

**Request for Construction Change  
Change Order No. 1**

City of Franklin  
Engineering Office  
109 Third Avenue South  
Franklin, TN 37064

Contract No. 2017-0131  
Project 54" Southeast Interceptor Sewer  
Emergency Repair

Whereas, we **GARNEY COMPANIES INC.** entered into a contract with the CITY OF FRANKLIN, on June 21, 2017, for the construction by said Contractor of the above designated contract; and Whereas, certain items of construction encountered are not covered by the original contract, we desire to submit the following additional items of construction to be performed by the Contractor and paid by the City at the prices scheduled therefore below:

**Reason for Change Order:**

- Rain event caused Harpeth River to overflow its banks and flood the open construction trench where manhole cone sections upstream had been removed to allow bypass pumping of the sanitary sewer around the construction site. Large amounts of debris were deposited into the 54" sanitary sewer pipe between the two sections of line that were part of the original construction project. City compared the costs of cleaning the pipe versus replacing the pipe and decided to replace the 414 feet of pipe between the two manholes involved in the bypass pumping

**Attachments (List documents supporting change):**

- Letter dated May 29, 2017, from Michael Orr of Hazen and Sawyer (Attachment A)

Item	Item Description	Qty	Unit	Unit Price	Total
S-1	Construction Mobilization/Demobilization	1	LS	\$-	\$-
S-2	Manage/Operate Sewer Bypass Pumping System Prior to Construction, "Pumping Condition"	15	DY	\$3,100	\$46,500
S-3	54" Sewer Pipe Installation (Material: PC150 DI Protecto-401 lined), Installation of "Backfill" material, compacted above "Select Backfill", Compactable trench spoil may be used if it meets the criteria of "Backfill" and compaction requirements, Includes Bypass Pumping Operation, and Maintenance During Construction, SMH10324 to SMH10686.	420	LF	\$1,250	\$525,000

S-4	Provide 54" Sewer Pipe (Material: PC150 DI with Protecto- 401 interior coating). 420 LF for this project and 600 LF for City's previous project.	1,020	LF	\$290	\$295,800
S-5	Fuel Costs <b>Allowance</b> for Bypass Pumping, Invoice Reimbursement (Gallons used@ \$/Gallon purchased)	1	LS	\$10,000	\$10,000
S-6	Provide and Installation of Geotextile Lining in Trench where directed by Engineer	100	LF	\$10	\$1,000
S-7	Import and Installation of "Select Backfill" material zone, 24" thickness compacted above pipe envelope	350	CY	\$30	\$10,500
S-8	Import and Installation of "Backfill" material to replace unsuitable material that can't be reused	3000	CY	\$15	\$45,000
S-9	Haul and dispose of unsuitable material, "OFFsite"	3350	CY	\$20	\$67,000
S-10	Seasonal Seeding (with Mulch) on all disturbed areas	1	AC	\$2,000	\$2,000
S-11	Silt Fence, along alignment and spoil area	100	LF	\$5	\$500
S-12	Pipe Joint Testing (Cherne Air-Loe Tester)	20	EA	\$100	\$2,000
S-13	CCTV inspection, post installation prior to service	420	LF	\$10	\$4,200
S-14	Compaction Testing <b>Allowance</b> , one (1) per each 12 inch lift of material placed, Invoice Reimbursement	1	LS	\$5,000	\$5,000
S-15	Trench Dewatering	45	DY	\$1,500	\$67,500
S-16	Final Cleanup and Surface Restoration	1	LS	\$5,000	\$5,000
S-17	Provide and Install new rubber boot connectors at each MH	1	EA	\$1,300	\$1,300
S-18	Provide Materials and Installation to replace SMH 10324 (A-9) with a standard 8' dia. MH base, Rubber Boot Connectors (3), Transition Riser, 4' dia. Risers, Eccentric Cone, Xypex additive in precast mix, W.T. Frame and Cover, and Inside Drop Connection w/416SS Hardware for 8" Chestnut Bend sewer,	1	LS	\$61,090	\$61,090
S-19	Contingency <b>Allowance</b> used at the request of the Owner/Engineer	1	LS	\$25,000	\$25,000
				<b>Total</b>	\$1,174,390

