets, SW Washington, D.C. 20407</b>  Attention: Mr. J. C. Falls, Chief</p>

**SPECIAL NOTICE:**

Special attention is called to the "Labor Standards for rations of apprentices and trainees of journeymen of Federal or Federally assisted Construction" issued by the Secretary of Labor in amendments to 29CR part 5, and new 29CRF, Par 5a in 35FR-16673 of December 9, 1970, and 36Fr-19305 of October 2, 1971.

SPECIAL NOTICE

Failure to bid or acknowledge receipt of this invitation under separate cover will result in removal of your firm from bidders mailing list for this type service.

All bidders must comply to "Safety and Health Regulations for Construction" (29 Code of Federal Regulation, Part 1928).

NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE

- (a) Restriction. Bids or proposals under this procurement are solicited from small business concerns only and this procurement is to be awarded only to one or more small business concerns. 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 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. Bids or proposals received from firms which are not small business concerns shall be considered nonresponsive.
- (b) Definition. In connection with invitations to bid on a contract for construction, alteration or repair (including painting and decorating) of a building or buildings, a "small business concern" is a concern, including its affiliates, which (a) is independently owned and operated, (b) is not dominant in the field of operation in which it is bidding on Government contracts, and (c) had average annual receipts for the preceding three fiscal years not exceeding \$12,000,000, unless a different criterion is applicable as shown in Item 1, Standard Form 19-B.

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PAYMENT OF INTEREST OF 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 in 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 judgement 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.

SPECIAL NOTICE

War on Poverty, In support of the Nation's War on Poverty, your firm may be interested in the availability of qualified employees through the Job Corps in these programs; it will be helping the War on Poverty. If you are interested and desire details, please write to the Placement Division, Job Corps, Office of Economic Opportunity, Washington, D.C. 20506, or to "JOBS", Neighborhood Youth Corps, U.S. Department of Labor, Washington, D.C. 20036.

THIS IS NOT A CONTRACT REQUIREMENT.

EMPLOYMENT OF THE HANDICAPPED

(a) The Contractor will not discriminate against any employee or applicant for employment because of the physical or mental handicap in regard to any positions 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 employment practices such as the following: employment, 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 of 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 111(c) or Section 111(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. 1857c-7(b)).



CLEAN AIR AND WATER CERTIFICATION

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, U.S. Environmental Protection Agency, indicating that any facilities 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 certifications, including this paragraph (c), in every non-exempt subcontract.

CLEAN AIR AND WATER CLAUSE (In addition to paragraph 17, GENERAL PROVISIONS):

(Applicable only if the contract exceeds \$100,000, or the contracting officer has 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:

(I) 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, 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.

(II) 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.

(III) 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.

(IV) To insert the substance of the provisions of this clause in any nonexempt subcontract, including this paragraph (IV).

(B) The Terms Used In This Clause Have The Following Meanings:

(I) 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).

(II) 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).

(III) 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 100(D) of the Clean Air Act Section 111(c) or Section 111(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. 1857-7(D).

(IV) 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 pre-treatment regulations as required by Section 307 of the Water Act (33 U.S.C. 1317).

(V) 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.

(VI) 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, subcontractor, to be utilized in the performance of a contract or subcontract. Where a location or site of operation 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 colocated in one geographical area.

**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 30 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 the delay, notifies the Contracting Officer in writing of the nature and extent of such delay and requests 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 amount of each payment for retention

pletion and acceptance of the contract work. However, if the Contractor has completed 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 equipment contemplated 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 if 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 completion, 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 for any and all claims, damages, costs, and expenses, including attorneys' fees, incurred by the Government in the prosecution of any patent infringement suit brought against the Contractor or its subcontractors, 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.

employees against liability, including costs and expenses, for infringement of any 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 (3 CFR, 1959-68 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 domestic if it has been mined, produced, or manufactured in the United States.

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 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

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 actions of the Contractor,

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.

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(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 duties. 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.



MODIFICATION OF GENERAL PROVISIONS  
(STANDARD FORM 23-A - APRIL 1975 EDITION)

Delete Clause 7 In Its Entirety and Substitute In Lieu Thereof The Following:

"7. PAYMENTS TO CONTRACTOR

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

(b) The Government will made 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. Materials 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 in the work covered by this contract.

(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 thereupon become the sole property of the Government, but his 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 except 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."

The Following Clauses Are Added To The General Provisions:

"32. LISTING OF EMPLOYMENT OPENINGS

(This clause is applicable pursuant to 41 CFR 50-250 if this contract is for \$10,000 or more).

(a) The Contractor agrees, in order to provide special emphasis to the employment of qualified disabled veterans and veterans of the Vietnam era, 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 other than the one wherein the contract is being performed but excluding those of independently operated corporate affiliates, shall be offered for listing at an appropriate local office of the State employment service system wherein the openings and hires as may be required: Provided, that if this contract is with a State or local government the reports set forth in paragraph (c) and (d) are not required.

(b) Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and nonveterans. This listing herein is intended to relieve the Contractor from any requirement in any statutes, Executive orders, or regulations regarding nondiscrimination in employment.

(c) The reports required by paragraph (a) 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 establishment in a State, with the central office of the State employment service. Such reports shall indicate for each establishment (i) the number of individuals who are hired during the reporting period, (ii) the number of those hired who were disabled veterans, and (iii) the number of those hired who were nondisabled veterans of the Vietnam era. The Contractor shall submit a report within 30 days after the end of each reporting period wherein any performance is made under this contract. The Contractor shall maintain copies of the reports submitted until the expiration of 1 year after final payment under this contract, during which time they shall be made available, upon request, for examination by any authorized representatives of the Contracting Officer or of the Secretary of Labor.

(d) Whenever the Contractor becomes contractually bound by the listing provisions of this clause, he shall advise the employment service system in each State wherein he has establishments of the name and location of each such establishment in the State. As long as the Contractor is contractually

bound to these provisions and has so advised the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(e) This clause does not apply to the listing of employment openings which occur and are filed outside of the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

(f) This clause does 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.

(g) 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 nonproduction; plant and office; laborers and mechanics; supervisory and nonsupervisory; technical; and executive, administrative, and professional openings which are compensated on a salary basis of less than \$18,000 per year. The term includes full-time 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.

(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 of the establishment where the employment openings is to be filled, including the District of Columbia, the Commonwealth of Puerto Rico, Guam, 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 own organization (including any affiliates, subsidiaries, and parent companies), and includes any openings which the Contractor proposes to fill from regularly established "recall" or "rehire" lists.

(4) "Openings which the Contractor proposes\* \* \* to fill pursuant to a customary and traditional employer-union hiring arrangement" means employment openings for which no consideration will be given to persons outside of a special hiring arrangement, including 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 the representatives of his employees.

(5) "Disabled veteran" means a person entitled to disability compensation under laws administered by the Veterans Administration for a disability rated at 30 percentum or more, or a person whose discharge or release from active duty was for a disability incurred or aggravated in line of duty.

(6) "Veteran of the Vietnam era" means a person (A) who (i) served on active duty with the Armed Forces for a period of more than 180 days, any part of which occurred after August 5, 1964, and was discharged or released therefrom with other than a dishonorable discharge, or (ii) was discharged or released from active duty for service-connected disability if any part of such duty was performed after August 5, 1964, and (B) who was so discharged or released within the 48 months preceding his application for employment covered by this clause.

(h) If any disabled veteran or veteran of the Vietnam era believes that the Contractor (or any first-tier subcontractor) has failed or refuses to comply with the provisions of this contract clause relating to giving special emphasis in employment to veterans, such veteran may file a complaint with the veterans' employment representative at a local State employment service office who will attempt to informally resolve the complaint and then refer the complaint with a report on the attempt to resolve the matter to the State office of the Veteran's employment service of the Department of Labor. Such complaint shall then be promptly referred through the Regional Manpower Administrator to the Secretary of Labor who shall investigate such complaint and shall take such action thereon as the facts and circumstances warrant consistent with the terms of this contract and the laws and regulations applicable thereto.

(i) The Contractor agrees to place this clause (excluding this paragraph (i)) in any subcontract directly under this contract.

### 33. EMPLOYMENT OF THE HANDICAPPED

#### PART A

(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 employment practices such as 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.

(b) The Contractor agrees that, if a handicapped individual files a complaint with the Contractor that he is not complying with the requirements of the Act, Public Law 93-112, he will (i) investigate the complaint and take appropriate action consistent with the requirements of 20 CFR 741.29 and (2) maintain on file for three years, the record regarding the complaint and the

actions taken.

(c) The Contractor agrees that, if a handicapped individual files a complaint with the Department of Labor that he has not complied with the requirements of the Act, (1) he will cooperate with the Department in its investigation of the complaint, and (2) he will provide all pertinent information regarding his employment practices with respect to the handicapped.

(d) The Contractor agrees to comply with the rules and regulations of the Secretary of Labor in 20 CFR CH VI, Part 741.

(e) In the event of the Contractor's noncompliance with the requirements of this clause, the contract may be terminated or suspended in whole or in part.

(f) This clause shall be included in all subcontracts over \$2,500.

#### PART B

(g) The Contractor agrees (1) to establish an affirmative action program, including appropriate procedures consistent with the guidelines and the rules of the Secretary of Labor, which will provide the affirmative action regarding the employment and advancement of the handicapped required by P.L. 93-112, (2) to publish the program in his employee's or personnel handbook or otherwise distribute a copy to all personnel, (3) to review his program on or before March 31 of each year and to make such changes as may be appropriate, and (4) to designate one of his principal officials to be responsible for the establishment and operation of the program.

(h) The Contractor agrees to permit the examination by appropriate contracting agency officials or the Assistant Secretary for Employment Standards or his designee, of pertinent books, documents, papers and records concerning his employment and advancement of the handicapped.

(i) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Assistant Secretary for Employment Standards, provided by the Contracting Officer stating 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 and remedies available.

(j) The Contractor will notify each labor union or representative of workers with which he has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Rehabilitation Act, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.

#### 34. CLEAN AIR AND WATER

(Applicable only if the contract exceeds \$100,000, or the Contracting Officer had determined that 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 non-exempt subcontract, including this paragraph (a)(4).

(b) The Terms Used In This Clause Have The Following Meaning:

(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, standard, 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 111(c) or Section 111(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. 1857c-7(d)).

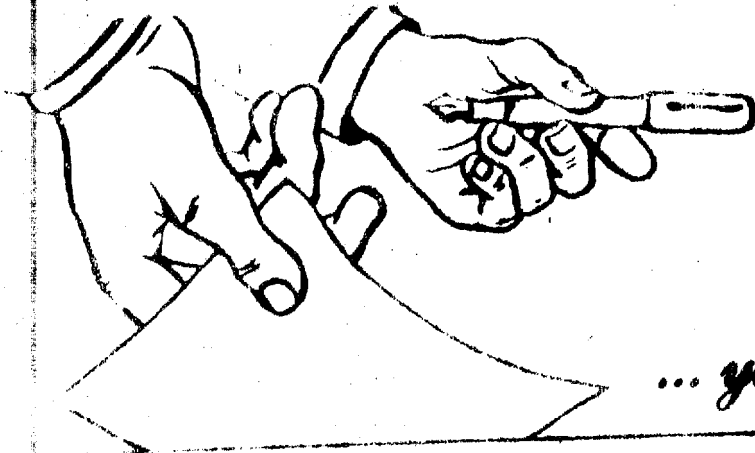
(4) The term "clean water standards" means any enforceable limitation, control, condition, prohibition, standard, or other requirement which is promulgated pursuant to the Water Act contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under

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 requirements 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 or site 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."

\* \* \* \* \*



*... your invitation to Bid*

**NOTICE TO PROSPECTIVE BIDDERS**

Special attention is called to the Equal Opportunity clause set forth in the general provisions included in this invitation for bids.

You should thoroughly familiarize yourself with this clause and with the related rules and regulations of the Secretary of Labor on equal employment opportunity since in submitting a bid you agree to certain specific responsibilities in the area of nondiscrimination in employment which may include submission of certain reports prior to and/or after award.

In connection with the administration of this clause, you may be required, prior to award, to submit the names of your subcontractors who will perform services for you under the contract if awarded to you.

Any questions you may have concerning these nondiscrimination requirements should be referred to the office issuing this invitation.

GENERAL SERVICES ADMINISTRATION



GSA FORM  
APR. 68 1139GENERAL SERVICES ADMINISTRATION  
PUBLIC BUILDINGS SERVICESECTION 0010  
GENERAL CONDITIONS

## 1. DEFINITIONS

1.1 The terms "Administration" and "Service" as used in this contract shall mean the General Services Administration (GSA) and the Public Buildings Service (PBS), respectively.

## 2. AUTHORITIES AND LIMITATIONS

2.1 All work shall be performed under the general direction of the Contracting Officer, or in his absence the person designated to perform the function of Contracting Officer, who alone shall have the power to bind the Government and to exercise the rights, responsibilities, authorities and functions vested in him by the contract documents, except that he shall have the right to designate authorized representatives to act for him. Wherever any provision in this contract specifies an individual (such as, but not limited to, Construction Engineer, Resident Engineer, Inspector or Custodian) or organization, whether Governmental or private, to perform any act on behalf of or in the interests of the Government, that individual or organization shall be deemed to be the Contracting Officer's authorized representative under this contract but only to the extent so specified. The Contracting Officer may, at any time during the performance of this contract, vest in any such authorized representatives additional power and authority to act for him or designate additional authorized representatives, specifying the extent of their authority to act for him; a copy of each document vesting additional authority in an authorized representative or designating an additional authorized representative shall be furnished to the Contractor.

2.2 The Contractor shall perform the contract in accordance with any order (including but not limited to instruction, direction, interpretation or determination) issued by an authorized representative in accordance with his authority to act for the Contracting Officer; but the Contractor assumes all the risks and consequences of performing the contract in accordance with any order (including but not limited to instruction, direction, interpretation or determination) of anyone not authorized to issue such order.

## 3. CONTRACT AND BONDS

3.1 If the successful bidder fails to satisfactorily execute the required forms of contract, performance bond and payment bond within the time established in the bid, the Government may proceed to have the required work performed by contract or otherwise, and the bidder to whom award was originally made shall be liable for any excess cost to the Government and the bid guarantee shall be available toward offsetting such excess cost.

## 4. WORKING HOURS

4.1 It is contemplated that all work will be performed during the customary working hours of the trades involved unless otherwise specified in this contract. Work performed by the Contractor at his own volition outside such customary working hours shall be at no additional expense to the Government.

4.2 Any requests received by the Contractor from occupants of existing buildings to change the hours of work shall be referred to the Contracting Officer for determination.

## 5. USE OF PREMISES

5.1 If the premises are occupied, the Contractor, his subcontractors, and their employees shall comply with the regulations governing access to, operation of, and conduct while in or on the premises and shall perform the work required under this contract in such a manner as not to unreasonably interrupt or interfere with the conduct of Government business.

5.2 Any requests received by the Contractor from occupants of existing buildings to change the sequence of work shall be referred to the Contracting Officer for determination.

5.3 If the premises are occupied, the Contractor, his subcontractors and their employees shall not have access to or be admitted into any building outside the scope of this contract except with official permission.

## 6. MEASUREMENTS

6.1 All dimensions shown of existing work and all dimensions required for work that is to connect with work now in place, shall be verified by the Contractor by actual measurement of the existing work. Any discrepancies between the contract requirements and the existing conditions shall be referred to the Contracting Officer before any work affected thereby has been performed.

## 7. SURVEY MONUMENTS AND BENCH MARKS

7.1 The Government has established, or will establish, such general reference points as will enable the Contractor to proceed with the work. The Contractor will provide new monuments where shown or specified. If the Contractor finds that any previously established reference points have been destroyed or displaced, or that none have been established, he shall promptly notify the Contracting Officer.

7.2 The Contractor shall protect and preserve established bench marks and monuments and shall make no changes in locations without the written approval of the Contracting Officer. Established reference points which may be lost, covered, destroyed or disturbed in the course of performance of the work under this contract or which require shifting because of necessary changes in grades or locations shall, subject to prior approval of the Contracting Officer, be replaced and accurately located or relocated (as appropriate) at the Contractor's expense, by a licensed engineer or licensed land surveyor.

7.3 New monuments shall be 6 inches square by 3 feet deep (unless otherwise specified), of concrete or stone, with a 3-inch copper or brass pin, 3/8-inch in diameter, in the center, and shall be set flush with the ground or pavement in locations indicated on the site plan.

7.4 Monuments will not be required where lines of building(s) are coincident with property lines.

7.5 The Contractor shall verify the figures shown on the survey and site plan before undertaking any construction work and shall be responsible for the accuracy of the finished work.

7.6 After completion of construction and prior to final payment, the Contractor shall furnish the Government blueprints (in triplicate) of plats showing the exact location of construction survey monuments with reference to true property lines.

## 8. BUILDING CODES, FEES AND CHARGES

8.1 State and local building codes and regulations do not apply to work inside the property lines of Government-owned properties but generally do apply to Government-leased properties.

8.2 The Contractor shall obtain and pay all fees and charges for connections to outside services and for use of property outside the site.

## 9. FEDERAL, STATE AND LOCAL TAXES

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

9.2 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—

9.2.1 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

9.2.2 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 Contracting 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.

9.3 No adjustment pursuant to paragraph 9.2 above will be made under this contract unless the aggregate amount thereof is or may reasonably be expected to be over \$100.00.

9.4 As used in paragraph 9.2 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.

9.5 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.

9.6 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.

**10. SUBCONTRACTS**

10.1 Nothing contained in the contract shall be construed as creating any contractual relationship between any subcontractor and the Government. The divisions or sections of the specifications are not intended to control the Contractor in dividing the work among subcontractors, or to limit the work performed by any trade.

10.2 The Contractor shall be responsible to the Government for acts and omissions of his own employees and of subcontractors and their employees. He shall also be responsible for the coordination of the work of the trades, subcontractors and suppliers.

10.3 The Government will not undertake to settle any differences between or among the Contractor, subcontractors, or suppliers.

**11. COORDINATION PROGRESS CHART**

11.1 Within 30 days after receipt of notice to proceed, the Contractor shall prepare and submit to the Contracting Officer for approval a series of a practical progress chart. The chart shall show the principal categories of work corresponding with those used in the breakdown on which progress payments are based; the dates by which the Contractor proposes to carry on the work, and the dates by which he will start each of the categories of work, and the estimated dates for completing the same. The chart shall be in suitable scale to indicate graphically the total percentage of work scheduled to be in place at any time. At the end of each progress payment period, or at such intervals as directed by the Contracting Officer, the Contractor shall (1) adjust the chart to reflect any change in the contract work, completion time, or both; as approved by the Contracting Officer, (2) enter on the chart the total percentage of work actually in place, and (3) submit three copies of the adjusted chart to the Contracting Officer.

11.2 At the option of the Contracting Officer work actually in place shall be that which is scheduled, the Contractor shall take such action as necessary to improve his progress. In addition, the Contracting Officer may require the Contractor to submit a revised chart demonstrating his program and proposed plan to make up any lag in scheduled progress and to insure completion of work within the contract time. If the Contracting Officer finds the proposed plan not reasonable, he may require the Contractor to submit a new plan. If a satisfactory plan is not agreed upon, the Contracting Officer may require the Contractor to increase the work force, the construction plant and equipment or the number of work shifts without additional cost to the Government.

11.3 Failure of the Contractor to comply with these requirements shall be considered grounds for determination by the Contracting Officer that the Contractor is failing to prosecute the work with due diligence, and shall insure its completion within the time specified.

**12. PAYMENTS TO CONTRACTOR**

12.1 The provisions of the Clause entitled "Payments to Contractor" in the General Provisions, Standard Form 23-A, are supplemented as follows:

12.2 Before the first progress payment under this contract becomes due, the Contractor shall prepare a breakdown of the contract price allocable to the Contracting Officer. The values in the breakdown shall be used for determining progress payments. The Contractor's overhead, profit and cost of bonds shall be prorated through the life of the contract.

12.3 Preparatory work done will not be taken into consideration in preparing estimates upon which progress payments are based.

12.4 Unless otherwise provided in the specifications, if the contract value is more than \$50,000 material delivered that will be incorporated into the structure will be taken into consideration in computing progress payments, provided the material is delivered on the site, or is delivered to the Contractor and properly stored by him in a warehouse, storage yard, or similar suitable place within 25 miles of the site or such reasonable distance in excess of 25 miles as may be approved by the Contracting Officer. Before each such payment is made for delivered material stored ON the site, the Contractor shall furnish to the Contracting Officer such evidence as he may require as proof of the quantity and value of such material. Before each such payment is made for delivered material stored OFF the site, the Contractor shall furnish the Contracting Officer a copy of the bills of sale for the delivered material upon which payment is being made.

12.5 Estimates on which progress payments are based shall include the value (as determined by the Contracting Officer) of satisfactory replacement work performed pursuant to a change order as to which final agreement on the equitable price adjustment has not been reached. Provided, however, that (except in an unusual case where a unilateral determination cannot be made, as provided in paragraph 23.16 of the Equitable Adjustments Clause) no further progress payments shall be made under the provisions of this paragraph until after the work is 50% completed as determined by the Contracting Officer.

12.6 A release of claims will be required before final payment is made.

**13. CERTIFICATION OF PAYMENT**

13.1 The contractor, prior to receiving a progress or final payment under this contract, shall submit to the Contracting Officer a certification that the Contractor has made payment from proceeds of prior payments, or that he will make timely payment from the proceeds of the progress or final payment then due him, to his subcontractors and suppliers in accordance with his contractual arrangements with them.

**14. ACCIDENT PREVENTION**

14.1 In the performance of the contract the Contractor shall comply with the applicable provisions of the "Handbook, Accident and Fire Prevention, Construction and Alteration Work," issued by the General Services Administration, and shall take any other precautions necessary to protect all persons against injury at the site of the work.

**15. WORKMEN'S COMPENSATION LAWS**

15.1 The Act of June 25, 1936, 49 Stat. 1938 (40 U.S.C. 290) authorizes the constituted authority of the several States to apply

their workmen's compensation laws to all lands and premises owned or held by the United States.

**16. BUY AMERICAN ACT**

16.1 Pursuant to the Buy American Act, referred to in the Buy American clause of Standard Form 23-A, General Provisions, the Administrator of General Services has determined that the provisions of the said clause shall not apply to the following:

Cork; sisal; hemp; flax; jute; silk; licorice root; asbestos; English china clay; English ball clay; carnauba wax; mica; rubber; antimony; manganese; titanium; tungsten; zirconium; chromium; platinum; tin; nickel and natural nickel alloys.

**17. STANDARD REFERENCES**

17.1 All documents and publications (such as, but not limited to, manuals, handbooks, codes, standards and specifications) which are cited in this contract for the purpose of establishing requirements applicable to equipment, materials, or workmanship under this contract, shall be deemed to be incorporated herein as fully as if printed and bound with the specifications of this contract, in accordance with the following:

17.1.1 Wherever reference is made to Standard Specifications of the Public Buildings Service, Interim Federal Specifications, Interim Amendments to Federal Specifications, Interim Federal Standards, or Interim Amendments to Federal Standards, the Contractor shall comply with the requirements set out in the issue or edition identified in this contract except as modified or as otherwise provided in the specifications of this contract.

17.1.2 Wherever reference is made to any such document other than those specified in subparagraph 17.1.1 above, the Contractor shall comply with the requirements set out in the edition specified in this contract, or, if not specified, the latest edition or revision thereof, as well as the latest amendment or supplement thereto, in effect on the date of the invitation for Bids on this project, except as modified by, as otherwise provided in, or as limited to type, class or grade, by the specifications of this contract.

17.2 Federal Specifications, Federal Standards, and Standard Specifications of the Public Buildings Service may be obtained from the Business Service Center at any GSA Regional Office. Inquiries regarding "Commercial Standards", "Product Standards" and "Simplified Practice Recommendations" should be addressed to the Office of Product Standards, National Bureau of Standards, Washington, D.C. 20234. Publications of Associations referred to in the specifications may be obtained directly from the Associations.

17.3 Upon request the Contractor shall make available at the job site within a reasonable time, a copy of each trade manual and standard which is incorporated by reference in this contract and which governs quality and workmanship.

**18. SPECIFICATIONS AND DRAWINGS**

18.1 The provisions of the Clause entitled "Specifications and Drawings" in Standard Form 23-A, General Provisions, are supplemented as follows:

18.2 In case of difference between small- and large-scale drawings, the large-scale drawings shall govern. Schedules on any contract drawing shall take precedence over conflicting information on that or any other contract drawing. On any of the drawings where a portion of the work is detailed or drawn out and the remainder is shown in outline, the parts detailed or drawn out shall apply also to all other like portions of the work.

18.3 Where the word "similar" occurs on the drawings, it shall have a general meaning and not be interpreted as being identical, and all details shall be worked out in relation to their location and their connection with other parts of the work.

**19. STANDARD DETAILS**

19.1 Standard Details are applicable when listed, bound with the specifications, noted on the drawings or referenced elsewhere in the specifications. Where the notes on the drawings indicate modifications, such modifications shall govern.

19.2 Revisions of Standard Details are indicated by the addition of a suffix letter to the basic number in alphabetical order, e.g., 6-15-3B supersedes 6-15-3A. Such suffix letters may not appear in cross references on other Standard Details. The Standard Details bound with the project specifications shall take precedence over earlier editions thereof which may be referenced.

19.3 In case of difference between the Standard Detail and the specification, the specifications will govern. In case of difference between the Standard Detail and the contract drawings, the contract drawings will govern.

**20. SHOP DRAWINGS, COORDINATION DRAWINGS, AND SCHEDULES**

20.1 The Contractor shall submit shop drawings, coordination drawings, and schedules for approval as required by the specifications or requested by the Contracting Officer as follows:

20.2 Shop drawings shall include fabrication, erection and setting drawings, schedule drawings, manufacturers' scale drawings, wiring and control diagrams, cuts or entire catalogs, pamphlets, descriptive literature, and performance and test data.

20.3 Drawings and schedules, other than catalogs, pamphlets and similar printed material, shall be submitted in reproducible form with two prints made by a process approved by the Contracting Officer. Upon approval, the reproducible form will be returned to the Contractor who shall then furnish the number of additional prints, not to exceed 10, required by the Special Conditions of the specifications. The Contractor shall submit shop drawings in catalog, pamphlet and similar printed form in a minimum of four copies plus as many additional copies as the Contractor may desire or need for his use or use by subcontractors.

20.4 Before submitting shop drawings on the mechanical and electrical work, the Contractor shall submit and obtain the Contracting Officer's approval of such lists of mechanical and electrical equipment and materials as may be required by the specifications.

20.5 The Contractor shall check the drawings and schedules, shall coordinate them (by means of coordination drawings wherever required) with the work of all trades involved before submission and shall indicate thereon his approval. Drawings and schedules sub-

mitted without evidence of the Contractor's approval may be returned for resubmission.

20.6 Each shop drawing or coordination drawing shall have a blank area 5 by 5 inches, located adjacent to the title block. The title block shall display the following:

- Number and title of drawing
- Date of drawing or revision
- Name of project building or facility
- Name of Contractor and (if appropriate) name of subcontractor submitting drawing
- Clear identity of contents and location on the work
- Project title and contract number

20.7 Unless otherwise provided in this contract, or otherwise directed by the Contracting Officer, shop drawings, coordination drawings and schedules shall be submitted to the Contracting Officer, with a letter in triplicate, sufficiently in advance of construction requirements to permit no less than 10 working days for checking and appropriate action.

20.8 Except as otherwise provided in subparagraph 20.9 of this Clause, approval of drawings and schedules will be general and shall not be construed as:

20.8.1 Permitting any departure from the contract requirements; including details, dimensions, materials, etc.; or

20.8.3 Approving departures from full-size details furnished by the Contracting Officer.

20.9 If drawings or schedules show variations from the contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, the Contracting Officer may approve any or all such variations and issue an appropriate change order. If the Contractor fails to describe such variations he shall not be relieved of the responsibility for executing the work in accordance with the contract, even though such drawings or schedules may have been approved.

**21. SAMPLES**

21.1 After the award of the contract, the Contractor shall furnish for the approval of the Contracting Officer, samples required by the specifications or by the Contracting Officer. Samples shall be delivered to the Contracting Officer or to the Architect as specified or as directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in the work until approved in writing by the Contracting Officer.

