

DESIGN-BUILD AGREEMENT FOR CNG STATION

THIS DESIGN-BUILD AGREEMENT is made and entered into this 17th day of August 2021 by and between TruStar Energy, LLC. ("Contractor"), and the City of Santa Ana, a charter city and municipal corporation organized and existing under the Constitution and laws of the State of California ("City").

RECITALS

- A. The City desires to retain a contractor having special skill and knowledge to design and build a new CNG station.
- B. For this purpose, the City issued Request for Proposal No. 20-095, by which the City invited proposals for the Project. Following evaluation by the City of all the proposals that were submitted, Contractor was selected to complete the Project.
- C. Contractor represents that Contractor is able and willing to provide such services to the City.
- D. The Project will be designed and constructed in a two-phase approach. At this time, the City has funding to complete Phase 1 that will allow TruStar to design the project. Once funding is secured, the City will move forward with Phase 2, which includes the equipment procurement, installation of said equipment and construction of the project.
- E. In undertaking the performance of this Agreement, Contractor represents that it is knowledgeable in its field and that any services performed by Contractor under this Agreement will be performed in compliance with such standards as may reasonably be expected from a professional consulting firm in the field.

NOW THEREFORE, in consideration of the mutual and respective promises, and subject to the terms and conditions hereinafter set forth, the parties agree as follows:

1. SCOPE OF SERVICES

Contractor shall perform design and construction services as set forth in Exhibit A to this Agreement. Contractor shall perform all services in compliance with applicable laws, statutes, ordinances, codes, rules, and regulations.

2. COMPENSATION

City agrees to pay, and Contractor agrees to accept as total payment for its services for City, the rates and charges identified in Exhibit A. The total amount to be expended under this Agreement shall not exceed \$2,122,232 during the term of this Agreement, including any extension periods exercised under Section 3. This sum shall be comprised of \$104,340 for the Design, Engineering & Permits (Phase I), \$933,917 for equipment procurement, which includes

a fifteen percent contingency amount of \$121,815 (Phase 2) for any potential equipment cost increases, and \$1,083,975 for construction, and installation, which includes a fifteen percent contingency amount of \$211,823 for construction. Any increases in the equipment procurement costs (Phase II) identified in Exhibit A must be supported by supplemental documentation satisfactory to the City. Contractor shall submit a monthly invoice by the fifteenth of each month to the City for the services rendered in the prior month.

All invoices for work performed under this Agreement shall be submitted in a format approved by the City. Invoices shall include the following information at a minimum: (i) Contractor's invoice number, (ii) beginning and ending dates for services, (iii) City project number and/or name (if applicable), (iv) work site address/location (if applicable), and (v) tasks or deliverables completed and % of total services completed

Payment by City shall be made within sixty (60) days following receipt of proper invoice evidencing work performed, subject to City accounting procedures. Payment need not be made for work which fails to meet the standards of performance set forth in the Recitals which may reasonably be expected by City.

3. DESIGN-BUILD DOCUMENTS

The Design-Build Documents consist of this Agreement, Standard Specifications for Public Works Construction (the "Greenbook"), all design documents hereafter prepared by Contractor and approved by City in accordance with this Agreement, other documents listed in this Agreement, Request for Proposals No. 20-095, and any modifications, including without limitation Change Orders, issued after execution of this Agreement. All such documents are incorporated herein by reference and made a part of this Agreement. This Agreement is intended to be an integral whole and shall be interpreted as internally consistent and in accordance with section 2-5.2 of the "Greenbook". Work required by any page, part, or portion of the Agreement shall be deemed to be required work as if called for in the whole Agreement, and no claim for extra work shall be based upon the fact that the description of the work in question is incomplete. "Work" shall mean the design, construction, and related services required to fulfill Contractor's obligations under the Design-Build Documents, whether completed or partially completed, and includes all labor, materials, equipment, and services to be provided by Contractor.

This Agreement may not be modified except by written instrument signed by the City and by an authorized representative of Contractor. The parties agree that any terms or conditions of any other instrument that are inconsistent with, or in addition to, the terms and conditions hereof, shall not bind or obligate Contractor or the City. Each party to this Agreement acknowledges that no representations, inducements, promises or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein. Nothing contained in this Agreement shall create, nor be interpreted to create, privity or any other relationship whatsoever between City and any person except Contractor.

4. CHANGES IN THE WORK

- a. **City's Right to Order Changes.** Changes in the Work under this Agreement, consisting of additions, deletions, revisions, or any combination thereof, may be ordered unilaterally by City without invalidating the Agreement. Such changes shall be communicated by Change Order or supplemental agreement, as applicable. Contractor shall proceed diligently with any changes, and same shall be accomplished in strict accordance with the following terms and conditions as set forth herein. "Change Order" means a written instrument signed by City requesting a change in the Work.
- b. **Changes and Extensions of Time.** All Change Orders, changes requested by Contractor, or extensions of time occurring during construction of the Project related to actual construction work shall be accomplished within the term and schedule set forth in section 5 unless not reasonably practicable. All changes to the scope of design services or extensions of the agreed-upon design schedule during the design process shall be made by mutual agreement of City and Contractor, and claims for an increase in design compensation due to a change in the scope of design construction work or for an extension of time to the design schedule shall be made in writing within seven (7) calendar days after occurrence of the event that gives rise to the claim. All requests for additional compensation due to a change in the scope of design services, and all requests for an extension of time to the design schedule, shall include sufficient backup documentation for City to reasonably understand the request and the amount of time or compensation requested and to determine the merits of the request.
- c. **Adjustments to Price or Time.** Upon the occurrence of a Change Order for construction work that increases the cost of the construction work, the price will thereafter include such cost of the construction work and services attributable to such change to the extent allowed by Paragraph (b) above. The failure of Contractor to provide notice in writing to City in accordance with Paragraph (b) of any request for an increase in price or for an extension of time shall constitute a waiver by Contractor of any entitlement thereto.
- d. **Continuing Duty to Perform Construction Work and Make Payment.** In the event the parties are unable to agree on the terms of a change order or supplemental agreement, then Contractor shall continue to diligently perform the design services and the construction work, including any change directed by City by change order or supplemental agreement, and shall keep thorough records of the cost of performance of such change order or supplemental agreement.
- e. **Fiduciary Relationship.** Contractor recognizes and accepts a fiduciary relationship of trust and confidence hereby established between Contractor and City and agrees that it shall at all times in good faith use its best efforts to advance City's interests and agrees to perform the design services and the construction work in professional manner.

5. TERM AND SCHEDULE OF WORK

This Agreement shall commence on the date first written above and terminate upon the City's acceptance of the Project via a "Notice of Completion" unless terminated earlier in accordance with Section 16 below. Contractor shall complete all design work, engineering and obtain all permitting within one hundred eighty (180) days of commencement of the Agreement. After the City approves the design work, equipment will be ordered and the construction related work under the Agreement shall be completed within one hundred eighty days (180) from the date of issuance by the City of a "Notice to Proceed" and mutual agreement of any potential cost increase incurred by Contractor in the procurement of equipment. The term of this Agreement may be extended upon a writing executed by the City Manager and City Attorney.

Upon completion of all work under this Agreement, ownership and title to all reports, documents, tracings, plans, specifications, estimates and maps prepared or obtained under the terms of this Agreement shall be delivered to, and become the property of City. Basic survey notes and sketches, charts, computations, and other data prepared or obtained pursuant to this Agreement shall be made available upon request of the City without restriction or limitation on their use. Contractor shall furnish the City all necessary copies of data needed to complete the review and approval process.

6. GENERAL REQUIREMENTS OF THE WORK

Contractor shall perform the Work in compliance with applicable laws, statutes, ordinances, codes, rules, and regulations. If Contractor performs Work contrary to applicable laws, statutes, ordinances, codes, rules, or regulations, Contractor shall assume responsibility for such Work and shall bear the costs attributable to correction. Contractor shall be responsible to City for acts and omissions of Contractor's employees, consultants, subcontractors, or others employed or retained by Contractor in connection with the Project or Work. Contractor shall provide City access to the Work in preparation and progress wherever located.

7. PROTECTION OF PERSONS AND PROPERTY

Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. Contractor shall be responsible for the safety of, and reasonable protection to prevent damage, injury, or loss to (i) employees performing the Work and other persons who may be affected thereby, (ii) the Work and materials and equipment to be incorporated therein, and (iii) other property at the Work site or adjacent thereto, including without limitation hardscaping, landscaping, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

8. PREVAILING WAGES

Contractor is aware of the requirements of California Labor Code Section 1720, et seq., and 1770, et seq., as well as California Code of Regulations, Title 8, Section 16000, et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on "public works" and "maintenance" projects. Since the

Work is being performed as part of an applicable “public works” or “maintenance” project, as defined by the Prevailing Wage Laws, and since the total compensation is \$1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws. Contractor shall defend, indemnify and hold the City, its elected officials, officers, employees and agents free and harmless from any claim or liability arising out of any failure or alleged failure to comply with the Prevailing Wage Laws

9. INDEPENDENT CONTRACTOR

Contractor shall, during the entire term of this Agreement, be construed to be an independent contractor and not an employee of the City. This Agreement is not intended nor shall it be construed to create an employer-employee relationship, a joint venture relationship, or to allow the City to exercise discretion or control over the professional manner in which Contractor performs the services which are the subject matter of this Agreement; however, the services to be provided by Contractor shall be provided in a manner consistent with all applicable standards and regulations governing such services. Contractor shall pay all salaries and wages, employer's social security taxes, unemployment insurance and similar taxes relating to employees and shall be responsible for all applicable withholding taxes.