CHANGE IN CONTRACT PRICE:
Original Contract Price
\$1,322,930.00
Net Increase (Decrease) from previous Change Orders No. 0 to ____:
Contract Price prior to this Change Order:
\$1,322,930.00
Net increase (decrease) of this Change Order:
\$1,174,390.00
Contract Price with all approved Change Orders:
<b>\$2,497,320.00</b>

CHANGE IN CONTRACT TIMES:
Original Contract Times:
Substantial Completion: N/A
Ready for final payment: N/A
Net change from previous Change Orders No. 0 to _ to:
Substantial Completion: N/A
Ready for final payment: N/A
Contract Times prior to this Change Order:
Substantial Completion: N/A
Ready for final payment: N/A
Net increase (decrease) this Change Order:
Substantial Completion: N/A
Ready for final payment: N/A
Contract Times with all approved Change Orders:
Substantial Completion: N/A
Ready for final payment: N/A

Now, Therefore, We, **GARNEY COMPANIES INC.** Contractors, hereby agree to this Supplemental Agreement consisting of the above mentioned items and prices, and agree that this Supplemental Agreement is hereby made a part of the original contract and will be performed by this Contractor in accordance with specifications thereof, and that the original contract remain in full force and effect, except in so far as specifically modified by this supplemental Agreement.

**RECOMMENDED FOR APPROVAL BY:**

By: Michael Orr  
ENGINEER

By: Patricia McNamee  
CITY PROJECT MANAGER

By: Walter Huber  
WATER MANAGEMENT DIRECTOR

Date: 8/8/17

Date: 8/17/17

Date: 8/21/17

**ACCEPTED:**

By: H. P. F.  
CONTRACTOR (Authorized Signature)

Date: 08/17/2017

**APPROVED:**

By: Eric S. Strubbe  
OWNER (Authorized Signature)

Date: 8-28-17



*Emergency Sewer Repair*

**May 29, 2017**

**Re: Request for Emergency Quote: 54" Southeast Interceptor Sewer Emergency Repair  
414 LF SMH10324-SMH10686,**

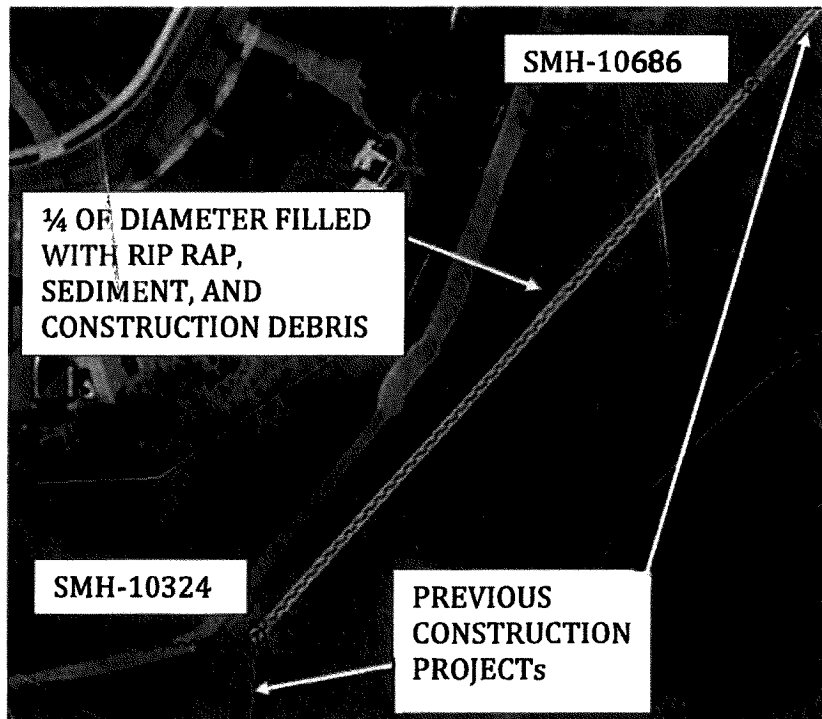
**To: Mr. Jeff Seal, Zack Bloomfield - Garney Construction**

