

# City of Denton

## Compressed Natural Gas (CNG) Fueling Station

### Technical Proposal

7/13/2016



Submitted to:  
City of Denton  
Vance Kemler  
General Manager  
Solid Waste & Recycling  
1527 S. Mayhill Rd.  
Denton, TX 76208

Submitted by:  
Zeit Energy LLC  
1717 McKinney Ave  
Suite #700  
Dallas, TX 75202

Clint Beauchamp  
817-223-1401  
clint@zeitenergy.com





## Equipment Specifications

### **CNG Compressor (QTY: 1)**

#### **ANGI NG300E Duplex Compressor Package**

- Ariel JGQ/2, 3 Stage Reciprocating Compressor
- 999 SCFM capacity @ 264.5 psig per inlet pressure (249hp) per compressor, 4500 psi discharge.
- 250 BHP, 480 VAC, 1800 RPM TEFC Electric motor
- ANGI control system with Allen Bradley remote I/O (controlled by site controller-listed below)
- Protective enclosure includes sound attenuation, interior light, and gas detector
- Standard operating temperatures -20 to 105F

### **Duplex Motor Starter Panel: Two 250 hp motors, with Soft Start (QTY 1)**

- UL approved with a short circuit current rating (SCCR) of 65 KAIC Main Circuit Breaker
- Assembled Nema 3R or equal (outdoor) enclosures
- Includes Equipment Control Power and ESD Control
- Main disconnect breaker 1000A, Factory Trip setting 760A
- Standard operating temperature -20 to 105 F

### **Site Controller panel for two (2) Compressors (QTY 1)**

- Centralized control of all equipment
- Allen Bradley CompactLogix PLC with Red Lion 7" color touch screen interface
- Centralized control of all equipment through remote I/O panels
- Redundant backup PLC for a cold swap recovery process included
- Lead / lag compressor start / stop control to balance equipment run hours
- Gas control for customer specific fueling strategy
- Incorporated communication panel with data logging and fault notification
- Nema 4 enclosure can be located in a hazardous area.





## Inlet Gas Dryer (QTY:1)

ANGI Model GD-024-S-M-460-300-3

- Single Tower
- 2004 SCFM @270 psi Inlet
- Approximately 5.5 psi pressure drop
- Regen interval, 82 Hrs @ 7# of water per MMSCF)
- Digital Dew Point Monitor
- Vent stack



## Priority Valve Panel (QTY: 1)

Angi Energy

- Electronically controlled gas actuated valves
- 1" ported ball valves
- Three line feed to cascade storage field and dispensing
- Allen Bradley remote I/O control Panel controlled by centralized site control panel PLC



## CNG Dispenser (QTY: 2)

Angi Gilbarco Encore 700S CNG Dispenser

- 5.7" color screen with HCR EMV ready hybrid card reader in dispenser (CRIND)
- 3-line in per hose configuration (sequencing in dispenser)
- Two (2) meters (one per side)
- 3/4" connections; 1" internal tubing
- 2-side; 2-hose configuration (one hose/nozzle assembly per side)





# ZEIT ENERGY

CNG FUELING SERVICES

City of Denton  
Design and Build Services  
CNG Fueling Station  
Technical/cost proposal

## ASME storage 3-Pack 38'(QTY 1):

- Can store **64,766** scf Natural Gas at 5500 psig. Each assembly includes inlet & relief valve isolation ball valves, ASME pressure relief valve for each vessel and I -beam mounting of vessel in a 1 wide, 3 high configurations.



## Liquid Fuel Dispensers

### Gilbarco Encore 700 S

- High Flow dual hose Diesel Dispenser (QTY 2)
- Regular FLOW dual hose Diesel Dispenser (QTY1)
- Regular flow E85/Unleaded Dual hose dispenser (Qty1)
- 5.7" Color screen with HCR EMV ready hybrid card reader in dispenser (CRIND)





# ZEIT ENERGY

CNG FUELING SERVICES

City of Denton  
Design and Build Services  
CNG Fueling Station  
Technical/cost proposal

## Point Of Sale System

**Comdata fuel management system** with Pegasus pedestal for DEF and overhead dispenser.



Pegasus IV Pedestal

## Services:

Commissioning & Start-up Support (Start-up): The program is designed to provide the basics of maintaining our systems and ensures that the installation of all site connections is complete and correct as well as validating warranty.