10. INSURANCE

Prior to undertaking performance of work under this Agreement, Contractor shall maintain and shall require its subcontractors, if any, to obtain and maintain insurance as described below:

- a. **Commercial General Liability Insurance.** Contractor shall maintain commercial general liability insurance which shall include, but not be limited to protection against claims arising from bodily and personal injury, including death resulting therefrom and damage to property, resulting from any act or occurrence arising out of Contractor's operations in the performance of this Agreement, including, without limitation, acts involving vehicles. The amounts of insurance shall be not less than the following: single limit coverage applying to bodily and personal injury, including death resulting therefrom, and property damage, in the total amount of \$1,000,000 per occurrence, \$2,000,000 in the aggregate. Such insurance shall (a) name the City, its officers, employees, agents, volunteers and representatives as additional insured(s); (b) be primary and not contributory with respect to insurance or self-insurance programs maintained by the City; and (c) contain standard separation of insureds provisions. Contractor shall supply City with a fully executed additional insured endorsement in substantially the form attached hereto as Exhibit B upon execution of this Agreement.
- b. **Business automobile liability insurance, or equivalent form, with a combined single limit of not less than \$1,000,000 per occurrence.** Such insurance shall include coverage for owned, hired and non-owned automobiles.

- c. Worker's Compensation Insurance. In accordance with California state law, Contractor, if Contractor has any employees, is required to be insured against liability for worker's compensation or to undertake self-insurance. Prior to commencing the performance of the work under this Agreement, Contractor agrees to obtain and maintain employer's liability insurance with limits not less than \$1,000,000 per accident.
- d. If Contractor is or employs a licensed professional such as an architect or engineer: Professional liability (errors and omissions) insurance, with a combined single limit of not less than \$1,000,000 per claim.
- e. The following requirements apply to the insurance to be provided by Contractor pursuant to this section:
 - i. Contractor shall maintain all insurance required above in full force and effect for the entire period covered by this Agreement.
 - ii. Certificates of insurance shall be furnished to the City upon execution of this Agreement and shall be approved in form by the City.
 - iii. Certificates and policies shall state that the policies shall not be canceled or reduced in coverage or changed in any other material aspect without thirty (30) days prior written notice to the City.
- f. If Contractor fails or refuses to produce or maintain the insurance required by this section or fails or refuses to furnish the City with required proof that insurance has been procured and is in force and paid for, the City shall have the right, at the City's election, to terminate this Agreement. Such termination shall not affect Contractor's right to be paid for its time and materials expended prior to notification of termination. Contractor waives the right to receive compensation and agrees to indemnify the City for any work performed prior to approval of insurance by the City.

11. INDEMNIFICATION

Contractor agrees to and shall indemnify and hold harmless the City, its officers, agents, employees, consultants, special counsel, and representatives from liability: (1) for personal injury, damages, just compensation, restitution, judicial or equitable relief arising out of claims for personal injury, including death, and claims for property damage, which may arise from the negligent acts or omissions of the Contractor or its subcontractors, agents, employees, or other persons acting on their behalf which relate to the Work and services described in section 1 of this Agreement; and (2) from any claim that personal injury, damages, just compensation, restitution, judicial or equitable relief is due by reason of the terms of or effects arising from this Agreement. This indemnity and hold harmless agreement applies to all claims for damages, just compensation, restitution, judicial or equitable relief suffered, or alleged to have been suffered, by reason of the events referred to in this Section or by reason of the terms of, or effects, arising from this Agreement. The Contractor further agrees to indemnify, hold harmless, and pay all costs for the defense of the City, including reasonable legal fees and costs for special counsel to be selected by the

City, regarding any action by a third party, or asserting that personal injury, damages, just compensation, restitution, judicial or equitable relief due to personal or property rights arises by reason of the terms of, or effects arising from this Agreement. City may make all reasonable decisions with respect to its representation in any legal proceeding. Notwithstanding the foregoing, to the extent Contractor's services are subject to Civil Code Section 2782.8, the above indemnity shall be limited, to the extent required by Civil Code Section 2782.8, to claims that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the Contractor.

12. CONFIDENTIALITY

If Contractor receives from the City information which due to the nature of such information is reasonably understood to be confidential and/or proprietary, Contractor agrees that it shall not use or disclose such information except in the performance of this Agreement, and further agrees to exercise the same degree of care it uses to protect its own information of like importance, but in no event less than reasonable care. "Confidential Information" shall include all nonpublic information. Confidential information includes not only written information, but also information transferred orally, visually, electronically, or by other means. Confidential information disclosed to either party by any subsidiary and/or agent of the other party is covered by this Agreement. The foregoing obligations of non-use and nondisclosure shall not apply to any information that (a) has been disclosed in publicly available sources; (b) is, through no fault of the Contractor disclosed in a publicly available source; (c) is in rightful possession of the Contractor without an obligation of confidentiality; (d) is required to be disclosed by operation of law; or (e) is independently developed by the Contractor without reference to information disclosed by the City.

13. CONFLICT OF INTEREST CLAUSE

Contractor covenants that it presently has no interests and shall not have interests, direct or indirect, which would conflict in any manner with performance of services specified under this Agreement.

14. NOTICE

Any notice, tender, demand, delivery, or other communication pursuant to this Agreement shall be in writing and shall be deemed to be properly given if delivered in person or mailed by first class or certified mail, postage prepaid, or sent by fax communication in the manner provided in this Section, to the following persons:

To City:	Clerk of the City Council
	City of Santa Ana
	20 Civic Center Plaza (M-30)
	P.O. Box 1988
	Santa Ana, CA 92702-1988
	Fax 714- 647-6956

With courtesy copies to:

Nabil Saba
Executive Director, Public Works Agency
City of Santa Ana
20 Civic Center Plaza (M-21)
P.O. Box 1988
Santa Ana, California 92702
Fax: 714- 647-5635

and

City Attorney
City of Santa Ana
20 Civic Center Plaza (M-29)
P.O. Box 1988
Santa Ana, California 92702
Fax 714-647-6515

To Contractor: TruStar Energy
Attn: Scott Edelbach – General Manager
10225 Philadelphia Ct, Rancho Cucamonga
Rancho Cucamonga, CA 91730

A party may change its address by giving notice in writing to the other party. Thereafter, any communication shall be addressed and transmitted to the new address. If sent by mail, communication shall be effective or deemed to have been given three (3) days after it has been deposited in the United States mail, duly registered or certified, with postage prepaid, and addressed as set forth above. If sent by fax, communication shall be effective or deemed to have been given twenty-four (24) hours after the time set forth on the transmission report issued by the transmitting fax machine, addressed as set forth above. For purposes of calculating these time frames, weekends, federal, state, County or City holidays shall be excluded.

15. ASSIGNMENT

Inasmuch as this Agreement is intended to secure the specialized services of Contractor, Contractor may not assign, transfer, delegate, or subcontract any interest herein without the prior written consent of the City and any such assignment, transfer, delegation or subcontract without the City's prior written consent shall be considered null and void. Nothing in this Agreement shall be construed to limit the City's ability to have any of the services that are the subject to this Agreement performed by City personnel or by other consultants retained by City.

16. TERMINATION

This Agreement may be terminated by the City upon thirty (30) days written notice of termination. In such event, Contractor shall be entitled to receive and the City shall pay Contractor

compensation for all services performed by Contractor prior to receipt of such notice of termination, subject to the following conditions:

- a. As a condition of such payment, the Executive Director may require Contractor to deliver to the City all work product completed as of such date, and in such case such work product shall be the property of the City unless prohibited by law, and Contractor consents to the City's use thereof for such purposes as the City deems appropriate.
- b. Payment need not be made for work which fails to meet the standard of performance specified in the Recitals of this Agreement.

This Agreement shall automatically terminate upon written notice by the City to Contractor, without penalty to City, either in whole or in part, if City is unable to secure the required funds to complete Phase II of the Project.

17. NONDISCRIMINATION

Contractor shall not discriminate because of race, color, creed, religion, sex, marital status, sexual orientation, age, national origin, ancestry, or disability, as defined and prohibited by applicable law, in the recruitment, selection, training, utilization, promotion, termination or other employment related activities. Contractor affirms that it is an equal opportunity employer and shall comply with all applicable federal, state and local laws and regulations.

18. JURISDICTION - VENUE

This Agreement has been executed and delivered in the State of California and the validity, interpretation, performance, and enforcement of any of the clauses of this Agreement shall be determined and governed by the laws of the State of California. Both parties further agree that Orange County, California, shall be the venue for any action or proceeding that may be brought or arise out of, in connection with or by reason of this Agreement.

