



# CITY OF HOUSTON

## INVITATION TO BID

Issued: November 22nd, 2011

### **Bid Opening:**

Sealed bids, in duplicate, will be received by the City Secretary of the City of Houston, in the City Hall Annex, Public Level, 900 Bagby, Houston, Texas 77002, until 10:30 a.m. Thursday, December 8th, 2011 and all bids will be opened and publicly read in the City Council Chamber, City Hall Annex, Public Level, 900 Bagby at 11:00 a.m. on that date for the purchase of:

**FUEL SYSTEM PIPE, FITTINGS & UTILITY CASING  
FOR THE HOUSTON AIRPORT SYSTEM  
INVITATION TO BID NO. S48-N24140  
NIGP CODE: 553-75, 658-80**

### **Buyer:**

Questions regarding this solicitation package should be addressed to **Irina Chong** at **832-393-8764**, or e-mail to [irina.chong@houstontx.gov](mailto:irina.chong@houstontx.gov)

**Bidding forms, specifications and all necessary information should be downloaded from the Internet at <http://purchasing.houstontx.gov>. By registering and downloading this solicitation document, all updates to this solicitation document will be automatically forwarded via e-mail to all registered bidders. This information may also be obtained from the Supplier Assistance Desk, Strategic Purchasing Division, 901 Bagby, Concourse Level, Houston, Texas 77002.**

### **Electronic Bidding:**

In order to submit a bid for the items associated with this procurement, you must fill in the pricing information on the "**PLACE BID**" page.

**It is the bidder's responsibility to ensure they have secured and thoroughly reviewed the solicitation documents prior to the submitting the bid. Any revisions to be incorporated into this solicitation document will be confirmed in writing by Letter(s) of Clarification prior to the bid due date. Verbal responses will not otherwise alter the specifications, terms and conditions as stated herein.**

The place of the bid opening may be transferred in accordance with Paragraph (b), (5) of Section 15-3 of the Code of Ordinances, Houston, Texas. The bid opening meeting may be rescheduled in accordance with Paragraph (b), (6) of said Section 15-3.

**The City reserves the right to reject any or all bids or to accept any bid or combination of bids deemed advantageous to it.**

City Employees are prohibited from bidding on this solicitation in accordance with the Code of Ordinances, Section 15 - 1.

#### **\*CONTENTS:**

SECTION A: OFFER  
SECTION B: SCOPE OF WORK/SPECIFICATIONS  
SECTION C: GENERAL TERMS & CONDITIONS

**\*NOTE 1: Actual page numbers for each Section may change when the solicitation document is downloaded from the Internet or because of Letters of Clarification. Therefore, Bidders must read the bid document in its entirety and comply with all the requirements set forth therein.**

**\*NOTE 2: To be considered for award, please submit the electronic bid form and the forms listed in Section A, including the official signature page, which must be signed by a company official authorized to bind the company.**

**SECTION A  
OFFICIAL BID FORM**



**FORMAL ONE-TIME BID**

**FUEL SYSTEM PIPE, FITTINGS & UTILITY CASING  
FOR THE HOUSTON AIRPORT SYSTEM  
INVITATION TO BID NO. S48-N24140**

To The Honorable Mayor  
and City Council Members  
of the City of Houston, Texas (the "City"):

The undersigned hereby offers to **furnish and deliver** Prepaid F.O.B. destination point Houston, Texas, the item(s) listed on the **electronic bid form** and on individual Purchase Orders, in accordance with the price(s) bid and other conditions shown herein, and in accordance with the City's Specifications and General Terms & Conditions and/or samples/drawings provided herein. When issued by the City of Houston, Letters of Clarification shall automatically become part of this bid document and shall supersede any previous specifications or provisions in conflict with Letters of Clarification. It is the responsibility of the bidder to ensure that it has obtained all such letters. By submitting a bid on this project, bidder shall be deemed to have received all Letters of Clarification and to have incorporated them into the bid.

The City may accept this bid offer by issuance of a Notice of Award Letter and/or a Purchase Order at any time on or before the 120th day following the day this Official Bid Form is opened by the City. This offer shall be irrevocable for 120 days after bid opening or for 90 days after City Council awards the bid, whichever comes last, but this period may be extended by written agreement of the parties.

**The City reserves the right to INCREASE quantities during the twelve-month (12) period following the issuance of the first purchase order subject to agreement in writing by the Contractor/Supplier to honor the same bid price.**

The City reserves the option, after bids are opened, to adjust the quantities listed on the electronic bid form upward or downward, subject to the availability of funds, and/or make award (s) on a line item basis.

SECTION A

**Documents/forms must be downloaded from the City’s Website:**

<https://purchasing.houstontx.gov>

[http://purchasing.houstontx.gov/solicitation\\_forms.htm](http://purchasing.houstontx.gov/solicitation_forms.htm)

**Additional Required Forms to be Included with this Bid:**

In addition to the electronic Bid Form and the Official Signature Page, the Forms listed in Table 1 **must be completed and submitted to the Office of the City Secretary on or before the date and time the bid is due:**

<b>Table 1 – Required Forms</b>
Affidavit of Ownership
Fair Campaign Ordinance
Statement of Residency
Conflict of Interest Questionnaire
Exhibit I - Buy American Program Certification

Table 2 lists other documents and forms that should be viewed/downloaded from the City’s website, but are not required to be submitted with the bid. **The City will request these forms, as applicable, to be completed and submitted to the City by the recommended/successful bidder:**

<b>Table 2 – Documents and Forms</b>
Drug Forms
Sample Insurance Over \$50,000.00
Formal Instructions for Bid Terms
EEOC

## SUPPLIER REFERENCES

In order to receive bid award consideration, the bidder must be able to demonstrate that it has provided, as a Contractor/Supplier, products or services that are similar to those offered on the electronic bid form to governmental agencies or other entities of similar size/scope. The references should be listed in the space provided below. Please attach additional pages as necessary. If references are not included with the bid, the bidder shall be required to provide such references to the City of Houston within five working days from receipt of a written request from the City of Houston to do so. **Bidder's capability and experience shall be a factor in determining the Supplier's responsibility.** The City of Houston reserves the right to determine if such products or services are appropriately similar to those offered.

1. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_
  
2. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_
  
3. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_
  
4. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_
  
5. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_

## SECTION B

### PART I

#### GENERAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS and UTILITY CASINGS

##### **1.0 BIDDING AND AWARD:**

- 1.1 The City may accept this bid offer by issuance of a Notice of Award Letter and/or a Purchase Order at any time on or before the 120th day following the day the Official Bid Form is opened by the City. This offer shall be irrevocable for 120 days after bid opening or for 90 days after City Council awards the bid, whichever comes last, but this period may be extended by written agreement of the parties.
- 1.2 Prices bid shall remain firm through delivery and shall not be subject to increases (or supplemented on the Supplier's invoice(s) for payment).
- 1.3 The City reserves the option to adjust the quantities listed on the City's Official Bid Form upward or downward, subject to the availability of funds, and/or make award on a line item basis. Therefore, the City shall not be liable for any contractual agreements/obligations the Bidder enters into based on the City purchasing all the quantities specified herein.
- 1.4 The City reserves the right to INCREASE quantities during the twelve-month period following the issuance of the first purchase order subject to agreement in writing by the Supplier to honor its original unit bid price.

##### **2.0 APPLICABLE SPECIFICATIONS:**

- 2.1 "Notice to Bidders", the "Official Bid Forms", the "General Specifications", the "Technical Specifications", the "General Terms and Conditions" and other specifications that may be included herewith and the purchase orders which refer to these specifications.

##### **3.0 TECHNICAL LITERATURE:**

- 3.1 To evaluate the bids, the user department and the City purchasing staff may require product literature/specification sheets. Technical literature may be provided with the bid submittal but is not required. However, the City reserves the right to request literature or clarifications, as needed, after bid submittal.
- 3.2 Bidder(s) shall furnish the requested literature within seven (7) calendar days after the receipt of the City's written request. FAILURE ON BIDDER'S PART TO FURNISH THE REQUESTED TECHNICAL DATA IN THE TIME LIMIT GIVEN MAY BE CAUSE FOR REJECTION OF THE BID.

##### **4.0 WARRANTY:**

- 4.1 A minimum twelve (12) month warranty on equipment shall be provided. The warranty period shall commence the date the City officially accepts the completed equipment(s). When extended warranties are available as standard, they shall be included as a part of the bid for the benefit of the City. Any and all documents necessary to effect warranty shall be properly applied for and submitted by the Bidder.
- 4.2 Additional warranties required are listed in the Technical Specifications for each item.

SECTION B, PART I GENERAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

**4.0 WARRANTY (CONTINUED):**

- 4.3 With respect to any goods, materials, equipment, supplies and parts furnished by it, the Contractor/Supplier warrants:
- 4.3.1 That all equipment is new and free of defects in title, design, material and workmanship.
  - 4.3.2 That each equipment meets or exceeds the manufacturer's specifications and requirements for the equipment structure, or other improvement in which the equipment is installed and conforms in all respects to the terms of the City Purchase Order and Specifications.
  - 4.3.3 That replacement equipment is new, in accordance with original equipment
  - 4.3.4 Manufacturer's specifications are of a quality of at least as good as the quality of the equipment that it replaces (when the replaced equipment was new).
  - 4.3.5 That no equipment or its use infringes any patent, copyright or proprietary right.
- 4.4 Any warranty work shall be completed without cost to the City. The Contractor/Supplier shall be responsible for all shipping and/or freight expense from the City's designated location to the Contractor/Supplier's facility for all warranty repair and/or maintenance and return to the City's designated location.

