

ORDINANCE NO. 21-2680

AN ORDINANCE OF THE CITY OF DENTON, A TEXAS HOME-RULE MUNICIPAL CORPORATION, AUTHORIZING THE APPROVAL OF A FIRST AMENDMENT TO A PROFESSIONAL SERVICES AGREEMENT BETWEEN THE CITY OF DENTON AND FREESE AND NICHOLS, INC., AMENDING THE CONTRACT APPROVED BY CITY COUNCIL ON SEPTEMBER 22, 2020, IN THE NOT-TO-EXCEED AMOUNT OF \$1,472,700.00; SAID FIRST AMENDMENT TO PROVIDE ADDITIONAL DESIGN SERVICES FOR THE RAY ROBERTS WATER TREATMENT PLANT UPRATING AND PERFORMANCE IMPROVEMENTS PROJECT; PROVIDING FOR THE EXPENDITURE OF FUNDS THEREFOR; AND PROVIDING AN EFFECTIVE DATE (RFQ 6590-093 – PROVIDING FOR AN ADDITIONAL FIRST AMENDMENT EXPENDITURE AMOUNT NOT-TO-EXCEED \$663,310.00, WITH THE TOTAL CONTRACT AMOUNT NOT-TO-EXCEED \$2,136,010.00).

WHEREAS, on September 22, 2020, by Ordinance No. 20-1828, the City awarded a contract to Freese and Nichols, Inc., in the amount of \$1,472,700.00, to provide regulatory permitting, process evaluation, design services, and Texas Water Development Board funding assistance in support of the Lake Ray Roberts Water Treatment Plant Capacity Uprate, Regulatory and Performance Upgrades Project; and

WHEREAS, the additional fees under the proposed First Amendment are fair and reasonable and are consistent with, and not higher than, the recommended practices and fees applicable to the Provider's profession, and such fees do not exceed the maximum provided by law; NOW, THEREFORE,

THE COUNCIL OF THE CITY OF DENTON HEREBY ORDAINS:

SECTION 1. The First Amendment, increasing the amount of the contract between the City and Freese and Nichols, Inc., which is on file in the office of the Purchasing Agent, in the amount of Six Hundred Sixty-Three Thousand Three Hundred Ten and 00/100 (\$663,310.00) Dollars, is hereby approved, and the expenditure of funds therefor is hereby authorized in accordance with said amendment which shall be effective upon the execution of the amendment attached hereto. The total contract amount increases to \$2,136,010.00.

SECTION 2. This ordinance shall become effective immediately upon its passage and approval.

The motion to approve this ordinance was made by Jesse Davis and seconded by Brian Beck. The ordinance was passed and approved by the following vote [7 - 0]:

	Aye	Nay	Abstain	Absent
Mayor Gerard Hudspeth:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vicki Byrd, District 1:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brian Beck, District 2:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jesse Davis, District 3:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alison Maguire, District 4:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deb Armintor, At Large Place 5:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paul Meltzer, At Large Place 6:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PASSED AND APPROVED this the 14th day of December, 2021.

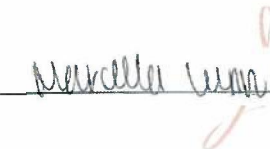


 GERARD HUDSPETH, MAYOR

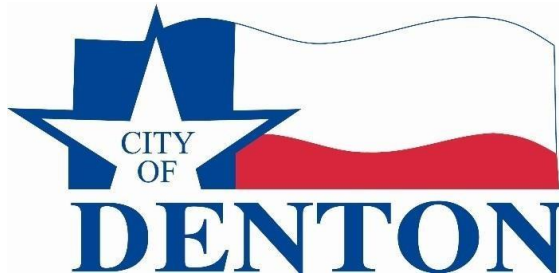
ATTEST:
 ROSA RIOS, CITY SECRETARY

BY:  _____

APPROVED AS TO LEGAL FORM:
 MACK REINWAND, CITY ATTORNEY

BY:  _____
 Digitally signed by Marcella Lunn
 DN: cn=Marcella Lunn, o, ou=City of Denton,
 email=marcella.lunn@cityofdenton.com, c=US
 Date: 2021.11.01 16:20:56 -05'00'





DocuSign City Council Transmittal Coversheet

PSA	6590-093
File Name	RRWTP CAPACITY UPRATE REGULATORY AND PERFORMANCE UPGRADES
Purchasing Contact	Crystal westbrook
City Council Target Date	DECEMBER 14, 2021
Piggy Back Option	Not Applicable
Contract Expiration	N/A
Ordinance	21-2680

**FIRST AMENDMENT TO CONTRACT
BY AND BETWEEN THE CITY OF DENTON, TEXAS
AND FREESE AND NICHOLS, INC.
PSA 6590-093**

THE STATE OF TEXAS §

COUNTY OF DENTON §

THIS FIRST AMENDMENT TO CONTRACT 6590-093 (“Amendment”) by and between the City of Denton, Texas (“City”) and Freese and Nichols, Inc. (“Engineer”); to that certain contract executed on September 23, 2020, in the original not-to-exceed amount of \$1,472,700 (the “Agreement”); for services related to the installation of the RRWTP Capacity Uprate Regulatory and Performance Upgrades.