19. PROFESSIONAL LICENSES

Contractor shall, throughout the term of this Agreement, maintain all necessary licenses, permits, approvals, waivers, and exemptions necessary for the provision of the services hereunder and required by the laws and regulations of the United States, the State of California, the City of Santa Ana and all other governmental agencies. Contractor shall notify the City immediately and in writing of its inability to obtain or maintain such permits, licenses, approvals, waivers, and exemptions. Said inability shall be cause for termination of this Agreement.

20. MISCELLANEOUS PROVISIONS

- a. Each undersigned represents and warrants that its signature hereinbelow has the power, authority and right to bind their respective parties to each of the terms of this Agreement, and shall indemnify City fully, including reasonable costs and attorney's fees, for any

injuries or damages to City in the event that such authority or power is not, in fact, held by the signatory or is withdrawn.

- b. All Exhibits referenced herein and attached hereto shall be incorporated as if fully set forth in the body of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the date and year first above written.

ATTEST:


CITY OF SANTA ANA

Daisy Gomez
Clerk of the Council

Kristine Ridge
City Manager

APPROVED AS TO FORM:

SONIA R. CARVALHO
City Attorney

By: 

Jose Montoya
Deputy City Attorney

CONTRACTOR:

Digitally signed by Scott Edelbach
DN: cn=Scott Edelbach, o=TruStar Energy, ou=TruStar
Energy, email=sedelbach@trustarenergy.com, c=US
Date: 2021.08.04 16:47:27 -04'00'

Scott Edelbach
General Manager

RECOMMENDED FOR APPROVAL:

Nabil Saba
Executive Director
Public Works Agency

EXHIBIT A

Appendix
ATTACHMENT 1: SCOPE OF WORK

SCOPE OF WORK
CNG FUEL STATION: DESIGN AND BUILD

The Fleet Maintenance Division of the Public Works Agency provides vehicle and equipment acquisitions, preventative maintenance, unscheduled repair and fueling services to City departments so they can have reliable, cost effective equipment and vehicles to accomplish their operational goals and purpose. Fleet Services is responsible to provide fuel (unleaded, diesel, propane, LNG, and CNG) for City vehicles, and does this at the Corporate Yard. It is the City's intent to contract with one vendor to provide installation of fueling equipment, and future maintenance support of that equipment to dispense CNG fuel. This project requires the Contractor to provide siting, design, obtain all required permits, construct, manufacture, procure equipment/ material, install, and test to start up the CNG fueling station. The same experienced contractor will be required to successfully operate and maintain the vehicle fueling station.

It is the City's intent to hire a firm to design all phases of the project and will construct each phase as funding becomes available. The project will have two phases as described in Section 2 of the Design Build Agreement: Phase Two will include:

200 SCFM CNG compressor with appurtenances, 4 meters, and 20 filling stations.

5 filling stations

200 SCFM CNG compressor with appurtenances, and 5 filling stations.

5 filling stations

5 filling stations

The construction will be completed in full within Phase 2 of the project, a Notice to Proceed will be issued no later than 60 days after Phase 1 has been completed to start phase 2 as funding becomes available. If a Notice to Proceed is not issued for Phase 2 of the project within 60 days after Phase 1 has been completed, Contractor will be entitled to modify or amend supplier pricing for equipment, materials and labor and make requisite adjustments in the pricing of Phase 2 of the project. If the revised pricing exceeds the 15% contingency budget that the City of Santa Ana has included in the project, the City of Santa Ana can elect to cancel Phase 2 of the project or accept the changes in the amount of the revised Phase 2 pricing.

SPECIFICATIONS

These General Requirements for Mechanical Equipment apply, in general to the equipment furnished under all divisions of these special provisions. They shall supplement the detailed equipment specifications. But in case of conflict, the more stringent specifications shall *govern*. All electrical equipment supplied under this contract including control panels, instruments, appliances, J-boxes, motors, etc. shall be in strict conformity with all current applicable codes and regulations of the State of California.

All equipment shall be new and shall not have been in service before.

1.2

SUMMARY

- A. This specification covers design, manufacture, and delivery of one (1) Compressed Natural Gas (CNG) Vehicle Fueling System. The CNG system shall consist of, but not be limited to, the following minimum components:
1. One (1) 200 SCFM electric motor-driven skid-mounted CNG compressor system complete with integrated compressor and time fill system controls. Must be modular in design to accommodate future expansion for Phase 2, which will be of the same type and size system.
 2. One (1) single tower low-pressure regenerative desiccant type gas dryer. Should be sized and equipped to add future compressor same size and type proposed for Phase 2 of the project.
 3. Ten (10) dual hose metered time fill post assemblies with twenty (20) hose assemblies. Installation will be such that existing traffic patterns and parking is sustained.
 4. Defueling Station: The defueling station will safely vent vehicles CNG Fuel Tanks as required for vehicle maintenance to be located next to the CNG equipment as the defueling vents gas back into the compressor inlet pipe stream.

1.3

CODES AND STANDARDS

Equipment and assemblies shall comply with all relevant provisions of the latest revisions of approved codes and standards and current industry practices including the following:

- A. American Petroleum Institute (API):
1. API Recommended Practice 520 - Sizing, Selection, and Installation of Pressure Relieving Devices in Refineries.
- B. American Society of Mechanical Engineers (ASME):
1. ASME Section VIII, Division I - Boiler and Pressure Vessel Code - Pressure Vessels
 2. ASME Section V - Boiler and Pressure Vessel Code Nondestructive Examination
 3. ASME Section IX - Boiler and Pressure Vessel Code - Welding and Brazing Qualifications
 4. ASME 831.J - Chemical and Petroleum Plant Piping
 5. ASME BJ 1.1 - Power Piping
- C. American Welding Society (AWS):
1. AWS AS. I - Covered Carbon Steel Arc Welding Electrodes
 2. AWS A5.5 - Low Alloy Steel Covered Arc Welding Electrodes
- D. National Fire Protection Association (NFPA):
1. NFPA 52 - Compressed Natural Gas (CNG) Vehicular Fuel Systems
 2. NFPA 54 - National Fuel Gas Code
 3. NFPA 70 - National Electrical Code (NEC)

4. NFPA 79 - Electrical Requirements for Machinery

E. Occupational Safety and Health Administration (OSHA):

1. Title 29 Code of Federal Regulations

F. Department of Industrial Relations - California Code of Regulations (CCR):

1. CCR - Title 8, Industrial Relations

G. California Building Code (CBC)

H. California Fire Code (CFC)

I. California Electrical Code (CEC)

J. Occupational Safety and Health Association (OSHA)

K. American Gas Association (AGA)

L. American Petroleum Institute (API)

1.4 SUBMITTALS

A. General: Provide electronic submittals for distribution as follows: one for the City's records, one for the City's Engineer, one for the Contractor and one for return with comments to the vendor.

B. Shop Drawings: Indicate piping system schematic with electrical and connection requirements, general assembly of components, mounting and installation details, and general layout of all control and alarm panels.

C. Product Data: System Components: Submit manufacturers' catalogue information including capacity, component sizes, rough-in requirements, and service sizes. When applicable, include electrical characteristics and connection requirements.

D. Calculations: Provide equipment run sheets or similar information to demonstrate compliance with stated performance requirements for equipment. Provide anticipated foundation loads and anchorage requirements for installation at the project site.

E. Acoustical Data: Provide test report data for acoustical enclosure to demonstrate compliance with specifications.

1.5 QUALITY ASSURANCE

- 1.5.1 All equipment shall be permanently affixed and accessible for maintenance and operation in accordance with all code requirements. Supports for all equipment shall conform to seismic requirements for intended location of installation.
- 1.5.2 The Supplier shall notify the City's Representative no later than 10 working days prior to factory testing of the compressor systems to allow the City Representative the option to witness the test prior to shipment. Witnessing of the testing does not relieve the manufacturer of the responsibility to comply with the specifications.
- 1.5.3 All paint and priming products, whether shop or field applied, shall be lead, chromium, and cadmium free. In addition, these products and all other materials used shall comply with local, regional, state and federal air quality rules and regulations, especially those of the South Coast Air Quality Management District.
- 1.5.4 All materials and exposed surfaces subject to corrosion, shall receive a two-coat shop-applied paint system.
- 1.5.5 Equipment furnished shall be factory inspected and certified by a National Recognized Testing Laboratory approved by local authority having jurisdiction for compliance with NFPA 70. Certification shall be evidenced by a written report and the application of a sticker on the equipment by the third-party inspection firm.
- 1.5.6 Deviations: Compliance with the provisions of this specification is the vendor's responsibility. Any deviation from this specification, or any of its provisions, shall be clearly identified in the vendors bid.

1.6 Qualifications

- 1.6.1 Manufacturer: Company specializing in manufacturing and packaging products and equipment specified in this section with minimum of five (5) years documented experience.
- 1.6.2 References: On company letterhead, provide references for at least (5) projects of similar size and complexity completed within the last five (5) years. State years of experience as described in Part 1.5-A. Include company name, address, primary contact's name and phone number, date completed, and approximate value of the contract. One page per project.