21.2 Each sample shall have a label indicating:

21.2.1 Name of project building or facility project title and contract number

21.2.2 Name of Contractor and, if appropriate, name of subcontractor

21.2.3 Identification of material or equipment with specification requirement

21.2.4 Place of origin

21.2.5 Name of producer and brand (if any)

Samples of finished materials shall have additional markings that will identify them under the finish schedules.

21.3 The Contractor shall mail under separate cover a letter in triplicate submitting each shipment of samples and containing the information required in 21.2 above. He shall enclose a copy of this letter with the shipment and send a copy to the Government representative on the project. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any contract requirement. Substitutions will not be permitted unless they are approved in writing by the Contracting Officer.

21.4 Approved samples not destroyed in testing will be sent to the Government representative at the project. Approved samples of hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in the work shall match the approved samples. Other samples not destroyed in testing or not approved will be returned to the Contractor at his expense if so requested at time of submission.

21.5 Failure of any material to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make of that material. The Government reserves the right to disapprove any material or equipment which previously has proved unsatisfactory in service.

21.6 Samples of various materials or equipment delivered on the site or in place may be taken by the Government representative for testing. Samples failing to meet contract requirements will automatically void previous approvals of the items tested. The Contractor shall replace such materials or equipment found not to have met contract requirements, or there shall be a proper adjustment of the contract price as determined by the Contracting Officer.

21.7 Unless otherwise specified, when tests are required only one test of each sample proposed for use will be made at the expense of the Government. Samples which do not meet specification requirements will be rejected. Testing of additional samples will be made by the Government at the expense of the Contractor.

**22. HEAT**

22.1 Unless otherwise specified or unless already provided by the Government the Contractor shall:

22.2 Provide heat as necessary to protect all work, materials, and equipment against injury from dampness and cold;

22.3 Protect, cover and/or heat, as may be necessary, to produce and maintain a temperature of not less than 50 degrees Fahrenheit (1) in the concrete during the placing, setting and curing of concrete, and (2) in the plaster during the application, setting and curing of plaster; and

22.4 Provide heat as necessary to produce in the area where such work is to be done a temperature of not less than 70 degrees Fahrenheit for the period beginning 10 days before the placing of interior finishes and finish materials and continuing until completion or beneficial occupancy of the area, whichever is earlier.

**23. EQUITABLE ADJUSTMENTS**

23.1 The provisions of the Changes clause of Standard Form 23-A, General Provisions, are supplemented as follows:

23.1.1 The Contractor's written statement of the monetary extent of a claim for equitable adjustment shall be submitted in the form of a lumpsum proposal (unless otherwise requested) with an itemized breakdown of all increases or decreases in the cost of the Contractor's and all subcontractors' work, in at least the following detail:

- Material quantities and unit costs
- Labor costs (identified with specific item of material to be placed or operation to be performed)
- Construction equipment
- Workmen's Compensation and Public Liability Insurance
- Overhead
- Profit
- Employment taxes under FICA and FUTA

23.1.2 The maximum allowable overhead, profit and commission percentages, given at the end of this paragraph, shall be considered to include, but not be limited to, insurance other than that mentioned in this "Equitable Adjustments" clause, bond or bonds, use of small tools, incidental job burdens, and general office expense. No percentages for overhead, profit or commission will be allowed on employment taxes under FICA and FUTA. The percentages for overhead, profit and commission shall be negotiated and may vary according to the nature, extent, and complexity of the work involved, but in no case shall exceed the following:

	Overhead	Profit	Commission
To Contractor on work performed by other than his own forces			10%
To Contractor and/or the subcontractors for that portion of the work performed with their respective forces	10%	10%	

Not more than three percentages, not to exceed the maximum percentages shown above, will be allowed regardless of the number of tier subcontractors, i.e., the markup on work subcontracted by a subcontractor will be limited to one overhead percentage and one profit percentage in addition to the prime Contractor's commission percentage. On proposals covering both increases and decreases in the amount of the contract, the overhead, profit, and commission will be allowed on the net increase only.

23.1.3 The Contractor shall submit with the proposal his request for time extension (if any).

23.1.4 In considering a proposal, the Government shall make check estimates in detail, utilizing unit prices where specified or agreed upon, with a view to arriving at an equitable adjustment.

23.1.5 After receipt of a proposal with a detailed breakdown, the Contracting Officer shall act promptly thereon, *Provided*, however, that when the necessity to proceed with a change does not allow sufficient time to properly check a proposal or in the event of failure to reach an agreement on a proposal, the Government may order the Contractor to proceed on the basis of price to be determined at the earliest practicable date but not to be more than the increase or less than the decrease proposed.

23.1.6 Except in unusual cases where neither the Contractor nor the Government can ascertain the full extent of the work which will be required pursuant to a change until the work involved therein has been substantially completed, final agreement on a proposal shall be effected no later than the time when the work involved is estimated by the Contracting Officer to be 50% complete; in the event final agreement cannot be reached by that time, the Contracting Officer shall issue a unilateral determination as to the equitable adjustment of the contract price and the time required for performance of the contract.

23.2 The provisions of the Differing Site Conditions clause of Standard Form 23-A, General Provisions, are supplemented as follows: The Contractor shall submit all claims for equitable adjustment in accordance with, and subject to the requirements and limitations set out in, paragraph 23.1 of this "Equitable Adjustments" clause.

23.3 Upon written request by the Contracting officer, the Contractor shall submit a proposal, in accordance with the requirements and limitations set out in paragraph 23.1 of this "Equitable Adjustments" clause, for work involving contemplated changes covered by the request, within the time limit indicated in the request or any extension of such time limit as may be subsequently granted. If, within a reasonable time after receipt of such a proposal, the Contracting Officer orders the Contractor to proceed with the performance of the work contemplated, the proposal submitted prior to the order shall constitute the Contractor's statement of the monetary extent of claim for equitable adjustment.

**24. FINAL INSPECTION AND TESTS**

24.1 The requirements of the Inspection and Acceptance clause of Standard Form 23-A, General Provisions, are supplemented to provide that the Contractor shall give the Contracting Officer at least 10 days' advance written notice of the date the work will be fully completed and ready for final inspection and tests. Final inspection and tests will be started within 10 days from the date specified in the aforesaid notice unless the Contracting Officer determines that the work is not ready for final inspection and so informs the Contractor.

**25. GOVERNMENT OCCUPANCY**

25.1 The Contracting Officer reserves the right of partial occupancy or use of facilities, services and utilities, prior to final acceptance, without implying completion or acceptance of any part of the project by the Government. Prior to such occupancy or use, he shall furnish the Contractor with an itemized list of work remaining to be performed or corrected.

25.2 Costs incurred as a result of such partial occupancy or use of facilities, services and utilities are subject to equitable adjustment under the provisions of the Changes clause of the General

Provisions, Standard Form 23-A, and the Clause entitled "Equitable Adjustments" of these General Conditions, GSA Form 1139.

25.3 Necessary restoration and repair of damage resulting from partial occupancy or use shall not be at the expense of the Contractor.

#### 26. GUARANTEES

26.1 Unless otherwise provided in the specifications, the Contractor guarantees all mechanical and electrical work to be in accordance with contract requirements and free from defective or inferior materials, equipment, and workmanship for one year after the date of final acceptance or the date the equipment or work was placed in use by the Government.

26.2 If, within any guarantee period, the Contracting Officer finds that guaranteed work needs to be repaired or changed because of the use of materials, equipment, or workmanship which, in his opinion, are inferior, defective, or not in accordance with the terms of the contract, he shall so inform the Contractor in writing and the Contractor shall promptly and without additional expense to the Government:

26.2.1 Place in a satisfactory condition all of such guaranteed work;

26.2.2 Satisfactorily correct all damage to equipment, the site, the building or contents thereof, which is the result of such unsatisfactory guaranteed work; and

26.2.3 Satisfactorily correct any work, materials, and equipment that are disturbed in fulfilling the guarantee, including any disturbed work, materials and equipment that may have been guaranteed under another contract.

Should the Contractor fail to proceed promptly in accordance with the guarantee, the Government may have such work performed at the expense of the Contractor.

26.3 Any special guarantees that may be required under the contract shall be subject to the stipulations set forth above, insofar as they do not conflict with the provisions of such special guarantees.

26.4 The Contractor shall obtain each transferable guarantee or warranty of equipment, materials or installation thereof which is furnished by any manufacturer, supplier or installer in the ordinary course of the manufacturer's, supplier's, or installer's business or trade. In addition, the Contractor shall obtain and furnish to the Government all information which is required in order to make any such guarantee or warranty legally binding and effective, and shall submit both the information and the guarantee or warranty to the Government in sufficient time to permit the Government to meet any time limit requirements specified in the guarantee or warranty or, if no time limit is specified, prior to completion and acceptance of all work under this contract.

#### 27. DEBRIS AND CLEANING

27.1 The Contractor shall, during the progress of the work, remove and dispose of the resultant dirt and debris and keep the premises clean.

27.2 The Contractor shall, upon completion of the work, remove all construction equipment and surplus materials (except materials or equipment that are to remain Government property as provided by this contract), and except as otherwise provided in this contract leave the premises in a broom clean condition satisfactory to the Government.

#### 28. FURNISHING INFORMATION AND RECORDS

28.1 If the Contractor or any subcontractor under this contract, or the officers or agents of the Contractor or any subcontractor, shall refuse or have refused, except as provided by the terms of the prime contract involved, to furnish to any Government agency or any establishment in the legislative or judicial branch of the Government information or records reasonably pertinent to this contract, or any other Government contract in connection with which the Contractor or such subcontractor has or shall have performed work or furnished materials or supplies or undertaken so to do, the following action may be taken:

28.2 In the case of a refusal by the Contractor, its officers or agents, the Government may, after affording an opportunity to explain or justify such refusal, terminate the Contractor's right to proceed with the work under this contract and thereupon the Government may avail itself of the rights and remedies provided in paragraphs (a) and (b) of the clause entitled "Termination for Default--Damages for Delay--Time Extensions," General Provisions (Standard Form 23-A) of this contract in addition to any other rights and remedies provided by law or under this contract;

28.3 In the case of a refusal by a subcontractor, its officers or agents, the Government may, after affording an opportunity to explain or justify such refusal, require the Contractor to terminate the subcontract without cost to the Government, or if the Contractor fails or refuses to effect such termination, the Government may terminate the Contractor's right to proceed with the work under this contract and thereupon the Government may avail itself of the rights and remedies referred to in subparagraph 28.2 above.

28.4 The term "subcontract" as used in this paragraph means any contract entered into, or any purchase order issued by, a prime contractor under a contract with the Government in connection with the performance of the prime contractor's obligations under such Government contract.

28.5 The term "subcontractor" as used in this paragraph means a party to a subcontract other than the prime contractor under the related Government contract.

#### 29. DISPUTES CONCERNING LABOR STANDARDS

29.1 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 classifications or wage rates contained in the wage determination of the labor provisions of the contract which questions shall be referred to the Secretary of Labor in accordance with the procedures of the Department of Labor.

#### 30. TERMINATION FOR CONVENIENCE OF THE GOVERNMENT

30.1 The Contracting Officer, by written notice, may terminate this contract, in whole or in part, when it is in the interest of the Government. If this contract is terminated, the Contractor shall be compensated in accordance with Part 1-8 of the Federal Procurement Regulations (41 CFR 1-8), in effect on this contract's date.

30.2 If this contract exceeds \$100,000, the clause in Section 1-8.703 of the Federal Procurement Regulations (41 CFR 1-8.703) in effect on the date of this contract shall apply in lieu of the provisions set forth in 30.1 above, such clause being hereby incorporated by reference as fully as if set forth at length herein.

#### 31. NON-COMPLIANCE WITH CONTRACT REQUIREMENTS

31.1 In the event the Contractor, after receiving written notice from the Contracting Officer of non-compliance with any requirement of this contract, fails to initiate promptly such action as may be appropriate to comply with the specified requirement within a reasonable period of time, the Contracting Officer shall have the right to order the Contractor to stop any or all work under the contract until the Contractor has complied or has initiated such action as may be appropriate to comply within a reasonable period of time. The Contractor will not be entitled to any extension of contract time or payment for any costs incurred as a result of being ordered to stop work for such cause.

#### 32. PERFORMANCE OF WORK BY CONTRACTOR

32.1 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.

MODIFICATION OF GENERAL CONDITIONS  
(GSA FORM 1139 - April 1968)

SECTION 0010

9. FEDERAL STATE AND LOCAL TAXES

Delete

12. PAYMENTS TO CONTRACTOR

Delete Clause 12 and substitute the following in lieu thereof:

"12. PAYMENTS TO CONTRACTOR

12.1 The provisions of the Clause entitled "Payments to Contractor" of the General Provisions, Standard Form 23-A, are supplemented as follows:

12.2 Before the first progress payment under this contract becomes due, the Contractor shall prepare a breakdown of the contract price acceptable to the Contracting Officer. The values in the breakdown will be used for determining progress payments. The Contractor's overhead, profit and cost of bonds shall be prorated through the life of the contract.

12.3 Preparatory work done (including shop drawings) will not be taken into consideration in preparing estimates upon which progress payments are based.

12.4 Unless otherwise provided in the specifications, material delivered that will be incorporated into the structure will be taken into consideration in computing progress payments, provided the material is delivered on the site, or is delivered to the Contractor and properly stored by him in a warehouse, storage yard or similar suitable place as may be approved by the Contracting Officer. Before each such payment is made for delivered material stored ON the site, the Contractor shall furnish to the Contracting Officer such evidence as he may require as proof of the quantity and value of such materials. Before each such payment is made for delivered material stored OFF the site, the Contractor shall furnish the Contracting Officer properly executed bills of sale for the delivered material upon which payment is being made. The Contractor shall remain responsible for such stored materials.

12.5 The Contracting Officer will make progress payments in full without retention of a percentage except that, where progress is not satisfactory, amounts will be withheld in accordance with the Lag in Construction Progress-Withholding of Funds clause of the Special Conditions.

12.6 Estimates on which progress payments are based shall include the value (as determined by the Contracting Officer) of satisfactory in-place work performed pursuant to a change order as to which final agreement on the equitable price adjustment has not been reached, provided, however, that (except in an unusual case where a unilateral determination cannot be made, as provided in Paragraph 23.1.6 of the Equitable Adjustments Clause) no further progress payments shall be made under the provisions of this Paragraph 12.6 after the work is 50% completed as determined by the Contracting Officer.

14. ACCIDENT PREVENTION, Delete Clause 14 GENERAL CONDITIONS (GSA Form 1139) and substitute the following in lieu thereof:

"14. By the Act of October 14, 1941, 55Stat.738, as amended (36 D.C. Code 431 et seq.), safety standards promulgated by the District of Columbia are applicable to work performed by contract with the Federal Government and are enforceable by the District of Columbia authorities. The Contractor shall also comply with the applicable provisions of the regulations issued by the Secretary of Labor pursuant to Section 107 of the Contract Work Hours and Safety Standards Act, entitled "Safety and Health Regulations for Construction" (29 CFR Part 1518, renumbered as Part 1926). Occupational Safety and Health Standards (29 CFR Part 1910) issued by the Secretary of Labor pursuant to the Williams-Steiger Occupational Safety and Health Act of 1970 are applicable to the work performed by Contractor subject to the provisions of the Act. The Contractor shall also comply with the GSA Handbook, Accident and Fire Prevention - Construction and Alteration Work (PBS P 5900.3), and shall take any other precautions necessary to protect all persons against injury at the site of the work. Where there may be a conflict in a requirement, the more stringent one will apply."

22. HEAT, Delete Subclause 22.4 of Clause 22 in GENERAL CONDITIONS (GSA FORM 1139) and substitute the following in lieu thereof:

"22.4 Provide heat as necessary in the area where work is to be done to provide the minimum temperature recommended by the supplier or manufacturer of the material, but in no case less than 50 degrees Fahrenheit, for a period beginning 10 days before placing of interior finishes and finish materials and continuing until completion or beneficial occupancy of the area, whichever is earlier."

23. EQUITABLE ADJUSTMENTS, Delete Clause 23 in GENERAL CONDITIONS (GSA FORM 1139) and substitute the following in lieu thereof:

"23. EQUITABLE ADJUSTMENTS

23.1 The provisions of the Changes clause of Standard Form 23-A, General Provisions, are supplemented as follows:

23.1.1 Upon written request, the Contractor shall submit a proposal, in accordance with the requirements and limitations set forth in this "Equitable

Adjustment" clause, for work involving contemplated changes covered by the request. The proposal shall be submitted within the time limit indicated in the request or any extension of such time limit as may be subsequently granted. The Contractor's written statement of the monetary extent of a claim for equitable adjustment shall be submitted in the following form:

(1) Proposals totaling \$5,000 or less shall be submitted in the form of a lump sum proposal with supporting information to clearly relate elements of cost with specific items of work involved to the satisfaction of the Contracting Officer, or his authorized representative.

(2) For proposals in excess of \$5,000, the claim for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following detail:

Direct Costs

Material quantities by trades and unit costs (Manufacturing burden associated with material fabrication performed off the job site will be considered to be part of the material costs of the fabricated item delivered to the job site).

Labor breakdown by trades and unit costs (Identified with specific item of material to be placed or operation to be performed).

Construction equipment exclusively necessary for the change.

Costs of preparation and/or revision to shop drawings resulting from the change.

Workmen's Compensation and Public Liability Insurance.

Employment taxes under FICA and FUTA.

Bond Costs -- when size of change warrants revision.

Overhead, Profit and Commission

23.1.2 The maximum allowable overhead, profit and commission percentage given in this paragraph shall be considered to include, but are not limited to, job-site staff and office expense, incidental job burdens, small tools and general office overhead allocation. The percentages for overhead, profit and commission shall be negotiated and may vary according to the nature, extent and complexity of the work involved, but in no case shall exceed the following:

	Overhead	Profit	Commission
To Contractor on work performed by other than his own forces---	----	----	10%

	Overhead	Profit	Commission
To first tier subcontractor on work performed by his subcontractors----	----	----	10%
To Contractor and/or the subcontractors for that portion of the work performed with their respective forces-----	10%	10%	----

Not more than four percentages, not to exceed the maximum percentages shown above, will be allowed regardless of the number of tier subcontractors. On proposals covering both increases and decreases in the amount of the contract, the application of overhead and profit percentages shall be on the net increase in direct costs for the Contractor or subcontractor performing the work. However, where the Contractor or first tier subcontractor receives proposals in additive and deductive amounts from separate lower tier subcontractors, the commission shall be allowed on the added amounts prior to subtraction of the credit amounts.

23.1.3 The Contractor shall submit with the proposal his request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the contract in its entirety.

23.1.4 In considering a proposal, the Government shall make check estimates in detail, utilizing unit prices where specified or agrees upon, with a view to arriving at an equitable adjustment.

23.1.5 After receipt of a proposal the Contracting Officer shall act thereon, within 30 days; provided, however, that when the necessity to proceed with a change does not allow time properly to check a proposal or in the event of failure to reach an agreement on a proposal, the Government may order the Contractor to proceed on the basis or price to be determined at the earliest practicable date. Such price shall not be more than the increase or less than the decrease proposed, except that on proposals under \$100,000, the increase shall not exceed the proposed increase plus 10%.

23.1.6 If a mutually acceptable agreement cannot be reached, the Contracting Officer may determine the price unilaterally.

23.2 The provisions of the Differing Site Conditions clause of Standard Form 23-A, General Provisions, are supplemented as follows: The Contractor shall submit all claims for equitable adjustment in accordance with, and subject to the requirements and limitations set out in, Paragraph 23.1 of this "Equitable Adjustments" clause."

25. GOVERNMENT OCCUPANCY

Delete

29. DISPUTES CONCERNING LABOR STANDARDS

Delete



30. TERMINATION FOR CONVENIENCE OF THE GOVERNMENT

Delete

The following clauses are added to the General Conditions (GSA Form 1139):

33. NON-USE OF FOREIGN-FLAG VESSELS ENGAGED IN CUBAN OR NORTH VIETNAM TRADE

(a) If, after the date of award, any shipment of material to be incorporated in such supplies, or any shipment of articles, materials, or supplies to be incorporated in a construction project, will require ocean transportation to or from the United States, the Contractor shall not use any foreign-flag vessel which the Maritime Administration has listed in the Federal Register as having called at a Cuban port on or after January 1, 1963, or a North Vietnam port on or after January 25, 1966, unless an exception has been made by the Secretary of Commerce.

(b) For the purposes of this clause, the term "United States" includes the fifty States, Puerto Rico, possessions of the United States, and the District of Columbia.

(c) The Contractor shall include the substance of this clause, including this Paragraph (c), in each subcontract or purchase order hereunder which may involve ocean transportation to or from the United States.

34. USE OF U.S. - FLAG COMMERCIAL VESSELS

(a) Any equipment, materials, or commodities required under this contract, which are to be transported on ocean vessels, shall be transported on privately owned U.S.-flag commercial vessels. When such vessels are not available, the Contractor must obtain the approval of the Contracting Officer to use foreign-flag vessels. The contract price shall be adjusted to reflect any difference in transportation charges when such foreign-flag vessels are authorized. A copy of the ocean bill of lading covering each shipment shall be submitted to the Contracting Officer.

35. NOT USED

36. CERTIFICATE OF CURRENT COST OR PRICING DATA

36.1 In connection with the negotiation of any change or other modification of this contract which involves aggregate increases and/or decreases in costs, plus applicable profits (as explained in FPR 1-3.807-3), in excess of \$100,000, and the change is not 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 Contractor shall furnish cost or pricing data and, as soon as practicable after agreement is

reached on price, shall furnish a certification in the following form:

This is to certify that, to the best of my knowledge and belief, cost or pricing data<sup>1</sup> submitted in writing, or specifically identified in writing if actual submission of the data is impracticable (see 1-3.807-3(h)(2)), to the Contracting Officer or his representative in support of \_\_\_\_\_<sup>2</sup> are accurate, complete, and current as of \_\_\_\_\_<sup>3</sup>.  
(Date)

FIRM \_\_\_\_\_

NAME \_\_\_\_\_

\_\_\_\_\_<sup>4</sup>  
(Date of Execution)

1 For definition of "cost or pricing data," see FPR 1-3.807-3.

2 Describe the proposal, quotation, request for price adjustments, or other submission involved, giving appropriate identifying number (e.g., RFP No. \_\_\_\_\_).

3 This date shall be as close as practicable to the date when the price negotiations were concluded and the contract price was agreed upon.

### 37. PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA-PRICE ADJUSTMENTS

37.1 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.

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

37.2.1 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;

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

37.2.3 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 or Pricing Data; or

37.2.4 The Contractor or a subcontractor or prospective subcontractor furnished any data, not within 37.2.1, 37.2.2 or 37.2.3 above, which was not accurate, as submitted; the price shall be reduced accordingly and 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 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.)

37.3 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.

## 38. AUDIT

38.1 General. The Contracting Officer or his representatives shall have the audit and inspection rights described in the applicable Paragraphs 38.2, 38.3 and 38.4, below.

38.2 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.

38.3 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.

38.4 Availability. The materials described in 38.2 and 38.3 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.

38.5 The Contractor shall insert a clause containing all the provisions of this clause, including this Paragraph 38.5, in all subcontracts hereunder except altered as necessary for proper identification of the contracting parties and the Contracting Officer under the Government prime contract.

#### 39. SUBCONTRACTOR COST OR PRICING DATA-PRICE ADJUSTMENTS

39.1 Paragraphs 39.2 and 39.3 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 modifications.

39.2 The Contractor shall require subcontractors hereunder to submit 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;

(c) 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 and substantial quantities to the general public, or prices set by law or regulation.

39.3 The Contractor shall require subcontractors to certify that to the best of their knowledge and belief the cost or pricing data submitted under 39.2 above is accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract change or modification.

39.4 The Contractor shall insert the substance of this clause including the Paragraph (d) in each subcontract which exceeds \$100,000.

40. STANDARD FORM 23-A, GENERAL PROVISIONS AND GSA FORM 1139, GENERAL CONDITIONS

40.1 Where there are differences between the requirements set forth in Standard Form 23-A, General Provisions and GSA Form 1139, General Conditions, the requirements of Standard Form 23-A shall govern.

\* \* \* \* \*

(FIXED PRICE CONTRACT)

SECTION 0015

1. *INTENT AND OBJECTIVES*—This clause applies to any cost reduction proposal (hereinafter referred to as a Value Engineering Change Proposal or VECP) initiated and developed by the Contractor for the purpose of changing any requirement of this contract. This clause does not, however, apply to any such proposal unless it is identified by the Contractor, at the time of its submission to the Government, as a proposal submitted pursuant to this clause.

1.1 VECP's contemplated are those that would result in net savings to the Government by providing either: (1) a decrease in the cost of performance of this contract, or; (2) a reduction in the cost of ownership (hereinafter referred to as collateral costs) of the work provided by this contract, regardless of acquisition costs. VECP's must result in savings without impairing any required functions and characteristics such as service life, reliability, economy of operation, ease of maintenance, standardized features, esthetics, fire protection features and safety features presently required by this contract. However, nothing herein precludes the submittal of VECP's where the Contractor considers that the required functions and characteristics could be combined, reduced or eliminated as being non-essential or excessive for the function served by the work involved.

1.2 A VECP identical to one submitted under any other contract with the Contractor or another Contractor may also be submitted under this contract.

1.3 A proposal to decrease the cost of performing the contract solely or principally by substituting another Subcontractor for one listed by the Contractor in his bid is not a VECP. In considering a VECP which, as an incident thereof, would entail substitution for a listed Subcontractor, maintaining the objective of the Subcontractor listing will be taken into account along with factors cited in paragraph 1.1 above.

2. *SUBCONTRACTOR INCLUSION*—The Contractor shall include the provisions of this clause, with a provision for sharing arrangements that meet or exceed the minimum percentage contained herein, in all first-tier subcontracts in excess of \$25,000, and in any other subcontract which, in the judgment of the Contractor, is of such nature as to offer reasonable likelihood of value engineering cost reductions. At the option of the first-tier Subcontractor, this clause may be included in lower tier subcontracts. The Contractor shall encourage submission of VECP's from Subcontractors; however, it is not mandatory that VECP's be submitted nor is it mandatory that the Contractor accept and/or transmit to the Government VECP's proposed by his Subcontractors.

3. *DATA REQUIREMENTS*—As a minimum, the following information shall be submitted by the Contractor with each VECP:

3.1 A description of the existing contract requirement and the proposed change, and the comparative advantages and disadvantages of each; including justification where function or characteristic of a work item is being reduced;

3.2 Separate detailed cost estimates for both the existing contract requirement and the proposed change, and an estimate of the change in contract price including consideration of the costs of development and implementation of the VECP and the sharing arrangement set forth in this clause;

3.3 An estimate of the effects the VECP would have on collateral costs to the Government, including an estimate of the sharing that the Contractor requests be paid by the Government upon approval of the VECP;

3.4 Architectural, engineering or other analysis, in sufficient detail to identify and describe each requirement of the contract which must be changed if the VECP is accepted, with recommendation as to how to accomplish each such change and its effect on unchanged work;

3.5 A statement of the time by which approval of the VECP must be issued by the Government to obtain the maximum cost reduction during the remainder of this contract, noting any effect on the contract completion time or delivery schedule; and,

3.6 Identification of any previous submission of the VECP including the dates submitted, the agencies involved, the numbers of the Government contracts involved, and the previous actions by the Government, if known.

4. *PROCESSING PROCEDURES*—Six copies of each VECP shall be submitted to the Contracting Officer, or his duly authorized representative. VECP's will be processed expeditiously; however, the Government will not be liable for any delay in acting upon a VECP submitted pursuant to this clause. The Contractor may withdraw, in whole or in part, a VECP not accepted by the Government within the period specified in the VECP. The Government shall not be liable for VECP development cost in the case where a VECP is rejected or withdrawn. The decision of the Contracting Officer as to the acceptance of a VECP under this contract shall be final and shall not be subject to the "Disputes" clause of this contract.

4.1 The Contracting Officer may modify a VECP, with the concurrence of the Contractor, to make it acceptable. If any modification increases or decreases the savings resulting from the VECP, the Contractor's fair share will be determined on the basis of the VECP as modified.