Freight: CNG Equipment delivered to site

## Requirements:

- 480 volt / 3 Phase from electric utility
- 270 psig inlet pressure from natural gas utility
- Internet connection



## Engineering & Construction Scope

### Engineering/Construction Management

- Professional Engineering design.
- PE Sealed Construction Document.
- Construction Management and on-site Supervision.

### Permitting

- City of Denton Building Permit

### Civil Scope

- Construction signage and barricades.
- Trenching including backfill/compaction.
- Removing existing fuel island area concrete paving, grade and repave. (Approx 6000 sqft).
- Remove grass island section at the entrance of the fueling facility and pave with concrete.
- Compressor Concrete Pad.
- CNG Dryer Concrete Pad.
- Priority valve Panel Concrete Pad.
- Storage Concrete Pad.
- Modify Dispensers Islands to receive new dispensers
- Materials, labor, and equipment to set and anchor equipment (Dispensers, Dryer, Compressors, Storage Vessels, valve Panel, Fire Extinguishers, signs).
- Install pipe bollards around Electrical Utility transformer.
- Gravel aggregate in equipment area.
- Install painted CMU block wall around CNG equipment area with steel door.
- Project Signage and Fire Extinguishers.
- Project general (Temporary Toilet, Dumpster, Water Supply etc...).
- Permitting.

### Electrical Scope

- Service Entrance disconnects/ Panels (Furnish and Install)
- Emergency Shutdown Buttons (Furnish and Install) and tie to existing ESD loop.
- All Conduits, Conductors and seal-offs (Furnish and Install).
- All CNG and liquid fuels equipment Terminations.
- Replace existing canopy lights
- Equipment Grounding.
- Permitting.

### Piping Scope

- Furnish and Install Carbon Steel Pipe From gas riser at the CNG equipment area to Dryer.
- Furnish and Install Carbon Steel Pipe from Dryer to Compressor.
- Pressure Test Carbon Steel Pipe.
- Provide and install all high pressure SS tubing Sleeves.
- Install SS tubing in sleeves.
- Provide and Install all high pressure fittings needed to connect SS tubing to CNG Equipment.
- Pressure test high pressure SS tubing.
- Mount and Connect fast fill dispensers.



# ZEIT ENERGY

CNG FUELING SERVICES

City of Denton  
Design and Build Services  
CNG Fueling Station  
Technical/cost proposal

- Permitting.

## Liquid/CNG Fuels Scope

- Install 2 dual hose CNG dispensers with internal card readers and Comdata POS.
- Install 2 high flow dual hose biodiesel dispensers, with internal card readers and Comdata POS.
- Install 1 regular flow dual hose biodiesel dispenser with internal card readers and Comdata POS.
- Install 1 E85/Unleaded dual hose dispenser with internal card readers and comdata POS.
- Replace WARD fuel management system pedestal for DEF dispenser and overhead dispenser

## Miscellaneous Scope

- Remove Existing Fuel Management Pedestals (WARD) and store on site.
- Remove existing acuums and compressed air equipment and store on site.
- Remove existing liquid fuel dispensers (4 total) and store on site.

## Landscaping Scope

- Install landscaping around Equipment area as required by code.
- Expand existing irrigation system to CNG equipment area.

## Pole Street Sign

- Install new street pole sign. location , size and design to be determined.
- Installation includes electrical service.
- Permitting.

## Gas line/Service

- Coordination and negotiation with Atmos Energy for Gas line extension to fueling site.
- Install gas pipe underground from gas meter location to CNG equipment area.
- Easement preparation.
- Permitting.