1.7 GENERAL DESIGN CONDITIONS

- 1. Electrical power supplied to the system will be 480 VAC \pm 10%, 3-phase, 60 hertz, unless noted otherwise. Power will be provided from an existing power distribution panel located approximately 100 feet from the equipment.
- 2. Natural Gas: PSE form from gas company will be provided when available from Southern California Gas Company.

1.8 GENERAL PRODUCT REQUIREMENTS

- A. Sufficient access shall be provided to perform major work on the equipment, including the removal of driver. All electric panels shall have the necessary clearances in front of openings as required by code. Sufficient access may be provided by removal of all or part of the enclosure.
- B. System shall be sized to provide the total specified gas flow with a single compressor.
- C. All furnished equipment shall be new. All equipment shall comply with all provisions of this specification including warranty requirements.
- D. The skid assembly shall comply with design requirements of appropriate sections of CBC.
- E. The skids shall have bolt holes to facilitate mounting of anchor bolts to a concrete foundation, and provisions for lifting.
- F. Structural steel skids shall be of welded construction.

G. INSTRUMENTATION AND CONTROLS

1. Pressure Gauges:

- All gauges shall read at least 1.2 times the system design pressure (NFPA 52).
- Accuracy, including hysteresis, shall $\pm 1.5\%$ of full scale or better.
- Rear blowout protection shall be provided.
- All gauges shall be waterproof and oil-filled.
- The dial shall have a minimum diameter of 2-1/2 inches.

2. Temperature Gauges (not required if RTDs or TCs are into PLC's HMI):

- Accuracy shall be within 1% of the full scale or better.
- The Dial shall have a minimum diameter of 2-1/2 inches.

3. All instrument components interfacing with natural gas shall be made of material compatible with odorized natural gas. No copper metal or alloys containing more than 70% copper shall be used in natural gas service.

4. All gauges and frequently operated manual valves shall be located no higher than seven (7) feet *above* grade and shall be easily operable and viewable.

H. PIPING/ TUBING

1. Gas piping design, fabrication, inspection, and testing shall be in accordance with ANSI B31.3.
2. Cast iron or semi-steel shall not be used.
3. Threaded gas pipe connections may be used on 2-inch nominal pipe size and smaller for piping systems with a maximum operating pressure no greater than 150 psig. Otherwise, such piping shall be socket- or butt-welded. Larger than 1-1/2-inch nominal pipe size shall be butt-welded regardless of its operating pressure.
4. Tubing and tube fittings shall be stainless steel. Tube fittings shall be rated for at least 6000 psig working pressure. Tubing fittings 3/8 inch or smaller shall be Swagelok or approved equal. Tubing fittings 2 inch or larger shall be Parker Face Seal stainless steel or approved equal. Different or mixed brands of fittings shall not be used. Bidder may use stainless steel pipe and socket welded stainless steel fittings in lieu of stainless-steel tubing and compression type fittings except where disassembly is required for maintenance.
5. Stainless steel tubing shall be seamless and bright annealed, ASTM SA 213, type 316. The maximum hardness of the stainless-steel tubing shall be no more than Rockwell hardness of 80. Where the following nominal OD tubing is used, the corresponding minimum wall thickness shall be:

<u>Nominal OD</u>	<u>Minimum Wall Thickness</u>
1/4"	0.049"
3/8"	0.065"
1/2"	0.083"
3/4"	0.109"
1"	0.134"

SECTION 2

NATURAL GAS COMPRESSOR SYSTEM

1.1 Acceptable Manufacturers/Packagers:

- A. ANGI with starter panel and communication panel
- B. CMD with starter panel and communication panel
- C. Or approved equal

1.2 Design Conditions

- Inlet Pressure 15-40 psig (regulated)
- Outlet Pressure 4500 psig
- Flow Rate ~400SCFM

1.3 The compressor shall be electric-driven and specifically designed to compress natural gas. No converted air compressor shall be used.

1.4 The compressor shall be designed for automatic starting, unloading, blowdown, idling, and shut off and shall be furnished with a suitably sized gas recovery system to feed blowdown gas back into the system.

1.5 The compressor shall be equipped with suction and discharge automatic (motor or solenoid operated) isolation valves and check valves.

1.6 Compressor bearings and journals shall be lubricated by a pressure or splash lubrication system. Cylinders may be splash lubricated or of a non-lubricated design and shall be air-cooled. System shall be provided with low oil level or pressure alarm or shut-off.

1.7 Each stage of compression shall be protected from over-pressurization with a suitably sized relief valve. All relief valves shall be ASME-rated and stamped. Relief valves may be connected to a common vent header terminating above the roof of the compressor enclosure at minimum of 12 feet above grade (vent stack and stack supports [15 feet, if needed] shall be furnished with compressor).

1.8 Compressor shall be either belt or direct drive. Belt drive assemblies shall include adjustable motor mountings and shall have suitable guards on all moving parts per OSHA and Cal-OSHA requirements.

- 1.9 Compressor, compressor control panel, and related equipment shall be mounted on a common, enclosed, and lockable, skid.
- 2.1 The compressor shall be furnished with the vendor's standard enclosure. If standard enclosure will result in observed noise levels exceeding 80 dBA at ten feet from the unit, vendor shall provide anticipated sound levels with their standard enclosure and also quote, as an option, a sound attenuating enclosure to reduce the anticipated sound levels to below 80 dBA.
- 2.2 All materials shall be non-combustible, or fire rated.
- 2.3 Exposed hot surfaces shall have guards or covers for personnel protection in accordance with OSHA and Cal-OSHA requirements.
- 2.4 Intercoolers and aftercoolers shall be sized a minimum 20% over capacity to compensate for fouling. The final discharge temperature shall not exceed 20F above the ambient gas temperature, unless approved by the City's Engineer.
- 2.5 Suction and discharge pulsation dampeners shall be provided.
- 2.6 Electric Motors
 - A. Acceptable Manufacturers:
 1. Baldor
 2. U.S. Motors
 3. Leeson
 4. WEG
 5. Or approved equal
 - B. Electric motors shall be totally enclosed fan cooled (TEFC) or explosion proof as required for Class I, Division 2, Group D per NEC, and be constant speed, induction type with a minimum service factor of 1.15.
 - C. Motors shall be NEMA premium efficiency type with the highest available efficiency as listed in the latest version of the Motor Master database and verified by the manufacturer. Motor brake horsepower and RPM shall be specified by the vendor. The vendor shall select motor/drive train to provide the minimum compressor and motor life-cycle costs.
 - D. All motors shall be rated for 480 Volt, 3-phase, 60 hertz and rated for continuous duty.
 - E. Solid state motor starters shall be located on the skid in a suitable enclosure. The compressor electrical system shall include solid state starter magnetic contactors, overload relays, and circuit breaker, disconnects, or fuses, for all other skid

mounted equipment including radiator fans, coolant pumps, ventilation fans, lights, and controls as necessary.

- F. The system shall be designed to accommodate up to 6 starts per hour without damage to the motor. The control system shall shut down the compressor system upon excessive starts and indicate the fault.

2.7 Gas Recovery System

- A. The gas recovery system shall be designed to take the compressor blowdown gas and store the gas in a captive tank for re-compression upon the next startup of the compressor.
- B. The captive tank shall be ASME-rated and have the necessary capacity and working pressure to store the blowdown gas without relieving gas to atmosphere or to the station suction line. The captive tank shall have full capacity relief protection and shall be located within the compressor enclosure.

2.8 Compressor Controls and Instrumentation

- A. Acceptable Manufacturer:
 - 1. Allen Bradley
 - 2. Or approved equal
- B. A local control system, instrumentation panel, and communication panel shall be furnished and fully integrated into the compressor system.
- C. All controls and instrumentation shall comply with the NEC requirements for class I, Division 2, Group D, or be classified intrinsically safe, as dictated by code.
- D. All pressure gauges and dial thermometers shall be stainless steel. No sensing element containing brass or copper shall be permitted. Pressure gauges shall be liquid-filled and have rear blowout protection.
- E. Each compressor shall have, as a minimum, the following control devices and indicators:
 - 1. Compressor Shutdown Protection
 - High inlet pressure
 - Low inlet pressure
 - High discharge pressure
 - Low discharge pressure (w/time delay)
 - Low oil pressure or level
 - ESD shutdown

- Drive motor failure
- Cooling fan motor failure (if equipped)
- High discharge temperature

2. Compressor Instruments and Controls

- Suction pressure gauge
- Inter-stage pressure gauge (each stage)
- Final discharge pressure gauge
- Hour meter
- Receiver pressure gauge
- Unload Restart Control
- Oil pressure switch gauge (if pressure lubricated)
- Manual Start/Stop Switch
- Discharge pressure Auto Start/Stop control
- Power on light
- ESD system w/ push button on front of enclosure
- Valve functions

- F. A common termination point shall be provided for connection of remote emergency shutdown switches, 120 VAC remote annunciation of shutdown alarm, and other field wiring connections. Remote shutdown switches will be connected in series.

