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INTEROFFICE MEMO

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**DATE:** OCTOBER 17, 2018  
**TO:** JESUS CHAPA, ASSISTANT CITY MANAGER  
DOUG BLACK, SR. ASSISTANT CITY ATTORNEY *DB* 10/17/18  
**FROM:** CHRIS HARDER, WATER DIRECTOR *C.H.*  
**SUBJECT:** TRINITY RIVER STREAMBANK EROSION AFFECTING TWO 90"  
SANITARY SEWER LINES – EMERGENCY RESPONSE

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Two 90" diameter sanitary sewer lines (West Fork sewer lines) were installed in the 1960's and 1970's that initially connected the old Riverside Plant with the Village Creek Plant. They are generally aligned parallel to and offset from the Trinity River. These two pipelines currently convey the majority of the wastewater generated in Fort Worth to the Village Creek Plant, with flow capacity of upwards of 200 million gallons per day.

In the spring of 2016, Trinity River streambank erosion was discovered that threatened to expose and potentially undermine the West Fork sewer lines. An emergency contract was authorized in June of 2016 (CS No. 47913, see also, June 7, 2016 Emergency Memo) for the installation of two sheet pile cutoff walls, a temporary solution designed to help protect the pipelines while a permanent solution was designed and permitted by the U.S. Army Corps of Engineers. The emergency work was completed in July 2016.

The City engaged James Deotte Engineering, Inc. (M&C C-27950) to develop, design and permit a permanent solution to the erosion problem. The approved design is to install a reinforced concrete wall supported by drilled shaft piers that would act as the foundation for a rock gabion basket reinforced channel slope. The drilled piers would be extended into bedrock to provide permanent stability. The rock gabion basket would be extended from the concrete foundation up the channel bank side slope to prevent erosion.

The Corps of Engineers permit for this permanent solution was obtained in the summer of 2017. Bids for the construction of the permanent solution were obtained in late July of that year and on September 26, 2017 (M&C C-28407) council authorized execution of a construction contract with Humphrey and Morton in the amount of \$1,867,535 to construct the permanent solution.

Construction of the drilled piers was delayed almost a year, however, in part due to final easement acquisition and the discovery of artifacts in the work zone that required mitigation. Once the drilled pier construction began in late summer of 2018, it was discovered that the rock layer encountered at several locations was deeper than what was logged in the geotechnical bores taken as part of the design. Unfortunately, the engineering design needed to be revised to provide additional depth to the drilled piers to strengthen the foundation and additional vertical tie-back

reinforcing of the proposed protective wall. That redesign has just recently been completed and provided to the contractor for a cost assessment.

On September 22, 2018, Fort Worth was hit by a severe storm which eroded significant portions of the Trinity River and resulted in the failure of one of the sheet pile cutoff walls. The second cutoff wall is now unstable and needs to be reinforced immediately (see attached pictures). On October 13, 2018, another storm increased the Trinity River water surface elevation at least 13' in the impacted area, resulting in additional erosion of the streambank. Rain has occurred every day from October 13<sup>th</sup> up to the date of this memo and significant rain is forecast for the next several weeks.

With the construction of the permanent solution gabion wall project expected to take six months, preparation and placement of materials and equipment necessary to perform bypass pumping should the transmission pipes be compromised is necessary to protect public health.

Under this emergency memorandum the Water Department intends to do the following:

1. Reinforce and repair the existing sheet pile cutoff walls and prevent further failure (installation of driven piles with tieback rods to support). It is anticipated work will be performed by Shin and Gregory and Circle C Construction, the construction team that performed the original emergency work, at an estimated cost of **\$200,000**.
2. Expose the West Fork sewer lines at points upstream and downstream of the compromised area in order to allow expedited bypass pumping. It is anticipated this work will be performed by Circle C Construction at an estimated cost of **\$50,000**.
3. Install approximately 3,000 linear feet of 24" HDPE piping, to be in place should emergency bypass pumping be required. Work is anticipated to be performed by Circle C Construction. Estimated cost of **\$250,000**.
4. Purchase two 90" sewer plugs and position them at the site for the duration of the project. These plugs will be needed in the event of damage to the existing pipes that requires bypass pumping. It is anticipated that these plugs will be purchased from Sunbelt Rentals at a cost of approximately **\$60,000**.
5. Rent bypass pumps and pump manifold. Costs vary based on duration of rental. Should the rental last several months, total cost would be approximately **\$300,000**. It is anticipated that Sunbelt Rentals will be utilized for pump and manifold rentals.
6. Execute an emergency contract with Humphrey and Morton to immediately proceed with installation of vertical tiebacks and extra depth piers as required by the revised rock ledge information described above. Estimated cost for this additional work is **\$650,000**

