



Board of Aldermen Request for Action

MEETING DATE: 3/7/2023

DEPARTMENT: Public Works – Wastewater

AGENDA ITEM: Resolution 1197 – Amendment No. 1 to Authorization No. 92 – Smith's Fork Pump Station

REQUESTED BOARD ACTION:

A motion to approve Resolution 1197, authorizing and directing the mayor to execute an Amendment No. 1 to Authorization No. 92 with HDR Engineering, Inc. for engineering design of the Smith Fork Pump Station force main.

SUMMARY:

The Pump Station at Smith's Fork has been reconstructed out of the Flood Plain and is operating. The pump station is a regional station that serves Harbortowne, Quail Ridge, Lakeside Crossing, Strawberry Hill, Litton Center, Campground, Parks and Rec, Oaks at Paradise Point and Grace Church.

The line extends from Smith's Fork campground under the river to a manhole on 4th Street (approximately 4100 feet). The pumps are running around 17 to 19 hours per day almost twice the design running time and head pressures are double what they were expected to be. What this indicates is that there is some restriction in the line. This 3-inch force main was installed, the best we can estimate, was in the 70's (unfortunately the plans do not have a date).

Staff is recommending that we replace the force main with a 6-inch main for additional capacity and growth. We have had 3 breaks on the existing line. This project was identified in the Wastewater Master Plan but was not in the immediate future or CIP.

Authorization 92 included the design of Smith's Fork Pump Station in an amount of \$158,000.

This Amendment for the design of the force main adds \$127,800 for a total Smith Fork Pump Station and Force Main Engineering services contract of \$285,800.

Estimated design and construction costs for the force main are \$510,000. Staff is going to leverage savings from CWWS budgeted projects in which spending will not occur. Savings will come from the following areas:

- Engineering portion of Winner and Woods waterline replacement (which had a budget of \$150,000) which was performed in-house.

- Construction portion of Winer and Woods waterline replacement (which has a budget of \$500,000) and was contracted with Blue Moon Hauling for a price of \$239,870.
- Engineering for the Wastewater Plant Bar Screen (which had a budget of \$250,000), which is not being pursued at this time due to high construction cost.

The total savings for these 3 planned projects is \$660,130, which is enough to fund the design and construction of the force main at \$510,000.

PREVIOUS ACTION:

- Smith's Fork Pump Station Resolution 894 (BOA Approved September 15, 2020)
- Wastewater Master Plan Adoption Resolution 880 (BOA Approved February 16, 2021)

POLICY ISSUE:

Utilities infrastructure maintenance and growth

FINANCIAL CONSIDERATIONS:

The 2023 Capital Improvement Plan for the Combined Water and Wastewater system includes savings from other CWWS projects which will go to fund this project (which are mentioned in the body of the RFA above).

ATTACHMENTS:

- | | |
|---|--|
| <input type="checkbox"/> Ordinance | <input checked="" type="checkbox"/> Contract |
| <input checked="" type="checkbox"/> Resolution | <input type="checkbox"/> Plans |
| <input type="checkbox"/> Staff Report | <input type="checkbox"/> Minutes |
| <input checked="" type="checkbox"/> Other: Auth 92, Engineers memo, alignment , drainage area | |

RESOLUTION 1197

A RESOLUTION AUTHORIZING AND DIRECTING THE MAYOR TO EXECUTE AMENDMENT NO. 1 TO AUTHORIZATION NO. 92 WITH HDR ENGINEERING, INC. FOR ENGINEERING SERVICES FOR SMITH'S FORK PUMP STATION SANITARY SEWER FORCE MAIN IMPROVEMENTS

WHEREAS, the City maintains a Wastewater Treatment Plant for processing the community's sanitary sewage; and

WHEREAS, a long-term goal of the City is to more efficiently serve the community's wastewater collection needs and provide additional capacity to facilitate growth opportunities; and