Exhibit 1						
RFQ 6016 - Construction of the CNG Fueling Station - Pricing Sheet						
The respondent shall complete the following section, which directly corresponds to the specifications. The contractor shall not make						
1		Respondent's Name:			Zeit Energy, LLC	
2		Respondent is a Corporation, Partnership, sole Proprietorship,			Limited Liability Company	
3		Total working days after Notice to Proceed is issued by City for			150	
3a		Construction of the CNG Fueling Station, shall be scheduled to be completed on or before November 30, 2016. If this date cannot be met, please insert the date that your firm can complete the project. The remainder of the project shall follow the schedule provided in Specification Section 01310 Construction Schedules :			Based on total working days after notice to proceed	
4		Total working days after Notice to Proceed is issued by City for				
Proposal Pricing:						
5		Base Pricing for Design-Build project per specifications:			\$2,021,845.00	
		Pricing in typed words				
Design Detail Costs						
Item #	QTY	UOM	Product Description	Subcontractor	Unit Price	Total
6	1	LS	Phase I - Information Gathering and Schematic Design		\$20,000.00	\$20,000.00
7	1	LS	Phase II - Design Development		\$55,000.00	\$55,000.00
8	1	LS	Phase III - Construction Documents		\$15,000.00	\$15,000.00
9	1	LS	Phase IV - Bidding and Negotiations		\$8,000.00	\$8,000.00
10	1	LS	Phase V - Construction Administration		\$23,000.00	\$23,000.00
11	1	LS	Reimbursable Expenses		\$3,000.00	\$3,000.00
12	1	LS	All other Design Items not noted above		\$0.00	\$0.00
Sub-total Base Price (Item #5)						\$124,000.00
Construction Detailed Pricing:						
Item #	QTY	UOM	Product Description	Subcontractor	Unit Price	Total
13	1	LS	General Conidtions		\$6,500.00	\$6,500.00
14	1	LS	Mobilization & Demobilization for Project		\$5,000.00	\$5,000.00
15	1	LS	Bonds (Labor and Materials & Performance)		\$42,880.00	\$42,880.00
16	1	LS	Existing Conditions - selective demolition		\$15,000.00	\$15,000.00
17	1	LS	Site Work		\$50,000.00	\$50,000.00
18	1	LS	Concrete Work		\$98,000.00	\$98,000.00
19	1	LS	Metal Fabrications		\$0.00	\$0.00
20	1	LS	Electrical Work		\$129,000.00	\$129,000.00
21	1	LS	Plumbing Work		\$115,000.00	\$115,000.00
22	1	LS	Earthwork		\$10,000.00	\$10,000.00
23	1	LS	Fueling Equipment		\$1,135,000.00	\$1,135,000.00
24	1	LS	Liquid Fuel Equipment Installation		\$55,400.00	\$55,400.00
25	1	LS	Installation of New Exit Concrete Driveway		\$45,865.00	\$45,865.00
26	1	LS	Utility Gas Line Extension Allowance Profit and Overhead 12%		\$66,000.00	\$66,000.00
27	1	LS	Street Sign Pole Allowance Profit and Overhead 12%		\$4,200.00	\$4,200.00
28	1	LS	All other Construction Items not noted above		\$120,000.00	\$120,000.00
					Sub-total Base Bid (Item #5)	\$1,897,845.00

**Exhibit 2****RFQ 6016 - Construction of the CNG Fueling Station - Allowance Pricing Sheet**

*The respondent shall complete the following section, which directly corresponds to the specifications. The contractor shall not make changes to this format.*

1		Respondent's Name:	<b>Zeit Energy, LLC</b>			
2		Respondent is a Corporation, Partnership, sole	<b>Limited Liability Company</b>			
3		Total working days after Notice to Proceed is issued by City	<b>150 Estimated*</b>			
3a		Construction of the CNG Fueling Station, shall be scheduled to be completed on or before November 30, 2016. If this date cannot be met, please insert the date that your firm can complete the project. The remainder of the project shall follow the schedule provided in Specification Section 01310 Construction Schedules :	<b>Based on total working days after notice to proceed</b>			
4		Total working days after Notice to Proceed is issued by City				
<b>Proposal Pricing:</b>						
5		Base Pricing for Design-Build project per specifications:	<b>\$585,000.00</b>			
Pricing in typed words						
<b>Allowance Detail Costs</b>						
Item #	QTY	UOM	Product Description	Subcontractor	Unit Price	Total
6	1	LS	Utility Gas Line Extension Allowance		\$550,000.00	\$550,000.00
7	1	LS	Street Sign Pole Allowance		\$35,000.00	\$35,000.00
					Total Price (Item #5)	\$585,000.00

\* Utility Gas line installation schedule is an Allowance and could vary



## Appendix A

### 3 year Maintenance Service Proposal

Zeit Energy will provide preventive and scheduled maintenance as detailed in our proposal for \$2100/month, including oil and filters. Repair and emergency maintenance are provided as needed and approved by the City. Maintenance services include only new CNG and Liquid Fuels equipment installed by Zeit Energy.