**5.0 DELIVERY/INSPECTION:**

- 5.1 The equipment(s) specified above, with delivery tickets and/or other required documents shall be delivered FOB Destination, to the location(s) shown on the purchase order(s) **within four (4) weeks** of receipt of the City of Houston Purchase Order.
- 5.2 The Contractor/Supplier shall notify the City Contact listed in the "Ship To" section of the purchase order not less than three (3) days prior to expected delivery/arrival to permit inspection scheduling. The City's contact person shall advise the Contractor/Supplier as to the date, time and location of authorized delivery/location. An authorized representative of the Contractor/Supplier shall supervise delivery to the City. The City will not assume any liability for equipment delivered to an unauthorized location.
- 5.3 Documentation at time of Delivery:
- 5.3.1 The Contractor/Supplier shall have provided all necessary documentation required under this solicitation no later than on the day of delivery.

**6.0 SHIPPING TERMS:**

- 6.1 Prices shall be prepaid F.O.B. Destination to the delivery locations, Houston, TX, as indicated on individual City of Houston purchase orders. The Contractor/Supplier shall retain title and control of all goods until they are delivered and the contract of coverage has been completed. All risk of transportation and all related charges shall be the responsibility of the Contractor/Supplier. All claims for visible or concealed damage shall be filed by the Contractor/Supplier. The City will notify the Contractor/Supplier promptly of any damaged goods and shall assist the Contractor/Supplier in arranging for inspection.

SECTION B, PART I GENERAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

**7.0 RESOLUTION OF LATE DELIVERY FOR EQUIPMENT:**

- 7.1 Time is of the essence in this Contract and accordingly all time limits shall be strictly construed and rigidly enforced. The equipment shall be furnished and fully delivered within the delivery time specified in the Bid Proposal and Purchase Order to be furnished to the Contractor/Supplier by the City. In the event that the equipment or any portions thereof shall remain undelivered after expiration of the specified time, the City retains the right to purchase such equipment from another Contract/Supplier and the Contractor/Supplier agrees and authorizes the City to deduct all such costs from the amounts due and owing to the Contractor/Supplier under the Purchase Order. The City may avail itself of other remedies that may be available to it in law or equity as to any other event of default
  
- 7.2 The Contractor/Supplier will not be liable for delays in performing its obligations to the extent such delays are caused by unforeseeable conditions that are beyond the Contractor/Supplier's reasonable control and directly interfere with performance, and are without the Contractor/Supplier's fault or negligence (force majeure). However, the Contractor/Supplier shall provide written notice to the City of the cause and extent of an **excusable delay** requesting a time extension equal to the estimated duration thereof. Upon cessation of the event causing the delay, the Contractor/Supplier shall provide written notice to the City of the actual delay incurred. Determination of force majeure shall rest solely with the City Purchasing Agent and the receiving department.

**8.0 CONFLICT IN TERMS:**

- 8.1 Should there be any conflict between the General Specifications and the Technical Specifications, the Technical Specifications shall prevail.

## SECTION B

### PART II

#### TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS

#### 1.0 GENERAL

The scope requires the Contractor/Supplier to provide all labor, equipment, materials, supervision and transportation necessary to furnish and deliver pipe, fittings, casings, and appurtenances for the aviation fueling system at George Bush Intercontinental Airport (IAH).

#### 2.0 SPECIFICATIONS

##### 2.1 Measurement and Payment

2.1.1 The following pipe and pipe fittings shall be priced and provided as one (1) lot in accordance with the specifications for fuel system pipe and fittings described herein. Pipe and pipe fittings shall be cleaned, prepared, and coated in accordance with the specifications for fuel system coating described herein.

<u>Description</u>	<u>Quantity</u>
16" dia. Jet Fuel Piping (dual random 40-ft length)	1000 LF
16" x 6" Reducer Fitting	2 Each
16" x 10" Reducer Fitting	4 Each
16" Tee	4 Each
16" 45 degree Elbow	8 Each
10" dia. Jet Fuel Piping	20 LF
10" 90 degree Elbow	8 Each
6" dia. Jet Fuel Piping	20 LF
6" Insert Weldolet	4 Each
6" Weld Cap	2 Each
2" dia. Jet Fuel Piping	100 LF
2" Socket Welded 90 degree Elbow	12 Each
2" Sockolet	10 Each
2" Socket Welded Coupling	10 Each

2.1.2 The utility casings shall be priced and provided as one (1) lot; and coated and insulated in accordance with specification for utility casings described herein.

<u>Description</u>	<u>Quantity</u>
20" dia. Casing Pipe	120 LF
Casing End Seals	8 Each
Casing Insulators	20 Each

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

**2.2.0 FUEL SYSTEM GENERAL PROVISIONS**

2.2.1 SUMMARY:

Work in this section includes furnishing all materials necessary for the construction of the new Jet Fuel hydrant system and relocation of the Jet A fuel mains. The work shall include all pipe, fittings, valves and appurtenances. The General Provisions described herein apply to the work.

2.2.2 REFERENCES:

Refer to each individual section as specified herein for a list of applicable references from each of the following organizations:

- i) American Petroleum Institute (API):
- ii) National Fire Protection Association (NFPA):
- iii) Underwriters Laboratories (UL):
- iv) American Society of Mechanical Engineers (ASME):
- v) American Society for Testing and Materials (ASTM):
- vi) Factory Mutual Engineering Division (FM):
- vii) Industrial Risk Insurance (IRI):
- viii) Military Specifications (Mil):
- ix) Petroleum Equipment Industry (PEI):

2.2.3 DEFINITIONS:

“Piping” includes in addition to pipe, all fittings, valves, sleeves, hangers, and other supports and accessories related to such piping.

2.2.4 COMPLIANCE Certifications and Statements:

2.2.4.1 Certifications and/or statements of compliance are required for all material specified herein.

2.2.4.2 The Contractor’s/Supplier’s submission of a certification or statement of compliance constitutes that he has both verified and coordinated all dimensional data, quantities, catalog data, and compliance with the specification or he assumes full responsibility for doing so.

2.2.4.3 Compliance certifications/statements shall include all components and units of fabrication for the hydrant fueling system specified in the following sections:

- i) Fuel Piping and Fittings 2.3.0
- ii) Utility Casings 2.4.0
- iii) Fuel System Coatings 2.5.0

2.2.4.4 Compliance Data Formats are as follows:

- i) Product Information: Submit manufacturer’s data sheets identifying equipment size, descriptions, materials, ratings, etc.

**SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)**

- ii) Drawings: Submit drawings which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.
- iii) Instructions: Preprinted material describing installation requirements of a product, system or material, including special notices and material safety data sheet, if any, concerning impedance, hazards and safety precautions.
- iv) Statements: A document required of the Contractor/Supplier, or through the Contractor/Supplier, from a supplier, manufacturer, or other lower tier Contractor. The purpose of which is to confirm the quality of the work, acceptability of methods or personnel, qualifications or other verifications of quality and compliance.
- v) Reports: Reports of inspections or tests, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified and test results shall be recorded.
- vi) Certificates: Statement signed by an official authorized to certify on behalf of the manufacturer of a product or material, attesting that the product or material meets specified requirements. The statement must be dated after the award of this contract; must state the Contractor's/Supplier's name and address; must name the project and location; and, must list the specific requirements that are being certified.
- vii) Records: Documentation to record compliance with technical or administrative requirements.

**2.2.5 QUALITY ASSURANCE:**

The Contractor/Supplier shall provide certifications of compliance on the following:

- 2.2.5.1 Materials and equipment shall be new, unused, and shall bear manufacture's name, model number, and other identification marking.
- 2.2.5.2 Materials and equipment shall be standard product of manufacturer regularly engaged in the production of required type of material or equipment for at least 5 years and shall be manufacturer's latest design having published properties.
- 2.2.5.3 If more than one unit of the same type of equipment is required, (i.e., control valves, manual valves, etc.) they shall be products of a single manufacturer.
- 2.2.5.4 All equipment, materials, components, coatings, and accessories provided shall be suitable for use with the specific product. The following table is provided to indicate the basic design conditions of the components:

<b><u>SERVICE</u></b>	<b><u>PRESSURE</u></b>	<b><u>TEMPERATURE</u></b>	<b><u>SPECIFIC GRAVITY</u></b>
Jet Fuel	275 psig	-20 to 110°F	0.81±0.05

- 2.2.5.5 The City shall check equipment delivered to job site by the Contractor/Supplier against certificates and statements of compliance or other required documentation provided by

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

the Contractor/Supplier. The City shall report all discrepancies or lack of data to the Contractor/Supplier for adjustments within 30 days after equipment is received. If such notification is not made within 30 days, it shall be assumed no discrepancies, shortages, or lack of data has been found.

2.2.5.6 The bid shall be based only on the specification herein without deviation.

**2.2.6 CODE REQUIREMENTS AND PERMITS:**

2.2.6.1 Any deviations from the contract documents or specifications required for conformance with the applicable codes or laws shall be made without change in contract price, but not until such deviations have been brought to the attention of, and approved in writing, by the Engineer.

2.2.6.2 The applicable codes and laws shall govern the minimum requirements only. Where the specifications call for materials or other similar requirements in excess of the code requirements, specifications shall be followed.

2.2.6.3 The Contractor/Supplier shall pay all fees and taxes and give all notices bearing on the conduct of the work specified. Certificates of compliance, approval, or acceptance from all authorities having jurisdiction over the work shall be obtained and delivered to the City.

2.2.6.4 All work herein specified shall conform with all applicable standards of the National Fire Protection Association, American Petroleum Institute, American National Standards Institute and American Society for Testing and Materials.