2.9 Time Fill Control

- A. An electronic type temperature compensating time fill system will be provided to control time fill operations. System shall be on-skid and fully integrated into compressor system. System shall be field adjustable for 3000 or 3600 psig fills. Provide pressure relief on downstream side of system to prevent vehicle overpressure in the event of a system failure. Provide inlet reference and outlet pressure gauges or digital readouts inside the panel for inspection and adjustment of set points. Time fill system shall be metered to control and measure delivered GGE to each time fill hose.

2.1 O Filters

- A. Acceptable Manufacturer:
- 1. Finite
 - 2. Nowata
 - 3. Or approved equal
- B. The compressor shall be equipped with filters in the suction and interstage, and discharge piping. The filters shall capture aerosol and solid particles greater than 0.6 microns and 0.2 microns, respectively.

- C. All filters and vessels shall be equipped with an automatic or manual blowdown valve and a drain line or hose routed the edge of the skid if not readily accessible.

3.0. Enclosure

- A. A totally enclosed weatherproof and sound-attenuating enclosure shall be provided for the compressor assembly, and ancillary equipment in accordance with the following requirements:
- B. Materials: All materials used shall be non-combustible or fire-rated materials. The enclosure shall be of welded steel construction. The enclosure base frame shall be fabricated of minimum 8 "channel and/or I- beam. Walls and roof material shall be heavy gauge steel for rigidity. Roof material shall be a minimum # 16-gauge steel.
- C. The enclosure shall have lockable steel doors to provide access to equipment for routine maintenance and inspections. The base frame shall be designed for the mounting of removable equipment assemblies. Plate walkway shall be provided. All interior floor areas, which are large enough to stand on, are to be covered with anti-skid floor plate. Anti-skid floor plates shall be removable, if necessary, for maintenance access. The roof shall be pitched for water run-off. A gauge panel viewing window shall be provided in the enclosure door or wall for the viewing of instruments without opening or entering the enclosure. All piping, and electrical connections shall be provided on the rear of the enclosure.
- D. .Sound Attenuation: If necessary, all walls and roof of the compressor enclosure shall be lined with flame resistant sound attenuating material to minimize equipment noise levels to a maximum of 80 dB at ten (10) feet outside any enclosure wall. No octave band shall exceed the average of its neighbors by more than 5 db.
- E. Lights: If enclosure is intended for personnel entry, one (1) explosion proof (Class I, Division I or 2, group D) ceiling light shall be provided, complete with explosion proof wall mounted manual light switch, within the enclosure.
- F. Paint: Before painting, metallic surfaces shall be cleaned and free of mill scale, burrs, and sharp edges. All painted surfaces shall be prepared in accordance with the paint manufacturers written instructions. Finish shall be powder coated or paint as per the following:
 - 1. Coat anti-corrosion, abrasion resistant industrial primer - 2 mils minimum dry film thickness.
 - 2. 1 coat impact resistant, weather resistant high-quality gloss enamel - 1.5 mils minimum dry film thickness.
 - 3. Minimum total dry film thickness 3.5.

SECTION 3

NATURAL GAS DRYER

1.1 Acceptable Manufacturers:

- A. Xebec
- B. PSB
- C. Or approved equal

General: Skid mounted single tower gas dryer (dehydrator) suitable for use to dry pipeline quality natural gas before being processed for use as a motor fuel. System will be furnished complete and ready for use with all necessary accessories or components, whether specified or not, necessary to provide a safe, durable, maintainable, and functional system.

1.2 Design Conditions

Design Flow Rate	Minimum 400 scfm
Inlet Gas Pressure	15 to 50 psig
Inlet Gas Temperature	50 to 60 deg F
Inlet Gas Water Content	7 lbs/MMscf
Ambient Air Temperature	20 deg F to 120 deg F
Vessel Design Temperature	-20 deg F to 500 deg F
Outlet Gas Water Content	Per NFPA 52
Outlet Gas Dew Point	Per NFPA 52
Duty Cycle	12 hrs/day

1.3 Filters:

- A. Pre-filter: A cartridge type coalescing pre-filter shall be located at the inlet to the dryer. Filter element shall remove 99.99% of particles larger than 0.01 microns and aerosols larger than 0.1 microns.
- B. After Filter: A cartridge type filter shall be located at the outlet of the dryer. Filter element shall remove 100% of the particles 1.0 microns or larger.
- C. Housing and bowl shall be of aluminum or carbon steel and fitted with a drain port for removal of collected liquids.
- D. Filters shall be located to allow replacement of the filter elements without removal of the filter housing from the piping system.

- E. Furnish inlet and outlet isolation ball valves at each filter.
- F. Differential Pressure Gauges: Each filter shall be furnished with locally mounted differential pressure gauge which is connected to the filter head.

1.4 Dryer:

- A. General: Natural gas dryer shall be an insulated single tower desiccant (molecular sieve) dryer.
- B. Desiccant tower shall be an ASME U-stamped carbon steel pressure vessel designed for 150 psig at 500 deg F with a 1/16 corrosion allowance.
- C. Tower shall be furnished with a local dial type pressure gauge with back-panel blowout and an ASME Code pressure relief valve complete with a lockable isolation valve.
- D. Tower shall be fitted with suitable desiccant fill and drain ports and stainless-steel inlet diffuser and desiccant support screens.
- E. Desiccant: Tower shall be loaded with high capacity Type 3A molecular sieve for minimal co-adsorption of mercaptans, CO₂, H₂S, and other components or trace elements from natural gas, with a minimum life of 5 years.
- F. Insulation: Tower shall be wrapped with fiberglass insulation and an aluminum skin to maintain optimal adsorption temperatures and to prevent accidental physical contact with any hot surfaces during regeneration. Insulation and cladding shall be suitable for outdoor installation.

1.5 Valving:

- A. Regeneration Valves: Dryer shall have valved regeneration inlet and outlet connections to facilitate regeneration with an external unit. Both valves shall be rated for gas service. Inlet valve shall be suitable for high temperature service. Both valves shall be lockable.
- B. System By-Pass: Provide one system by-pass valve near the system inlet and outlet.

1.6 Skid and Assembly:

- A. Manufacturer shall furnish all piping systems and all equipment, mounted on a skid. Connections shall be sealed for shipment.
- B. All piping shall be carbon steel. SA53 Grade B with wall thickness to meet the required design conditions. Minimum schedule 40.

C. Fittings 2" and under shall be threaded malleable iron, class 150, ASTM 1197. Larger fittings shall be butt weld type ASTM A234 WPB of the same wall thickness as the adjoining pipe.

D. Flanges shall be forged steel, slip-on or weld neck, raised face, ASTM A-105, bored to match the I.D. of the pipe. Flange ratings shall be as required for the design of the piping system.

E. Welding and welder qualifications shall conform to the requirements of the ASME Boiler and Pressure Vessel Code or API Standard 1104. Filler metals shall be selected in accordance with AWS or ASTM Standards.

F. All electrical systems for all electrical equipment shall be furnished and installed on the skid. Electrical construction shall be in accordance with NFPA 52 and NFPA 70 for Class I, Div II, Group D. Terminal strips shall be furnished with all internal wiring complete to these terminal strips. Electrical control panel(s) shall be waterproof NEMA 4. Power required shall be 120 Volt, 1 phase, 60Hz. Provide a separate grounding lug on the skid.

G. Painting: Skid, equipment, piping and all other ferrous materials which are not insulated shall be primed and painted. A minimum of one primer and two finish coats are required. One quart of touch up paint to match the finish shall be furnished with the equipment.

- 1.7 Instrumentation: Provide a continuous dew point monitor with selectable digital dew point indication in degrees C or F at the dryer control panel. Moisture sensor shall be mounted at the dryer outlet to verify the outlet gas dew point. Provide two alarm lights: one for deteriorating dewpoint performance and one for regeneration required. Provide two set of dry alarm contacts for a remote signal.

SECTION 4

TIME FILL POSTS

A. General

1. Ten (10) time-fill post shall have two fill hoses and each fill hose shall be of a two (2) hose design. Metering of each time fill hose is required.
2. Each time-fill dispensing hose shall be 20 feet long, 3/4-inch inside diameter, with a 1/4-inch vent line.
3. Each time-fill hose shall be labeled for natural gas service, tagged to indicate date of manufacture and pressure test, electrically conductive, CSA Group certified for 5,000 psig, and capable of dispensing natural gas at a temperature compensated fill pressure of 3,600 psig at 70F.
4. Each lime-fill dispensing hose and vent hose shall be conductive to prevent buildup of static electricity. Acceptable manufacturers are Parker Paraflex or equal. Each dispensing hose shall have an NGV-I Type 2, 3,600 psig rated nozzle attached at the vehicle fill end. Acceptable manufacturers are OPW or equivalent. Each hose of the two-hose design shall have straight pull breakaway fittings to stop the flow of gas in the event of a drive off.
5. Each dispensing vent hose shall discharge vented gas to atmosphere at the top of each time-fill post, if permitted by the South Coast Air Quality Management District.
6. The flow of gas to a vehicle shall continue until the electronic time-fill control system signals a complete fill or is manually stopped. The shut-off fill pressure shall be electronically ambient temperature compensated at a fixed reference temperature of 70F. The system shall allow unrestricted CNG flow until the shutoff pressure is reached.
7. Each time-fill hose shall be equipped with a hose retractor to keep the hose from touching the ground when not in use with the nozzle in the post holster. Each retractor shall be attached to the top of post and shall allow for full extension of hose for filling, without restriction.
8. Each time-fill post shall meet Class I Division 2 Group D NFPA 70 requirements.
9. Signage and wording required by NFPA 52, including fueling instructions, shall be attached to each time-fill post.