### Labor Rate Sheet

Controls/Automation	\$119.00/hr or \$950/day (8 to 10hrs)
Training	\$1,200/day (8 to 10hrs)
Repair and emergency maintenance	\$104.00/hr
Repair and emergency maintenance (Preferred Contract Rate)	\$99.00/hr

(Contract Rate offers)

Discounted labor rate

Preferred service scheduling

Twenty Four/ Seven, telephone support

Over Time and Weekend's billed at rate times one point five

Holidays billed at rate times two

Vehicle mileage \$0.89/mi

Note: Preventive maintenance for liquid fuel dispensers includes yearly filters replacement only.

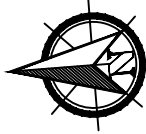
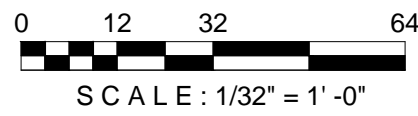
LEGEND

- UGE

NEW UNDERGROUND POWER CONDUIT TO CNG EQUIPMENT & FUTURE
- GAS

NEW GAS LINE UNDERGROUND TO NEW GAS METER STATION
- G

NEW GAS LINE FROM GAS METER STATION TO CNG EQUIPMENT
- TRENCH

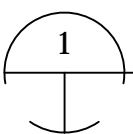
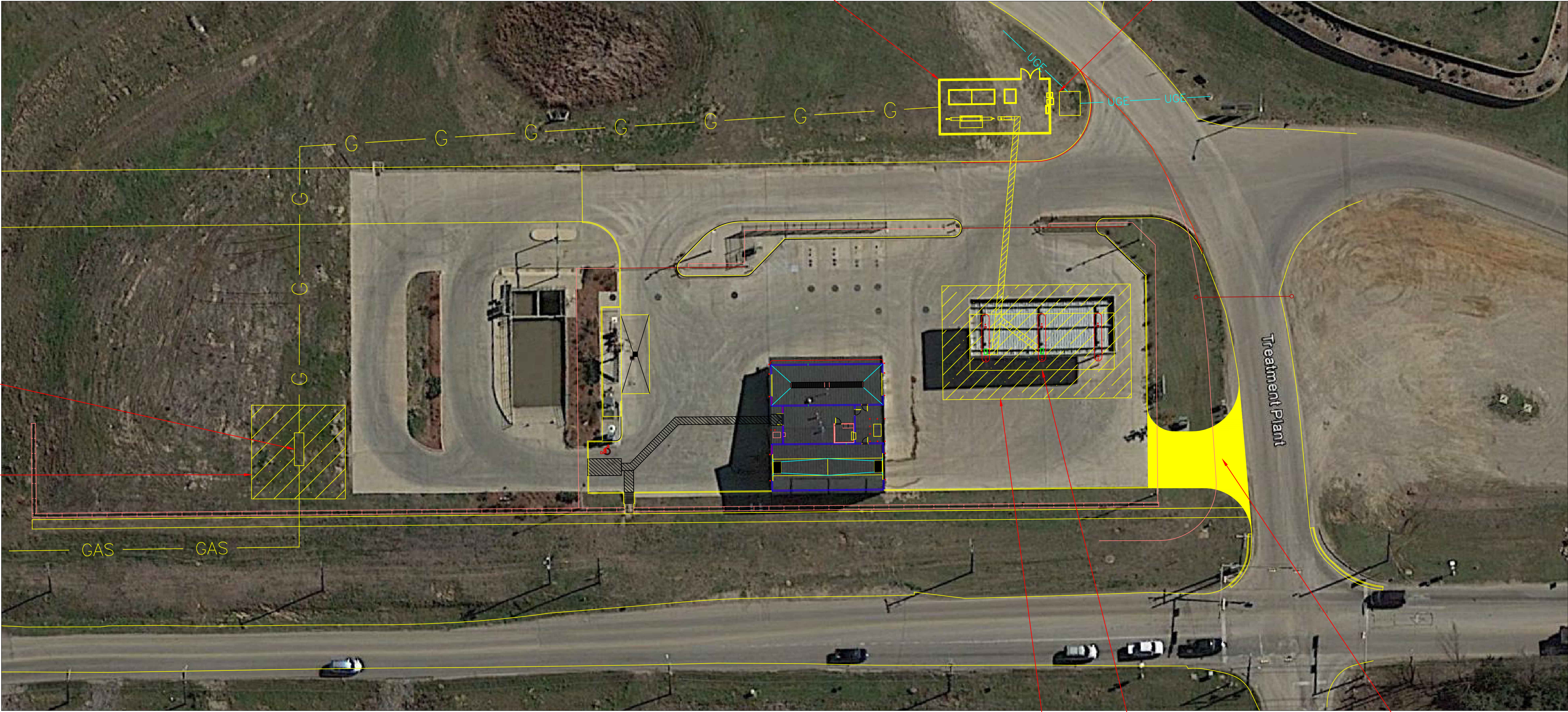