WHEREAS, the City deems it necessary to further expand the services provided by Consultant to the City pursuant to the terms of the Agreement, and to provide an additional not-to-exceed amount \$663,310 with this Amendment for an aggregate not-to-exceed amount of \$2,136,010; and

FURTHERMORE, the City deems it necessary to further expand the goods/services provided by Engineer to the City;

NOW THEREFORE, the City and Engineer (hereafter collectively referred to as the “Parties”), in consideration of their mutual promises and covenants, as well as for other good and valuable considerations, do hereby AGREE to the following Amendment, which amends the following terms and conditions of the said Agreement, to wit:

1. The additional services described in Exhibit “A” of this Amendment, attached hereto and incorporated herein for all purposes, for professional services related to **RRWTP Capacity Uprate Regulatory and Performance Upgrades**, are hereby authorized to be performed by Engineer. For and in consideration of the additional services to be performed by Engineer, the City agrees to pay, based on the cost estimate detail attached as Exhibit “A” to this Amendment, attached hereto and incorporated herein for all purposes, a total fee, including reimbursement for non-labor expenses an amount not to exceed \$663,310.
2. This Amendment modifies the Agreement amount to provide an additional \$663,310 for the additional services with a revised aggregate not to exceed total of \$2,136,010.

The Parties hereto agree, that except as specifically provided for by this Amendment, that all of the terms, covenants, conditions, agreements, rights, responsibilities, and obligations of the Parties, set forth in the Agreement remain in full force and effect.

IN WITNESS WHEREOF, the City and the Consultant, have each executed this Amendment electronically, by and through their respective duly authorized representatives and officers on this date 12/14/2021.

“City”

“Engineer”

CITY OF DENTON, TEXAS
A Texas Municipal Corporation
SARA HENSLEY, INTERIM CITY MANAGER


FREESE AND NICHOLS, INC.


By: 
5236DB206270423
AUTHORIZED SIGNOR

By: 
15B5A941D2364D5... Vice President
AUTHORIZED SIGNOR, TITLE


ATTEST:
ROSA RIOS, CITY SECRETARY

APPROVED AS TO LEGAL FORM:
MACK REINWAND

BY: 
1C5C8C5E175493...

BY: 
4B070831B4AA438...

THIS AGREEMENT HAS BEEN
BOTH REVIEWED AND APPROVED
as to financial and operational
obligations and business terms.


FEB48BB0726E4A9... Stephen D. Gay
SIGNATURE PRINTED NAME

Director

TITLE
Water Utilities

DEPARTMENT

EXHIBIT A

ATTACHMENT SC.1

SCOPE OF SERVICES AND RESPONSIBILITIES OF CLIENT**PROJECT UNDERSTANDING**

The City of Denton (City) has requested that the Ray Roberts Water Treatment Plant (LRRWTP) Regulatory and Performance Upgrade Professional Services Agreement executed on September 23, 2020, be amended to include design services associated with the following two items:

- Modification of the backwash supply for the Ray Roberts Water Treatment Plant (WTP) Filter Complex.
- Replacement of additional electric motor operators (EMO) for valves and gates not included in the original scope of services.

MODIFICATIONS OF BACKWASH SUPPLY

The City of Denton (City) has requested that the Ray Roberts Water Treatment Plant Regulatory and Performance Upgrade Professional Services Agreement executed on September 23, 2020, be amended to include design services associated with the modification of the backwash supply for the Ray Roberts WTP Filter Complex.

The existing filters are classified as self-backwashing style filters. When one filter goes into backwash, the filtered water exiting the other filters is used to supply the backwash. The existing 30-inch diameter butterfly valve on the filtered water (filter outlet) line throttles the flow into the filter cell. The City has expressed concern regarding ability for the flow to be adjusted easily and to ensure that the filters are being adequately cleaned during a backwash.

Based on input from the City, the proposed backwash supply improvements will generally consist of a ground storage tank to store backwash at such an elevation as to provide the filters with a wide range of backwash flows. The major components that will be included in the modifications include:

- Backwash supply ground storage tank,
- Connection to the transfer pump station to fill the backwash supply ground storage tank with chlorine-free water,
- Flow control valve at the transfer pump station connection to throttle the fill of the backwash supply ground storage tank,
- Piping from the backwash supply ground storage tank to the filter complex,
- Piping improvements within the filter gallery to accommodate the new backwash supply connection,
- Electrical and instrumentation improvements to support the modifications,
- Programmable logic controller additions and programming modifications to convert to a new backwash approach.