4.2 The Contracting Officer may accept, in whole or in part, a VECP submitted pursuant to this clause by giving the Contractor written notice thereof reciting acceptance under this clause. However, pending issuance of a formal change order or unless otherwise directed, the Contractor shall remain obligated to perform in accordance with the

ing contract requirement and the proposed change, and the comparative advantages and disadvantages of each; including justification where function or characteristic of a work item is being reduced;

3.1 A description of the existing contract requirement and the proposed change, and the comparative advantages and disadvantages of each; including justification where function or characteristic of a work item is being reduced;

4.3 An approved VECP shall be finalized through an equitable adjustment in the contract price and time of performance by the issuance of a change order pursuant to the provisions of this clause bearing a notation so stating. Where an approved VECP also involves any other applicable clause of this contract such as "Termination for Convenience of the Government," "Suspension of Work," "Changes," or "Differing Site Conditions" then that clause shall be cited in addition to this clause.

5. **COMPUTATIONS FOR CHANGE IN CONTRACT COST OF PERFORMANCE**—Separate estimates shall be prepared for both the existing contract requirement and the proposed change. Each estimate shall consist of an itemized breakdown of all costs of the Contractor and all Subcontractors' work in sufficient detail to show unit quantities and costs of labor, material, and equipment.

5.1 Contractor development and implementation costs for the VECP shall be included in the estimate for the proposed change. However, these costs will not be allowable if they are otherwise reimbursable as a direct charge under this contract.

5.2 Government costs of processing or implementation of a VECP shall not be included in the estimate.

5.3 If the difference in the estimates indicate a net reduction in contract price, no allowance will be made for overhead, profit and bond. The resultant net reduction in contract cost of performance shall be shared in accordance with the provisions of paragraph 7.2 of this clause; and the contract price shall be reduced by the Government's share of the savings.

5.4 If the difference in the estimates indicate a net increase in contract price, the contract price shall be adjusted pursuant to Clause 23, GSA Form 1139 (General Conditions) or Clause 2, SF 32 (General Provisions); whichever is applicable to this contract.

6. **COMPUTATIONS FOR COLLATERAL COSTS**—Separate estimates shall be prepared for collateral costs of both the existing contract requirement and the proposed change. Each estimate shall consist of an itemized breakdown of all costs and the basis for the data used in the estimate. Cost benefits to the Government include, but are not limited to: reduced costs of operation, maintenance or repair, extended useful service life, increases in useable floor space, and reduction in the requirements for Government furnished property. Increased collateral costs include the converse of such factors. Computation shall be as follows:

6.1 Costs shall be calculated over a 20-year period on a uniform basis for each estimate and shall include Government costs of processing or implementing the VECP.

6.2 If the difference in the estimates as approved by the Government indicate a savings, the Contractor shall divide the resultant amount by 20 to arrive at the average annual net collateral savings. The resultant savings shall be shared in accordance with the provisions of paragraph 7.3 of this clause; and the contract price shall be increased by the Contractor's share of the savings.

6.3 In the event that agreement cannot be reached on the amount of estimated collateral costs, the Contracting Officer shall determine the amount. His decision is final

and is not subject to the provisions of the "Disputes" clause of this contract.

7. **SHARING ARRANGEMENTS**—If a VECP is accepted by the Government, the Contractor is entitled to share in instant contract savings and collateral savings not as alternatives, but rather to the full extent provided for in this clause. For the purposes of sharing under this clause, the term "instant contract" shall not include any changes to or other modifications of this contract, executed subsequent to acceptance of the particular VECP, by which the Government increases the quantity of any item of work or adds any item of work. It shall, however, include any extension of the instant contract through exercise of an option (if any) provided under this contract after acceptance of the VECP.

7.1 When only the prime Contractor is involved, he shall receive 50% and the Government 50% of the net reduction in the cost of performance of this contract.

7.2 When a first-tier Subcontractor is involved, he shall receive a minimum of 30%, the prime Contractor a maximum of 30%, and the Government a fixed 40% of the net reduction in the cost of performance of this contract. Other Subcontractors shall receive a portion of the first-tier Subcontractor savings in accordance with the terms of their contract with the first-tier Subcontractor.

7.3 When collateral savings occur the Contractor shall receive 20% of the average one years net collateral savings.

7.4 The Contractor shall not receive instant savings or collateral savings shares on optional work listed in this contract, until the Government exercises its option to obtain that work.

8. **DATA RESTRICTION RIGHTS**—The Contractor may restrict the Government's right to use any sheet of a VECP or of the supporting data, submitted pursuant to this clause, in accordance with the terms of the following legend if it is marked on each such sheet:

The data furnished pursuant to the Value Engineering Incentive Clause of contract \_\_\_\_\_ shall not be disclosed outside the Government, or duplicated, used, or disclosed in whole or in part, for any purpose other than to evaluate a VECP submitted under said clause. This restriction does not limit the Government's right to use information contained in this data if it is or has been obtained, or is otherwise available, from the Contractor or from another source, without limitations. If such a proposal is accepted by the Government under said contract after the use of this data in such an evaluation, the Government shall have the right to duplicate, use, and disclose any data reasonably necessary to the full utilization of such proposal as accepted, in any manner and for any purpose whatsoever, and have others so do.

In the event of acceptance of a VECP, the Contractor hereby grants to the Government all rights to use, duplicate or disclose, in whole or in part, in any manner and for any purpose whatsoever, and to have or to permit others to do so, data reasonably necessary to fully utilize such proposal on this and any other Government contract.

**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 1½ 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) 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 he 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.

PUBLIC BUILDING SERVICE  
MODIFICATION OF LABOR STANDARD PROVISIONS  
(STANDARD FORM 19-A - NOVEMBER 1972)

1. Delete Article 3, APPRENTICES AND TRAINEES, And Insert In Lieu Thereof The Following:

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 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 journeymen hourly rates) for the area of construction, prior to using any apprentices on the contract work. The wage rate paid apprentices shall be not less than the appropriate percentage of the journeymen'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 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 5.15 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 55.17."

2. Delete Article 4, PAYROLLS AND BASIC RECORDS, and substitute in lieu thereof the following:

#### "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 contributing for or costs assumed to provide fringe benefits), daily and weekly number of hours, 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 sub-contractors. 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 this contract and the Copeland Regulations of the Secretary of Labor (29 CFR Part 3) shall satisfy the requirements 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."

\* \* \* \* \*

**SECTION 0020**

**APPLICABLE MINIMUM HOURLY RATES OF WAGES**

1. The attached wage determination decision of the Secretary of Labor specifies the minimum hourly rates of wages which shall be paid to laborers and mechanics employed or working directly upon the site of the work, the rates having been determined by the Secretary of Labor in accordance with the provisions of the Davis-Bacon Act, as amended, to be the prevailing rates for the corresponding classes of laborers and mechanics employed on contracts of a similar character in the locality where this work is to be performed. **THESE MINIMUM HOURLY RATES OF WAGES SHALL APPLY ONLY IF THE CONTRACT IS IN EXCESS OF \$2,000 IN AMOUNT.**

2. While the wage rates given in the attached decision are the minimum rates required to be paid during the life of the contract, it is the responsibility of bidders to inform themselves as to local labor conditions such as the prevailing wage rates, the length of the work day and work week, overtime compensation, fringe benefit payments, available labor supply, and prospective changes or adjustments of wage rates. The Contractor shall abide by and conform to all applicable laws, Executive Orders, and rules, regulations and orders of the Secretary of Labor. No increase in the contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed in the attached decision.

3. The wage determination decision of the Secretary of Labor is attached solely for the purpose of setting forth the minimum hourly wage rates required to be paid during the life of the contract and is not to be accepted as a guarantee, warranty or representation as to the wage rates indicated. Under no circumstances shall any mistake in attaching the appropriate wage determination decision of the Secretary of Labor and in the wage rates set forth entitle the successful bidder to cancellation of his bid or contract or to an increase in the contract price or other additional payment or recovery.

U.S. DEPARTMENT OF LABOR  
OFFICE OF THE SECRETARY  
WASHINGTON

DECISION OF THE SECRETARY

This case is before the Department of Labor pursuant to a request for a wage probe termination as required by law applicable to the work described.

A study has been made of wage conditions in the locality and based on information available to the Department of Labor the wage rates and fringe payments listed are hereby determined by the Secretary of Labor as prevailing for the described classes of labor in accordance with applicable law.

This wage determination decision and any modifications thereof during the period prior to the stated expiration date shall be made a part of every contract for performance of the described work as provided by applicable law and regulations of the Secretary of Labor, and the wage rates and fringe payments contained in this decision, including modifications, shall be the minimums to be paid under any such contract by contractors and subcontractors on the work.

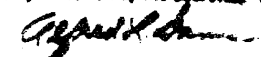
The contracting officer shall require that any class of laborers and mechanics which is not listed in the wage determination and which is to be employed under the contract, shall be classified or reclassified conformably to the wage determination, and a report of the action taken shall be sent by the Federal agency to the Secretary of Labor. In the event the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers and mechanics to be used, the question accompanied by the recommendation of the contracting officer shall be referred to the Secretary for determination.

Before using apprentices on the job the contractor shall present to the Contracting officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U.S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U.S. Bureau of Apprenticeship and Training.

The contractor shall submit to the contracting officer written evidence of the established apprentice-journeyman ratio and wage rates in the project area which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

Fringe payments include medical and hospital care, compensation for injuries or illness resulting from occupational activity, unemployment benefits, life insurance, disability and sickness insurance, accident insurance (all designated as health and welfare), pensions, vacation and holiday pay, apprenticeship or other similar programs and other bona fide fringe benefits.

By direction of the Secretary of Labor.



Alfred L. C. Jones, Director  
Division of Wage Determinations  
Workplace Standards Administration

**WAGE RATE SCHEDULE**

DEPARTMENT, AGENCY, OR BUREAU <b>Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7</b> GENERAL SERVICES ADMINISTRATION - PUBLIC BUILDINGS SERVICE		DECISION NO. <b>MD 76-3285</b>
LOCATION OF PROJECT (City or other description) <b>CIA Headquarters Building, McLean, Virginia</b>		LAW INVOLVED <b>Davis-Bacon</b>
STATE <b>Virginia</b>	COUNTY <b>Fairfax</b>	DATE OF DECISION <b>July 30, 1976</b>
DESCRIPTION OF WORK <b>GS-03B-63544 Roof Replacement</b>		EXPIRES
		SUPERSEDES DECISION NO.

C R A F T	BASIC HOURLY RATES	FRINGE BENEFITS PAYMENTS				
		H & W	PENSIONS	VACATION	APP. TR.	OTHERS
LABORERS	8.07	.50	.40		.05	
ROOFERS:						
COMPOSITION	9.26	.47	.30			
SLATE, MOPMEN, WATERPROOFER						
SPRAYERS, SPANDREL, & IRONITE	9.82	.47	.30			
HELPER	6.68	.47	.30			
SHEETMETAL WORKERS	10.74	.84	.96		.12	

SECTION 0110 SPECIAL CONDITIONS

1. GENERAL

1.1 Requirements of the contract include furnishing all labor and materials and performing all work for Roof Replacement, Southwest Wing, Headquarters Building, McLean, Virginia including all changes and repairs incident thereto, as specified and as shown on Drawing No. 3-1.

2. BID GUARANTEE AND BONDS

2.1 Bid guarantee will be required as provided in the invitation for Bids, Standard Form 20. Performance bond will be required in an amount equal to 100 percent of the Bid. Payment bond will be required in the amount as follows:

Contracts over \$2,000 and not over \$1,000,000; 50 percent of contract.

2.2 The Contractor shall not be deemed to have lost his right to receive any payment due or to become due him under this contract unless and until the Contractor's surety has made payment in settlement of claims by suppliers of labor or material in accordance with the requirements of the surety's undertaking under the payment or performance bond and has notified the Contracting Officer of the claims and amounts so paid.

3. COMPLETION TIME

3.1 Time for completion shall be seventy five (75) calendar days from date of receipt of notice to proceed, which will be issued upon approval of bonds.

4. LIQUIDATED DAMAGES

4.1 In case of failure on the part of the Contractor to complete the work within the time fixed in the contract or any extensions thereof, the Contractor shall pay to the Government as fixed, agreed and liquidated damages, pursuant to the clause of this contract entitled "Termination for Default - Damages for Delay-Time Extensions", the sum of \$100 for each calendar day of delay.

5. BASE BID

5.1 One lump sum Bid is required.

6. BASIS OF AWARD

6.1 The Government reserves the right to accept or reject as may be determined by the Contracting Officer to be in the best interest of the Government, any or all bids.



7. LAG IN CONSTRUCTION PROGRESS - WITHHOLDING OF FUNDS

7.1 In the event actual construction progress as reported through the reporting month falls more than four percent below the normal progress as reflected in the current CPM or the current approved construction progress chart submitted by Contractor as revised to reflect modifications to the contract - including extensions of time granted, the Government shall withhold from the monthly payment the sum of \$12,000 multiplied by the percentage reported behind schedule. Any sums accrued from such withholding will be released to the Contractor at such time as the construction progress is brought up to schedule, or upon completion of the project, whichever occurs earlier.

8. SPECIALIST

8.1 The term "specialist" as used in the specification shall mean an individual or firm of established reputation (or, if newly organized, whose personnel have previously established, a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workmen skilled in either (as applicable) manufacturing or fabricating items required by the work required by the contract. Where the contract specification requires installation by a specialist, that term shall also be deemed to mean either the manufacture of the item, an individual or firm licensed by the manufacturer, or an individual or firm who will perform the work under the manufacturer's direct supervision. Contractor: submit name of proposed specialist and appropriate certification of qualifications and/or licensing or both as proof of meeting specialist requirements.

9. SHOP DRAWING SUBMISSION PROCEDURES

9.1 In addition to requirements specified in SECTION 0010, GENERAL CONDITIONS, Article 20, entitled "SHOP DRAWINGS, COORDINATION DRAWINGS, AND SCHEDULES: procedures noted below will be applicable.

9.1.1 Shop drawings required by the specifications or called for by the Contracting Officer (including catalog data, brochures, etc.) shall be submitted to:

Project Execution Branch  
Repair and Alteration Division  
Room 1709  
General Services Administration  
Seventh and D Streets, S.W.  
Washington, DC 20407

9.1.1.1 Shop drawings submitted which are not required by the specifications or the Contracting Officer will be returned with no comment.

9.1.2 Covering letters which accompany shop drawings shall contain the following information.

9.1.2.1 Contractor's name.

9.1.2.2 Subcontractor's and suppliers name.

9.1.2.3 GSA Contract Number and Project Title.

9.1.2.4 Description of each enclosure.

9.1.2.5 Reference to any prior actions on the submission.

9.1.2.6 A statement of reason for any proposed change, proposed adjustment in price and contract time when shop drawings show variations from Contract requirements.

9.1.3 Separate covering letters shall be prepared and transmitted with shop drawings for each related submission. This is required due to checking by various disciplines.

9.2 Shop drawings shall have the Contractor's stamp of approval on each drawing signed and dated as evidence of the Contractor's check and coordination of the items submitted. Catalog cuts and brochures shall have items proposed for use marked for ready identification.

9.3 Catalog data and brochures shall be submitted in not less than 5 copies. Drawings may be submitted in 5 copies or one sepia and two prints.

9.3.1 When data, brochures and/or drawings have been checked (normally within 10 days after receipt) distribution will be made as follows:

9.3.1.1 When approved or approved as noted three copies retained by the Government. Remaining copies and/or sepia to Contractor, Approved as noted drawings need not be resubmitted.

9.3.1.2 When rejected two copies retained by the Government. One copy and/or sepia to Contractor. Rejected items shall be resubmitted within ten (10) days of receipt by the Contractor of the rejection letter.

Rejections, resubmittals and final approvals of shop drawings, materials, etc., will not be acceptable as a cause for delay under the contract COMPLETION TIME clause hereinbefore specified.

9.3.1.3 Variations from Contract requirements proposed by the Contractor on the shop drawings which are acceptable to the Government, will be authorized by change order in accordance with Clause 3 of the GENERAL PROVISIONS.

9.3.1.3.1 The processing of Change Orders and return of shop drawings involved, to the Contractor will exceed review time of shop drawings as above noted.

9.4 Shop drawings, schedules, etc., shall be submitted not later than fifteen (15) days after receipt of Notice to Proceed

9.5 When disagreements occur over shop drawings the Contractor shall indicate the basis for disagreement to the Contracting Officer in writing within twenty (20) days of receipt of the shop drawing involved, in order that prompt settlement can be acted on, without holding up the project. When no letter is received from the Contractor within twenty (20) days it will be taken as acknowledgement that shop drawings are satisfactory.

10. CONSTRUCTION PROGRESS CHART

10.1 Contractor shall include in the Construction Progress chart required by the General Conditions, Article 11 Items indicating:

Dates of submission of Shop Drawings to the Government for approval.

Dates of submission of other items to the Government for approval.

Dates of return of Shop Drawings to the Contractor.

Dates of return of other items to the Contractor.

Proposed dates of starting and completing each Operational Section or area as described under clause "SCHEDULING OF WORK" hereinafter.

11. NOT USED

12. SAFETY BARRICADES

12.1 Provide safety barricades in accordance with requirements of the Building Code of Fairfax County, Virginia and the applicable local ordinances and codes.

12.2 Barricades shall be removed upon completion of the project, in accordance with local ordinance and to the satisfaction of the Construction Engineer.

13. SAFETY BARRICADES

13.1 Provide safety barricades and signs to prevent building occupants from walking into an area being worked on during Government working hours; remove such barricades and signs when work is completed and it is safe for building occupants to enter the space or area.

14. OCCUPANCY OF PREMISES

14.1 The premises will be occupied during the performance of the work under the contract.

14.2 Normal deliveries shall be made after 9:30 a.m. and before 3:30 p.m.

14.3 Advance notice shall be given to the Special Police on deliveries in late evening hours after 6 p.m. or on normally off days.

14.4 See also paragraphs "Noise Control", this section.

15. SCHEDULING OF WORK

15.1 Before work is started Contractor shall arrange with the Construction Engineer and the Building's Manager, a sequence of procedure, means of access to premises, space for storage of materials and equipment, use of approaches, use of corridors, stairways, elevators and similar means of communication.

15.2 The sequence of procedure shall include the work which shall begin in definite operational sections or areas and which shall be completed before work in other operational sections or areas is begun. The Operational Sections or areas shall be defined in detail by the Contractor for approval within fourteen (14) calendar days after receipt of notice of award of the contract.

The Contractor shall, when establishing the operational sections or areas, coordinate the sections or areas with the Buildings Manager and the Construction Engineer so that actual construction work will cause as little interference as possible with Government operations.

15.3 Temporary use of existing elevators shall be by arrangement with the Buildings Manager and subject to his control. If arrangements are made for Government employees to operate elevator equipment, with approval of the Contracting Officer, such operation shall be at Government expense. Such use will be of an intermittent nature. The Contractor shall provide and maintain suitable and adequate protective coverings for elevator machinery, hatchway entrances and interior of cab during the period of use, provide a qualified operator and be responsible for any damage due to his fault or negligence. Loads in excess of rated capacity will not be permitted. The Government will bear the cost of electric current for operation. On termination of use, the Contractor shall remove protective coverings and resultant dirt and debris, leaving equipment in condition equal to that existing prior to starting work.

16. PROTECTION  
Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

16.1 The Contractor shall provide adequate protection for all parts of the building, its contents and occupants wherever work under this contract is performed. Furniture, office fixtures and carpets shall be moved as necessary for proper performance of the work, stored on the premises, protected and properly replaced.

16.2 The Contractor shall provide temporary dustproof enclosures or partitions for protection where dusty or dirty work is performed to permit the uninterrupted use of the Building by the Government during the life of the project. Debris shall be dampened when removed to avoid dusting.

16.3 Any work performed that results in exposing the building exterior to water damage due to leakage, shall be repaired, temporarily covered, or new work completed prior to the Contractor's forces leaving the site on any given day.

16.4 The Contractor, prior to the start of site work, shall furnish the Contracting Officer with the name or names and emergency telephone numbers of his staff who can be contacted during non-working hours including weekends for assistance during the life of the contract should leaks and/or other damage develop in the areas of his contract performance.

16.5 The Contractor shall be responsible for making inspections at the site during inclement weather to ensure that contract work in progress and that completed contract work is and remains water tight and weather tight.

16.6 Remove all temporary partitions, enclosures, coverings, barricades, etc., as soon as they are no longer required for protection purposes.

17. NEW WORK

17.1 Unless otherwise noted on drawings or specified, new work in extension of existing conditions shall correspond in all respects with that to which it connects, or to similar existing conditions, in materials, workmanship and finish.

18. EXISTING WORK

18.1 Existing work shall be cut, drilled, altered, removed, or temporarily removed and replaced as necessary for performance of work under the contract. Work that is replaced shall match similar existing work. Structural members shall not be cut or altered, except, where noted on drawings, without authorization of the Contracting Officer. Work remaining in place which is damaged or defaced during this contract shall be restored to the condition existing at time of award of contract.

18.2 Discolored or unfinished surfaces exposed by removal of existing work and indicated to be the final exposed surfaces shall be refinished or the material shall be replaced as necessary to make contiguous work uniform and harmonious. Work out of alignment where exposed by removal of existing work shall be called to the Contracting Officers attention. Necessary corrective work directed by the Contracting Officer will be subject to adjustment of the contract in accordance with "Differing Site Conditions" clause of the General Provisions, Standard Form 23-A.

19. EQUIPMENT ON THE SITE

19.1 Equipment (other than mechanical equipment) including but not limited to furniture, metal shelving, office fittings, bulletin boards, movable office partitions, directional signs, shall remain the property of the Government.

20. MATERIALS ON THE SITE

20.1 Construction materials and items of mechanical and electrical equipment that are removed and not reused under the contract, shall become the property of the Contractor and the salvage value shall be reflected in the bids. Materials removed and not reserved as property of the Government and not reused in the work shall be removed from the site by the Contractor. Storage or sale of excess salvable material on the site will not be permitted.

21. WATER, UTILITIES

21.1 Premises are supplied with water and electrical services which may be used in this work, subject to regulations of the Government Agency in control. Contractor shall make his own arrangements for such services.

22. TOILET FACILITIES

22.1 Contractor's personnel will be permitted to use a toilet room on the premises subject to regulation and control of the Construction Engineer.

23. RECEIPT OF, STORAGE AND REMOVAL OF MATERIALS AND EQUIPMENT

23.1 The Contractor will be responsible for receipt of and placing materials and equipment in storage area provided or into work area, he materials and debris resulting from contract work.

23.2 In no case shall contractors debris be disposed of by transfer to Government containers.

24. PARKING FACILITIES

24.1 There will be no parking available at the site during normal Government working hours. The Contractor and his employees shall make their own arrangements for vehicle parking off the site.

25. LOADING DOCK FACILITIES

25.1 The Government will permit use of loading dock facilities on a first-come, first-served basis and wait-your-turn. Parking for one Contractor vehicle may be permitted, when prior arrangements are made, in a general area, not a reserved space.

26. PRIORITY

26.1 This project is not eligible for priority rating under the Defense Production Act of 1950 as amended.

27. ENVIRONMENTAL PROTECTION

27.1 Environmental Control Officer.

27.1.1 Contractor shall designate one of his staff as "Environmental Control Officer." The duties of such designee shall include the responsibility for enforcing the environmental protection provisions of these specifications; the requirements of the Occupational Safety and Health Act, and other applicable Federal, State and local standards.

27.1.2 As outlined in the applicable sections of this specification, Contractor shall submit, for approval by the Contracting Officer, his intended traffic flow plan, security plan, program for temporary structures, housecleaning plan, erosion control plan and demolition program. After approval by the Contracting Officer, the implementation and enforcement of these programs shall become the responsibility of the Environmental Control Officer. Any changes in the programs must be requested by the Contractor through the Environmental Control Officer for written concurrence by the Contracting Officer.

27.2 Solid, Liquid and Gaseous Contaminants.

27.2.1 Contractor shall be responsible for the proper disposal of all solid, liquid and gaseous contaminants in accordance with all local codes and regulations, together with the following requirements.

27.2.1.1 Gaseous contaminants shall be discharged in such a manner that they will be sufficiently diluted with fresh air that the toxicity will be reduced to levels acceptable to local governmental authority.

27.2.1.2 Liquid contaminants may, subject to local utility standards, be diluted with water to a level of quality acceptable in the local sewer system, or shall be contained in approved vessels for disposal at approved sites.

27.3 Disposal of Refuse.

27.3.1 Refuse resulting from construction operations shall be removed from the site.

27.4 Covered Chutes.

27.4.1 All chutes for refuse, etc., shall be covered, or of such a design as to fully confine the material to prevent the dissemination of dust.

27.5 Trucking.

27.5.1 All trucks leaving the site with construction materials or loose debris shall be loaded in a manner that will prevent dropping of materials on streets and shall have suitable tarpaulins fastened over the load before they enter surrounding paved streets. Trucks bringing construction materials over paved streets to the site shall be similarly loaded and covered.

27.5.2 The Contractor shall conform to all local regulations regarding load limits.

27.6 Construction Site Maintenance.

27.6.1 All supplies and equipment on project site shall be stored in such a manner as to preclude mechanical and climatic damage. Site shall be maintained in a neat and orderly manner as to further minimize hazards to personnel, supplies and equipment.

27.6.2 Contractor shall be responsible for maintaining the temporary construction enclosure in good repair and visually pleasant. He shall further provide adequate security to prevent the presence of unauthorized persons on the work site, and to keep doors secured when not in use to insure the integrity of the barrier as well as for property security.

27.7 Noise Control.

27.7.1 Equipment to be employed on this site shall not produce a noise level exceeding the following limits in Db(A) at a distance of 50 feet from the equipment under test.

Equipment

Stationary

pumps	76
generators	78
compressors	81

Impact

pneumatic tools	86
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Other

saws	78
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27.7.2 The Contractor shall comply with all applicable local laws, ordinances and regulations relative to noise control.

27.7.3 Stationary equipment may be provided with acoustical enclosures to provide the required sound attenuation subject to continued maintenance of such enclosures to assure that maximum sound levels specified are not exceeded.

27.7.4 Where field sound measurements reveal sound levels exceeding those listed above, Contractor shall cease operating such equipment and repair or replace it with equipment complying with these sound levels.

27.7.5 Only rotary drilling and core drilling through concrete slabs or other structural members will be permitted, and this may not be done during normal working hours of the building occupants. The use of impact tools for cutting concrete or for installation of inserts and the use of powder-actuated tools will not be permitted in or immediately adjacent to occupied office buildings during normal working hours of the building occupants. Cutting, drilling, etc., accomplished after normal working hours of the building occupants on weekdays, or on Saturdays, Sundays and holidays, shall be as directed by the Construction Engineer, unless otherwise specified.

## 28. ENERGY CONSERVATION

### 28.1 Energy Conservation Officer.

28.1.1 Contractor shall designate one of his staff as "Energy Conservation Officer". The duties of such designee shall include the development and implementation of a program for minimizing the use of energy on the site.

28.1.2 The program, after approval by the Contracting Officer, shall be posted in a conspicuous location so that all personnel employed on the project may be made aware of the need to conserve energy at all times.

## 29. INSPECTION

29.1 Bidders may obtain permission to inspect site or building by making application to Building Manager, Telephone 351-4533, Room 1E-12 at Headquarters Building, McLean, Virginia.

## 30. SECURITY REQUIREMENTS

30.1 Bidders shall consult the Building Manager for permission to inspect the site and for the security regulations in effect.

30.2 Bidders will be required to comply with security regulations imposed by the occupying agency including any necessary security clearances.

30.3 Bidders will be required to visit the site as a group at a time set aside by the Building Manager.

30.4 After award the Contractor and his employees will be required to furnish information for security clearances and comply with security regulations as imposed by the occupying agency (a security agency).