Waiting to prepare a change order to the contract under which the permanent solution is being constructed for the additional piers and tie-back structures is not prudent given the saturated conditions and forecast for more heavy rain. The City is exempt from competitive bidding when an emergency threatens the preservation of the city's property or the public health of the citizens. Concurrently awarding emergency contracts to repair the failing cutoff walls and establish procedures for bypass pumping, should there be a failure of the pipeline, furthers the interest of protecting the public health and safety of the City as well as being necessary to protect the city's

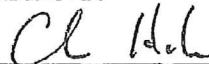
property. Chapter 2, Article I, Section 2-9 at (9) of the City's Code of Ordinances and Section 252.022 of the Local Government Code exempts from normal bidding requirements expenditures that are necessary to preserve or protect the city's property and the public health or safety of the municipality's residents.

This memo is submitted to request authorization for emergency procurement of services outlined above, at a total cost of approximately **\$1,510,000**. While this cost is extremely high, the consequences of one or both of the 90" pipes failing and allowing raw wastewater to flow into the Trinity River are dire and this must be prevented.

A confirming M&C will be circulated to ratify the above activities after the work has been performed.

**APPROVED FOR EMERGENCY PROCUREMENT:**

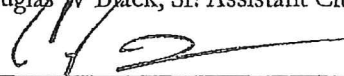
Recommended:

  
Chris Harder, Director, Water Dept.

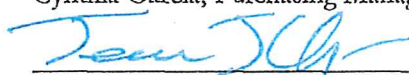
Approved As To Form and Legality:

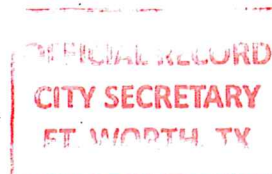
  
Douglas W Black, Sr. Assistant City Attorney

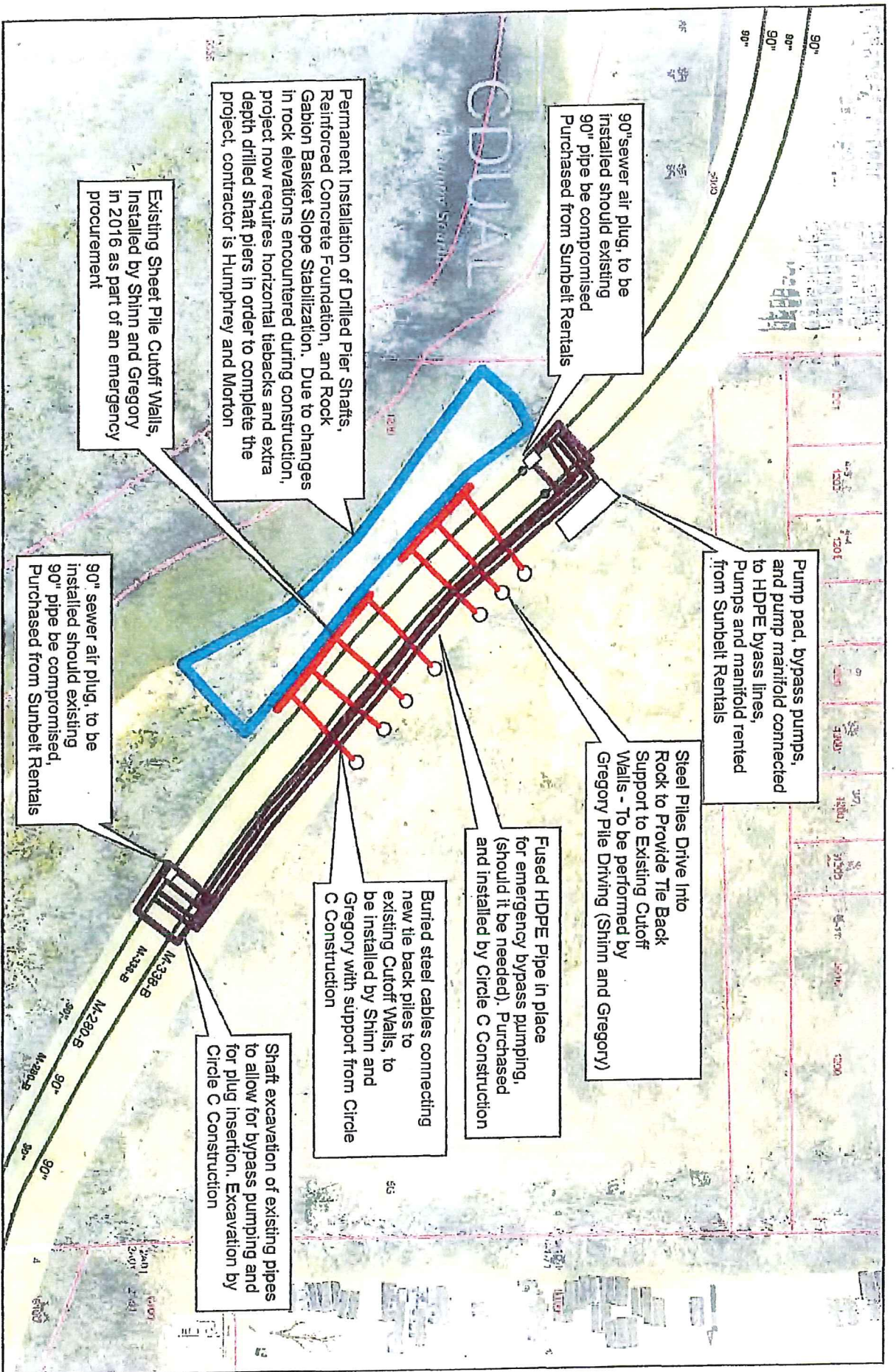
Approved:

  
Cynthia Garcia, Purchasing Manager

Approved:

  
Jesus J. Chapa, Assistant City Manager





90" sewer air plug, to be installed should existing 90" pipe be compromised  
Purchased from Sunbelt Rentals

Pump pad, bypass pumps, and pump manifold connected to HDPE bypass lines, Pumps and manifold rented from Sunbelt Rentals

Steel Piles Drive Into Rock to Provide Tie Back Support to Existing Cutoff Walls - To be performed by Gregory Pile Driving (Shinn and Gregory)

Fused HDPE Pipe in place for emergency bypass pumping, (should it be needed). Purchased and installed by Circle C Construction

Buried steel cables connecting new tie back piles to existing Cutoff Walls, to be installed by Shinn and Gregory with support from Circle C Construction

Shaft excavation of existing pipes to allow for bypass pumping and for plug insertion. Excavation by Circle C Construction

Permanent Installation of Drilled Pier Shafts, Reinforced Concrete Foundation, and Rock Gabion Basket Slope Stabilization. Due to changes in rock elevations encountered during construction, project now requires horizontal tiebacks and extra depth drilled shaft piers in order to complete the project, contractor is Humphrey and Morton

Existing Sheet Pile Cutoff Walls, Installed by Shinn and Gregory in 2016 as part of an emergency procurement

90" sewer air plug, to be installed should existing 90" pipe be compromised, Purchased from Sunbelt Rentals





RECEIVED  
2018  
CITY OF FORT WORTH  
CITY SECRETARY

SECTION 00 52 43  
AGREEMENT FOR EMERGENCY REPAIR SERVICES

THIS AGREEMENT is made by and between The City of Fort Worth, a Texas home rule municipality acting by and through its duly authorized City Manager, ("City"), and HUMPHREY & MORTON CONSTRUCTION COMPANY, INC., a corporation authorized to do business in Texas, acting by and through its duly authorized representative ("Contractor"). City and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**Article 1. WORK**

Contractor shall install vertical tiebacks and extra depth piers that would act as the foundation for a rock gabion basket reinforced channel slope.

**Article 2. PROJECT**

The recent rains of September and October 2018, have further eroded the bank of a portion of the Trinity River compromising the integrity of the City's twin 90-inch sanitary sewer mains (M-280-B and M-338-B) which convey sewage to the Village Creek Treatment Plant. The lines must be protected.

In the spring of 2016 two temporary sheet pile cutoff walls were installed to protect the mains while a permanent solution was designed. The permanent solution was under construction until the recent rains destabilized the temporary solution causing further erosion of the stream bank.

**Article 3. CONTRACT TIME**

3.1 Time is of the essence.

Contractor recognizes that time is of the essence, and the Contractor will be required to remain on the jobsite until the work on repairing the cut off walls and procedures for bypass pumping is completed. The City expects the Contractor to have a sense of urgency to complete the Work in a timely manner.

**Article 4. CONTRACT PRICE**

City agrees to pay Contractor for performance of the Work based on Contractor's invoice an amount up to Six Hundred and Fifty Thousand Dollars (\$650,000.00) This figure may be amended up or down as final invoices are received.