2.2.6.5 All work herein specified, or tasks required in the performance of the work, but not specifically indicated in the specifications, shall conform to the applicable requirements of the Occupational Safety and Health Administration (OSHA) as provided in 29 CFR. Applicable requirements include, but are not limited to, Part 1910 – Occupational Safety and Health Standards and Part 1926 – Safety and Health Regulations for Construction.

**2.2.7 TESTING LABORATORY SERVICES:**

2.2.7.1 The Contractor/Supplier shall secure the services of a qualified independent testing laboratory to perform all testing applying to coating integrity.

2.2.7.2 The cost for all laboratory services will be the responsibility of the Contractor/Supplier.

**2.3.0 FUEL PIPING AND FITTINGS**

**2.3.1 SUMMARY:**

This Section of the specifications describes and provides for the furnishing pipe and piping components for the aviation fueling system.

**2.3.2 RELATED SECTIONS:**

- i) Fuel Systems General Provisions 2.2.0
- ii) Utility Casings 2.4.0
- iii) Fuel System Coatings 2.5.0

**SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)**

**2.3.3 REFERENCES:**

**2.3.3.1 American Society for Testing and Materials (ASTM):**

- i) A53 - Pipe, Steel, Black, and Hot Dipped, Zinc Coated Welded and Seamless.
- ii) A105 - Forging, Carbon Steel, for Piping Components.
- iii) A193 – Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
- iv) A194 - Carbon and Alloy Steel Nuts for Bolts for High Pressure and High Temperature Service.
- v) A234 - Piping Fitting of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
- vi) D1655.- Standard Specification for Aviation Turbine Fuels

**2.3.3.2 American Society of Mechanical Engineers (ASME)**

- i) B1.20.1 – Pipe Threads, General Purpose
- ii) B16.5 - Pipe Flanges and Flanged Fittings.
- iii) B16.9 – Factory Made Wrought Steel Butt Welding Fittings.
- iv) B16.9 - Factory Made Wrought Steel Butt Welding Fittings
- v) B16.11 - Forged Steel Fittings, Socket Welding and Threaded.
- vi) B16.25 - Buttwelding Ends.
- vii) B31.1 - Power Piping.
- viii) B31.3 - Chemical Plant and Petroleum Refinery Piping.

**2.3.3.3 American Petroleum Institute (API):**

- i) RP 1110 – Pressure Testing of Liquid Petroleum Pipelines.
- ii) Spec 5L - Line Pipe.
- iii) Std. 601.21 - Metallic Gaskets for Piping, Double-Jacketed Corrugated and Spiral Wound.
- iv) Federal Specifications (FS) QQ-P-416 - Plating, Cadmium.
- v) National Electrical Manufacturer’s Association (NEMA).

**2.3.4 LUMP SUM PRICE**

2.3.4.1 Lump Sum Price: Equipment delivered under this Section will be paid as one (1) lot. The equipment and quantities shall be as follows:

<b>Description</b>	<b>Quantity</b>
16” Jet Fuel Piping (dual random 40-ft length)	1000 LF
10” Jet Fuel Piping	20 LF
6” Jet Fuel Piping	20 LF
2” Jet Fuel Piping	100 LF
16” x 6” Reducer Fitting	2 Each
16” x 10” Reducer Fitting	4 Each
16” Tee	4 Each
16” 45 Degree Elbow	8 Each
10” 90 Degree Elbow	8 Each
2” Socket Welded 90 Degree Elbow	12 Each
2” Sockolet	10 Each
2” Socket welded coupling	10 Each
6” Insert Weldolet	4 Each
6” Weld Cap	2 Each

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

2.3.5 DEFINITIONS:

- 2.3.5.1 Unless otherwise specified, the working pressure ratings as used in these specifications for valves, fittings, unions, and other piping specialties refer to pressure ratings in pounds per square inch above atmosphere (PSIG) in accordance with applicable ASME Standards.
- 2.3.5.2 The use of the word "piping" shall be interpreted to include all pipe, valves, fittings, flanges, supports, or accessories for any particular portion of the work, or system to which the word "piping" is applied.

2.3.6 CERTIFICATION AND STATEMENTS OF COMPLIANCE:

- 2.3.6.1 General: Compliance Submittals shall be in accordance with 2.2.4
- 2.3.6.2 Product Information: Submit manufacturer's data sheets identifying equipment size, materials, pressure ratings, etc. for piping and fittings
- 2.3.6.3 Provide Certificates of Compliance for pipe and fittings.

2.3.7 QUALITY ASSURANCE:

- 2.3.7.1 Certify all pipe and piping materials are provided by a manufacturer and fabricator meeting the requirements in 2.2.5.2.
- 2.3.7.2 No foreign materials or component shall be utilized. The use of the words "domestic materials" or "no foreign materials" shall mean all materials shall be of U.S. origin. The Contractor/Supplier shall certify this condition in the compliance submittals. If at any time, the City or Engineer determines that any flanges, fittings, bolts or nuts are not of U.S. origin, the City shall be entitled to replace the components without need for individual testing for conformance to technical specifications. Contractor/Supplier shall be responsible for all costs associated with such replacement.
- 2.3.7.3 Provide certification of compliance that all materials and equipment provided under these specifications shall be new, unused products of manufacturers regularly engaged in production of such equipment for a minimum of 5 years and all products conform to the applicable code or standard for its manufacturing, fabricating and installation

2.3.8 PIPING MATERIALS:

- 2.3.8.1 The piping specified herein is below ground piping.
- 2.3.8.2 All direct buried piping connections shall be welded. Welded joints shall conform to the standards set forth in the ASME B31.3 Code for Petroleum Refinery Piping.
- 2.3.8.3 Pipe fittings shall be of standard manufacture of materials, weight, and quality corresponding to the pipe with which they are used.
- 2.3.8.4 Fittings such as elbows, tees, reducers and caps shall be used for all changes in piping direction, intersections, size changes and end closures unless otherwise stipulated or specified herein.

**SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)**

2.3.8.5 The manufacturer or supplier of the piping materials shall provide a certificate of the inspection, stating origin of manufacture and that all material has been manufactured, sampled, tested and inspected in accordance with the specified ASTM, API and other identified specification and has found to meet those requirements.

2.3.8.6 All pipe shall be stamped with specification and grade. Shop coated pipe shall have specification and grade stenciled on the coating.

2.3.8.7 Galvanized piping is not allowed in the aircraft fueling system.

**2.3.9 PIPING SPECIFICATIONS:**

2.3.9.1 The following table is provided to indicate the basic design conditions of the components within this section of the specification:

<b><u>SERVICE</u></b>	<b><u>SYMBOL</u></b>	<b><u>PRESSURE</u></b>	<b><u>TEMPERATURE</u></b>	<b><u>SPECIFIC GRAVITY</u></b>
Jet Fuel	JF	275 psig	-20 to 110°F	0.81±0.05
Drain	D	15 psig	-20 to 110°F	0.81±0.05
Vent	V	0 psig	-20 to 110°F	0.81±0.05

2.3.9.2 The following table is provided to indicate the various materials of construction for the design service required by this specification

<b><u>ITEM</u></b>	<b><u>2" AND SMALLER</u></b>	<b><u>2 1/2" AND LARGER</u></b>
<u>Carrier Pipe:</u>	ASTM A53 Grade B Schedule 80 Seamless	ASTM A53 Grade B or API 5L Grade B, ERW or Seamless 2-1/2 to 10" - Sch. 40 12" and over - 0.375-inch
Note: Where applicable, use double random lengths to minimize the number of welds required		

<b><u>ITEM</u></b>	<b><u>2" AND SMALLER</u></b>	<b><u>2 1/2" AND LARGER</u></b>
<u>Joints:</u>	Socket Weld	Butt – Weld End preparation to ASME B16.25
Note: Atmospheric pressure small-bore piping may be threaded. Socket welded and threaded connections are only allowed above ground or within pits/vaults.		

**SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)**

<b>ITEM</b>	<b>2" AND SMALLER</b>	<b>2 1/2" AND LARGER</b>
<u>Flanges:</u>	150lb ASME B16.5 Carbon Steel ASTM A105 Socket Weld Raised-Face	150lb. ASME B16.5 Carbon Steel ASTM A105 Weld Neck Raised-Face
Note: Flange face and ASME rating to be compatible with corresponding component.		

<b>ITEM</b>	<b>2" AND SMALLER</b>	<b>2 1/2" AND LARGER</b>
<u>Fittings:</u>	Socket Weld, ASTM A105, Grade 2 3,000 lb.	Buttweld, ASME B16.9 Carbon Steel per ASTM A234 Grade B, wall thickness to match pipe
Note: Bushings shall not be used except as noted.		

<b>ITEM</b>	<b>2" AND SMALLER</b>	<b>2 1/2" AND LARGER</b>
<u>Bolts:</u>	Carbon Steel, Cadmium Plated Machine Bolts ASTM A193, Grade B7	Carbon Steel, Cadmium Plated Machine Bolts ASTM A193, Grade B7
Note: Studs may be used for corresponding equipment.		

<b>ITEM</b>	<b>2" AND SMALLER</b>	<b>2 1/2" AND LARGER</b>
<u>Nuts:</u>	Nuts to be heavy hexagon ASTM A194, Grade 2H Cadmium Plated	Nuts to be heavy hexagon ASTM A194, Grade 2H Cadmium Plated.
Note: Nuts shall be properly torqued to manufacturer's recommendations.		