WHEREAS, Smith's Fork pump station and force main serve several developments; and

WHEREAS, Smith's Fork pump station has recently been rebuilt and the force main needs to be replaced; and

WHEREAS, HDR Engineering Inc. has submitted Amendment No. 1 to Authorization No. 92 to complete the engineering design and specifications for the Smith's Fork Pump Station Sanitary Sewer Force Main in an amount of \$127,800.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE CITY OF SMITHVILLE, MISSOURI:

THAT the Mayor is hereby authorized to execute Amendment No. 1 to Authorization No. 92 with HDR Engineering, Inc. to complete the engineering design and specifications for the Smith's Fork Sanitary Sewer Force Main in an amount of \$127,800.

PASSED AND ADOPTED by the Board of Aldermen and **APPROVED** by the Mayor of the City of Smithville, Missouri, the 7th day of March, 2023

Damien Boley, Mayor

ATTEST:

Linda Drummond, City Clerk

AMENDMENT NO. 1 TO AUTHORIZATION NO. 92

**TO
AGREEMENT BETWEEN
CITY OF SMITHVILLE, MISSOURI**

**AND
HDR ENGINEERING, INC.
FOR
PROFESSIONAL ENGINEERING SERVICES**

SMITH'S FORK PUMP STATION FORCE MAIN REPLACEMENT

BACKGROUND

Replacement of the substandard and under capacity Smith's Fork Pump Station was recently completed under Authorization No. 92. Startup and testing of the new Pump Station revealed the station is functioning but is not pumping at its full capacity. Attempts to bleed air and flush the system did not result in increased flow rates. It was determined the existing force main is partially clogged or the air relief valves are inoperable, preventing the pumps from operating at the design capacity. The existing 3-inch force main is approximately 3,800 LF crossing an open field and the Little Platte River before discharging to a manhole on 4th Street Terrace. From record drawings, the existing force main was installed in the 1970's and is approximately 50 years old. This pump station receives wastewater flow from three other pump stations in addition to the campground. City staff is concerned that attempts to clean or otherwise work on the existing force main could result in a break that would require emergency measures to repair, potentially at or near the Little Platte River crossing.

This amendment is to replace the existing force main with a new pipe extending from the pump station to a manhole on 4th Street Terrace near the Intersection of Spelman Drive and paralleling the existing force main (see image below).



In accordance with Section 1.A. of the December 18, 2003 Agreement, ENGINEER is hereby authorized to assist the City with the topographic survey, site investigation, design, preparation of construction documents, bidding assistance, and construction administration for the parallel force main.

The Scope of Services will more specifically include the following project improvements & tasks.

SCOPE OF SERVICES

Tasks 1-5 – Part of Original Work Authorization 92 – Original scope remains in effect.

Task 6. Data Collection and Topographic/Boundary Survey

1. Project research, preparation, and management - Research and compile relevant previous topographic surveys and background data and incorporated into this project.
2. Safety plan coordination and review
3. Control and benchmark survey - Establish and/or identify survey control points and project benchmarks.
4. Topographic and utility survey - Obtain topographic survey within the project boundary including apparent visible features and the Little Platte River bottom utilizing sonar equipment. This will also include staking the existing force main based on the as-built drawings.
5. Property boundary and right of way survey - Develop property boundary survey from right of way to right of way and/or building faces. Research existing property lines based on County deeds and tax mapping.
6. Utility Coordination/meetings - Coordination with utilities for locates and survey of utilities. HDR will conduct a joint utility meeting on site and survey visible marked utilities located by respective utility companies.
7. Easement descriptions - Obtain Guaranteed Title Reports (GTR), create easement descriptions and exhibits for up to 5 properties.
8. Easement staking for acquisitions – HDR will provide stacking for the proposed easements to define the project for property owners, appraisers, and the City.
9. Base mapping - Convert topographic field survey information into AutoCAD Civil 3D format.
10. Alignment walkthrough - HDR will conduct a walkthrough of the project with the City. This will confirm the proper alignment for the topographic survey and design.
11. Geotechnical investigation - HDR will retain a subconsultant to perform 3 soil bores at proposed manhole locations to determine bedrock and groundwater conditions. Two bores at the river with a maximum of 30 feet deep with rock coring. One additional bore at the west end of the alignment with 8 feet deep or refusal. HDR will provide staking for the geotechnical bore locations. An allowance of \$6,000 has been included in this amendment. Any cost in excess of this amount will be reimbursed by the City.

