PLAINTIFF'S
EXHIBIT
CHV-491

SPECIFICATION NO. EP-432-J
OVERHEAD CONDUIT BANK - PLANT 33 ISOLATION
EL PASO REFINERY

SECTION 1 - GENERAL REQUIREMENTS

1.0 SCOPE OF WORK

1.1 CONTRACTOR shall provide all utilities, tools, construction equipment, labor, including supervision and inspection, and all items of a consumable nature that are required for construction of an overhead conduit bank for Plant 33 Isolation, at the Chevron U.S.A. Inc., El paso Refinery as detailed by this Specification, including the drawings and other attachments listed in the Appendix.

This work includes but is not limited to: Erection of 7 overhead conduit supports made of channel iron; construction of a rack with concrete footings to support 2 new terminal boxes, including installation of the 2 boxes; installation of 3 more boxes tc existing stanchions, and; installation of the wiring and tubing needed to operate an entire plant, making all connections except the final connections to operating lines.

1.2 In addition, CONTRACTOR shall provide concrete and forms, and all painting material required.

2.0 WORK, MATERIAL AND UTILITIES BY COMPANY OR OTHERS

2.1 Material by COMPANY

COMPANY will provide the following material to be incorporated into the Facility:

A) Channel Iron

B) Steel Plates

C) Terminal Boxes

D) Conduit

E) Concrete Anchor Bolts

F) Machine Bolts

G) Rebar

H) Junction Box

2.2 Construction Utilities by COMPANY

2.21 COMPANY will provide electrical energy to CONTRACTOR at either 480-volts, 3-phase, or 120/240 volts, Single-phase suitable disconnect switches and all materials for extension of service to CONTRACTOR's work areas shall be provided and installed by CONTRACTOR.

2.22 COMPANY will provide drinking water for CONTRACTOR's containers at a location designated by COMPANY's Representative.

3.0 SEQUENCE OF WORK

The sequence of work shall be as mutually agreed between the COMPANY and CONTRACTOR and shall be consistent with the facing sheet of the Agreement.

4.0 INTENT

The installations shall be complete in every respect, constructed in accordance with generally accepted, current good practices of the several trades involved and the detailed requirements of this Specification and ready to serve in the manner expressed or implied herein, regardless of whether or not full details of such completeness or practices are contained herein.

The specifications and drawings are not complete in every detail and CONTRACTOR shall comply with their true intent taken as a whole, and not avail himself of any errors or omissions to the detriment of the work. Should any error, omission or discrepancy appear in the drawings, specifications and instructions, CONTRACTOR shall notify COMPANY at once, and COMPANY will issue instructions to be followed. If CONTRACTOR proceeds prior to receiving such instructions, necessary corrections shall be at CONTRACTOR's expense. Anything not indicated on the drawings or outlined in the specification which is necessary for full and faithful construction of the installations in accordance with the true intent of this agreement or anything indicated on the drawings but not outlined or vice versa, shall be provided and incorporated at the expense of CONTRACTOR to the same extent as though fully set forth in both the drawings and the specification.

5.0 COMPANY REVIEW AND APPROVAL

COMPANY's review of, approval of, or agreement to the performance of certain items of work or the provisions of certain material shall in no way relieve CONTRACTOR of full responsibility for the performance of such work, or for the adequacy of such material. All such reviews, approvals or agreements shall be obtained through COMPANY's Construction Representative, or in a manner previously approved in writing by COMPANY's Construction Representative.

SECTION 2 - GENERAL CONDITIONS AND PERFORMANCE OF WORK

6.0 PRECEDENCE

6.1 The following items shall take precedence in the order listed in the event of conflict.

A) Facing Sheet of Agreement

B) Terms and Conditions

C) Refinery Instruction No. 1404

D) This Specification

E) Construction Drawings in Appendix A.1, attached in this Specification

F) Standard Specifications

G) Standard Drawings

H) Reference Drawings and Specifications, Engineering Instructions, Recommended Practices and Refinery Instructions in Appendix.