CNG EQUIPMENT COMPOUND

NEW ELECTRICAL UTILITY  
TRANSFORMER

NEW GAS  
METER STATION

50' X 50' GAS  
UTILITY EASEMENT



MAP LAYOUT

1/32" = 1'-0"

60' X 100' PAVING AREA TO  
SAW CUT, REGRADE AND REPAVE

CNG/LIQUID FUEL CANOPY/ISLAND

NEW EXIT DRIVEWAY

**ZEIT ENERGY**  
CNG FUELING STATIONS  
ZEIT ENERGY LLC  
1717 MCKINNEY AVE, STE 700  
DALLAS, TX 75202  
Phone: 214 244 1926  
Fax: 214 593 3344

CITY OF DENTON CNG FUELING STATION  
1257 S MAYHILL RD, DENTON TX 76208

GENERAL  
MAP LAYOUT OPTION 1

NO.	ISSUE	BY	DATE	JOB NO.	JOB
1		ZE	7/14/16		DESIGNED
2		ZE			DRAWN
3		ZE			REVISED
4		ZE			CHECKED
VERIFY SCALE		Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.		FILE NAME	
0		1		Denton Preliminary 2.dwg	
SHEET		G-1		SEQ.	

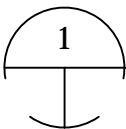