30.5 The Contractor shall notify the Building Manager not less than 24 hours in advance when he proposes to work in a security area. Notification shall include the following:

30.5.1 Names of individuals who are to work.

30.5.2 The exact time, date and hours of work.

30.5.3 Areas of building in which work is to be performed.

31. TERMINATION FOR DEFAULT - DAMAGES FOR DELAY - TIME EXTENSIONS

31.1 See Clause 5, "Termination for Default - Damages for Delay - Time Extensions" of the General Provisions, Standard Form 23-A, October 1969.

31.2 "Usually severe weather" referenced in Subclause 5(d)(1) which hinders or prevents work shall not be a basis for a time extension unless it surpasses in severity the weather reasonably to be expected in the locality of the site of work at the particular time of year. Should the Contractor file notice that he was delayed by weather sufficiently severe as to entitle him to additional time, he shall furnish therewith a statement of the portions of the work affected; an explanation as to the reasons work was prevented or hindered by the weather, if not readily apparent; the dates on which such portions of the work were affected; the total number of days by which he believes the job in its entirety was delayed; and any other information which would be of assistance to the Contracting Officer such as official weather bureau climatological data for several prior years.

31.3 Documentation that the delay in the completion of the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor (Subclause 5(D)(1) shall demonstrate that any delay was unforeseeable and without the fault or negligence of himself or his lowest tier subcontractor or supplier. The Contractor will be entitled only to the additional number of days the project is delayed in its entirety. Furthermore, the Contractor will not be granted additional time for a delay which is concurrent with another delay for which the Contractor has been previously granted a time extension or concurrent with a delay for which the extension. The Contracting Officer has no authority to grant relief by extending the time specified for contract completion unless the Contractor is actually entitled to an extension of time as specifically provided by a provision of the contract in effect at that time.

38. LABOR DISPUTES

38.1 The Contractor shall immediately notify the Contracting Officer (or the Construction Manager) of any actual or impending labor dispute which may affect or is affecting the schedule of the Contractor's or any other Contractor's work. In addition, the Contractor shall take all appropriate measures to eliminate or minimize the affect of such labor dispute on the schedule, including but not limited to such measures as: Promptly seeking appropriate injunctive relief, filing appropriate charges with the National Labor Relations Board under the applicable provisions of the Labor Management Relations Act of 1947, as amended; filing appropriate damage actions; taking such measures as establishing a reserved gate, as appropriate; if reasonably feasible, seeking other sources of supply or service; and any other measures that may be appropriately utilized to limit or eliminate the effect of the labor dispute. To the extent the Contractor fails to initiate measures that are appropriate, he is not entitled to an extension of time under the provisions of Clause 5 of SF-23-A. In addition, any delay impact on any other Contractor's schedule on the schedule for the project will be considered as a Contractor-caused delay under any and all applicable provisions of the contract. The rights and remedies of the General Services Administration provided in this paragraph are in addition to any other rights or remedies provided by law or under this contract. The Contractor shall include this clause in every subcontract, together with a requirement that the subcontractor include a substantially similar clause in each lower tier subcontract.

\* \* \* \* \*

DIVISION 7 - MOISTURE PROTECTION

SECTION 0750

BUILT-UP BITUMINOUS ROOFING SYSTEM

1. GENERAL. For location and extent of work, see drawings. Roof surfaces shall be sound, clean and dry, reasonably smooth and free from loose and foreign material and from depressions that would interfere with proper drainage.

2. Every precaution shall be taken to keep moisture out of the roofing during its application. Felt and paper shall be dry when laid. No part of the roofing materials shall be applied or laid during damp or rainy weather or while moisture of any kind is present in visible amount on the surface that is to be covered. Surfaces that become wet from any cause during the progress of the work shall be allowed to dry out to the satisfaction of the Construction Engineer before work is resumed.

3. MATERIALS shall conform to the applicable referenced Federal Specifications. Materials shall be shipped to the job with manufacturers' labels and seals intact.

3.1 Coated base sheets; asphalt saturated and coated asbestos: Standard with roofing manufacturer and having minimum weight of not less than 38 pounds per 100 square feet.

3.2 Flashing Felt:

3.2.1 Fabric reinforced asbestos flashing sheet.

3.2.2 Felt (asbestos, asphalt saturated): HH-R-590A, perforated and with 50% showing light, Type I, Class A.

3.3 Saturated Roofing Felts:

3.3.1 Glass Fiber Felt, Asphalt Coated: SS-R-620B, Type I, modified for 7.5 pounds minimum weight per 100 square feet.

3.3.2 Asbestos Felt, Asphalt Saturated: HH-R-590A, Type I, Class A.

3.4 Cement, Bituminous Plastic: SS-C-153C, Type I with asphalt saturated felts.

3.5 Asphalt Primer: SS-A-701.

3.6 Asphalt, Petroleum: SS-A-666D, Type III.

3.7 Fasteners into concrete shall be threaded nails (FF-S-325) set into nylon expansion shields set in predrilled holes.

3.8 Bolts and Nuts: FF-B-575, Type 1 or 2 as applicable.

3.9 Metal Caps: Flat, and not less than one inch diameter.

3.10 Aggregates for surfacing built-up roofing shall be commercial grade washed gravel or other approved aggregate meeting the requirements of ASTM D-1863 and shall be opaque to ultra-violet radiation when tested in accordance with ASTM D-1866.

3.11 Roof Insulation:

3.11.1 Thermo-setting monolithic mineral insulation (asphalt with perlite aggregate) having the following physical characteristics:

Density: Not more than 22 pounds per cubic foot.

Asphalt: Softening point 190-200F (ASTM D36-26)  
Penetration C77F 25-30 (ASTM D5-52)  
Flash point (C.O.C) 500F (ASTM D92-57)

Water Absorption  
by ASTM D 2127 .....NIL

Conductivity  
by ASTM C 177 .....0.42 (K factor)  
@75°F (maximum)

3.11.2 Insulation Board, Thermal (Urethane), HH-I-530B

3.12 Aluminum paint: ASTM D 1187 or TT-P-320C, Class 2.

4. Compatibility: All materials provided shall be compatible with each specified component of the built-up roofing system.

5. Storage: All materials shall be stored in properly protected and dry storage facilities until ready for use. Materials, other than aggregate, once wet shall not be used. Such materials shall be marked and removed from the site. For 24 hours before laying, felt rolls shall be stacked on end and stored in an enclosure maintained at a temperature of not less than 50 degrees F.

5a. Environmental Conditions: Roofing system materials shall not be applied during rain, snow or when the wind chill factor is 40°F or less. Application may be continued in cold weather subject to the following requirements:

5a.1 Comply with all provisions of these and the manufacturer's specifications.

5a.2 Do not overheat bitumen to compensate for rapid chilling.

6. Metal Work and Accessories: The installer of the roofing system shall be responsible for the proper attachment of the roofing system to metal work and accessories that are embedded in or in contact with and become an integral part of the roof system.

7. Protection of Adjacent Surfaces: Adjacent surfaces shall be protected from stain and disfigurement during application of roofing system.

8. Defects: Conditions which may be detrimental to completion or performance of specified work shall be reported in writing to the Contracting Officer prior to commencing such work and such work shall not start until defects have been corrected. No claim by the Contractor concerning defects will be allowed if made after starting work.

9. WORKMANSHIP

9.1 Condition of surfaces: Decks to which roofing system is to be applied shall be sound, dry, clean, smooth, and free from projections. Application of roof system components shall not progress when there is ice, frost, surface moisture, or dampness visible on the roof deck. The Contractor shall be responsible for damage to the deck or structure due to his trafficking across same, or to loads imposed by him in any form. Evidence shall be submitted that roof deck surfaces, and all slopes to roof drains and outlets have been checked, and are approved for installation of the roof system before installation of any roofing is started. Joints in deck shall be sealed as necessary to prevent drippage of bitumen into the building or down exterior walls.

9.2 Asphalt shall not be heated above 475 degrees F. The bitumen shall be heated in an approved type kettle, equipped with a visible Thermometer and thermostatic control of heating systems, for positive control of the specified temperature.

9.3 Bitumen shall be evenly applied while hot, leaving no bare spots.

9.4 Felt shall be laid without buckles or wrinkles. Felt shall be rolled, and broomed into place, closely following mopping, leaving no voids or air pockets. In no case shall felt touch felt.

9.5 Materials shall be trimmed to a neat fit around vent pipes, roof drains and other like projections through roofing.

9.6 The application of the 4-ply roof system shall be finished in one operation, including aggregate surfacing, up to the line of termination at end of day's work. Aggregate surfacing shall be placed to within 3 to 5 feet of the water cut-offs.

9.7 Water Cut-offs:

9.7.1 At end of day's work, and whenever precipitation is imminent, protect unfinished roofing system with temporary water cut-offs.

9.7.2 Form water cut-offs of two 24-inch wide strips of felt solidly mopped in with not less than 15 pounds of bitumen per 100 square feet. Extend half-width of strips up and over the finished roofing and extend the other half-width out and onto the bare monolithic asphalt insulation surface and solidly mop thereto in bitumen.

9.7.3 Remove water cut-offs before continuing with the installation of the roof system.

10. INSTALLATION: All work shall be installed by a specialist, see SPECIAL CONDITIONS.

10.1 Installation of vapor barrier under insulation shall consist of two plies of 15 pound asbestos roofing felt, asphalt saturated, and hot steep roof asphalt. Apply asphalt at rate of 20 pounds per square under each ply.

Prime concrete deck with one gallon of asphalt primer per square and allow to dry thoroughly. Mop the deck fully with hot steep asphalt, into which lay initial ply. Lap sides of sheets 4 inches and ends 6 inches. Mop second ply solidly over the first ply with joints broken between plies. Lap edges of second ply 2 inches.

Mop top of second ply solidly to provide complete water protection. Vapor barrier shall be installed as a completed system for one step application of thermo-setting asphalt insulation fill.

10.2 Installation of thermo-setting insulation fill shall be in strict conformity with the manufacturer's specifications and with the drawing showing all slopes required. Insulation shall be applied hot in a monolithic blanket with thickness of 4 inches maximum and 2 inches minimum, firmly adhered to the vapor barrier. Vapor barrier shall be dry and clean for installation of thermo-setting asphalt fill.

A licensed applicator specialist shall furnish all labor, materials and approved equipment for installation of asphalt insulation fill. All work shall be coordinated with other trades involved. See Paragraph "Specialist", special conditions.

10.3 Do not leave preformed urethane insulation exposed to weather. Cover with finished built-up roofing on the same day.

10.4 Built-up Bituminous Roofing:

10.4.1 Built-up bituminous roofing shall contain the minimum quantities of material per square foot as specified in Table I, except that tolerances for bitumen shall be 15% of specified quantity:



MINIMUM QUANTITIES (IN TOTAL POUNDS PER SQUARE FOOT) FOR BUILT-UP ROOFING MATERIAL ON NON-NAILABLE SUBSTRATES HAVING SLOPES OF  $\frac{1}{2}$ -INCH PER FOOT OR LESS

Asphalt Saturated Coated Asbestos Base Sheet; Type I,  
Class A, Asphalt Asbestos Felt and Type III Asphalt Bitumen

Base Sheet	1 ply: 0.38
Plies of Felt	3 plies: 0.39
Moppings of Bitumen	4 moppings: 0.92
Top Pour of Bitumen	0.60
Surface Material	
Embedded:	
Gravel	4.00

10.4.2 Roofing shall be applied in accordance with the requirements of this specification and with the requirements of the approved roofing manufacturer's latest published manual for 20 year bondable construction for the type of substrate and slope indicated; provided however, that if there are specific conflicts between the requirements of this specification and those of the manufacturer's published manual then these specification requirements shall take precedence.

#### 10.4.3 Detailed Application Requirements:

10.4.3.1 Roofing Construction: Install four (4) plies of felt or a coated base sheet plus three (3) plies of felt mopped to the insulation and between plies with hot bitumen so that in no place felt touches felt. Lap each ply  $27\frac{1}{2}$ -inches over the preceding ply and broom into place. End laps shall be not less than 6 inches. A top flood coat of bitumen, with embedded aggregate, shall be applied the same day.

10.4.3.2 Roof Drains: Taper urethane roof insulation to top of metal rim of roof drain bowl. Bring all roofing felt plies down over the roof insulation and extend under the flashing ring of the roof drain. Over the roofing felts in the sump install a 9-course flashing extending a minimum distance of six (6) inches out of the bowl onto the main roof deck, and under the roof drain flashing ring. The 9-course flashing shall consist of one (1) layer of asbestos roofing felt, one (1) layer of 3lb. lead and two (2) layers of asbestos roofing felt all placed in the foregoing order, and each embedded in plastic cement. Over the top layer of felt, apply a heavy coat of plastic cement and embed aggregate surfacing. Disassemble and reassemble existing clamping rings, strainers and associated hardware as necessary for proper installation of the new work.

10.5 Built-up Base Flashing and Seals:

10.5.1 Follow the approved built-up bituminous roofing material manufacturer's printed instructions for installation of flashings and seals for the system provided, except that the minimum requirements specified herein shall govern.

10.5.1.1 All masonry, concrete and metal surfaces to be flashed or stripped-in shall be clean and dry. Primer application shall be full and complete, and carried slightly beyond the point where the flashings will terminate.

10.5.1.2 Base Flashings: Built-up base flashings at intersections of roofs with walls, curbs, raised edges, and similar situations, shall consist of one layer of asbestos roofing felt, and one layer of reinforced asbestos flashing felt. Cementing agent shall be bituminous plastic cement, as recommended by the supplying manufacturer for flashing usage, and applied in uniform 1/16 inch thick coatings to all contacting surfaces (both sides). Extend flashings to within approximately 1-1/2 inches of top of curbs or of reglets or as otherwise shown or required by conditions. Press flashing felts firmly into place, so that a uniformly well attached, and completely laminated membrane results. Nail top edge and laps as directed by supplying manufacturer's specification. Seal all laps, corners and top edges of flashings with a 3-course strip-in of sufficient width to seal top edge adequately. Cover all nail beads. Strip-in shall be bonded to the substrate surfaces. Apply two coats of aluminum paint to all surfaces of base flashings exposed to the weather.

10.5.1.3 Seals: Flanges of metal work to be incorporated into the roofing system shall be set into a uniform 1/16 inch minimum thick bed of bituminous plastic cement, applied to the previously uncoated roof or flashing membrane. Seal all metal flanges with a 5-course seal consisting of one ply of coated glass cloth, and one ply of asbestos roofing felt alternately set into, and coated with troweled applications of an approved type of bituminous cement. Minimum width of the glass fabric shall be at least 4 inches wider than the metal flange. Cut asbestos roofing felt a minimum 2 inches wider than the glass fabric. Always place felt over fabric. Use wider fabric and felts as required by conditions encountered.

11. INSULATION (BOARD)

11.1 Lay insulation board in hot asphalt mopped full width under each unit of insulation, using 30 pounds per square.

11.2 Apply insulation with long joints continuous and short joints staggered. Mop asphalt full surface with asphalt and apply board insulation.

\* \* \* \* \*

OF-17 (NOV. 60)

GSA CIRCULAR NO. 229

# IMPORTANT — NOTICE TO BIDDER

*On the envelope submitting your bid, it is imperative:*

1. That your name and address appear in the UPPER left corner.
2. That the bottom portion of this label be filled in and pasted on the LOWER left corner.

5017-101

<b>S E A L E D</b>	INVITATION NO.	<b>B I D E E E</b>
	DATE OF OPENING	
	TIME OF OPENING	
	A. M. P. M.	
	BID FOR	

# SPECIFICATION AND BID FORMS

PROJECT

ROOF REPLACEMENT, SW WING  
CIA HEADQUARTERS BUILDING  
MC LEAN, VA

PROJECT NO.

VOLUME

II OF II

CONTRACT NO.

GS-03B-63544



**GENERAL SERVICES ADMINISTRATION**

*Public Buildings Service*

<p>Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7</p> <p><b>TITLE PAGE—BID FORMS</b> (CONSTRUCTION CONTRACT)</p>	<p>REFERENCE PROJECT NO. . CONTRACT NO. . <b>GS-03B-63544</b></p> <p>DATE OF INVITATION <b>JAN 26 1977</b></p>
<p>PROJECT TITLE AND LOCATION</p> <p>Roof Replacement, Southwest Wing CIA Headquarters Building McLean, Virginia</p>	<p>Modifications where applicable have been included with these bid forms. All bid forms - Standard Form 21, Supplements (if any), Representations and Certifications - Standard Form 19B, and Bid Bond - Standard Form 24, (if used) should be detached, filled in and executed. One copy of each form should be retained by the bidder, and all other copies shall be submitted in accordance with the directions on the Bid Form.</p>
<p>ISSUING OFFICE</p> <p><b>GENERAL SERVICES ADMINISTRATION PUBLIC BUILDINGS SERVICE</b></p>	

INVITATION FOR BIDS.....	STANDARD FORM 20
INFORMATION REGARDING BUY AMERICAN ACT.....	GSA FORM 1735
NOTICE TO BIDDER.....	GSA FORM 1903
INSTRUCTIONS TO BIDDERS.....	STANDARD FORM 22
CONSTRUCTION CONTRACT.....	STANDARD FORM 23
BID BOND.....	STANDARD FORM 24
BID FORM.....	STANDARD FORM 21
REPRESENTATIONS AND CERTIFICATIONS.....	STANDARD FORM 19-B

**CAUTION—LATE BIDS.**—See the clause entitled "Late Bids and Modifications or Withdrawals," Standard Form 22, Instructions to Bidders (Construction Contract), which provides that late bids and modifications or withdrawals thereof sent through the mails ordinarily will be considered only if timely mailed by REGISTERED MAIL or by CERTIFIED MAIL for which a POSTMARKED RECEIPT has been obtained as specified in such provision.

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STANDARD FORM 20  
JANUARY 1961 EDITION  
GENERAL SERVICES ADMINISTRATION  
FED. PROC. REG. (41 CFR) 1-16.401

REFERENCE

GS-03B-63544

DATE

JAN 26 1977

**INVITATION FOR BIDS**  
(CONSTRUCTION CONTRACT)

NAME AND LOCATION OF PROJECT

Roof Replacement, Southwest Wing  
CIA Headquarters Building  
McLean, Virginia

DEPARTMENT OR AGENCY

General Services Administration, Reg. 3  
Public Buildings Service  
7th and D Streets, SW  
Washington, D.C. 20407

BY (Issuing office)

General Services Administration, Public Buildings Service, Region III, Contract  
Services Branch - 3POC, 7th and D Streets, SW., Washington, D.C.

Scaled bids in

DUPLICATE

for the work described herein will be received until

at 1:30 PM General Services Administration, PBS  
Room 1701 - ROB  
Washington, D.C. 20407

FEB 24 1977

and at that time publicly opened.

Information regarding bidding material, bid guarantee, and bonds

BID GUARANTEE SHALL BE IN THE AMOUNT OF 20% OF THE AMOUNT OF YOUR BID

BIDS ARE RESTRICTED TO SMALL BUSINESS SET ASIDE

Description of work

Roof Replacement, Southwest Wing of the CIA Headquarters  
Building, McLean, Virginia.

BEST COPY

*Available*

GENERAL SERVICES ADMINISTRATION  
PUBLIC BUILDINGS SERVICE

INFORMATION REGARDING BUY AMERICAN ACT

(a) The Buy American Act (41 U.S.C. 101-104) generally requires that only domestic construction material be used in the performance of this contract. (See the clause entitled "Buy American" in the GSA Form 25A, General Provisions, Construction Contracts.) This requirement does not apply to the construction material or components listed in the clause entitled "Buy American Act" of GSA Form 25A, General Conditions, section I of the contract.

(b) (1) Furthermore, bids or proposals offering use of additional nondomestic 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 reasonable available commercial quantities and of satisfactory quality is unavailable. Reliable evidence shall be furnished justifying such use of additional nondomestic construction material.

(2) Where it is alleged that use of domestic construction material would unreasonably increase the cost:

(i) 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 nondomestic 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 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 added prices, any available comparable domestic construction material, so as to avoid the possibility that failure of a nondomestic construction material to be acceptable, under (1) above, will cause rejection of the entire bid.



Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7  
NOTICE TO BIDDER  
(Construction Contract)

IMPORTANT - PLEASE READ CAREFULLY

To insure the submission of complete bids and to avoid omissions that could result in your bid being nonresponsive, please check each of the following:

1. Have you rechecked your estimate? Are all items and amounts included?
2. Is bid amount entered in proper space provided on the SF-21, Bid Form (Construction Contract)?
3. Have you completed all Alternates, Separated Prices and Unit Prices (if any) on the SF-21, Bid Form?
4. Have you acknowledged, on the SF-21, Bid Form, receipt of all amendments (if any) issued to the specifications?
5. Have you properly completed and checked the appropriate box of each bidder representation and certification on the SF 19-B, Representations and Certifications?
6. Have you properly completed the supplements to SF-21, Bid Form, including the List of Subcontractors and Competency of Bidder Certification (where required)?
7. Do your listed subcontractors meet all applicable qualifications requirements?
8. Does your bid guarantee conform to the requirements of SF-20, Invitation for Bids and SF-22, Instructions to Bidders?
9. Have you read the clause "Termination for Default - Damages for Delay - Time Extensions," SF 23-A, General Provisions (Construction Contract), on delays and damages?   

Submission and acceptance of your bid commits you to complete your contract within the time specified. The contract may provide for assessment of liquidated damages for each day's delay beyond the contract time, for which a time extension is not granted.
10. Have you read the "Equal Opportunity Clause," SF 23-A and do you fully understand your obligations regarding this requirement?
11. Have you familiarized yourself with the applicable contracting provisions covering Utilization of Small Business Concerns and the Small Business Subcontracting Program.
12. Have you properly complied with the appendixes to SF-21, Bid Form, including (if appended) the Notice of Requirements for Submission of Affirmative Action Plan to Ensure Equal Employment Opportunity?
13. Have you familiarized yourself with the regulations issued by the Secretary of Labor (see Clause No. 2 of SF 19-A, pursuant to section 107 of the Contract Work Hours and Safety Standards Act, entitled: "Safety and Health Regulations for Construction," (29 Code of Federal Regulations, Part 1926 and Occupational Safety and Health Standards 29 Code of Federal Regulations, Part 1910)
14. CAUTION - LATE BIDS - See SF-22, Instructions to Bidders, clause entitled "Late Bids and Modifications or Withdrawals" which provides that late bids and modifications or withdrawals thereof sent through the mails ordinarily will be considered only if timely mailed by REGISTERED MAIL or by CERTIFIED MAIL for which a POSTMARKED RECEIPT has been obtained.

SPECIAL ATTENTION - BIDDERS

## 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.

MODIFICATION OF INSTRUCTIONS TO BIDDERS  
(STANDARD FORM 22 - October 1969)

1. CLAUSE 3

Add the following paragraph:

"As part of the procedure for determining the responsibility of the apparent low bidder as to his ability to conform to the Equal Opportunity Clause, he may be required to visit the office of the Contracting Officer to discuss his Equal Employment Opportunity Program and provide such assurances as the Contracting Officer may require."

2. CLAUSE 7

Delete Clause 7 in STANDARD FORM 22 and substitute in lieu thereof the following:

7. LATE BIDS, MODIFICATIONS OF BIDS, OR WITHDRAWAL OF BIDS

(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 after receipt at the Government installation.

(b) Any modification of 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 late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. Postal Service postmark on the wrapper or 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 that is readily identifiable without further action has having been supplied and affixed on the date of mailing by employees of the U.S. Postal Service.)

(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.

\* \* \* \* \*

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7  
STANDARD FORM 27-1  
JANUARY 1961 EDITION  
GENERAL SERVICES ADMINISTRATION  
FED. PROC. REG. (41 CFR) 1-16.401

**CONSTRUCTION CONTRACT**  
(See instructions on reverse)

**GS-03B-63544**  
DATE OF CONTRACT

NAME AND ADDRESS OF CONTRACTOR

CHECK APPROPRIATE BOX

- Individual
- Partnership
- Joint Venture
- Corporation, incorporated in the State of \_\_\_\_\_

DEPARTMENT OR AGENCY

**General Services Administration, Public Buildings Service, Region III,  
Seventh and D Streets, SW., Washington, D.C.**

CONTRACT FOR (Work to be performed)

**Roof Replacement, Southwest Wing**

PLACE

**CIA Headquarters Building, McLean, Virginia**

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: **Specification for Roof Replacement, Southwest Wing of the CIA Headquarters Building, McLean, Virginia dated**

WORK SHALL BE STARTED

WORK SHALL BE COMPLETED

After Notice to Proceed is given

**Within Seventy Five (75) calendar days from date of receipt of notice to proceed**

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Alteration. 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  
GENERAL SERVICES ADMINISTRATION

CONTRACTOR

By Kenneth A. Jacobson  
Director, Repair & Alteration Division  
Contracting Officer

\_\_\_\_\_  
(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 authority to act on behalf of the Contractor.

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7 <b>BID BOND</b> (See Instructions on reverse)					DATED (Must not be later than bid opening date)	
STANDARDS FORM NO. 34 JUNE 1964 EDITION GENERAL SERVICES ADMINISTRATION FED. PROC. REG. (41 CFR) 1-16.801						
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 and business address)						
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. _____ (Seal)		2. _____ (Seal)		Corporate Seal	
Name(s) & Title(s) (Typed)	1. _____		2. _____			
INDIVIDUAL SURETIES						
Signature(s)	1. _____ (Seal)		2. _____ (Seal)			
Name(s) (Typed)	1. _____		2. _____			
CORPORATE SURETY(IES)						
SURETY A	Name & Address			STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1. _____ (Seal)		2. _____ (Seal)		
	Name(s) & Title(s) (Typed)	1. _____		2. _____		
Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7						



CORPORATE SURETIES (Continued)

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

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7 <b>BID BOND</b> (See Instructions on reverse)					(Must not be later than bid opening date)					
STANDARD FORM 24 JUNE 1964 EDITION GENERAL SERVICES ADMINISTRATION FED. PROC. REG. (41 CFR) 1-16.801					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 and business address)										
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. _____			2. _____			Corporate Seal		
		(Seal)			(Seal)					
Name(s) & Title(s) (Typed)		1. _____			2. _____					
INDIVIDUAL SURETIES										
Signature(s)		1. _____			2. _____					
		(Seal)			(Seal)					
Name(s) (Typed)		1. _____			2. _____					
CORPORATE SURETY(IES)										
SURETY A	Name & Address					STATE OF INC.		LIABILITY LIMIT		
	Signature(s)		1. _____			2. _____			Corporate Seal	
			(Seal)			(Seal)				
Name(s) & Title(s) (Typed)		1. _____			2. _____					
Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7										

CORPORATE SURETIES (Continued)

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

Bid bond should be typed in the space provided.

STANDARD FORM 21  
DECEMBER 1965 EDITION

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

GENERAL SERVICES ADMINISTRATION  
FED. PROC. REG. (41 CFR) 1-16.401

**BID FORM**  
**(CONSTRUCTION CONTRACT)**

GS-03B-63544

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

DATE OF INVITATION

NAME AND LOCATION OF PROJECT

NAME OF BIDDER (*Type or print*)

Roof Replacement, Southwest Wing  
CIA Headquarters Building  
McLean, Virginia

GENERAL SERVICES ADMINISTRATION, REGION 3  
PUBLIC BUILDINGS SERVICE  
TO: CONTRACT SERVICES BRANCH, 3POC  
WASHINGTON, D.C. 20407

\_\_\_\_\_  
(Date)

In compliance with the above-dated invitation for bids, the undersigned hereby proposes to perform all work for Roof Replacement, Southwest Wing of the CIA Headquarters Building, McLean, Virginia.

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)

LUMP SUM BID AMOUNT \_\_\_\_\_

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

The undersigned agrees that, upon written acceptance of this bid, mailed or otherwise furnished within 60 calendar days ( 5 calendar days unless a different period be 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 Three (3) calendar days after the date of receipt of notice to proceed, and to complete the work within Seventy Five (75) 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:*

SEALED BIDS ARE TO BE SUBMITTED IN DUPLICATE  
AT 1:30 PM TO:  
General Services Administration, Region 3  
7th and D Streets, SW., Room 1701  
Washington, D.C. 20407

ON THE LEFT HAND CORNER OF ENVELOPE  
SHOW:  
Contract Number  
Date and Time set for opening of bids  
Work Involved

(Construction and Architect-Engineer Contract)  
(For use with Standard Forms 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-Aluts."