B. Time-fill System Inlet Filters

Two inline coalescing filters shall be connected above ground to the pipe or stainless steel tube at the inlet to the time-fill system. The two coalescing filters shall capture aerosol and solid particles greater than 0.6 microns and 0.2 microns, respectively. Each filter shall have a design pressure not less than 5000 psig. Filter element replacement shall be performed without removing the connection piping or tubing. Filters shall be Parker Finite J2 or approved equal with a block and bleed drain system installed on each filter housing. Filter housings shall be installed with double ferrule fittings.

SECTION 5

TESTING STARTUP AND TRAINING

- 1.0 Prior to shipment, each CNG compressor shall be operated for a minimum of two (2) continuous hours and functionally tested. The test shall include, but not be limited to, operation of each compressor, all control, safety shutdown and alarming systems, etc.
- 1.1 A minimum of three consecutive days, including all travel and subsistence, shall be provided for testing and start-up by the supplier. Each piece of equipment shall undergo a witnessed system test. At least two (2) weeks prior to the system test, the Supplier shall submit to the City's Engineer draft Maintenance and Operating Manuals. During the testing of the mechanical, instrumentation and electrical equipment, the Supplier shall make available representatives of the manufacturers of all the various pieces of equipment or other qualified persons who shall instruct the City's personnel in the operation and maintenance thereof. Natural gas shall be used for the system test. Piping and tubing shall be purged with nitrogen prior to introducing natural gas. Overall station operation and testing shall be coordinated and performed by the construction contractor. The Supplier shall be responsible for running and testing only the equipment furnished by Supplier. The tests shall include, but not be limited to, the items listed below.
 - A. Run-test for proper operation including calibrating all instrumentation
 - B. Test the ESD system
 - C. Test compressor control panels and shutdowns.
 - D. Test dryer system.
 - E. Test dispensing systems.
 - F. Any discrepancies in the equipment found as a result of these inspections and tests shall be corrected by the Supplier at no cost to the City (including the cost for making the corrections and repeating the tests within two (2) weeks).

1.2 WARRANTY SERVICE

Supplier shall provide a one-year warranty on all furnished equipment covering all non-consumable parts and labor. The warranty shall be for a period of one year from the date of final written acceptance of the equipment by the City. Acceptance by the City may take up to 60 days from successful commissioning of the CNG station equipment.

Warranty period shall commence upon written acceptance of the system as defined above.

- 1.3 Acceptance by the City's Representative of the fueling station and associated items furnished by Supplier under this specification shall occur only after the following requirements have been met:

- A. It has been demonstrated to the satisfaction of the City's Representative that the fueling station, meets and conforms to the requirements of the specification and drawings.
 - B. All testing required by this specification have been successfully completed and have been accepted by the City's Representative.
 - C. Acceptance by the City's Representative of the respective witnessed tests shall not release Supplier from any of its warranty obligations, or any other obligation, under this Specification, the Contract, the law, or in equity.
- 1.4 Supplier shall provide an informal training class in station operation, service, and maintenance while on-site. The Supplier shall instruct the City's designated operating and maintenance personnel in the correct and safe operation, adjustment, and maintenance of all equipment and systems. The basis of instruction shall be the station operating and maintenance manual.
- 1.5 EQUIPMENT RECORD DRAWINGS
- The Supplier shall update the approved shop drawings to reflect any field modifications after delivery from the factory. The "as-built" shop drawings shall be incorporated into the station operating and maintenance manuals.
- 1.6 OPERATING AND MAINTENANCE MANUALS
- All product data and related information appropriate for City's maintenance and operation of all products and systems provided under this Contract shall be compiled into an integrated operating and maintenance manual. A minimum of two copies shall be provided to the City prior to acceptance.

**---End of SCOPE OF WORK FOR DESIGN AND BUILD
Section.---**

CNG Time-Fill Fueling Station Proposal

Created Exclusively for

City of Santa Ana

08/28/2020

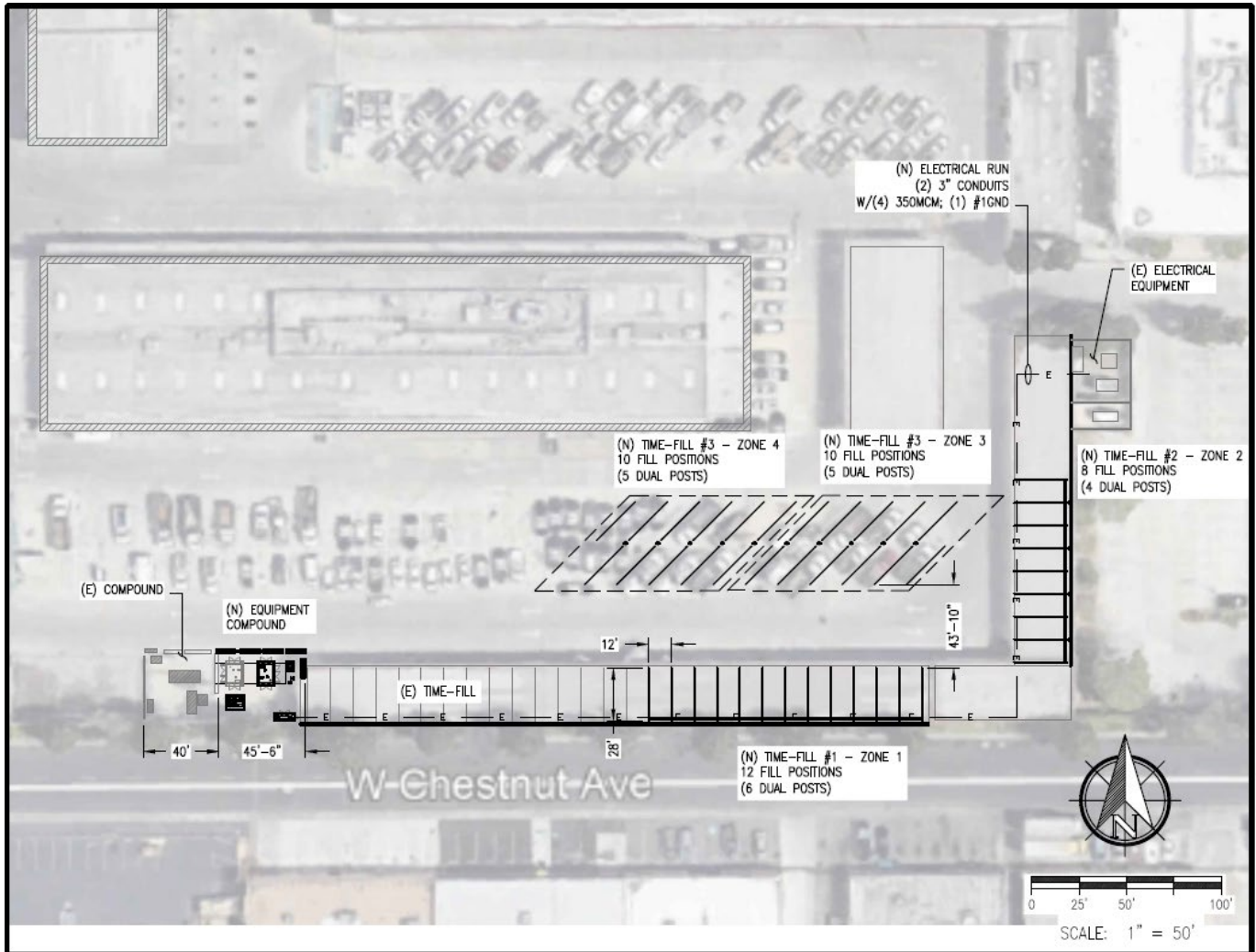




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<u>The electrical equipment will be located a minimum of 15' from the compressors and other gas-supplied equipment. The electrical area will contain the following items: Service Entrance Main Disconnect, Motor Starter Panel, and optional items, such as communications panel, power distribution panel and manual transfer switches.</u>	36
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General Station Layout for City of Santa Ana





Dear City of Santa Ana,

TruStar Energy is pleased to offer the following proposal for a time-fill station at the following location:

215 S. Center St,
Santa Ana, CA 92703

This 100% turnkey proposal addresses the following requirements:

- Design, Planning, Permitting, Equipment, Construction, Start Up and Training

This proposal includes 2 compressor(s) and 40 time-fill hoses

Use the table below to determine the production capability of this proposal
COMPRESSOR PERFORMANCE CAPACITY [1 DGE = 1.39 cubic feet / 1 GGE = 1.267 cubic feet]

Compressor	Per Min. Production GGE	Per Min. Production DGE	Per Hr. Production GGE	Per Hr. Production DGE	Per 7 Hr. Production GGE	Per 7 Hr. Production DGE	Per 10 Hr. Production GGE	Per 10 Hr. Production DGE
1	1.66	1.5	99.52	90.22	696.67	631.51	995.24	902.16
2	3.32	3.01	199.04	180.44	1393.33	1263.02	1990.48	1804.32

The Time-Fill Station as quoted has the following dispensing capabilities.