6.2 As used in the standard specifications attached hereto: (a) "Purchaser" shall mean COMPANY; (b) "Supplier" or "Vendor" shall mean CONTRACTOR; and (c) "Purchaser's Inspector" shall mean COMPANY Construction Representative.

6.3 Unless otherwise expressly provided in this Specification, (a) any data, specifications, material, and work or any other matter which is covered by this Agreement which the standard specifications require to be provided by COMPANY shall instead be provided by CONTRACTOR; (b) any provisions of the standard specifications requiring COMPANY to inspect certain material or work shall mean that COMPANY has an option, rather than the obligation, to so inspect such material or work; (c) any warranty or guarantee provisions contained in the standard specifications shall be of no effect and the warranty and guarantee provisions of this Specification, if any, shall apply; and (d) any item of material, work, inspection or testing to be furnished at extra expense to COMPANY pursuant to the standard specifications shall be furnished under this Specification at no increase in CONTRACTOR's compensation.

All provisions in the standard specifications concerning compensation or payment to CONTRACTOR in case of delay shall be of no effect, and the provisions of the Terms and Conditions and of this Specification shall apply.

In the engineering instructions, reference to COMPANY's personnel shall be of no effect, and CONTRACTOR's personnel shall perform all activities which are to be performed under the engineering instructions, except as otherwise provided elsewhere in this Specification.

Where standard specifications on materials contain sections covering COMPANY's normal requirement for purchasing and field erection, these sections shall be of no effect except as otherwise expressly stated in this Specification.

7.0 FIELD REPRESENTATIVES

7.1 COMPANY's Representative

COMPANY will maintain a representative in the field pursuant to Section 4.0 of Refinery Instruction No. 1404, General Instructions to Contractors Working Within the Refinery, attached.

Examples of his functions are to:

A) Establish and maintain field liaison between CONTRACTOR's Construction Representative and COMPANY.

B) Provide materials to CONTRACTOR as provided in this Specification.

C) Review CONTRACTOR's construction schedule.

D) Provide drawings and other detailed information.

E) Explain drawings and specifications as required.

F) Make such inspections as COMPANY may desire in order to check the quality and progress of the work.

G) Review and approve field changes or material substitutions, or any other matter where COMPANY's approval or agreement is required by this Specification.

H) Negotiate with CONTRACTOR's Construction Representative the adjustment in compensation arising from a change.

7.2 CONTRACTOR's Construction Representative

CONTRACTOR shall maintain a Construction Representative in the field at all times who shall act in full charge of CONTRACTOR's work and maintain field liaison between CONTRACTOR and COMPANY's Construction Representative.

8.0 OTHER CONTRACTS

COMPANY reserves the right to let other contracts or perform other services in connection with CONTRACTOR's work hereunder. CONTRACTOR shall afford others equitable opportunities for the introduction and storage of their materials and the execution of their work and shall properly coordinate its work with theirs.

.0 SCHEDULE

CONTRACTOR shall maintain a detailed construction schedule for all phases of the work.

9.1 The construction schedule shall indicate, for each portion of the Facility, the date of the start of the work thereon, job progress and completion date. Completion dates on such construction schedule shall agree with any dates set forth in Section 3.0 of this Specification, if any, and on the Facing Sheet of this Agreement.

9.2 COMPANY's Construction Representative will review the schedule with CONTRACTOR's Construction Representative at periodic interval to verify that the Facility is progressing as scheduled. Modifications to the schedule which affect the completion dates established in the schedule must be approved in writing by both CONTRACTOR and COMPANY.

10.0 PLANT REGULATIONS

Prior to the commencement of work, CONTRACTOR shall become familiar with the plant regulations specified in the attached Refinery Instruction No. 1404, General Instructions to Contractors Working Within the Refinery and the following regulations. CONTRACTOR shall be responsible for compliance with these regulations during the execution of his work.

10.1 Electrical Safety Requirements

CONTRACTOR shall provide and use ground fault circuit interrupters for personnel protection at all construction sites (including areas inside existing plants) on all 120 volt single phase 15 and 20 amper receptacle outlets.