<b>ITEM</b>	<b>2" AND SMALLER</b>	<b>2 1/2" AND LARGER</b>
<u>Gaskets:</u>	Flexitallic Type CG 304 Stainless Steel Windings with Non-Asbestos Filler Conform to A.P.I. 601.21	Flexitallic Type CG 304 Stainless Steel Windings with Non-Asbestos Filler Conform to A.P.I. 601.21
Note: Gaskets to be 1/8" in thickness - ring style for R.F. flanges.		

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

2.3.9.3 The interior and exterior coating for all pipe and piping materials shall be as specified 2.5.0 Fuel System Coatings.

2.3.9.4 Welded elbows shall be long radius unless otherwise shown.

2.3.9.5 Changes in direction of pipe of other than 45 degrees or 90 degrees shall be made as follows:

- i) With long radius welds cut to proper angle and shop beveled.
- ii) Or, at the option of the Contractor/Supplier, with long radius pipe bends. Pipe roundness shall be maintained to factory tolerance for straight pipe lengths. Submit shop drawings of all bends and bending procedures for approval.
- iii) Bends of 10 degrees or less shall be miter joints.

2.3.9.6 Fittings for Threaded Fuel Pipe:

- i) 3,000 pound forged steel conforming to ASME B16.11.
- ii) Threads of threaded jointed piping shall be full, clean, sharp, and true.
- iii) Bushings shall not be used except as noted on the drawing

2.3.10 PIPE CLEANING AND HANDLING REQUIREMENTS:

2.3.10.1 The importance of keeping the interior of all piping systems clean during construction is critical. The Contractor/Supplier is required to keep the interior of the carrier piping and casing pipe, clean from all visible dirt or foreign matter at all times and under all conditions during shipping. If for any reason the inside of the piping contains dirt or foreign matter, the Contractor/Supplier shall correct this condition to the Engineer's satisfaction with all necessary material, labor and equipment for cleaning being furnished at the Contractor's/Supplier's expense. The following measures shall be taken to assure cleanliness of the system:

- i) The pipe and fittings shall be delivered to the job site sealed. The seals are not to be removed until the pipe is installed.
- ii) All fittings and valves shall be kept in a covered dry storage area until installation.
- iii) Pipe shall not be installed or stored in areas or ditches containing water or mud.

2.3.10.2 Pipe Handling

- i) The shipment, delivery, and installation of all pipe and accessories shall be handled in such manner as to ensure a sound undamaged condition. Particular care shall be taken not to damage pipe coating when storing pipe. No other pipe or materials of any kind shall be placed inside a pipe or fitting after the coating has been applied.
- ii) Perform the hauling of pipe and other materials in such a manner as to prevent damage to pipe and material. If damage is sustained, Contractor/Supplier shall be responsible for repair or replacement cost.

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

**2.4.0 UTILITY CASINGS**

2.4.1 SUMMARY

2.4.1.1 This Section includes purchase of pipe insulators, end seals and casing pipe for installation by open cut methods by others.

2.4.1.2 Related Work specified elsewhere

- i) Fuel System General Provision 2.2.0
- ii) Fuel Piping and Fittings 2.3.0

2.4.2 REFERENCES

- A. American Petroleum Institute (API)
  - i) API RP1102 – Recommended Practice for Liquid Petroleum Pipelines Crossing Railroads and Highways.
  - ii) API 1104 – Standard for Welding Pipelines and Related Facilities.
  - iii) API 5L – Specification – Line Pipe.
- B. Steel Structures Painting Council (SSPC)
  - i) SP-3 – Power Tool Cleaning.

2.4.3 Lump Sum Price

2.4.3.1 Lump Sum Prices: Equipment delivered under this Section will be paid as one (1) lot. The equipment and quantities shall be as follows:

<b>Description</b>	<b>Quantity</b>
20" Casing Pipe	120 LF
Casing End Seals	8 Each
Casing Insulators	20 Each

2.4.4 SUBMITTALS

2.4.6.1 General: Compliance Submittals shall be in accordance with 2.2.4.

2.4.6.2 Submit the following for acceptance prior to shipment:

- i) Pipe insulators.
- ii) End seals.
- iii) Casing pipe material and certification.

2.4.5 MATERIALS

2.4.5.1 New, smooth wall, welded steel pipe conforming to API-5L, Grade B (35ksi minimum yield strength steel) or Grade X42 (42 ksi minimum yield strength steel). New pipe manufactured using salvaged steel is unacceptable.

**SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)**

2.4.5.2 Minimum Casing Thicknesses:

Casing Diameter		Minimum Wall Thickness *			
		For Roadways		For Aircraft	
Mm	in.	mm	in.	mm	in.
Under 350	Under	4.78	0.188	6.35	0.250
350 and	14 and	4.78	0.188	7.14	0.281
450	18	6.35	0.250	7.92	0.312
500	20	6.35	0.250	8.37	0.344
550	22	6.35	0.250	9.53	0.375
600	24	7.14	0.281	10.3	0.406
650	26	7.14	0.281	11.1	0.438
700 and	28 and	7.92	0.312	11.9	0.469
800	32	7.92	0.312	12.7	0.500
350	34	7.92	.0312	13.4	0.531
900	36	8.37	0.344	13.4	0.531
950, 1000, and 1050	38, 40 and 42	8.74	0.344	14.3	0.563

\* Wall thickness shown is the calculated minimum wall thickness required for the indicated pipe size and service condition and may not be a standard wall thickness manufactured or normally available. Provide casing wall greater or equal to value shown in table.

Minimum casing inside diameter shall exceed outside diameter of carrier pipe joints or couplings by 4 inches (100 mm).

2.4.5.3 Coatings and Linings:

- i) Clean to SSPC-SP3 and coat exterior of all casing pipe with iron oxide primer applied at 5 mils minimum thickness.
- ii) Hold coatings back from end joints to be welded 2 inches (50 mm) each side of joint.

2.4.5.4 Joints:

- i) All casing pipe field joints and closure plates shall be welded to in accordance with API 1104.
- ii) Clean to SSPC-SP3 and apply minimum of 5 mils of iron oxide field coating to all exterior joints after field welding.
- iii) Clean to SSPC-SP3 and apply minimum of 5 mils of iron oxide field coating to all interior joints on casings 24-inch (600-mm) diameter and larger after field welding.

2.4.5.5 Pipe Insulators:

- i) Segmented high density polyethylene insulators with runners shall be Thinsulator Model M-2 as manufactured by T.D. Williamson Company, Model PS as manufactured by PSI (Pipeline, Seal and Insulator Inc.) or approved equal for use with pipe and casing sizes specified or indicated.
- ii) Leg lengths shall be sized to keep carrier pipe positioned within limits of end seal adjustment. When segmented mechanical end seals are indicated on plans pipe (with or without rubber boot seals) insulators must center the carrier pipe in the casing.

**SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)**

- iii) Installation of casing insulators is required at all casing locations where fuel piping is installed. The casing insulators shall be 12-inch long steel bands that are coated with a thermoplastic 10- 15 mil thick for corrosion resistance. The casing interior liner is composed of EPDM rubber .090" to .120" thick with a dielectric strength of 60,000 VPM. The casing runners shall be glass filled polymer with the ends of the runners beveled to facilitate installation.
- iv) The casing insulators shall be spaced at the minimum intervals as recommended by the manufacturer for the particular pipe size and service conditions. Provide Model CSC12 by CCI Pipeline Systems, Model C12G-2 by PSI or approved equivalent.

**2.4.5.6 Boot Seals:**

- i) One piece, pull-on type synthetic rubber end seals as manufactured by T.D. Williamson Company, PSI (Pipeline, Seal and Insulator Inc.), F.H. Maloney Company or approved substitute.
- ii) Fasten to casing pipe and carrier pipe with furnished stainless steel bands, for use with seal.
- iii) Certify segmented mechanical rubber seals are manufactured of jet-fuel resistant rubber with corrosion resistant compression plates and stainless steel bolts.

**2.5.0 FUEL SYSTEM COATINGS**

**2.5.1 DESCRIPTION:**

- 2.5.1.1 The work to be performed in this specification includes the cleaning, preparation, painting, and coating of fuel system piping materials, equipment and components.
- 2.5.1.2 The preparation and application for the system shall include only shop operations.
- 2.5.1.3 The applicable methods and system identification to be used shall be as follows. Reference the data sheets included in this section for individual systems:

<b>Item</b>	<b>Surface</b>	<b>Application</b>	<b>System</b>
All Piping, Fittings, Equipment and Tanks	Interior	Shop	1
Above Ground Piping, Fittings and Equipment	Exterior	Shop	2
Below Ground Piping	Exterior	Shop	3

**2.5.2 REFERENCES**

- 2.5.2.1 American Petroleum Institute (API):
  - i) STD. 1542 - Airport Equipment Marking for Fuel Identification
- 2.5.2.2 American Society of Mechanical Engineers (ASME):
  - i) A13.1 – Scheme for the Identification of Piping System
  - ii) Z53.1 - Safety Color Code for Marking Physical hazards

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

2.5.2.3 Military Specifications

- i) MIL-C-4556 - Epoxy for Interior of Steel Fuel Tanks

2.5.2.4 National Fire Protection Association

- i) NFPA 407 - Aircraft Fuel Servicing
- ii) NFPA 704 - Standard System for the Identification of the Fire Hazards of Materials for Emergency Response

2.5.2.5 Steel Structures Painting Council

- i) SP-1 - Solvent Cleaning
- ii) SP-3 - Power Tool Cleaning
- iii) SP-5 - White Metal Blast Cleaning
- iv) SP-6 - Commercial Blast Cleaning
- v) SP-10 - Near White Blast Cleaning

2.5.3 SUBMITTALS:

Certifications on compliance with the specification and data/information shall be provided on the following:

- i) Surface preparation requirements.
- ii) Product manufacturer, name of coating, and number designation of coating.
- iii) Method of application and the minimum and maximum dry film thickness of coating (per coat) to be applied.
- iv) Certification from the manufacturer that the unthinned maximum VOC content of the field applied coating products is below the maximum allowable for the project location.
- v) Technical and material safety data sheets.
- vi) Third party testing agency and their graphical report indicating test locations and results.