The Ray Roberts WTP has eight filters, each with dimensions of 16'-0" by 29'-0" resulting in a filter surface area of 464 square feet (sf). The following backwash protocol is common for many WTPs:

1. Close the settled water valve (filter influent, BFV-F-1x1)
2. The filter will continue treating water as the water level drains.
3. Once the water level in the filter cell is below the top of the backwash troughs, the backwash waste valve (BFV-F-1x2) will open. Once this valve is open, the troughs will empty, and the settled water/backwash waste channel will drain.
4. Once the water level in the filter cell is 6 inches above the media (adjustable), the filtered water (filter effluent, BFV-F-1x3) will close.
5. The air scour valve (BFV-F-1x5) will open, and one of the air scour blowers will begin operations.

6. The air scour process will continue for an amount of time as desired by the City operations team (user input).
7. Upon the completion of the air scour only timer, the new backwash supply valve (BFV-F-1x6) will open and the new rate-of-flow control valve at the new backwash supply ground storage tank will begin to actuate to achieve the desired low backwash rate, as measured by the new master backwash flow meter located near the new backwash supply ground storage tank. The ramp up to the low-rate backwash will be 1 minute (adjustable).
8. The low-rate backwash rate is typically 5 gpm/sf (2,320 gpm); however, it will be field adjustable by the City operations team.
9. The combination air scour/low-flow backwash will continue until the water level within the filter cell is 6 inches (adjustable) from the bottom of the backwash waste troughs. At this time, the air blower will shutoff and the air-scour isolation valve (BFV-F-1x5) will close.
10. The low-rate backwash timer will begin with an initial setpoint of 5 minutes (adjustable).
11. The backwash rate will increase from the low rate to the high rate over 1 minute (adjustable). The high-rate backwash is typically up to 20 gpm/sf (9,280 gpm); however, it will be field adjustable by the City operations team.
12. The high-rate backwash timer will begin, with an initial setpoint of 10 minutes (adjustable).
13. Once the high-rate backwash timer has been reached, the backwash rate will decrease from the high rate to low rate over 1 minute (adjustable).
14. The low-rate backwash time will begin, with an initial setpoint of 5 minutes (adjustable). This step allows the media to re-stratify after the mixing caused by the air scour and high-rate backwash steps.
15. After the final low-rate backwash, the backwash waste valve (BFV-F-1x2) will close, allowing the water level in the filter cell to increase.
16. As the level approaches the normal operating level, the master rate-of-flow control valve will close.
17. The filter will be allowed to age, with all valves closed, for 5 minutes (adjustable).
18. After the aging process, the settled water valve (filter influent, BFV-F-1x1) will open and the filter-to-recycle valve (BFV-F-144) will open. The filter-to-recycle process will continue for a period of 10 minutes (adjustable).
19. Upon completion of the of the filter-to-recycle time, the filter-to-recycle valve (BFV-F-1x4) will close as the filtered water valve (filter effluent, BFV-F-1x3) opens.

Backwash Supply Storage Tank:

Based on the above filter backwash scenario, steps 7 through 15 will impact the size of the backwash supply storage tank. This scenario requires a backwash supply volume of approximately 144,000 gallons for each backwash. The current RRWTP backwash sequence uses approximately 250,000 gallons. If the high-rate backwash was extended from 10 minutes to 22 minutes, the proposed backwash volume would approach that currently used at the RRWTP. This approach will provide the RRWTP with the flexibility to extend the backwash, if necessary. Once in operation, if the RRWTP operations team can reduce the backwash volume used, the excess volume would allow for additional filters to be backwashed in sequence prior to refilling the tank. Storing four backwashes at the higher volume equates to a volume of 1,000,000 gallons.

The grade near the filters is approximately 598.00±. The top of the filter backwash troughs is approximately 592.10±. This provides approximately six feet of driving head for a backwash; however, the head loss through the piping, fittings, valves, underdrain, and media would be in excess of this available driving head. Based on preliminary evaluations, it appears that a ground storage tank may be possible.

A ground storage tank with a diameter of 85 feet and a side water depth of approximately 24 feet will provide a volume of 1,020,000 gallons. The proposed location for this tank will be adjacent to the transfer pump station. A second tank could be designed and constructed in this space beyond a RRWTP capacity of 50 MGD.

A master rate-of-flow valve and flow meter will be provided near the backwash supply storage tank to throttle the backwash flow to the filters.

Transfer Pump Station:

Each of the three transfer pump station pumps has a rated head of approximately 34.25 feet. The clearwell finished floor elevation is 596.00± and the overflow elevation is 628.00±. The inlet piping of the clearwell has a riser pipe with an elevation of 612.00±. The backwash supply storage tank geometry will be critical in balancing the flow split from the transfer pump station to the backwash supply storage tank and clearwell. Modifying the transfer pump station controls are not anticipated to achieve the above backwash protocol.