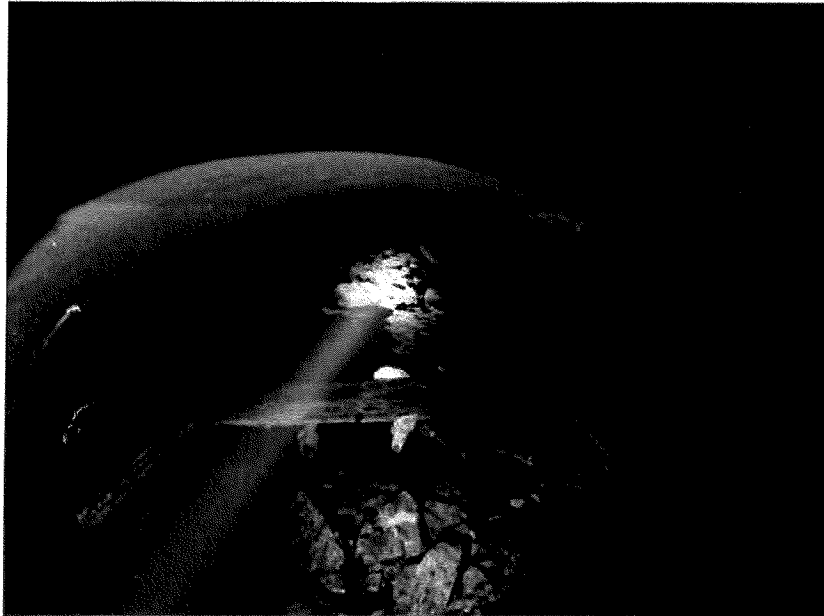
**From: Michael L. Orr, PE – Hazen and Sawyer on behalf of the City of Franklin**

**Background**

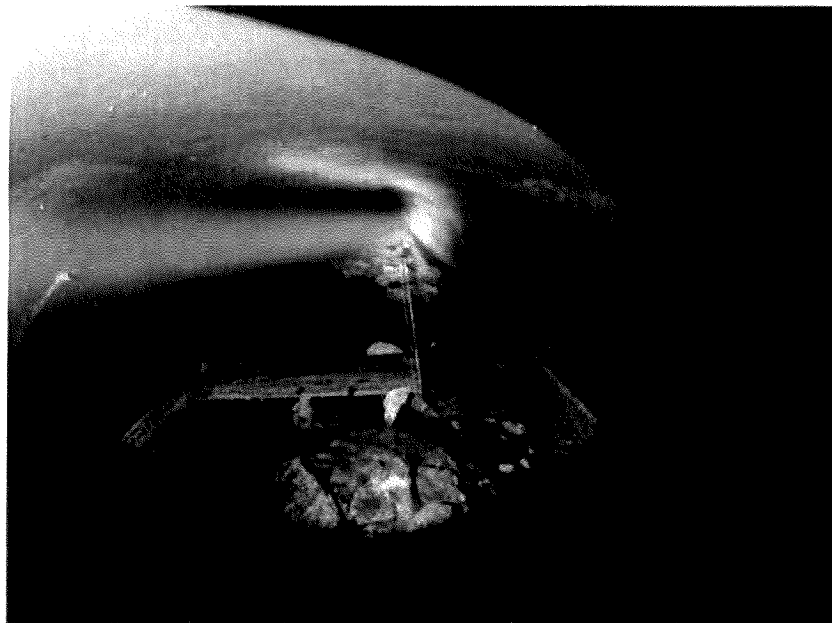
During the recent replacement of collapsed 54" gravity sewer upstream of your current project there was a period of time when manhole cone sections upstream were removed to allow sewer bypass pumping around the construction site. Within that construction period a heavy rain event occurred and the Harpeth River breached it's banks. In doing so, flood water then had the ability and pathway to enter the open construction pipe trench and unsealed sewer manhole. This rush of flow into the separate sewer system had enough energy to force out a 54" inflatable plug which allowed the mixing of stormwater from the river and sanitary sewer from collection system. As stormwater overwhelmed the open trench and recently installed 54" ductile iron pipe it carried with it construction debris and rip rap sized stone from the open excavation.

The City has discovered since this rain event that debris was deposited in the next MH-MH pipe segment downstream of that construction project. Refer to the following site map and images taken from inside the pipe.