2.5.4 QUALITY ASSURANCE:

2.5.4.1 The Contractor/Supplier shall certify the coating applicator for shop operations shall have a minimum of 5 years of experience in the systems specified and the coating applicator has previous experience applying all of the coating systems in this specification for which he is responsible.

2.5.4.2 The coating applicator shall provide a certificate of quality control procedures utilized during application of internal and external coatings. The certification shall include surface preparation, film thickness per coat, curing procedures, and holiday testing.

2.5.4.3 The coating manufacturer shall certify that the internal pipe coating used in all fuel contact locations is compatible for a submersible use in Jet-A Fuel.

2.5.4.4 All coatings shall be applied in strict accordance with the manufacturer's recommendations including environmental conditions, surface preparation, coating method and coverage, etc.

NOTE: Pipe Supplier shall employ the services of a third party testing agency to perform all dry film thickness testing on all field applied coatings. Submit to the Engineer the proposed testing agency for approval.

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

2.5.6 INTERNAL COATING of PIPING and FITTINGS:

- 2.5.6.1 Reference System 1 of the attached tables.
- 2.5.6.2 This section shall apply to shop applied epoxy internal coatings for piping, fittings, and equipment.
- 2.5.6.3 All fuel contact surfaces shall receive the epoxy coating.
- 2.5.6.4 The surfaces to be painted shall be sandblasted or shot blasted immediately before applying the prime coat. Remove all surface irregularities such as burrs, weld splatter, etc., before proceeding with blasting. Blasting shall be in strict accordance with Steel Structures Painting Council Surface Preparation Specification. Care shall be taken to prevent grease, oil or other organic matter from contacting the blasted surface prior to application of the prime coat. Blasting shall be coordinated with primer application, which shall be applied as soon as possible after blasting. If the blasted surface remains uncoated overnight, it shall be reblasted.
- 2.5.6.5 Coatings shall be a two (2) coat system of epoxy paint qualified to meet government Specification MIL-C-4556-E and be applied in accordance with the manufacturer's instruction and procedure and shall be approved by the manufacturer's representative. Paint shall be applied to the full length of pipe and fittings. The total dry film thickness of the paint shall be within the range recommended by the manufacturer. The ends of the pipe and fittings shall have the paint wiped back 1-1/2" with cloth or other approved absorbent material. Masking the ends will not be acceptable.
- 2.5.6.6 Dry film thickness shall be spot checked at random on the coated surfaces after each coat has been applied and has cured. At a minimum, the thickness shall be checked every 20 linear feet of piping. The tank interior shall be tested once every 100 square feet. If film thickness is not found to be uniform and to specification, the Contractor/Supplier shall be required to apply additional coats until the specified film thickness has been obtained. If the dry film thickness exceeds the maximum allowable film thickness per the manufacturer, the Contractor/Supplier shall remove and reapply the coating in those areas. Dry film thickness is to be checked by the Contractor/Supplier at his expense by a third party testing agency.
- 2.5.6.7 After the paint has dried to its maximum hardness, the ends of all pipes are to be closed with plastic cap seals manufactured for this purpose. The aboveground tanks shall have the manways installed and all nozzles and flanges covered with plastic covers.
- 2.5.6.8 If the coatings show ridges, waves, runs, orange peeling, or holidays indicating uneven coverage or improper application, the Contractor/Supplier shall remove and re-apply the coating at no cost to the City.

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

2.5.7 EXTERNAL COATING OF ABOVE GROUND PIPING, FITTINGS, and EQUIPMENT:

2.5.7.1 Reference System 2 of the attached tables.

2.5.7.2 All pipe, fittings and equipment which are installed above ground shall be given a protective covering applied with equipment especially designed for this purpose. Before the coating is applied, the surface of the pipe, fittings and equipment shall be thoroughly cleaned of all rust, scale, oil, grease and other matter that will interfere with the proper adhesion of the primer coat. Those pieces of equipment, valves, pumps, motors, actuators, etc that have been shop primed or delivered to the site with a finish coat shall be properly prepared for application of the coating. Contractor/Supplier shall coordinate with the equipment suppliers and the coating manufacturer on the proper preparation and application of the coating.

2.5.7.3 The surfaces to be painted shall be sandblasted or shot blasted immediately before applying the prime coat. Remove all surface irregularities such as burrs, weld splatter, etc., before proceeding with blasting. Blasting shall be in strict accordance with Steel Structures Painting Council Surface Preparation Specification. Care shall be taken to prevent grease, oil or other organic matter from contacting the blasted surface prior to application of the prime coat. Blasting shall be coordinated with primer application, which shall be applied as soon as possible after blasting. If the blasted surface remains uncoated overnight, it shall be reblasted.

2.5.7.4 Prepare the surface as specified, defined and remove any loose rust, scale, dust or dirt. Oil and grease are to be removed with suitable solvent. All field-applied coatings shall conform to the contour of the pipe or fitting leaving no moisture traps between or under the coating.

2.5.7.5 Coatings shall be a two (2) coat system with an epoxy first coat and a polyurethane top coat applied in accordance with the manufacturer's instruction and procedure and shall be approved by the manufacturer's representative. The total dry film thickness of the paint shall be within the range recommended by the manufacturer.

2.5.7.6 Dry film thickness shall be spot checked at random, on the coated surfaces after each coat has been applied and has cured. At a minimum, the thickness shall be checked every 20 linear feet of piping and at each fitting, flange, etc. The tank exterior shall be tested once every 100 square feet. If film thickness is not found to be uniform and to specification, the Contractor/Supplier shall be required to apply additional coats at no cost to the City until the specified film thickness has been obtained. If the dry film thickness exceeds the maximum allowable film thickness per the manufacturer, the Contractor/Supplier shall remove and reapply the coating in those areas at no cost to the City. Dry film thickness is to be checked by the Contractor/Supplier at his expense by a third party testing agency.

2.5.8 EXTERNAL COATING OF BELOW GROUND PIPING:

2.5.8.1 Reference System 3 of the attached tables.

2.5.8.2 External coating of below ground pipe shall be factory or mill applied in the pipe manufacturer's shop or in the mill of the custom external coater.

2.5.8.3 The pipe coating shall be a Fusion Bonded Epoxy (FBE) coating.

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

2.5.8.4 Holiday test all coatings and repair. All holidays shall be patched prior to shipment of pipe to the jobsite.

2.5.8.5 Application, testing and inspection shall be in accordance with manufacturer's recommendations.

2.5.9 PROTECTION:

2.5.9.1 Cover and protect all surfaces that are not to be painted which are in close proximity to the painting operation. Remove all protective materials when appropriate and before materials such as masking tape becomes difficult to remove.

2.5.9.2 Provide signs to indicate fresh paint areas.

2.5.10 CLEANING:

2.5.10.1 Touch up and restore damaged finishes to original condition as required. Remove all masking tape residue and glues that may be left on surfaces.

2.5.10.2 Remove spilled, dripped or splattered paint from all surfaces.

2.5.11 COATING REPAIRS:

2.5.11.1 Repair all damages to pipe coating systems before the piping is holiday tested. This includes all cuts, breaks, voids, bruised or scarred spots, or other damage caused prior to delivery, or resulting from handling or installation of the pipe, or from any cause whatsoever.

2.5.11.2 Included also are damaged coatings where new connections are made to existing coated pipes or where existing coated pipes are uncovered or exposed for any reason.

2.5.11.3 Repair all holidays detected during inspection of coatings. Use the same coatings for repair as was used for the base coating with the exception of belowground piping which shall use System 4.

2.5.12 INSPECTION

2.5.12.1 Use wet film gauges to check each application about every 15 minutes in order to correct low or heavy film build immediately.

2.5.12.2 Use dry film gauge to check each coat when dry, and the total system when completed.

2.5.12.3 Use holiday or pinhole detector to detect and correct voids when indicated on system sheet.

2.5.12.4 Provide daily reports of environmental conditions including ambient temperature, substrate temperature, relative humidity, and wind speed and direction.