Equipment:

- Time fill 1 vehicle with 25 DGE in: 0.14 hours
- Time fill 10 vehicles with 25 DGE in: 1.39 hours
- Time fill 30 vehicles with 25 DGE in: 4.16 hours
- Time fill 50 vehicles with 25 DGE in: 6.93 hours
- Time fill 75 vehicles with 25 DGE in: 10.39 hours

The compression scenario is based off of an inlet pressure of 30 PSIG with adequate flow. Lower pressures will affect the production by lowering the per minute/hour production.

Steve Breeze
TruStar Energy Sales Representative

TIME-FILL STATION EQUIPMENT OVERVIEW

DESIGN AND ENGINEERING (to be performed by TruStar Energy)

TruStar Energy will initially meet to understand the requirements of your proposed station. At TruStar Energy's discretion TruStar Energy will provide exhibit drawings. The design will be based off the conceptual layout for the location. Upon signed agreement and 20% down payment, a final design will include PE-stamped CAD drawings for each phase of the project, including but not limited to: electrical, mechanical and civil for permitting purposes. TruStar Energy will acquire all permits necessary for complete build in all phases of construction.

Design and construction will consider industry standards and all executable local, State, and/or Federal building codes as interpreted by the Fire Marshall and/or building inspector with regional jurisdiction.

PROJECT MANAGEMENT

A dedicated project manager is assigned to each project for the duration of the project. The assigned project manager is involved with the project from the design phase throughout the construction and startup. The project manager will be 100% responsible for all of the daily activity at the job site and will report construction progress to the customer's designated contact on a weekly basis. This project manager is responsible to ensure that all TruStar Energy employees and subcontractors follow TruStar Energy and Customer safety and site policies. The project management fee includes site equipment mobilization, TruStar Energy employee travel & lodging and project management.

START UP LABOR

Includes certified equipment technician on site for four days, on site operations and maintenance training and one site follow-up visit by technician in first six months after start up.

UTILITY EXTENSIONS REQUIRED BY CUSTOMER

- A single **High Speed Broadband Internet (RJ45) connection for CP-400 Communication (3MB minimum – 7MB optimal)** package is required at the compressor staging area.
- A second phone line is required for customers using a gas broker for a telemetric meter.
- A third **High Speed Broadband Internet (RJ45) connection (3MB minimum – 7MB optimal)** is required for customers using a credit card reader for public fuel dispensing or private fleet information collection.

Electrical Service –

- A 400 amp electrical service is required at the compressor staging area from your Electric Utility provider - 277/480, 3 phase 4-wire service.

Natural Gas Service –

- 30 psi pressure capable of delivering 25080 cubic feet of natural gas per hour, with the gas meter located at the compressor staging area. Note: (lower pressures can be acceptable for the production of CNG at the designated site location. Lower pressures will drop the hourly production rate of CNG.

The customer is responsible to provide all electrical, phone and gas service as required within 25 feet of the compressor compound and responsible for all associated costs. TruStar Energy will work with your local utilities to validate existing service and determine what necessary upgrades are required to satisfy utilities requirements. **Assumptions: TruStar Energy takes no responsibility for the unforeseen. TruStar Energy assumes that the soil is not contaminated and is suitable for backfill.**

EQUIPMENT OVERVIEW

Please find a full station order summary [including quantities] at the end of this proposal.

2 ANGI 300 JGP 100 hp - 209 scfm Compressors - Included

Compressor: Lubricated, Reciprocating, Balanced, Opposed

Number of Stages: 4

Manufacturer: ANGI - All weather enclosures included. Compressor is positioned so that access doors can be opened fully to access compressor and components inside enclosure.

COMPRESSOR ENCLOSURE

The ANGI 300 compressor comes standard with a power-coated sheet metal enclosure with access doors and removable panels. The maximum emitted noise from the skid is 78 dBA @ 10' (typical for enclosed skids). Unless specified by the customer, the enclosure comes painted in white with a gray skid. Included options include one enclosure light and an IR gas detector.

CONSTRUCTION

Piping 2" diameter and smaller is of socket weld construction. Piping construction methods shall conform to ANSI B31.3 3. Flanged piping joints shall use spiral-wound, metallic gaskets. Tubing shall be of seamless ASTM-316 type of adequate pressure rating. Tube fittings 1/2" or smaller shall be Hoke brand or Swagelok brand. Tube fittings 1/2" or larger shall be Parker "Seal-lok" fittings with face seal O-rings. All carbon steel surfaces shall be adequately prepped and painted using industrial epoxy paint. All components shall be suitably braced.

INLET SYSTEM

Inlet connection: Varies based on site conditions. 2. Inlet Valve: Solenoid valve. 3. Inlet Filter: Particulate filter with serviceable, removable filter made of stainless steel mesh construction. 4. Inlet Flex Hose to be provided, manual isolation valve to be provided, with construction start up strainer to be provided.

CAPTIVE RECOVERY SYSTEM

Complete skid-mounted captive recovery system for filter blow-down and unloaded starts and stops. The system includes a 100-gallon, vertical ASME tank rated for 600 psig. The recirculation system includes a high-flow recirculation regulator, system relief valve and receiver tank drain.

SKID CONSTRUCTION

The NG300 Single Unit Skid measures 12' L x 7'-6" W x 8'-5" H, and weighs 15,000 lbs and built to Ariel Compressor Packaging Standards. The open skid is made of welded, structural beams. The main beams are full-depth steel channel or tubes. Rigid mounting surfaces are provided for the compressor and driver. The skid is designed with an overhead support frame and hold-down bolt holes are provided at four (4) external and two (2) internal locations.

FILTRATION

Serviceable filtration is provided on the inlet of the compressor, on all inter-stage circuits and prior to discharge. The inlet particulate filter comes with a serviceable element made of stainless steel mesh construction. Coarse coalescing filters with stainless steel oil knock-out elements are provided on all inter-stage circuits. Pre-coalescing and fine-coalescing final filters are provided on the discharge circuit for oil elimination.

CONTROL SPECIFICATIONS

Control System.....	ANGI CCS Compressor Control System
PLC Make / Model.....	Panel, Control, Compressor, Horner Electric RX371
I/O	
I/O Arrangement (Max I/O Indicated)	24 DI / 16 DO / 20 AI / 4 AO
Mounting Location of Controller.....	On-skid, UL NNNY, mounted in NEMA 3R Enclosure
Electrical Classification of Control Panel.....	Class I Div II Per NFPA 78
Operator Interface	Panel mounted graphical display, pilot lamps and
key switches	
Available Network Connections.....	CsCAN, Ethernet, Modbus*, DeviceNet

INSTRUMENTATION

STANDARD INSTRUMENTATION: Analog: Inlet Pressure Transducer, Interstage Pressure Transducer, Discharge Pressure Transducer, Interstage Discharge Pressure RTD, Compressor Oil Pressure Transducer. OPTIONAL ANALOG INSTRUMENTATION INCLUDED: Enclosure Gas Level (%LEL). DIGITAL INSTRUMENTATION: ESD Active Dry Contact, Hi Gas Level

ELECTRIC MOTOR

Manufacturer: WEG Baldor or Equal / Operating Speed – 1785 rpm /NEMA, TEFC, Class 1 DIV 2 / 3-phase – 460/60 Hz

COMPRESSOR AREA EQUIPMENT

COMPRESSOR EQUIPMENT BASE AREA - Included

Compressor pad area is composed of a minimum of 12-18" concrete base (depending on compressor configuration and local building codes). The compressor equipment base area will house compressors, storage, priority panel, inlet gas dryers and gas meter assembly.

The area inside the compressor compound (around the concrete equipment pads) is finished with a surface of ¾" river rock (asphalt or concrete finish optional). By code, the compressor area must be protected by bollards or continuously connected guardrail.

ELECTRICAL EQUIPMENT BASE AREA – Included

The electrical equipment will be located a minimum of 15' from the compressors and other gas-supplied equipment. The electrical area will contain the following items: Service Entrance Main Disconnect, Motor Starter Panel, and optional items, such as communications panel, power distribution panel and manual transfer switches.

COMPRESSOR AND ELECTRICAL EQUIPMENT AREA PROTECTION - Included

When guardrail is chosen for protection posts are typically spaced 7' on center and are anchored 36" - 60" below the ground surface. Guardrail height is set at 36" above the surface level. The time-fill post will be mounted in an 18" dia. x 3' deep concrete base.

If bollards are chosen for protection, the compressor pad area will include 3' tall - 4" concrete-filled steel protective bollards anchored in an 18" diameter base, 3' in depth spaced 4' on center. The bollard is covered in a safety yellow TruStar Energy-branded plastic sleeve.