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)
------------------------	--

(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.

STANDARD FORM 21  
DECEMBER 1965 EDITION  
GENERAL SERVICES ADMINISTRATION  
FED. PROC. REG. (41 CFR) 1-16.401

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

**BID FORM**  
**(CONSTRUCTION CONTRACT)**

GS-03B-63544

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

DATE OF INVITATION

NAME AND LOCATION OF PROJECT

NAME OF BIDDER (*Type or print*)

Roof Replacement, Southwest Wing  
CIA Headquarters Building  
McLean, Virginia

GENERAL SERVICES ADMINISTRATION, REGION 3  
PUBLIC BUILDINGS SERVICE  
TO: CONTRACT SERVICES BRANCH, 3POC  
WASHINGTON, D.C. 20407

(Date)

In compliance with the above-dated invitation for bids, the undersigned hereby proposes to perform all work for Roof Replacement, Southwest Wing of the CIA Headquarters Building, McLean, Virginia.

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)

LUMP SUM BID AMOUNT \_\_\_\_\_

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7



The undersigned agrees that, upon written acceptance of this bid, mailed or otherwise furnished within 60 calendar days ( calendar days unless a different period be 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 Three (3) calendar days after the date of receipt of notice to proceed, and to complete the work within Seventy Five (75) 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:*

SEALED BIDS ARE TO BE SUBMITTED IN DUPLICATE  
AT 1:30 PM TO:  
General Services Administration, Region 3  
7th and D Streets, SW., Room 1701  
Washington, D.C. 20407

ON THE LEFT HAND CORNER OF ENVELOPE  
SHOW:  
Contract Number  
Date and Time set for opening of bids  
Work Involved

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)
------------------------	--

(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.

STANDARD FORM 21  
DECEMBER 1965 EDITION  
GENERAL SERVICES ADMINISTRATION  
FED. PROC. REG. (41 CFR) 1-16.401

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

**BID FORM**  
**(CONSTRUCTION CONTRACT)**

GS-03B-63544

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

DATE OF INVITATION

NAME AND LOCATION OF PROJECT

Roof Replacement, Southwest Wing  
CIA Headquarters Building  
McLean, Virginia

NAME OF BIDDER (Type or print)

GENERAL SERVICES ADMINISTRATION, REGION 3  
PUBLIC BUILDINGS SERVICE  
TO: CONTRACT SERVICES BRANCH, 3POC  
WASHINGTON, D.C. 20407

(Date)

In compliance with the above-dated invitation for bids, the undersigned hereby proposes to perform all work for Roof Replacement, Southwest Wing of the CIA Headquarters Building, McLean, Virginia.

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)

LUMP SUM BID AMOUNT \_\_\_\_\_

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

The undersigned agrees that, upon written acceptance of this bid, mailed or otherwise furnished within 60 calendar days ( calendar days unless a different period be 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 Three (3) calendar days after the date of receipt of notice to proceed, and to complete the work within Seventy Five (75) 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 ( <i>Type or print</i> )	FULL NAME OF ALL PARTNERS ( <i>Type or print</i> )	
BUSINESS ADDRESS ( <i>Type or print</i> ) ( <i>Include "ZIP Code"</i> )		
BY ( <i>Signature in ink. Type or print name under signature</i> )		
TITLE ( <i>Type or print</i> )		

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

SEALED BIDS ARE TO BE SUBMITTED IN DUPLICATE  
AT 1:30 PM TO:  
General Services Administration, Region 3  
7th and D Streets, SW., Room 1701  
Washington, D.C. 20407

ON THE LEFT HAND CORNER OF ENVELOPE  
SHOW:  
Contract Number  
Date and Time set for opening of bids  
Work Involved

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)

(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

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.

OF-17 (NOV. 60)

GSA CIRCULAR NO. 229

# IMPORTANT — NOTICE TO BIDDER

*On the envelope submitting your bid, it is imperative:*

1. That your name and address appear in the UPPER left corner.
2. That the bottom portion of this label be filled in and pasted on the LOWER left corner.

5017-101

<b>S E A L E D</b>	INVITATION NO	<b>B I D E N T</b>
	DATE OF OPENING	
	TIME OF OPENING A. M. P. M.	
	BID FOR	



# WASTE ENERGY RECOVERY STUDY

PHASE I REPORT

HEADQUARTERS BUILDING  
Mc LEAN, VIRGINIA

CONTRACT XG-4238/5

# WASTE ENERGY RECOVERY STUDY

HDR

**HENNINGSON, DURHAM & RICHARDSON**

ENGINEERING • ARCHITECTURE • PLANNING • SYSTEMS • ECONOMICS

# HENNINGSON, DURHAM & RICHARDSON

ARCHITECTURE · ENGINEERING · PLANNING · SYSTEMS · ECOSCIENCES

5454 Wisconsin Avenue  
Washington, D.C. 20015  
February 24, 1977

Central Intelligence Agency  
Washington, D.C. 20505

Attention:   
Chief, Real Estate and Construction Div., OL

Contract No: XG-4238/5  
Waste Energy Recovery Study

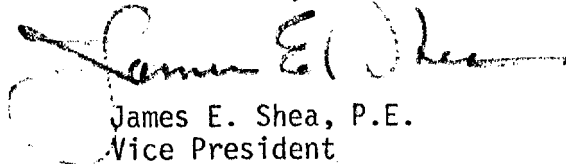
Gentlemen:

In compliance with requirements of paragraph 2 of special provisions of subject architect/engineer contract, we submit herewith twenty-five copies of a progress report covering Phase I activities.

Although not included in the Progress Report, some of the work required in subsequent phases of the Study as well as certain additional tasks pertaining to fuel combustion tests have also been completed.

Very truly yours,

HENNINGSON, DURHAM & RICHARDSON  
OF MARYLAND, INC.



James E. Shea, P.E.  
Vice President

JES:vsj

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## I. INTRODUCTION

An earlier study (ref. no.1) of heating equipment in the Powerhouse revealed that inadequate boiler operation has been experienced during the summer season under minimal steam load conditions. Analysis showed that the design of the boilers and related firing equipment was such that stable, automatic operation of the plant cannot be realized at light load conditions. It was recommended that a new automatic package-unit oil-fired boiler, sized for summer load conditions be provided. It was anticipated that this action would result in improved reliability of plant operation, and reduced costs of fuel, maintenance and operating labor.

In 1972 a technical analysis (ref. no.2) was made of the existing classified waste disposal system. It was found that the system met all Agency criteria for reliability. However, from the standpoint of

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The fact that an energy crisis has developed to an alarmingly real extent in this country is readily apparent. On a national scale it is anticipated that the increasing energy demand is expected to top the 200 quadrillion BTU mark by the end of this century. One potential source of energy that has been neglected in this country is that which can be produced during the disposal of solid waste. Since typical solid waste consists primarily of paper it possesses a relatively high BTU value. Several different solid waste processing systems have been developed during the past several years which produce energy in the form of electricity, steam, gas or oil.



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## V. SITE VISITS

### a. Site No. 1 - Supplementary Fuel Production and Firing - St. Louis, Missouri

The City of St. Louis, Missouri, and the Union Electric Company in April of 1972 began a test program to determine the feasibility of burning processed household refuse as an auxiliary fuel in a coal-fired electric utility boiler. The solid waste processing facility required \$2,500,000 financing from the City of St. Louis and the U.S. Environmental Protection Agency. Reported additional one to two million dollar revamping costs for the boiler conversions were financed by Union Electric.

The solid waste processing facility is located immediately adjacent to one of the City incinerators, while the boiler firing facilities are located at the Union Electric's Meramec Plant, approximately 20 miles away. The City of St. Louis has the responsibility for processing the household refuse and transporting the combustible fraction to the Meramec Plant. The design capacity for the prototype facility was set at approximately 325 tons per 8 hour day, based on supplying the Meramec Plant supplementary fuel equal to 10 percent of the coal requirements during a 24 hour period.

Household refuse is delivered to the processing plant in conventional collection vehicles and weighed on the incinerator scales next door.

The material is deposited on the floor of the receiving building and then pushed by rubber-tired tractors onto a belt conveyor system ahead of the shredder. The shredder is a horizontal shaft

hammermill powered by a direct drive 1250 HP - 900 RPM motor. The milled materials are rated at 85% less than 1 1/2 inches in size.

The shredded materials are conveyed to the air classifier metering and surge bin; thus a controlled feed into the air classifier entrance is achieved. The light fraction of the shredded refuse which is largely burnable is transported upwards in the air flow to the cyclone separator where the materials are removed from the air stream for transporting via a conveyor belt to the storage bin. The heavy fraction separating in the air classifier falls through the air stream onto a conveyor for transporting to a magnetic separator for recovery of the ferrous portion. A 100 HP vertical nuggetizer mill increases the density of the ferrous metal. The remaining portion of the heavy stream is conveyed into an open top dump truck and is transported approximately one mile to an old rock quarry landfill.

The light fraction is withdrawn from the 400 ton Miller-Hofft storage bin by means of a screw conveyor located above the floor and this material is then compacted into a 75 cubic yard self-unloading transfer trailer for transport approximately 20 miles to the Union Electric Plant at Meramec.

Union Electric Company's responsibility begins at the point the material is transferred from the packer truck thru the pneumatic feeder system into their surge bin.

The surge bin is equipped with four sweep bucket trains and four drag chain unloading conveyors built into troughs in the bin floor.

During the first 12 to 18 months, the magnetic removal of ferrous metals was the only treatment prior to firing in the boiler. This permitted glass and other solid non-magnetic particles to occasionally cause jamming in the pneumatic feed system at the Meramec plant and steel piping elbows in the pneumatic transport system were subjected to abrasive wear, causing failures to occur regularly every six to eight weeks. Also, excessive amounts of non-combusted materials were removed from the boiler bottom ash. Therefore, late in 1973, an air density separation system, commonly referred to as an air classifier, was added to the existing solid waste process facility.

The classifier has reportedly alleviated the mechanical jamming and bottom ash problems. The abrasive wear problem is being studied and attempts toward a solution have included specially designed elbows with replaceable monel steel back plates.

One significant informational item sought during the visit concerned clarification of the air emissions test results that had recently been performed by the U.S. Environmental Protection Agency at the Meramec facility. Pages 185 and 186 of the September 16, 1974 Solid Waste Report presented material on the air emissions testing performed at the Meramec Plant. The information contained therein indicated inconclusive results and recommended additional air emissions tests be performed. It was found, however, that additional air emission testing would not soon be possible in that the existing firing equipment at the Meramec power plant site was scheduled to be removed shortly. Removal of the firing equipment resulted from Union Electric's assess-



ment that the pilot project was a success coupled with the removal of financial support by the Federal government for the air emission testing of the project.

An additional problem noted during the visit to the plant concerned the possible pollution of the two adjacent rivers as a result of the ash disposal site adjoining the plant. In many areas, ashes are classified as Group I material requiring disposal in a Class I landfill facility. The ashes being deposited behind the river dikes, in addition to creating potential leaching problems, are subject to possible water inundation during flooding periods.

Additional relevant details noted during the inspection of the city processing plant are summarized as follows:

1. The design of the receiving area at the City plant does not permit sufficient storage during periods of breakdown; the incinerator pit in the adjacent building must be used during such periods.
2. Only household refuse was being deposited in the receiving building. No large bulky items whatsoever were noticeable in the large pile of material (approximately 150 to 200 tons) awaiting processing.
3. The 1250 HP Gruendler horizontal shredder was producing a very acceptable product. The foreman for the processing plant indicated the City had not experienced any considerable down periods attributable to the shredder. No operation or maintenance cost figures were available from the City for the shredder operation.
4. The Rader Pneumatic air classifier system, installed in

hopes of alleviating the jamming and abrasion problems mentioned earlier, cost approximately \$200,000. Mr. Robert Jones, Manager Resource Recovery for Rader Pneumatics, indicated the proportionally large air classifier system was the result of having to splice into the existing processing plant. An air classification system designed into a new plant would be considerably reduced in size.

5. There appeared to be little interest shown in the heavy fraction materials and ferrous retrieval after separation in the air classifier. A visit to the site where the heavy fraction was being disposed of disclosed a very high metallic content of both ferrous and non-ferrous metals.

6. A discussion with the plant foreman indicated twelve men were working at the processing facility, but that the plant had been averaging only 200 to 250 tons per day of throughput refuse.

Based upon their review and evaluation of the performance of the prototype refuse auxiliary program, the Union Electric Company has announced plans for development for an \$80,000,000 Solid Waste Utilization System (SWUS) designed to process 8,000 tons per day from a total tributary population of 2,500,000 persons. To date Union Electric has already awarded contracts totaling over 30,000,000 dollars for component parts of the system including \$4 million for surge bins from Atlas Systems, Inc., Spokane, Washington; \$4 million for 11 air classifiers and waste transport systems from Rader Pneumatics Inc., Memphis, Tenn.; \$8 million for 14 hammermills from Williams Crushers and Pulverizer Co., Inc., St. Louis, Mo.; and \$7 million for 450 rail containers, stationary compactors and

container ejectors from Dempster Dumpsters Systems, Knoxville, Tenn. Union Electric's commitment was in part predicated on the implied success of having processed, since April, 1972, approximately 50,000 tons of St. Louis household material. It is worthy of note that 50,000 tons of material over that time period represents only 45 tons per day of material processed through a plant designed to handle 325 tons per day.

By Districts' calculations, the 8000 ton per day process design currently being funded would appear to contain a substantial excess of capacity. Using an average of nine pounds per person per day for total overall solid waste production for the area, and estimating that approximately 55 percent of this total is suitable for the St. Louis processing system, indicates that only 6200 tons per day would be available. The basis for these calculations stem from work performed by the Districts' staff for the Los Angeles County area.

On May 28, 1975, Mr. David L. Klumb, Manager for the St. Louis project, presented a paper in San Francisco at the Conference on Resource Recovery sponsored by the National League of Cities and U.S. Conference of Mayors. Mr. Klumb's paper presented considerably more statistics concerning the proposed Solid Waste Utilization System. Mr. Klumb, in reply to a question from the audience concerning the financing of the proposed program, indicated that unless the project received 100% tax exempt status for issuance of Corporate Development Bonds, that the proposal would not proceed further. As of October 6, 1975, Mr. Klumb's office reported that the Internal Revenue Service had not as yet ruled on the tax issue, but Union Electric expected a decision shortly. For this and other unenumerated reasons, the project is currently being

held in abeyance.

It is believed that the refuse auxiliary fuel system project reviewed in St. Louis in its present state of development, offers little potential for application in the Los Angeles County area for the following reasons:

1. Absence of coal-fired boilers or power plants with ash handling capabilities in the Los Angeles area.
2. Inconclusive, but negative, air emissions test results.
3. Inconclusive operational costs were reported, varying from \$2.58 per ton to \$14.80 per ton.
4. Inability of the system to provide assurance for continuous refuse disposal.
5. Unproven storage facility capabilities for shredded refuse.

b. Site No. 2 - Resource Recovery Facility at Ames, Iowa:

The Ames facility, designed by Gibbs Hill, Durham & Richardson, involves processing of municipal solid wastes into usable fuel for supplemental firing with coal in an existing electric power generating plant.

The power plant has three boilers: a Riley installed in 1951, able to deliver 95,000 lb/hr of steam at 710 psi and 825°F; a Union Iron Works unit installed in 1958, delivering 125,000 lb/hr at 725 psi and 825°F; and a Combustion Engineering unit installed in 1968, producing 360,000 lb at 900 psi and 900°F. All three can use either pulverized coal or gas for fuel. The first two have multiple cyclone dust-collection equipment. The third uses an American electrostatic precipitator to remove the ash. Detailed characteristics of the boilers are set forth in Appendix Item A-4.

The extraction of the combustible fraction from the waste flow involves a system of devices designed to function under severe materials handling constraints. At Ames, the combustible, refuse derived fuel (RDF) is transported via pneumatic pipeline to an adjacent storage bin at the power plant.

The Ames facility has a capacity of 50 tons per hour which permits processing of an average day's waste in about 5 1/2 hours. The rest of each working day is spent maintaining the plant's equipment. Capacity for future growth in waste generation can be accommodated by working a two shift cycle at the plant.

Trucks entering the resource recovery facility, are weighed, and then dump their contents onto the 100' x 160' enclosed storage area. A front end loader pushes the material across the concrete floor and onto a conveyor feeding the first stage shredder. Solid waste is shredded by a two stage process in preparing a RDF. This homogenizes the solid waste, in order to make air classification of the waste into heavy and light particles more efficient. The light particles are the combustibles, which are sent to the power plant, while the heavy particles undergo further separation.

Shredding is an expensive process which introduces a large recurring maintenance expense to the RDF-resource recovery process. Many highly abrasive materials are routinely discarded in municipal solid waste. This inevitably results in increased maintenance of the hammermills which rotate within the shredder to pulverize the waste. Engine blocks, scrap steel products, and other massive metallic objects cause wear on shredders, in addition to paper, which is a highly abrasive material. There is a constant danger of explosion inside shredders, as volatile materials in waste can be activated by metal sparks produced during shredding. Explosion suppression devices, designed to chemically suppress explosions, and specially constructed shredder housings are used to minimize the danger of shredder explosions.

An electromagnet is employed to remove ferrous metals, following first stage shredding. Ferrous metals are stored in large trailers for shipment to steel processing firms. After extraction of the ferrous metals, waste undergoes secondary shredding. Reduction of nominal

particle size, to less than one inch, is accomplished in this process. Two stage shredding was chosen to minimize plant downtime and reduce maintenance costs. After secondary shredding, the processed waste is fed to a surge bin to await controlled feeding to the air classification system.

The air density classifier uses an updraft air flow to separate the shredded refuse into a light and heavy fraction. The shredded refuse enters the classifier, where the combustible light fraction is carried away by the air stream, while gravity-effects cause the non-combustible heavy fraction to drop out. The light fraction is directed to a cyclone, where the refuse is removed from the air stream of the classification system. Delivery of the light fraction to the power plant is accomplished through a pneumatic pipeline to an Atlas storage bin, 84 feet in diameter and having a capacity of 500 tons.

Storage of the RDF is a problem due to its moisture content and potential for bridging, inside any container. Rapid decomposition of organic material and the subsequent release of methane gas must also be anticipated in the design and operation of a storage facility. The Atlas refuse storage bin is specially designed to discourage bridging by a unique live bottom system which keeps the refuse in constant motion. Capacity of the storage bin is a function of plant capacity and the desire to permit flexibility in scheduling waste processing, while providing a continuous supply of fuel for the power plant. Thus, the 500 ton capacity permits the power plant to operate for three days while the processing plant is shutdown. Processed waste enters the

top of the bin and falls to form a conical pile at the base. Fuel is fed into the power plant from the bottom of the Atlas bin by a bucket conveyor system which removes material from the perimeter of the base, gradually proceeding inward. It is then fed directly to the boilers as described herein before.

The boiler modifications cost approximately \$180,000 out of the \$5,300,000 total project cost. The modifications were minimal on the Combustion Engineering tangentially fired pulverized coal unit. The refuse nozzle was inserted in an auxiliary air compartment at each of the four burner corners. Each of the two spreader stoker-type coal fired boilers required more modifications. Wall openings above the coal spreaders for the refuse nozzles had to be provided and quantity of overfire air was significantly increased. The rate of firing refuse on each boiler is controlled by changing the feeder speeds at the base of the Atlas storage bin.

The non-combustible, heavy fraction is subject to mechanical separation in a rotating trommel screen, designed to segregate the material into four size categories. Sand and glass are separated by this mechanical process for use in street maintenance operations. Non-ferrous metals, including aluminum, predominate in one of the size classifications. The aluminum separator operates on an eddy current principle similar to a linear induction motor. Aluminum particles, mostly can stock, develop polarity and are repulsed from the conveyor belt.

In the initial mode of operation the refuse derived fuel is fired in an amount equal to about 12 percent of the total fuel burned in the power



plant's largest boiler. After a five year evaluation period, this percentage may be increased, provided that no serious boiler corrosion has taken place.

In operation, since July 1975, the Ames resource recovery facility has performed successfully. The plant has reliably processed 150-200 tons per day of municipal solid waste. Initial operations revealed that the plant was producing a fuel particle too large for efficient combustion in the electric utility's boilers. This has since been remedied through slight modification to the second stage shredder. Refinements in the non-ferrous metals separation system have been required, though it is presently operating according to specifications. The air density classification system is efficiently separating the non-combustibles from the waste flow to produce a RDF predominantly composed of combustible material. Besides the high maintenance costs associated with any RDF project that employs extensive shredding of waste, the materials handling problems are severe. In some instances, the problems associated with transporting the waste to and from the machines, in an acceptable form, are greater than the operations of the processing machines themselves.

c. Sites No's 3 & 4 - U.S. Navy Facilities at Public Works Center, Norfolk, Virginia and Norfolk Naval Base, Portsmouth, Virginia.

Inspection of U. S. Navy facilities at Salvage Fuel Plant, Public Works Center, Norfolk, Virginia and Norfolk Naval Base, Portsmouth, Virginia revealed that both installations involved Mass-burning techniques using steam generators of the waterwall furnace type construction installed for production of steam to interconnect with an existing district heating system.

In each of these plants refuse collected from naval shore activities and ships in the area is transferred to the plant by truck, where it is dumped into a storage pit. Refuse is fed to charging hoppers by a traveling crane.

In regard to the Salvage Fuel Plant, various types of incinerators and boilers were evaluated during the preliminary engineering phase and it was concluded that a waterwall furnace, rather than a conventional refractory-lined furnace would be the most efficient. The facility was completed in May 1967 at a cost of \$2,220,000. It was the first steam generating waterwall furnace to be built in the United States for the incineration of refuse. The plant is operated 5 days per week, 24 hours per day, with one unit in service. As the boilers are alternated each week, the out-of service unit is cleaned of siftings and regular maintenance is accomplished. Steam production averages 40,000 pounds per hour and is used to supplement other steam sources aboard the Naval Station. The operation is primarily oriented to the

incineration of available refuse while producing as much steam as possible. Over 100 tons of refuse is burned each day.

The second installation, located at the Norfolk Naval Base, Portsmouth, Virginia was under construction, but nearing completion at the time of the visit. The plant includes two boilers designed to burn refuse and equipped with oil burners and an oil storage tank for burning No. 6 oil as a supplementary fuel. Boiler characteristics are as follows:

Manufacturer: E. Keeler Company  
Steam Capacity (continuous): 30,000 lb/hr  
Operating Pressure (Present): 125 psig  
Operating Pressure (Future): 175 psig  
Design Pressure: 200 psig  
Steam Temperature: Saturated  
Feedwater Temperature: 240°F  
Furnace Volume: 3,096 cu.ft.  
Heating Surface (per ABMA Standards)  
Waterwall: 1,020 sq.ft. (Flat Proj.)  
Convection: 2,494 sq.ft. (Full Cir.)  
Total: 3,514 sq.ft. (Flat Proj.)  
Economizer: 1,136 sq.ft. (Full Cir.)

Included in the plant auxiliary equipment are electrostatic precipitators, ash removal apparatus, de-aerating feedwater heaters and feed pumps, induced draft fans, water treatment equipment, refuse storage pit, and crane and hoist for charging the furnaces. The plant is sufficiently automated that it can be operated by a staff of 20 men: Plant Supervisor, 3 Shift Foremen, 3 Water Treatment Technicians, 3 Boiler Operators, 3 Crane Operators and miscellaneous support personnel.

Representatives of the E. Keeler Company were contacted to ascertain the suitability of their water-tube steam generator, type MK for

burning the refuse-derived fuel described hereinbefore. This boiler is equipped with traveling grates and air-operated fuel distributing spouts arranged for uniform fuel combustion in suspension. The recommended boilers would be two-drum, bent-tube, water-tube steam generators with steel encased and insulated setting, constructed in accordance with the A.S.M.E. Construction Code. Each boiler unit should be capable of producing 40,000 pounds of steam per hour continuously at an operating pressure of 250 psig when supplied with feed-water at 212 degrees F and fired with shredded refuse-derived fuel, and equipped with oil burners arranged to burn No. 6 oil as a supplemental fuel. Detailed specifications are included hereinafter as Appendix Item A-2.

d. Site No. 5 - Energy Recovery (Incineration) Facility at  
Nashville, Tennessee

The Nashville facility is undergoing repairs and modifications and is not scheduled to resume operation until late in 1977. The following description was extracted from Reference No. 3.

In May of 1970, the Nashville Thermal Transfer Corporation (Thermal) was chartered under the laws of Tennessee as a non-profit corporation. Thermal was authorized to issue tax-exempt revenue bonds and to construct, own and operate a proposed incineration facility and distribution system. Construction of the 720 ton per day heat recovery incineration unit commenced in June of 1972. The \$17,000,000 refuse reduction plant, designed to produce both steam and chilled cooling water began full scale operation in December of 1974. Financing was accomplished through revenue bonds carrying a 30 year retirement period and guaranteed by the Metropolitan Government of Nashville-Davidson Counties (Metro). The project was also the recipient of a \$650,000 Ford Foundation Grant as one of six major sites for Environmental Planning and Management Projects.

At the Nashville Facility, household solid waste is delivered to the site in standard collection vehicles and dumped without weighing into the refuse receiving pit. With no shredding or separating, the refuse is then fed to the incinerator hopper by an overhead traveling crane.

Steam from the incinerator boilers is piped to non-condensing turbines

housed in an adjacent building. Exhaust steam from the turbines is used to drive two condensing Carrier Corporation chillers. The resulting chilled water and excess steam are then directed to a distribution system serving various Metro buildings in downtown Nashville.

On March 4, 1975, the Nashville Thermal facilities were visited by the study group from California. Mr. William Clemons, Manager of the Thermal project, conducted the party on a complete tour of the thermal processing facilities, which at the time were operating on refuse as a fuel.

At the time of the visit, interviews conducted with various businesses adjacent to or near the Thermal facility provided information indicating a high degree of displeasure with the project. A major concern was the particulate matter causing air pollution problems. A service station adjacent to the plant reportedly was receiving a complete repainting at the expense of the Thermal Corporation because of particulate matter becoming embedded in the painted surfaces. In addition, automobiles parked as far as one block from the plant were reportedly being washed daily at no cost to the owners, and in two cases, owners indicated the emissions problems were severe enough to warrant repainting of their automobiles; again the cost to be borne by Thermal. The rental automobile used by the tour group, having been parked in the Thermal lot for less than two hours, required removal of soot and particulate matter from the windshield in order to see.

The refuse disposal activities witnessed during the two hour visit did not support the projected 720 ton per day volume considered by the

manager being processed. During the inspection period, numerous small partially loaded refuse collection vehicles (10 cubic yard) deposited household material at the site. There are no weigh scales and when questioned about how the daily volume of material was determined, Mr. Clemons indicated that each load handled by the crane was approximately one ton; however, additional inquiries revealed no record is kept of crane loadings into the incinerator.

Two workmen in white laboratory coats were conducting air emissions tests inside a make-shift plastic draped platform. When questioned as to the ability of the unit to meet required Federal air control standards, they replied they were not at liberty to discuss any of the testing results.

When questioned about the ash disposal site, Mr. Clemons indicated its whereabouts was not known to him, inasmuch as that was not part of Thermal's responsibilities. He did indicate, however, that because of its sterile nature, the material was suitable for road building material and contracts for possible future sale were being investigated. A Browning Ferris Industries refuse truck exiting the site with a load of ashes was followed by the review team. Materials leaving the Thermal plant were discharging a trail of leaking quench waters over the streets on route to the disposal site.

The ash disposal facility, located approximately three miles from the Thermal plant, consisted of a field approximately 20 acres in size completely covered with ashes and devoid of any earth cover, undergoing putrefaction with a related odor that was noticeable

approximately one block distant from the disposal site. The foul smell associated with the area would indicate an incomplete burn was occurring at the Thermal plant.

The Thermal processing and resource recovery plant has been the recipient of extensive review by many engineering and resource recovery publications wherein glowing accolades of achievement and recognition of successful operations have been bestowed upon the project. Having visited the facility and reviewed the solid waste system under operating conditions leads one to ponder how such assessments could be made.



e. Site No. 6 - Saugus, Massachusetts Resource Recovery Facility

The basic requirements of the facility are to accept an average of 1,200 tons per day of domestic and commercial refuse and provide steam to the General Electric Company at 625 psig and 785-825°F. Peak steam delivery is 350,000 pounds per hour. A minimum of 2 billion pounds of steam will be delivered annually. Steam charges to G.E. provide some savings compared with generation in oil-fired boilers and are to be scaled with oil price levels.