Hubbell type GFP or Porta-Power Pak Inc. Model 72 series are typical of acceptable portable receptacle units.

Ground fault circuit interrupters shall not be used in areas where flammable vapors are present.

It is essential that the polarity of the conductors in all cords, plugs and receptacles supplying single pole portable ground fault circuit interrupter units be properly maintained to insure proper operation of the units.

10.2 Work Space and Storage Area

COMPANY will assign space in the general vacinity of the CONTRACTOR work for CONTRACTOR's office, work space and storage area.

11.0 TEMPORARY CONSTRUCTION FACILITIES

11.1 CONTRACTOR shall provide and install all necessary temporary facilities including, but no limited to, tool rooms, locker rooms, toilets, office and storehouse. All temporary installations shall be subject to approval by COMPANY prior to installation.

11.2 In addition, CONTRACTOR shall provide all necessary temporary equipment and material including, but not limited to, shoring, concrete forms, bracing, ladders, scaffolding, staging, drop cloths and tarpaulines.

11.3 CONTRACTOR shall maintain all temporary facilities, material and equipment in a safe and adequate manner nd remove them immediately upon completion of the work requiring their presence.

12.0 SURVEYING

CONTRACTOR shall perform all surveying necessary from base lines and bench marks established by COMPANY. The accuracy for all grades, elevations, and plumbing of any structures and location of facilities described in this Specification shall be the responsibility of CONTRACTOR.

13.0 EXCAVATION AND BACKFILL

Earthwork shall be in accordance with applicable paragraphs of Specification EG-581. CONTRACTOR shall haul any excess excavated material to a location designated by COMPANY's Construction Representative.

14.0 GRADING

CONTRACTOR shall rough-grade the work areas as shown on rough-grading drawings. CONTRACTOR shall return area grades as shown on these drawings to a tolerance of plus or minus 0.1 foot. Additional finish grading and/or slope protection will be performed by others.

15.0 DELIVERY AND HANDLING OF COMPANY PROVIDED MATERIALS

15.1 Materials furnished by COMPANY will be available to CONTRACTOR at the Refinery Storehouse. CONTRACTOR shall provide the necessary labor and equipment for handling and transporting materials.

15.2 CONTRACTOR shall be responsible for keeping all material in good condition until Acceptance of the Installations, subject to Section 5.3 of the Terms and Conditions.

15.3 Upon completion of the Installations, CONTRACTOR shall provide COMPANY an inventory of all remaining material which was provided by COMPANY including the quantity, description, and the item number for each item. When directed by COMPANY, CONTRACTOR shall transport the remaining material to the location on COMPANY's premises designated by COMPANY.

15.4 CONTRACTOR's requests for withdrawal of COMPANY-furnished material and equipment shall be based on quantities shown on drawings or lists of materials furnished by COMPANY. CONTRACTOR shall obtain approval from COMPANY's Representative before materials in excess of the quantities shown on the drawings or lists of materials will be issued.

15.5 CONTRACTOR shall (a) be responsible for keeping all materials and equipment in good condition until the completed Installations are accepted by COMPANY, including taking any necessary steps such as painting, greasing, installation of rust preventive oil, as covering, etc., to protect all equipment externally and internally from mechanical damage or damage from the elements, temperature (b) be held accountable for surplus materials furnished by COMPANY, items received from COMPANY and to be returned, and for shortages or damages to equipment and materials furnished by COMPANY.

15.6 CONTRACTOR shall promptly check bills of material or drawings for any erros which would result in shortages and shall notify COMPANY in writing if there are any such errors or if the listed are insufficient to meet his anticipated needs. Delays caused by CONTRACTOR's failure to discover and promptly report such erros or that the equipment and materials listed are insufficient to meet his anticipated needs shall not constitute a basis for extension of time of completion under Section 3.2 or a basis for reimbursement under Section 3.3 of the Terms and Conditions.