Task 6 Deliverables:

- Easement description and exhibits
- Geotech Report

Task 7. Force Main Design

1. Project plans – HDR will develop design plans for the force main under the direction of City Staff. These plans will include title sheet, force main line plan and profiles, layout and survey control, erosion control, traffic control, easement dimension, and standard details.
2. Technical specifications - HDR will prepare technical specifications for sewer line. A project manual is not included in this scope (see Project Assumptions Note 1).
3. Utility Coordination - HDR will initiate conversations with utilities about the project with the conceptual alignment.
4. Coordination with the Corps – HDR will engage with the Corps regarding site access and force main alignment options.
5. Cost estimate – HDR will prepare an itemized opinion of probable construction costs.
6. Technical Memorandum – HDR will prepare a tech memo to be sent to Missouri Department of Natural Resources (MDNR) for review for the force main.
7. Internal QC review - HDR will perform an internal quality control review on the plans, project manual, and cost estimate.
8. Client coordination meeting - HDR will attend one meeting with the City to review the final documents.
9. MDNR construction permit - HDR will submit a sewer construction permit to MDNR.
10. Stormwater Permitting – Coordinate and prepare land disturbance erosion & sediment control (E&S) plans, NPDES stormwater permit NOI application, and stormwater pollution prevention plan (SWPPP).
11. Easement exhibits to City - HDR will prepare easement exhibits and descriptions.
12. Finalize plans and specifications – HDR will finalize plans and specs based on comments from MDNR and City
13. Project management - Perform project management, invoicing, scheduling, and cost control for the project.

Task 7 Deliverables:

- 90% design force main plan and profiles
- Technical memo
- MDNR construction permit
- 100% plans and specifications

Task 8. FM Bidding Phase¹

1. Bidders Questions – HDR will address prospective bidders' questions during bidding.
2. Prepare addenda - Prepare up to one (1) addendum during bidding.

Task 8 Deliverables:

- Addenda

Task 9. FM Construction Phase¹

1. Submittal Reviews – HDR shall review up to ten (10) Shop Drawings and Samples and other data which Contractor is required to submit, but only for conformance with the information given in the Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

¹ See Note 1 of the Project Assumptions.

Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto.

2. Address RFI's - HDR shall issue up to two (2) necessary clarifications and interpretations of the Contract Documents to the orderly completion of Contractor's work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. Engineer may issue Field Orders authorizing minor variations in the Work from the requirements of the Contract Documents.
3. Issue Change Orders - HDR shall prepare up to two (2) Change Orders/Work Change Directives for the City.
4. Review payment applications - Based on HDR's observations as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation, HDR will recommend the amount the Contractor be paid on up to three (3) applications. Such recommendations of payment will be in writing and will constitute from information provided to HDR that the Contractor's Work has progressed to the point indicated, the quality of such Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion and to the results of subsequent tests called for in the Contract Documents), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is HDR's responsibility to observe Contractor's Work. In the case of unit price work, HDR's recommendations of payment will include final determinations of quantities and classifications of Contractor's Work (subject to subsequent adjustments allowed by the Contract Documents).
5. Monthly progress meetings - HDR shall attend up to three (3) construction progress meetings with Owner and Contractor.
6. Engineer site visits - In connection with observations of Contractor's Work while it is in progress and coordination with City Staff, HDR may make up to two (2) visits to the Site to observe as an experienced and qualified design professional the progress and quality of Contractor's executed Work. Such visits and observations by HDR are not intended to be exhaustive or to extend to each aspect of Contractor's Work in progress or to involve detailed inspections of Contractor's Work in progress beyond the responsibilities specifically assigned to HDR in this Agreement and the Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on HDR's exercise of professional judgment as assisted by the Resident Project Representative. HDR will check with City Staff documentation. Based on information obtained during such visits and observations, HDR will determine in general if the Work is proceeding in accordance with the Contract Documents, and HDR shall keep Owner informed of the progress of the Work.
7. Project Closeout - HDR will provide substantial and final completion walkthrough, punch list, and prepare record drawings based on as-built information provided by the contractor.
8. Project Management - Perform project management, invoicing, scheduling, and cost control for the project.