In the Saugus facility incoming refuse trucks are weighed to determine disposal charges before being allowed to proceed to the facility reception area and tipping floor. Sixteen aisles are provided along the face of the storage pit.

The 200-ft long refuse pit has a normal storage capacity of over 2700 tons, enough for 2.3 days firing to carry the plant over short periods when little or no refuse is being delivered. In unusual situations, refuse can be stored above the level of the tipping floor to give a maximum stored capacity of 6700 tons. This would permit steam generation for 5.6 days without refuse delivery.

Two overhead traveling cranes are used to mix and feed refuse into the furnace charging hoppers, located on the charging floor 90-ft above the bottom of the refuse pit. The cranes have air-conditioned cabs for operator protection and comfort, and can lift up to 3 tons of refuse at a bite of their tine-type grapples. A third crane can be

installed if plant expansion is necessary.

The cranes are also used to charge the plant's 25-tph shredder with bulky items. The shredder's charging hopper is located between the two furnaces. Its discharge is back into the refuse pit where the shredded material can be mixed with the other refuse for firing.

Solid waste loaded into the incinerator feed hoppers acts a seal to maintain furnace draft and prevent flame flashbacks. A nuclear level monitor installed on the hopper sounds a warning to the crane operator if the refuse level falls dangerously low.

The two refuse-to-energy furnaces are of the Von Roll design. Seventy-one Von Roll energy recovery facilities are now in operation or under construction.

Each 750-tpd furnace uses a three-step, inclined reciprocating grate. The first step is the feed grate where refuse from the feed hoppers is discharged. Moved by the grate's reciprocating motion, the refuse is dried and combustion initiated. The burning refuse then drops onto the second grate section where combustion is nearly completed.

The reciprocating grate action both moves the refuse down the incline and turns it to ensure complete combustion. Final burnout occurs on a last grate section, and ash is then discharged into a watersealed hopper for quenching and removal.

Primary combustion air, supplied by a forced draft fan with an intake in the refuse pit area, is introduced beneath the furnace grates. Secondary air is introduced above the grates through a series of

nozzles in the furnace's refractory walls to help complete combustion and keep the flue gas temperature manageable. The flue gas temperature must be maintained between 1600°F and 2000°F to inhibit corrosion of the water tubes of the steam superheater, generator and economizer system.

The upper section of the furnace is made up of vertical water walls. The superheater, steam generating section and economizer, however, resemble vertically hung tube panels. Using the tube panel design allows the use of mechanical rappers, similar to those used in electrostatic precipitators, to clean ash and scale off the tubes for better heat transfer. The Von Roll experience has been that the mechanical cleaning system is much more effective for refuse-fired water-wall furnaces than conventional high-pressure steam cleaners.

Each furnace is capable of generating 185,000 lb/hr of 690 psig, 875°F steam from 750 tpd of raw, 4500 Btu/lb refuse. The contract with General Electric calls for the Resource Recovery Facility to provide between 65,000 lb/hr and 350,000 lb/hr of 970.3 Btu/lb steam. To ensure that the steam is available, the furnaces were also designed for supplemental oil firing. Two package water tube boilers with a total capacity of 240,000 lb/hr of 690 psig, 850°F steam have also been installed for backup.

The oil burners in the refuse furnaces are to be used when the refuse composition does not include sufficient combustibles to generate the required amount of heat. A 20,000 gal oil storage tank is on-site.

Particulate matter is removed by a two-field electrostatic precipita-

tor installed in the gas train of each furnace. Designed for 97.5% removal efficiency, the plant emissions comply with the Commonwealth of Massachusetts air quality restrictions imposed for the densely-populated metropolitan area surrounding Boston.

An induced draft fan discharges cleaned gases through a common concrete stack 178-ft high. During normal operation, no emission plume is visible to the eye.

The steam product of the facility is delivered to the General Electric plant 3000-ft away across the Saugus River via a structural steel utility bridge supported on wood and pipe pilings. The bridge carries steam to the GE plant and condensate, fuel oil for auxiliary use and electrical power back to the resource recovery plant. Condensate is returned to conserve on water use, although make-up water as required is purchased from the Town of Saugus. Boiler water is demineralized on-site to prevent the formation of scale deposits in the steam generating system.

Ash from the refuse furnaces is processed through rotating drum type screens to remove bulky items. It is then magnetically separated to remove ferrous materials for resale. Since the market for this ferrous material has not yet been firmed up, it presently is being land-filled. The remaining ash can be processed for use as aggregate or used as fill material.

f. Site No. 7 - Refuse Disposal Facility at Braintree, Massachusetts

The plant at Braintree, Massachusetts is a refuse-burning municipal incinerator having a capacity of 240 tons per day. The design of the plant includes provisions for draining off excess steam (generated by gases entering the precipitator) estimated to amount to about 60,000 lb/hr at a pressure of 250 p.s.i. and proceeds from the sale of this are expected to offset about one-third of the annual operating costs of the plant.

Main components of the plant are two, 120-ton per day continuous feed furnaces with vertical water-wall boilers, economizers to preheat water entering the boilers, a five-ton bridge crane, a three-cubic yard grapple bucket, a 100-ft chimney, a refuse storage pit, and two electrostatic precipitators.

Also included in the plant is a gas-fired, automatic temperature control system to maintain a minimum furnace temperature of 400°F when refuse is not being burned. This prevents condensation of corrosive acids on the plant's equipment.

The crane, bucket and storage pit are housed in the main building, along with administrative offices, a locker room and shower facilities. Structural framing consists of steel columns, some encased in concrete for fire protection. The walls of the foundation and storage pit are reinforced concrete, while the walls of the superstructure are non-bearing, precast prestressed concrete panels. Framing for the furnace and boiler room consists of steel members, with walls of insulated, corrugated metal siding. Wall and column loads of the incinerator structure are car-

ried by a reinforced concrete mat resting on compacted gravel fill. The 100-ft steel chimney structure rests on 30-ft steel piles filled with concrete.

During normal plant operation, refuse trucks discharge their loads through the openings of the roll-up front doors of the main building into the storage pits. Overhead, an operator in a cab mounted on the bridge crane works the grapple bucket to seize a load of refuse, then transfers the refuse via the high-speed travelling bridge for discharge to a charging chute. A variable speed, hydraulically driven grate near the bottom of the chute feeds the refuse into the furnace.

Residue from incineration, amounting to less than one-seventh of the volume of the incoming refuse, is discharged into a water-filled quenching trough, then removed by a conveyor to a truck for hauling to nearby landfills. The residue makes ideal fill because of its inertness - less than 1% is decomposable organic matter.

The plant was placed in full-scale operation in 1971. At the time of inspection the plant was shut down pending major repair and rehabilitation work including rebuilding the electrostatic precipitators so as to permit the plant to meet more stringent emission standards.

Performance data for the plant based on refuse or natural gas are as follows: Predicted performance data - One steam generating unit, 30,000 lbs. of steam per hour maximum continuous capacity; 250 psig operating pressure; 240 F feed water; steam temperature 406 F (Sat.)

Fuel - Refuse: Moist 20.00; Ash 20.00: 5000 Btu per pound  
as fired. C 30.00; O 25.50; S 0.10; N 0.15;  
H 4.25

Natural Gas: by volume; CH<sub>4</sub> 95.32; C<sub>2</sub>H<sub>6</sub> 2.66; C<sub>3</sub>H<sub>8</sub>  
0.57; CO<sub>2</sub> 0.69; N 0.43; 1050 Btu cu. ft.;  
23,560 Btu per lb. as fired.

	<u>REFUSE</u>	<u>NATURAL GAS</u>
1. Pounds of steam per hour act.evap.	30,000	30,000
2. K Btu in steam above F.W. temp.	29,760	29,760
3. % excess air in boiler exit gases	50	20
4. Temp. of economizer exit gases, F	550	350
5. Temp. of air ent. heater (room temp.) F	80	80
6. Total steam temp. leaving superheater F	406 (Sat.)	406 (Sat.)
7. Boiler drum pressure psig	250	250
8. Furnace draft	0.25	0.25
9. Draft loss thru blr. and superheater	1.50	0.50
10. Draft loss thru economizer	0.50	0.20
11. Air pressure drop thru firing equipment	(stoker)2.50	(Burner)2.80
12. Pounds of fuel per hour	10,000	1,530
13. Pounds of air per hour	61,800	31,700
14. Pounds of gas per hr. leaving unit	69,800	33,230
15. Overall efficiency complete unit	--	81.66
16. Heat release in furnace, Btu/cu.ft./hr	18,000	15,000
17. Heat release in furnace, Btu/sq.ft./hr	43,200	36,000
18. Btu per sq.ft. grate surface per hr	311,000	--
18a. Refuse fired, tons per 24-hour day	120	--

#### HEAT BALANCE

19. Dry flue gas loss at exit		5.30
20. Loss due to hydrogen and fuel moisture		10.90
21. Loss due to moisture in air		0.14
22. Loss due to radiation		1.00
23. Manufacturer's margin		1.00
24. Total losses		18.34
25. Efficiencies of complete unit	59.52	81.66

The unit consists of RX-54/42 boiler, H.S. 2410 sq.ft.; projected walls, H.S. 895 sq.ft. Total H.S. 3305 sq.ft.: economizer, H.S. 525 sq.ft.; Two (2) Traveling Grate Incinerator Stokers; One (1) Riley Intertube burner; furnace volume 2780 cu.ft.; Furnace Area 1095 Sq.Ft. Drawing LP-1568; Drying Stoker 7 x 12, burning stoker 7 x 21, Total Effective Grate Area 161 sq.ft.

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h. Site No. 9 - Automatic Vacuum Collection System at Roosevelt Island, New York City, N. Y.

The "AVAC" system or Automatic Vacuum Collection System as installed at Roosevelt Island was designed to serve approximately 10,000 units of housing and support facilities. The system was developed by the Swedish firm of AB Centralsug of Stockholm and design and installation of this system was by the American licensee of Envirogenics Systems, division of Chemico Process Plants of El Monte, California.

In this system each floor of the residential buildings is equipped with one or more standard hopper doors that provide access to a vertical chute. Refuse from these hoppers drops through 24-inch chutes to storage sections. The storage sections sit on a discharge valve with a 1-inch thick steel swivel plate that operates on a pre-determined perforated tape program. The plate swings open allowing the storage section to empty into a 13,000 ft. network of vacuum transport piping. The system incorporates 29 individual discharge valves on each side of the island's spine road or an average of 75 to 100 housing units for each valve. There are strategically located floor-mounted stations for yard refuse, commercial refuse, and other types of consolidated refuse.

The system is preprogrammed to sequentially open collection or discharge valves for 7-second dumping cycles. This supplies the system's compactors with up to 3 cu.yd. of refuse each minute during the operational period. Flexibility fixtures include variable sequencing, demand override and demand start-up.

Solid waste is carried through the network of underground transport pipes by a 60 m.p.h. air-stream. The waste travels to the central transfer station, where it is compacted under vacuum into sealed containers for removal by the New York City Department of Sanitation.

Pneumatic transport within the collection pipes is performed a maximum vacuum of 6 p.s.i. The collected solid waste is compacted into 47 cu. yd. capacity roll-on containers at a load density of 500 lbs/cu.yd. They are transferred to and from the filling position by a container-handling mechanism that is commanded by an operator in the central control room that overlooks the loading system.

i. Site No. 10 - Automatic Vacuum Collection System at Walt Disney World, Lake Buena Vista, Florida

The automatic vacuum collection system at Walt Disney World is an "AVAC" system produced by Envirogenics Company. This firm has been described hereinbefore in regard to the system at Roosevelt Island, New York. Construction on the AVAC system at Walt Disney World began in 1969, and was completed in 1971. It became the first of its kind installed in the United States, and is the largest system in the world. In its first week of operation, it collected an estimated 150 tons of trash. The system was designed to handle trash at the rate of 11,000 lb/hr.

The collection of waste is accomplished by depositing the waste material into one of 18 strategically located charging stations throughout the Theme Park. The waste material, having been deposited in the charging station, drops down into a vertical storage section above a discharge valve. Actuation of the discharge valve allows the waste to drop into the horizontal transport line to be carried to the central collection hopper.

Conveyance of the solid waste to the collection hopper is effected by a high velocity air stream developed in the transport lines by two heavy duty exhausters, with an additional exhauster installed as a standby unit. There are over 8,000 ft. of 20-in. transport line joining all of the charging stations to the central collection hopper. The air flow along the path from the charging station to the collection hopper is 10,000 cu ft/min, or reaches a velocity of about

60 mph/hr in a 20-in. pipe. The transport air is filtered to  $2\mu$  (nominal) by an automatically recleanable bag type filter prior to being discharged to the atmosphere. In the tunnels below the Magic Kingdom, where the transport lines run overhead, 2 in. of acoustical insulation were used to insure quietness.

Collection of the waste is controlled automatically by the AVAC Central Control Panel located in the Theme Park basement. The sequence of operations in the collection cycle is controlled by a single 82-channel pre-programmed tape. After operating commands are transmitted to valves and the system components, feedback signals indicate to the Control Panel that the commands have been followed, or the cycle is held and an annunciator section of the Control Panel alerts an operator as to the nature of the trouble.

Each cycle takes about 20 min. During this time every charging station is dumped and the heavily utilized stations are dumped twice.

The cycle begins automatically with the starting of the exhauster and opening of the air inlet valve for the first branch line to be collected. Discharge valves are operated sequentially, the nearest to the central collection hopper operating first.

When all discharge valves on a particular branch line have been operated, the program automatically advances to collect from the next branch line. This continues until all discharge valves in the system have been actuated.

The final step in a cycle is to dump the waste from the central collection hopper into a 5-cu.yd. compactor, which compacts it into a 40-cu.yd. roll-on container.

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K. Site No. 12 - Pneumatic Conveying System at Eastern Cyclone Industries Plant, Fairfield, New Jersey

The manufacturing facility of Eastern Cyclone Industries, at Fairfield, New Jersey was inspected on November 8, 1976. A prototype system for handling rubbish and/or linen was demonstrated.

The system is completely closed, utilizing a high-velocity stream of outside air, negative pressure and safety locks prevent air in tubes from escaping into occupied spaces. The system prevents accumulation of waste as the material is conveyed to a central collection point. The system is said to be self-cleaning.

The system is fully automatic and goes into operation only when activated at any one of the multiple drop stations. Each drop station is designed with a double-door safeguard arrangement which seals off the conveyor line and prevents air in the tubes from escaping into the occupied area.

In operating the system an individual would open the door of a station, drop the bag of waste material into a five-sided receiving hopper and close the door. He then presses a "start" button. The material is conveyed to a collector discharging into a compactor. Pressing the button at the drop station starts the following sequence:

1. Roof damper opens.
2. Inner door opens and hopper trips its load into the moving air stream.
3. Waste load is carried through the line to the collector.
4. Collector drops load into the compactor. The entire sequence is completed in less than ten seconds and the system automatically shuts off when the linen reaches its destination.

The system is designed so that it will "store" the activating signal from

any one station should another station be operative at the same time. When the operating cycle from the first station times out the second station automatically begins to operate.

The design parameters of the system are such that since no mechanical parts are incorporated in the pneumatic tube line it can be placed in walls, under ceilings, on roofs or other convenient locations.

In addition to the stations, collecting lines, collectors and inlet dampers the system requires one or more exhausters and all necessary controls and devices necessary for operating the system.

1. Site No. 13 - Automatic Trash Collection System at Operation Breakthrough Site, Jersey City, New Jersey

This site was inspected while the pneumatic trash collection system was being subjected to technical and economic evaluation. The results of this evaluation are set forth in Section VI.

This system was said to be the first of its kind to be used for residential living in the United States. The system will ultimately service about 500 dwelling units, a 40,000 square foot commercial building, pre-school, elementary school and indoor swimming pool, all at the Jersey City location.

Jersey City is one of nine prototype sites around the country where innovative housing and site planning is in the process of development under HUD's BREAKTHROUGH program to stimulate volume production.

The disposal system was supplied by the Envirogenics Company. This firm has been described herein before in regard to the system at Roosevelt Island, New York. Refer to Section V h.

At the start of its operations it is similar to current methods, in that the refuse is put down a nearby disposal chute located on each floor of the building. At the bottom of the chute the refuse lands on a horizontal plate which separates the chute from an underground pneumatic tube connected to a central collection point.

At scheduled operating times exhausters are started in the central equipment building. The chute discharge valves open one at a time



and the refuse falls into the conveyor tube, where it is transported in the air stream to the collection point and compacted in large containers. The entire operation is automatic. The containers are hauled several times a week to a Jersey City incinerator. Spent air from the collection system is purified in high efficiency filters and vented through silencers into the atmosphere, avoiding the danger of pollution. Aside from the absence of odors and spillage, the system dispenses with the noisy racket raised by refuse collection trucks. The projected everyday operation cost is low compared to existing removal systems. Moreover, the system can handle increased loads without an increase in collection rates.

m. Site No. 14 - Consumat Systems, Inc. Factory at Richmond, Virginia

On November 4, 1976 the factory of Consumat Systems, Inc., Richmond, Virginia was inspected.

This Company offers a complete modular line of engineered factory fabricated waste-to-energy conversion systems. The Consumat unit is essentially a pyrolytic-type incinerator and is described in Section VI. An evaluation of these small modular incinerators was carried out in Reference 5.

The inspection of the manufacturing facilities revealed that several incinerator units were in various stages of completion. The manufacturing capability of the firm was discussed with Mr. William Wiley, Vice President. He revealed that Consumat Systems offers a range of nine model sizes. Energy conversion equipment is not manufactured at the Richmond plant but can be provided for all the industrial-municipal models.



## VI. PRODUCT EVALUATION

a. General: The site visits described in Section V served to identify products that have been used to convey and burn solid waste for energy recovery. In addition, a search was conducted into availability of a commercially produced boiler capable of generating approximately 20,000 lb. of steam per hour at a pressure of 125 p.s.i. This effort included a mail survey; a typical letter of inquiry is shown as Appendix Item A-6. A primary objective of the search was to identify products which ideally have performed with reliability without air pollution when using a supplemental waste fuel as described in Section IV.

The findings revealed that current state of the art is such that the ideal boiler described above was not commercially available in the relatively small size required. It was determined that large waterwall type furnaces suitable for burning municipal refuse (such as those in service at Braintree, Mass., Saugus, Mass., Norfolk, Va. and Portsmouth, Va.) are capable of producing steam from waste fuel but only after careful implementation of special design procedures.

Boilers fabricated for this type of service are equipped with passages located at the back of the boiler to control the conversion of water to steam at specific temperature and pressure. By transferring the heat released through the combustion of refuse-derived fuel to the water, the volume air needed to keep the operating temperature at acceptable levels can be reduced. The advantage of this is a reduction in the size of the unit, and most importantly, in the size of the air pollution control equipment needed. The volume of gas entering the air pollution control

equipment will be about 25 percent of that of an air-cooled, refractory unit. Additionally, the combustion process can be better controlled so that fewer pollutants are entrained in the gas stream. The smaller volumes of gases can then be easily cleaned using either high-energy-drop scrubbers or electrostatic precipitators. Performance reports of Chicago's Northwest waterwall incinerator have demonstrated that it can meet the Federal limit of 0.08 grain per cubic foot. Reciprocating grate stokers consisting of a feeding section and two burning sections are usually provided with the boiler. Vertical drop-offs between each section reorients the refuse as it moves through the unit, exposing new burning surfaces. The waterwalls of the furnace absorb heat to produce steam. Cyclone separators and electrostatic precipitators are provided for air pollution control. Non-combustible material and ash residue pass into a water filled conveyor to storage hoppers.

Residue from the combustion of refuse-derived fuel is permeable and may contain water-soluble inorganic and organic compounds. If water moves through a deposit of residue, leaching can occur. Pollution can occur if the leachate water moves through underlying soil and enters the groundwater. Surface water can also become contaminated where the leachate moves laterally through the surrounding soil and seeps out at ground surface. Therefore, only sanitary landfill methods are employed to dispose of boiler residue. Fly ash is usually handled along with the residue. In addition to ensuring that it is properly landfilled to prevent leaching, it must also be handled in a manner that prevents it from being air blown. This requires the use of either closed containers or wet sluicing from the point of collection to disposal.

Wastewaters are produced in a boiler plant using refuse-derived fuel both from the ash quenching operation and from many types of air pollution control processes. Even if these waters are reused, some discharging will be necessary. Whenever possible, these wastes should be discharged to a sanitary waste sewer for proper treatment. Both pH and settleable solids should be controlled to the maximum extent practicable, whether they are being discharged to an open course or a sanitary sewer. The pH is partially controlled by mixing the quench water and scrubber water, but additional chemical treatment may also be needed. Retention tanks or ponds are sometimes used to remove settleable solids.

Much has been learned from the operating problems that have arisen in facilities using refuse-derived fuel. In the Nashville facility the Environmental Protection Agency studied the operating problems and found that a number of mechanical and operating problems occurred during the shakedown period. The plant was unable to consistently supply steam and chilled water from the combustion of solid wastes because of failures in the combustion unit and inadequate emission control equipment. In that plant it has been found necessary to provide service by means of an auxiliary boiler using conventional fossil fuels. Escalating fossil fuel costs and unanticipated maintenance expenses have produced operating deficits of approximately \$5 million over a two-year period. The two most important mechanical problems at the Nashville plant concern air pollution control equipment and boiler tube failures. Many less severe problems have hampered operations and could well continue as additional operating time is logged. The low-energy scrubbers originally installed in place of electrostatic precipitators were unable

to adequately remove particulates from the stack gases. In addition, design inadequacies in the scrubber water recirculation system resulted in rapid equipment deterioration. Soon after the plant was placed in operation, the internal spray nozzles deteriorated through a combination of corrosion and erosion. Therefore, in addition to the program of replacing the scrubbers with electrostatic precipitators and/or baghouses, it was necessary to retrofit an interim scrubber system. This interim system improved emission control but resulted in unacceptably high water contamination, restricted capacity to handle solid wastes, and necessitated frequent maintenance of the scrubber and other downstream components.

Corrosion and tube wastage problems have continuously plagued both solid-wastes-fired boilers. Tube failures began to occur after the units had been in operation only a few months. Most tubes in the lower portion of each boiler and both superheaters required replacement. The lower wall section of each furnace is also being coated with silicone/carbide refractory to further protect the tubes. This is now common in waterwall incinerator design. Other modifications to the air distribution system, the grate design and superheating equipment, as well as modifications to operating procedures, are being implemented in an effort to mitigate tube failures.

Excessive vibrations have been reported in the vicinity of the turbine-driven chillers. These vibrations were caused by a defect in the turbine governor and the situation has been rectified. Overloading of the turbines during the plant startup could have contributed to this problem. In any event, the coupling of the refuse-fired boiler to the

steam-driven chillers has been complicated at this plant because of frequent swings in steam flow caused by the unhomogeneous nature of the solid wastes fuel and lack of adequate control over the solid wastes charging rate.

Other problems involve the overloading of the siftings removal system located beneath the grates, problems with the ash quench system, and most recently, operating problems with the grates themselves.

Experience with other waterwall incinerators in the United States and, even more extensively, in Europe and elsewhere, makes it clear that other plants need not have the problems being incurred in Nashville. As reported hereinbefore, the Chicago-Northwest incinerator reports emissions well within the federal standard of .08 grains per standard cubic foot. Many European operations report emissions in the .03 to .05 grains per standard cubic foot.

At two other sites described in Section V at Norfolk and Portsmouth, Virginia emission standards have been met by use of electrostatic precipitators. On the other hand the Braintree, Massachusetts plant which is also installing precipitators did not get on line in time to meet an EPA deadline. As a result waste disposal is still via landfill. In Baltimore, that city's 1000 ton-per-day pyrolysis plant has experienced not only air pollution problems but also a breakdown of the refractory material in the kiln along with necessary expensive and delaying modifications in the waste handling conveying systems. The facility at Saugus, Massachusetts meets local and Federal air pollution standards but it would require modifications to comply with more rigid requirements such as those in Los Angeles.



b. Available Products: The mail survey cited hereinbefore included contact with McBurney Stoker & Equipment Co., Inc. of Atlanta, Georgia. This firm has been fabricating boilers for use in the Wood Products Industry for burning hard-to-handle wastes such as wood bark with-or without-black liquor. These boilers include pressure components manufactured by E. Keeler Co. such as those used in their Model "CP" boiler. Their response is included as Appendix Item A-7. The following is an excerpt therefrom:

"We can indeed supply a boiler with a capacity of 20,000 pph at 100 psig burning #6 oil and shredded paper refuse such as you describe. There are, however, a number of critical bits of information required in order to prepare a quotation for your consideration.

One of our major concerns would be the air pollution emission requirements and we therefore need to know where the installation is to be made. Just how fine the paper refuse is to be shredded will determine the type of burner we would apply to the boiler and whether or not the refuse is to be burned as produced or stored in some sort of intermediate bin and then fed to the boiler in order to match steam demand.

We also need to know whether additional equipment is required such as deaerating feedwater heater, boiler feed pumps, chemical treatment,

etc. We can furnish and install a unit such as you are interested in, depending upon whether the installation can be made with non-union or whether union labor would be necessary.

Perhaps the best solution would be to have one of our engineers meet you at the job site to obtain the necessary information and proceed from there".

Evaluation of this prospect revealed that whereas verbal assurance by the manufacturer of his ability to meet project needs was promising the critical need for reliability of operation in this application suggested that in lieu of a record of successful performance in other installations using similar waste products as a supplemental fuel ability to meet Agency needs could only be met by firing the boiler under monitored test conditions using samples of fuel similar to that described in Section IV. A letter (Appendix item A-8) was transmitted to McBurney Stoker and Equipment Co. following several verbal calls to arrange for combustion tests. In order for a meaningful test it was believed necessary to operate over a period of several hours and a fuel load of not less than 8000 pounds of sample fuel was needed. Additional applicable correspondence has been included as Appendix Items A-9 and A-10. Arrangements with H.E.B. were made for accumulation and delivery of 500 cubic feet of the sample fuel. Unfortunately, activity in the Wood Products Industry which had lain dormant for a considerable period of time underwent a program of resurgence and all bark-burning boilers of the type described hereinbefore were placed in 24-hour operation.

Investigation revealed that in the plants involved the owners were unwilling to take a boiler out of production service in order to conduct a test, especially where risk factors to the boiler as a result of burning a "non-design" fuel could not be ascertained beforehand.

In the subsequent period of time contact has been continued with McBurney Stoker & Equipment Co. to keep abreast of the situation. Not only does the possibility exist of one of the boilers in current use becoming available but it is reasonable to expect that if and when a new boiler is produced by McBurney that a brief test can be carried out in the manufacturer's plant.

The series of events described above led to investigation of pyrolysis, a technology considered by many as being most appropriate for small scale resource recovery. This entails the high temperature destruction of waste in an oxygen deficient atmosphere. The mixture of air and auxiliary fuel is closely controlled to maintain temperature levels and the required reducing atmosphere. Close control of the pyrolysis reaction results in reduced gas velocity and thereby minimizes particulate emissions. Incomplete combustion produces a gas which, subsequently, is combusted to fire waste heat boilers, producing steam. It is the availability of mass produced, pyrolytic incineration-heat recovery systems which makes this technology feasible for small scale resource recovery applications.

This technology is a recent development, having been steadily refined since its first application, in the late 1960's. It is unique because even municipal solid waste can be processed in its "as received" form, there is maximum operating flexibility, due to the small capacity modular type units, and environmental standards can be met without the need for stack gas treatment systems. Energy produced, as steam, can be used in a wide range of industrial processes and for heating purposes. The same technology is utilized for high temperature destruction of X-ray film which allows the film's silver coating to be recovered.