**DEBRIS IN PIPE**



**DEBRIS IN PIPE**

**Notes: Repair/Replacement -5**

1. Photo taken from upstream SMH-10324 facing downstream direction toward SMH-10686,
2. Pipe is filled to approximately 1 ft depth with debris consisting of stone ranging in size from gravel to large surge stone rip rap, sediment, construction debris (plywood), sanitary material, etc.
3. Pipe must be cleaned and/or replaced to provide the City with reliable service.

The City has compared the costs of cleaning the pipe with risks associated to replacing the pipe between the two manholes. The City believes it's in the best interest for the health and safety of Franklin's residents to replace the pipe in it's entirety.

## Scope of Emergency Response

"MH to MH replacement"

- Approximately 414 LF between SMH10324 and SMH10686 (GIS),

## Contractor Scope of Work

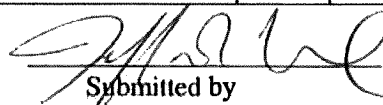
The Contractor shall furnish all labor and materials required to perform all operations for the removal and replacement of sewers and appurtenances including all concrete, granular bedding, select backfill, backfill, testing, and incidental work necessary to complete the work as described below.

1. Install and maintain perimeter erosion prevention and sediment controls.
2. Continue control, responsibility, invoicing, and operation of the bypass pumping system as provided by Xylem for the duration of the project.
3. Repair-5: As represented in the attached GIS base maps, the Contractor shall remove and replace the existing 54" pipe from MH103246 and MH10686. Per 2001 asbuilt drawings, MH A-8 Sta 27+05.9 up to MH A-9 Sta 31+27.2.
4. Replace MH A-9 (Tindal T-Series) manhole base and risers with 8' diameter circular precast manhole base and 4" diameter risers, water tight frame and cover, and inside drop connection for connecting existing 8" sewer. All precast components shall have Xypex additive.
5. Contractor shall establish and install the new pipe from the existing inverts in to the invert out of maintaining a constant slope.
6. Replace the existing MH Frames and Covers with new Watertight versions and securely attach them to the existing MHs with M-1 Structural Adhesive/Sealant or equivalent.
7. At three (3) locations along the alignment, the Contractor shall allow time and provide labor assisting the Engineer to document the existing pipe's trench characteristics.
8. Care shall be taken when removing the existing pipe in the area of the failure. Backfill shall be removed carefully as to not damage the remaining pipe further. The pipe shall be removed and three (3) sample rings salvaged for additional materials testing by the City.
9. Carefully follow the trench details for Soil Trench and Rock Trench as field conditions change per the direction of the engineer. The pipe envelope is critical to the installation's long term success.
10. Each section of new pipe shall be inspected by the owner/engineer prior to installation. Defective pipe shall be rejected and removed from site.
11. Bells and Spigots shall be carefully cleaned before pipe is lowered into the trench. Before joints are made, each section of pipe shall rest upon the pipe bed for the full length of it's barrel, with recesses to accommodate bells. After joining of consecutive pipes the recess shall be adequately backfilled. At no time shall a pipe be belled up until the preceding pipe has been adequately backfilled to protect against movement and misalignment.
12. The interior of all pipes shall be thoroughly cleaned before installation and kept clean until acceptance of work is granted.

13. Laying pipe in wet/submerged conditions is prohibited. In all cases proper trench dewatering shall be maintained so that the water level is kept to at least six (6) inches below the bottom of the trench.
14. Each joint shall be pressure tested prior to subsequent joints being placed.
15. Any pipe that has its grade or joint disturbed after laying shall be taken up and reinstalled.
16. Prior to acceptance, a mandrel shall be pulled from MH to MH in the FRP to test deflection (5% Deflection) and go/no-go rod shall be walked through the Ductile and CCTV submitted to the Owner/Engineer for review.
17. Upon acceptance, the trench shall be completely backfilled finishing with a 4" mounded surface to allow for future settlement.
18. In addition to the trench width, the remaining disturbed area shall receive finish grading, areas that received heavy construction traffic shall be scarified to a 4 inch depth.
19. All disturbed areas shall receive seasonal seeding and mulch.