Filter Piping Modifications:

A pipe from the backwash supply tank will be provided to accommodate the high-rate backwash. This pipe will have provisions to connect to future filter galleries as the LRRWTP expands. This backwash supply pipe will split to accommodate the two existing filter galleries. It is anticipated that this pipe will have a diameter of 24 to 30 inches. Due to space constraints within the filter pipe gallery, the backwash supply headers will need to stay outside. Backwash supply drops for each filter will drop below grade and penetrate the existing exterior wall of the filter pipe gallery so that the backwash supply line will be below the access platforms. The individual filter backwash supply isolation valve will be equipped with an open/close electric motor operator and will be located exterior to the pipe gallery. The existing 30-inch diameter filtered water piping within the filter pipe gallery between the existing filtered water (effluent) butterfly valve (BFV-F-1x3) and the fittings at the filter cell wall will require modification. It should be noted that the space in this area is extremely tight. Besides the eight penetrations through the exterior wall, additional wall penetrations may be required for Filter No. 4 and 8 to support piping installation and connections.

REPLACEMENT OF ADDITIONAL ELECTRIC MOTOR OPERATORS

The City of Denton (City) has requested that the Ray Roberts Water Treatment Plant Regulatory and Performance Upgrades Professional Services Agreement executed on September 23, 2020, be amended to include design services associated with the replacement of additional electric motor operators for valves and gates not included in the original scope.

The existing electric motor operators utilize a serial RS-485 communication protocol, which has been problematic for the Ray Roberts Water Treatment Plant (WTP). The new operators will use individual input/output (discrete and analog) conductors to remedy those challenges and provide more stable and efficient communication.

The valves, sluice gates, and slide gates associated with these additional EMO replacements will not be replaced and will remain in service.

The PLCs identified within this Amendment will accept the following input/output (I/O) points from each motor operator being replaced:

- Discrete Input
 - In Remote
 - Fully Open
 - Fully Closed
- Discrete Output
 - Open Command
 - Close Command
- Analog Input (Modulating Duty Operators Only)
 - Valve Position Feedback

- Analog Output (Modulating Duty Operators Only)
 - Valve Position Setpoint

The modifications for the PLCs listed below are limited to adding I/O points to support the EMO replacements; however, no additional programming or transfer of process control and monitoring is included with these services. The majority of the plant processes' current monitoring and control strategy are executed by the Think-and-Do server, and the City is currently working toward replacing the Think-and-Do server with a Modicon M580 data aggregator. The current programming associated with monitoring and controlling the processes and valves will remain in the current system and configuration and will not be transferred to the new PLCs identified in this Amendment. The modifications to or replacements of the PLCs identified below are limited to gathering the necessary I/O associated with the electric motor operators identified in this Amendment.

Ray Roberts Water Treatment Plant Electric Motor Operators:

The additional electric motor operators to be replaced at the Ray Roberts WTP are summarized in Table 1. Based on input from the City, the valves and slide gates attached to the electric motor operators listed below will remain in place. No valves or gates will be replaced as part of the operator replacement.

Table 1: Additional RR WTP Electric Motor Operators

Tag. No.	Valve Size/Type	Open/Close or Modulating	Location
SLG-POC-1	20" x 20" Slide Gate	Open/Close	Pre-ozone Contactor No. 1
SLG-POC-2	20" x 20" Slide Gate	Open/Close	Pre-ozone Contactor No. 1
SLG-POC-5	48" x 36" Slide Gate	Open/Close	Pre-ozone Contactor No. 1
SLG-POC-3	20" x 20" Slide Gate	Open/Close	Pre-ozone Contactor No. 2
SLG-POC-4	20" x 20" Slide Gate	Open/Close	Pre-ozone Contactor No. 2
SLG-POC-6	48" x 36" Slide Gate	Open/Close	Pre-ozone Contactor No. 2
MV-FS-1	8" Mud Valve	Open/Close	Flocculation/Sedimentation Basin No. 1
TV-FS-1	8" Telescoping Valve	Modulating	Flocculation/Sedimentation Basin No. 1
MV-FS-2	8" Mud Valve	Open/Close	Flocculation/Sedimentation Basin No. 2
TV-FS-2	8" Telescoping Valve	Modulating	Flocculation/Sedimentation Basin No. 2
SLG-IOC-1	20" x 20" Slide Gate	Open/Close	Intermediate Ozone Contactor No. 1
SLG-IOC-2	20" x 20" Slide Gate	Open/Close	Intermediate Ozone Contactor No. 1
SLG-IOC-3	20" x 20" Slide Gate	Open/Close	Intermediate Ozone Contactor No. 2
SLG-IOC-4	20" x 20" Slide Gate	Open/Close	Intermediate Ozone Contactor No. 2
WG-TP-1	12' Weir Gate	Modulating	Transfer Pump Station
PV-TP-249	8" Plug Valve	Open/Close	Transfer Pump Station
BFV-WR-292	10" Butterfly Valve	Open/Close	Washwater Return to Raw Water Pipeline Connection
BFV-BB-441	12" Butterfly Valve	Open/Close	Filter Air Scour Blower Building

