

342-0082

Appropriation 12-9708

Contract No. G-00-5474-C

THIS CONTRACT, entered into this *7th* day of *August*
1972, by and between HUMBLE OIL & REFINING COMPANY,
hereinafter referred to as "Humble," and BROWN & ROOT, INC.

, hereinafter referred to as "Contractor," WITNESSETH:

That in consideration of the covenants and agreements set out herein and the payments provided for herein Humble and Contractor agree as follows:

1. Contractor agrees to begin immediately and press with due diligence until completion in a careful and workmanlike manner, with the necessary labor, supervision, tools, equipment, and materials, furnished and maintained by Contractor at its own cost and expense except as hereinafter provided, certain work briefly described as follows:

Perform all work in accordance with the specifications and exhibits listed below, a copy of said specifications and exhibits and of each drawing and Baytown Engineering Standard referred to therein being attached hereto and made a part hereof.

<u>Designation</u>	<u>Title</u>	<u>Date</u>
Specifications	Specifications for the Consolidation of South Refinery Entrances, Humble Oil & Refining Company, Baytown, Texas (Except as noted below) *	June 26, 1972
Exhibit "A"	Consolidation of South Refinery Entrances San Jacinto Avenue-Bayway Drive	June 26, 1972
Exhibit "G"	Stabilization of Prices, Rents, Wages, and Salaries	August 1971
Exhibit "H"	Occupational Safety & Health Act	March 1, 1972

* Except that that the paving of the streets and parking lot shall be 10 inches of compacted limestone with 1-1/2 inches of hot mix asphalt in accordance with Baytown Engineering Standard 4-60-1.1A. Preparation of subgrade shall be in accordance with specifications.

Contractor agrees to begin work on or about August 1, 1972, and will make every effort to complete the work before October 30, 1972.

2. As consideration for the satisfactory performance and completion of this Contract by Contractor, Humble agrees to pay Contractor the lump sum of ONE HUNDRED TWENTY-EIGHT THOUSAND THREE HUNDRED TWENTY-FIVE AND NO/100 (\$128,325.00) DOLLARS.

EXX 001935

3. Contractor shall comply with all of the terms and conditions contained in Humble's publication entitled "Contractors' Responsibilities for Safety, Plant Protection, and Traffic Regulations," dated October 1, 1971, said publication being made a part of this contract by reference. Humble will furnish copies of this publication to the Contractor. The rules and regulations contained in the "Contractors' Responsibilities" shall apply to all subcontractors and their employees as well as to the prime contractor and its employees. Before starting work under this Contract, Contractor shall obtain from Humble copies of these regulations. Contractor shall notify its employees, its subcontractors, and the employees of its subcontractors of the provisions of said regulations and shall secure compliance therewith by all such parties; and Contractor shall not allow any of such persons to begin work inside Humble's Baytown Refinery until such notification has been given them.

Said "Contractors' Responsibilities" are designed as minimum requirements for Contractor, and Contractor shall take any additional precaution necessary or proper under the circumstances to prevent injury or death to persons or damage to property. Neither compliance with such regulations by Contractor nor Humble's approval of any actions or procedures of Contractor as provided therein shall relieve Contractor of its obligation always to use due care in performing work hereunder.

4. Although Contractor shall provide its own representative or representatives to supervise and inspect all materials and workmanship entering into this job, Humble reserves the right to have an inspector on the job. Any material which Humble considers unsatisfactory shall be removed and replaced at Contractor's expense. Neither inspection, waiving of inspection, nor acceptance by Humble shall relieve Contractor of its obligation to furnish all materials and workmanship in accordance with specifications.

5. It is understood and agreed that all work performed by Contractor hereunder shall meet with the approval of Humble's engineers or inspectors but that the detailed manner and method of doing same shall be under the control of Contractor, Humble being interested only in the result obtained, and that Contractor is an independent contractor as to all work performed hereunder. In this connection, Contractor and Humble agree as follows:

A. Contractor agrees to indemnify and hold Humble harmless from all claims, actions, demands, loss and causes of action arising:

(1) From injury, including death, to its employees and those of its subcontractors, except such as may result solely from the negligence or willful acts of Humble or its employees.

(2) From (a) injuries to or deaths of persons, including employees and representatives of Humble, which result in whole or in part from the willful acts or negligence of Contractor, its employees, agents, or subcontractors, or (b) damage to property of Humble and all other persons, which results in whole or in part from the negligence or willful acts of Contractor, its employees, agents, or subcontractors, except that Contractor shall not be responsible for damage to Humble's property resulting from fire or explosion.

(3) From damage to property or injury to or death of persons which result in whole or in part from willful acts or the negligence of Contractor, its employees, agents or subcontractors, in connection with the handling and use of utilities furnished by Humble except that

Contractor shall not be responsible or liable for such damage to Humble's property resulting from fire or explosion.

B. In addition, Contractor agrees to carry insurance as follows:

(1) Workmen's Compensation Insurance in compliance with the Texas Employers' Liability Act and all amendments thereto.

(2) Comprehensive General Liability Insurance (including Contractors' Protective Liability when subcontractors are used), covering

(a) Bodily injury liability with a limit of not less than \$ 100,000 for one person injured or killed and, subject to such limit, \$ 100,000 for more than one person injured or killed in any one accident, and

(b) Property damage liability with limits of not less than \$ 100,000 for each accident, and \$ 100,000 aggregate.

(3) Automobile Liability Insurance on owned, non-owned and hired automotive equipment covering

(a) Bodily injury liability with a limit of not less than \$100,000 for one person injured or killed and, subject to such limit, \$300,000 for more than one person injured or killed in any one accident, and

(b) Property damage liability with limits of not less than \$50,000 for each accident.

C. Prior to commencing work hereunder, Contractor shall produce evidence in a form satisfactory to Humble that all insurance required under this Contract is in force and carried with companies acceptable to Humble and that such insurance will not be materially altered or canceled while the work covered hereby is in progress without a reasonable prior written notice to Humble. Upon request of Humble, Contractor shall furnish certified copies of all such insurance policies. Should Contractor at any time neglect, or refuse to provide, or should it cancel the insurance required herein, Humble shall have the right to procure same and deduct the cost thereof from the consideration to be paid Contractor hereunder.

6. Contractor agrees to pay off and satisfy all claims for labor and material employed or used in anywise by it in connection with the work performed hereunder, and to permit no liens of any kind to be fixed upon or against the property of Humble by Contractor's laborers, mechanics or materialmen, and agrees to indemnify, protect and save Humble harmless from and against all such claims and liens.

7. Contractor agrees that if, in the opinion of Humble, Contractor should fail at any time during the performance hereof, to provide the necessary labor, supervision, tools, equipment or materials for the prompt performance of the work herein contracted for, or should breach this Contract in whole or in part or fail to use due diligence in the performance thereof, or should not be performing this Contract in the manner herein provided, Humble may, at its election,

take over and perform or obtain another contractor to take over and perform all or any part of the work then remaining unperformed. In the event Humble should exercise such right, it shall have the right to use all or any part of Contractor's tools or equipment then in use on the job but shall pay Contractor a reasonable rental for the use of such tools and equipment during the period of use by Humble and shall return same to Contractor upon the completion of the job in as good condition as when taken over by Humble, ordinary wear and tear excepted. Should Humble take over the completion of said job, or obtain another contractor to do so Humble shall pay Contractor for the work then completed, subject to the later provisions hereof, unless the compensation for the completed work cannot be readily determined, in which latter event Humble shall pay Contractor the full contract price less all costs and expenses incurred by it in the completion of the work.

8. Contractor agrees that upon the completion by it and acceptance by Humble of the work herein contracted for it will furnish Humble with proof satisfactory to the latter that all claims for labor and material have been satisfied and paid and that there are no unsatisfied claims for injuries to persons or property, and thereupon the amount due as herein provided shall be paid by Humble to Contractor, subject, however, to the right in Humble to withhold payments in accordance with the provisions of Article 5469, Texas Revised Civil Statutes of 1925, and all amendments thereto or other provisions of law applicable. It is agreed that upon request of Contractor and upon showing to the satisfaction of Humble that all claims for labor and material and for damages to persons and property, as above provided, have been satisfied, Humble, in the event it considers it safe to do so, will advance at approximately fifteen (15) day intervals up to ninety per cent (90%) of the value of the work then completed, based upon estimates by Humble's engineers or inspectors, in which event the balance will be paid upon completion and acceptance of the work and compliance with the terms and provisions hereof.

Contractor agrees that in the event any lien or liens are fixed or attempted to be fixed, secured or claimed against Humble or Humble's property by any person or firm, lumber dealer or corporation, artisan, laborer, mechanic or subcontractor who furnished services or materials in connection with the performance of this Contract, Contractor will, within ten (10) days following notification by Humble that such lien or liens have been fixed or attempted to be fixed, secured or claimed, furnish Humble a bond in an amount equal to twice the value of the lien or liens. Such bond shall be executed by a corporate surety authorized to do business under the laws of the State of Texas and shall comply in all respects with the requirements of Article 5472c, Vernon's Annotated Texas Statutes. Contractor further agrees to file such bond with the County Clerk of Harris County, Texas, and to take all steps necessary to assure that prompt notice of such filing is given to the obligees named therein. Contractor further agrees that the giving of such bond shall be in addition to any other rights of Humble or obligations of Contractor under this Contract and shall in no way be construed as abrogating or qualifying such rights and obligations.

9. In the event there is a conflict between any of the provisions hereof and any of the proposals, general conditions, specifications, or any documents, agreements, or papers of any kind which have been incorporated herein by other provisions hereof, it is understood and agreed that the provisions hereof shall be controlling.

The making, execution and delivery of this Contract by the parties hereto have been induced by no representations, statements, warranties or

agreements other than those herein expressed. This Contract embodies the entire understanding of the parties hereto and there are no further or other agreements or understandings, written or oral, except as mentioned herein.

10. In performing its obligations hereunder, Contractor shall comply with all applicable federal, state, and municipal laws, and all applicable orders, rules and regulations of constituted authority.

11. If Contractor fails or refuses to pay any taxes or governmental charges, state or federal, relating to the employees of Contractor, and Humble may be required or deems it necessary to pay such taxes or charges, Contractor agrees to furnish Humble with information required to enable it to make the necessary reports and to pay such taxes or charges. Contractor agrees to reimburse Humble on demand at Houston, Texas, for all such taxes or governmental charges, state or federal, which Contractor fails or refuses to pay and which Humble may be required or deems it necessary to pay. In addition, Humble, at its election, is authorized to deduct all sums so paid for taxes and governmental charges from any payment due Contractor hereunder.

12. In connection with the work provided for hereunder, Contractor (1) guarantees and warrants all material and equipment fabricated by it against defects and agrees to replace, without cost to Humble, any such material or equipment which may become defective within one (1) year from Humble's acceptance of the work except when such defects are the result of corrosion, erosion, normal wear and tear; (2) guarantees its field workmanship and agrees without cost or charge to Humble to replace or repair any defects in the work covered by this Contract resulting from its field workmanship if such defects are reported to Contractor within one year from date of Humble's acceptance of the work; (3) will to the extent reasonably possible secure from the vendors of materials and equipment guarantees substantially the same as the guarantees of Contractor set out in (1) and (2) above.

13. In the event Humble loans or furnishes tools or equipment to Contractor in connection with its work covered hereunder, Contractor agrees:

A. To make its own determination before commencing work that such tools and equipment are adequate for the safe performance of the work by Contractor;

B. That such tools or equipment will be loaned or furnished and accepted by Contractor without warranty or representation by Humble as to their condition.

C. To return such tools or equipment to Humble at the conclusion of such use in as good condition as when received, ordinary wear and tear excepted; and;

D. To indemnify and hold Humble harmless from all claims, demands, causes of action, damages and injuries resulting from Contractor's use of said tools or equipment.

For the purpose of this paragraph 13, tools and equipment shall be defined to include scaffolds, lights, and all other types of apparatus, facilities or services which Humble may loan or furnish. In addition, all of the provisions of this paragraph shall be applicable to any lighting or illumination loaned or furnished to Contractor by Humble.

14. Humble may from time to time, by written instructions or drawings issued to Contractor, require additional work and services directly in connection with or incidental to the work covered by this Contract; and Humble may by such instructions or drawings, require Contractor to alter, change, accelerate, or omit any work covered by this Contract. In the event Humble desires any such additions, changes, alterations, accelerations or omissions which will materially increase or decrease the total contract price referred to in paragraph 2 above, Contractor shall submit to Humble an estimate of such increase or decrease. Should Humble desire to proceed in accordance with such estimate, Humble shall issue to Contractor a Contract Change Order describing the work to be added or deleted and the corresponding price addition or deduction therefor. If Contractor has not obtained a Contract Change Order, signed by Humble's appointed representative, no claim for additional compensation will be allowed. The provisions of this Contract except as may be otherwise provided shall apply to all such additions, changes or alterations as if they were embodied in the original drawings and specifications.

15. Contractor shall procure Humble's prior written approval as to any subcontract covering any portion of the work provided for hereunder. No such approval shall relieve Contractor from any of the obligations of this Contract, and, as between the parties hereto, Contractor shall be and remain liable as if no such subcontract had been made. No subcontract shall bind or purport to bind Humble but shall contain a provision permitting assignment thereof by Contractor to Humble.

16. Contractor agrees to hold in confidence any and all technical information disclosed to Contractor by Humble, including technical information included in or on tracings, drawings, field notes, calculations, specifications, and engineering data, except:

A. Technical information which at the time of disclosure by Humble to Contractor is in the public domain;

B. Technical information which, after disclosure by Humble to Contractor, becomes part of the public domain by publication or otherwise; and

C. Technical information which Contractor can show was in Contractor's possession at the time of Humble's disclosure to Contractor and was not acquired, directly or indirectly, from Humble.

Contractor agrees that Contractor will not, without the written permission of Humble, use the technical information which Contractor is required to keep confidential under this Contract for any purpose other than the accomplishment of work under this Contract.

17. If Contractor or Contractor's personnel make any inventions based upon technical information which Contractor is required to keep confidential under this Contract, Contractor shall promptly disclose said inventions to Humble. Contractor agrees to grant and hereby grants to Humble an irrevocable, nonexclusive, royalty-free license and the irrevocable right to grant nonexclusive licenses, without accounting therefor to Contractor, to use said inventions under Contractor's Patent Rights. The licensing right herein granted by Contractor to Humble is assignable by Humble to any of its Affiliates. For the purpose of this Contract only, the term "Contractor's Patent Rights" shall mean patents and patent applications based on inventions made by Contractor or Contractor's personnel which inventions are based upon information which Contractor is required to keep confidential under this Contract and which are conceived during the life of this Contract and two (2)

years thereafter. The term "Affiliate," as used in this paragraph 17, shall mean any company of which Humble Oil & Refining Company (a corporation of the State of Delaware) or Standard Oil Company (a corporation of New Jersey) now or hereafter owns or controls, directly or indirectly, fifty per cent (50%) or more of the stock having the right to vote for directors thereof. For the purpose of this definition, the stock owned or controlled by a particular company, shall be deemed to include all stock owned or controlled, directly or indirectly, by any other company of which the particular company owns or controls, directly or indirectly, fifty per cent (50%) or more of the stock having the right to vote for directors thereof.

18. It is expressly understood by Contractor that Humble accepts no obligation of confidence with respect to any information disclosed to Humble by Contractor under this Contract unless specifically covered by a separate, written confidentiality agreement. In the absence of such separate confidentiality agreement, Contractor agrees that it will not place any restrictive notices on the tracings, drawings, field notes, specifications, and any other documents embodying engineering or professional data developed by Contractor for Humble pursuant to this Contract and that Humble is hereby authorized to nullify, obliterate, or otherwise remove any such restrictive clauses; and that Humble shall be free to use or disclose any or all of the information contained therein to third parties without accounting to Contractor therefor.

19. It is understood and agreed that Humble may, upon written notice to Contractor, terminate the work provided for hereunder. In the event of such termination, Contractor shall be reimbursed for actual costs incurred to the date of such notice of termination in connection with the execution of the described work, and for actual costs thereafter incurred by Contractor in connection with such termination, plus applicable overhead and a reasonable profit based on such costs. However, in no event shall such reimbursement include prospective profits for work unperformed.

20. Contractor's obligations under paragraphs 16 and 17 of this Contract shall survive any termination of this Contract.

21. It is agreed as a condition of the Contract as follows:

A. That in the performance of this Contract, Contractor shall not engage in any conduct or practice which violates any applicable law, order or regulation prohibiting discrimination against any person by reason of race, color, religion, national origin, sex or age.

B. This Contract is ☒ is not ☐ subject to the Equal Opportunity Supplement entered into between the parties pursuant to Executive Order 11246. This Supplement is:

☒ on file in this office

☐ attached hereto. Please sign and return to this office.

This Contract is subject to the provisions of Federal Executive Order 11598 concerning the Contractor and Subcontractor Listing Requirement.

IN WITNESS WHEREOF, the parties hereto have executed this Contract in duplicate originals as of the day and year first above written.

ATTEST:

Arlis L. Johnson
 SECRETARY
 ASSISTANT

BROWN & ROOT, INC.

By L. J. Derrick
 L. J. DERRICK, SENIOR VICE PRESIDENT

HUMBLE OIL & REFINING COMPANY

By W. H. Schmitz
 MATERIALS MANAGER
 BAYTOWN REFINERY

6 WLB:aj
 (GFSpangler)

HUMBLE'S ACKNOWLEDGMENT

STATE OF TEXAS I

COUNTY OF HARRIS I

Before me, the undersigned authority, on this day personally appeared W. B. Schuster known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity stated and as the act and deed of said Humble Oil & Refining Company.

Given under my hand and seal of office, this the 7th day of August, A.D., 1972.

Amelia H. Davis
Notary Public in and for
Harris County, Texas

AMELIA H. DAVIS
Notary Public in and for Harris County, Texas
My Commission Expires June 1, 1973

EXHIBIT "G"

STABILIZATION OF PRICES, RENTS, WAGES, AND SALARIES (1971 AUG)

(a) By Executive Order 11627, dated October 15, 1971, the President stabilized prices, rents, wages, and salaries. The contractor represents that to the best of his knowledge and belief he is in complete compliance with Executive Order 11627. Further, the contractor warrants that the amounts invoiced under this contract will not exceed the lower of (1) the contract price, or (2) the maximum levels established in accordance with the order.

(b) The contractor agrees to insert the substance of this clause, including this paragraph (b), in all subcontracts for supplies or services issued under this contract.

EXX 001944

EXHIBIT "H"

OCCUPATIONAL SAFETY & HEALTH ACT

Contractor shall observe and comply with all safety and health standards promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Standards Act, published in 29 CFR Part 1518 and adopted by the Secretary of Labor as occupational safety and health standards under the Williams-Steiger Occupational Safety and Health Act of 1970. Such safety and health standards shall apply to all subcontractors and their employees as well as to the Contractor and its employees.

March 1, 1972

EXX 001945

CONTRACTOR'S ACKNOWLEDGMENT

STATE OF TEXAS I
COUNTY OF HARRIS I

Before me, the undersigned authority, on this day personally
appeared D. J. DERRICK known to me to be the
person whose name is subscribed to the foregoing instrument as
 SENIOR VICE PRESIDENT of Brown & Root, Inc. ,
and acknowledged to me that he executed the same for the purposes and
consideration therein expressed, in the capacity stated, and as the act
and deed of said Brown & Root, Inc. .

Given under my hand and seal of office, this the 7TH
day of August, A. D., 19 72.

 A. V. Armstrong
Notary Public in and for
 Harris County, Texas

June 26, 1972
Appropriation 12-9708

SPECIFICATIONS FOR THE CONSOLIDATION
OF SOUTH REFINERY ENTRANCES
HUMBLE OIL & REFINING COMPANY
BAYTOWN, TEXAS

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EXX 001947

June 26, 1972
Appropriation 12-9708

SPECIFICATIONS FOR THE CONSOLIDATION
OF SOUTH REFINERY ENTRANCES
HUMBLE OIL & REFINING COMPANY
BAYTOWN, TEXAS

1. GENERAL REQUIREMENTS

1.1 Scope

- a. These specifications cover the consolidation of the two South Refinery Entrances into one central location at South San Jacinto Avenue and Bayway Drive. The new location consists primarily of a truck turnaround from two directions and car entrance and exit from two directions. The relocation of the Dock Guard Post Building 720 and Toilet Building 721 to the new location. The south area surrounding the new entrance will be fenced in with chain-link fencing with gates at crossings, all located at the Baytown Refinery of Humble Oil & Refining Company.
- b. All work shall be in accordance with the specifications and with the following drawings and Baytown Engineering Standards (BTES's), which are listed and attached and made a part hereof:
 - (1) Table I - List of Engineering Drawings, dated June 26, 1972.
 - (2) Table II - List of Baytown Engineering Standards, dated June 26, 1972.

1.2 Precautions

- a. Contractor shall exercise all necessary precautions to protect and preserve the sodded areas and the trees in the location of the new facility. Only those trees plainly indicated "TO BE REMOVED" on Drawing 510-140-30 shall be removed.
- b. Sod shall be removed, stockpiled, and kept wet until such time as it is needed for replanting in those areas adjacent to new curbs and paving.

2. SITE WORK

2.1 Earthwork

- a. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the completion of the clearing, excavating, filling, and rough grading. Refer to drawings, details, schedules, and these specifications for type, location, and extent of such work required.
- b. Excavating and backfilling for sewers, water, plumbing, and electrical work are included under their respective divisions.

EXX 001948

- c. Excavate to elevations and dimensions indicated plus sufficient space to permit erection of forms, shoring, and inspection of foundations. Excavation for footings and trenches may be cut to accurate sizes and side forms omitted if concrete is poured in clean-cut trenches without cave-ins.
- d. Grade under slabs must be smooth and at elevation to provide proper slab thickness.
- e. Contractor shall control the grading around building so that ground is pitched to prevent water from running into the excavated areas of the building or damaging other areas. He shall furnish all pumping required to keep excavated spaces clear of water during construction.
- f. Provide and place any additional earth and topsoil material needed to bring existing grades to new grades indicated or specified.
- g. Fill under concrete slabs shall be of compactible material and shall be approved by Humble before use. Place in layers and moisten during compaction. Compaction shall be by means of approved equipment. Fill shall be compacted to at least 95% dry density at $\pm 3\%$ of optimum moisture as determined by ASTM Specification D 698 (Standard Proctor).
- h. Sand may be used for leveling.
- i. Do all cutting, filling, backfilling, and fine grading necessary to bring the entire area outside of building lines to following levels: for paving, walks, and other surface areas to underside of respective surfacing; for lawns and planted areas to three inches below finished grades.
- j. Material used for site fill shall be as approved by Humble.
- k. Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given or between such points and existing finished grades. Abrupt change in slopes shall be rounded.

3. PAVING AND CONCRETE WORK

3.1 Turnarounds

- a. Placing of paving and foundations on earth fill will not be permitted. Fill excess cuts under pavings and foundations with concrete and fill any excess cut under slabs with tamped bank sand.
- b. Truck turnaround and parking areas shall conform to BTES 4-60-1.1A.
- c. Curbs, gutters, and paving surface shall conform to elevations shown on the plans and in BTES's 4-61-1.1D and 4-60-1.1A.

- c. Excavate to elevations and dimensions indicated plus sufficient space to permit erection of forms, shoring, and inspection of foundations. Excavation for footings and trenches may be cut to accurate sizes and side forms omitted if concrete is poured in clean-cut trenches without cave-ins.
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- j. Material used for site fill shall be as approved by Humble.
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3. PAVING AND CONCRETE WORK

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- b. Truck turnaround and parking areas shall conform to BTES 4-60-1.1A.
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3.2 Foundations (Buildings)

- a. Steel fabric reinforcing shall be cold-drawn wire or welded wire fabric for slab or decks and shall conform to ASTM Specification No. A 185 and to BTES 4-6-1.4B.
- b. Metal accessories shall include all spacers, chairs, ties, and other devices necessary for properly placing, spacing, supporting, and fastening reinforcement in place.
- c. Slabs for both guard post and toilet building shall receive a steel trowel finish, ready to receive vinyl floor covering.
- d. Concrete area around guard post shall receive a broom finish.

4. SEWER AND SURFACE DRAINAGE

4.1 Surface Drainage

- a. All catch basins and drainage piping shall be in accordance with BTES 3-2-1-1.13D, to grades and elevations shown on the plans.

4.2 Plumbing (Buildings)

- a. Install complete plumbing system below finished slab. Supply lines shall be Schedule 40 galvanized steel pipe assembled with 150-pound, galvanized, malleable iron fittings.
- b. Water piping shall be thoroughly treated and sterilized with chlorine solution in amount to give a minimum dosage of 50 ppm and allowed to remain for a minimum of 24 hours. At the end of this period, system shall be thoroughly flushed out. Comply with all requirements of authorities having jurisdiction. All cost in connection with this work shall be included in bid price.
- c. Cleanouts shall be same size as pipe and shall be installed at each change in direction, not more than 90 feet apart in horizontal runs, and where otherwise indicated on drawings.