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

<b>FUEL SYSTEM COATINGS SYSTEM – 1</b>				
<b>SERVICE: All Piping, Fittings, and Equipment – Interior</b>				
<p><b>Surface Preparation:</b> SSPC-SP 10 to a profile depth recommended by product manufacturer.</p> <p><b>First Coat:</b> High solids amine epoxy with minimum of 71% solids by volume. Apply at a rate to meet the manufacturer’s recommended dry film thickness. Do not exceed the maximum dry film thickness as published by the manufacturer. Wipe coating 1-1/2” from end of pipe.</p> <p><b>Second Coat:</b> Same as first coat except color shall be different than first coat to distinguish between coats. Second coat shall be white, light gray, or beige for light reflectance and to facilitate inspection. Wipe coating 1-1/2” from end of pipe</p> <p><b>Third Coat:</b> Not required.</p> <p><b>System Total:</b> System total shall meet the recommended dry film thickness.</p> <p><b>Volatile Organic Content:</b> Maximum 1.0 lbs/gal</p>				
<u>Manufacturer</u>	<u>First Coat</u>	<u>Touch Up</u>	<u>Second Coat</u>	<u>Third Coat</u>
Ameron	Amercoat 395FD	N/A	Amercoat 395FD	
Tnemec	Tneme-liner 61	N/A	Tneme-liner 61	
<p><b>Notes:</b></p> <p>1. Upon completion, check for voids with a suitable electric holiday detection operating at the proper voltage as recommended by the manufacturer. Repair all holidays.</p>				

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

<b>FUEL SYSTEM COATINGS SYSTEM – 2</b>				
<b>SERVICE: Above Ground Piping, Fittings, and Equipment – Exterior</b>				
<p><b>Surface Preparation:</b> SSPC-SP 6 to a profile depth recommended by product manufacturer.</p> <p><b>First Coat:</b> High build, high solids epoxy lenamels with minimum 70% solids by volume. Apply at 5.0 mils dry film thickness.</p> <p><b>Second Coat:</b> High build, high solids polyurethane enamels with minimum 70% solids by volume. Apply at 5.0 mils dry film thickness.</p> <p><b>Third Coat:</b> Not required.</p> <p><b>System Total:</b> System total shall meet the recommended dry film thickness.</p> <p><b>Volatile Organic Content:</b> Maximum lbs/gal: 2.7 epoxy, 2.3 urethane.</p>				
<u>Manufacturer</u>	<u>First Coat</u>	<u>Touch Up</u>	<u>Second Coat</u>	<u>Third Coat</u>
Ameron	Amercoat 385 (epoxy)	Same as first coat	Amercoat 450SA (polyurethane)	
Tnemec	66-Hi Build Epoxoline (epoxy)	Same as first coat	75 Endura-shield (polyurethane)	
<p><b>Notes:</b> Does not apply. There is no above ground piping.</p>				

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

<b>FUEL SYSTEM COATINGS SYSTEM – 3</b>				
<b><u>SERVICE</u>: Below Ground Piping- Exterior</b>				
<p><b>Surface Preparation:</b> SSPC-SP 6 to a profile depth recommended by product manufacturer.</p> <p><b>First Coat:</b> Shop applied, fusion bonded epoxy powder. Apply at 14 mils minimum dry film thickness. Wipe back the coating 2" from the end of the piping.</p> <p><b>Second Coat:</b> Not required.</p> <p><b>Third Coat:</b> Not required.</p> <p><b>System Total:</b> Minimum 14.0 mils dry film thickness.</p> <p><b>Touch Up:</b> Field applied, two component catalyzed epoxy as recommended by the manufacturer.</p>				
<b><u>Manufacturer</u></b>	<b><u>First Coat</u></b>	<b><u>Touch Up</u></b>	<b><u>Second Coat</u></b>	<b><u>Third Coat</u></b>
3M	Skotch-Kote 6233	Skotch-Kote 226P Hot Melt Patch Compound		
Lily Coatings	PipeClad 1500	PipeClad Patch Compound		
<b>Notes:</b>				

SECTION B, PART II TECHNICAL SPECIFICATIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

**3.0 WARRANTY**

3.1 Contractor/Supplier warrants to the City that Products furnished under the Contract are:

- 3.1.1 free of defects in title;
- 3.1.2 of good quality; and
- 3.1.3 new, unless otherwise required or permitted by the Contract.

If required by the City Engineer, Contractor/Supplier shall furnish satisfactory evidence as to kind, quality and title of Products, and that Products conform to requirements of the Contract.

3.2 Contractor/Supplier warrants that the Work is free of concentrations on polychlorinated biphenyl (PCB) and other substances defined as hazardous by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) or any other applicable law or regulation.

**4.0 DELIVERY REQUIREMENT**

Contractor/Supplier shall deliver the materials within **4 weeks** of receipt the City of Houston purchase order to the following address:

City of Houston  
Houston Airport System  
Supply Chain Management  
18600 Lee Road  
Houston, TX 77032

**5.0 LIQUIDATED DAMAGES**

The amount of liquidated damages payable by the Contractor/Supplier for each and every day beyond the contract delivery period is \$5,000 per day.

**6.0 BUY AMERICAN**

Contractor/Supplier shall comply with the requirements of Exhibit I – Bidder’s Certification of Compliance with Buy American Program (Aviation Safety and Capacity Expansion Act of 1990).

**SECTION C**  
**GENERAL TERMS AND CONDITIONS**  
**FOR**  
**FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS**

**1.0 COMPETITIVE BIDDING:**

1.1 It is the intent of the City of Houston to solicit the lowest and best responsible bid or price under competitive conditions. All materials and/or equipment shall be new unless stated otherwise. Prospective bidders are advised that the specifications within this bid invitation are not to be considered restricted to any referenced manufacturer.

**2.0 AWARD:**

2.1 The City reserves the right to consider and make awards of bids on articles of similar nature that will in all respects serve the purpose for which the purchase is being made. The City reserves the right to be the sole judge as to whether such articles will serve the purpose.

2.2 Unless otherwise specified, the City reserves the right to accept or reject in whole or in part any bid submitted or to waive any informalities that are in the best interests of the City.

**3.0 CONDITIONS PART OF BID:**

3.1 In the event of any conflict, the terms and provisions incorporated in the bid specifications shall control over the terms and provisions of the General Terms & Conditions for any or all purposes. Otherwise, all the terms and provisions appearing within the General Terms & Conditions shall be given full effect and shall be construed in harmony to the maximum extent by the parties hereto.

3.2 The failure of the City to insist, in any one or more instances, upon performance of any of the terms, covenants or conditions of this Contract, General Terms & Conditions or Specifications shall not be construed as a waiver or relinquishment of the future performance of such term, covenant or condition by the City, but the obligation of the Contractor/Supplier with respect to such future performance shall continue in full force and effect.

**4.0 SILENCE OF SPECIFICATIONS:**

4.1 The apparent silence of these specifications as to any detail or the apparent omission from them of a detailed description concerning any point shall be regarded as meaning that only the best commercial practice shall prevail and only materials and workmanship of first quality are acceptable. All interpretations of these specifications shall be made upon the basis of this statement.

**5.0 SPECIFIED EQUIPMENT OR EQUIVALENT:**

5.1 Wherever in the specifications any materials or processes are indicated or specified by patent of proprietary name and/or by name of manufacturer, such specifications shall be deemed to be used for the purpose of facilitating descriptions of the performance, materials and/or processes desired and shall be deemed to be followed by the words, "or equivalent", if not so stated in the specifications herein.

SECTION C, GENERAL TERMS & CONDITIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS  
(CONTINUED)

- 5.2 The burden of proof shall rest with the bidder, in the course of a technical evaluation, to prove that the proposed item(s) are equivalent to the performance, materials, processes, or articles specified. DETERMINATION AS TO WHETHER THE ITEM (S) BID IS (ARE) EQUIVALENT TO THOSE SPECIFIED SHALL REST SOLELY WITH THE CITY PURCHASING AGENT AND THE RECEIVING DEPARTMENT.

**6.0 BRAND NAME OR TRADE NAME:**

- 6.1 Any manufacturer's names, trade names, brand names, or catalog numbers used in the specifications are for the purpose of describing and establishing the general quality level, design and performance desired. Such references are not intended to limit or restrict bidding by other Contractors/Suppliers, but are intended to approximate the quality design or performance that is desired. Any bid that proposes like quality, design or performance, will be considered. Equivalent products will be considered, provided a complete description and product literature is provided. Unless a specific exception is made, the assumption will be that the item bid is exactly as specified on the Invitation to Bid.

**7.0 PATENTS:**

- 7.1 The Contractor/Supplier agrees to indemnify and save harmless the city, its agents, employees, officers, and legal representatives from all suits and actions of every nature and description brought against them or any of them, for or on account of the use of patented appliances, products or processes, and it shall pay all royalties and charges which are legal and equitable. Evidence of such payment or satisfaction shall be submitted, upon request of the City Purchasing Agent, as a necessary requirement in connection with the final estimate for payment in which such patented appliance, products or processes are used.

**8.0 TERMINATION OF AGREEMENT:**

- 8.1 By the City for Convenience:

- 8.1.1 The City Purchasing Agent may terminate this Contract at any time upon 30-calendar days notice in writing to the Contractor. Upon receipt of such notice, the Contractor/Supplier shall, unless the notice directs otherwise, discontinue all services in connection with the performance of the contract and shall proceed to cancel promptly all existing orders and contracts insofar as such orders and contracts are chargeable to this Contract. As soon as practicable after the receipt of notice of termination, the Contractor/Supplier shall submit a statement to the appropriate department(s) showing in detail the services performed or equipment delivered under this Contract to date of termination. The City agrees to compensate the Contractor/Supplier for that portion of the prescribed charges for which the services were actually performed or equipment delivered under this contract and not previously paid.

- 8.2 By the City for Default by the Contractor:

- 8.2.1 In the event that the materials and/or services furnished by the Contractor/Supplier do not conform to the standard set forth herein, or if the deliveries and servicing of this contract do not conform to the requirements detailed herein, the City through a written notice from the City Purchasing Agent to the Contractor/Supplier describing such default may as its options:

- (1) Terminate the contract for default and the City shall have no further obligation under the Contract.

SECTION C, GENERAL TERMS & CONDITIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS  
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- (2) Allow the Contractor/Supplier to cure default within a reasonable time as specified in the notice. The City, at its sole option, may extend the proposed date of termination to a later date. If prior to the proposed date of termination, the Contractor/Supplier cures such default to the City's satisfaction, then the proposed termination shall be ineffective. If the Contractor/Supplier fails to cure such default prior to the proposed date of termination, then the City may terminate its performance under this contract as of such date and have no further obligation under the contract.