Tag No.	Valve Size/Type	Open/Close or Modulating	Location
BFV-BB-444	12" Butterfly Valve	Open/Close	Filter Air Scour Blower Building

The switch from serial RS-485 communication to individual I/O (discrete and analog) conductors for each operator results in additional conduit and conductors. In addition, several programmable logic controllers (PLCs) will require modifications to support the additional I/O conductors.

This Amendment will also include the following modifications to the Ray Roberts WTP PLCs listed below:

- PLC-06:
 - PLC-06 is located within the Operations/Administration Building Electrical Room. The original Project included the addition of a small number of I/O points but did not require the replacement of this PLC.
 - Due to the increase in the I/O points, this PLC will require replacement due to the lack of available input/output points. Space within the Operations/Administration Building Electrical Room will not allow the installation of a second PLC. The original PLC and the associated cabinet will be replaced with a Modicon M340 PLC. The field wiring between the PLC cabinet and the existing field devices will remain and not be replaced. The construction sequencing of this work may request that the Ray Roberts WTP be offline for approximately two (2) weeks.
 - The following electric motor operators will be assigned to this PLC:
 - MV-FS-1
 - TV-FS-1
 - MV-FS-2
 - TV-FS-2
 - BFV-WR-292
- PLC-10:
 - As part of the original Agreement, PLC-10 was added at the Biologically Active Filters to support the improvements designed at Filter Nos. 5 through 8.
 - Additional design will be required to support this Amendment.
 - The following electric motor operators will be assigned to this PLC:
 - SLG-IOC-1
 - SLG-IOC-2
 - SLG-IOC-3
 - SLG-IOC-4
- PLC-13:
 - As part of the original Agreement, PLC-13 was added to the Transfer Pump Station Electrical Building to support the improvements designed at the Water Reclamation Basin.
 - Additional design will be required to support this Amendment.
 - The following electric motor operators will be assigned to this PLC:
 - WG-TP-1
 - PV-TP-249
- PLC-14:
 - An additional PLC will be required due to the number of I/O points added with the electric motor operators listed below. The current Pre-ozone Contactor operators are connected to PLC-02 (Ozone Building) via serial RS-485. Due to the length of the duct bank, conduit, and conductors required with this operator placement, a new Modicon M340 PLC is proposed.
 - PLC-14 will be a new PLC as part of this Amendment and located at the Pre-Ozone Contactor.
 - The following electric motor operators will be assigned to this PLC:

- SLG-POC-1
- SLG-POC-2
- SLG-POC-5
- SLG-POC-3
- SLG-POC-4
- SLG-POC-6
- Filter Air Blower Control Panels
 - Each filter air scour blower has an inlet control valve with an electric motor actuator connected to its associated blower control panel via serial RS-485. The control panel was supplied by Spencer Blower and programming modifications and potential hardware modifications to each control panel will be needed to accommodate individual I/O points from the motor operators.
 - The following electric motor operators will be replaced.
 - BFV-BB-441
 - BFV-BB-444

Ray Roberts Raw Water Pump Station Electric Motor Operators

Table 2 summarizes the additional electric motor operators associated with the Ray Roberts Raw Water Pump Station. Based on input from the City, the valves attached to the electric motor operators listed below will remain in place. No valves or gates will be replaced as part of the operator replacement.

Table 2: Additional RR WTP Raw Water Pump Station Electric Motor Operators

Tag. No.	Valve Size/Type	Open/Close or Modulating	Location
BFV-RW-005	30" Butterfly Valve	Open/Close	Raw Water Pump Station
BFV-RW-007	30" Butterfly Valve	Open/Close	Raw Water Pump Station
BFV-RW-009	30" Butterfly Valve	Open/Close	Raw Water Pump Station
BFV-RW-010	42" Butterfly Valve	Open/Close	Raw Water Pump Station
BFV-RW-011	30" Butterfly Valve	Open/Close	Raw Water Pump Station
BFV-RW-012	36" Ball Valve	Modulating	Raw Water Pump Station

Due to the number of added I/O points, the following PLC modifications will be required to support these operator replacements:

- PLC-15:
 - PLC-1 at the Raw Water Pump Station does not have the space to accommodate the number of additional I/O points associated with the proposed electric motor operators.
 - PLC-15 will be a new PLC as part of this Amendment and will be located at the Raw Water Pump Station.
 - The following electric motor operators will be assigned to this PLC:
 - BFV-RW-005
 - BFV-RW-007
 - BFV-RW-009
 - BFV-RW-010
 - BFV-RW-011
 - BFV-RW-012