Cleanouts in finished floors:	Josam YL-310-FBK	Wade W-8030-K
	Smith 4020	Zurn Z-1326

- d. Cast iron pipe and fittings under roads or concrete slabs shall be standard weight, heavily coated at factory with tar inside and outside, and with weight designation cast thereon. Joints shall be made up with tarred oakum or Sealtite White Oakum No. 110 and caulked pig lead or Tyler "Ty-Seal" joint gaskets.
- e. Provide reducers, increasers, special fittings, etc., as required between piping work and fixtures and equipment to provide a complete and proper installation.

- f. Drainage lines shall have a uniform slope downward towards sewer, not less than 1/4 inch per foot for lines three inches and smaller and not less than 1/8 inch per foot for lines four inches and larger.
- g. Basic system shall be cast iron pipe and fittings with these exceptions:
 - (1) Tapped tees with cast iron or red brass nipples may be used in vertical position above floor for fixture connections.
 - (2) Brass soldering nipples and lead pipe with wiped joints may be used for fixture connections and where space will not permit use of cast iron. Lead pipe shall not be used where it could be damaged by rodding from a cleanout.
- h. Furnish all necessary piping, fittings, and accessories to reconnect both Guard Post Building 720 and Toilet Building 721 to plumbing and sewer systems.

5. BUILDING RELOCATION AND RENOVATION

5.1 Building Relocation

- a. The Guard Post Building 720 and Toilet Building 721 are to be moved intact. Both buildings can be removed from the existing foundation slabs by removing the wall paneling and exposing the anchor bolts; wall paneling in both buildings is to be replaced.
- b. Buildings to be anchored to slabs in new locations with 3/8-inch-diameter Tamp-Ins if preferred over anchor bolts in slabs.
- c. Provide any additional piping or plumbing fittings required to reconnect fixtures.
- d. Provide any additional electrical conduit and fittings required to reconnect electrical service to fixtures.
- e. Relocate flagpole to new building site. See Drawing 273-35-18 for foundation details.

5.2 Building Renovation

a. Guard Post Building 720

- (1) All wood surfaces are to be cleaned, filled, sanded, and given two (2) coats of enamel paint. Existing natural surfaces are to be sanded and given one (1) coat of clear varnish.
- (2) Concrete floor slab shall receive a 1/8-inch-thick vinyl floor covering, color selected by Humble.

b. Toilet Building 721

- (1) Remove interior paneling and replace with 1/4-inch raked surface wood paneling, varnished, two coats.

General B

a. Codes

Unless
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f. Drainage lines shall have a uniform slope downward towards sewer, n less than 1/4 inch per foot for lines three inches and smaller and not less than 1/8 inch per foot for lines four inches and larger.

g. Basic system shall be cast iron pipe and fittings with these except

(1) Tapped tees with cast iron or red brass nipples may be used in vertical position above floor for fixture connections.

(2) Brass soldering nipples and lead pipe with wiped joints may be used for fixture connections and where space will not permit use of cast iron. Lead pipe shall not be used where it could be damaged by rodding from a cleanout.

h. Furnish all necessary piping, fittings, and accessories to reconnect both Guard Post Building 720 and Toilet Building 721 to plumbing and sewer systems.

5. BUILDING RELOCATION AND RENOVATION

5.1 Building Relocation

a. The Guard Post Building 720 and Toilet Building 721 are to be moved intact. Both buildings can be removed from the existing foundation slabs by removing the wall paneling and exposing the anchor bolts; wall paneling in both buildings is to be replaced.

b. Buildings to be anchored to slabs in new locations with 3/8-inch-diameter Tamp-Ins if preferred over anchor bolts in slabs.

c. Provide any additional piping or plumbing fittings required to reconnect fixtures.

d. Provide any additional electrical conduit and fittings required to reconnect electrical service to fixtures.

e. Relocate flagpole to new building site. See Drawing 273-35-18 for foundation details.

5.2 Building Renovation

a. Guard Post Building 720

(1) All wood surfaces are to be cleaned, filled, sanded, and given two (2) coats of enamel paint. Existing natural surfaces are to be sanded and given one (1) coat of clear varnish.

(2) Concrete floor slab shall receive a 1/8-inch-thick vinyl floor covering, color selected by Humble.

b. Toilet Building 721

(1) Remove interior paneling and replace with 1/4-inch raked surface wood paneling, varnished, two coats.

7. ELECTRICAL

7.1 General Requirements

a. Codes and Standards

Unless otherwise specified, all work, materials, and equipment shall, as a minimum, fully comply with the requirements of the applicable sections of the National Electrical Code, National Electrical Safety Code, and the Regulations of the National Board of Fire Underwriters for Electric Wiring and Apparatus as recommended by the National Fire Protection Association.

7.2 Electrical Area Classification

- a. All areas except switch racks -- nonhazardous.
- b. Switch racks only -- Class I, Group D, Division 2.

7.3 Equipment Location

Contractor shall determine the location of all junction boxes, supports, and other unit assemblies to be installed and shall mark them in the field for approval by Humble.

7.4 Materials

- a. All material not otherwise specified on the drawings or not completely described on the drawings shall be in accordance with this section.
- b. Polyvinyl-Chloride-Insulated Cables for 440-Volt and 120/240-Volt Circuits -- Cable, single conductor, stranded, soft-annealed copper, insulated for 600 volts with 90°C polyvinyl chloride, General Electric Specification SI58175 "Flamenol," Okonite Company "Okoseal 200," Anaconda "Densheath 900," Rome "Synthanol 902," or Simplex "Plastex 90." No insulation thickness shall be less than 3/64 inch.
- c. Aerial Cable for 440-Volt, Three-Phase Circuits -- Cable, aerial, four conductors, 600 volts, stranded aluminum, polyethylene insulation on three twisted conductors, one bare conductor, equal to Anaconda Type N-SD.
- d. Conduit Fittings
 - (1) Nonexplosionproof -- Fittings shall be the standard threaded type equal to Crouse-Hinds Mark 9, Appleton, Pyle National, or Killark. Both fittings and covers shall be copper-free aluminum. All screws shall be of 18-8 stainless steel.
- e. All straps, nuts, clamps, bolts, and washers used to support conduit shall be hot-dipped galvanized steel, copper-free aluminum, or 18-8 stainless steel.

8. ROAD SIGNS

8.1 Road signs shall be erected in locations as indicated on the plans.

a. Sign designation and shape as follows:

4 required -- "KEEP RIGHT."

2 required -- "ONE WAY - DO NOT ENTER."

1 required -- "EXIT LANE ONLY."

1 required -- "ENTER - KEEP RIGHT."

b. Signs shall be standard highway construction, steel, rectangular, with permanent coatings and lettering, and set in concrete, Texas Highway Department standard.

8.2 Stripping on Pavement

a. Traffic lane lines, direction arrows, and parking lot stripping shall be as shown on the plans and of "Highway Yellow" paint.

9. SCHEDULING OF WORK

9.1 Time of Relocating Both Buildings

a. A schedule for the relocation of the buildings with Plant Protection by the M&C contact man is essential for keeping the Dock Guard Post open at all times.

b. Relocate existing safety sign to approximate location indicated on Drawing 510-140-29.

10. CLEANUP

10.1 All materials, equipment, and debris shall be removed from the site before Contractor leaves.

10.2 Disturbed areas adjacent to paving and turnaround shall be leveled or sloped to drain.

10.3 Area around new curbs at turnaround shall be resodded with salvaged sod.

GFS:ja

June 26, 1972
Appropriation 12-9708

TABLE I
LIST OF ENGINEERING DRAWINGS

<u>Drawing No.</u>	<u>Revision</u>	<u>Date</u>	<u>Title</u>
<u>ENGINEERING DRAWINGS</u>			
273-35-18	0	6/23/72	South Entrance, Foundations
510-140-29	0	6/23/72	South Entrance, Fencing, Plot Plan
510-140-30	0	6/23/72	South Entrance, Paving, Details
521-35-4	3	6/23/72	Existing Dock Toilet Building 721
686-140-361	0	6/23/72	South San Jacinto Avenue, Roads
<u>REFERENCE DRAWINGS</u>			
521-35-7	1	5/6/66	Existing Building 720-721 Foundations
521-35-8	0	10/6/65	Existing Dock Guard Gate Building 720
<u>ELECTRICAL DRAWINGS</u>			
273-34-2	2	6/23/72	Dock Gate Guard House Building, Electrical, Plan and Details
273-102-6	0	6/23/72	South San Jacinto Guard House 720, Gate Power and Control, Plan and Details
273-102-7	0	6/23/72	South San Jacinto Guard House 720, House and Gates, Electrical Plan
273-102-8	0	6/23/72	South San Jacinto Guard House 720, Gate Power and Control, Wiring Diagram
273-102-9	0	6/23/72	South San Jacinto Guard House 720, Electrical, Sections and Details
510-102-5	0	6/23/72	Fences, Railroad Gate at Bayway Drive, Details and Wiring Diagram
521-35-4	3	6/23/72	Dock Gate Entrance, Field Toilet Building 721, Foundation, Floor Plan, and Sections
SK-766-PEB	0	6/23/72	Gates, San Jacinto Street, Starter Rack Details
SK-768-PEB	0	6/23/72	Gates, Baytown Avenue @ Bayway Drive, Starter Rack Details

GFS:ja

EXX 001956

June 26, 1972
Appropriation 12-9708

TABLE II
LIST OF BAYTOWN ENGINEERING STANDARDS

<u>BTES No.</u>	<u>Revision</u>	<u>Date</u>	<u>Title</u>
3-2-1-1C	0	6/71	Sewer Systems, Construction
3-2-1.13D	0	9/70	Catch Basin, Type "C"
3-2-1.14D	0	4/70	Catch Basin, Type "D"
3-2-3.6D	0	5/70	Fire Hydrant Piping, Type "A"
3-18-1B	0	1/71	Fabricated Pipe Purchase
3-19-1C	0	1/71	Fabricated Pipe Erection
4-6-1.1C	0	12/70	Concrete Construction
4-6-1.2B	0	11/70	Concrete Materials
4-6-1.3D	0	5/70	Anchor Bolts, Fabrication
4-6-1.4B	1	10/71	Reinforcing Steel
4-6-51.1D	0	3/71	Drilled Pipe Support Foundations
4-9-1.2C	0	5/71	Excavation and Backfill
4-60-1.1A	0	4/71	Asphaltic Concrete Pavement
4-61-1.1C	0	4/71	Cement Concrete Roads, Construction
4-61-1.1D	0	5/71	Concrete Curb and Gutter
17-3-1C	2	11/71	Chain-Link Fencing, Installation

GFS:ja

EXX 001957

EXHIBIT "A"

June 26, 1972
Appropriation 12-9708

CONSOLIDATION OF SOUTH REFINERY ENTRANCES
SAN JACINTO AVENUE-BAYWAY DRIVE

HUMBLE WILL FURNISH ONLY THE FOLLOWING:

- 1.1 Copies of applicable drawings, specifications, and standards reasonably necessary for work execution.
- 1.2 The following utilities, if required and requested by Contractor, at existing outlets, which will not be extended by Humble, and in quantities available at those outlets, each to be used at Contractor's own risk:
 - a. Drinking water, not cooled.
 - b. Electric power at 110/220 volts, 60 cycles, single-phase.
- 1.3 The following material delivered to Contractor's receiving station or other location where applicable:
 - a. Carbon steel fire water piping materials two inches and larger, millwrapped, cement lined, all in straight lengths; also, valves and fittings, but excluding bolts and gaskets.
 - b. Two standard Mueller-Columbian fire hydrants, Symbol No. 92009-960.
 - c. The following electrical material delivered to jobsite:

<u>Item No.</u>	<u>Description</u>	<u>Material Request, Purchase Order, or Symbol No.</u>	<u>Quantity</u>
1	Lighting Standard, 400 Watt, Metalarc, Complete with Pole and Anchor Bolts, Simes Co. No. 46980-MV	16500	6
2	Traffic Signal Beacon, One Section, Two-Way, Red Lens and 4-Inch Slip-Fitter, Crouse-Hinds No. TRP-821	16501	2
3	Traffic Signal Beacon, One Section, Two-Way, Amber Lens and 4-Inch Slip-Fitter, Crouse-Hinds No. TRP-821	16501	1
4	Floodlight, 1,000 Watt, Mercury Vapor, 460 Volts, General Electric No. C522G004	22457-923	8
5	Pole Mount, General Electric No. PM-2A	22484-502	5

EXX 001958

Appropriation 12-9708

Item No.	Description	Material Request, Purchase Order, or Symbol No.	Quantity
6	Lamp, 1,000 Watt, Mercury Vapor, USA Code #H36-15GW/DX	22444-724	13
7	Lamp, 400 Watt Multi-Vapor, U USA Code #MV400/HV/E	16502	6
8	Photo Control, Fisher-Pierce Model #6661A	22025-700	2
9	Floodlight Contactor in Crouse-Hinds EPC Housing	16504	2
10	Pole, 50', Class 3	45910-461	3
11	Messenger Cable, 5/16" Stainless Steel	10731-590	2,200' (All Req'd)
12	Guy Grip for 5/16" Stainless Steel Cable, PLP #SDE 5104	10400-420	20 (All Req'd)
13	Cable, 12 Pair, No. 19 AWG, PWC Type 150	16503	1,500' (All Req'd)
14	Cable, 6 Pair, No. 19 AWG, PWC Type 150	16503	1,000' (All Req'd)
15	Cable, 3 Pair, No. 19 AWG, PWC Type 150	20960-320	2,000' (All Req'd)
16	Electric Gate Operators for Gates on San Jacinto and Gate on Railroad at Bayway Drive	21TH08023-73745	4
17	Alarm and Gate Control Console for Guard House	16506	1
18	Electric Eye, General Electric (One for Dock Gate and Two for Railroad)	16507	3
19	Streetlight, 1,000 Watt, Mercury Vapor, 480 V, General Electric #C705G031	16505	1
20	Bracket for Street Light, 10' Long, GE #C623G016	16505	1
21	Pole, 35', Class 3	45910-455	1

Appropriation 12-9708

Item No.	Description	Material Request, Purchase Order, or Symbol No.	Quantity
22	Floodlight, 1,000 Watt Mercury Vapor, 120/240 V, with Socket for PE Cell, General Electric #C522G015	16510	2
23	Photoelectric Control, 120 V, General Electric #C402G200	16510	2
24	Slipfitter, 2", General Electric #35-110728-28	22484-800	10
25	Ballast, 1,000 Watt, Mercury Vapor, 480 V, General Electric #35-961570B3 (For Relocated Street Lights)	16509	2

HUMBLE WILL PERFORM ONLY THE FOLLOWING:

- 2.1 Designate a site within Baytown Refinery to which Contractor shall haul dismantled or surplus materials and debris.
- 2.2 Designate material storage areas and areas on which Contractor may locate temporary sanitary facilities, shops, and offices.
- 2.3 Set one reference point and advise Contractor of the elevation and coordinates thereof.

GFS:ja

OFFICE MEMO
BROWN & ROOT, INC.

AUGUST 25, 1972

TO THOSE CONCERNED:

JOB NO. 27-5379 IS ASSIGNED TO COVER THE CONSTRUCTION OF THE
CONSOLIDATION OF SOUTH REFINERY ENTRANCES FOR HUMBLE OIL &
REFINING COMPANY IN BAYTOWN, TEXAS.


BILL LONG

BL/nb

JOB TITLE: HUMBLE OIL & REFINING COMPANY - CONSTRUCTION OF THE
CONSOLIDATION OF SOUTH REFINERY ENTRANCES IN
BAYTOWN, TEXAS.

(WORK TO BE PERFORMED BY THE L. J. DERRICK DEPARTMENT)

EXX 001961

N.B.
REQUEST FOR ASSIGNMENT OF JOB NUMBER
BROWN & ROOT, INC. AND ASSOCIATED COMPANIES

#27-5379

8/10/72
(DATE)

T.) ACCOUNTING DEPARTMENT
FROM: Industrial-Civil Division

SUBJECT: JOB NUMBER ASSIGNMENT - Brown & Root, Inc.
(COMPANY)

Industrial-Civil
(DEPARTMENT)

SUB-DIVISION: Civil Type Work

(James Williams, Supt., Paving Office)

PLEASE ASSIGN A JOB NUMBER TO BE USED FOR RECORDING OF INCOME AND COSTS RELATING TO THE CONTRACT DETAILED BELOW:

OWNER: Humble Oil & Refining Co., Baytown, Texas

PRIME CONTRACTOR:

CONTRACT DATE: August 7, 1972

DESCRIPTION OF WORK: Consolidation of South Refinery Entrances at Owner's Plant in
Baytown.

TYPE OF CONTRACT: UNIT PRICE (), LUMP SUM (XX), FORCE ACCOUNT (), COST PLUS FEE ()
OTHER (), (EXPLAIN)

ESTIMATED COMPLETION DATE: October/November 1972 OR CONTINUOUS ().

CONTRACT AMOUNT: \$ 128,325.00 ACTUAL (XX), ESTIMATED ().

TERMS OF PAYMENT: PROGRESS BILLINGS - MONTHLY (), WEEKLY (), BIWEEKLY ().

SEMIMONTHLY (), REVOLVING FUND (), OTHER (), (EXPLAIN)

PERCENT RETAINED: 10 % OF Completed Work

OTHER (), (EXPLAIN)

TO BE COMPLETED ONLY FOR JOINT VENTURES:

PARTNERS AND PARTICIPATION:

SPONSOR: %

%

%

ATTACH FINANCING CURVE OR CASH FORECAST:

JOB NUMBER ASSIGNED: 27-5379

Agreement dated 8/7/72 attached

(SIGNATURE OF EMPLOYEE REQUESTING JOB NUMBER)

L. Mathews

CC ORIGINAL - ACCOUNTING
DUPLICATE - RETAINED
TRIPLICATE - TREASURY/CREDIT
QUADRUPLICATE - PURCHASING

FORM A-56

ACCOUNTING

EXX 001962

27-5394 HUMBLE OIL & REFINING COMPANY
CONTRACT FILES

EXX 001963

Appropriation 102-9143

Contract No. C-00-5532-C

THIS CONTRACT, entered into this 12th day of October # 27-5394
1972, by and between HUMBLE OIL & REFINING COMPANY,
hereinafter referred to as "Humble," and BROWN & ROOT, INC.

, hereinafter referred to as "Contractor," WITNESSETH:

That in consideration of the covenants and agreements set out herein and the payments provided for herein Humble and Contractor agree as follows:

1. Contractor agrees to begin immediately and press with due diligence until completion in a careful and workmanlike manner, with the necessary labor, supervision, tools, equipment, and materials, furnished and maintained by Contractor at its own cost and expense except as hereinafter provided, certain work briefly described as follows:

Perform all work in accordance with the specifications and exhibits listed below, a copy of said specifications and exhibits and of each drawing and Baytown Engineering Standard referred to therein being attached hereto and made a part hereof.

Designation	Title	Date
Specifications	Specifications for Reforming Control Center Building No. 731, Humble Oil & Refining Company, Baytown, Texas	September 1, 1972
Exhibit "A"	Reforming Control Center Building No. 731	September 1, 1972
Exhibit "G"	Price Stabilization	August 10, 1972
Exhibit "H"	Occupational Safety & Health Act	March 1, 1972

Contractor agrees to begin work on or about October 23, 1972, and will make every effort to complete the work required to allow Humble to start installation of terminal cabinets by March 2, 1973, and all work covered by this Contract on or before March 23, 1973.

2. As consideration for the satisfactory performance and completion of this Contract by Contractor, Humble agrees to pay Contractor the lump sum of ONE HUNDRED TWENTY-ONE THOUSAND EIGHT HUNDRED SEVENTY-SIX AND NO/100 (\$121,876.00) DOLLARS.

3. Contractor shall comply with all of the terms and conditions contained in Humble's publication entitled "Contractors' Responsibilities for Safety, Plant Protection, and Traffic Regulations," dated October 1, 1971, said publication being made a part of this contract by reference. Humble will furnish copies of this publication to the Contractor. The rules and regulations contained in the "Contractors' Responsibilities" shall apply to all subcontractors and their employees as well as to the prime contractor and its employees. Before starting work under this Contract, Contractor shall obtain from Humble copies of these regulations. Contractor shall notify its employees, its subcontractors, and the employees of its subcontractors of the provisions of said regulations and shall secure compliance therewith by all such parties; and Contractor shall not allow any of such persons to begin work inside Humble's Baytown Refinery until such notification has been given them.

Said "Contractors' Responsibilities" are designed as minimum requirements for Contractor, and Contractor shall take any additional precaution necessary or proper under the circumstances to prevent injury or death to persons or damage to property. Neither compliance with such regulations by Contractor nor Humble's approval of any actions or procedures of Contractor as provided therein shall relieve Contractor of its obligation always to use due care in performing work hereunder.

4. Although Contractor shall provide its own representative or representatives to supervise and inspect all materials and workmanship entering into this job, Humble reserves the right to have an inspector on the job. Any material which Humble considers unsatisfactory shall be removed and replaced at Contractor's expense. Neither inspection, waiving of inspection, nor acceptance by Humble shall relieve Contractor of its obligation to furnish all materials and workmanship in accordance with specifications.

5. It is understood and agreed that all work performed by Contractor hereunder shall meet with the approval of Humble's engineers or inspectors but that the detailed manner and method of doing same shall be under the control of Contractor, Humble being interested only in the result obtained, and that Contractor is an independent contractor as to all work performed hereunder. In this connection, Contractor and Humble agree as follows:

A. Contractor agrees to indemnify and hold Humble harmless from all claims, actions, demands, loss and causes of action arising:

(1) From injury, including death, to its employees and those of its subcontractors, except such as may result solely from the negligence or willful acts of Humble or its employees.

(2) From (a) injuries to or deaths of persons, including employees and representatives of Humble, which result in whole or in part from the willful acts or negligence of Contractor, its employees, agents, or subcontractors, or (b) damage to property of Humble and all other persons, which results in whole or in part from the negligence or willful acts of Contractor, its employees, agents, or subcontractors, except that Contractor shall not be responsible for damage to Humble's property resulting from fire or explosion.

(3) From damage to property or injury to or death of persons which result in whole or in part from willful acts or the negligence of Contractor, its employees, agents or subcontractors, in connection with the handling and use of utilities furnished by Humble except that

Contractor shall not be responsible or liable for such damage to Humble's property resulting from fire or explosion.

B. In addition, Contractor agrees to carry insurance as follows:

(1) Workmen's Compensation Insurance in compliance with the Texas Employers' Liability Act and all amendments thereto.

(2) Comprehensive General Liability Insurance (including Contractors' Protective Liability when subcontractors are used), covering

(a) Bodily injury liability with a limit of not less than \$ 100,000 for one person injured or killed and, subject to such limit, \$ 100,000 for more than one person injured or killed in any one accident, and

(b) Property damage liability with limits of not less than \$ 100,000 for each accident, and \$ 100,000 aggregate.

(3) Automobile Liability Insurance on owned, non-owned and hired automotive equipment covering

(a) Bodily injury liability with a limit of not less than \$100,000 for one person injured or killed and, subject to such limit, \$300,000 for more than one person injured or killed in any one accident, and

(b) Property damage liability with limits of not less than \$50,000 for each accident.

C. Prior to commencing work hereunder, Contractor shall produce evidence in a form satisfactory to Humble that all insurance required under this Contract is in force and carried with companies acceptable to Humble and that such insurance will not be materially altered or canceled while the work covered hereby is in progress without a reasonable prior written notice to Humble. Upon request of Humble, Contractor shall furnish certified copies of all such insurance policies. Should Contractor at any time neglect, or refuse to provide, or should it cancel the insurance required herein, Humble shall have the right to procure same and deduct the cost thereof from the consideration to be paid Contractor hereunder.

6. Contractor agrees to pay off and satisfy all claims for labor and material employed or used in anywise by it in connection with the work performed hereunder, and to permit no liens of any kind to be fixed upon or against the property of Humble by Contractor's laborers, mechanics or materialmen, and agrees to indemnify, protect and save Humble harmless from and against all such claims and liens.

7. Contractor agrees that if, in the opinion of Humble, Contractor should fail at any time during the performance hereof, to provide the necessary labor, supervision, tools, equipment or materials for the prompt performance of the work herein contracted for, or should breach this Contract in whole or in part or fail to use due diligence in the performance thereof, or should not be performing this Contract in the manner herein provided, Humble may, at its election,

take over and perform or obtain another contractor to take over and perform all or any part of the work then remaining unperformed. In the event Humble should exercise such right, it shall have the right to use all or any part of Contractor's tools or equipment then in use on the job but shall pay Contractor a reasonable rental for the use of such tools and equipment during the period of use by Humble and shall return same to Contractor upon the completion of the job in as good condition as when taken over by Humble, ordinary wear and tear excepted. Should Humble take over the completion of said job, or obtain another contractor to do so Humble shall pay Contractor for the work then completed, subject to the later provisions hereof, unless the compensation for the completed work cannot be readily determined, in which latter event Humble shall pay Contractor the full contract price less all costs and expenses incurred by it in the completion of the work.