16.0 DRAWINGS AND DIMENSIONS

COMPANY will provide to CONTRACTOR two copies of all pertinent standard drawings, standard specifications, reference drawings, and construction drawings.

17.0 INSPECTION AND TESTING

17.1 General

CONTRACTOR shall be solely responsible for thorough craft inspection during construction and for the quality of the work. COMPANY will make such inspection as COMPANY may desire in order to check the progress and quality of the work, to see that CONTRACTOR's employees are properly qualified in their respective crafts, that workmanship is of an acceptable grade, and that all requirements of this Specification are being met. Such inspection or any other inspection or testing by COMPANY shall in no way relieve CONTRACTOR of full responsibility for the work hereunder.

17.2 Welding Inspection and Qualification

17.21 CONTRACTOR shall arrange for welding qualification tests at his expense at El Paso Testing Company, Inc., 2315 Myrtle Street, El Paso, Texas 79901, phone 532-3831, or other approved testing firm, in accordance with Engineering and Maintenance Instruction EP-2200. Welders shall be required to pass qualification tests before performing any operation. COMPANY reserves the right to require additional qualification tests during construction if it has any doubt about the competence of welders. COMPANY shall be allowed to witness tests and to examine test coupons. If additional tests are required and passed by welders, cost of retesting will be borne by COMPANY; if failed, cost of retesting shall be borne by CONTRACTOR.

17.22 The required qualification tests shall be the "Pipe Test for Qualification of Metal Arc Welders" as described in Appendix I of Engineering Instruction No. EP-310. Welds shall be made in seamless pipe conforming to ASTM Specs. A-106 or A-53 or API Spec. 5-L. Weld rods shall be Type E-6010 mild steel electrodes.

17.23 The face and root bend specimens shall be tested in the guided bend test jig described in Fig. Q-7 of the ASME Boiler and Pressure Vessel Code, Section IX, Welding Qualifications.

17.24 The convex surface of the bend specimens shall be examined for cracks or other open defects. Any specimen in which a crack or open defect is present, after bending, exceeding 1/8" measured in any direction shall shall be considered as having failed. Cracks which originate along the edges of the specimen during testing and that are minor in extent shall not be considered unless there is definite evidence that they result from slag inclusions or other internal defects.

17.25 The fractured surfaces of the nick-break test shall show complete penetration throughout the entire thickness of the weld, absence of oxide or slag inclusions, and a degree of porosity not to exceed six gas pockets per square inch of the total area of the weld surface exposed in the fracture, the maximum dimension of any such pocket not to be in excess of 1/16".

17.26 If the welder fails in one of the test positions, he may be allowed to take an immediate retest by making two test pieces in the failed position. Both of the test pieces shall pass the test requirements. If the welder fails in more than one position, he shall not be allowed to take a retest.

17.27 Upon passing the qualification tests, CONTRACTOR shall assign each welder an identification number. This number shall thereafter be used by the welder to identify his work by stamping it alongside each completed weld with steel stencils.

17.28. At the option of the COMPANY's Lead Equipment Inspector, CONTRACTOR's welders need not pass the welding qualification tests if they can present suitable and acceptable evidence of having passed the appropriate ASME Performance Qualification Tests as described in Section IX of the ASME Boiler and Pressure Vessel Code.

17.29 COMPANY will perform (random or 100%) radiography of welds in accordance with Section 7.0 of Specification No. EG-2505 to verify that the overall quality of workmanship is in accordance with COMPANY standards as set forth in Specification No. EG-2505. Welds so inspected shall be repaired or replaced by CONTRACTOR at no increase in CONTRACTOR's compensation if the weld fails to meet said standards. All of COMPANY's radiographs will be available to CONTRACTOR for his review and use to the extent he desires to verify that all requirements of Section 17.1 above are met.

17.3 Electrical Inspection and Testing

CONTRACTOR shall inspect wiring, cables, motors, controllers, and lighting and test grounding, all in accordance with Specification No. EG-1675.