ARTICLE I

BASIC SERVICES: The task lettering and numbering below is based on the Agreement and only tasks impacted by this Amendment are listed. FNI shall render the following professional services in connection with the development of the Project:

- A1. DESIGN PHASE – MODIFICATION OF BACKWASH SUPPLY: FNI shall provide professional services in this phase as follows:
1. Project Management:
 - a. Project management will be based on the services included in the original Professional Services Agreement.
 2. Kick-off Workshop:
 - a. Conduct one (1) additional project kick-off workshop with the OWNER at the OWNER's facility to (1) review the scope of services, (2) verify OWNER's requirements for the amended Project, and (3) review and update available data.
 - b. Deliverables:
 - i. Workshop agenda.
 - ii. Workshop notes.
 3. Meetings and Site Visits:
 - a. Conduct up to two (2) additional site visits by the engineering team to the Ray Roberts WTP for coordination of detailed design aspects for completion of the Project.
 - b. Conduct the following additional workshops with the OWNER during the design phase. FNI will submit relevant drawings, specifications, and detailed data for each workshop two (2) weeks before the workshop dates to allow the OWNER adequate time for review and comment.
 - i. Modification of Backwash Supply Review Workshop – 75% design level QC workshop.
 4. Detailed Design:
 - a. The detailed design scope tasks outlined in the Agreement will be applied to the design elements described in the Project Understanding – Modification of Backwash Supply section of this Amendment.
 5. Opinions of Probable Construction Cost:
 - a. The development of opinions of probable construction cost are outlined in the Agreement and will include the design elements described in the Project Understanding – Modification of Backwash Supply section of this Amendment.
 7. Geotechnical Services: FNI will provide professional services in this task as follows:
 - a. Field Exploration: Exploratory core borings previously drilled for the RR WTP encountered shale at approximately 40 to 44 feet or elevation 553 to 558 feet. Therefore, the following is planned for core borings at the ground storage tank:
 - i. Select and mark five (5) boring locations and notify Texas 811 and the City to request location marking of existing underground utilities prior to the field exploration.
 - ii. FNI will subcontract with a drilling contractor to drill five (5) borings to a depth of 50, 60, and 75 feet. Samples will be collected intermittently using continuous or hollow stem

augers and either split-spoon or tube sampler. Rock and rock-like materials will be sampled using an NX core barrel and/or tested insitu using a TxDOT Cone Penetration test, as appropriate for the material. At completion, the boreholes will be backfilled with auger cuttings to the ground surface.

iii. FNI will provide an engineer or geologist, experienced in logging borings, to direct the drilling, log the borings, and handle the samples. Visual classification of the subsurface stratigraphy shall be provided according to the Unified Soil Classification System (USCS).

b. Laboratory Testing

i. Testing shall be performed on soil samples obtained from the borings to determine soil classification and pertinent engineering properties of the subsurface materials. FNI will select samples for laboratory testing, assign tests, and review the test results. Testing will be performed by a geotechnical testing subcontractor.

ii. Laboratory tests will be assigned based on the specific subsurface materials encountered during exploration. Test type and quantity may vary, but are expected to include:

- (1) Classification test (liquid and plastic limits and percent pass the No. 200 sieve or gradation);
- (2) Moisture content;
- (3) Dry unit weight;
- (4) Shear strength testing;
- (5) One-dimensional swell (restrained); and
- (6) Consolidation test.

c. Engineering Analysis

i. FNI will prepare a technical memorandum of the geotechnical investigation that will include:

- (1) Appendix with boring locations, boring logs, laboratory test results, and a key to the symbols used.
- (2) Discussion of subsurface conditions and soil properties indicated by the field and laboratory work, and the implications for design.
- (3) Foundation and site preparation recommends for the proposed ground storage tank.
- (4) General discussion of expected construction related issues.
- (5) Earthwork related recommendations for use during development of the plans and specifications.

d. Deliverables

i. FNI will provide the City with three (3) draft copies and one (1) Adobe Portable Document Format (PDF) copy of the geotechnical memorandum for review and comment.

ii. FNI will provide the City with three (3) final copies and one (1) Adobe Portable Document Format (PDF) copy of the geotechnical memorandum for review and comment.

8. Topographic Survey Services: Topographic survey services will be coordinated by FNI and provided by a surveyor as a subconsultant to FNI.

A2. DESIGN PHASE –REPLACEMENT OF ADDITIONAL ELECTRIC MOTOR OPERATORS: FNI shall provide professional services in this phase as follows:

1. Project Management:

a. Project management will be based on the services included in the original Professional Services Agreement.