8. Contractor agrees that upon the completion by it and acceptance by Humble of the work herein contracted for it will furnish Humble with proof satisfactory to the latter that all claims for labor and material have been satisfied and paid and that there are no unsatisfied claims for injuries to persons or property, and thereupon the amount due as herein provided shall be paid by Humble to Contractor, subject, however, to the right in Humble to withhold payments in accordance with the provisions of Article 5469, Texas Revised Civil Statutes of 1925, and all amendments thereto or other provisions of law applicable. It is agreed that upon request of Contractor and upon showing to the satisfaction of Humble that all claims for labor and material and for damages to persons and property, as above provided, have been satisfied, Humble, in the event it considers it safe to do so, will advance at approximately fifteen (15) day intervals up to ninety per cent (90%) of the value of the work then completed, based upon estimates by Humble's engineers or inspectors, in which event the balance will be paid upon completion and acceptance of the work and compliance with the terms and provisions hereof.

Contractor agrees that in the event any lien or liens are fixed or attempted to be fixed, secured or claimed against Humble or Humble's property by any person or firm, lumber dealer or corporation, artisan, laborer, mechanic or subcontractor who furnished services or materials in connection with the performance of this Contract, Contractor will, within ten (10) days following notification by Humble that such lien or liens have been fixed or attempted to be fixed, secured or claimed, furnish Humble a bond in an amount equal to twice the value of the lien or liens. Such bond shall be executed by a corporate surety authorized to do business under the laws of the State of Texas and shall comply in all respects with the requirements of Article 5472c, Vernon's Annotated Texas Statutes. Contractor further agrees to file such bond with the County Clerk of Harris County, Texas, and to take all steps necessary to assure that prompt notice of such filing is given to the obligees named therein. Contractor further agrees that the giving of such bond shall be in addition to any other rights of Humble or obligations of Contractor under this Contract and shall in no way be construed as abrogating or qualifying such rights and obligations.

9. In the event there is a conflict between any of the provisions hereof and any of the proposals, general conditions, specifications, or any documents, agreements, or papers of any kind which have been incorporated herein by other provisions hereof, it is understood and agreed that the provisions hereof shall be controlling.

The making, execution and delivery of this Contract by the parties hereto have been induced by no representations, statements, warranties or

agreements other than those herein expressed. This Contract embodies the entire understanding of the parties hereto and there are no further or other agreements or understandings, written or oral, except as mentioned herein.

10. In performing its obligations hereunder, Contractor shall comply with all applicable federal, state, and municipal laws, and all applicable orders, rules and regulations of constituted authority.

11. If Contractor fails or refuses to pay any taxes or governmental charges, state or federal, relating to the employees of Contractor, and Humble may be required or deems it necessary to pay such taxes or charges, Contractor agrees to furnish Humble with information required to enable it to make the necessary reports and to pay such taxes or charges. Contractor agrees to reimburse Humble on demand at Houston, Texas, for all such taxes or governmental charges, state or federal, which Contractor fails or refuses to pay and which Humble may be required or deems it necessary to pay. In addition, Humble, at its election, is authorized to deduct all sums so paid for taxes and governmental charges from any payment due Contractor hereunder.

12. In connection with the work provided for hereunder, Contractor (1) guarantees and warrants all material and equipment fabricated by it against defects and agrees to replace, without cost to Humble, any such material or equipment which may become defective within one (1) year from Humble's acceptance of the work except when such defects are the result of corrosion, erosion, normal wear and tear; (2) guarantees its field workmanship and agrees without cost or charge to Humble to replace or repair any defects in the work covered by this Contract resulting from its field workmanship if such defects are reported to Contractor within one year from date of Humble's acceptance of the work; (3) will to the extent reasonably possible secure from the vendors of materials and equipment guarantees substantially the same as the guarantees of Contractor set out in (1) and (2) above.

13. In the event Humble loans or furnishes tools or equipment to Contractor in connection with its work covered hereunder, Contractor agrees:

A. To make its own determination before commencing work that such tools and equipment are adequate for the safe performance of the work by Contractor;

B. That such tools or equipment will be loaned or furnished and accepted by Contractor without warranty or representation by Humble as to their condition.

C. To return such tools or equipment to Humble at the conclusion of such use in as good condition as when received, ordinary wear and tear excepted; and;

D. To indemnify and hold Humble harmless from all claims, demands, causes of action, damages and injuries resulting from Contractor's use of said tools or equipment.

For the purpose of this paragraph 13, tools and equipment shall be defined to include scaffolds, lights, and all other types of apparatus, facilities or services which Humble may loan or furnish. In addition, all of the provisions of this paragraph shall be applicable to any lighting or illumination loaned or furnished to Contractor by Humble.

14. Humble may from time to time, by written instructions or drawings issued to Contractor, require additional work and services directly in connection with or incidental to the work covered by this Contract; and Humble may by such instructions or drawings, require Contractor to alter, change, accelerate, or omit any work covered by this Contract. In the event Humble desires any such additions, changes, alterations, accelerations or omissions which will materially increase or decrease the total contract price referred to in paragraph 2 above, Contractor shall submit to Humble an estimate of such increase or decrease. Should Humble desire to proceed in accordance with such estimate, Humble shall issue to Contractor a Contract Change Order describing the work to be added or deleted and the corresponding price addition or deduction therefor. If Contractor has not obtained a Contract Change Order, signed by Humble's appointed representative, no claim for additional compensation will be allowed. The provisions of this Contract except as may be otherwise provided shall apply to all such additions, changes or alterations as if they were embodied in the original drawings and specifications.

15. Contractor shall procure Humble's prior written approval as to any subcontract covering any portion of the work provided for hereunder. No such approval shall relieve Contractor from any of the obligations of this Contract, and, as between the parties hereto, Contractor shall be and remain liable as if no such subcontract had been made. No subcontract shall bind or purport to bind Humble but shall contain a provision permitting assignment thereof by Contractor to Humble.

16. Contractor agrees to hold in confidence any and all technical information disclosed to Contractor by Humble, including technical information included in or on tracings, drawings, field notes, calculations, specifications, and engineering data, except:

A. Technical information which at the time of disclosure by Humble to Contractor is in the public domain;

B. Technical information which, after disclosure by Humble to Contractor, becomes part of the public domain by publication or otherwise; and

C. Technical information which Contractor can show was in Contractor's possession at the time of Humble's disclosure to Contractor and was not acquired, directly or indirectly, from Humble.

Contractor agrees that Contractor will not, without the written permission of Humble, use the technical information which Contractor is required to keep confidential under this Contract for any purpose other than the accomplishment of work under this Contract.

17. If Contractor or Contractor's personnel make any inventions based upon technical information which Contractor is required to keep confidential under this Contract, Contractor shall promptly disclose said inventions to Humble. Contractor agrees to grant and hereby grants to Humble an irrevocable, nonexclusive, royalty-free license and the irrevocable right to grant nonexclusive licenses, without accounting therefor to Contractor, to use said inventions under Contractor's Patent Rights. The licensing right herein granted by Contractor to Humble is assignable by Humble to any of its Affiliates. For the purpose of this Contract only, the term "Contractor's Patent Rights" shall mean patents and patent applications based on inventions made by Contractor or Contractor's personnel which inventions are based upon information which Contractor is required to keep confidential under this Contract and which are conceived during the life of this Contract and two (2)

years thereafter. The term "Affiliate," as used in this paragraph 17, shall mean any company of which Humble Oil & Refining Company (a corporation of the State of Delaware) or Standard Oil Company (a corporation of New Jersey) now or hereafter owns or controls, directly or indirectly, fifty per cent (50%) or more of the stock having the right to vote for directors thereof. For the purpose of this definition, the stock owned or controlled by a particular company, shall be deemed to include all stock owned or controlled, directly or indirectly, by any other company of which the particular company owns or controls, directly or indirectly, fifty per cent (50%) or more of the stock having the right to vote for directors thereof.

18. It is expressly understood by Contractor that Humble accepts no obligation of confidence with respect to any information disclosed to Humble by Contractor under this Contract unless specifically covered by a separate, written confidentiality agreement. In the absence of such separate confidentiality agreement, Contractor agrees that it will not place any restrictive notices on the tracings, drawings, field notes, specifications, and any other documents embodying engineering or professional data developed by Contractor for Humble pursuant to this Contract and that Humble is hereby authorized to nullify, obliterate, or otherwise remove any such restrictive clauses; and that Humble shall be free to use or disclose any or all of the information contained therein to third parties without accounting to Contractor therefor.

19. It is understood and agreed that Humble may, upon written notice to Contractor, terminate the work provided for hereunder. In the event of such termination, Contractor shall be reimbursed for actual costs incurred to the date of such notice of termination in connection with the execution of the described work, and for actual costs thereafter incurred by Contractor in connection with such termination, plus applicable overhead and a reasonable profit based on such costs. However, in no event shall such reimbursement include prospective profits for work unperformed.

20. Contractor's obligations under paragraphs 16 and 17 of this Contract shall survive any termination of this Contract.

21. It is agreed as a condition of the Contract as follows:

A. That in the performance of this Contract, Contractor shall not engage in any conduct or practice which violates any applicable law, order or regulation prohibiting discrimination against any person by reason of race, color, religion, national origin, sex or age.

B. This Contract is ☒ is not ☐ subject to the Equal Opportunity Supplement entered into between the parties pursuant to Executive Order 11246. This Supplement is:

☒ on file in this office

☐ attached hereto. Please sign and return to this office.

This Contract is subject to the provisions of Federal Executive Order 11598 concerning the Contractor and Subcontractor Listing Requirement.

IN WITNESS WHEREOF, the parties hereto have executed this Contract in duplicate originals as of the day and year first above written.

BROWN & ROOT, INC.

ATTEST:

By [Signature]
VICE PRESIDENT

SECRETARY

HUMBLE OIL & REFINING COMPANY

By [Signature]
PURCHASING HEAD
BAYTOWN REFINERY

WLB:aj
(EGWarren)

CONTRACTOR'S ACKNOWLEDGMENT

STATE OF TEXAS }
COUNTY OF HARRIS }

Before me, the undersigned authority, on this day personally
appeared E. M. ZERR known to me to be the
person whose name is subscribed to the foregoing instrument as
VICE PRESIDENT of Brown & Root, Inc.,
and acknowledged to me that he executed the same for the purposes and
consideration therein expressed, in the capacity stated, and as the act
and deed of said Brown & Root, Inc..

Given under my hand and seal of office, this the 12TH
day of October, A. D., 1972.

A. V. Armstrong
Notary Public in and for
Harris County, Texas

HUMBLE'S ACKNOWLEDGMENT

STATE OF TEXAS I

COUNTY OF HARRIS I

Before me, the undersigned authority, on this day personally appeared J. E. Wessinger known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity stated and as the act and deed of said Humble Oil & Refining Company.

Given under my hand and seal of office, this the 16th day of October, A.D., 1972

Amelia M. Davis
Notary Public in and for
Harris County, Texas

AMELIA M. DAVIS
Notary Public in and for Harris County, Texas
My Commission Expires June 1, 1973

EXX 001973

EXHIBIT "G"

PRICE STABILIZATION: To the extent that supplies or services delivered pursuant to this contract are resold by the buyer to the United States Government, the seller represents that he is in complete compliance with Executive Order 11640 and warrants that the amounts invoiced under this contract will not exceed the lower of (1) the contract price, or (2) the maximum levels established in accordance with that order and that the seller will insert the substance of this clause in all subcontracts for supplies or services under this contract.

8/10/72

EXX 001974

EXHIBIT "H"

OCCUPATIONAL SAFETY & HEALTH ACT

Contractor shall observe and comply with all safety and health standards promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Standards Act, published in 29 CFR Part 1518 and adopted by the Secretary of Labor as occupational safety and health standards under the Williams-Steiger Occupational Safety and Health Act of 1970. Such safety and health standards shall apply to all subcontractors and their employees as well as to the Contractor and its employees.

March 1, 1972

EXX 001975

 BAYTOWN ENGINEERING STANDARD HUMBLE OIL & REFINING COMPANY	 ENJAY CHEMICAL COMPANY	STANDARD CLAUSES INSTRUCTIONS	BTES 50-3-5.1A
	JANUARY 1970		Page 1 of 14

27-5394

SCOPE

- 1.1 This standard furnishes Owner's Standard Clauses, which state the mandatory requirements that shall become a part of Contractor's purchase orders and subcontracts.

SELECTION OF CLAUSES

- 2.1 Table 1 serves as a guide to assist in the selection of the proper clauses for various types of equipment and materials to be procured. Owner shall be consulted in the selection of clauses for special equipment not listed in Table 1 and when additional clarification is required.
- 2.2 Contractor shall incorporate the applicable clauses into all inquiries, purchase orders, and subcontracts. Clauses may be typed on the face of the order or each clause with number, title, and content may be preprinted on separate sheets for attachment to the appropriate documents by Contractor. This is permissible, since the paragraph numbers, titles, and wording of standard clauses will be the same as those in this document, which is a part of the Job Specification.
- 2.3 The number of a Standard Clause is given in parentheses and shall not be changed by Contractor. Contractor may add other clauses as required.

RECORDS OF DATA REQUIRED

- 3.1 An Equipment Data Record Sheet, as shown in Table 2, or its equivalent shall be used by Contractor to record data required by the purchase order and data received from suppliers. The information required by the purchase order shall be listed by clause number when the order is placed and the clause number shall be circled after all required copies of the data in acceptable form are received from the supplier.
- 3.2 Contractor shall expedite receipt of purchase order requirements and maintain control of completeness, quantity, and quality. This control is necessary in order to assure that all required information is received by Owner prior to the date that the information is needed for purchasing spare parts, field installations, and preparing operator training manuals. The four copies of data required, in addition to the copies required for the Mechanical Catalogs, shall be transmitted to Owner as soon as received from suppliers. It is expected that Owner will receive all Standard Clause information before the equipment is received at the jobsite.

EXX 001976

LIST OF
STANDARD CLAUSES

Print Clauses

The applicable clause of the four listed below shall be used with requests for quotations, purchase orders, or subcontract specifications concerning equipment on which prints are required.

(1) Print Clause - Case 1

This clause does not require shop detail drawings, but it does specify approval prints.

Required prints or drawings are those (excluding shop detail drawings) used in the design, fabrication, and assembly of the equipment. These prints or drawings as well as all correspondence pertaining to drawings or approval of them shall be mailed directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

to whom you shall also address all correspondence pertaining to shipment, invoice, and other particulars. Attention is called to the fact that our approval of the prints, in case design has been made by you, does not relieve you of responsibility as to design, strength, or performance of equipment. Notes or changes recommended by us on approval drawings do not authorize additional charges.

Manufacture of equipment shall not start until drawings have been approved by us. You are to furnish to us immediately (two for Owner plus Contractor's requirements) prints for approval. Immediately upon receipt of the approved prints and completion of changes, you are to send to us for Owner's permanent files in the following order of preference: (1) the original tracing and one paper print, (2) an autopositive blackline vellum-silver emulsion, or (3) an autopositive blackline cloth transparency-silver emulsion. SEPIAS ARE NOT ACCEPTABLE! The following requirements should be adhered to strictly:

- (a) Maximum size of drawings shall be 24 by 36 inches and all letters and numbers on drawings shall be no smaller than 1/8 inch to comply with microfilming requirements.
- (b) Duplicates that are submitted in lieu of the original drawing must maintain a ratio of 1:1 from original to duplicate. A minimum of generations should be used in preparation of duplicates.
- (c) Duplicates must be right reading on emulsion side.
- (d) Originals and duplicates must be LEGIBLE AND CLEAR (no background).

(2) Print Clause - Case 1A

This clause requires both shop detail drawings and approval prints.

Required prints or drawings are those (including shop detail drawings) used in the design, fabrication, and assembly of the equipment. These prints or drawings as well as all correspondence pertaining to drawings or approval of them shall be mailed directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

to whom you shall also address all correspondence pertaining to shipment, invoice, and other particulars. Attention is called to the fact that our approval of the prints, in case design has been made by you, does not relieve you of responsibility as to design, strength, or performance of equipment. Notes or changes recommended by us on approval drawings do not authorize additional charges.

Manufacture of equipment shall not start until drawings have been approved by us. You are to furnish to us immediately (two for Owner plus Contractor's requirements) prints, including shop detail drawings, for approval. Immediately upon receipt of the approved prints and completion of changes, you are to send to us for Owner's permanent files in the following order of preference: (1) the original tracing, (2) an autopositive blackline vellum-silver emulsion, or (3) an autopositive blackline cloth transparency-silver emulsion. SEPIAS ARE NOT ACCEPTABLE! The following requirements should be adhered to strictly:

- (a) Maximum size of drawings shall be 24 by 36 inches and all letters and numbers on drawings shall be no smaller than 1/8 inch to comply with micro-filming requirements.
- (b) Duplicates that are submitted in lieu of the original drawing must maintain a ratio of 1:1 from original to duplicate. A minimum of generations should be used in preparation of duplicates.
- (c) Duplicates must be right reading on emulsion side.
- (d) Originals and duplicates must be LEGIBLE AND CLEAR (no background).

(3) Print Clause - Case 2

This clause does not require either shop detail drawings or approval prints.

Required prints or drawings are those (excluding shop detail drawings) used in the design, fabrication, and assembly of the equipment. These prints or drawings as well as all correspondence pertaining to drawings shall be mailed directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

to whom you shall also address all correspondence pertaining to shipment, invoice, and other particulars. Attention is called to the fact that our acceptance of the

prints, in case design has been made by you, does not relieve you of responsibility as to design, strength, or performance of equipment.

Immediately upon receipt of order, you are to furnish to us for Owner's permanent files in the following order of preference: (1) the original tracing, (2) an autopositive blackline vellum-silver emulsion, or (3) an autopositive blackline cloth transparency-silver emulsion. SEPIAS ARE NOT ACCEPTABLE! The following requirements should be adhered to strictly:

- (a) Maximum size of drawings shall be 24 by 36 inches and all letters and numbers on drawings shall be no smaller than 1/8 inch to comply with micro-filming requirements.
- (b) Duplicates that are submitted in lieu of the original drawing must maintain a ratio of 1:1 from original to duplicate. A minimum of generations should be used in preparation of duplicates.
- (c) Duplicates must be right reading on emulsion side.
- (d) Originals and duplicates must be LEGIBLE AND CLEAR (no background).

Approval prints are not required. Fabrication of equipment may start as soon as this material has been mailed.

(4) Print Clause - Case 2A

This clause requires shop detail drawings, but it does not require approval prints.

Required prints or drawings are those (including shop detail drawings) used in the design, fabrication, and assembly of the equipment. These prints or drawings as well as all correspondence pertaining to drawings shall be mailed directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

to whom you shall also address all correspondence pertaining to shipment, invoice, and other particulars. Attention is called to the fact that our acceptance of the prints, in case design has been made by you, does not relieve you of responsibility as to design, strength, or performance of equipment.

Immediately upon receipt of order, you are to furnish to us for Owner's permanent files in the following order of preference: (1) the original tracing, (2) an autopositive blackline vellum-silver emulsion, or (3) an autopositive blackline cloth transparency-silver emulsion. SEPIAS ARE NOT ACCEPTABLE! The following requirements should be adhered to strictly:

- (a) Maximum size of drawings shall be 24 by 36 inches and all letters and numbers on drawings shall be no smaller than 1/8 inch to comply with microfilming requirements.
- (b) Duplicates that are submitted in lieu of the original drawing must maintain a ratio of 1:1 from original to duplicate. A minimum of generations should be used in preparation of duplicates.

(c) Duplicates must be right reading on emulsion side.

(d) Originals and duplicates must be LEGIBLE AND CLEAR (no background).

Approval prints are not required. Fabrication of equipment may start as soon as this material has been mailed.

(6) Operating Instructions Clause

Requests for quotations, purchase orders, or subcontract specifications covering special equipment where operating and maintenance instructions only are required and Clause 9, 10, or 11 is not used shall contain this clause.

You shall mail directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

separately from equipment (four* for Owner plus ____ for Mechanical Catalogs plus ____ for Contractor) properly identified copies of operating and maintenance instructions, including wiring diagrams and flow diagrams, where applicable.

* When Mechanical Catalogs are not required by the Job Specifications, the total copies for Owner shall be as follows:

(a) Eight (8) for Humble Oil & Refining Company.

(b) Six (6) for Enjay Chemical Company.

(7) Centrifugal Pump Performance Curves Clause

Requests for quotations, purchase orders, or subcontract specifications for centrifugal pumps shall contain this clause.

You shall mail directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

separately from equipment (same quantity as for Clause 6) properly identified copies of performance curve sheets for each pump showing head, efficiency, bhp, and net positive suction head plotted as a function of capacity for the full range of pump. In addition, curve sheets shall show head versus capacity curve of pump with maximum impeller diameter. Maximum and minimum impeller diameters the case can take and diameter and pattern number of impeller or impellers furnished shall be listed.

Weight of pump, baseplate, and driver shall be shown separately on the pump outline drawing.

(7A) Positive-Displacement Pump Performance Curves Clause

Requests for quotations, purchase orders, or subcontract specifications for positive-displacement pumps shall contain this clause.

You shall mail directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

separately from equipment (same quantity as for Clause 6) properly identified copies of curve sheets showing performance of pump at design viscosity, speed, and differential pressure. Curves shall also include horsepower requirements of pump throughout operating range.

Weight of pump, baseplate, and driver shall be shown separately on the pump outline drawing.

(9) Machinery Parts and Operating Instructions Clause

Requests for quotations and purchase orders covering machinery shall contain this clause. When a subcontract is involved, the subcontract specification shall require the subcontractor to furnish the information required by this clause.

It is Owner's policy to have complete information on parts before the equipment arrives in Baytown. Therefore, as soon as possible after receipt of purchase order, you shall mail to

(Contractor To Fill in Name and
Mailing Address of Contractor)

(same quantity as for Clause 6) properly identified copies of the following:

- (a) A complete bill of material showing the name of each part, the reference number as shown on the parts drawing, and the part number that completely identifies that part so that interchangeability with present stock may be determined, and any part may be ordered without reference to equipment size, type, style, or serial number.
- (b) Material used in each part.
- (c) Price, delivery, and shipping point of each part.
- (d) On all parts utilized, but made by others, complete specifications by reference to such manufacturers' designations or by types and dimensions as applicable.
- (e) Installation, operating, and maintenance instructions, including wiring diagrams and flow diagrams where applicable.

(10) Instrument Parts and Operating Instructions Clause

Requests for quotations and purchase orders for instruments shall contain this clause. When a subcontract is involved, the subcontract specification shall require the subcontractor to furnish the information required by this clause. Manufacturers' recommended parts lists are not required, unless specifically requested by Owner. If the parts lists are included on drawings or in the instruction manuals, additional copies are not required.

It is Owner's policy to have complete information on parts before the equipment arrives in Baytown. Therefore, as soon as possible after receipt of purchase order, you shall mail to

(Contractor To Fill in Name and
Mailing Address of Contractor)

(same quantity as for Clause 6) properly identified copies of the following:

- (a) Installation instructions, including equipment dimensions, panel cutout details, external electrical connections, air piping, and process piping as applicable.
- (b) Operating and maintenance instructions, including theory of operation, operational adjustments, synchronization, alignment, and calibration instructions.
- (c) Detail drawings and illustrative cuts showing the layout and assembly of components, internal connections, internal wiring diagrams, etc., including part numbers or sizes wherever applicable.
- (d) A complete bill of material showing the name of each part, the reference number as shown on the parts drawing, and the symbol or part number that completely identifies each part so that any part may be ordered without reference to equipment size, type, style, or serial number.

(11) Electrical and Miscellaneous Equipment
Parts and Operating Instructions Clause

Requests for quotations and purchase orders for electrical equipment as well as for items of a general nature shall include this clause. When a subcontract is involved, the subcontract specification shall require the subcontractor to furnish the information required by this clause.

It is Owner's policy to have complete information on parts before the equipment arrives in Baytown. Therefore, as soon as possible after receipt of purchase order, you shall mail to

(Contractor To Fill in Name and
Mailing Address of Contractor)

(same quantity as for Clause 6) properly identified copies of the following:

- (a) Installation, operating, and maintenance instructions, including wiring diagrams where applicable.
- (b) A complete list of parts, with each part suitably identified by name of part, by reference number as shown on the parts drawing, and by catalog number, so that any part may be ordered without reference to the model or serial number of the associated equipment.

(12) Patterns for Castings Clause - Case 1

Requests for quotations, purchase orders, or subcontract specifications for castings shall contain this clause when the foundry has existing patterns.

You shall mail directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

separately from equipment, the following information:

- (a) Length of time the pattern will be retained in storage by foundry before permission is requested to destroy the patterns or ship to Humble.
- (b) Material specification of casting.