Operating performance of the units has been significantly improved through design modifications. Increased boiler efficiency is responsible for extracting a greater percentage of the heat content of waste. Improved combustion efficiency has reduced the consumption

of auxiliary fuel, used to sustain the pyrolysis reaction. Automatic ash removal systems permit, 24 hour, operating cycle efficiency by eliminating daily burn-downs, required to remove ashes manually. Labor inputs required to operate these small scale resource recovery units have been reduced through greater reliance on automated systems.

These modular, small capacity systems are feasible in many places where resource recovery has never been seriously considered. Steam generated from waste has provided substantial savings to industrial concerns, hospitals, commercial establishments, educational institutions, and municipalities which are presently utilizing fossil fuels to accomplish this task. In addition, costs associated with long distance hauling to disposal sites have been substantially reduced by on-site disposal. Multiple unit installations are considered desirable for maximum flexibility in designing system capacity. Systems ranging from 8-100 tons per day have been found to be feasible, with larger systems enjoying substantial economies of scale.

The principle constraint to implementing a resource recovery project, of this type in many applications is the existence of a market for the low pressure steam produced. In commercial installation low pressure steam must be consumed at the time it is produced and cannot be transported over distances greater than several miles. A 24 hour, 365 day steam customer, located adjacent to the small scale resource recovery facility has been found to provide maximum economic returns from the system. However, systems may be operated profitably, even when the steam demand is less than continuous, pro-

vided that system efficiency is maintained by retaining a 24 hour operating cycle. It should be noted that the pyrolytic incinerator and heat recovery systems are controlled independently which facilitates continuous waste processing in the absence of steam demand. The potential for substantial fuel savings and improved waste disposal practices should stimulate municipalities, in conjunction with local industry, to initiate an evaluation of refuse-energy feasibility.

The concept of modular refuse-energy systems is exemplified by the installation at Siloam Springs, Arkansas. This facility, located in northwestern Arkansas, one mile from the Oklahoma State line, serves two towns with a combined population of 8,000. Plant capacity is 20 tons per day with (2) 10 tpd units in operation. Steam produced at an average rate of 5,000 lbs./hr. per unit, is piped to an adjacent plant, owned by the Allen Canning Co., where it is used in food processing operations. The resource recovery facility is operated five days per week, during a ten hour cycle, which coincides with the steam demand of the canning plant. The pyrolytic incineration-heat recovery units were produced by Consumat Systems Inc., Richmond, Virginia and is similar to the unit described in Section III currently in use in use in the Headquarters Building for declassification of non-water soluble classified waste materials.

The plant is owned by the City of Siloam Springs and was financed through the sale of municipal bonds. Initial operation of the plant has been committed to a private, waste management firm, under a contractual arrangement. A contract with the Allen Canning Co. sets a pricing formula for the steam produced, based on the price of natural

gas, currently used to produce the Company's steam requirement. A minimum production of 120,000 lbs. of steam, at 100 psig., is guaranteed during a 12 hour day, for 240 days per year. The contract has an effective life of 20 years. Other performance guarantees and the assignment of responsibilities between the City and the Company are detailed in the agreement.

Municipal solid waste, of average size and composition, will be accepted at the Siloam Springs refuse-energy facility. Large, non-combustible objects, and hazardous wastes will not be accepted. A sanitary landfill will be maintained to facilitate disposal of large, non-combustibles and the sterile ash residue.

Trucks enter the 60' x 70' prefabricated building, which houses the twin Consumat units, and dump their refuse onto the concrete floor. A front loading tractor pushes the refuse into the automatic loading devices, at a rate determined by the units' automated controls. A unique feature of these Consumat units is their two chamber design which maximizes combustion efficiency while minimizing air pollution. The waste, first, enters the pyrolysis chamber, where it undergoes high temperature destruction in an oxygen deficient atmosphere and a gas is produced. Then, the gas is directed to the secondary chamber where it is combusted, while the ash and particulate material remain at the bottom of the primary chamber. The gases are used to fire waste heat boiler units, producing steam. Gases flow from the energy recovery system to a small smokestack. When released to the atmosphere, the gases have been substantially cooled. A larger, main dumping stack is provided to facilitate continuous waste disposal operations when

the energy recovery system is not operating or in case an emergency shut-down is required. Gases emitted from the main stack will be considerably hotter than those subjected to heat transfer in the energy recovery system. However, tests have shown that this Consumat plant easily meets all Federal air emissions standards, as well as the State standards which are in effect in most places.

In Section Vg a facility was described at the Pentagon which will be similar to the Siloam Springs facility.

Although the pyrolysis unit appears to be a possible answer to this project requirement some further evaluation would be desirable. The Consumat Model H-760 units were evaluated by the Navy Department to determine applicability of the units for use in disposing of solid waste at Naval Bases. Inspection of operations and conditions of the Consumat module type incinerators in three cities in the Greater Houston area revealed that the Consumat Model H-760 units were unsuitable for application to Naval Base installations for the following reasons:

1. Environmentally unacceptable residue removal system.
2. Load opening too small.
3. Inadequate refuse storage capacity.
4. Area requirements too great.
5. Excessive costs.

The complete report is included hereinafter as Appendix Item A-11.

In regard to pneumatic conveying systems that AVAC system described in Section V - 1 was evaluated over an 18 month period in a contract



initiated by the Office of Research and Monitoring, U.S. Environmental Protection Agency and sponsored by Office of Policy Development and Research, Division of Energy, Building Technology, and Standards, U.S. Department of Housing and Urban Development.

The technical objectives of the study were to determine overall system performance and to estimate the service life for the system. To accomplish these objectives the following specific technical areas were investigated:

1. Reliability and Maintainability: The system reliability and maintainability was evaluated using operational data collected during an 18 month monitoring period. These data were analyzed to determine:
  - (a) The availability of the system and the probability that the system will be in an operable mode at any time;
  - (b) The probability that the system can continue to collect refuse automatically after the completion of a specified number of cycles;
  - (c) The probable repair time required to correct malfunction;
  - (d) The effects of system malfunctions on the collection service;
  - (e) The effects and probability of a major system breakdown; and
  - (f) The reliability and maintainability characteristics of the system and recommendations for consideration in the design of future pneumatic transport system applications.
2. Performance: The system performance was evaluated to determine the effectiveness of the pneumatic transport system in terms of:

- (a) The ability to meet design criteria for the refuse loads and economics for the site;
  - (b) The ability to transport various shapes and densities of refuse, including oversize, overweight, and other bulky items;
  - (c) The capacity of the system for the design loads, actual loads, and operating schedule, including determination of the optimum operating schedule;
  - (d) The ability to safely handle dangerous materials;
  - (e) The adaptability of the system to recycle specific solid waste classes;
  - (f) The ability to recover valuable items mistakenly placed in the system; and
  - (g) The adequacy of safety equipment including provisions to prevent injury to residents, provide fire prevention, and provide safety to operating personnel.
3. Expected Service Life: The service life of the pneumatic transport system was determined by evaluating the operational degradation and wear with respect to service time over an 18 month period.

In a draft copy of Reference No. 1 the following technical conclusions were set forth:

1. Reliability and Maintainability:

Using the operational data collected during an 18 month monitoring period, the availability of the pneumatic transport system was calculated to be 54 percent. Design specifica-

tions stated that the system should be in an operable mode around 97 percent of the time. Accordingly, the system did not meet design expectations.

The probability that the system will successfully operate (without failure) for a given number of cycles decreases drastically as the number of cycles increases. There is a 50 percent probability of failure for 16 hours (15 cycles) of operation and a 90 percent probability of failures for 40 hours (37 cycles) of operation. The system exhibited 16 hours (15 cycles) mean time between failures. This represents a very, very low reliability.

Analysis of the data showed that total calendar downtime increased with the extent of the system malfunction. Fifty percent of the malfunctions were repaired within three hours of total downtime while 10 percent of the malfunctions required 36 hours. However, 60 percent of the malfunctions were repaired within one-half hour after repair work was actively begun. Considerable amounts of downtime were attributable to the site personnel's slow response in reacting to system problems.

2. Performance:

Evaluation of the operational data indicated that the pneumatic transport system did meet the design capacity criteria for the refuse loads; however, the loads at the site were only about one-sixth of design load criteria.

The observed load was about 248 tons per year, while the designed load criteria was from 1300 to 1600 tons per year.

The design specifications stated that the system must be able to collect refuse with densities ranging to 50 pounds per cubic foot. Under normal operating conditions, the system complied with these qualifications. The transport velocities for refuse of 10 and 50 pounds per cubic foot were observed to be about 50 and 27 feet per second, respectively. Additionally, it was noticed that many overweight, oversize, and other bulky items were collected without any problem. At times, small refuse samples on the order of 100 pounds per cubic foot could be safely collected. The refuse load, however, from the residences averaged about two pounds per cubic foot.

The operating schedule of 18 cycles per day more than adequately handled the actual loads of the system. One reason for this was that, as mentioned previously, the actual loads were only one-sixth of the design loads. It was determined that for the actual loads, the optimum operating schedule would be between seven and nine cycles per day. The times for the cycling of the system may vary due to daily, seasonal, and other load factors.

The system did have the ability to safely handle some types of dangerous materials. Residents were informed not to dispose of certain items which would be hazardous to the

system. Overall, these restrictions were followed. In spite of these precautions, several dangerous materials such as aerosol cans were placed into the system. These cans were safely collected and created no problems.

The investigations into the adaptability of the system to recycle specific solid waste classes showed that the system could be modified to do so without major design changes and with reasonable success. The modifications would most likely be centered around the collection hopper. The quantities of recycled solid waste annually could be about 148 tons of paper, 18 tons of glass, 20 tons of metal, and 10 tons of plastic. This would amount to about 196 tons, or 79 percent of the annual refuse loading.

Observations from the monitoring program revealed that valuable items mistakenly placed into the system could be recovered, however, the probability of retrieving the item undamaged is small. The chances of recovery and the effort required for recovery depend upon the extent of system operations. By way of illustration, the likelihood of rescuing an item mistakenly placed in the system is good, if a collection cycle has not been initiated. If, however, the cycle has been completed, the possibility of obtaining the item is poor. Therefore, care should be exercised to insure that valuable items are not placed into the system.

The design specifications for the system called for equipment to prevent component and plant failures, service interruptions, fires, and personnel injuries. Many of the system safety features did not satisfy these requirements. To cite two examples, a fire detection and sprinkler system failed to operate in one of the trash chutes when a fire occurred. Also, a high temperature alarm cable for a main exhauster caught on fire. These failures could be attributed to poor inspection techniques. For the most part, the safety equipment for the system did prevent injury and property damage.

The performance of the system deteriorated with low room temperatures. Because components were located in rooms that were not properly heated, and components were built to operate properly at normal room temperature, component failures occurred. Most of these failures were related to ice formation in the pneumatic air actuation lines for the air inlet and discharge valves, and the sluggish behavior of the hydraulic oil used in the compactor.

The design specifications stated that the service life of the pneumatic transport system should be 40 years. Through observations of equipment degradation and the amount of wear experienced during the first 18 months of operation, it was determined through wear measurements that two system components did not meet this design criteria.

The main transport line would fail after 36 years of operation, while the compactor would fail after 38 years. Whereas the compactor can be overhauled, a main transport line failure would create severe and costly problems for many reasons:

- (a) Locating the failed section,
- (b) Excavating in order to reach the section,
- (c) Repairing and/or replacing the failed section,
- (d) Backfilling to cover the section, and
- (e) Providing an alternative refuse collection service during the repair efforts.

The design specifications called for all system malfunctions to be repaired within 24 hours. The operational data indicated that 16 percent of the malfunctions required more than 24 hours for repairs, which did not comply with the design criteria.

The probability of a major system breakdown is directly related to the probability of a failure with six critical components. These components were the main transport line, the programmer, the discharge valves, the control panel, the vertical trash chutes, and the compactor. They contributed to 88 percent of all system malfunctions, 94 percent of all downtime, 89 percent of the total repair time, and 91 percent of the total man-hours needed to effect repairs. It was found that design improvements for



these components could reduce the total number of system malfunctions by 51 percent, total downtime by 62 percent, total repair time by 46 percent, and total man-hours for repair by 51 percent. Furthermore, the system availability would be increased by 32 percent, or be about 86 percent.

The effects of system malfunctions were more pronounced as the amount of time that the system did not operate increased. Minor problems with sanitation, litter, and odor were experienced with short downtime periods. Whenever the downtime exceeded 24 hours, major problems ensued. As a result of the system being inoperable for periods longer than 24 hours, an alternative refuse collection service was required. During these periods, the site personnel manually collected refuse which was a highly labor-intensive activity.

The prolonged downtime and the alternative collection service combined to cause a variety of problems with litter, odor, and vermin. At times, these sanitation conditions were so repulsive that the residents complained to the site management.

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The cost to create a typical Government letter rises every year, as well as the cost to file and to dispose of it. Informal communication, resulting from the use of Optional Form 27, 2-WAY MEMO, can reduce these costs substantially.

Experienced letterwriters have observed the following about Government correspondence practices:

The bulk of correspondence is conducted within the governmental family—between offices whose day-to-day relationships could permit simple, informal written communication.

Many written communications are for immediate action, are routine in nature (such as requests for information or services), and do not require copies for distribution.

Many written communications are less than a dozen lines in length.

### PRINCIPLES INVOLVED

1. When agencies issue instructions encouraging the use of memoranda and informal correspondence within the agency, there is a noticeable drop in the communications effort and in the time required to respond to a request, as well as a reduction of useless copies in file. Examining the two types of correspondence shows that formal correspondence has certain drawbacks:

a. Formal correspondence is usually more wordy because of salutations, introductory paragraphs, complimentary closings, etc. It becomes a difficult writing chore because of continual polishing and editing.

b. Formal correspondence typically calls for more reviews, resulting in many rewrites and retypes, and for excessive time-in-shop.

c. Formal correspondence goes through stricter clearance channels, and frequently makes communication between "opposite numbers" very difficult.

2. In many cases, the best reply is an informal endorsement on an incoming letter. Optional Form 27, 2-WAY MEMO, takes advantage of this principle.

### PRACTICAL PURPOSES SERVED BY 2-WAY MEMO

1. The message and the reply are placed on the same page in brief, informal language. This simplifies writing, handling, storing, and disposing of short communications.

2. The message may be prepared by typewriter or by hand; the reply may be by typewriter, by hand, or by rubber stamp.

3. It is possible to achieve a greater delegation of signing authority with the 2-WAY MEMO because of its informal nature.

4. The 2-WAY MEMO may be designated for special handling. It may be marked URGENT if exceptional speed is required. It may be stamped for special mailing services. It may be used for classified material if it is marked with the proper security classification.

5. The "TO" line and the "FROM" line are so placed that the 2-WAY MEMO may be sent in a window envelope and returned in a window envelope, if desired.

6. The 2-WAY MEMO is particularly well suited for communication between "opposite numbers" within one agency or in different agencies.

*The above guides have been prepared by the Office of Records and Information Management, National Archives and Records Service, General Services Administration.*



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APPENDIX

<u>ITEM NO.</u>	<u>DESCRIPTION</u>
A-1	Dwg. No. A-1 Classified Waste Disposal Facility - Floor Plan and Sections
A-2	Laboratory Test Data
A-3	Typical Mass - Burning Boiler Specifications
A-4	Characteristics of Existing Steam Generators - City of Ames, Iowa
A-5	New Classified Waste Disposal System The Pentagon, Washington, D.C.
A-6	Letter from HDR to Kelley - Hoskinson Co. Dated April 3, 1975
A-7	Letter from McBurney Stoker and Equipment Co., Inc. to HDR dated July 9, 1975
A-8	Letter from HDR to McBurney Stoker and Equipment Co., Inc dated February 27, 1976
A-9	Letter from HDR to McBurney Stoker and Equipment Co, Inc. dated November 25, 1975
A-10	Letter from HDR to McBurney Stoker and Equipment Co., Inc. dated January 23, 1975
A-11	Report of Inspection of Consumat Module. Type Incinerators in three Cities in the Greater Houston Area as prepared by Navy Department
A-12	Letter Proposal from Engineering-Test Services Div. to HDR dated November 15, 1976
A-13	Dwg. 9-11VAC-4 Powerhouse Boiler Room Upper Level Plan & Sections-Heat, Vent, Air Cond.

APPENDIX ITEM A-1

DRAWING NO. A-1 CLASSIFIED  
WASTE DISPOSAL FACILITY -  
FLOOR PLAN & SECTIONS

HENNINGSON, DURHAM & RICHARDSON



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APPENDIX ITEM A-2  
LABORATORY TEST DATA



# MIDWESTERN LABORATORIES, INC.

14965 GROVER STREET — OMAHA, NEBRASKA 68144 — TELEPHONE (402) 334-5606  
 5TH & HOWARD STREET — SCRIBNER, NEBRASKA 68057 — TELEPHONE (402) 664-3501

Client: HD&R OF Maryland, Inc.  
 Attn: Mr. Jim Shey  
 cc: Mr. Russell D. Menke  
 5454 Wisconsin Avenue  
 Washington, D.C. 20015

Type of Sample: Solid Waste  
 Method: (See Attached Sheet)

Job No.	Date Received	Lab No.	Job Location	Reported	Invoice No.
1-75	11/17/75	1366	Washington, D.C.	12/1/75	1286

TEST CONDUCTED	U.S. ATC#1	W.T.C.#1
TOTAL WEIGHT, grams	4070	580
FERROUS CANS%	----	----
ALUMINUM CANS%	----	----
GLASS%	----	----
MISCELLANEOUS%**	----	----
MOISTURE (Water) %	7.0	38.5
DRY MATERIAL%	93.0	61.5
BTU/LB**	6910	6690
WLOH***	75.98	91.75
RESIDUE%****	24.02	8.25
TOTAL CARBON%	36.83	40.50
HYDROGEN%	4.71	4.38
CHLORINE%	.02	.01
NITROGEN%	.72	.22
OXYGEN%	33.96	48.64
SULFUR%	.10	----

\*Non-grindable materials, ie: brick tile, bones, nylon stockings, garden hose, plastic bags, rags

\*\*Based on dry weight

\*\*\*Weight loss (%) on heating at 600°C for 4 hours. Based on loss from dry material.

\*\*\*\* % Weight of dry sample after ashing at 600°C as above. Includes heavy metals, nitrogen, halides, and forms of sulfur.

NOTE: Element percent determinations were based on dry weight.



## MIDWESTERN LABORATORIES, INC.

14965 GROVER STREET -- OMAHA, NEBRASKA 68144 -- TELEPHONE (402) 334-5606  
5TH & HOWARD STREET -- SCRIBNER, NEBRASKA 68057 -- TELEPHONE (402) 664-3501

### DESCRIPTION OF TEST METHODS FOR SOLID WASTE TESTS

- 1) INITIAL SAMPLE WEIGHTS: Total bag and contents were weighed. Aluminum cans, ferrous cans, and glass were removed and weighed separately. Remaining material was ground with non-grindable material being weighed afterward and labeled miscellaneous.
- 2) PERCENT MOISTURE: was determined on ground sample (hammer mill) at 120°C for 24 hours. Resulting dry material was finely ground (wiley mill) with a 60 mesh screen. All chemical analyses were run on this 60 mesh dried sample and percents calculated on dry sample basis.
- 3) CHEMICAL ANALYSIS:
  - a) BTU/LB - determined according to, "Laboratory Procedure for Determining Total Heat of Combustion in Solid Wastes" (C<sub>v</sub> Calorimeter used) from EPA-6700-73-01.
  - b) WLOH and % RESIDUE - determined according to "Laboratory Procedure for Determining Percent Ash and Percent Weight Loss of Solid Wastes on Heating at 600°C" From EPA-6700-73-01.
  - c) CARBON and HYDROGEN - determined according to "Laboratory Procedure for the Gravimetric Determination of Carbon and Hydrogen in Solid Wastes" (carbon-hydrogen train used) from EPA-6700-73-01.
  - d) CHLORINE - determined according to specific ion electrode methods as set forth by Orion Research, utilizing Cl<sup>-</sup> electrode #94-17.
  - e) SULFUR - determined according to No. 156C Turbidimetric Methods Sulfate Determination from Standard Methods.
  - f) NITROGEN - determined according to "Micro-Kjeldahl Method #42.014" from AOAC.
  - g) OXYGEN - determined according to "Mathematical Determination of Total Oxygen in Solid Waste" from EPA-6700-73-01.

INVOICE

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MIDWESTERN LABORATORIES, INC.

14965 GROVER STREET - OMAHA, NEBRASKA 68144 - TELEPHONE (402) 334-5606

Client: HD&R OF Maryland, Inc.  
 Attn: Mr. Jim Shey  
 5454 Wisconsin Avenue  
 Washington, D.C. 20015

P.O.#6704

INVOICE # 1286  
 JOB # 1-75  
 DATE 12/1/75

DATE RECEIVED	LAB NUMBER	TEST CONDUCTED	NUMBER OF TEST	COST PER TEST	TOTAL
11/17/75	1366	Analysis for Moisture, BTU, WLOH, Residue, Total Carbon, Hydrogen, Oxygen, Nitrogen, Chlorine, Sulfur	2	\$80.00	\$160.00
		Sample preparation	2	\$15.00	<u>30.00</u>
		TOTAL			<u>\$190.00</u>

*Donald C. Pesek*

Donald C. Pesek, President

N 10 DAYS ON TOTAL INVOICE

APPENDIX ITEM A-3  
TYPICAL MASS BURNING  
BOILER SPECIFICATIONS

APPENDIX ITEM A-3 TYPICAL BOILER SPECIFICATIONS

1. General

Furnish two-drum, bent-tube, water-tube type steam generator with steel encased and insulated setting, constructed in accordance with the A.S.M.E. Construction Code, and to comply with the Code for the State of Maryland.

Steam generator shall be Keeler type "MK", or approved equal.

2. Capacity

Each boiler unit shall be capable of producing 40,000 lbs of steam per hour continuously at an operating pressure of 250 psig when supplied with feedwater at 212°F. and fired with shredded municipal refuse. Boilers are to be arranged to fire No. 6 fuel oil as auxiliary fuel.

3. Heating Surface

Each unit shall have heating surface, furnace water wall surface, convection surface as required. Heating surface shall be calculated as all surface exposed to radiation in the furnace or in contact with the products of combustion on one side and steam or water on the other side.

Furnace side walls, roof and rear wall shall be water cooled. Bidders shall list the breakdown of heating surface in radiant section and convection section. The radiant heating surface shall be listed on both flat projected and full circumference basis.

4. Design Pressure

Each unit shall be designed for a safe working pressure of 300 psig in accordance with the A.S.M.E. Boiler and Pressure Vessel Code, Section I.

5. Furnace Volume

Each unit shall have furnace volume as required. Space beyond the first row of furnace screen tubes shall not be considered as furnace volume.

6. Drums

Drums shall be of fusion welded construction in strict accordance with A.S.M.E. Code including stress relieving and radiograph of all welded seams.

A 12" x 16" manhole shall be provided in each end of each drum furnished with hinged forged steel manhole cover, yokes and gasket.

All drums shall be hydrostatically tested at a pressure one and one-half times the design pressure prior to shipment. A certificate of Inspection by the Hartford Steam Boiler Inspection and Insurance Company and an A.S.M.E. Manufacturers' Data Report shall be furnished with each boiler.

7. Connections

The following connections shall be provided in the drums or headers:

Required number of flanged safety valve nozzles:

- One flanged steam outlet
- One coupling for feedwater connection
- Two couplings for water column connections
- Two couplings for feedwater regulator connections
- One coupling for continuous blowdown connection
- One coupling for chemical feed connection
- One coupling for vent connection
- One coupling for blowoff connection in bottom drum
- One coupling for blowoff connection in each lower sidewall header and bridgewall header
- One coupling for soot blower steam supply

8. Drum Internals

Internal piping and fittings shall be provided for feedwater distribution, chemical feed and continuous blowdown.

The necessary steam separators and baffles shall be provided in the steam drum to insure delivery of steam from the unit having a moisture content of not more than 1/2 of 1 percent at the maximum continuous capacity with boiler water concentration not in excess of the recommendations of American Boiler Manufacturers and Affiliated Industries.

9. Tubes

Tubes shall be seamless or electric-resistance welded steel of a thickness to conform to the A.S.M.E. Code. All tubes shall be of the same diameter throughout its entire length.

Water-wall tubes shall be not less than 3-1/4" diameter, spaced on not more than 7" centers. All bank tubes shall be not less than 2-1/2" diameter.

Tubes shall be spaced so that any tube may be removed and replaced without removing adjacent tubes. Designs using swaged, studded or finned tubes, and where several adjacent tubes must be removed to replace a tube, will not be acceptable.



10. Headers

All headers shall be at least 10" in diameter and shall be seamless steel pipe. Handhole openings with handhole plates, yokes and gaskets will be provided for all exposed ends of headers. Openings will be provided in headers for access to ends of tubes for expanding. One opening shall be provided for every two tubes entering headers. These openings will be closed with key handhole caps. All headers shall have each end extended through the casing for adequate access for cleaning. Boiler designs incorporating supply tubes from the upper drum, or having supply tubes outside the casing, will not be acceptable.

11. Supports

The boiler shall be top-supported with supports provided under the top drums and headers. The construction shall provide for expansion and contraction without causing damage to the boiler or setting. Designs incorporating bottom supporting saddles under the lower drum and headers, with casing and tile supported on the tubes, drum or headers, will not be acceptable.

12. Baffles

Baffles shall be provided to direct the flow of gases through the unit. The baffles installed parallel to the tubes shall consist of 2", No. 1, quality refractory shiplap tile. Baffles installed across the tubes shall be of monolithic construction of high temperature refractory, or precast shapes.

13. Access and Inspection Doors

Each unit shall be provided with minimum of two doors for access and inspection of the unit. All access openings shall be at least 12" x 18". A minimum of two observation ports shall be provided on one side of the boiler furnace. Furnish one furnace access door and two explosion doors for the boiler.

14. Setting

A steel encased insulated setting shall be provided to give an average casing temperature not to exceed 140°F. in an ambient temperature of 80°F. with surface wind velocity of 2' per second.

The setting shall consist of the following or approved equal:

Front Furnace Wall above Header: 2" high heat duty refractory tile  
2" mineral wool block insulation  
3" mineral wool block insulation

Side Furnace Walls:	2" high heat duty refractory tile 2" mineral wool block insulation 3" mineral wool blanket insulation
Side Walls in Convection Area:	2" high heat duty refractory tile 2" mineral wool block insulation 3" mineral wool blanket insulation
Roof at rear of Steam Drum:	2" high heat duty refractory tile 2" mineral wool block insulation 3" mineral wool blanket insulation
Rear Wall down to Centerline of Bottom Drum	2" high heat duty refractory tile 3" mineral wool blanket insulation

Insulation thicknesses less than the minimums outlined above will not be acceptable.

The entire setting down to the sidewall headers and centerline of bottom drum will be enclosed in a No. 10 gauge flanged and bolted casing.

#### 15. Trimmings

The following trimmings shall be provided for each unit:

One high and low alarm water column with a minimum of 18" between steam and water connections and a minimum of 18" between water gauge connections. Quick-opening water gauge valves and round gauge glass shall be provided with a minimum of 13" visibility complete with chains to operate from the boiler room floor. Three weighted lever gauge cocks with chains shall be provided. Water column shall be Reliance or approved equal.

Provide safety valves as required by A.S.M.E. Code with cast iron body and bronze trim. - Consolidated No. 1511 or approved equal, or pressure series as required.

- One - Feed globe valve with plug seat, Jenkins or equal
  - One - Feed check valve, Jenkins or equal
  - One - Drain valve for water column drain, water gauge drain, and inspector's test valve
- Blowoff valves for bottom drum and headers shall be provided in tandem at each blowoff connection and shall be of the seamless type, Yarway Type B, or equal.

#### 16. Soot Blowers

Soot blowers shall be provided as required to clean the boiler heating surface. Soot blowers shall be of the automatic valve-in-head type.

Diamond, Vulcan, Bayer or approved equal. Chains shall be provided to rotate the elements from the boiler room floor. Elements and bearings shall be a material suitable for the prevailing temperature as recommended by the Boiler and Soot Blower Manufacturers.

17. Furnace Refractory

Furnace refractory shall be provided as required and recommended by the manufacturer of the firing equipment.

18. Instrument Connections

The casing and setting shall be provided with the necessary standard weight pipe connections required for instruments and combustion controls.