8.2.2 In the event of failure to deliver any or all of the equipment or to perform required services, the City may cover its loss by reasonably procuring from another source the equipment not delivered or the services not performed. The Contractor/Supplier shall be responsible for and shall pay to the City immediately upon demand the difference in price between that offered by the Contractor/Supplier and that which the City was forced to pay for covering the Contractor's failure to deliver or perform services.

8.3 By the Contractor/Supplier for Default by City:

8.3.1 Default by the City shall occur if the City fails to perform or observe the terms and conditions of this Contract required to be performed or observed by the City, and the Contractor/Supplier gives notice in writing to the City within 30 calendar days of the act or omission claimed by the Contractor/Supplier to constitute default on the part of the City.

8.3.2 Upon receipt of such notice in writing from the Contractor, however, the City shall have 30 calendar days to cure such default. The Contractor, at its sole option, may extend the proposed date of termination to a later date.

8.3.3 If City cures such default prior to the proposed date of termination, the proposed termination shall be ineffective. If the City fails to cure such default prior to the proposed date of termination, then the Contractor/Supplier may terminate its performance under this contract as of such date

**9.0 SUCCESSORS & ASSIGNS:**

9.1 The Contractor/Supplier may not assign this contract or dispose of substantially all of its assets without the written consent of the City Purchasing Agent. The Contractor's failure to obtain such consent shall be an event of default, authorizing the City Purchasing Agent to terminate this contract according to its terms.

**10.0 RELEASE:**

10.1 THE CONTRACTOR/SUPPLIER AGREES TO AND SHALL RELEASE THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") FROM ALL LIABILITY FOR INJURY, DEATH, DAMAGE, OR LOSS TO PERSONS OR PROPERTY SUSTAINED IN CONNECTION WITH OR INCIDENTAL TO PERFORMANCE UNDER THIS AGREEMENT, EVEN IF THE INJURY, DEATH, DAMAGE, OR LOSS IS CAUSED BY THE CITY'S SOLE OR CONCURRENT NEGLIGENCE AND/OR THE CITY'S STRICT PRODUCTS LIABILITY OR STRICT STATUTORY LIABILITY.

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(CONTINUED)

**11.0 INDEMNIFICATION:**

11.1 THE CONTRACTOR/SUPPLIER AGREES TO AND SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") HARMLESS FOR ALL CLAIMS, CAUSES OF ACTION, LIABILITIES, FINES, AND EXPENSES (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS, AND ALL OTHER DEFENSE COSTS AND INTEREST) FOR INJURY, DEATH, DAMAGE, OR LOSS TO PERSONS OR PROPERTY SUSTAINED IN CONNECTION WITH OR INCIDENTAL TO PERFORMANCE UNDER THIS AGREEMENT INCLUDING, WITHOUT LIMITATION, THOSE CAUSED BY:

- (1) THE CONTRACTOR/SUPPLIER'S AND/OR ITS AGENTS', EMPLOYEES', OFFICERS', DIRECTORS', CONTRACTORS', OR SUBCONTRACTORS' (COLLECTIVELY IN NUMBERED PARAGRAPHS 1-3, "THE CONTRACTOR/SUPPLIER") ACTUAL OR ALLEGED NEGLIGENCE OR INTENTIONAL ACTS OR OMISSIONS;
- (2) THE CITY'S AND THE CONTRACTOR/SUPPLIER'S ACTUAL OR ALLEGED CONCURRENT NEGLIGENCE, WHETHER THE CONTRACTOR/SUPPLIER IS IMMUNE FROM LIABILITY OR NOT; AND
- (3) THE CITY'S AND THE CONTRACTOR/SUPPLIER'S ACTUAL OR ALLEGED STRICT PRODUCTS LIABILITY OR STRICT STATUTORY LIABILITY, WHETHER THE CONTRACTOR/SUPPLIER IS IMMUNE FROM LIABILITY OR NOT.

11.2 THE CONTRACTOR/SUPPLIER SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY HARMLESS DURING THE TERM OF THIS AGREEMENT AND FOR FOUR YEARS AFTER THE AGREEMENT TERMINATES. THE CONTRACTOR/SUPPLIER'S INDEMNIFICATION IS LIMITED TO \$500,000 PER OCCURRENCE. THE CONTRACTOR/SUPPLIER SHALL NOT INDEMNIFY THE CITY FOR THE CITY'S SOLE NEGLIGENCE.

**11.3 INDEMNIFICATION PROCEDURES:**

11.3.1 Notice of Claims. If the City or the Contractor/Supplier receives notice of any claim or circumstances which could give rise to an indemnified loss, the receiving party shall give written notice to the other party within 10 days. The notice must include the following:

- (a) a description of the indemnification event in reasonable detail,
- (b) the basis on which indemnification may be due, and
- (c) the anticipated amount of the indemnified loss.

11.3.2 This notice does not stop or prevent the City from later asserting a different basis for indemnification or a different amount of indemnified loss than that indicated in the initial notice. If the City does not provide this notice within the 10 day period, it does not waive any right to indemnification except to the extent that the Contractor/Supplier is prejudiced, suffers loss, or incurs expense because of the delay.

SECTION C, GENERAL TERMS & CONDITIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS  
(CONTINUED)

11.3.3 Defense of Claims.

- (a) Assumption of Defense. The Contractor/Supplier may assume the defense of the claim at its own expense with counsel chosen by it that is reasonably satisfactory to the City. The Contractor/Supplier shall then control the defense and any negotiations to settle the claim. Within 10 days after receiving written notice of the indemnification request, the Contractor/Supplier must advise the City as to whether or not it will defend the claim. If the Contractor/Supplier does not assume the defense, the City shall assume and control the defense, and all defense expenses constitute an indemnification loss.
- (b) Continued Participation. If the Contractor/Supplier elects to defend the claim, the City may retain separate counsel to participate in (but not control) the defense and to participate in (but not control) any settlement negotiations. The Contractor/Supplier may settle the claim without the consent or agreement of the City, unless it (i) would result in injunctive relief or other equitable remedies or otherwise require the City to comply with restrictions or limitations that adversely affect the City, (ii) would require the City to pay amounts that Contractor/Supplier does not fund in full, (iii) would not result in the City's full and complete release from all liability to the plaintiffs or claimants who are parties to or otherwise bound by the settlement.

**12.0 INSURANCE: (See City of Houston's website for sample certificate)**

12.1 The Contractor/Supplier shall have insurance coverage as follows:

- Commercial General Liability shall be \$500,000 per occurrence; \$1,000,000 aggregate, per 12-month policy period.
- Automobile Liability Insurance for autos furnished or used in the course of performance of this Contract. Including Owned, Non-owned, and Hired Auto coverage. (Any Auto coverage may be substituted for Owned, Non-owned and Hired Auto coverage.) If no autos are owned by the Contractor, coverage may be limited to Non-owned and Hired Autos. If Owned Auto coverage cannot be purchased by the Contractor, Scheduled Auto coverage may be substituted for Owned Auto coverage. EACH AUTO USED IN PERFORMANCE OF THIS CONTRACT MUST BE COVERED IN THE LIMITS SPECIFIED. \$1,000,000 - Combined Single Limit per occurrence; \$1,000,000 aggregate, per 12-month policy period.
- **Worker's Compensation** including Broad Form All States endorsement shall be in statutory amount.
- **Employer's Liability:** Bodily Injury/Accident \$100,000; Bodily Injury/Disease \$100,000 (per employee); Bodily Injury/Disease \$100,000 (policy limit).

12.2 The issuer of any policy (1) shall have a Certificate of Authority to transact insurance business in Texas or (2) shall be an eligible non-admitted insurer in Texas, and shall have a Best's rating of at least B+, and a Best's Financial Size Category of Class VI or better, according to the most current edition of Best's Key Rating Guide.

**SECTION C, GENERAL TERMS & CONDITIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS  
(CONTINUED)**

- 12.3 All insurance policies required by this Contract shall require on their face that 1) the City of Houston is named as an additional insured; 2) the insurance carrier waives any rights of subrogation against the City; and 3) it shall give thirty (30) days written notice to the City before any policy required by this Contract is cancelled. Within such thirty (30) day period, the Contractor/Supplier covenants that it will provide other suitable policies in lieu of those about to be cancelled so as to maintain in effect the coverage required under the provisions hereof. Failure or refusal of the Contractor/Supplier to obtain and keep in force the above-required insurance coverage shall authorize the City, at its option, to terminate this Contract at once.
- 12.4 **REQUIREMENTS FOR CERTIFICATE OF INSURANCE:**
- 12.4.1 Certificate must not be more than 30 days old.
  - 12.4.2 Name and Address of Producer writing coverage.
  - 12.4.3 Name of each insurance company providing coverage (as listed or on company's Certificate of Authority on file with the Texas Department of Insurance, or in Best's Key Rating Guide.)
  - 12.4.4 Name and address of insured (as shown on policy).
  - 12.4.5 Letter in the column must reference the insurer of the policy being described.
  - 12.4.6 Must be a policy number; no binders will be accepted.
  - 12.4.7 Date policy became effective.
  - 12.4.8 Expiration date must be at least **60** days from date of delivery of certificate.
  - 12.4.9 Name and file number of project (Bid Name and Bid Number).
  - 12.4.10 Name of project manager (Buyer).
  - 12.4.11 Signature or facsimile signature of authorized representative of Producer (blue ink preferred).
- 12.5 Prior to award and/or starting work, the Contractor/Supplier must present a Certificate of Insurance evidencing the insurance coverage specified above. This is a mandatory requirement.