(13) Patterns for Castings Clause - Case 2

Requests for quotations, purchase orders, or subcontract specifications for castings shall contain this clause when new patterns must be made.

You shall mail directly to

(Contractor To Fill in Name and
Mailing Address of Contractor)

separately from equipment, the following information:

- (a) Cost of pattern(s).
- (b) Positive identification of each pattern by description, drawing number, etc.
- (c) Foundry that fabricated the casting(s) and foundry's assigned pattern number(s).
- (d) Length of time patterns will be retained in storage by foundry before permission is requested to destroy the patterns or ship to Humble.
- (e) Material specification of casting(s).

Inspection Clauses

It shall be the responsibility of Contractor's author of the inquiry specification to determine from Baytown Engineering Standard (BTES) 50-3-6.1A what equipment and material shall be inspected by Esso Research and Engineering Company. Requests for quotations, purchase orders, or subcontract specifications requiring inspection shall contain the appropriate inspection clause below. At the time of inquiry, it will not be known where the equipment or materials will be fabricated. Therefore, Contractor may select either inspection clause and, when necessary, make the required correction when the purchase order is placed.

(15) Inspection Clause - Case 1

Specify this clause when the inspection service is to be performed in the states of Arkansas, Louisiana, Mississippi, Oklahoma, Texas, and the southern half of Kansas.

Equipment specified herein is subject to inspection and test by Owner's representative at point of manufacture, fabrication, or both, as may be desired. Please write or telegraph, as circumstances may warrant, to Head of Inspection Section, Esso Research and Engineering Company, 416 Post Oak Bank Building, 2200 South Post Oak, Houston, Texas 77027, five days prior to start of fabrication and again five days in advance of your readiness for final inspection. Your notification should include complete order number, destination, whether all or what part will be ready, and location of your plant. Inspection by Owner's representative does not relieve you of responsibility to furnish satisfactory material, and it is furthermore understood to be Owner's privilege to waive inspection at point of manufacture or fabrication without prejudice to Owner's right to reject the material at destination. Six copies of manufacturer's data reports and/or any applicable code reports shall be handed to Esso Research and Engineering Company's inspector or delivered according to his instructions at the time of approval of equipment.

(16) Inspection Clause - Case 2

Inspection of work in the states not listed above is normally handled by the Esso Research and Engineering Company Inspection Section located in Florham Park, New Jersey. Specify this clause when the inspection is to be handled by this group.

Equipment specified herein is subject to inspection and test by Owner's representative at point of manufacture, fabrication, or both, as may be desired. Please write or telegraph, as circumstances may warrant, to Head of Inspection Section, Esso Research and Engineering Company, P. O. Box 101, Florham Park, New Jersey 07932, five days prior to start of fabrication and again five days in advance of your readiness for final inspection. Your notification shall include complete order number, destination, whether all or what part will be ready, and location of your plant. Inspection by Owner's representative does not relieve you of responsibility to furnish satisfactory material, and it is furthermore understood to be Owner's privilege to waive inspection at point of manufacture or fabrication without prejudice to Owner's right to reject the material at destination. Six copies of manufacturer's data reports and/or any applicable code reports shall be handed to Esso Research and Engineering Company's inspector or mailed according to his instructions at the time of approval of the equipment.



(19) Independent Contractor's and Safety, Plant Protection, and Traffic Clause

Purchase orders that require the services of an erector, engineer, repairman, or others (or when such services are required in connection with existing facilities) shall contain this clause.

It is distinctly understood and agreed that Supplier is an independent contractor as to all of the work performed hereunder, and that any and all supervisors, servicemen, repairmen, inspectors, and other persons of any kind or character whom Supplier shall furnish or supply during the course of the performance of the work called for hereunder shall be its employee or employees and in no sense and at no time shall they be considered an employee or employees of Owner.

Supplier further agrees to protect, indemnify, and save Owner harmless from and against all claims, demands, and causes of action of every kind and character arising in favor of Supplier's employees, Owner's employees, or third parties on account of personal injuries, death, or damages to property that result in whole or in part from the willful or negligent acts or omissions of Supplier, Supplier's agents, employees, representatives, or subcontractors, except that Supplier shall not be responsible for damage to Owner's property resulting from fire or explosion. Supplier shall be responsible for all damage and loss sustained by Supplier's tools and equipment utilized in the performance of all work hereunder. Supplier's authorized representative shall sign the purchase order prior to starting work.

The person or persons performing such work or services shall comply with Owner's Safety, Plant Protection, and Traffic Instructions contained in BTES 50-5-3.1C, and before starting any such work or service, a responsible person representing Supplier shall contact Mr. _____ at Owner's Baytown Plant to discuss the work or service to be performed and the Safety, Plant Protection, and Traffic Instructions. Baytown Engineering Standard 50-5-3.1C is attached and made a part hereof.

(20) Design Information on Pressure Vessels Furnished as Parts of Mechanical Tools and Equipment Clause

All requests for quotations and purchase orders for mechanical tools or equipment that contain pressure vessels as component parts (compressor air receivers, pressure fuel tanks, gunite equipment, etc.) shall contain this clause.

You shall furnish complete design information on all pressure vessels that are parts of the mechanical equipment described herein. The size, thickness, shape, material specification, the setting and capacity of necessary pressure-relieving devices, and the method and rate of applying pressure to the container shall be included in this information. The manufacturer shall also state whether or not the pressure vessel is constructed and stamped in accordance with a recognized code or regulation. The manufacturer will be required to furnish the original and two copies of all pressure vessel inspection reports required by applicable

codes or regulations. Manufacturer shall mail required pressure vessel inspection reports to

(Contractor To Fill in Name and
Mailing Address of Contractor).

These shall be sent separately from equipment parts lists and operating instructions.

(21) Case Design Clause

Requests for quotations, purchase orders, or subcontract specifications for pumping and compression equipment shall include this clause.

Drawings required by this order shall include the following information on the case design:

- (a) Maximum allowable safe working pressure: _____ psig at _____ °F.
- (b) Initial minimum thickness of case: _____ inch.
- (c) Retiring thickness of case and safety factor at maximum allowable safe working pressure: _____ inch at _____ °F and safety factor of _____.
- (d) Retiring thickness of case and safety factor at the maximum operating pressure: _____ inch at _____ °F and safety factor of _____.

Maximum operating pressure is defined as the maximum positive inlet pressure to be encountered plus the maximum differential pressure the equipment is capable of developing when operating at design speed and fluid density.

(22) Audit Clause

Subcontracts or purchase orders for engineering or other services negotiated on any basis other than lump sum shall contain this clause.

Owner and its duly authorized representatives shall have access to the books, payrolls, and other records maintained by Contractor and its affiliates that relate to the costs and expenses of this purchase order (or contract) and shall have the right to audit such books, payrolls, and records at any reasonable time or times during the period work is performed hereunder and for one year after the completion of work performed hereunder. Contractor will preserve such books, payrolls, and records until expiration of the time in which Owner is entitled to audit the same.

(25) Flanges and Fittings Clause

Requests for quotations, purchase orders, or subcontract specifications for flanges and fittings shall contain this clause.

All flanges and fittings furnished under this order must be permanently stenciled with the following information:

- (a) Control number.

BTES 50-3-5.1A Page 12	 BAYTOWN ENGINEERING STANDARD 	
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(b) Manufacturer's name (or symbol).

(c) Material designation (ASTM Specification number).

Owner reserves the right to request actual mill test reports that will identify fittings and flanges with corresponding control numbers. This report also must indicate the origin of raw material used.



TABLE 1
MINIMUM STANDARD CLAUSE REQUIREMENTS

EQUIPMENT AND MATERIALS TO BE PROCURED	STANDARD CLAUSE NUMBER AND TITLE																									
	(1) Print Clause - Case 1 (Approval Prints)	(2) Print Clause - Case 1A (Approval Prints, Shop Details)	(3) Print Clause - Case 2 (Final Prints Only)	(4) Print Clause - Case 2A (Final Prints Only, Shop Details)	(6) Operating Instructions Clause	(7) Centrifugal Pump Performance Curves Clause	(7A) Positive Displacement Pump Performance Curves Clause	(9) Machinery Parts & Operating Instructions Clause	(10) Instrument Parts & Operating Instructions Clause	(11) Electrical & Misc. Equip. Parts & Oper. Instruct. Clause	(12) Patterns for Castings Clause - Case 1. (Exist. Patterns)	(13) Patterns for Castings Clause - Case 2. (New Patterns)	(15) Inspection Clause - Case 1 (See BTES 50-3-6.1A)	(16) Inspection Clause - Case 2 (See BTES 50-3-6.1A)	(19) Indep. Contractor's and Safety, Plt. Prot. & Traffic Clause	(20) Design Info. on Pressure Vessel Parts of Equip. Clause	(21) Case Design Clause	(22) Audit Clause	(25) Flanges and Fittings Clause	()	()	()	()	()	()	()
Tanks		•											•	•												
Pressure Vessels		•											•	•												
Shell & Tube Exchangers		•											•	•												
Double Pipe Exchangers		•											•	•												
Scraped Surface Exchangers		•						•					•	•												
Air Fin Coolers		•						•		•			•	•												
Furnaces		•			•								•	•												
Boilers		•			•								•	•												
Cooling Towers (Including Fans & Drivers)	•							•		•																
Mixers			•					•																		
Compressors (Including Lube Console)	•					•	•	•	•	•			•	•		•	•									
Gas Engines	•					•	•	•	•	•			•	•												
Turbines	•							•	•	•			•	•				•								
Pumps			•			•	•	•					•	•				•								
Motor Operators (Valves)			•					•		•																
Motors			•					•																		
Switchgear	•									•																
Transformers			•							•																
Load Centers	•									•																
Electrical Control Panels	•									•			•	•												
Instruments								•																		
Fabricated Piping			•										•	•					•							
Fabricated Structural Steel			•										•	•												

TABLE 2

REV. NO. _____ COPIES TO:		EQUIPMENT DATA PURCHASED AND CLAUSE NUMBER				MISC.
PURCHASE ORDER	SUPPLIER	ITEM NO.	EQUIP. NO.			
				Approval Prints	(1) or (2)	
				Final Prints	(1), (2), (3), or (4)	
				Operating Instructions	(6), (9), (10), or (11)	
				Installation Instructions	(6), (9), (10), or (11)	
				Wiring Diagrams	(6), (9), (10), or (11)	
				Bill of Materials	(9), (10), or (11)	
				Flow Diagrams	(6), (9)	
				Pump Curves	(7) or (7A)	
				Pattern Information	(12) or (13)	
				Data Reports	(15), (16), or (20)	
				Code Reports	(15), (16), or (20)	
				Calculations		
				Data Sheets		

Notes:

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 BAYTOWN ENGINEERING STANDARD HUMBLE OIL & REFINING COMPANY	 ENJAY CHEMICAL COMPANY	CONSTRUCTION REQUIREMENTS INSTRUCTIONS	BTES 50-5-1.1C
REVISION 1	DECEMBER 1971		Page 1 of 3

SCOPE

- 1.1 This standard covers Contractor's responsibilities and the general working conditions in the Owner's Baytown Plant. This standard is applicable to Contractor and all its subcontractors.

GENERAL REQUIREMENTS

- 2.1 Contractor shall have inspected the site and shall fully understand the nature of the Work, the conditions governing the Work, and all other local requirements affecting the Work. No additional compensation will be allowed for work that could be reasonably anticipated from visible conditions.
- 2.2 All work shall conform to drawings, specifications, and generally accepted practices, and shall be completed in every detail. In the event of doubt as to the meaning and intent of any portion of the Work, Owner shall define that which is required by the Job Specification.
- 2.3 Work called for on drawings, or revisions to drawings, shall not be started by Contractor until authorized by the Owner's Contact Man.

WORK SCHEDULES

- 2.4 Contractor shall work from 7:30 a.m. to 4:00 p.m., Monday through Friday, unless otherwise specified in the contract or unless otherwise approved by the Contact Man.
- 2.5 The holidays listed below shall be observed at the Baytown Plants. Contractor shall not work on these days unless otherwise specified in the contract or unless otherwise approved by the Contact Man.
- a. New Year's Day
 - b. Good Friday
 - c. Memorial Day (last Monday in May)
 - d. July Fourth
 - e. Labor Day
 - f. Thanksgiving Day
 - g. Friday after Thanksgiving
 - h. Christmas Eve, except when Christmas Day falls on Monday or Thursday, in which event, the day after Christmas. (When Christmas Day falls on Sunday, the preceding Friday.)
 - i. Christmas Day

Holidays falling on Saturday and Sunday shall be observed on Friday and Monday, respectively.

- 2.6 In the event Owner furnishes critical path schedules or other job plans to Contractor, Contractor's responsibility for the completion of the Work by a fixed date shall be as specified in the contract.

- 2.7 Contractor's work shall be executed so as to cause a minimum of interference with Owner's operation of its equipment and facilities.

MATERIALS

- 2.8 Upon receipt of material furnished by Owner, Contractor shall accept full responsibility for this material and shall make provision to protect this material from loss or damage.
- 2.9 Contractor shall arrange for the prompt unloading, hauling, and proper storage of all material delivered to the job during construction and prior to its entry into the field. Owner's Contact Man will designate the areas available for storage of materials.
- 2.10 Contractor shall not substitute used or alternate materials or equipment for those specified without Owner's prior written approval. ←

EQUIPMENT

- 2.11 The method and time of erecting large, heavy process equipment shall be subject to Owner's approval. This includes the type and load rating of handling equipment to be used and detailed erection procedures.

FACILITIES

- 12 Contractor shall provide its own sanitary facilities, properly secluded from observation and maintained by Contractor in a sanitary manner, as approved by Owner's Contact Man. Contractor shall provide all temporary buildings necessary for materials storage and construction purposes. ←

HOUSEKEEPING

- 2.13 At all times the jobsite shall be kept clean and free from debris, trash, and rubbish. Contractor shall store all materials in a neat and orderly fashion and shall not store materials within four feet of any fence or along railroad tracks within a distance of seven feet two inches horizontally from the inside edge or twenty-three feet vertically above the top of any rail and shall not construct temporary or permanent structures within this minimum clearance. Dismantled or surplus materials, trash, and debris (including earth, clay, lumber, concrete, metal, insulation, paper, etc.) that falls from Contractor's vehicles shall be promptly cleaned up by Contractor.

INSPECTION

- 3.1 Adequate inspection and quality control testing shall be provided by Contractor to insure compliance with designs and specifications. Contractor shall furnish Owner a copy of all inspection and test reports required by the Work. Contractor shall furnish additional specimens of materials for testing by Owner when requested. These specimens shall be prepared by Contractor using latest American Society for Testing Materials procedures.

- 3.2 Owner's inspector shall have access to Contractor's drawings, records, and work procedures pertaining to the contract.
- 3.3 Owner's onsite inspection will be as defined in the applicable construction standards governing the installation, erection, or application of materials and equipment and will also include, but not be limited, to the following:
- a. Witness tray leakage tests, for field installed internals.
 - b. Inspect towers and drums after final cleaning by Contractor.
 - c. Witness all field pressure tests.
 - d. Witness all required electrical tests.
 - e. Check orifice plates and control valves as Contractor installs after flushing of piping.
 - f. Witness all required instrument tests.
 - g. Approve welds, welding procedure and welder qualification records.
 - h. Witness all required alignment checks of machinery.
 - i. Witness pump run-in tests.
- 3.4 Cleanliness of all lines and equipment is essential. Contractor shall exercise due diligence in maintaining cleanliness and shall be responsible for removing any foreign material. Owner reserves the right to inspect all parts of the unit for cleanliness during and at the completion of construction.

COMPLETION OF WORK

- 4.1 Upon completion of the Work provided for hereunder and before acceptance and final payment, Contractor shall restore, in a manner acceptable to Owner, all property that has been used or damaged during the performance of the Work; remove from the jobsite all dismantled and surplus materials, debris, and temporary structures resulting from the Work; load and stack all dismantled Owner-owned surplus materials and debris at a site designated by Owner; and shall leave the jobsite in a neat and presentable condition. Contractor shall obtain instructions from the Contact Man for disposal of any left-over materials, including scrap.
- 4.2 Prior to departure from jobsite, Contractor shall obtain the Contact Man's concurrence that Contractor has completed satisfactorily all work required by the contract.

 BAYTOWN ENGINEERING STANDARD HUMBLE OIL & REFINING COMPANY	 ENJAY CHEMICAL COMPANY	INVOICING FOR LUMP-SUM CONTRACTS INSTRUCTIONS	BTES 50-6-5.1D
	FEBRUARY 1970		Page 1 of 2

SCOPE

- 1.1 This standard furnishes instructions to Contractor that describe the mandatory accounting requirements that shall be followed to permit payment of invoices submitted for work performed under a lump-sum contract.

GENERAL INSTRUCTIONS

- 2.1 Correspondence pertaining to invoicing shall show the contract number and a brief description of the work covered.
- 2.2 Invoices submitted by Contractor shall show the contract number and a brief description of the work covered and shall be rendered in triplicate to the applicable company:
- | | |
|--|---|
| Humble Oil & Refining Company
Accounting Contract Audit
P. O. Box 3950
Baytown, Texas 77520 | Enjay Chemical Company
Chemical Accounting
P. O. Box 4004
Baytown, Texas 77520 |
|--|---|
- 2.3 Each invoice rendered for the job shall bear a special number to facilitate identity. Example: Progress Billing No. 1, Progress Billing No. 2.
- 2.4 Progress billings shall be based on work completed as stated in the main contract.
- 2.5 To expedite invoice processing, it is recommended that invoices be submitted in accordance with the following examples:

<u>Progress Billing No. 1</u>		<u>% Completed</u>	<u>Amount This Billing</u>
Original Contract	\$100,000	20	\$20,000
Change Order No. 1	25,000	10	2,500
Change Order No. 2	10,000	0	0
Total Gross Amount	\$135,000		\$22,500
Less 10% Retained			2,250
Net Payment Due			\$20,250

<u>Progress Billing No. 2</u>		<u>% Completed</u>	<u>Amount This Billing</u>
Original Contract	\$100,000	50	\$50,000
Change Order No. 1	25,000	20	5,000
Change Order No. 2	10,000	10	1,000
Total Gross Amount	\$135,000		\$56,000
Less Previously Invoiced			22,500
Total Gross Amount			\$33,500
Gross Amount This Invoice			3,350
Less 10% Retained			
Net Payment Due			\$30,150



<u>Billing No. (Final Except Retention</u>		<u>% Completed</u>	<u>Amount This Billing</u>
Original Contract	\$100,000	100	\$100,000
Change Order No. 1	25,000	100	25,000
Change Order No. 2	10,000	100	10,000
Total Gross Amount	<u>\$135,000</u>		<u>\$135,000</u>
Less Previously Invoiced			
Total Gross Amount			56,000
Gross Amount This Invoice			<u>\$ 79,000</u>
Less 10% Retained			7,900
Net Payment Due			<u>\$ 71,100</u>

Final Billing (For Retention)

Total Amount Due This Invoice \$ 13,500

- 2.6 Affidavits pertaining to Contractor's having satisfied contract requirements may be supplied in original only and should be attached to the final invoice.

1 September 1972
Appropriation 102-9143

SPECIFICATIONS FOR
REFORMING CONTROL CENTER
BUILDING NO. 731
HUMBLE OIL & REFINING COMPANY
DAYTOWN, TEXAS

#27-1394

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EXHIBIT "A"

SECTION 1SUMMARY OF THE WORK1. SCOPE

A. These specifications cover the erection of an addition to the existing Reforming Control Center, Building No. 731, located at the Baytown Refinery of the Humble Oil and Refining Company.

B. All work shall be done in accordance with these specifications, and with the standards and engineering drawings listed below in Tables I and II:

TABLE I - LIST OF BAYTOWN ENGINEERING STANDARDS

<u>DATE</u>	<u>STANDARD</u>	<u>REV.</u>	<u>TITLE</u>
1-70	BTES 50-3-5.1A	0	Standard Clauses Instructions
12-71	BTES 50-5-1.1C	1	Construction Requirements Instructions
2-70	BTES 50-6-5.1B	0	Invoicing for Lump Sum Contracts Instructions

TABLE II - LIST OF ENGINEERING DRAWINGS

<u>HOR NO.</u>	<u>ARCH. NO.</u>	<u>TITLE</u>	<u>DATE</u>
10-140-10	A-1	SITE PLAN AND INDEX	1 Sept. 72
10-35-87	A-2	PLAN AND SECTIONS	1 Sept. 72
10-35-88	A-3	ELEVATIONS AND SECTIONS	1 Sept. 72
10-35-89	A-4	DETAILS AND SECTIONS	1 Sept. 72
10-35-90	A-5	SECTIONS AND CEILING PLAN	1 Sept. 72
10-35-91	S-1	FOUNDATION PLANS AND DETAILS	1 Sept. 72
10-35-92	S-2	WALL AND ROOF DETAILS	1 Sept. 72
10-35-93	S-3	PRECAST WALL PLAN	1 Sept. 72
10-35-94	S-4	STRUCTURAL DETAILS	1 Sept. 72
10-33-9	P-1	PLUMBING SITE PLAN	1 Sept. 72
10-33-10	P-2	PLUMBING FLOOR PLAN AND DETAILS	1 Sept. 72
10-32-27	M-1	MECHANICAL FLOOR PLAN	1 Sept. 72
10-32-28	M-2	MECHANICAL SCHEDULES AND DETAILS	1 Sept. 72
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10-34-26	E-3	ELECTRICAL SCHEDULES AND DETAILS	1 Sept. 72

EXX 001997

SECTION 2A

EARTH WORK

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the completion of the clearing, excavating, filling, and rough grading. Refer to drawings, details, schedules, and these specifications for type, location, and extent of such work required.

B. Excavating and backfilling for sewers, water, gas, plumbing, heating, and electrical work are included under their respective divisions.

2. EXCAVATION

A. Subsurface soil in general is suitable for bearing at the levels indicated on the drawings. A record of footing depths shall be kept. If the average of all footings varies more than six inches from approximate depth shown on the drawings, an adjustment shall be made on a predetermined unit price based on the difference between the approximate depth shown and the average depth of actual excavation.

B. Excavate to elevations and dimensions indicated plus sufficient space to permit erection of forms, shoring, and inspection of foundations. Excavation for footings and trenches may be cut to accurate sizes and side forms omitted if concrete is poured in clean-cut trenches without cave-ins.

C. Grade under slabs must be smooth and at elevation to provide proper slab thickness.

D. Protect bottom of excavation from frost. Do not place foundations, footings, or slabs on frozen ground. Shore and brace excavations; protect all slopes and earth banks, if necessary, to prevent cave-in. Remove shoring before backfilling is completed but not until permanent supports are in place.

E. Contractor shall control the grading around building so that ground is pitched to prevent water from running into the excavated areas of the building or damaging other structures. He shall furnish all pumping required to keep excavated spaces clear of water during construction.

F. Placing of footings and foundations on earth fill will not be permitted. Fill excess cuts under footings and foundations with concrete and fill any excess cut under slabs with tamped bank sand.

G. Execute drilled and reamed-type footing excavations with approved equipment which will provide required size, shape, and depth for footings.

2A-01

EXX 001998

EARTH WORK

3. FILL

A. Provide and place any additional earth and topsoil material needed to bring existing grades to new grades indicated or specified.

B. Fill under concrete slabs shall be of compactible material and shall be approved by Humble before use. Place in layers not exceeding eight inches thick and moisten during compaction. Compaction shall be by means of approved equipment. Fill shall be compacted to at least 95% dry density at +3% of optimum moisture as determined by ASTM Specification D 698 (Standard Proctor).

C. Sand may be used for leveling.

4. SANDFILL

A. Band sand may be used for fill in place of earth. If water saturation is used, fill layer may be any depth. Same compaction is required as for earth.

5. TESTING LABORATORY

A. At the option of Humble, a testing laboratory, selected and paid for by Humble, may be employed to verify conformance with density requirements for fill and backfill.

B. In case of nonconformance, Contractor shall remove material from rejected areas and recompact until specified density is obtained. Costs of tests to verify density of reworked areas shall be paid by Contractor.

6. SITE WORK

A. Site work in general will be handled by Humble under separate contract or contracts.

B. Site work to be included in this contract will be limited to back-filling at grade beams on exterior of structure, compacted as above in paragraph 3, and such additional earth fill as necessary to drain water away from structure during the construction period.

EXX 001999

SECTION 2B

DEMOLITION

1. RELATED DOCUMENTS

A. The general conditions of the Contract, including General Conditions, Supplementary General Conditions and General Requirements, apply to the work specified in this section.

2. DESCRIPTION OF WORK:

A. The extent of demolition work is indicated on the drawings and in these specifications.

B. It is imperative that demolition work does not interfere with the 24-hour, 7 days a week, continual operation of the Control Center. Any operation that will create dust shall be contained within temporary closures. Removal of the concrete corner columns shall be accomplished in such a manner that the building will remain weathertight.