19. Flue Gas Outlet and Damper

A flanged, rectangular flue gas outlet shall be provided at the top rear of each unit and shall be provided with holes for attachment of the flue gas duct. Flue gas outlet shall be the full inside width at boiler setting to equalize gas flow, and shall be equipped with a multiblade balanced damper in a structural steel frame, with ball bearings, shafts and damper lever.

20. Painting

All structural steel and sheets shall be given one shop coat of paint prior to shipment.

21. Drawings and Manuals

The purchaser shall be provided with five sets of setting drawings, foundation loading diagrams and three instruction manuals.

22. Arrangement and Layout

The drawings and these specifications indicate the type of boiler unit desired, and if units are offered of different type and arrangement, the cost of all piping, ductwork, walkways and foundation changes shall be borne by the Vendor at no additional cost to the Owner. All drawings, State and Insurance Carrier approvals shall be at the expense of the Vendor.

APPENDIX ITEM A-4  
CHARACTERISTICS OF  
EXISTING STEAM GENERATORS  
CITY OF AMES, IOWA

CITY OF AMES, IOWA

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

CHARACTERISTICS OF EXISTING STEAM GENERATORS

	UNIT NO.		
	5	6	7
Manufacturer	Riley	Union Iron Works	Combustion Engineering
Installation Date	1951	1958	1968
Pressure/Temperature, PSI/F	710/825	725/825	900/900
Nominal Steam Output Capacity, pph	95,000	125,000	360,000
Fuels	Coal/Gas	Coal/Gas	Coal/Gas
Coal Firing Equipment	Spreader Stoker Traveling Grate	Spreader Stoker Traveling Grate	2-Pulverizers, 8-Non-Tilting Tangential Burners
Furnace Pressure	Balanced Draft	Balanced Draft	Balanced Draft
Dust Collection Equipment	Western Multiple Cyclone	American Multiple Cyclone	American Electrostatic Precipitator
Stack Heights, ft.	200	200	200
Heat Input at Nominal Capacity, Million BTU/hour	146	191	436
Coal Fired, TPH, at 9541 BTU/lb.	7.6	10.0	22.9
Refuse Burning Capability, TPH at 5000 BTU per lb., % of total fuel input			
10%	1.5	1.9	4.4
20%	3.0	3.8	8.7
50%	7.3	9.5	NA

APPENDIX ITEM A-5

NEW CLASSIFIED WASTE  
DISPOSAL SYSTEM, THE  
PENTAGON, WASHINGTON, D.C.

STAT

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

APPENDIX ITEM A-6

LETTER FROM HDR  
TO KELLEY - HOSKINSON  
CO. DATED APRIL 3, 1975



*HENNINGSON, DURHAM & RICHARDSON*

ENGINEERING • ARCHITECTURE • PLANNING • SYSTEMS • ECONOMICS

5454 Wisconsin Avenue  
Washington, D.C. 20015  
April 3, 1975

Kelley-Hoskinson Company  
6720 N. Teutonia Avenue  
Milwaukee, Wisconsin 53209

Gentlemen:

We are currently involved in preparation of preliminary plans and specifications for provision of a new boiler to burn no. 6 oil but with the capability to burn refuse-derived fuel as a supplement. The boiler should have a capacity to produce approximately 20,000 lb. of steam per hour at a pressure of 125 p.s.i. Please furnish me with complete information on your line of boilers suitable for this service.

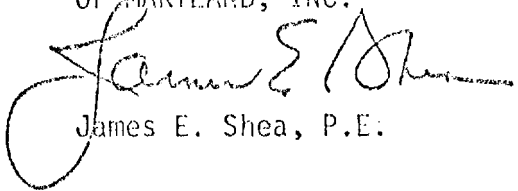
The boiler is to be installed in an existing plant, the floor construction of which is concrete slab-on-grade. Accordingly we will be concerned about requirements for ash handling when the boiler is fired with higher percentages of refuse-derived fuel.

The refuse-derived fuel will consist of finely shredded paper much of which will be the output of a dual hammermill handling only paper waste. The nature of the material is such that it appears to be ideally suited to burning in suspension.

In addition, your recommendations for pollution-control devices to be provided for the boiler will be sincerely appreciated.

Very truly yours,

HENNINGSON, DURHAM & RICHARDSON  
OF MARYLAND, INC.

  
James E. Shea, P.E.

JES/bw

APPENDIX ITEM A-7

LETTER FROM McBURNEY  
STOKER AND EQUIPMENT  
CO. INC. TO HDR DATED  
JULY 9, 1975

RECEIVED JUL 11 1975

**McBURN EY**

**STOKER & EQUIPMENT CO., INC.**

P. O. DRAWER 47848, ATLANTA, GA. 30340

404: 448-8144

July 9, 1975

Henningson, Durham & Richardson  
5454 Wisconsin Avenue  
Washington, D.C. 20015

Attention: Mr. James E. Shea  
Vice President

Dear Mr. Shea:

In the absence of our Mr. Dave Heinzmann, I am responding to your letter dated June 11th with reference to a refuse burning boiler.

We can indeed supply a boiler with a capacity of 20,000 pph at 100 psig burning #6 oil and shredded paper refuse such as you describe. There are, however, a number of critical bits of information required in order to prepare a quotation for your consideration.

One of our major concerns would be the air pollution emission requirements and we therefore need to know where the installation is to be made. Just how fine the paper refuse is to be shredded will determine the type of burner we would apply to the boiler and whether or not the refuse is to be burned as produced or stored in some sort of intermediate bin and then fed to the boiler in order to match steam demand.

We also need to know whether additional equipment is required such as deaerating feedwater heater, boiler feed pumps, chemical treatment, etc. We can furnish and install a unit such as you are interested in, depending upon whether the installation can be made with non-union or whether union labor would be necessary.

*Manufacturers of* **McBURN EY STOKERS**

**ENGINEERING CONTRACTORS • STEAM GENERATING AND FUEL BURNING SYSTEMS**

Since 1911

*Offices and Plant* • **4698 OLD PEACHTREE ROAD, DORAVILLE, GEORGIA**

Henningson, Durham & Richardson  
Mr. James E. Shea

Page Two.  
July 9, 1975

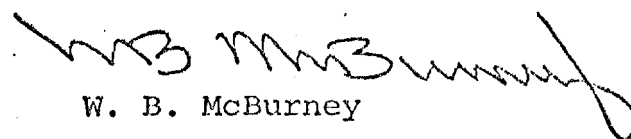
Perhaps the best solution would be to have one of our engineers meet you at the job site to obtain the necessary information and proceed from there.

We appreciate your inquiry and look forward to hearing from you further.

Very truly yours,

McBURN EY STOKER & EQUIPMENT CO., INC.

By



W. B. McBurney

WBM/djc

APPENDIX ITEM A-8

LETTER FROM HDR TO  
McBURNEY STOKER AND  
EQUIPMENT CO. DATED  
FEBRUARY 27, 1976

*HENNINGSON, DURHAM & RICHARDSON*

ARCHITECTURE • ENGINEERING • PLANNING • SYSTEMS • ECOSCIENCES

5454 Wisconsin Avenue  
Washington, D.C. 20015  
February 27, 1976

COPY

McBurney Stoker & Equipment Co., Inc.  
P.O. Drawer 47848  
Atlanta, Georgia 30340

Attn: Mr. D. A. Heinzmann

Re: Project 501114 Waste Energy Recovery Study

Gentlemen:

With reference to your letter of February 20, 1976, I am presenting herewith complete details on our project requirements in the hope that tests can be arranged that will result in conclusive data that will help us achieve our objectives. I discussed this project in general terms with Mr. McBurney here in Washington last year, and more recently with Gerry DeHoff.

The study involves an existing power plant in this area that has three (3) type MKL steam generators manufactured by E. Keeler Co. Each boiler has a maximum capacity of 55,000 lb. of steam per hour at a boiler operating pressure of 100 psig. Other technical data is as follows:

Steam Working Pressure:	160 psig
Convection Heating Surface:	6,016 Sq.Ft.
Water Walls Heating Surface:	397 Sq.Ft.
Total Heating Surface:	6,413 Sq.Ft.

The fuel is No. 6 fuel oil.

An earlier study of some operational problems involving these boilers revealed that there was an apparent need for a new automatically fired boiler having a design capacity of approximately 20,000 lb. of steam per hour to handle summertime loads. There is believed to be adequate floor space in the plant for the new boiler, but there are some limitations on headroom. (Refer to my letter of June 11, 1975).

The study resulted in a conclusion that the requirement could be met by installation of an automatically-fired boiler similar to the Keystone 9M model as manufactured by Erie City Division of Zurn Industries. The unit would be designed for a maximum or gross load of 18,000 lb/hr.

McBurney Stoker & Equip. Co., Inc.  
February 27, 1976  
Page 2

An increasing urgency for energy conservation resulted in a need for determination of whether a boiler could be provided to meet the requirements described hereinbefore, but also burn significant amounts of waste material in the form identical to the sample I sent you last week. We furnished you with results of laboratory tests of the material previously on January 23, 1976.

In Mr. McBurney's letter to me dated July 9, 1975, it was indicated that you can supply a boiler adequate for our project requirements. In our later meeting he described a modified Keeler model CP boiler commonly used in the wood bark-burning industry. He prepared a sketch (see attachment "A") which illustrates such a boiler having a combustion chamber for oil-firing above a lower section in which the shredded refuse would be fed. Approximate vertical dimensions to suit available headroom are shown, as are appurtenant equipment items including a cyclone separator and an induced draft fan.

Our investigations to date have revealed no existing installation in which a commercial boiler is being used for burning shredded paper with oil as a supplemental fuel, particularly in the size range we are thinking of. Moreover, we know of no plans for an EPA demonstration grant program for such applications. Mr. McBurney is probably aware of the effort the National Resource Recovery Corporation has expended to interest EPA in an applicable program.

In addition to the provision of a new boiler, this project requires that we look into the feasibility of burning the waste material in one of the three existing boilers.

Our client is concerned with reliability of performance over a wide range of paper/fuel oil ratios without pollution. Mr. McBurney addressed this subject in his letter of July 9, 1975.

In our discussions of "burn" tests of waste material furnished by our client, I was led to believe that the material could be burned in a boiler similar to that described hereinbefore, either in your plant or in a location in which you have installed such a boiler subject to appropriate arrangements made by your organization. In summary, we are concerned not only with being able to feed the material into a boiler, but also in being able to burn it at various fuel ratios without excessive emissions. It would be hoped that assurance of reliable performance could be established leading to installation of a similar boiler in the client's plant that would operate predictably and relatively free of significant risks.

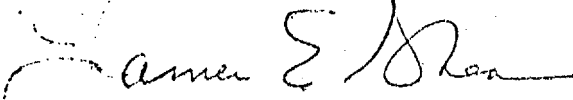
McBurney Stoker & Equip. Co., Inc.  
February 27, 1976  
Page 3

Your attention is invited to our need for temporary storage of the waste material at the test site in order to minimize the turn-around time for the delivery truck. Refer to my letter of February 20, 1976. Also, please confirm that your plant is still at 4690 Old Peachtree Road, Doraville, Georgia. Your last letter had only a P.O. Drawer number.

I apologize for the length of this letter, but I felt that by giving you all the facts pertaining to the project, you may be better prepared to develop a proposal for boiler tests commensurate with our needs.

Very truly yours,

HENNINGSON, DURHAM & RICHARDSON



James E. Shea, P.E.  
Vice President

JES/mcr



APPENDIX ITEM A-9

LETTER FROM HDR TO  
McBURNAY STOKER AND  
EQUIPMENT CO. DATED  
NOVEMBER 25, 1975

**HENNINGSON, DURHAM & RICHARDSON**

ARCHITECTURE · ENGINEERING · PLANNING · SYSTEMS · ECOSCIENCES

5454 Wisconsin Avenue  
Washington, D. C. 20015  
November 25, 1975

**COPY**

McBurney Stoker and Equipment Co., Inc.  
4690 Old Peachtree Road  
Atlanta, Georgia 30340

Subject: Project 501114, Waste  
Energy Recovery Study

Attn: Mr. Willard McBurney

Dear Willard:

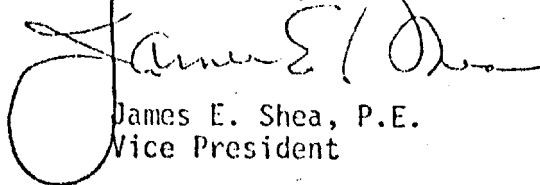
In our recent discussion of boiler requirements for subject project I believe that you expressed the opinion that the finely-shredded waste could probably be burned effectively in a boiler similar to the Keeler "CP". With reference to the available space in the existing plant being considered you felt that the boiler could be accommodated. It would have a firebox section approximately 14 feet high for oil firing with an additional firebox section immediately below for burning the waste material. A cyclone separator and induced draft fan would be required.

You mentioned the possibility of arranging a combustion test using an existing bark-burning boiler in the Atlanta area. I recall that about 8,000 lbs. of our waste material would be needed to gain any meaningful data. I passed this information on to the client and it appears that a transfer box filled with the material can be obtained and shipped to Atlanta for the test.

Please let me know what arrangements must be made to definitely schedule this test and if the fuel quantity cited above is correct. We would prefer to use #6 fuel oil as a supplemental fuel during the test in order to simulate the ultimate installation as close as possible.

Very truly yours,

HENNINGSON, DURHAM & RICHARDSON  
OF MARYLAND, INC.



James E. Shea, P.E.  
Vice President

JES/blp

APPENDIX ITEM A-10

LETTER FROM HDR TO  
McBURNEY STOKER AND  
EQUIPMENT CO. DATED  
JANUARY 23, 1975

HENNINGSON, DURHAM & RICHARDSON  
ARCHITECTURE • ENGINEERING • PLANNING • SYSTEMS • ECOSCIENCES

5454 Wisconsin Avenue  
Washington, D.C. 20015  
January 23, 1976

McBurney Stoker and Equipment Co., Inc.  
4690 Old Peachtree Road  
Atlanta, Georgia 30340

Attn: Mr. Gary De Hoff

Re: Project 501114 - Waste Energy Recovery Study

Gentlemen:

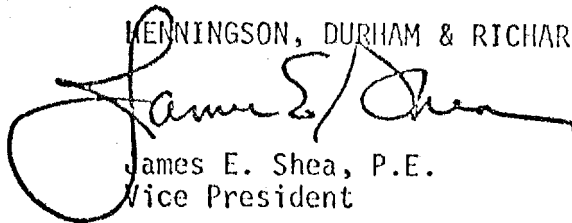
In your call on January 20, 1976, you asked me to see if we could expedite shipment of 500 cu.ft. of our waste material to your site for combustion tests in a particular boiler believed to be suitable for the application. Subsequently, after contacting the Client, I notified you that the material could not be shipped this week.

Today your request that we ship the material as soon as possible was received and we will work with the Client in an effort to comply. As soon as a firm schedule can be established, I will contact you.

I have enclosed a report dated November 17, 1975 of the Midwestern Laboratories, Inc. concerning a series of tests carried out on two samples of waste material. With reference to the moisture content of the material, the sample identified as U.S. ATC #1 is considered more representative because the other (W.T.C.H.) sample is known to have been artificially wetted.

Very truly yours,

HENNINGSON, DURHAM & RICHARDSON



James E. Shea, P.E.  
Vice President

JES/mcr

Enclosure

APPENDIX ITEM A-11

REPORT OF INSPECTION OF  
CONSUMAT MODULE. TYPE  
INCINERATORS IN THREE CITIES  
IN THE GREATER HOUSTON  
AREA AS PREPARED BY  
NAVY DEPARTMENT

A. PURPOSE OF INSPECTION TOURS

Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7

The purpose of the inspection tours was to observe operations and conditions of the Consumat module type incinerators in three cities in the Greater Houston area, to determine applicability of the units for use by the Navy Department in disposing of solid waste generated at Naval Bases.

B. BACKGROUND DATA

The Consumat is a patented incinerator unit arrangement currently being marketed by Waste Control Systems Inc. of Houston, Texas. The design of primary and secondary combustion chambers, arranged for auxiliary fuel firing, a controlled method of refuse feed and several other unique features, combine to provide a good burn-out of refuse and an exceptionally fine stack effluent. The unit arrangement is available in several sizes. The largest size unit is designated Model H-760 and is claimed to be capable of disposing of a nominal 12.5 tons of typical mixed refuse during a 10 hour charging day. Operations require that, following the last charge of the day, the burners and controls continue in automatic operation for a six hour period and then shut down; the ash is raked out the following morning prior to preheating the furnace for that day's initial charge of refuse.

To match the specific needs in capacity to dispose of daily refuse loads being generated in communities of various sizes, Waste Control Systems Inc. conceived the idea of multiple installations of the Model H-760 Consumats. Examples are as follows: Two (2) of these units, at 12 1/2 tons/day each, would have a combined rating of 25 tons/day; ten (10) such units would have a combined rating of 125 tons/day. Two-unit installations have been provided for the City of Galena Park in December 1969 and for the City of South Houston the following year. Waste Controls reports the recent sale of two (2) 10-unit and one (1) 5-unit installation to the City of Houston and, through an associated company, Sanitas Technology and Development Corp. of Boston, Massachusetts, the sale of a 10-unit installation to the City of Detroit. Both Waste Controls and Sanitas are affiliates of Houston Natural Gas Corporation.

C. FINDINGS

1. Applicability to Naval Base Facilities

The Consumat Model H-760 units are not considered suitable for Naval Base installations for the following reasons:

a) Environmentally Unacceptable Residue Removal System

The units are emptied of residue each morning at about 6:30 AM, before commencing the feed of refuse for the day's burning operation. A large refractory-lined door at the end of the primary combustion chamber is fully opened; the residue, which is still aflame, quenched by hosing with water and then raked out and allowed to fall on a concrete apron at the foot of the door. The residue requires additional quenching once removed from the furnace. This residue removal operation, which takes about 45 minutes for two furnaces with two men working, is accompanied by much smoke and fly ash and is considered unacceptable.

b) Feed Opening Too Small

Refuse is fed into the unit by first depositing the material into a feed box, 6' 0" wide by 3' 6" deep (front to back) and 2' 6" high, after which it is rammed into the furnace through an opening 2' 0" high by 4' 0" wide. This feed system is too small for the bulky waste normally found in Naval Bases, i. e., cartons, crating, etc., and prior shredding of this material would be required.

c) Inadequate Refuse Storage Capacity

The two-unit installations at Galena Park and South Houston have no storage bins. Refuse is dumped on the floor between the two feed boxes. A small front-end unloader called a "Bob-cat" maneuvers about in this space, first shoveling refuse into one feed box and then the other. The space between the feed boxes can only accommodate the discharge of two 20-yard packer truck loads at the same time, without the refuse spilling over and obstructing the feed operation. It takes about four hours to charge this quantity of refuse into the two units, or two hours to charge the contents of one packer truck

Therefore, a third packer truck cannot be accommodated for at least two hours at this two-unit incinerator station. This would cause delays in collector truck operations.

d) Area Requirements Too Great

A typical 100 ton/day facility proposed by Waste Control Systems consisting of eight Consumat units would require about 32,500 square feet (235 x 138) in plan. Preliminary layouts prepared by Leonard S. Wegman Co. Inc. of conventional two 150 ton/day incinerator units, complete with air pollution control equipment, requires only 20,000 square feet (160 x 120) in plan. With land area at a premium at most Naval Bases, the Consumat System is not recommended.

e) Costs Too Much

Mr. Ed Levane, General Manager of Waste Control Systems Inc., in telcon with RGB on May 17, 1972, advised pricing on a 100 ton/day turn-key installation just sold on May 15, 1972 to the City of Houston as follows:

Equipment: (8) 12 1/2 ton/day units. . . . .	\$580,000
Building and foundations. . . . .	170,000
Total	<u>\$750,000</u>

The experience at Galena Park and South Houston indicates that the 12 1/2 ton/day rating assigned to the unit may be overly optimistic and that 8 ton/day is more realistic. Eight units would then provide a capacity of 64 tons/day. At \$750,000 for the installation, unit cost per ton/day amounts to \$11,700 which, considering the system's disadvantages, offers little inducement for purchase.

Operating costs have been estimated by Mr. Edward Barmore, South Houston's City Supervisor, at \$6.50 per ton which is sufficiently high to offer little attraction on this score. Gas supply for the auxiliary burners and labor are the big elements of cost. Mr. Barmore estimates \$0.50 per ton for maintenance, based on the limited operating experience of two years at South Houston, but concedes that it may turn out higher.



The higher cost of labor for the multi-unit Consumat concept, compared to a conventional incinerator plant, is demonstrated in the following:

A single crane operator can easily feed two furnaces, each rated 100 tons/8 hours, for a through-put of 200 tons/8 hours.

The maximum number of Consumat units that a "Bob-cat" operator can feed is four. Since each unit can only take about eight tons, 10 at the very most, although the manufacturer claims 12 1/2 tons, one man on a "Bob-cat" can then feed only 40 tons in an 8-hour day. Five "Bob-cat" operators would then be required to feed the 200 tons that a single crane operator can feed in eight hours.

ANALYSIS OF  
CAPITAL AND OPERATING COSTS  
Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7  
MODULE CONSUMAT INCINERATOR PLANT 2-9 TONS/DAY  
GALENA PARK, TEXAS

CAPITAL COST

I Construction costs

A. Incinerators	\$130,000	
B. Foundation and housing	31,850	
C. "Bob-Cat" (Melrose)	5,000	
D. Installation, Wiring, gas piping, etc.	23,500	
Total		\$190,350

TOTAL CAPITAL COST \$190,350  
ANNUAL CAPITAL COST (12.44%) 23,700

OPERATING COST

I Labor including fringe benefits \$ 30,500

II Utility costs

1. Gas	4,570
2. Electricity	1,210
3. Water	--

III Supplies

1. Gasoline and Lubricants	750
2. Insecticide	1,500

IV Maintenance and repairs

1. Contract repair service	2,500
2. Replacements parts	1,500

ANNUAL OPERATING COST \$42,530  
TOTAL ANNUAL COST \$66,230  
ANNUAL COST PER TON \$13.10

$(2 \times 9 \frac{\text{tons}}{\text{day}} \times 6 \frac{\text{days}}{\text{week}} \times 52 \frac{\text{weeks}}{\text{year}} \times 0.9 = 5060 \text{ tons/years})$

APPENDIX ITEM A-12

LETTER PROPOSAL FROM  
ENGINEERING-TEST  
SERVICES DIV. TO  
HDR DATED  
NOVEMBER 15, 1976



RECEIVED

NOV 15 1976

H-D-R ENGINEERS, INC.

**ENGINEERING-TEST SERVICES DIV.**  
A.S.P. Inc. P.O. Box 11 Sandston, Va. 23150 Phone (804) 353-4953

November 15, 1976

Mr. Erik Silverman  
H-D-R Engineers  
5454 Wisconsin Avenue  
Chevey Chase, Maryland 20015

Dear Mr. Silverman:

After our discussions of Thursday, November 11, 1976, I contacted both the Consumat dealer responsible for the Pentagon installation and Mr. Raymond Belcher of the Virginia Air Pollution Control Board. Mr. H.V. Traywick of Air Pollution Control Products indicated to me that the units at the Pentagon would require at least another three weeks for completion, if not longer. It is for this reason that I am not optimistic about our access to them for testing before mid-December at the earliest. We can follow the construction more closely and see.

Mr. Belcher indicated to me that a proposal to shorten the testing periods somewhat while still adhering to test procedures would pose no problems from his standpoint. He did request that his area representative be invited to witness the tests, a request that I think is fair enough.

Testing can be condensed into two days, weather permitting. These would be four (4) separate test runs completed of two (2) hours


Approved For Release 2003/04/29 : CIA-RDP86-01019R000100250001-7  
Mr. Silverman  
Page Two  
November 15, 1976

duration each. These would be completed two test runs per day following a one hour warmup of the machines. Time between tests would be held to a minimum (about 5 minutes), thereby requiring waste for only five hours per test day. Preparations for testing would be completed no later than the day before scheduled testing. Testing should be arranged for a Wednesday and Thursday. Preparation by operating crews, your staff, and my test crews would be completed on Monday and Tuesday. As I mentioned on the phone, I think you must allot three men to the field to evaluate machine operation on the test days, while one or two men are adequate during preparation. Supervision of the refuse charging could be shared between you and me. I will monitor auxilliary fuel usage and stack test operations. I feel confident that we can do a respectable job in two test days.

My recommendation is that you budget \$2,500.00 for stack testing and a like amount for your field crew. I have enclosed our standard rate schedule to show our charges.

I am looking forward to working with you on this project and hope to hear from you soon.

Sincerely,

  
Fred M. Yelinek, PCA  
President

FMY/may  
Enclosure



**ENGINEERING-TEST SERVICES DIV.**  
A.S.P. Inc. P.O. Box 11 Sandston, Va. 23150 Phone (804) 353-4953

**STANDARD RATE SCHEDULE**

EFFECTIVE APRIL 1, 1976

GENERAL PROCESS INDUSTRIES ( no combustion analysis or other chemical characterization required)

Particulate Mass Emission Rate - EPA Methods 1-5; 3 test runs or as required

\$1,200.00 includes setup preparation, calibration, analysis, calculation, and formal reporting as required by local or applicable control agency (includes 1st field day)

\$300.00/day  
(after 1st field day) for a crew not to exceed 3 men

\$500.00/day for two crews not to exceed 6 men simultaneously comitted to the same field project

PLUS all direct travel and subsistence charges billed at cost.

SO<sub>x</sub> DETERMINATION - EPA Methods 6 and 8. Same Rate Schedule as General Process Industries (above).

NO<sub>x</sub> DETERMINATION - EPA Method 7. Same as Rate Schedule for General Process Industries (above).

U.S. EPA INCINERATOR COMPLIANCE DETERMINATION

EPA Methods 1-5 PLUS Standard Methods for the Evaluation of Solid Waste Incinerators as published by the USEPA 1973.

\$1,800 includes setup, calibration, preparation of equipment, analysis of results with combustion analysis Orsat calculations, visible

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U.S. EPA INCINERATOR COMPLIANCE DETERMINATION (cont.)

emission evaluation, operation logs, and formal report in our standard format (includes 1st field day).

\$300.00/day  
(after 1st field day) for a crew not to exceed 3 men

\$500.00/day for two crews not to exceed 6 men and two separate sets of equipment

PLUS direct travel costs for transport, lodging and meals.

Company land vehicles billed at 15¢/mile from Richmond, Virginia, each way.

Company aircraft billed at 30¢/mile from Richmond, Virginia, each way.

TERMS:

Travel and Subsistence Costs - NET 15 DAYS from completion of field work

FEES - NET 15 DAYS from delivery of final report

a 1½% per month late charge is applied to overdue invoices and the purchaser agrees to reimburse the seller in full for all costs of collection of late payments.

OTHER field studies such as Hydrocarbons Characterization, Process Evaluation, Industrial Hygiene Sampling, Waste Water Sampling, and Chemical Analytical Services are negotiated on a project basis.

Senior Scientist - \$22.50/hour

Scientist - 18.00/hour

Field Technician - 15.00/hour

with chemical analytical rates per our reported schedule.

We also provide bench scale and pilot scale waste water treatment and process development studies in our laboratories.

APPENDIX ITEM A-13

DWG. 9-HVAC-4 POWERHOUSE  
BOILER ROOM UPPER LEVEL  
PLAN & SECTIONS-HEAT, VENT, AIR COND



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REFERENCES

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ITEM NO.

DESCRIPTION

1. Evaluation Study of Powerhouse Boiler Controls (prepared by Henningson, Durham & Richardson - Contract No. 93-03B-10502)
2.
3. Report on Status of Technology in the Recovery of Resources from Solid Wastes (published by County Sanitation Districts of Los Angeles County, California, January, 1976.)
4. Evaluation of the Refuse Management System at the Jersey City Operation Breakthrough Site prepared by Hittman Associates, Inc under Contract 68-03-0094 prepared for Office of Research and Monitoring, U.S. Environmental Protection Agency.
5. Evaluation of Small Modular Incinerators in Municipal Plants, prepared for Office of Solid Waste Management, U.S. Environmental Protection Agency by Ross Hofmann Associates in 1976.

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