2. Kick-off Workshop:
 - a. Conduct one (1) additional project kick-off workshop with the OWNER at the OWNER's facility to (1) review the scope of services, (2) verify OWNER's requirements for the amended Project, and (3) review and update available data.
 - b. Deliverables:
 - i. Workshop agenda.
 - ii. Workshop notes.
3. Meetings and Site Visits:
 - a. Conduct up to two (2) additional site visits by the engineering team to the Ray Roberts WTP for coordination of detailed design aspects for completion of the Project.
 - b. Conduct the following additional workshops with the OWNER during the design phase. FNI will submit relevant drawings, specifications, and detailed data for each workshop two (2) weeks before the workshop dates to allow the OWNER adequate time for review and comment.
 - i. Replacement of Additional Electric Motor Operators Review Workshop – 75% design level QC workshop.
4. Detailed Design:
 - a. The detailed design scope tasks outlined in the Agreement will be applied to the design elements described in the Project Understanding – Modification of Backwash Supply section of this Amendment.
5. Opinions of Probable Construction Cost:
 - a. The development of opinions of probable construction cost are outlined in the Agreement and will include the design elements described in the Project Understanding – Modification of Backwash Supply section of this Amendment.

- B. BID OR NEGOTIATION PHASE: Bid phase services are not included in this Amendment.
- C. CONSTRUCTION PHASE GENERAL REPRESENTATION: General construction phase services are not included in this Amendment.
- D. FULL-TIME RESIDENT PROJECT REPRESENTATIVE: Resident project representation during the construction phase is not included in this Amendment.

ARTICLE II

SPECIAL SERVICES: FNI shall render the following professional services, which are not included in the Basic Services described above, in connection with the development of the Project:

1. This Amendment does not include any Special Services.

ARTICLE III

ADDITIONAL SERVICES: Any services performed by FNI that are not included in the Agreement or these Amended Basic Services or Special Services described above are Additional Services.

ARTICLE IV

TIME OF COMPLETION: FNI is authorized to commence work on the Project upon execution of this Agreement and agrees to complete the services in accordance with the following schedule:

- Design Phase – Modification Of Backwash Supply: Six (6) months from Notice to Proceed for this Amendment.
- Design Phase – Replacement Of Additional Electric Motor Operators: Six (6) months from Notice to Proceed for this Amendment.

If FNI's services are delayed through no fault of FNI, FNI shall be entitled to adjust contract schedule consistent with the number of days of delay. These delays may include but are not limited to delays in Client or regulatory reviews, delays on the flow of information to be provided to FNI, governmental approvals, etc. These delays may result in an adjustment to compensation as outlined on the face of the Agreement and in Attachment CO.

ARTICLE V

RESPONSIBILITIES OF CLIENT: The responsibilities of the OWNER are outlined in the Agreement.

ARTICLE VI

COMPENSATION: Compensation will be based on the following breakdown of the proposed fee and in accordance with Attachment CO:

TASK	FEE	COMPENSATION TYPE
BASIC SERVICES		
A.1: Design Phase – Modification Of Backwash Supply	\$489,399	Lump Sum
A.2: Design Phase - Replacement Of Additional Electric Motor Operators	\$173,911	Lump Sum
Total Basic Services Fee	\$663,310	Lump Sum

Certificate Of Completion


Envelope Id: F7E9449F403044EABE5D079B91F7B6EA	Status: Completed
Subject: Please DocuSign: City Council Contract 6590-093 Amendment 1	
Source Envelope:	
Document Pages: 13	Signatures: 5
Certificate Pages: 6	Initials: 1
AutoNav: Enabled	Envelope Originator:
Enveloped Stamping: Enabled	Crystal Westbrook
Time Zone: (UTC-06:00) Central Time (US & Canada)	901B Texas Street
	Denton, TX 76209
	crystal.westbrook@cityofdenton.com
	IP Address: 198.49.140.104

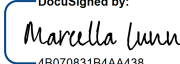
Record Tracking

Status: Original 10/27/2021 2:12:01 PM	Holder: Crystal Westbrook crystal.westbrook@cityofdenton.com	Location: DocuSign
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Signer Events

Signer Events	Signature	Timestamp
Crystal Westbrook crystal.westbrook@cityofdenton.com Senior Buyer City of Denton Security Level: Email, Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	Completed Using IP Address: 198.49.140.104	Sent: 10/27/2021 2:19:33 PM Viewed: 10/27/2021 2:20:45 PM Signed: 10/27/2021 2:21:53 PM