C. Disposal of waste material shall be as stipulated in "Exhibit A".

D. All existing doors, cabinets and equipment removed from existing building which are not to be reused in new work shall remain the property of Humble and shall be stored as directed by Humble.

EXX 002000

SECTION 3A

STRUCTURAL CONCRETE

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the completion of the concrete work.

B. See drawings, schedules, and details for type and location of concrete work required.

C. Refer to Section 3B for architectural concrete.

2. MATERIALS

A. Portland Cement -- Shall conform to standard specification for Portland Cement (ASTM Specification C 150) or specification for Air Entraining Portland Cement (ASTM C 175) and be Type I or iA. Type III or Type III-A (high early strength) may be used, subject to the approval of Humble in each instance of its proposed use.

B. Water -- Shall be clean and free from oil, acid, and injurious amounts of vegetable matter, alkalies, or other salts.

C. Aggregates -- Shall conform to ASTM Specification C 33 for standard aggregates or to ASTM Specification C 330 for lightweight aggregates. The maximum size of the aggregate shall not exceed 1/5 of the narrowest dimension between forms of the member where concrete is to be placed nor exceed 3/4 of the minimum space between reinforcing bars.

D. Reinforcing -- All reinforcing steel shall be Grade 60, shall conform to ASTM Specification A615, and shall be weldable.

E. Steel Fabric Reinforcing -- Shall be cold-drawn wire or welded wire fabric for slab or decks and shall conform to ASTM Specification A 85.

F. Metal Accessories -- Shall include all spacers, chairs, ties, and other devices necessary for properly placing, spacing, supporting, and fastening reinforcement in place.

3. STORAGE OF MATERIALS

A. Store cement on platforms off ground; protect stored cement against the elements. Handle and store aggregates separately in manner to prevent intrusion of foreign material. Protect all reinforcement until used.

EXX 002001

STRUCTURAL CONCRETE

4. FORMS

A. Standard Finish -- Obtain by using clean, straight-dressed lumber. Concrete having a standard finish shall have honeycombing and minor defects patched. Standard concrete finish shall be used for concrete for which no other finish is indicated or specified. It is the intent of these specifications to provide concrete work with sharp, clean lines with a minimum amount of patching. All work with standard finish shall be smooth and paintable.

5. CONSTRUCTION OF FORMS

A. Construct forms to slopes, lines, and dimensions shown plumb and straight and sufficiently tight to prevent leakage; securely brace and shore forms to prevent displacement and to support construction loads safely. Provide access openings to clean and inspect forms and reinforcing prior to depositing concrete. Do not coat forms with material that will stain or cause injury to exposed concrete surfaces. Keep wood forms wet as necessary to prevent shrinkage. Forms for exposed concrete beams, girders, columns, and pilasters shall provide for a one-inch chamfer on external corners. Construct forms for beams, girders, and lintels so that sides may be removed without disturbing bottom of form or its support.

B. Where soil conditions will permit excavation to accurate sizes without bracing, side forms for footings may be omitted and the sides of excavation lined with waterproof paper.

C. Form ties for exposed concrete shall be removable type. Locate ties level and plumb in horizontal rows and vertical tiers. Remove tie wires completely or to a depth of 1-1/2 inches from exposed faces of concrete; fill holes as hereinafter specified.

6. PLACING REINFORCEMENT

A. Place reinforcement accurately in position shown; securely fasten and support to prevent displacement before or during depositing of concrete; cleaning, bending, and placing of reinforcement shall be done in accordance with requirements of the drawings and the City of Houston Building Code.

B. Use steel chairs to hold reinforcement to proper clearance from slab bottoms, beams, or wall faces.

C. Minimum concrete protection for steel reinforcement shall be as follows except where noted otherwise on the drawings: footings, three inches; columns, 1-1/2 inches; walls, two inches; grade beams, three inches on bottom and 1-1/2 inches side and top; beams above grade, 1-1/2 inches; slabs on grade, one inch; and slabs above grade, 3/4 inch.

STRUCTURAL CONCRETE

7. PROVISION FOR OTHER WORK

- A. Provide for installation of inserts, hangers, metal ties, anchors, bolts, angle guards, dowels, thimbles, slots, nailing strips, blocking grounds, and other fastening devices required for attachment of other work. Properly locate in cooperation with other trades and secure in position before concrete is poured. Do not install sleeves in any concrete beams or columns except upon approval of Humble.
- B. All inserts and fastening devices shall be subject to Humble's approval for each condition of use.

8. DESIGN OF CONCRETE MIX

- A. See structural drawing for design strength of concrete. Aggregate shall be stone except in precast wall panels, which shall be Haydite.
- B. Transit mix concrete shall conform to requirements of ASTM Specification C 94.
- C. Slump shall be determined by the conditions prevailing on the job and shall be specified by the purchaser at the time the order is placed. Where it is impracticable to place concrete with the slump specified, a change may be made on approval of Humble. Concrete shall not be placed when outside the following maximum limits for slump:

Footings - 4-1/2 Inches
Walls - Six Inches
Columns, Slabs, and Beams - Five Inches

9. PLACING CONCRETE

- A. Place no concrete until foundations, forms, reinforcing steel, pipes, conduits, sleeves, hangers, anchors, inserts, waterproofing, and other work required to be built into concrete has been inspected and approved by Humble. Before depositing concrete in footings or foundations, see that bottoms of excavations are on undisturbed earth, properly leveled off and tamped. Thoroughly wet or oil wood forms prior to placing concrete.
- B. Place concrete in forms immediately after mixing and in such manner as to maintain the top surface reasonably level and to avoid flowing along the forms as much as possible. It shall be compacted by suitable means so that the concrete adjacent to the forms will be agitated sufficiently to cause mortar to exude from the mass and form a smooth wall and bottom surface. Give special attention thus in the case of concrete wall forms.

STRUCTURAL CONCRETE

C. Contractor may place concrete at night provided he supplies sufficient artificial light to enable the work to be thoroughly inspected and takes all precautions to guard against displacement of the steel during the pour. Notice must be given to Humble so that arrangement can be made for proper inspection of the work.

D. Fill footings to required height without stopping pour. Fill over excavation with concrete only.

10. REMOVAL OF FORMS

A. Forms shall be removed without damage to concrete and in a manner to insure complete safety of the structure. Forms shall not be removed, in any case, from beams, girders, slabs, joists, and similar structures, until concrete has reached two thirds of its design strength and even then shall be shored to the satisfaction of Humble until full strength has been reached. In the interest of expediting the work, Contractor may, at his option, take additional test cylinders for breaking ahead of scheduled seven- and 28-day aging periods. All expenses in connection with taking such cylinders and their breaking shall be paid by Contractor.

B. Forms shall be completely removed in order that no form material will be left in the completed work.

11. CONSTRUCTION JOINTS

A. The rate and method of placing concrete and arrangement of construction joint bulkheads shall be such that the concrete between construction joints may be placed in one continuous operation.

B. Before placing slabs, locate and form for construction joints and depressed areas. Depress slabs without decreasing thickness of slab.

C. When it becomes necessary to discontinue concreting before completion of the unit involved, temporary bulkheads may be introduced at approved points. On removal of these temporary bulkheads, the concrete face exposed must be roughened up with picks or otherwise as elected to give a satisfactory bond with the new concrete. Wet and paint with neat cement before placing new concrete.

12. FINISH OF ROUGH SLABS

A. Strike off structural slabs at required levels with a straight edge; strike roof slabs at underside of roof insulation, fill, or roofing as required; strike slabs having ceramic tile or cement topping the required depth below finish floor elevations unless other dimensions are shown.

STRUCTURAL CONCRETE

B. Slab surfaces to receive roofing or rigid roof insulation shall have a float finish. All other surfaces of structural slabs, except where integral cement finish is required, shall be thoroughly raked or wire broomed to provide bond for other finishes.

13. PATCHING AND CLEANING

A. Concrete not formed as shown on the plans or out of level or alignment or having a defective surface shall be considered as not conforming to these specifications and shall be removed at the Contractor's expense unless permission is given to patch the defective area. Permission to patch shall not be considered a waiver of the right to require removal of the defective work should the patching prove unsatisfactory to Humble. Do not patch any surface until examination has been made by Humble and permission given.

B. Directly after forms have been removed, all exposed ties shall be removed from concrete surfaces to be exposed; cut ties flush with finished surfaces of all other concrete. Rub smooth or cut off fins and rough places and remove all loose concrete.

C. When permitted, patching shall be done with approximately the same materials as used for the concrete except that the coarse aggregate shall be omitted and the mortar shall not be richer than one part cement to one part sand. All patching shall conform to the requirements set out in Architectural Concrete Specifications AC-1, Paragraph 36, 4th Edition, as published by the Portland Cement Association.

14. CURING AND PROTECTION

A. Protect concrete against frost and rapid drying and keep moist for at least seven days after placing (three days for high early concrete or cement). When outside temperature is 40°F or less, maintain concrete temperature of at least 70°F for three days or 50°F for five days.

B. Cover troweled interior concrete floor surfaces as soon as the concrete has hardened sufficiently to prevent damage thereby and start curing. Covering shall be of a type that will not stain or discolor finished surfaces and shall be maintained in good condition until the installation of finished floor covering or until otherwise directed. Do not use curing compound unless approved by Humble.

C. Concrete roof slab surface shall be sprayed with water during the curing period as frequently as drying conditions may require. Curing on grade beams and other accessible exterior surfaces may be with an approved liquid chemical compound which does not affect texture or color.

3A-05

STRUCTURAL CONCRETE

15. CEMENT FINISH

A. Dusted-On Concrete Floor Finish -- Use dusted-on concrete floor finish for all interior floor slabs. To produce, strike off floor at proper level; remove excess water, laitance, and trash; and apply a dry mixture of one part Portland cement and two parts sand to the hardened slab in a uniform layer 1/16 to 1/8 inch thick. When the dry materials have absorbed the moisture and the slab is hardened enough to allow finishing, float and trowel to unite the dust coat with the base. Do not overwork, but trowel to a smooth, level, even surface, free from air holes or blemishes.

B. Brushed Area -- Ramps and entry platforms shall be given a medium-brushed surface immediately after troweling.

C. Rubbed Surfaces -- The exposed vertical surfaces of poured-in-place concrete shall be rubbed. All fins shall be removed and ground even with surrounding surfaces; all voids shall be filled with neat grout; and all surfaces shall then be coated with grout to an even and homogeneous surface free from swirls and discolorations.

16. METAL FORMS FOR ROOF DECK

A. Forms over steel joists for concrete roof deck shall be 24-gauge, galvanized iron "Cofar", 1-15/16 inch deep, with Type A T-wire spacing as manufactured by Granco Steel Products Company, Granite City, Illinois. End laps shall occur over joists with a minimum lap of two inches. Weld each sheet at each joist with two welds using "Corruform" curved washers. After sheets have been welded in place, Granco vent clips shall be inserted at the side lap of each sheet locating one clip at midpoint between joists. Under no circumstances are the vent clips to be eliminated or reduced in quantity.

17. FOUNDATIONS FOR EQUIPMENT:

A. This Contractor shall coordinate his structural work with the mechanical and electrical subcontractors. He shall include bases for equipment and shall build in anchors furnished to him by the subcontractors.

18. CLEANUP AND DEFECTS

A. Leave floor construction broom clean and all other surfaces ready for painting and facing or ready for use.

B. Cement floors found to be other than absolutely level or with foreign material "stuck on" shall be ground down or otherwise corrected to provide a satisfactory surface for installation of floor coverings.

SECTION 3B

ARCHITECTURAL CONCRETE

1. SCOPE

- A. Work under this section includes all labor, materials, accessories, and equipment necessary for architectural concrete work.
- B. Refer to drawings and these specifications for type, location, and extent of work involved.
- C. The work covered in this section is, in particular, the exposed vertical surfaces, interior and exterior, of concrete walls.
- D. Except where stipulated otherwise in this section of the specifications, all provisions and requirements of Section 3A, STRUCTURAL CONCRETE, shall apply for Architectural Concrete Work.

2. MATERIALS

- A. CEMENT: Match existing panels.
- B. EXPOSED AGGREGATE: Match existing panels.

3. CASTING METHOD

- A. Wall panels shall be precast with the exposed aggregate face down on a smooth concrete slab that has no joints or seams inside the panel area.

4. WALL PANELS

- A. Wall panels shall have exposed aggregate on exterior surface. Size of aggregate and general appearance shall match that of the existing panels on Reforming Control Center. Interior exposed surfaces shall be smooth, without form marks and suitable for painting.
- B. The exposed surfaces of columns and those portions of wall panels which do not receive exposed aggregate finish shall be rubbed and blended together to form a uniform and continuous surface.

5. SUBMITTALS

- A. The Contractor shall submit, for approval of Humble, a written outline of procedure, with drawings for the following:
 - 1) Casting Method
 - 2) Type and placement of brace inserts
 - 3) Type and placement of lifting bolts
 - 4) Type of lifting harness
 - 5) Bracing
 - 6) Method of grouting holes left by lifting bolts and inserts

EXX 002007

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ARCHITECTURAL CONCRETE

6. SAMPLE

A. Prepare, for approval of Humble, samples of wall panel work to show finish and texture of both faces.

7. DEFECTIVE PANELS

A. ANY PANELS THAT ARE CRACKED FROM THE PROCESS OF RAISING OR ANY OTHER CAUSE SHALL BE REPLACED BY THE CONTRACTOR WITHOUT CHARGE.

EXX 002008

3B-02

SECTION 5A

STRUCTURAL STEEL

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the fabrication, erection, and execution of the structural steel work.

B. See drawings and schedule for type, location, quantity, and details of steel framing and structural steel required to complete work. Anchor bolts and other incidental items of structural steel required to be built into concrete or masonry shall be furnished to respective trades at proper time and shall include instructions or templates for their installation.

C. Substitutions of shapes or modifications of details may be permitted only by approval of Humble.

2. MATERIALS

A. Structural Steel -- Shall conform to ASTM Specification A 36, suitable for welding.

B. Steel Joists -- Shall be open-web type conforming to standard specifications of the Steel Joists Institute. Joists shall be high strength of H or LH series with bearing depth of 5". Minimum yield point shall be 50,000 psi. Bottom chords of joints shall be made of angles same as top chords. Steel shall be suitable for welding.

C. Welding electrodes shall conform to those specified in AISC Specification Manual 1.17.2. Welding on A 36 steel shall be made with ASTM A 233, Class E-60 or E-70 series electrodes; Grade SAW-1 or SAW-2 shall be used for welding this steel with the submerged-arc process. Manual welding on the high-strength steel joists shall be done only with Class E-70, low-hydrogen electrodes.

D. Anchor Bolts -- Shall be in accordance with ASTM A 193, Grade B.

E. Anchor Bolt Nuts -- Shall be heavy in accordance with ASTM A 194 Grade 2.

3. SHOP DRAWINGS

A. Submit shop and erection drawings for all structural steel work to Humble for approval. Manufacturing or fabricating of any material or the performing of any work prior to approval of shop drawings will be entirely at risk of Contractor.

B. The approval of shop drawings will be for size and arrangement of principal and auxiliary members and strength of connections. Any errors in dimension shown on shop drawings shall be the responsibility of the Contractor.

STRUCTURAL STEEL

4. PROTECTIVE COATING

A. Clean steel of all rust, scale, millscale, sand, or other foreign matter and apply one shop coat of Humble Rust-Ban 281 red lead paint. Asphalt paint will not be allowed as shop coat on bar joists.

B. After erection, touch up field connections and abraded places with paint, and all surfaces which are not to be encased in masonry or concrete shall be given a field coat of Rust-Ban 281 red lead paint except that four ounces of lamp black shall be added to each gallon of paint.

5. FABRICATION:

A. Unless otherwise shown, fabricate structural steel in accordance with current edition of specifications adopted by American Institute of Steel Construction. Punch and drill steel as indicated on drawings or specified for attachment of other materials thereto; punching and drilling required but not definitely indicated on drawings or specified, shall be done in the field.

6. ERECTION

A. Except as otherwise shown on drawings, all details of erection shall be in accordance with the specification for the design, fabrication, and erection of structural steel for buildings (riveted, bolted, and arc-welded construction) and the Code of Standard Practice for Steel Buildings and Bridges as issued by the American Institute of Steel Construction.

7. STEEL JOISTS

A. Set joists level to spacing shown with bearing as indicated on drawings. Provide headers and trimmers as indicated.

B. Each joist resting on steel shall be welded to the steel support with two welds at each support or shall be secured to steel as detailed on structural drawings.

C. Bridge joists in accordance with structural drawings. Splicing of joists will not be permitted.

D. Where suspended ceilings occur on bottom of joists, furnish and install ceiling extensions for joist ends. Provide bridging, headers, anchors and clips as required.

SECTION 5B

MISCELLANEOUS METAL

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the execution of the miscellaneous metal work.

B. See drawings, schedules, and details for items of miscellaneous metal required. The following metal items are specified under other provisions of specifications: anchors, bolts, sleeves, and supports required for installation of plumbing, heating, ventilating, and electrical equipment; metal clamps, anchors, ties, and dowels for masonry and concrete work; metal windows, metal doors and frames, aluminum trim, and aluminum doors.

2. MATERIALS

A. Steel -- Conform to ASTM Specifications A 36 for structural steel, suitable for welding, and A 27 for cast steel. Architectural and miscellaneous steel not otherwise indicated or specified shall be mild steel.

B. Aluminum shall be Alloy No. 43 for castings, No. 35 for sheet, and No. 63-ST for extruded. All aluminum shall be from virgin ingot, as made by the Aluminum Company of America, or equal.

C. Screws and bolts shall be made of the same material as the exposed piece they hold, except screws for aluminum are to be of stainless steel.

3. SHOP DRAWINGS

A. Before any fabrication is begun, shop drawings of all miscellaneous metal items shall be submitted to Humble for approval. The drawings shall show sizes of metal, method of assembly, hardware, and anchorage or connection with other work.

4. WORKMANSHIP

A. Sheet and wrought iron shall be well-formed to shape and size with sharp lines or angles. Shearing and punching shall leave clean, true lines and surfaces. Weld or rivet permanent connections. Do not use screws or bolts where they can be avoided; where used, heads shall be countersunk, screws uptight, and threads nicked to prevent loosening.

B. Castings shall be sound and free from warp, holes, and other defects that impair their strength or appearance. Exposed surfaces shall have a smooth finish and sharp, well-defined lines and arris. Machined joints, where required, shall be milled to a close fit.

5B-01

EXX 002011

MISCELLANEOUS METAL

- C. Provide necessary rabbets, lugs, and brackets so that work can be assembled in neat and substantial manner.
- D. Fastenings shall be concealed where practicable. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Joints exposed to weather shall be formed to exclude water. Provide holes and connections for the work of other trades.
- E. At proper time, deliver and set in place items of metal work to be built into adjoining construction.
- F. Extruded members shall be clean cut, sharp and straight, and not less than 1/8 inch thick. Sheet aluminum shall be of such weights and so applied that it will be free of waves, buckles, or other irregularities of surface.
- G. Where aluminum attaches to steel, the materials shall be properly insulated to prevent direct contact by means of bituminous paint.
- H. Provide all necessary joints so constructed as to be watertight.

5. FINISH AND PROTECTIVE COATING

- A. All aluminum shall have a satin finish. All surfaces shall be given an Alumilite coating equal to the finishes of the Aluminum Company of America, Alumilite No. 204-A2.

6. PAINTING

- A. All ferrous metal shall be properly cleaned and given one shop coat of Rust-Ban 191, unless specified to be galvanized. Anchors that are built into masonry or concrete shall be coated with asphalt paint unless specified to be galvanized. Where hot-dip galvanized or zinc-coated metal is required, it shall not be shop primed unless specifically called for, but all abraded places and weldings shall be touched up with aluminum paint. Where hot-dip galvanizing or hot-zinc coating is specified, it shall be done in accordance with the standard specifications of ASTM A 123.

7. MISCELLANEOUS BOLTS AND ANCHORS

- A. Provide all bolts, anchors, and attachments detailed on the drawings or specified herein.

8. MISCELLANEOUS METAL

- A. Items of miscellaneous metal work shall include, but shall not be limited to, the following:

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MISCELLANEOUS METAL

- (1) Bearing plates for steel joists at concrete walls.
- (2) Steel support for open counter at Kitchen.
- (3) Steel angles at concrete in access floor.
- (4) Steel channels at Door No. 14.
- (5) Miscellaneous weld plates, angles, etc., for securing wall panels as shown on structural drawings.

5B-03

EXX 002013

SECTION 6ACARPENTRY1. SCOPE

A. Work under this section includes all labor, material, equipment, and accessories necessary for execution of carpentry work.

B. Refer to drawings, schedules, and these specifications for type, location, and extent of work required.

2. GRADING REQUIREMENTS

A. Material for all woodwork shall be thoroughly air on kiln dried and protected from moisture. Maximum moisture content shall be 12%.

B. Grade and trademark shall be required on each piece of lumber (or bundle in bundled stock). Use only the recognized official marks of the association under whose rules it is graded. Grade and trademarks will not be required if each shipment is accompanied by certificates of inspection issued by the association.

C. Quality -- Lumber must be sound, thoroughly seasoned, well manufactured, and free of warp. All wood shall be dressed. Finished lumber shall be free of pitch pockets, knots, and off-colored wood.

3. GRADES OF WOOD

A. Grades and species of lumber and millwork shall be as follows, except that grades and species hereinafter specified under specific items shall govern:

Bucks and Nailers -- Grade 2 southern yellow pine or Douglas fir.

Treated Wood -- Use six-pound, Woodlife for roofing grounds and nailers.

4. STORAGE AND PROTECTION

A. Protect lumber from exposure to rain.

5. TEMPORARY ENCLOSURES

A. Provide temporary wood doors for exterior wall openings until specified doors are ready for installation.

6. ROUGH HARDWARE

A. Provide and install all rough hardware and metal fastenings as shown on drawings, specified herein, or required for proper installation of carpentry and millwork. Nails, spikes, screws, bolts, and similar items shall be of sizes and types to rigidly secure members in place. See the

CARPENTRY

various headings hereinafter specified for specific sizes and type of rough hardware required.

7. HARDWARE APPLICATION

A. Receive, store, and be responsible for all finished hardware. Properly tag, index, and file all keys as directed. Apply hardware in accordance with manufacturer's instructions. Fit accurately, apply securely, and adjust carefully. Use care not to injure work when applying hardware. When necessary, remove and replace doors so they may have their bottoms painted. Hinge screws shall be of sufficient length to extend through doorframes and into wood bucks on all doors with door closers.

B. The location of hardware, in connection with doors, shall be as follows, unless otherwise shown on drawings: center doorknobs 38 inches above finished floor, center door pulls 40 inches above finished floor, center push plates 45 inches above finished floor, center cylinder deadlocks 52 inches above finished floor, center single push bars 48 inches above finished floor, locate upper edge of top hinge five inches below head of frame, locate lower edge of bottom hinge ten inches above finished floor, and space center hinges an equal distance between top and bottom hinges.

C. Cover doorknobs and pulls with heavy cloth until painting is completed. Prior to completion of building, examine all doors, sash, and other movable parts; adjust, as required, to leave the hardware in good working order.

8. MAILERS

A. Provide wood nailers behind all wall hung cabinets, counters, lockers and accessories.

SECTION 6B

MILLWORK

1. SCOPE

A. Furnish and deliver all millwork shown and specified. Millwork is defined to include all exterior and interior woodwork and plastic laminate exposed to view in the finished building.

B. Typically exempted wood items are: (1) lumberyard and specialty items of flooring, shingles, exposed roof decking, ceilings, siding, structural members, overhead doors, and wood bumpers; (2) painting, finishing, and erection; (3) furnishing and installing of hardware; and (4) factory-finished furniture and furnishings.

2. GENERAL

A. Quality Standards -- The Quality Standards of the Architectural Woodwork Industry, dated 1963, shall apply and, by reference, are made a part of these specifications. Where these specifications are in conflict with the Architectural Woodwork Industry Standards, these specifications take precedence.

B. Shop Drawings -- Required brochures or catalogs may be substituted for drawings of stock items. Show elevations of items requiring assembly. Details shall be drawn full size or three-inch scale. Give grade of millwork, wood species, and whether natural or paint finish. Show dimensions requiring field measurements.

C. Field Dimensions -- Contractor is responsible for details and dimensions not controlled by the job conditions. Contractor and Humble shall cooperate to establish and maintain field dimensions.

D. Delivery and Storage -- Not permitted until storage area is enclosed and wet application materials have essentially dried.

3. CASEWORK

A. Definitions

(1) Exposed -- Surfaces visible when doors and drawers are closed and bottoms of cases more than four feet zero inch above floor. Surfaces visible through clear-glass doors. Tops of cases less than six feet zero inch above floor.

(2) Semiexposed -- Surfaces visible when drawers and opaque doors are opened. Tops of cases six feet six inches or more above floor.

(3) Concealed -- Surfaces not usually visible after installation.