## Bid Form

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Submitted by

June 29, 2017  
Date



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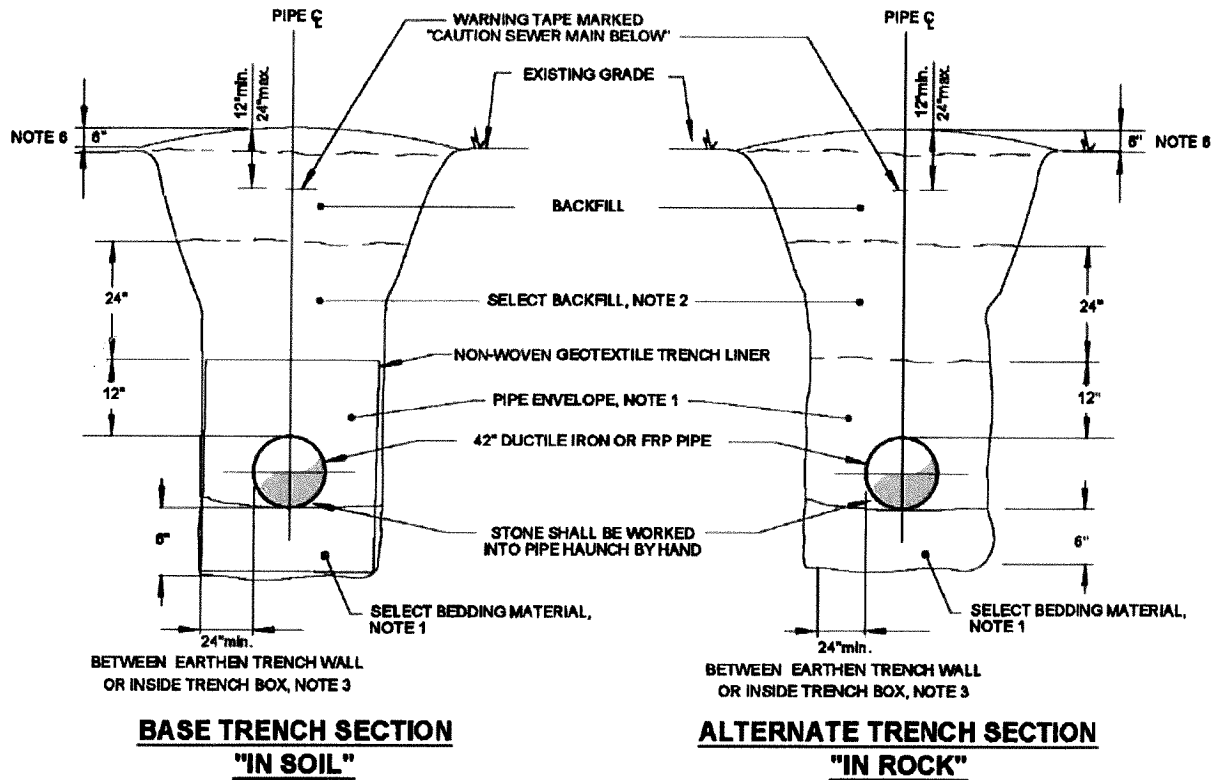
Submitted by Jeffrey M. [Signature]