Task 9 Deliverables:

- Submittal reviews
- Change orders,
- Pay app reviews
- Substantial completion punch list
- Final completion documentation
- Record drawings

Project Assumptions

1. This project will be combined into one Bid Package with the Little Platte Water Line Crossing project under design currently.
2. Separate bidding documents and construction administration will not be necessary. Tasks 8 and 9 have been scaled down to account for the added scope and schedule during bidding and construction. We anticipate this project will add 90 days to Little Platte Water Line Crossing construction schedule.
3. The City will coordinate with owners of private property to provide access for consultant's staff.
4. The City will attain any appraisals and negotiate with and obtain easements from the property owners.
5. The City will provide construction observation and will review results of any testing during construction.
6. The project will only be bid one time.
7. There will be no fee for the City issued floodplain development permit. Also, a no rise certification is not anticipated for this project.
8. Corps has informed the City that no Cultural or Environmental survey review are necessary for this project and are not included in the base services but can be selected as optional scope. Corps will provide an on-site archologist to evaluate the presence of cultural resources during construction.
9. A 404 permit will not be required for the horizontal directional drill installation of the force main under the Little Platte River. HDR can provide these as an additional service if requested.

Project Schedule

- Task 6: Complete within 60 days from Notice to Proceed (NTP)
- Task 7: 90% Construction Documents will be submitted to City & MDNR within 150 days from NTP
- Task 8: Will commence after Final document approval from City and MDNR. Task will be complete within 60 days from advertisement.
- Task 9: Construction is anticipated to be 180 days. Current supply chain restrictions may delay construction completion. If significant delay is encountered additional contract time may be requested.

FEE

The CITY shall compensate ENGINEER for Amendment No. 1 to Authorization 92 Smith’s Fork Pump Station an amount not to exceed:

Amendment 1 Base Services

| | |
|--|------------------|
| Task 6 – Data Collection and Topographic/Boundary Survey | \$46,250 |
| Task 7 – Design | \$59,320 |
| Task 8 – Bidding Phase | \$3,030 |
| Task 9 – Construction Phase | <u>\$19,200</u> |
| Subtotal Base Amended Services | \$127,800 |
| Original Contract | <u>\$158,000</u> |
| Total Amended Contract fee | \$285,800 |

Smithville Agreement
Amendment No. 1 to Authorization No. 92

This AUTHORIZATION shall be binding on the parties hereto only after it has been duly executed and approved by the CITY and ENGINEER.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this AGREEMENT in duplicate on the respective dates indicated below.

CITY: SMITHVILLE, MISSOURI

By: _____

Damien Boley

Type or Print Name

Title _____ Mayor

Date _____ March 7, 2023

ENGINEER: HDR Engineering, Inc.