MILLWORK

B. Assembly -- Completely shop assembled except:

- (1) When casework is too large for entrance to the use area. In such cases, it will be assembled into sections prepared for field connections.
- (2) Fitting of hinged doors when door hardware is specified under another section.
- (3) Fitting and attachment of finished hardware specified under other sections.
- (4) Installation assembly.

Contractor may construct at the jobsite.

C. Material Thicknesses -- The following thicknesses shall apply, except when shown thicker on the drawings.

- (1) Tops, Bottoms, End, and Divisions -- Three-fourths inch thick. Thinner plywood may be used if reinforced with members and at locations not requiring dados.
- (2) Face Plates -- Equal to door thickness with 3/4-inch minimum.
- (3) Web Frames -- Three-fourths-inch minimum.
- (4) Backs and Drawer Bottoms -- One-fourth-inch plywood, 1/4-inch hardboard, or 1/8-inch tempered hardboard. Drawers over 24 inches wide require center bottom support. Backs reinforced with strips or braces to limit areas to 12 square feet.
- (5) Drawer Fronts -- Three-fourths inch.
- (6) Drawer Backs and Sides -- One-half inch.
- (7) Shelves -- Exposed shelves 3/4 inch thick to 42 inches and one-inch minimum over 42 inches. Concealed shelves 3/4 inch thick to 48 inches.
- (8) Dust Panels -- Not required unless shown on the drawings.
- (9) Bases -- Specified under Carpentry Section. Design toe space three inches deep and four inches high, except when shown otherwise on the drawings. Design 1/2-inch-deep recessed base across exposed ends.
- (10) Doors -- Three-fourths-inch-minimum thickness, except when shown greater on the drawings. When thicknesses 1-3/8 inches and over are shown, specifications for full-size, walk-through doors apply. Flush type, except where shown otherwise on the drawings. Hardware final

MILLWORK

fitting and installation are not in this section. Omit edge binding for tops and bottoms of sliding doors. Omit edge binding on the tops of doors over six feet above floor and on the bottoms less than three feet above floor.

D. Drawers

(1) Flush type, except where shown otherwise on the drawings. Include slides installed:

K & V No. 1300

Washington No. B-2000

Garcy No. 380 or Humble's Approved Equal

E. Shelves

(1) All adjustable unless marked fixed or removable on the drawings. Removable shelves shall be on cleats or standards. Include standards and shelf supports, installed. Standards are to be K & V No. 255 zinc plate with recessed mounting. Shelf supports are to be K & V No. 256 zinc plate.

F. Plastic Laminate

(1) Standards -- Meet NEMA Test LP 2-1957.

(2) Brands -- Nevamar, Wilson-Art, Textolite, Micarta, Formica, and Panelyte.

(3) Selection of Color and Pattern -- By Humble from full range of stock materials. Satin finish unless specified otherwise.

(4) Thicknesses -- Use 1/16 inch (0.062 inch) for counters and similar horizontal surfaces and walk-through-size doors. Use 1/32 inch (0.032 inch) for cabinet facings and edge banding. Use 0.30-inch phenolic plastic backer sheets.

(5) Backer Sheets -- Required where plastic laminated sheet is not supported along all four edges and where unsupported areas exceed six square feet for custom-grade cabinets or four square feet for premium-grade cabinets. All doors require backer sheets or plastic on two sides. Hinged doors require finished plastic on both sides.

(6) Edges -- Self edge unless shown or specified otherwise.

(7) Cores -- Three-fourths-inch-thick, five- or seven-ply core, softwood or hardwood veneer plywood with "B" surfaces on sides exposed to view. Hardwood veneers required for premium-grade cabinets. Plywood is to

MILLWORK

conform to APA standards and carry grade mark. Particle boards are to conform to the standards of NAPF, Grade B, optional for custom or economy grades. Raised-grain core boards that telegraph imperfections cannot be used.

G. Adhesives -- Urea formaldehyde type for shop use. Set in press. Job applications permitted only where shop fabrication is impractical. Use either contact or pressure types for job application.

H. Grades -- Custom.

I. Exposed Surfaces -- Hardwood, stain finish.

J. Semi-exposed Surfaces -- Softwood, natural finish drawers. Softwood, paint finish cabinets.

4. STANDING AND RUNNING TRIM

A. Wood -- Pine, fir, or hardwood.

B. Finish -- Paint.

C. Grade -- Custom.

5. CABINET WORK

A. Materials shall be as shown on drawings.

SECTION 7A

ROOFING

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the execution of the roofing and deck insulation work.

B. See drawings for location, extent, and details of roofing and deck insulation work required.

C. Ventilators and flashing, plumbing vent flashing, and roof drains are included in the Mechanical Specifications. This Contractor shall build items as furnished into the roofing.

2. GUARANTEE

A. The roofing contractor shall be approved by Humble. The roofing subcontractor shall provide a two-year maintenance guarantee for all roofing and flashing against leakage.

3. MATERIALS AND APPLICATION

A. Roof shall be 20-year type coal tar and aggregate system equal to Philip Carey 1-CZ as described below:

- 1) Mop 1-ply 43 lb. base sheet vapor barrier to deck using 25 lbs. pitch per square.
- 2) Lay one inch, Johns-Manville Fesco Board insulation in pitch.
- 3) Mop a one-ply 43 lb. base sheet to the top of the insulation. Use pitch at the rate of 25 lbs. per square.
- 4) Apply three plies of 15 lb. tarred felt in pitch at the rate of 25 lbs. per ply per square.
- 5) Apply flood coat of pitch 60 to 75 lbs. per square and spread gravel 400 lbs. per square.
- 6) Gravel guard to be 26 gauge T-304 or T-316 stainless steel.
- 7) Coal tar pitch shall comply with ASTM Specification D-450-41-A-BU.
- 8) Roof drains shall be set so that they will be lower than roof when all flashing is installed.
- 9) Gravel shall be approximately 3/8", 100%. Passing 1/2" mesh, 30 to 50%. Passing #4 mesh and no greater than 5% passing #16 mesh.

SECTION 7B

WATERPROOFING

1. SCOPE

A. Work under this section includes furnishing of all labor, materials, accessories, and equipment necessary for completion of waterproofing work.

B. Refer to the drawings and these specifications for type, location, and extent of work required.

C. Caulking is specified under a separate section.

2. GUARANTEE

A. Provide guarantee, in writing, warranting workmanship against leakage and material against hardening, cracking, or crumbling away for a period of two years from date of completion, as evidenced by date of final payment.

3. MATERIALS

A. Membrane -- Six-mil-thick polyethylene plastic sheet.

B. Plastic Cement -- Cold-applied asphalt emulsion as approved by Humble.

4. INSTALLATION

A. Apply one ply of membrane over sandfill at all building concrete slabs.

B. All joints shall be lapped a minimum of six inches and sealed with cement for watertight joint.

C. Any penetrations of membrane for conduit, pipe, or other reasons shall be carefully repaired with extra ply of membrane and cement to restore to a reasonably watertight condition. Screed stakes may penetrate the membrane without patching.

SECTION 7CCAULKING1. SCOPE

- A. Work under this section includes furnishing of all labor, materials, accessories, and equipment necessary for completion of the caulking work.
- B. Refer to the drawings and these specifications for type, location, and extent of work required.
- C. Waterproofing is specified under a separate section.

2. GUARANTEE

- A. Provide guarantee, in writing, warranting workmanship against leakage and material against hardening, cracking, or crumbling away for a period of two years from date of completion, as evidence by date of final payment.

3. MATERIALS

- A. Caulking Compound -- An elastic, waterproof adhesive as manufactured by Pecora, H. B. Fred Kuhls, A. C. Horn, Minwax, or an equal, as approved by Humble. Compound shall be of proper consistency to be readily worked and not be affected by vibration or long exposure to outside climatic and temperature changes. Compound shall form a thin, tough, elastic film on the surface but remain permanently plastic underneath. It shall contain no acid or ingredients that will stain stone, corrode metal, or have an injurious effect on painting. Compound shall be white or colored, as required, to match adjacent work.
- B. Rope Yarn -- Raveled strands of nonstaining rope fiber, oakum, or jute.
- C. Caulking Primer -- A quick-drying, clear varnish thinned to proper consistency or other methods as recommended by the manufacturer of the compound.

4. APPLICATION

- A. All joints and spaces to be caulked shall be clean, free from dust, and dry. When gun consistency compound is used, prime absorbent or rough surfaces that are in contact with caulking before caulking is applied. Joints more than 3/4 inch deep and joints where a suitable backstop has not been provided shall be packed with rope yarn to within 1/2 inch of surface before applying caulking. Caulk joints before final coat of paint is applied to adjacent work.
- B. Apply compound with gun having proper size nozzle or with knife as required. (See requirements of other section.) Use sufficient pressure to fill all voids and joints solid; superficial pointing of joints with a

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CAULKING

skin bead will not be accepted. Remove excess caulking and leave surfaces neat, smooth, and clean. Upon completion, caulking shall have a smooth, even finish. All caulked joints shall be watertight.

7C-02

EXX 002023

SECTION 7D

WEATHERSTRIPPING

1. SCOPE

A. Work under this section includes all labor, materials, equipment and accessories necessary for the provision and installation of weatherstripping at exterior doors.

2. MATERIALS

A. Materials listed below are as manufactured by Argil J. May Manufacturing and Dist. Corp.

- 1) Door Bottom Weather Seal: 33AA.
- 2) Door Seals: 21AA Neoprene

3. INSTALLATION

A. Installation shall be in accordance with manufacturer's recommendations.

SECTION 8A

HOLLOW METAL FRAMES

1. SCOPE

- A. Work under this section includes all labor, materials, accessories, and equipment necessary for erection of hollow metal frames.
- B. Refer to the drawings, schedules, and these specifications for type, location, and extent of work required.
- C. Exterior steel doorframes are specified elsewhere.

2. MATERIALS

- A. Metal doorframes, where indicated on the plans, shall be combination buck and jamb type as detailed on the drawings.
- B. Frames to be formed to shape, as detailed, from 16-gauge, best-grade furniture steel. Head and jamb sections are to be accurately mitered, continuously welded, filled, and ground smooth to produce a completely rigid assembly.
- C. Bucks shall be mortised, reinforced, drilled, and tapped at the factory to receive mortised template hinges, lock strikes, flush bolts, and door closers where required; reinforce bucks to receive surface-applied hardware. Provide cover boxes in the back of all hardware cutouts.

3. SHOP DRAWINGS AND SAMPLES

- A. Submit to Humble, for approval, shop drawings showing typical construction of all items. The drawings shall also show the conditions at doors, with various wall thickness and materials, and a schedule listing the location in the building for each item.
- B. Submit sample corner sections of metal bucks to Humble for approval. Sample section shall clearly show details of construction.

4. SHOP FINISH

- A. All frames shall be electrogalvanized or be primed with paint that will pass a 200-hour, 5% salt spray test in accordance with ASTM method.

5. LOCATION OF HARDWARE

- A. The location of hardware, in connection with metal bucks and trim and hollow metal doors, shall be as follows unless otherwise shown on the drawings: center doorknobs 38 inches above finished floor, center door pulls 40 inches above finished floor, center push plates 45 inches above finished floor, center cylinder deadlocks 52 inches above finished floor, locate upper edge of top hinge five inches below head of frame, locate

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HOLLOW METAL FRAMES

lower edge of bottom hinge ten inches above finished floor, and space center hinges an equal distance between the top and bottom hinges.

6. INSTALLATION

A. Install frames plumb, rigid, and in true alignment. Frames are to be securely anchored to wall members.

8A-02

EXX 002026

SECTION 3B

WOOD DOORS

1. SCOPE

- A. Work under this section includes provision of wood doors.
- B. Installation of doors is covered under the Carpentry Section of these specifications.

2. MATERIALS

- A. General -- Comply with AWI Brochure 5, 1963, Revision and Commercial Standards CS171-58, except when more stringent requirements are set forth herein. In such cases, the most stringent requirements shall apply.
- B. Warp Limits -- Maximum warp or twist in all grades is 1/4 inch, as defined by the National Woodwork Manufacturers Association standard door guarantee. If door cannot operate properly, it shall be corrected regardless of the amount of warp or twist.
- C. Glue -- All doors shall be glued with Type I, fully waterproof glue.
- D. Solid Core Doors -- Type A.
- E. Door Cores and Veneers
 - 1) Cores -- Solid cores.
 - 2) Veneers -- Domestic Ash.

3. SAMPLES, BROCHURES

- A. Submit cutaway sample or manufacturer's literature that describes construction completely.

SECTION 8C

EXTERIOR STEEL DOORS AND FRAMES

1. SCOPE

A. Work under this section includes all labor, materials, accessories and equipment necessary for the provision and installation of exterior steel doors and frames.

2. MATERIALS

A. Doors shall be heavy duty galvanized steel doors, as manufactured by Dean Steel Products Co., or Tex-Steel Corporation, with 16 gauge face sheets and 18 gauge inner stiffeners on 6" centers spot welded to both faces of doors.

B. Metal panel above door No. 14 shall be same construction as doors and shall be removable.

C. Frames shall be formed tubular sections of 14 gauge galvanized metal. Horizontal mullion at door No. 14 shall be reinforced as detailed and shall be removable.

3. FABRICATION, GENERAL

A. Fabricate hollow metal units to be rigid, neat in appearance and free from defects, accurately formed to the required sizes and profiles. Whenever practicable, fit and assemble units in the manufacturer's plant. Clearly identify work, that cannot be permanently factory-assembled before shipment, to assure proper assembly at the project site. Dress all welded joints on exposed surfaces flush and smooth, to be invisible when prime painted. Use of metallic filler to conceal manufacturing defects is not acceptable.

4. FINISH HARDWARE PREPARATION

A. Prepare hollow metal units at the manufacturer's plant to receive mortised and concealed finish hardware, including cutouts, reinforcing, drilling and tapping. Comply with applicable requirements of ANS A115 "Specifications for Door and Frame Preparation". Prepare for other mortised and concealed finish hardware to the templates of the manufacturer of each finish hardware item required in the work.

B. Reinforce all doors for closers, whether or not closers are indicated.

C. Reinforce hollow metal units at the manufacturer's plant to receive surface-applied hardware. Drill and tap for surface-applied finish hardware at the project site during installation.

D. Provide removable moldings at all other locations, unless otherwise shown.

EXTERIOR STEEL DOORS AND FRAMES

5. SHOP PAINTING

- A. Clean, treat and paint all surfaces of fabricated hollow metal units, including galvanized surfaces, whether concealed or exposed in the finished work.
- B. Remove mill scale, rust, oil, grease, dirt and other foreign materials before the application of the shop coat of paint.
- C. Apply shop coat of baked-on prime paint of even consistency to provide a uniform finished surface ready to receive field-applied paint.
- D. Molding Locations: Provide moldings around solid, glazed or louvered panels in hollow metal units for a rigid and secure installation.
- E. Provide non-removable moldings on the outside of exterior hollow metal units.

6. INSTALLATION

A. General

- 1) Install hollow metal units and accessories in accordance with the final shop drawings and manufacturer's data, and as herein specified.

B. Placing Frames

- 1) Set frames and secure to adjacent construction with machine screws and masonry anchorage devices.

C. Door Installation

- 1) Fit hollow metal doors accurately in their respective frames, within clearances specified in S.D.I. 100.
- 2) Finish hardware is specified in Section 8D "Finish Hardware".
- 3) Final Adjustments
 - a. Check and readjust all operating finish hardware items in hollow metal work just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames which are warped, bowed or otherwise damaged.

7. SUBMITTALS

EXX 002029

A. Manufacturer's Data, Hollow Metal Doors and Frames

- 1) For information only, submit 2 copies of manufacturer's specifications for fabrication and shop painting, and installation

EXTERIOR STEEL DOORS AND FRAMES

instructions. Indicate by transmittal form that one copy of instructions has been distributed to the Installer.

B. Shop Drawings, Hollow Doors and Frames

- 1) Submit shop drawings for the fabrication and erection of hollow metal doors and frames, as required to supplement manufacturer's data and to show location in building. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Provide details at 3" to 1'-0" scale and dimensioned elevations at not less than 1" to 1'-0" scale. Show anchorages and accessory items.

SECTION 8DFINISH HARDWARE1. SCOPE

A. See drawings, schedules, and details for items requiring hardware and installation details. Include all finish hardware and related items necessary to complete work shown and specified.

B. Where hardware is required in connection with the following items it is specified to be furnished with those items unless specifically noted otherwise:

- 1) Metal lockers
- 2) Toilet partitions

C. Should items of hardware not definitely specified be required for completion of the work, furnish such items of type and quality suitable for the service required and comparable to adjacent hardware.

D. As soon as practicable, and no later than 30 days after award of the general contract, Contractor shall submit to Humble for approval six copies of the finish hardware schedule, complete with all details and a sample of each individual item.

2. SAMPLES

A. Submit such samples as are required by Humble for approval; do not deliver hardware until approval is obtained.

3. MATERIALSA. BUTTS

- 1) Doors shall have 1-1/2 pairs of butts per leaf. All butts shall have flat button tips. All butts shall be sized per manufacturer's recommendations for size and weight of door involved.
- 2) Exterior doors shall have solid bronze or anodized aluminum butts (except where prime coats are specified) with rust-proof, oil-lite bronze bearings. Butts shall be standard mortise type for wood and hollow metal doors and frames. Half surface butts shall be used for doors with channel frames.
- 3) Interior doors shall have standard weight, oil-lite bearings and anodized aluminum leaves.

B. DOOR CLOSERS

- 1) Door closers shall have aluminum finish, 140-degree swing, regular arm (unless specifically noted to have fusible link, hold-open arm for exit or fire doors) and shall be surface mounted. Closers

FINISH HARDWARE

shall be Norton Door Closer Company's 1600 series, or approved equal, selected per manufacturer's recommendations for size and weight of door involved.

C. DOOR STOPS

- 1) Door stops shall be dome floor type equal to Glynn-Johnson's GJ-F18X-US26D.

D. KICK PLATES

- 1) All kick plates shall be brushed aluminum, 10 inches wide by door width less 2 inches with minimum of 14 countersunk, flush-headed, chrome plated, wood screws.

E. LOCK SETS

- 1) Lock sets shall be mortise case sets in accordance with Federal Specification FFH106, Series 86; 2-3/4-inch back set; equipped with an interchangeable core with paracentric keyway, 1-1/8 inch diameter of six-pin tumbler as manufactured by the Best Universal Lock Company, Inc. The interchangeable core shall be removable only with a special control key. Lock sets shall be supplied keyed with construction cores. All other keying or keying systems are to be by Owner. Lock sets shall have anodized aluminum and/or US26D finish trim.

F. KEYING FOR CYLINDER, CABINET, TUBULAR, RIM, AND DEAD LOCKS

- 1) All lock sets requiring keying shall be of the type specified in Paragraph 2.7.

G. KEY-IN-KNOB LOCK SETS

- 1) Key-in-knob lock sets shall be of matching design and finish of surrounding hardware, equipped to accommodate the "Best interchangeable core".

H. DUMMY KNOBS

- 1) All dummy knobs are to be of matching finish and design of that of surrounding hardware.

FINISH HARDWARE

J. PUSH-PULL TRIM

- 1) All push-pull trim shall be anodized aluminum finish to match surrounding hardware.

K. FLUSH BOLTS

- 1) For inactive leaf of interior double doors: cast bronze with dull nickel finish, 12" rod.
- 2) For inactive leaf door No.14: Special heavy duty steel with 3/4" diameter steel rod.

L. ROOM DESIGNATION PLATES

- 1) Plates shall be phenolic resin plastic with beveled edges, incised letters, and four holes for mounting with chrome-plates wood screws. Letters and numerals shall be 7/8 inch high. Letters shall be white on a black background.
 - a. Type 1 -- Plates for office-type doors shall be 5 inches high by 4-1/2 inches wide with 3-inch high by 3-1/2-inch wide card opening with room numbers above consisting of letters or numbers, as required.
 - b. Type 2 -- Plates for conference, coffee, equipment rooms, etc., shall be 2 inches wide by length required.
- 2) Location and exact wording of each designation plate required shall be as directed by Humble.

4. SHIPMENT

A. All items of hardware shall be properly packages to prevent damage during shipment. Each package shall be legibly and accurately marked to show the items it contains. When hardware schedules are required, item numbers used for marking shall correspond to the item numbers shown on the hardware schedule.

5. SCHEDULE OF HARDWARE

Type 1

1 1/2 Pr.	Butts
2	2 Dummy Knobs
1	Closer
1	Stop

Type 2

1 1/2 Pr.	Butts
1	Lockset
1	Closer
1	Stop
1	Kick Plate

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FINISH HARDWARE

Type 3 (Interior Double Doors)

3 Pr.	Butts
1	Push
1	Pull
2	Closers

Type 4

Similar to Type 2 except extra heavy butts

Type 5

3 Pr.	Extra heavy butts
1	Lockset
2	Extra heavy flush bolts
1	Closer

Type 6

Cabinet Hardware as shown on drawings.

EXX 002034

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SECTION 8E

GLASS AND GLAZING

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the execution of the glass and glazing work, including aluminum frames at borrow lights.

B. Refer to drawings and these specifications for type, location, and extent of work required.

2. MATERIALS

A. Exterior glass shall be 3/4-inch thick, tempered plate glass as manufactured by Pittsburgh Plate Glass Company or Libby-Owens-Ford.

3. MANUFACTURER'S LABELS

A. Labels showing strength, grade, thickness, type, and quality will be required on each piece of glass. Labels must remain on glass until it has been set and inspected. When glass is not cut to size by the manufacturer and is furnished unlabeled from local stock, Contractor shall submit an affidavit stating the quality, thickness, type, and manufacturer of the glass furnished.

4. INSTALLATION

A. Installation of glass shall be as indicated on drawings and in accordance with recommendations of the manufacturer.

EXX 002035

SECTION 9APAINTING1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the completion of the painting work.

B. Refer to drawings, details, schedules, and these specifications for type, location, and extent of such work required.

C. Touch up prime coats of steel. No finish coats required, except where exposed on exterior or in finished rooms.

D. Field painting will not be required on items specified to be completely finished at factory or on aluminum, copper, brass, bronze, and other non-ferrous metal unless specifically designated. Do not paint putty on aluminum windows. Do not paint acoustical tile. Paint aluminum grates step.

E. All walls, exposed pipe, conduits, ducts, and equipment not provided with factory finish in mechanical room shall be painted.

F. Omit exterior painting of concrete except for trim designated on the drawings.

2. MATERIALS

A. Paints, varnishes, lacquers, stains, and fillers shall be of type and brands hereinafter specified under Schedule of Painting. Painting materials such as shellac, turpentine, etc., shall be of the highest quality and have identifying labels on containers.

B. All paint shall be delivered to site in manufacturer's unbroken, sealed containers. Each container shall be labeled by the manufacturer; labels shall give manufacturer's name, type of paint, label analysis showing all of the important constituents of the paint such as alkyd (glycerol-phthalate) titanium, zinc, acrylate esters, etc., color of paint, and instructions for reducing. Thinning shall be done only in accordance with directions of manufacturer. Job mixing or job tinting may be done when approved by Humble.

C. Paints shall be Humble, as specified in Schedule of Painting. Substitution may be made for good reason but only with prior approval of Humble.

3. COLORS AND SAMPLES

A. Paint colors shall be as selected by Humble. Bids shall be based on colors as scheduled. Before any work is done, furnish Contractor with a set of color cards and a schedule showing where the various colors shall

PAINTING

go. Contractor shall then prepare samples at the job, as required, until the colors and textures are satisfactory.

4. STORING MATERIALS

A. Store and mix materials only in such rooms as may be assigned for this purpose and take necessary precautions to prevent fire. All solvents shall be in self-closing safety containers. No paint container larger than five-gallon size will be permitted in the building.

5. PROTECTION

A. Protect work of other trades against damage or injury by materials, tools, or utensils used. Work damaged as a result of prosecution of this contract shall be repaired at Contractor's expense or, if in the opinion of Humble, it cannot be properly repaired, it shall be replaced with new work by Contractor without additional compensation beyond contract amount.

6. PREPARATION OF SURFACES

A. Wood -- Sandpaper to smooth and even surface and then dust off. After priming or stain coat has been applied, thoroughly fill nail and other holes and cracks with plastic wood or putty; for natural-finished work, putty shall be colored to match the wood. Sand off sharp corners of millwork.

B. Before painting, fill holes; paint carefully around openings; remove foreign material from surfaces to be painted; and patch all blemishes that will affect the final appearance of the work. Exercise caution to keep adjacent work free from paint.

C. Before painting any surfaces, notify Humble's inspector of suitability of surface for painting. The absence of such notification shall be construed as acceptance of surfaces by painter, and it shall become his responsibility to correct any defects appearing in the painting work thereafter.

D. General -- Before painting, remove or tape hardware, accessories, plates, lighting fixtures, and similar items, or provide ample protection of such items. Upon completion of each space, replace above items.

7. APPLICATION

A. Do not apply exterior paint in damp, rainy weather or until the surface has thoroughly dried from the effects of such weather. Do not apply varnish or paint when temperature is below 50°F.