17.4 Concrete Samples

COMPANY may perform compression and slump tests on concrete. CONTRACTOR shall furnish sammples taken in accordance with ASTM Specifications as may be requested for the following tests and inspections:

17.41 Compression Tests: 3 cylinders from each 10 cu. yd. of structural concrete placed each day.

17.42 Slump Tests: Periodic samples daily during pouring of concrete.

18.0 Cleaning Up

During the performance of the work, CONTRACTOR shall keep a reasonable degree of order by disposing of accumulated rubbish and waste material and, at the completion of the work, the site shall be cleared of all debris, left-over tools, consumable supplies, and material which may have accumulated in the performance of the work. Where the CONTRACTOR, after due notice, fails to keep the area of his work reasonably clean and safe, or fails to clean this area at the completion of the work, COMPANY may perform this work; the cost of such work shall be for CONTRACTOR's account and may be deducted from the sums due or to become due CONTRACTOR.

19.0 Completion

The work will be considered "complete" when CONTRACTOR has performed all work expressly stated or implied in this Specification.

SECTION 3 - CONSTRUCTION

This Section amplifies the construction details for some portions of CONTRACTOR's work. The provisions are generally applicable to all the facilities covered by this Specification.

20.0 STEEL WORK

20.1 Fabrication

Structural steel fabrication sahll conform to Specification EG-398.

20.2 Erection

CONTRACTOR shall erect all steel work. All work shall comply with latest editions of the AISC Code of Standard practice for steel building and bridges, AISC Specification for design, fabrication, and erection of structural steel for buildings and AWS Standard Code for Arc and Gas Welding in Building Construction.

Structures, platforms, stiles, stairs and ladders shall be fabricated per Specification EG-398 as complete as practicable, consistent with the economy of handling and shipping the assembled unit.

20.3 Welders

Field welding on steel work shall be done by welders who are qualified as specified in Section 17.2 of this Specification.

21.0 ELECTRIC POWER AND LIGHTING

21.1 Scope of Work

A) CONTRACTOR shall perform all electrical work required for construction of the facilities as shown on the drawings and as described in the Specification.

B) Installation of electrical facilities will be in accordance with Specification No. EG-1675.

22.0 CONCRETE WORK

22.1 Scope of Work

CONTRACTOR shall provide and be responsible for all concrete work.

22.2 Methods

Placing and curing concrete shall be in accordance with Specification EG-850.

Material and fabrication of reinforcing shall conform to Specification EG-516, unless otherwise specified on the drawings.

22.3 Properties

Ready-Mix concrete shall be in accordance with ASTM Specification C-94.

If field mix concrete is used, materials to be used and the procedure to be followed in proportioning and mixing Portland Cement Concrete in the field shall conform with Specification EG-851. Consistency and workability shall be in accordance with Specification EG-851 with a minimum ultimate compressive strength of 3000 psi after 28 days of curing, maximum aggregate size 3/4-inch, slump 3 to 5 inches.

Method of measuring materials shall be such that the proportions can be accurately controlled and easily checked at any time during the work.

22.4 Anchor Bolts

All anchor bolts securing machinery or equipment, shall be provided with sleeves in accordance with Drawing GB-Q68922. After setting equipment, these sleeves shall be filled with grout. Anchor bolts shall be accurately placed and securely tied to avoid movement during concrete placement.

22.5 Special Techniques

CONTRACTOR shall consult COMPANY's Construction Representative before using such special techniques as, for example, precasting pipeway stanchions, or pumping structural concrete.

23.0 PAINTING

All exposed metal surfaces of piping, structures, supports, drums and exchangers shall be painted as follows:

23.1 Surface Preparation - Wire brush surface to conform to Steel Structural Painting Council Standard SSPC SP#.

23.2 Primer - LZ1 primer - low lead, brush, roll or spray.

23.3 Paint - Aluminum paint - Hanley Sunfoe 17-010, or equal, applied according to manufacturers recommendations.

The terminal boxes shall be painted with a finishing coat only, a grey enamel shall be used.

Randall R. Woosin 2/24/81
Engineer

2/24/81
Lead Engineer