June 29, 2017  
Date

## SPECIFICATION FOR BACKFILL

### 1.01 BACKFILL

- A. "Select Backfill" shall contain no man-made or organic materials and shall be free of rocks, clods, or other materials larger than 2-inches in nominal diameter. Materials from on-site excavations may be used for select backfill provided they meet the specified requirements. IF SUFFICIENT ON-SITE SELECT BACKFILL MATERIAL IS NOT AVAILABLE, THE CONTRACTOR SHALL SECURE ACCEPTABLE MATERIALS FROM AN OFF-SITE BORROW AREA. Off-site borrow material shall be approved by the Engineer before any material is transported to the work area.
- B. "Backfill" materials shall be free of all organic materials and shall not contain any rocks larger than 12 inches in diameter. Materials from on-site excavations may be used for backfill provided they meet the specified requirements. IF SUFFICIENT ON-SITE BACKFILL MATERIAL IS NOT AVAILABLE, THE CONTRACTOR SHALL SECURE BACKFILL MATERIALS FROM AN OFF-SITE BORROW AREA. Off-site borrow material shall be approved by the Engineer before any material is transported to the work area.
- C. Select Backfill and Backfill material shall be compacted to a minimum of 92% of maximum standard Procter density in accordance with ASTM D4253 and ASTM D4254 (relative density). ASTM D698 testing methods may be used if the test results in a clearly defined compaction curve. Compaction shall be performed with surface plate vibrators, vibratory rollers, or internal vibrators. Maximum lift thickness during placement shall not exceed 12-inches.
- D. Moisture content of Select Backfill and Backfill shall be controlled of  $\pm 3\%$  of optimum per ASTM D698.
- E. Select Bedding shall be imported material meeting the following gradation and pipe support:
  - a. SC1 - Crushed Rock containing  $\leq 15\%$  sand, 100% passing the 1 1/2-in sieve, maximum 25% passing the 3/8-in sieve and maximum 5% passing the No. 200 sieve.
  - b. SC2 - Clean, coarse-grained aggregates meeting Soil Group A1 or A3 in the American Association of State Highway and Transportation Officials (AASHTO) M145 – Classification of Soils and Soil Aggregate Mixtures.
  - c. Maximum particle size for Select Bedding shall be 1.5-in.
  - d. In no case, shall a soil aggregate mixture be accepted as Select Bedding if it USCS designation is SP per ASTM D2487 and having 50% passing a No. 100 sieve.
  - e. Select Bedding shall be worked by hand under pipe to provide uniform haunch support.
  - f. When rock or unyielding material is present in trench bottom, install a minimum 6-in cushion of bedding material below the bottom of the pipe.



**NOTES:**

1. SELECT BEDDING AND PIPE ENVELOPE BACKFILL SHALL BE PLACED TO A 24-INCH MIN. DEPTH OF COVER OVER PIPE. REFER TO THE ATTACHED SPECIFICATION FOR MATERIAL CHARACTERISTICS.
2. THE SELECT BACKFILL SHALL BE A MATERIAL FREE FROM ROCKS GREATER THAN 2" dia., SOIL CLODS, OR FROZEN MATERIAL. WHEN AUTOMATIC TAMPERS ARE USED, CARE SHALL BE EXERCISED TO AVOID DAMAGE TO THE PIPE.
3. A MINIMUM OF 24 INCHES OF CLEAR SPACE IS REQUIRED BETWEEN EACH SIDE OF THE PIPE AND THE EARTHEN TRENCH WALL OR INSIDE FACE OF THE TRENCH BOX (IF USED).
4. GEOTEXTILE SHALL BE A MINIMUM 8-OUNCE PER SQUARE YARD (NOMINAL) NONWOVEN NEEDLE PUNCHED SYNTHETIC FABRIC CONSISTING OF STAPLE OR CONTINUOUS FILAMENT POLYESTER OR POLYPROPYLENE MANUFACTURED IN A MANNER ACCEPTED BY THE ENGINEER AND THE OWNER. GEOTEXTILE SHALL BE INERT AND UNAFFECTED BY LONG TERM EXPOSURE TO CHEMICALS OR LIQUIDS WITH A PH RANGE FROM 3 TO 10. GEOTEXTILE SHALL HAVE A SURVIVABILITY CLASS OF CLASS 1 OR 2 IN ACCORDANCE WITH AASHTO M288, UNLESS OTHERWISE SPECIFIED HEREIN. ACCEPTABLE PRODUCTS ARE MIRAFI 180N OR EQUIVALENT.
5. ALL SEWER LINE TRENCHES SHALL BE MECHANICALLY COMPACTED PER SPECIFICATION, (FULL DEPTH).
6. TRENCH SHALL BE CAPPED OFF WITH A 6" MOUND OF TOP SOIL. ADDITIONAL OFFSITE MATERIAL REQUIRED SHALL BE INCIDENTAL TO THE UNIT PRICES AVAILABLE.
7. PIPE BEDDING AND COMPACTED BACKFILL SHALL BE INCIDENTAL TO THE UNIT PRICE FOR SEWER LINE.
8. ENGINEER SHALL DETERMINE WHICH TRENCH SECTION SHALL APPLY BASED ON CHANGING FIELD CONDITIONS.

## **TRENCH DETAIL**

NTS