B. Surface to be stained or painted shall be clean, dry, smooth, and adequately protected from dampness. Each coat of paint shall be brushed

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PAINTING

on well, worked out evenly, and allowed to dry (at least 48 hours) before subsequent coat is applied. Spray painting is acceptable where appropriate.

C. Finished work shall be uniform; of approved color; and smooth and free from runs, sags, defective brushing, clogging, or excessive flooding. Make edges of paint adjoining other materials or colors sharp and clean without overlapping.

D. At completion, touch up and restore finish where damaged and leave in good condition. Paint top and bottom edges of hollow metal and wood doors with one coat and varnish tops and bottoms of plastic-covered doors with one coat after fitting.

8. SCHEDULE OF PAINTING

<u>Equipment To Be Painted</u>	<u>Preparation of Surface</u>	<u>Prime Coat</u>	<u>Finish Coat</u>	<u>Special Notes</u>
Gypsum, Concrete	To Humble's Satisfaction			
Four-Foot Wainscot	Mechanical or Handcleaned, SSPC-SP-3-63	Aqua Tone 6772	Rust-Ban AK-6438**	
Remainder of Walls	SSPC-SP-3-63	Aqua Tone 6790	Semigloss 6646**	
Ceilings	SSPC-SP-3-63	Aqua Tone 6780	Semigloss 6630**	
Doors and Door Frames and Galvanized Steel	SSPC-SF-3-63	Rust-Ban VY-6528	* Two Coats Rust-Ban AK-6438**	* Rust-Ban EE-6565
Steel Doors	SSPC-SP-3-63	Rust-Ban EE-6565	Inside: Match Room Color Outside: Match Exterior Concrete Trim Color	
Outside Concrete	SSPC-SP-3-63	Block Prime 6604	Two Coats Vinyl Emulsion in Napko- Bobolink**	

Other materials not mentioned to be painted in accordance with Humble's recommendations for that material. Gypsum board and concrete sand-finish texture.

* Intermediate coat.

** Color selections are tentative only and final selection will be made by Humble prior to painting schedule.

SECTION 9B

ACOUSTICAL CEILINGS

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the execution of the acoustical ceiling work.

B. Refer to the drawings, schedules, and these specifications for type, location, and extent of work required.

C. Luminous ceiling in the control room is included under this section.

D. All other suspension systems and hanging for acoustical ceilings are included in this section of work.

2. GUARANTEE

A. Provide a joint manufacturer's and Contractor's guarantee warranting all materials against defects in materials and installations for a period of one year from date of completion, as evidenced by date of final payment.

3. LAYOUT

A. See ceiling plans and electrical and mechanical drawings for layout to coordinate pattern with light and air-conditioning grilles that lay into grid system.

4. SUSPENSION SYSTEM

A. Direct hanging system by wires directly to main tees; space wires at two-foot maximum centers along each tee; No. 14 galvanized wires; every wire must have load capacity of 200 pounds. Luminous ceiling grid to hang from upper acoustical ceiling grid. Use sufficient wires to support load of ceilings with light fixtures attached to them at 1,000 pounds per fixture. Each end of each wire shall be clinched with at least three turns.

5. MATERIALS

A. Grid System -- Donn Products, Eastern Products System, or approved equal. Finish -- Zinc-coated steel, bonderized, semigloss white, baked enamel.

(1) Main Tees -- Gauge of 0.030-inch minimum, 15/16-inch minimum flange, 1/2-inch minimum bulb stem, and ends to interlock or clip together to provide accurately aligned hairline joints.

(2) Cross Tees -- To surround each light fixture and air-conditioning grille and air-conditioning registers. Gauge of 0.25-inch minimum and 15/16-inch minimum stem and flange.

ACOUSTICAL CEILINGS

(3) Wall Angle or Channel -- Gauge of 0.25-inch minimum and 15/16-inch minimum flanges.

B. ACOUSTICAL PANELS: Match existing panels in manufacture and pattern.

6. INSTALLATION

A. Installation of acoustical materials shall be made by a contractor approved by the manufacturer of suspension system and ceiling board. All materials shall be installed in accordance with recommendations of the manufacturers and shall not begin until the humidity within the area is 65% or less and can be maintained at this limit during and for at least 24 hours after installation. The temperature range shall be maintained between 60-85 degrees during the same period.

B. Metal "T" shall be erected in patterns, as shown on the approved layout drawings, with all edges in alignment and all faces in a plane. Splicing of members shall be avoided but, where necessary, shall be made with special care in order not to interrupt continuity of appearance.

C. Where lay-in type light fixtures are used, two parallel ends or sides of light fixture shall be supported by metal "T"s" on hanger wires. All "T" members that are cut around air conditioning grilles, speakers, and light fixtures shall have loose ends supported by hanger wires.

D. Where "T" members of grid lay on wall angle, cement "T" in place to prevent discoloration.

7. CLEANING AND REPLACEMENT

A. At completion, replace all units that are damaged and clean soiled tile or replace where tile cannot be properly cleaned.

SECTION 9C

RESILIENT FLOORING

1. SCOPE

A. Work under this section includes furnishing labor, materials, equipment, and accessories necessary for a complete job of resilient flooring as specified herein and indicated on the drawings.

2. SAMPLES

A. Provide samples for Humble's field superintendent to select colors and patterns from the full range included under the specifications. Also, provide any additional samples requested by Humble for use verifying compliance with specifications.

3. EXAMINATION OF SUBFLOOR

A. Examination of subfloor prior to laying any flooring is the responsibility of Contractor. Examination to include the following items:

(1) Smoothness -- Any irregularities that would cause a visible fault in the finished flooring job shall be corrected before proceeding. Maximum irregularity is $1/16$ inch within any running foot and $1/4$ inch in eight feet zero inch.

(2) Moisture and Alkalinity -- Conduct necessary tests to confirm that these are below levels that would be detrimental. If alkalinity is excessive, reduce noninjurious level by treatment with acid.

(3) Unsound Concrete -- Do not lay flooring on patches or other areas showing signs of softness or crumbling.

(4) Cleanliness -- Accept subfloor surface only in perfectly clean condition with all foreign materials removed. Anything that could telegraph through flooring and cause a fault is to be removed.

(5) Curing Compounds -- Verify, with adhesive manufacturer, the compatibility of curing compound and adhesive. Conduct adhesive tests in areas indicating excessive buildup of compound.

4. PREPARATION OF SUBFLOORS

A. Do minor spot patching of chips and minor leveling, particularly at points resilient flooring abuts other materials.

5. LOCATION OF RESILIENT FLOORING

A. Extent of work is indicated on the drawings. Particular attention is called to the Room Finish Schedule. Flooring is not required under built-in cabinets. Provide base on cabinets wherever room base is scheduled as resilient and where noted.

RESILIENT FLOORING

6. ACCEPTANCE

A. Flooring and base will be accepted only in immaculate, polished condition, free of dirt, dust, or markings. Resilient floor shall be cleaned, waxed, and buffed as required to achieve this condition.

7. GUARANTEE

A. Period to commence from date of substantial completion and acceptance as determined by Humble. Guarantee to include defective workmanship and materials including warping, buckling, shrinking, cracking, discoloring, indenting excessively, and coming loose from the subfloor.

8. VINYL ASBESTOS TILE

A. Material -- Size of 12" x 12" x 1/8". Color and pattern to match existing flooring.

B. Adhesive and Primer -- Cut back asphalt adhesive and primer to be of the same brand as flooring. Primer use required for all conditions.

C. Installation

(1) Storage -- Store materials at the jobsite at least 24 hours prior to laying at temperature of 70°F or above. Maintain this temperature at least 48 hours after laying.

(2) Layout -- Arrange pattern in rooms so that the edge rows against wall are not smaller than 1/2 of the tile size.

(3) Grain Direction -- Lay tile with grain running as directed by Humble.

(4) Edges -- Provide adhesive-applied, tapered, resilient strips where flooring terminates at an unfloored area. When flooring abuts other types of flooring, finish level with other flooring.

(5) Workmanship -- Joints in accurate alignment with hairline fit.

9. VINYL BASE

A. Size -- Four inches high, 1/8 inch thick, topset-type, roll length.

B. Corners -- Outside corners, one piece, premoulded type. Inside corners cut square.

C. Brand -- Same as listed for tile. Color, black or brown as selected.

D. Adhesive -- Use only base adhesive. Brand is to match base material.

E. Installation -- Toe of base must touch floor at all points. End joints made to hairline fit. Base and preformed corners must be accurately leveled.

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RESILIENT FLOORING

10. DOORWAY STRIPS

A. Provide strip across doors and cased openings the width of door frames and the thickness of the flooring. Strip to be vinyl and of the same color as base.

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SECTION 9DCERAMIC TILE1. SCOPE

A. Work under this section includes all labor, materials, accessories, and equipment necessary for execution of ceramic tile work. Include galvanized metal lath and cement brown coat for tile base.

B. Refer to the drawings, schedules, and these specifications for type, location, and extent of work involved.

2. MATERIALS

A. Certification -- Meet the quality standards of the Department of Commerce's R61-61 and the Federal Specification RS SS-T-308B.

B. Color Selection -- Range available for selection to be comparable to what is offered by the Mosaic Tile Company. Provide samples for selection purposes. Color selection by Humble.

C. Floor Tile -- Natural clay type; cushion edge; sizes mixed with 1" x 1", 1" x 2", and 2" x 2"; color range selection to include Mosaic "Velvetone," "Velvetex," and "Granitex."

D. Wall and Ceiling Tile -- Size 4-1/4" x 4-1/4" x 3/8", bright glaze, cushion edge, A-4402 external wall corners; butt joint internal corners; other combination units, as necessary, for first-class work; cove base; outside corners rounded; and inside corners square.

E. Soap Holder -- Size 4-1/4" x 4-1/4" recessed, without lip, one for each shower head, and anchored.

F. Cement -- Portland ASTM Specification C 150, Type 1.

G. Lime -- Hydrated ASTM Specification C 206 or C 207, Type S.

H. Aggregate -- Sand, clean and graded, ASTM Specification C 144.

J. Water -- Potable.

K. Grout -- For floors, gray "Crest Ceramic Acidite" as manufactured by Kaiser Manufacturing Company. For walls and ceilings, "Crest Superwhite" as manufactured by Kaiser Manufacturing Company.

3. MORTAR

A. Floors -- Half gray and half white Portland cement.

B. Walls and Ceilings -- Dry-set Portland cement, Kaiser Manufacturing Company's "Crest," sanded, or others produced under the Tile Council hallmark.

CERAMIC TILE

4. DELIVERY, STORAGE, AND APPROVAL

- A. Samples submitted for all tile selections.
- B. Deliver and store materials to prevent damage or staining.
- C. Seals unbroken and labels intact until time of use and after Humble's inspection.

5. WORKMANSHIP

A. General Requirements

(1) Inspections

- a. Examine surfaces to receive tile -- must be dry, clean, free from oil or wax film, firm, level or plumb, and within tolerances set by USAS A108.
- b. Make certain areas to be covered are complete and protection is provided for adjoining work.
- c. Report all defects because start of work implies acceptance of surfaces.

(2) Protection

- a. Control temperature and humidity as required by USAS A108.
- b. Cure installation for three days without traffic.

(3) Layout and Fittings

- a. Lay out floors and walls so fields or patterns center on areas with no tile cut less than half size.
- b. Wainscots to height shown or nearest full tile square.
- c. Provide trim pieces as indicated or as necessary for a complete installation. Use "combination" trim pieces unless specifically excepted.
- d. Grind and fit carefully around all equipment trim and accessories.

(4) Expansion Joints

- a. Lay out as detailed or directed.

B. Installation Methods

(1) Mortar

- a. Portland cement mortar.

CERAMIC TILE

b. Dry-set Portland cement mortar.

(2) Organic Adhesive

a. Water-resistant organic adhesive set to USAS A108 applicable to type of tile and surface covered.

C. Vertical Surfaces

(1) Apply leveling or plumb coat and mortar setting bed to provide true plane for setting finish wall tile.

(2) Backing for dry-set or adhesive application must be true plane.

(3) Apply primer sealer coat over surfaces unless otherwise recommended by adhesive manufacturer.

D. Horizontal Surfaces

(1) Over wood construction, apply waterproof cleavage membrane and metal shrinkage mesh before setting bed.

(2) Reinforcing mesh is required in any setting bed over a cleavage membrane (shower receptors).

(3) Over concrete slab or fill (properly graded), apply setting bed.

(4) For dry-set or adhesive application, correct subgrade with mortar or adhesive underlayment.

E. Special Treatments

(1) Ceiling applied with special attention to mortar mix and avoidance of vibration during setting period.

(2) Provide shower receptor with waterproofed mortar setting bed.

F. Grouting

(1) When tile has set firmly, wash and force in maximum of grout. Tool cushion edge tile to depth of cushion square edge tile flush. Do not grout tile set with organic adhesive for at least 24 hours.

G. Accessories

(1) Cut and fit tile to accessories.

(2) Locate as shown or directed and anchor securely.

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CERAMIC TILE

H. Cleaning

(1) Clean tile thoroughly after grouting is finished. Use acid only as recommended by USAS A1C8.

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SECTION 9EDRYWALL1. SCOPE

A. Work under this section includes furnishing labor, materials, and accessories necessary for a complete job of drywall as specified herein and as indicated on the drawings.

B. Texture coat on gypsum board is not part of the work included in the section.

2. SAMPLES

A. Provide samples for approval of any variations in materials or manufacturers from those specified.

3. BRANDS

A. Materials to be as distributed by the Gold Bond Division of the National Gypsum Company or other national brands approved as equal by Humble. Materials all to be of the same brand where variations might be incompatible within a system.

4. MATERIAL HANDLING

A. All materials specified shall be delivered to the jobsite in the original packages bearing the name of the manufacturer. Gypsum wallboard shall be kept flat under cover and out of contact with damp surfaces until ready for use. Maintain a uniform room temperature above 50°F during application and until completely dry or occupied. Provide adequate ventilation.

5. MATERIALS

A. See paragraph on "Systems and Locations" for proper selections for material uses.

(1) Studs -- Screw type, drywall type, 25 gauge, hot-dipped galvanized (1-5/8 inches, 2-1/2 inches, 3-5/8 inches).

(2) Floor and Ceiling Tracks -- Same as studs.

(3) Furring Channels -- Screw type, same as studs.

(4) Gypsum Board -- Regular board (3/8 inch, 1/2 inch, 5/8 inch), Underwriters' Laboratories labeled "Fireshield" type (1/4 inch, 5/8 inch), backer board regular or "Fireshield" (3/8 inch, 1/2 inch, 5/8 inch), vinyl-surfaced backer board (1/2 inch), and finish boards to have tapered edges. Board for back-up of ceramic tile to be waterproof type.

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DRYWALL

- (5) Screws -- Self-drilling, cadmium-plated, one inch for single ply and 1-5/8 inches for double ply.
- (6) Corner Beads -- Standard galvanized steel, one-inch flanges for 3/8-inch or 1/2-inch single ply, 1-1/8-inch flanges for 5/8-inch single ply, and 1-1/4-inch flanges for two ply.
- (7) Casing Bead -- Gold Bond No. 100 or 200 designed for floating in.
- (8) Joint Treatment -- Regular joint tape, ready-mixed or dry joint and topping compounds, and same brand as gypsum board.
- (9) Laminating Adhesive -- Same brand as gypsum board.

6. STUD INSTALLATION

- A. Floor Track -- Attach to floor at 24-inch-maximum centers with shot-in pins or concrete nails.
- B. Ceiling Track -- Attach to structure above or carry above required wall height where partitions do not close to structure above. Brade ceiling track at intervals not exceeding four feet zero inch.
- C. Studs -- Space as required under paragraph of "Systems and Locations" and as required by sound- and fire-resistance ratings. In no case is spacing to exceed 24 inches center-to-center.
- D. Corners -- Place one stud directly in corner with second stud abutting. Screw stud to adjoining gypsum board at intersections.

7. GYPSUM BOARD INSTALLATION ON STUDS

- A. System -- Horizontal or vertical application at Contractor's option.
- B. Position studs in track on centers by rotating into place for a friction fit. Secure studs located adjacent to door and window frames and partition intersections and corners by self-drilling sheet metal screws through both flanges of studs and tracks. Apply gypsum wallboard with the length (parallel and at right angles) to the studs. Center abutting ends or edges over the stud flanges. Where wallboard abutments are made between studs, free ends are to be backlocked. No two such joints should occur between the same two studs.
- C. For nonfire-rated construction, locate all attaching screws 12 inches on-center. For fire-rated construction, vertical application, space screws 12 inches on-center in the field and eight inches on-center staggered along the vertical abutting edges.

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DRYWALL

D. Attach the gypsum wallboard to Gold Bond steel studs with self-drilling, drywall screws using an electric screwdriving gun (wallboard Scrugun Kit No. 740, Black and Decker Company) and a No. 2 Phillips bit.

E. For vertical wallboard application with studs at two feet zero inch on-center, erect the wallboard on one side of the partitions, screwing it to every other stud. Complete the wallboard application to the entire side of the partition in this manner. For the opposite side, cut the first wallboard panel two feet wide so that joints will be staggered. Fasten this and succeeding wallboard panels to all studs on this side. When this partition face is complete, return to the first side and complete the installation by attaching screws to the previously unattached studs.

F. Make door and window frame opening of such size that when the wallboard is secured to the studs, it will fit snugly into the steel frames.

G. Joints -- Apply tape, joint compound, and topping compound in accordance with manufacturer's directions. Sand smooth. Finish over screws and nails.

H. Inside Corners -- Tape and finish same as joints.

J. Outside Corners -- Metal beads of size given under Materials Section.

K. Joints to Different Materials -- Do not tape and join to any materials other gypsum boards unless specifically required. Use casing beads against other materials.

8. HEIGHT OF PARTITIONS ABOVE CEILING

A. Seal to Construction -- Where indicated on the drawings.

B. Acoustic Ceiling Locations -- As detailed.

9. WORKMANSHIP

A. Any nicks, bumps, out-of-level, out-of-plumb areas detectable by the naked eye must be corrected.

SECTION 9F

PLASTIC FABRIC

1. SCOPE

A. Work under this section includes labor, materials, equipment and accessories for the installation of plastic fabric in accordance with the contract documents.

2. MATERIALS

A. Plastic Fabric -- To be purchased under an allowance of \$3.00 per square yard based on net contract prices. Installation costs shall be included separately as part of bid price. The final price shall be adjusted if the selected material is higher or lower prices. Selection of material by Humble.

B. Wall Paste -- Ready-mixed type sold by manufacturer of plastic fabric for materials used. To be Gilfor WP 515 or others approved by Humble:

3. INSTALLATION

A. Surfaces -- Do not install over surfaces unless they are perfectly smooth. Any irregularities showing through the fabric will require removal and replacement.

B. Seams -- Double cut to form hairline seams.

C. Adhesion -- No bubbles or loose areas permitted.

SECTION 9 G

PLASTIC MATRIX TERRAZZO

PART 1. GENERAL

1.01 SCOPE:

A. RELATED WORK:

1. The general conditions of the Contract, including General Conditions, Supplementary General Conditions and General Requirements, apply to work in this section.

B. DESCRIPTION OF WORK:

1. The extent of plastic matrix terrazzo work, including the pattern of divider strips and joints, if required, is indicated on the drawings and in the specifications.

1.02 INDUSTRY STANDARDS:

- A. Comply with applicable provisions of National Terrazzo and Mosaic Association, Inc. (NTMA).

1.03 MANUFACTURER'S INSTRUCTIONS:

- A. In addition to the requirements of these specifications, comply with the resin manufacturer's instructions and recommendations for all phases of the work, including preparation of substrate, storing, mixing and applying materials, finishing, and curing of plastic matrix terrazzo work.

1.04 SUBMITTALS:

A. MANUFACTURER'S DATA:

1. For information only, submit 2 copies of matrix manufacturer's specifications, installation instructions and certificate of compliance that all materials are in compliance with these specifications. Indicate by transmittal form that copy of each instruction has been distributed to the Installer.

B. SAMPLES:

1. Submit 3 samples of each type, pattern and color of terrazzo required, not less than 12" square on plywood backing. Samples will be reviewed for color, pattern and texture only. Compliance with all other requirements is the exclusive responsibility of the Contractor.

1.05 MAINTENANCE INSTRUCTIONS:

- A. Submit 2 copies of the manufacturer's written instructions for periodic maintenance of each type of plastic matrix terrazzo.

PLASTIC MATRIX TERRAZZO

PART 2. PRODUCTS

2.01 EPOXY RESIN MATRIX:

- A. Thermosetting, amine-cured epoxy resin and hardener, mineral filler and color pigment, complying with NTMA "Performance and Properties" and as herein specified to match the Architect's sample. Provide manufacturer's certification of compliance with NTMA "Performance and Properties" requirements.

2.02 AGGREGATES:

- A. Natural, sound, crushed marble chips, unless otherwise shown, colors selected and graded to match the Architect's sample, but with maximum size within limits of workability for the flooring thickness shown.

2.03 SUBSTRATE PRIMER:

- A. 2-component resin or other compound, as recommended by the matrix manufacturer, to penetrate and seal the substrate and to provide maximum bond of terrazzo to substrate.

2.04 FINISHING GROUT:

- A. Resin or other compound with filler and pigments, as recommended by the matrix manufacturer.

2.05 FINISH SEALER:

- A. Compound recommended by the matrix manufacturer.

PART 3. EXECUTION

3.01 INSTALLATION:

- A. Clean and prepare substrate in accordance with matrix manufacturer's instructions. Grind concrete surfaces as required to surfaces as required to meet tolerances specified by matrix manufacturer. Etch concrete substrate with muriatic (hydrochloric) or phosphoric acid as instructed by matrix manufacturer.
- B. Apply substrate primer to substrate in accordance with matrix manufacturer's instructions.
- C. Mix and place matrix and aggregates in accordance with matrix manufacturer's instructions. Comply with time limitations and instructions for rolling, troweling, sprinkling additional aggregates and curing installed work. Match Architect's sample and provide total material thickness shown.

PLASTIC MATRIX TERRAZZO

- D. Rough grind, grout and finish grind in compliance with matrix manufacturer's instructions. Use final grit size as required to match the texture of the Architect's sample. Exercise extreme care to insure that fluids from grinding operation do not react with metal strips to produce a stain on the aggregate.
- E. Seal surface of plastic matrix terrazzo with finish sealer in accordance with matrix manufacturer's instructions, after thoroughly curing and cleaning the finished surface.

SECTION 10A

TOILET PARTITIONS

1. SCOPE

A. Work under this section includes all labor, materials, accessories, and equipment necessary for partitions and installation of toilet partitions.

B. Work shall include a complete job of materials and labor to provide toilet partitions indicated on the drawings and specified herein.

2. MATERIALS

A. Toilet partitions shall be laminated plastic partitions, floor anchored, series 1040 as manufactured by Bobrick Dispensers, Inc., complete with door hardware, steel plinths, B212 clothes hook and door bumper, and anchoring devices.

- 1) Toilet paper dispensers are specified under "Toilet Accessories".
- 2) Plastic laminate shall be NEVAMAR.

3. SUBMITTALS

A. Submit shop drawings and manufacturer's literature for Humble's approval. Fabrication or delivery shall not be started until they have been returned from Humble with indication of "Approved for Design" or "Approved for Design with Corrections Noted". Work shall be done in accordance with the approved shop drawings.

B. Submit samples and standard color range of plastic laminate for selection by Humble.

4. INSTALLATION

A. Installation shall be by manufacturer's approved mechanics and in strict accordance with manufacturer's recommendations.

SECTION 10CTOILET ACCESSORIES1. SCOPE:

A. Work under this section includes all labor, material, equipment and accessories necessary for provision and installation of toilet accessories.

2. MATERIALS:

A. MIRRORS

- 1) Mirrors shall be 20 inches x 20 inches x 1/8 inch thick, polished plate glass with polished aluminum frame. One each lavatory.

B. PAPER DISPENSERS

- 1) Paper towel dispenser shall be surface mounted, Scott Paper Company's No. 989 (white). Quantities as shown on drawings.
- 2) Toilet tissue dispensers shall be Scott Paper Company's No. 965, or equal.

C. SOAP DISPENSERS

- 1) Liquid type shall be West Chemical Products, Inc., No. 851, or equal, with nickel-plated brass globe. One each lavatory.
- 2) Powder type shall be U. S. Sanitary Specialties No. 031, or equal each lavatory.

D. TOILET ROOM SHELVES

- 1) Shelves shall be stainless steel 2 feet 0 inch long (unless otherwise specified on drawings) and 5 inches wide with 3/4-inch turned down front lip, 2-inch turned-down back lip, and turned down end lips tapered 3/4 inch to 2 inches. All corners shall be welded. All corners shall be rounded and edges shall be ground smooth and polished. The 2-inch turned-down back lip shall be punched for anchoring shelf to wall. Quantities as shown on drawings.