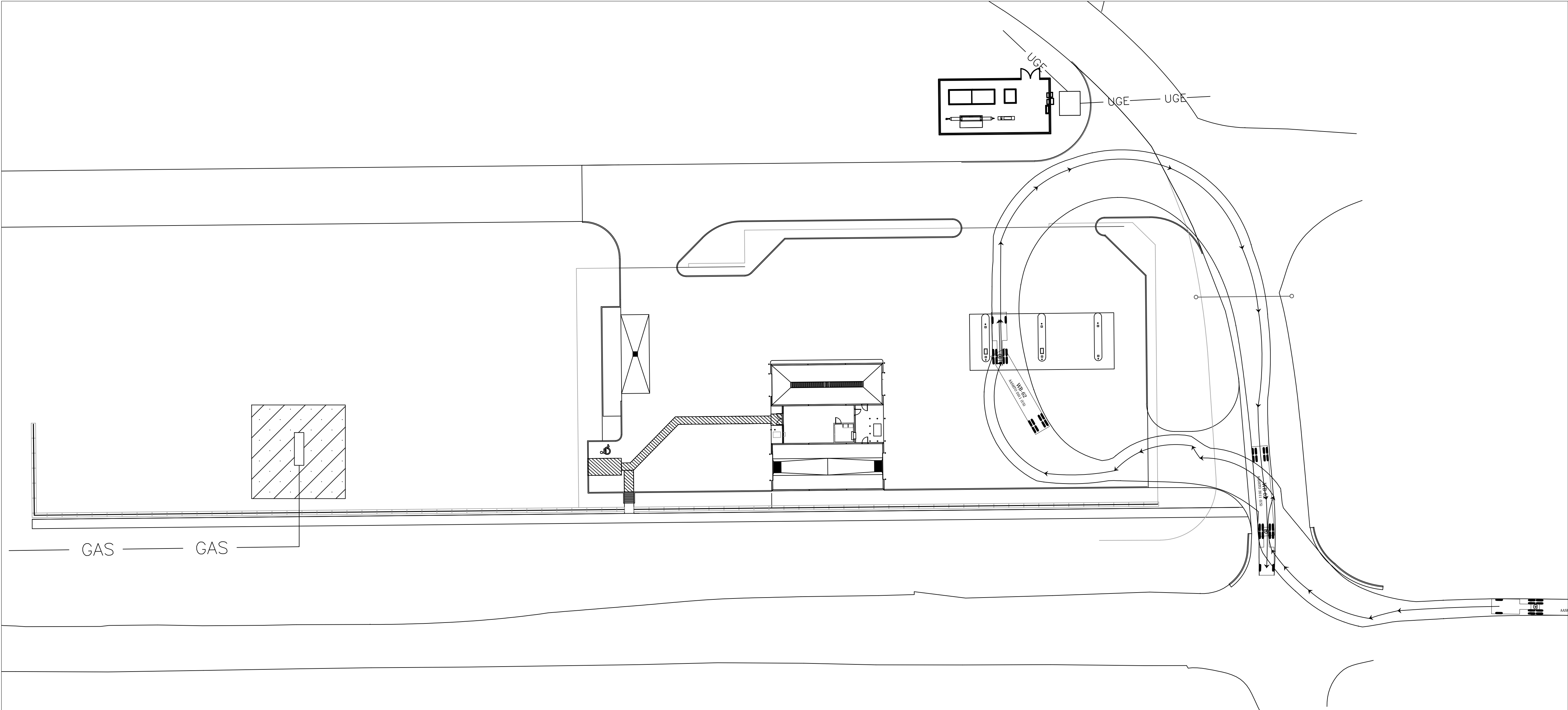
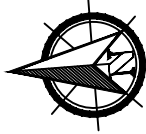
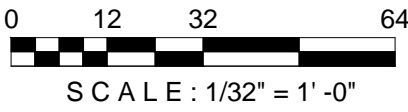
LEGEND

- UGE —

NEW UNDERGROUND POWER CONDUIT TO CNG EQUIPMENT & FUTURE
- GAS —

NEW GAS LINE UNDERGROUND TO NEW GAS METER STATION
- G —

NEW GAS LINE FROM GAS METER STATION TO CNG EQUIPMENT
- TRENCH



48' TRAILER AUTOTURN LAYOUT

1/32" = 1'-0"

NO.	ISSUE	BY	JOB NO.	JOB
1		ZE		
2		ZE	DATE	7/14/16
3		ZE	DESIGNED	DS
4		ZE	DRAWN	DR
			REVISED	RV
			CHECKED	CK
			FILE NAME	
				Denton Preliminary 2.dwg

CITY OF DENTON CNG FUELING STATION  
1257 S MAYHILL RD, DENTON TX 76208

GENERAL  
48' TRAILER AUTOTURN LAYOUT

ZEIT ENERGY  
CNG FUELING SERVICES  
ZEIT ENERGY LLC  
1717 MCKINNEY AVE, STE 700  
DALLAS, TX 75202  
Phone: 214 244 1926  
Fax: 214 593 3344

SEQ.