CHAIN LINK FENCE: - Included A 6-foot high 2-1/4" x 11-1/2 ga. galvanized-steel fence will be installed around the compressor / electrical equipment areas. Includes a lockable service gate. The gate size will be 3-feet wide unless otherwise specified.

COMMUNICATIONS PACKAGE: - TSE Wireless Communication Panel - Included

TSE Wireless Communication Panel: A TruStar Energy engineered wireless full-time equipment monitoring system which includes: email and text messaging for system faults, continuous time-based logging of system operating parameters, continuous event-based logging of system events. The system provides local web server for real-time and logged data display. Provides for remote access for TruStar Energy data collection and support via secure VPN connection. Also provides Network Address Translation [NAT] for secure interface to the customer's network.

INLET GAS DRYER: GD-024-S-M-460-150-3 - Included ANG1 single tower manual regen dryer, 24" vessel, 150 psi design pressure, 3" class 150 flanges. Includes digital dew point monitor, isolation and bypass valves, blower, heater, cooler, water separator and collection tank to regenerate the desiccant. Requires 460/3/60 power.

MOTOR STARTER PROVISION: Motor Starter - Dual 100 hp - Qty 1 - Included

The motor starter panel is designed to perform several different custom functions within the compressor design - as well as a soft start for your electric motor. The other functions include, but are not limited to: dryer power, enclosure power, gas detection power, time-fill panel power, cooling fan power, ESD for time-fill line power, and spares for future options.

DIRECT FILL POST WITH STORAGE PROVISIONS – 4-Bottle TF Buffer Storage: - 6,840 cubic ft with Direct Fill Post and Hose - Included

This option serves two purposes: as buffer storage, it functions to protect the pressure relief valves on the compressors from back pressure on the time-fill line in the event time-fill lines are disconnected while the compressor is operating. The second purpose provides a means to direct-fill vehicles (similar to fast fill) and dedicates all storage and compressor production to one single vehicle without having to disconnect time-fill lines currently connected to vehicles. This direct fill includes one skid of 4 DOT bottles with bottom-mounted drains - capable of storing 6,840 scf of CNG. Approximately 54 GGE is available from this storage depending on pressure in the receiving vehicle.

EMERGENCY SHUTDOWN AND FIRE EXTINGUISHERS TO MEET BUILDING CODE – Included

Shutdowns are located at compressor area and dispenser area.

- Includes Emergency Shutdown Switch at dispenser area
- Fire Extinguisher - 5 lb./ 20 BC/model B402/B402T, 3A:40B:C/ 25-gallon water equivalent
- Safety Signs at dispenser area
- Safety Signs at dispenser area and time fill areas

TIME-FILL AREA AND EQUIPMENT

Protection for Vehicle Parking and Time-Fill Posts – Included

Wall Mounted: Qty 20 parking locations - Included

The time-fill post will be mounted to the wall in a similar fashion as existing time-fill posts. High-pressure piping and electrical conduit will be run above ground mounted on the existing wall on a separate galvanized-steel mounting structure.

Caisson Protection: Qty 20 parking locations - Included

When choosing caisson protection, the area will include 3' tall - 4" concrete-filled steel protective bollards anchored in an 18" dia. base, 3' in depth spaced 4' on center. Each caisson will contain separate conduit for the high-pressure gas and electrical service. When choosing this option, all high-pressure piping and electrical conduit is run underground between the time-fill posts/caissons.

Fill Posts for 40 Time-Fill hoses - Included

20 dual-hose time-fill posts will be supplied and installed in the time-fill mounting system. Each single or dual-hose post includes: receiver for fill hose nozzle, Heavy duty retractor for fill hose, Shut off valve, Safety and Warning signs, Grounding rod with 3/8-16 grounding stud welded on with double clad plated nuts. Posts are installed in a concrete base 18" in diameter and 3' in depth. Holster style post hook up – eliminates freeze up of nozzle to post. Posts are constructed of 3" x 3" square steel tube with on-post atmospheric gas exhaust vent, located at the top of the post. The top of the post measures 10' high from mounting surface. Prepped, painted "Safety" yellow.

40 Fill Hoses - Included

- Staubli 3,600 psi NGV1 Type 2 nozzles
- 25' long hose with Guard-rail mount
- 150# inline high-pressure breakaways
- Swagelok 3 way valve for nozzle

Time-Fill Post 3 Zone Layout - Included

High-pressure discharge lines run from the compressor to 3 time fill zones. All lines are trenched or directional drilled when possible from compressor to first fill hose on fill line. Trenched lines are replaced with original surface type that existed before trenching.

Mechanical High Pressure Trenching per Time-Fill Run - Included

Trenching for mechanical high pressure originating from the compressor to each individual time fill run.

Time-Fill Line Filtration – Qty 1 - Included

There will be Parker High pressure filters installed on the beginning of the Time-Fill Line to catch any oil bypass and contaminants before CNG is dispensed into the trucks. Filter stand includes a 99.5% 3/4" JS3B-10 pre-coalescer filter and 1" JS4C 99.9% final filter.

High-Speed Defueling Panel – Included

High-speed defueling panel equipped with a Parker Quick Release Coupler. Comes complete with a self-supporting enclosure stand.

High-Pressure Piping - Included

Stainless steel high-pressure Time-Fill Line will be run from the compressor area to the Time-Fill Line. This high-pressure line will be directional drilled when possible and where required, trenching for high-pressure runs will be backfilled and replaced with like type surface material (which was removed during installation). All stainless steel lines that are run underground are protected by PVC conduit. Stainless steel tube is rated at 5,000 psi with 1/2" having a .065" wall thickness and 3/4" tubing having a .095" wall thickness. Schedule 160 High pressure stainless steel pipe between 1" and 2" in diameter is rated at 5,000 psi.

Low-Pressure Piping - Included

Low-pressure piping will be used from gas meter assembly to the inlet gas dryer and from the inlet gas dryer to the compressors. Schedule 40 carbon steel is rated at over 1,000 psi.

Time Fill Panel - Included

Time fill panels with 1" valve (for applications above 700 scfm), located on compressor will control the start and stop functions of the Time-Fill Line. This panel provides temperature compensation fill on the Time-Fill Line. This panel also allows you to set specific start and stop times on the Time-Fill Line to

maximize the entire systems capabilities and ensure trucks get the maximum allowable CNG on board with each fill.

Micromotion CNG050 Meter – 4 - Included

Micromotion Meter CNG050 - 40 to 4444 scfm capacity constructed of stainless steel, pressure rated to 5,000 psi. Temperature rated from -40°F to +247°F. Mass flow accuracy to ± .5%. Rated for hazardous area installation. Weights and Measures rated. Reads in liters, DGE, or GGE. All-weather rated.

20' Dual-Head LED Parking Lot Light – 1 Included

A dual 400-watt LED lamp mounted on a one-piece aluminum post. Each lamp enclosure measures 15" x 22". This light post includes dual LED lamp enclosures. The light post is 20' in height and mounted in a 18' concrete caisson.

Start Up and Commissioning- Included

TruStar Energy will commission the station and provide on-site training on equipment to mechanics that will include all maintenance and operations requirements. Mechanic will work with TruStar Energy trainer during start up to understand all required maintenance and operations requirements.

Pricing and RNG Credit Summary:

Phase 1

Design, Engineering & Permits:	\$104,339.80
Total Phase 1 Contract Price:	\$104,339.80

Phase 2*

Equipment Procurement:	\$778,351.14	Phase 2 - Equipment
Construction & Installation:	\$1,172,982.50	Phase 2 - Construction
Project Management & Commissioning:	\$239,168.59	Phase 2 - Construction
Freight & Mobilization:	\$33,750.00	Phase 2 - Equipment
RNG Credit/Lump Sum:	(\$540,000.00)	
Total Phase 2 Contract Price:	\$1,684,252.23	

**Phase 2 pricing expires June 30th, 2021 and will be revised to reflect cost increases incurred, if any, by TruStar Energy. Phase 2 will commence upon mutual agreement of updated pricing and receipt Notice to Proceed.*

TruStar Energy will receive all RNG credit value up to 110,000 GGE per year for 10 years.

Actual usage will be audited at the end of each calendar year by TruStar Energy and verified by City of Santa Ana. RNG credits will be reconciled as follows:

- TruStar Energy will pay City of Santa Ana \$0.67/GGE for all volume over 110,000 GGE annually.
- City of Santa Ana will pay TruStar Energy \$0.67/GGE for any shortfall of volume below 110,000 GGE annually.

Optional Public Dispenser Pricing: \$565,495.50**

The Optional Public Dispenser Price includes all costs associated with the construction of (1) dual-hose public fast-fill dispenser roughly 750' from the equipment compound. Dispenser includes a POS system and 24,000 cu ft of storage sufficient to supply expected public volumes. The Optional Public Dispenser option is not part of this Agreement and shall require a separate agreement approved by the City Council.

***Optional Public Dispenser Pricing expires June 30th, 2021 and will be revised to reflect cost increases incurred, if any, by TruStar Energy. Phase 2 will commence upon mutual agreement of updated pricing and receipt Notice to Proceed.*

EXHIBIT B
Additional Insured Endorsement