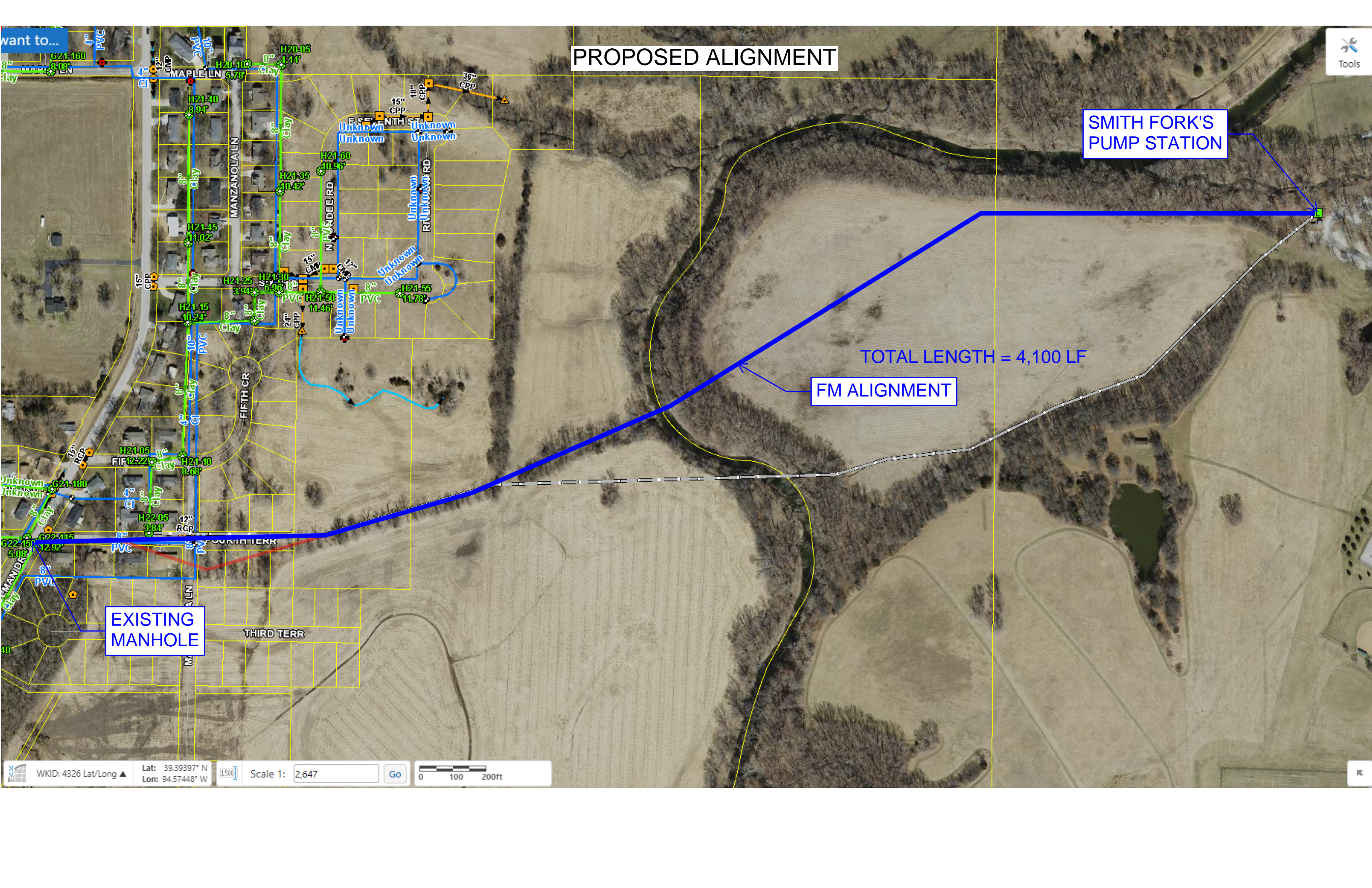
By: _____

Cory Imhoff, P.E.

Type or Print Name

Title _____ Senior Vice President

Date _____



PROPOSED ALIGNMENT

SMITH FORK'S
PUMP STATION

TOTAL LENGTH = 4,100 LF

FM ALIGNMENT

EXISTING
MANHOLE