G-1



## Appendix D

### Summary of Major Equipment

- 1 EACH - ANGI NG300E Duplex Compressor Package, 999 scfm capacity @ 264.5 psig inlet pressure per compressor, 4,500 psi discharge, 250 Bhp, 480 VAC TEFC Electric Motor
- 1 Each - ANGI Duplex Motor Starter Panel
- 1 Each - ANGI Site Controller Panel for 2 compressors with remote monitoring
- 1 Each - ANGI Inlet Dryer, Model GD-024-S-M-460-300-3, rated for 2004 scfm at 270 psig
- 1 Each - ANGI Priority Valve Panel
- 1 Each - FIBA ASME storage 3-Pack, Storage capacity of 64,766 scf at 5,500 psig
- 2 Each - ANGI Fast Fill CNG Dispenser, Gilbarco Encore 700S, with chip reader
- 2 Each - Gilbarco Diesel Fuel Dispenser, Encore 700S High Flow dual hose Dispenser
- 1 Each - Gilbarco Diesel Fuel Dispenser, Encore 700S Regular Flow dual hose Dispenser
- 1 Each - Gilbarco E85/Unleaded Fuel Dispenser, Encore 700S Regular Flow dual hose Dispenser E85 on side Unleaded on the other side
- 2 Each - Pegasus Point of Sale pedestal
- 1 Each - Comdata point of sale software and hardware



## Appendix E

### Scope of Services

#### Engineering/Construction Management

- Professional Engineering design.
- PE Sealed Construction Document.
- Construction Management and on-site Supervision.

#### Permitting

- City of Denton Building Permit

#### Civil Scope

- Construction signage and barricades.
- Trenching including backfill/compaction.
- Removing existing fuel island area concrete paving, grade and repave. (Approx 6000 sqft).
- Remove grass island section at the entrance of the fueling facility and pave with concrete.
- Compressor Concrete Pad.
- CNG Dryer Concrete Pad.
- Priority valve Panel Concrete Pad.
- Storage Concrete Pad.
- Modify Dispensers Islands to receive new dispensers
- Materials, labor, and equipment to set and anchor equipment (Dispensers, Dryer, Compressors, Storage Vessels, valve Panel, Fire Extinguishers, signs).
- Install pipe bollards around Electrical Utility transformer.
- Gravel aggregate in equipment area.
- Install painted CMU block wall around CNG equipment area with steel door.
- Project Signage and Fire Extinguishers.
- Project general (Temporary Toilet, Dumpster, Water Supply etc...).
- Permitting.

#### Electrical Scope

- Service Entrance disconnects/ Panels (Furnish and Install)
- Emergency Shutdown Buttons (Furnish and Install) and tie to existing ESD loop.
- All Conduits, Conductors and seal-offs (Furnish and Install).
- All CNG and liquid fuels equipment Terminations.
- Replace existing canopy lights
- Equipment Grounding.
- Permitting.

#### Piping Scope

- Furnish and Install Carbon Steel Pipe From gas riser at the CNG equipment area to Dryer.
- Furnish and Install Carbon Steel Pipe from Dryer to Compressor.
- Pressure Test Carbon Steel Pipe.



- Provide and install all high pressure SS tubing Sleeves.
- Install SS tubing in sleeves.
- Provide and Install all high pressure fittings needed to connect SS tubing to CNG Equipment.
- Pressure test high pressure SS tubing.
- Mount and Connect fast fill dispensers.
- Permitting.

#### Liquid/CNG Fuels Scope

- Install 2 dual hose CNG dispensers with internal card readers and Comdata POS.
- Install 2 high flow dual hose biodiesel dispensers, with internal card readers and Comdata POS.
- Install 1 regular flow dual hose biodiesel dispenser with internal card readers and Comdata POS.
- Install 1 E85/Unleaded dual hose dispenser with internal card readers and comdata POS.
- Replace WARD fuel management system pedestal for DEF dispenser and overhead dispenser

#### Miscellaneous Scope

- Remove Existing Fuel Management Pedestals (WARD) and store on site.
- Remove existing acuums and compressed air equipment and store on site.
- Remove existing liquid fuel dispensers (4 total) and store on site.

#### Landscaping Scope

- Install landscaping around Equipment area as required by code.
- Expand existing irrigation system to CNG equipment area.

#### Pole Street Sign

- Install new street pole sign. location , size and design to be determined.
- Installation includes electrical service.
- Permitting.

#### Gas line/Service

- Coordination and negotiation with Atmos Energy for Gas line extension to fueling site.
- Install gas pipe underground from gas meter location to CNG equipment area.
- Easement preparation.
- Permitting.

#### Equipment Services:

Commissioning & Start-up Support (Start-up): The program is designed to provide the basics of maintaining our systems and ensures that the installation of all site connections is complete and correct as well as validating warranty.