Forward to Buyer at:

City of Houston/Administration & Regulatory Affairs Department  
Strategic Purchasing Division  
P.O. Box 1562  
Houston, Texas 77251-1562

**INSURANCE IS NOT REQUIRED IF EQUIPMENT IS DROP-SHIPPED BY  
MANUFACTURER OR IS DELIVERED BY COMMON CARRIER.**

**13.0 REJECTIONS:**

- 14.1 Articles not in accordance with samples and specifications must be removed by the Contractor/Supplier and at its expense. All disputes concerning quality of supplies delivered under this offer will be determined by the City Purchasing Agent or designated representative.
- 14.2 All articles enumerated in the offer shall be subject to inspection on delivery by an officer designated for the purpose and if found inferior to the quality called for, or not equal in value to the Department's samples, or deficient in weight, measurements, workmanship or otherwise, this fact shall be certified to the City Purchasing Agent who shall have the right to reject the whole or any part of the same.

SECTION C, GENERAL TERMS & CONDITIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS  
(CONTINUED)

**14.0 INVOICING:**

- 15.1 In order to expedite payments all invoices must be submitted in triplicate, itemized as to quantity, part and/or model number, description in the same order and form as in the City of Houston Purchase Order. Variations will only delay payment. In addition, invoices must show the project no. **643F**, name of the Department, Division or Section to which the merchandise was delivered, and the City of Houston Purchase Order Number.
- 15.2 All delivery tickets must have a description of the equipment delivered.
- 15.3 Mail invoices to the Accounts Payable Section of the Department and to the address, as noted on individual purchase order(s).
- 15.4 Delivery tickets and packing slips will contain the same information as the invoice.
- 15.5 All packing slips and delivery tickets must be signed by the receiving employee with their City Employee Number and must be signed by the Contractor's Representative.

**15.0 TAXES:**

- 16.1 The City is exempt from the Federal Excise and Transportation Tax, and the limited Sales and Use Tax. Unless the Bid Form or Specifications specifically indicate otherwise, the bid price must be net exclusive of above-mentioned taxes. A Contractor/Supplier desiring refunds of, or exemptions from, taxes paid on merchandise accepted by the City, must submit the proper forms, and the City Purchasing Agent, if satisfied as to the facts, may approve or issue the necessary certificates.

**16.0 PAYMENT:**

- 16.1 Payment is due thirty (30) days after the City has approved the invoice or after the City has accepted the equipment and all required documents, whichever occurs later. Invoices received that do not agree with the provisions set forth herein shall be returned for correction and will result in payment being delayed.
- 16.2 PAYMENT OF SUBCONTRACTORS:
  - 16.2.1 The Contractor/Supplier shall make time payments to all persons and entities supplying labor, materials or equipment for the performance of this Contract. The Contractor/Supplier agrees to protect, defend, and indemnify the City from any claims or liability arising out of the Contractor's failure to make such payments. (Disputes relating to payment of MWBE subcontractors shall be submitted to arbitration in the same manner as any other disputes under the MWBE subcontract. Failure of the Contractor/ Supplier to comply with the decisions of the arbitrator may be deemed, at the sole discretion of the City, a material breach leading to termination of this Contract.)

**17.0 INSPECTIONS AND AUDITS:**

- 17.1 The City reserves all rights to review all payments made to the Contractors by auditing at a later date. Subject to such audit, overpayments may be recovered from the Contractor.
- 17.2 City representatives may have the right to perform, or have performed, (1) audits of the Contractor's books and records, and (2) inspections of all places where work is undertaken in connection with this Agreement. The Contractor/Supplier shall keep its books and records available for this purpose for at least four years after this Agreement terminates. This provision does not affect the applicable statute of limitations.

SECTION C, GENERAL TERMS & CONDITIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS  
(CONTINUED)

- 17.3 City representatives have the right to examine the books of all subcontractors and/or suppliers supplying goods and/or services under the contract insofar as those books and records relate to performance under the prime contract.

**18.0 CITY OF HOUSTON FAIR CAMPAIGN ORDINANCE:**

- 18.1 The City of Houston Fair Campaign Ordinance makes it unlawful for a Contractor/Supplier to offer any contribution to a candidate for City elective office (including elected officers and officers-elect). All respondents to this invitation to bid must comply with Houston Code of Ordinances Chapter 18 as amended relating to the contribution and solicitation of funds for election campaigns. Provisions of this ordinance are provided in part in the paragraphs that follow. Complete copies may be obtained from the office of the City Secretary.
- 18.2 Candidates for city office may neither solicit nor receive contributions except during a period commencing 270 calendar days prior to an election date for which a person is a candidate for such office and ending 90 calendar days after the election date, including run off elections if such candidate is on the ballot.
- 18.3 Further, it shall be unlawful either for any person who submits a bid or proposal to contribute or offer any contribution to a candidate or for any candidate to solicit or accept any contribution from such person for a period commencing at the time of posting of the City Council Meeting Agenda including an item for the award of the Contract and ending upon the 30th day after the award of the Contract by City Council.
- 18.4 For the purposes of this Ordinance, a **Contract** is defined as each Contract having a value in excess of \$30,000 that is let by the City for professional services, personal services, or other goods or services of any other nature whether the Contract is awarded on a negotiated basis, request for proposal basis, competitive proposal basis or formal sealed competitive bids. The term **Contractor/Supplier** includes proprietors of proprietorships, partners having an equity interest of 10% or more of partnerships, (including limited liability partnerships and companies), all officers and directors of corporations (including limited liability corporations), and all holders of 10% or more of the outstanding shares of corporations.
- 18.5 **A STATEMENT DISCLOSING THE NAMES AND BUSINESS ADDRESSES EACH OF THOSE PERSONS WILL BE REQUIRED TO BE SUBMITTED WITH EACH BID OR PROPOSAL FOR A CITY CONTRACT.** Completion of the attached form entitled "**Contractor/Supplier Submission List**" will satisfy this requirement. Failure to provide this information may be just cause for rejection of your bid or proposal.

**19.0 CITY OF HOUSTON CONTRACTOR/SUPPLIER OWNERSHIP DISCLOSURE ORDINANCE:**

- 19.1 City Council requires knowledge of the identities of the owners of entities seeking to contract with the City in order to review their indebtedness to the City and other qualifying governmental entities prior to entering into contracts. Therefore, all respondents to this invitation to bid must comply with Houston Code of Ordinances Chapter 15, as amended (Sections 15-122 through 15-126) relating to the disclosure of owners of entities bidding on, proposing for or receiving City contracts. Provisions of this ordinance are provided in part in the paragraphs that follow. Complete copies may be obtained from the office of the City Secretary.
- 19.2 Contracting entity means a sole proprietorship, corporation, non-profit corporation, partnership, joint venture, limited liability company, or other entity that seeks to enter into a contract requiring approval by the Council but excluding governmental entities.

SECTION C, GENERAL TERMS & CONDITIONS FOR FUEL SYSTEM PIPE, FITTINGS AND UTILITY CASINGS (CONTINUED)

- 19.3 A contracting entity must submit at the time of its bid or proposal, an affidavit listing the full names and the business and residence addresses of all persons owning 5% or more of a contracting entity or, where a contracting entity is a non-profit corporation, the full names and the business and residence addresses of all officers of the non-profit corporation.
- 19.4 Completion of the “**Affidavit of Ownership or Control**”, included herein, and submitted with the Official Bid or Proposal Form will satisfy this requirement. Failure to provide this information with your bid or proposal may be just cause for rejection of your bid or proposal.

**20.0 CHANGE ORDERS:**

- 20.1 At any time during the Agreement Term, the City Purchasing Agent, or designated representative, may issue a change order to increase or decrease the scope of services, or change plans and specifications, as may be necessary to accomplish the general purposes of this Agreement. The Contractor/Supplier shall furnish the services or deliverables in the change order in accordance with the requirements of this Agreement plus any special provisions, specifications, or special instructions issued to execute the additional work.
- 20.2 The Contractor/Supplier shall not make any changes to the specifications or drawings contained herein without written authorization from the City Purchasing Agent or designated representative. The City may refuse to accept all or part of the work performed or equipment/supplies delivered if changes are made to the specifications or drawings without the written authorization of the City Purchasing Agent or designated representative. The City shall not be responsible for costs incurred by the Contractor/Supplier on unauthorized change orders.
- 20.3 Documentation acceptable to the City Purchasing Agent as evidence of the Contractor's change(s) shall reference the City's bid specification by section(s) and page number(s). A letter with supporting documentation of the requested change(s) shall be submitted to the City Purchasing Agent, and the City Purchasing Agent must approve any requested changes **PRIOR TO ANY CHANGES BEING PERFORMED**. The face of the envelope containing this letter shall clearly state, “CHANGE ORDER REQUEST” and THE NUMBER OF THE BID INVITATION AND THE NUMBER(S) OF THE PURCHASE ORDER(S) referenced. Failure to provide clear and concise evidence as stated above and in the format requested will result in denial until the Contractor/Supplier complies with these provisions. Documentation shall be mailed to:

City Purchasing Agent  
City of Houston, Administration & Regulatory Affairs Department  
Strategic Purchasing Division  
P. O. Box 1562  
Houston, TX 77251-1562

- 20.4 The City Purchasing Agent, or designated representative, may issue change orders, subject to the following limitations:
- 20.4.1 City Council expressly authorizes the City Purchasing Agent to approve change orders of **\$50,000** or less. A change order of more than **\$50,000** over the approved contract amount must be approved by City Council.
- 20.4.2 The total of all change orders issued under this section may not increase the Original Agreement amount by more than 25%.

20.4.3 For any equipment described in a change order that the Contractor/Supplier is otherwise required to provide under the Original Agreement, the City shall not pay additional money to the Contractor.