Tabitha Millsop tabitha.millsop@cityofdenton.com Assistant Purchasing Manager City of Denton Security Level: Email, Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	 Signature Adoption: Pre-selected Style Using IP Address: 47.222.5.47	Sent: 10/27/2021 2:21:55 PM Viewed: 10/27/2021 3:33:43 PM Signed: 10/27/2021 3:34:10 PM
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Marcella Lunn marcella.lunn@cityofdenton.com Catherine Clifton, Interim City Attorney City of Denton Security Level: Email, Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	 Signature Adoption: Pre-selected Style Using IP Address: 198.49.140.104	Sent: 10/27/2021 3:34:11 PM Viewed: 10/28/2021 9:54:14 PM Signed: 10/28/2021 9:56:47 PM
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David Jackson drj@freese.com Vice President Security Level: Email, Account Authentication (None) Electronic Record and Signature Disclosure: Not Offered via DocuSign	 Signature Adoption: Pre-selected Style Using IP Address: 104.209.239.171	Sent: 10/29/2021 9:30:17 AM Viewed: 10/29/2021 9:33:19 AM Signed: 10/29/2021 9:33:52 AM
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Signer Events

Stephen D. Gay
stephen.gay@cityofdenton.com
Director
Security Level: Email, Account Authentication (None)

Signature

DocuSigned by:
Stephen D. Gay
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Signature Adoption: Pre-selected Style
Using IP Address: 198.49.140.10

Timestamp

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Signed: 10/29/2021 10:52:14 AM

Electronic Record and Signature Disclosure:

Accepted: 10/29/2021 10:51:39 AM
ID: d8581653-238f-45a0-a46a-10912b068112

Cheyenne Defee
cheyenne.defee@cityofdenton.com
Contract Administrator
City of Denton
Security Level: Email, Account Authentication (None)

Completed

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Viewed: 12/15/2021 8:02:21 AM
Signed: 12/15/2021 8:02:59 AM

Electronic Record and Signature Disclosure:

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Sara Hensley
sara.hensley@cityofdenton.com
Interim City Manager
City of Denton
Security Level: Email, Account Authentication (None)

DocuSigned by:
Sara Hensley
5236DB296270423...
Signature Adoption: Pre-selected Style
Using IP Address: 198.49.140.10

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Signed: 12/15/2021 8:21:57 AM

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

Rosa Rios
rosa.rios@cityofdenton.com
City Secretary
Security Level: Email, Account Authentication (None)

DocuSigned by:
Rosa Rios
1C5CA8C5E175493...
Signature Adoption: Pre-selected Style
Using IP Address: 198.49.140.10

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Electronic Record and Signature Disclosure:

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In Person Signer Events

Signature

Timestamp

Editor Delivery Events

Status

Timestamp

Agent Delivery Events

Status

Timestamp

Intermediary Delivery Events

Status

Timestamp

Certified Delivery Events

Status

Timestamp

Carbon Copy Events

Status

Timestamp

Cheyenne Defee
cheyenne.defee@cityofdenton.com
Contract Administrator
City of Denton
Security Level: Email, Account Authentication (None)

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Electronic Record and Signature Disclosure:

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Carbon Copy Events	Status	Timestamp
<p>Scott Hubley chris.johnson@freese.com Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Accepted: 10/29/2021 5:15:35 AM ID: 59beabd6-4281-42c2-a9ed-f902c68fea9e</p>	<div style="border: 2px solid blue; padding: 5px; display: inline-block;">COPIED</div>	Sent: 10/29/2021 9:30:18 AM
<p>Gretna Jones gretna.jones@cityofdenton.com Legal Secretary City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Not Offered via DocuSign</p>	<div style="border: 2px solid blue; padding: 5px; display: inline-block;">COPIED</div>	Sent: 10/29/2021 10:52:17 AM Viewed: 11/1/2021 8:37:31 AM
<p>City Secretary Office citysecretary@cityofdenton.com Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Not Offered via DocuSign</p>	<div style="border: 2px solid blue; padding: 5px; display: inline-block;">COPIED</div>	Sent: 12/15/2021 9:26:29 AM Viewed: 12/15/2021 9:48:30 AM
<p>Annie Bunger annie.bunger@cityofdenton.com Contract Control Specialist City of Denton Security Level: Email, Account Authentication (None)</p> <p>Electronic Record and Signature Disclosure: Not Offered via DocuSign</p>	<div style="border: 2px solid blue; padding: 5px; display: inline-block;">COPIED</div>	Sent: 12/15/2021 9:26:30 AM
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Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	10/27/2021 2:19:33 PM
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Signing Complete	Security Checked	12/15/2021 9:26:26 AM
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Operating Systems:	Windows2000? or WindowsXP?
Browsers (for SENDERS):	Internet Explorer 6.0? or above
Browsers (for SIGNERS):	Internet Explorer 6.0?, Mozilla FireFox 1.0, NetScape 7.2 (or above)
Email:	Access to a valid email account
Screen Resolution:	800 x 600 minimum
Enabled Security Settings:	<ul style="list-style-type: none"> •Allow per session cookies •Users accessing the internet behind a Proxy Server must enable HTTP 1.1 settings via proxy connection

** These minimum requirements are subject to change. If these requirements change, we will provide you with an email message at the email address we have on file for you at that time providing you with the revised hardware and software requirements, at which time you will have the right to withdraw your consent.

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