**Article 5. CONTRACT DOCUMENTS**

5.1 CONTENTS:

The Contract Documents which comprise the entire agreement between City and Contractor concerning the Work consist of the following:

1. This Agreement.
2. Exhibits to this Agreement:
  - a. Approved Invoice
  - b. Evidence of Current Insurance
  - c. Current Prevailing Wage Rate Table incorporated by reference.
3. General Conditions incorporated by reference

40 Article 6. INDEMNIFICATION

41 Contractor covenants and agrees to indemnify, hold harmless and defend, at its own expense, the city, its  
42 officers, servants and employees, from and against any and all claims arising out of, or alleged to arise  
43 out of, the work and services to be performed by the contractor, its officers, agents, employees,  
44 subcontractors, licenses or invitees under this contract. This indemnification provision is specifically  
45 intended to operate and be effective even if it is alleged or proven that all or some of the damages  
46 being sought were caused, in whole or in part, by any act, omission or negligence of the city. This  
47 indemnity provision is intended to include, without limitation, indemnity for costs, expenses and legal  
48 fees incurred by the city in defending against such claims and causes of actions.  
49

50 6.2 Contractor covenants and agrees to indemnify and hold harmless, at its own expense, the city, its  
51 officers, servants and employees, from and against any and all loss, damage or destruction of property  
52 of the city, arising out of, or alleged to arise out of, the work and services to be performed by the  
53 contractor, its officers, agents, employees, subcontractors, licensees or invitees under this contract.  
54 This indemnification provision is specifically intended to operate and be effective even if it is alleged  
55 or proven that all or some of the damages being sought were caused, in whole or in part, by any act,  
56 omission or negligence of the city.  
57

58 Article 7. MISCELLANEOUS

59 7.1 Terms.

60 Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the  
61 meanings indicated in the General Conditions.

62 7.2 Assignment of Contract.

63 This Agreement, including all of the Contract Documents may not be assigned by the Contractor without  
64 the advanced express written consent of the City.

65 7.3 Successors and Assigns.

66 City and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other  
67 party hereto, in respect to all covenants, agreements and obligations contained in the Contract Documents.

68 7.4 Severability.

69 Any provision or part of the Contract Documents held to be unconstitutional, void or unenforceable by a  
70 court of competent jurisdiction shall be deemed stricken, and all remaining provisions shall continue to be  
71 valid and binding upon CITY and CONTRACTOR.

72 7.5 Governing Law and Venue.

73 This Agreement, including all of the Contract Documents is performable in the State of Texas. Venue shall  
74 be Tarrant County, Texas, or the United States District Court for the Northern District of Texas, Fort Worth  
75 Division.

76 7.6 Other Provisions.

77 The Contractor agrees to pay at least minimum wage per hour for all labor as the same is classified,  
78 promulgated and set out by the City.

79 7.7 Authority to Sign.

80 Contractor shall attach evidence of authority to sign Agreement, if other than duly authorized signatory of  
81 the Contractor.

82  
83 IN WITNESS WHEREOF, City and Contractor have signed this Agreement in multiple counterparts. At least  
84 one counterpart of each has been delivered to City and Contractor.  
85

86 This Agreement will be effective on the last date subscribed by a signatory (which is the Effective Date of the  
87 Agreement).  
88

City of Fort Worth

Contractor: **HUMPHREY & MORTON  
CONSTRUCTION COMPANY, INC.**

By: [Signature]  
(Signature)

Title: Vice President  
Josh R. Gill  
(Printed Name)

By: [Signature]  
Jay Chapa  
Assistant City Manager

Date 11-2-18

Attest: [Signature]  
City Secretary



Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Seal)

City/State/Zip: \_\_\_\_\_

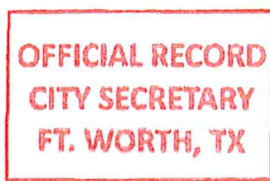
Approved as to Form and Legality:  
[Signature]  
Douglas W. Black  
Senior Assistant City Attorney

Date \_\_\_\_\_

89 M&C N/A  
90 Date N/A  
91 HB1295:NA  
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APPROVAL RECOMMENDED:

[Signature]  
Chris Harder, P.E.  
Director, Water Department  
200 Texas St. Fort Worth, TX-76102





Contract Compliance Manager

By signing I acknowledge that I am the person responsible for the monitoring and administration of this contract, including ensuring all performance and reporting requirements.

Tony Shukh

Signature

Tony Shukh

Name of Employee

Senior Capital Projects Officer

Title