E. COAT HOOKS

- 1) Double prong, chrome plated. To be provided at shower anteroom. Quantities as indicated on drawings.

3. ATTACHMENT

A. Attachment to the various materials shall be as recommended by manufacturer.

SECTION 10D

FOLDING DOOR

1. SCOPE

A. Work under this section includes all labor, materials, accessories and equipment necessary for provision and installation of Folding Door.

B. Refer to drawings, schedules, and these specifications for type, location, and extent of work required.

2. MATERIALS

A. FOLDING DOOR: MODERNFOLD, single partition, vinyl folding door No. 680, with track and jamb fittings.

3. SUBMITTALS

A. Submit shop drawings and samples of covering for approval and selection by Humble.

4. INSTALLATION

A. Installation shall be in accordance with recommendations of manufacturer.

SECTION 11A

LOCKERS AND LOCKER BENCHES

1. SCOPE

- A. Work under this section includes furnishing all lockers, labor, and materials for installation of lockers.
- B. Refer to drawings and these specifications for extent of work required.

2. MATERIALS

A. New Clothing Lockers: Steel, 15-inch wide x 18-inch deep x 6-foot high, single-tier, through-vision door, baked-on enamel finish, no legs, four coat hooks, name and number plates, automatic locking handle with slots for padlocks, less padlocks, with stainless steel soap dish and towel rod attached to inside of door. All new lockers shall match existing lockers in manufacture, color, name plates, etc.

B. New Personal Lockers: Steel, 15" wide x 18" deep by 12" high with solid steel door and flat key lock.

C. Existing Lockers: Move existing lockers to new location as indicated on drawings. Replace existing number plates.

D. Benches: Provide and install benches as indicated on drawings. DO NOT reuse existing benches.

3. INSTALLATION

A. Installation shall be as indicated on drawings. Note that all lockers at exterior walls are NOT to be secured to those walls.

SECTION 13A

ACCESS FLOOR

1. SCOPE

A. Work under this section includes all labor, materials, accessories, and equipment necessary for provision and installation of access flooring.

B. Refer to drawings, schedules, and these specifications for type, location, and extent of work required.

2. MATERIALS

A. FLOOR: Free access with 24" x 24" wood panels, on adjustable pedestals. Floor system shall be MULT-A-FLOOR as manufactured by MULT-A-FRAME Corporation. Panels shall be surfaces with NEVAMAR.

3. SAMPLES

A. Submit samples of panels, surfacing materials, together with colors and patterns, pedestal and registers for approval and selection by Humble.

4. INSTALLATION

A. Installation shall be manufacturer-approved mechanics.

SECTION 15APLUMBING1. SCOPE

A. The work contemplated and included under this section of the specifications consists of the furnishing of all labor and materials necessary for the complete installation of the plumbing, drainage, and domestic hot and cold water piping with attendant accessories; complete system of plumbing fixture venting; flashings; floor drains; the furnishing and installing of all porcelain and vitreous enamelware fixtures including water closets, urinals, lavatories, mop sinks, drinking foundations, etc.

B. Refer to drawings, schedules, and these specifications for type, location, and extent of work required.

2. GENERAL

A. All plumbing shall comply with the American Standard National Plumbing Code USA A40.1955, as supplemented by these specifications.

B. All sewer lines and piping to enter the reforming control center underground.

C. All sewer lines and piping servicing the Reforming Control Center shall be extended to include existing lines and tie-ins.

D. Disposition of drainage from Reforming Control Center involves the use of two separate sewer systems -- sanitary and industrial.

E. Each sanitary sewer leaving building shall be trapped to prevent vapors from entering the plumbing system. A running trap with double-hub entering the plumbing system. A running trap with double-hub vents shall be installed in the sewer at a point where the line leaves the building. The upstream hub shall be plugged to serve as a cleanout; the downstream hub shall be vented above the building roof. Sanitary sewers serving water closets shall have a six-inch minimum running trap. Indirect waste lines (from a-c units, steam traps, etc.) running above grade shall have a running trap with cleanout located inside the building, just before the line leaves the building.

F. The accompanying drawings show location of all apparatus. Contractors for plumbing, heating, and electric wiring must cooperate in installing their work to the end that there will be no conflict of space required. The galvanized iron ductwork shall, in general, take precedence over all pipe work except where it is absolutely necessary to maintain an even grade on the piping.

G. The Plumbing Contractor shall clean out all lines, adjust all valves, flushometers, etc., clean all plumbing fixtures, and leave the whole plumbing system in complete working order before receiving the final approval of Humble.

3. LAWS AND REGULATIONS

The National Plumbing Code shall be used as a guide for the installation of all work in connection with this contract.

4. VALVES AND MISCELLANEOUS

A. Furnish and install all valves that are shown on the plans or that may be necessary to make the system complete. Air vent valves for hot water lines shall be manual valves.

B. The Plumbing Contractor shall assist and cooperate with the General Contractor in the locating and placing of thimbles, inserts, and other requirements necessary for the support or reception of equipment and piping to be installed by the Plumbing Contractor.

5. EXCAVATION, BACKFILL, AND REPAIRS

The Plumbing Contractor shall do all excavating and backfilling necessary for the installation of his work, including shoring, bailing, and pumping, to maintain trenches and keep them in a dry condition. Under no circumstances shall the sewer lines be used for the draining of trenches. The ends of all underground pipelines shall be kept properly blocked during construction. Mud or other materials which may enter the lines must be removed and the lines left clean and unobstructed.

6. SEWAGE AND DRAINAGE

A. The system of draining and venting to be installed shall be a cast iron system including both pipe and fittings and waste lines. Vent lines shall be standard weight, galvanized, steel pipe with galvanized cast iron fittings or cast iron pipe at Contractor's option.

B. All drainage lines inside and out must have at least 1/4 inch to the foot fall toward the main sewers where possible and in no case less than 1/8 inch, and pipe must be so laid that the slope will be continuous.

7. WATER SUPPLY PIPING

- A. All water supply piping shall be of materials herein before specified.
- B. The Plumbing Contractor shall furnish and install all water piping to all fixtures and equipment requiring water in the building of runs and sizes as shown on the plans and herein specified.
- C. This Contractor shall furnish and install valved lines of sizes shown on drawings and shall cooperate with Mechanical Contractor in placing water connections at desired locations.
- D. Branches to plumbing fixtures shall be as follows:
- 1) To flush valve water closets, 1-1/4 inches minimum to within four feet of valve, then one inch. Headers for all banks of water closets to be sized as shown on the drawings with one-inch branches.
 - 2) To flush valve urinals, same as for water closets.
 - 3) To lavatories, 1/2 inch, hot and cold water. Headers for more than one lavatory shall be 3/4 inch minimum.
 - 4) To service sinks, 3/4 inch, hot and cold water.
 - 5) To all other fixtures, 1/2 inch, hot and cold water unless otherwise called for.
- E. The supply to both hot and cold water to each and every fixture hereinafter specified shall be equipped with stop valves. All valve cocks, etc., where chromium-plated piping is used shall be chromium-plated to correspond.

8. SANITARY FIXTURES

A. Description of Fixtures

1) Water Closets -- Flush Valve Type

American Standard "Afwall" No. 2447.016, or equal, with Sloan Valve Company's "Royal" No. 112YV flush valve and C.F. Church's No. 9500 water closet seat. Furnish chair carrier.

2) Urinals

Back spud -- American Standard's "Jetbrook" No. 6570.014, or equal, with Sloan Valve Company's "Royal" No. 180 YV flush valve.

3) Lavatories

American Standard's "Lucerne" No. 0350.025, 20" x 18", with 2248.045 fitting, 2302.016 supplies and 1-1/4-inch 4418.018 P-trap with cleanout, or equal.

4) Shower.

a) Shower Head -- Speakman Company's No. S-2260.

b) Mixing Valve -- Speakman Company's No. 2230.

c) Shower Floor Drain -- Two-inch NPS CI, Spigot outlet and nickel bronze strainer, J.A. Zurn Manufacturing Company's No. Z-250.

5) Electric Drinking Fountain

Oasis ODP 13S Semi-recessed electric drinking fountain or approved equal.

SECTION 15B

HEATING, VENTILATING AND AIR CONDITIONING

1. SCOPE

A. Work under this section includes furnishing all labor, materials, equipment, and accessories necessary for the execution of the air conditioning, heating, ventilating, and building pressurization work.

B. Refer to drawings for location and size of equipment, ductwork, piping, flashing, and pertinent notations regarding the installation.

C. Particular attention is called to the fact that the air conditioning system shall also be used to maintain a positive internal building pressure for the purpose of preventing the infiltration of explosive gases. No unauthorized penetrations of the building envelope, tending to adversely affect building pressurization, will be permitted.

2. SHOP DRAWINGS

Subcontractor shall promptly submit for approval shop drawings showing details of construction, capacities, dimensions, etc., for the following items: condensing units, air handling units, ventilation fans, controls, registers and grilles, ductwork, piping and flashing.

3. SHEET METAL WORK

All ductwork shall be fabricated, braced, and installed in accordance with the latest recommendations of the American Society of Heating, Refrigerating, and Air Conditioning Engineers. All ductwork shall be fabricated of galvanized steel. Flexible connections shall be provided at supply and return connections to all air units. Volume dampers shall be multiblade, heavy-duty type, factory made with bronze bushings and felted edges and shall move freely and close tightly. Volume dampers in return and outside air ducts shall be opposed blade and suitable for pressure balancing. Sheet metal subcontractor shall provide General Contractor with locations and sizes of all openings in masonry and ceilings required for ductwork and shall coordinate installation of ductwork with other trades to avoid conflict of location or cutting of finished work. Sheet Metal Contractor shall coordinate work with insulation subcontractor. Ductwork projecting down through suspended ceilings shall be roughened in to a point two inches below ceiling line before ceiling T-bars are installed. Care must be taken to place ceiling outlets in exact locations to harmonize with ceiling pattern. Grilles and diffusers shall be carefully and securely mounted to ductwork and shall fit snug against suspended ceiling. Return air plenums adjacent to air units

shall be lined with 1/2-inch thick fiber glass acoustical insulation, three-pound per cubic foot density, securely fastened to inside of duct with cement and clips. Sizes shown on drawings. Indicate clear inside dimensions.

4. INSULATION

All ducts shall be supported with 16 ga x 1 inch wide galvanized non-perforated strip around the duct. Ducts less than two feet in maximum dimension shall be supported on 5 foot centers. Ducts larger than this shall be supported on 3 foot centers. Each end of support shall be fastened to main roof structure or additional structural steel support between main supports. Each end of strip shall be capable of supporting at least 1000 pounds. Ends of strip shall be cinched to supporting portion with 3 turns of 18 ga galvanized wire. Alternate methods of support providing equivalent strength are acceptable, provided owner's approval is obtained in writing. Supports for air handling units or similar suspended equipment shall be designed for a safe working load of three times the weight of the equipment, with a minimum size of 1/2 inch threaded rod for threaded type supports.

5. CONTROLS

A. A complete system of electric, electronic controls shall be provided as described below. Control subcontractor shall provide complete installation of control system including the preparation of an integrated wiring diagram showing electrical interlocks of all fans, motors, starters, switches, etc., all on one drawing, as well as a diagram of the electric, electronic controls and the sequence of operation. Control model numbers of Barber Coleman Company are shown here but similar and equal systems will be acceptable under the base bid.

B. Air Units 1 and 2 shall have the same controls and sequence, each consisting of an electrical room thermostat and electronic humidistat, auxiliary switches plus any relays necessary for proper interlocks. When fan starter closes, room thermostat shall energize the electric heating coil and refrigerant solenoid valve in sequence to maintain set point; room humidistat shall open refrigerant solenoid valve when dehumidification is required. Compressor must not be able to operate unless fan is energized.

C. Manual reset thermostats in return air ducts of each air unit shall stop fans in event of fire.

D. All three-phase motors shall be 460-volt, 60-cycle. Magnetic starters, except for compressors, will be provided under electrical section of the specifications. All electrical wiring will be provided by Electrical Contractor.

6. CONDENSING AND COMPRESSOR UNITS

Furnish and install where indicated on drawings, two (2) air cooled condensing units. Compressors shall be of the welded hermetic-type with internal vibration isolation and be covered with a shield to muffle operating sound. Condenser coils shall be circular construction. Tubes shall be nonferrous with mechanically bonded aluminum plate fins. Plastic condenser fans shall be propeller-type, direct drive, and arranged for vertical air discharge. Automatic two-speed fan motors shall be factory lubricated, inherently protected and resiliently mounted. Fan motors shall automatically switch to high speed at 90°F outdoor temperature. Compressor motors shall have both thermal and current-sensitive overload devices. Solid-state compressor protection control system shall prevent short cycling on safety devices or power interruption by limiting compressor starts at 4 to 6 minute intervals. Other protective devices shall include crankcase heaters, high and low pressure safety switches, suction line accumulators, filter-driers, and liquid line sight glasses.

7. AIR HANDLING UNITS

Furnish and install where indicated on drawings, two (2) air handling units, complete with condensate drain pans, fan sections, cooling coil sections, electric re-heat coils, an adjustable base for standard NEMA frame motors, and a condensate pan that fits under the expansion valve. The units shall be constructed of mill-galvanized steel. The fan wheels, motor base, bearing flanges and tubular shafts shall be painted. Solid steel shafts shall be coated with a rust inhibitor. Fan sections, cooling coil sections, and accessories downstream of the cooling coil shall be internally insulated at the factory with one inch, 3/4 pound density, coated fiber glass cemented in place with waterproof adhesive. Fan wheels shall be forward-curved type. Fan wheels and shafts shall be statically and dynamically balanced. Air conditioning contractor shall suspend units from bar joist and provide necessary hangers and Amber Booth type spring vibration isolators.

8. GRILLES, REGISTERS AND DIFFUSERS

Grilles, registers, and diffusers shall be of sizes shown on the drawings, complete with sponge rubber gaskets and aluminum finish. Equal air devices as manufactured by Titus, Tuttle and Bailey, or Barber-Coleman, will be acceptable:

Ceiling Diffusers - Titus TMOC-S1 w/AG-95.

Sitewall Registers - Titus S-277 w/AG-35.

Return Air Grilles - Titus RL-241.

Fresh Air Louvers - Titus OXL-02.

9. FILTERS

Filter Unit shall be two (2) Purafil Filter Cell Model No. PCZZC, as indicated on drawings, complete with angle frame, two inch pre-filter section, assembly frames. Filter modules, and cells. The air purification media shall be activated alumina impregnated with an alkali metal pre-manganate salt. The media shall be non-toxic, non-corrosive, non-flammable, and shall not support bacterial nor fungicidal growth. The media shall be suitable to remove odorous irritant and corrosive gaseous contaminants. The air purification system shall contain air filtering cells consisting of an assembly frame with removable perforated steel filter modules. The assembly frame shall be constructed of 16 gauge steel with flush mitered and welded corners and incorporated adequate air seals. The filter modules shall be constructed of 24 gauge perforated steel, with suitable openings for easy filling and adequate closure.

Filter system shall have Custom-Aire C42-150-G replaceable media pre-filters.

10. REFRIGERANT PIPING

Refrigerant lines shall be Type L rigid copper tubing with silver soldered joints. Solder 9505 may be used at solenoid and expansion valves. Test piping 300 psi and remove all debris and oxidation products from lines before evacuating and charging systems. Before charging systems with refrigerant, triple evacuate, breaking vacuum with freon and allowing 45 minutes for moisture absorption before each evacuation. Provide all dryers, valves, vibrasorbers, etc., as shown on drawings. Lines shall be properly braced to prevent vibration; avoid direct contact of copper lines to steel at fastening points.

11. PIPE SUPPORT

A. All drain and refrigerant piping shall be properly secured and suspended from roof joists using threaded rod, steel angle, and pipe hangers.

B. Hangers for insulated lines shall be of the clevis type sized for the outside of the insulation with galvanized sheet metal saddles six inches wide at each hanger. Other hangers shall be of the split ring type. All hangers and rods shall be black steel. Floor stanchions and rigid wall braces may be used to further secure piping if required.

12. STARTING AND ADJUSTING AND WARRANTY

A. All equipment shall be thoroughly tested and adjusted by Air Conditioning Contractor and placed in operation when directed by Humble. Air distribution and controls shall be adjusted to provide uniform temperatures throughout the structure. After computer equipment is placed in full operation, Contractor shall readjust air distribution if required. Contractor shall make necessary adjustments to fan speeds and fresh air dampers to provide degree of building pressurization desired by Humble.

B. After equipment has been initially operated and Contractor has had sufficient time to properly adjust and balance the system, Humble shall be notified that system is ready for preliminary acceptance. Humble, at this time, may elect to leave the equipment inoperative until final completion of the job or may direct that the equipment be placed in operation at any time suiting their convenience. However, that time which the owner elects to begin using the equipment shall be the beginning date for the Contractor's one-year warranty period. It shall be clearly understood that preliminary acceptance by Humble as described above shall not be construed as final acceptance and approval of the air conditioning system. This inspection will be made by Humble at the completion of the entire project and Air Conditioning Contractor shall promptly correct any deficiencies noted before the job will be approved for final payment.

C. During the one-year warranty period beginning as described above, Air Conditioning Contractor shall repair or replace any defect in workmanship or material which shall be evidenced during this period. Contractor shall also make any adjustments of controls or air distribution requested by owner and provide all routine maintenance for the first year. Thirty days prior to end of warranty period Humble shall reinspect the system and repairs or replacements required to leave system in perfect operating order shall be provided at no additional cost.

SECTION 16ELECTRICAL1. SCOPE

A. Work under this section includes all labor, materials, accessories, and equipment necessary for completion of the electrical work.

B. Refer to drawings, schedules, and these specifications for type, location, and extent of work required.

C. The work covered by these specifications includes electrical service for 480-volt, three-phase equipment; 120/208-volt, three-phase equipment; and certain 120-volt a-c and d-c equipment.

1) 480-volt equipment shall consist of:

- a) Two circuit breakers installed in existing MCC's.
- b) Two three-phase, 480-volt motor control centers.
- c) Wiring for 2 air conditioning condensing units.
- d) Wiring for 2 air handling units.
- e) Wiring for two duct heaters.
- f) Wiring for battery charger.
- g) Providing and installing 3 transformers.

2) 120/208-volt equipment shall consist of:

- a) One circuit breaker panelboard.
- b) Lights, receptacles, other devices as shown on drawings.

3) 120-volt a-c and d-c equipment shall consist of:

- a) Provide d-c wiring from battery charger to battery and inverter.
- b) Provide 120-volt a-c wiring from two transformers and inverter to transfer switchboard.

D. The following materials will be furnished by Humble but shall be installed and connected as part of the work under this section of the specifications.

- 1) Battery
- 2) Battery Charger
- 3) Inverter
- 4) Transfer Switchboard

E. The electric-electronic temperature control system will be furnished by the mechanical contractor and installed by the electrical subcontractor. Compressor starters are integral with compressor control panel and will be furnished by air conditioning subcontractor. Air handling unit starters and duct heater contractors will be furnished by the mechanical contractor and wired by this contractor.

2. CODES AND REGULATIONS

A. Unless otherwise specified, all work, materials, and equipment shall be in strict accordance with the National Electrical Code and the Regulations of the National Board of Fire Underwriters for Electric Wiring and Apparatus, latest editions, as recommended by the National Fire Protection Association.

3. CONDUIT AND FITTINGS

A. All conduit connections shall be threaded. Threads shall be cleaned and coated with one coat of zinc-chromate base primer, Humble's Rust-Ban 270, or approved equal before connecting. All conduit ends shall have at least five full threads of standard tapered type and shall be made up tight. No running threads shall be used. Rigid conduit shall be used, unless otherwise specified.

B. Conduits shall be supported on top of the bottom cords of roof trusses if possible, and wired to supports every five feet. Otherwise they shall be supported every five feet with wire or straps all around in such manner that the conduit is capable of supporting 500 pounds.

C. Type UF cable may be used where indicated on drawings providing a grounding conductor is included and connected to all devices and to the grounding system. Each conduit shall be so run as to avoid proximity to steam or other hot lines. No conduit shall be run within 12 inches of such lines, except where crossings are unavoidable, in which case the conduit shall be kept at least six inches from the covering of the line crossed. Conduit shall not be supported from process or utility piping.

4. EQUIPMENT IDENTIFICATION

A. Each circuit breaker, push button, starter, disconnect switch, and motor shall be identified by painting three-inch-high black letters or numbers wherever practical. Lighting panel shall be provided with typed legends as shown on drawings.

5. FIRE AND SMOKE DETECTION SYSTEM

A. Provide and install Pyr-A-Larm low voltage fire and smoke detection system consisting of :

- 1) 1 CP-130 Control Panel (37"H x 22"W x 7"D)
- 2) 1 EA-112 Enclosure
- 3) 24 DI-S5 Ionization Detectors
- 4) 10 DT-1F135 Thermal Detectors
- 5) 5 MS-3 Manual Pull Stations
- 6) 6 ZN-1 Zone Modules
- 7) 6 EDC-624 Polarized Alarm Bells
- 8) 1 EDC-624 1.8K End Line Bell

B. Provide wiring in conduit for this system as indicated on the drawings.

EXHIBIT "A"

1 September 1972
Appropriation 102-9143

REFORMING CONTROL CENTER
BUILDING NO. 731

HUMBLE WILL FURNISH ONLY THE FOLLOWING:

1. Copies of applicable drawings, specifications, and standards reasonable necessary for work execution.
2. The following utilities, if required and requested by Contractor, at existing outlets, which will not be extended by Humble, and in quantities available at those outlets each to be used at Contractor's risk:
 - a. Drinking water, not cooled.
 - b. Electrical power at 110/220 volts, 60 cycles, single-phase; and 440 volts, 60 cycles, three-phase.

HUMBLE WILL PERFORM ONLY THE FOLLOWING:

1. Designate a site or sites in Baytown Refinery to which Contractor shall haul all dismantled or surplus materials and debris.
2. Designate material storage areas and areas on which Contractor may locate temporary sanitary facilities, shops, or offices.
3. Install telephone wiring and instruments.

OFFICE MEMO
BROWN & ROOT, INC.

NOVEMBER 6, 1972

TO THOSE CONCERNED:

JOB NO. 27-5394 IS ASSIGNED TO COVER THE CONSTRUCTION OF THE REFORMING
CONTROL CENTER BUILDING NO. 731 FOR HUMBLE OIL & REFINING COMPANY IN
BAYTOWN, TEXAS.


BILL LONG

BL/nb

JOB TITLE: HUMBLE OIL & REFINING COMPANY - CONSTRUCT REFORMING CONTROL
CENTER BUILDING NO. 731 IN BAYTOWN, TEXAS.

(WORK TO BE PERFORMED BY THE L. J. DERRICK DEPARTMENT)

EXX 002073

REQUEST FOR ASSIGNMENT OF JOB NUMBER
BROWN & ROOT, INC. AND ASSOCIATED COMPANIES

#27-5394

ACCOUNTING DEPARTMENT
FROM: Industrial Civil Division
SUBJECT: JOB NUMBER ASSIGNMENT - Brown & Root, Inc. - Industrial - Civil
(COMPANY) (DEPARTMENT)

10-16-72
(DATE)

SUB-DIVISION: Industrial Type Work
(Tom Hunt, Building Dept.)

PLEASE ASSIGN A JOB NUMBER TO BE USED FOR RECORDING OF INCOME AND COSTS RELATING TO THE CONTRACT DETAILED BELOW:

OWNER: Humble Oil & Refining Company
PRIME CONTRACTOR: 
CONTRACT DATE: 10-10-72
DESCRIPTION OF WORK: Reforming Control Center Building No. 731

TYPE OF CONTRACT: UNIT PRICE (), LUMP SUM (☒), FORCE ACCOUNT (), COST PLUS FEE ()
OTHER (), (EXPLAIN)

ESTIMATED COMPLETION DATE: March 23, 1973 OR CONTINUOUS ()
CONTRACT AMOUNT: \$ 121,876.00 ACTUAL (☒), ESTIMATED ()
TERMS OF PAYMENT: PROGRESS BILLINGS - MONTHLY (), WEEKLY (), BIWEEKLY ()
SEMIMONTHLY (☒), REVOLVING FUND (), OTHER (), (EXPLAIN)

PERCENT RETAINED: 10 % OF Completed Amount
OTHER (), (EXPLAIN)

TO BE COMPLETED ONLY FOR JOINT VENTURES:

PARTNERS AND PARTICIPATION:

SPONSOR: _____ %
_____%
_____%

FINANCING CURVE OR CASH FORECAST:

JOB NUMBER ASSIGNED: 27-5394
Copy Of Contract Attached

(SIGNATURE OF EMPLOYEE REQUESTING JOB NUMBER)

H. Reed

CC ORIGINAL - ACCOUNTING
DUPLICATE - RETAINED
TRIPPLICATE - TREASURY/CREDIT
QUADRUPLICATE - PURCHASING

FORM A-56

ACCOUNTING

EXX 002074