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Appendix A.
Matrix of Alternatives, with Detail

APPENDIX A. MATRIX OF ALTERNATIVES

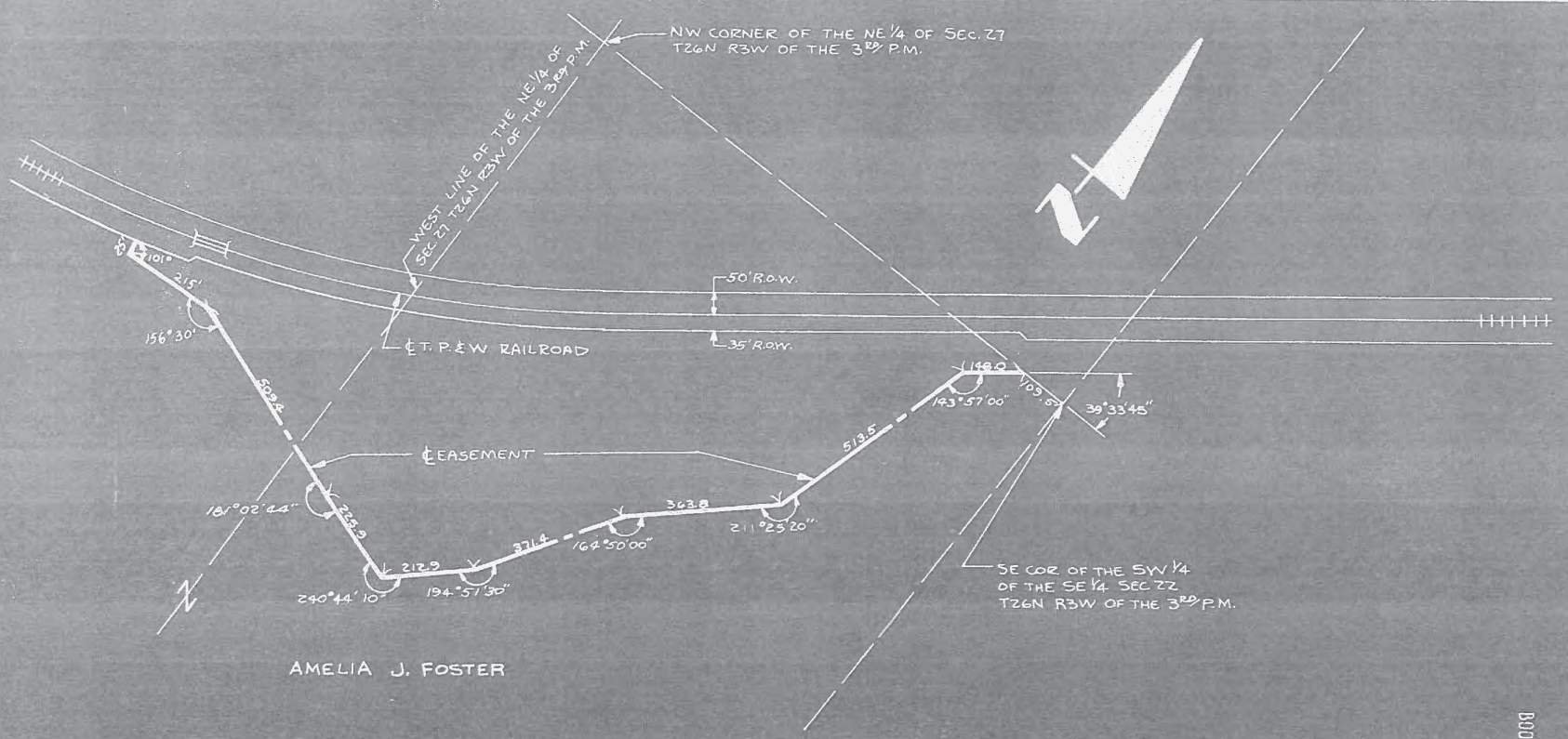
CITY OF WASHINGTON - FARM CREEK TRUNK SEWER - THIRD PARTY ANALYSIS
HCE JOB NO. 21911
2/15/2022

DRAFT

MATRIX OF ALTERNATIVES: "1" = BEST, "7" = WORST

ALTERNATIVE	DESCRIPTION		LOCATION	NORTH OR SOUTH OF RR	INCREASE IN AREAS SERVED?		DEPTH OF SEWER		EOPCC + ENGINEERING (NOT INCLUDING EASEMENT COSTS)		FUTURE COSTS - MAINTENANCE & OPERATION, ETC.		ENVIRONMENTAL IMPACTS		ANY RESIDENCES / RESIDENTS AFFECTED?		ACCESSIBILITY		CONSTRUCTABILITY		OVERALL RANKING OF ALTERNATIVES (NO WEIGHTING OF FACTORS)
A	STRAND ALIGNMENT B	BUILD NEW 42" GRAVITY REPLACEMENT SEWER AND ABANDON EXISTING FCTS	FOLLOWS SOUTH SIDE OF THE RR FROM MH 101/STP#1 TO NEW INFLUENT PUMP STATION AT STP#2	SOUTH SIDE	INCREASES GROWTH POTENTIAL	1	DEEP POINTS	5	$8 MILLION + FCTS ABANDONMENT	5	I/I NOT CORRECTED, HIGH STP FLOWS	3	SOUTH LOCATION WITH MATURE TREES, WETLANDS, STREAM CROSSINGS	6	NO	1	LEAST ACCESSIBLE, BUT ACCESS ROUTES PLANNED	6	SOME DEEP PIPES, ACCESS ISSUES	5	3.8
B	PUDIK ALIGNMENT L-1	BUILD NEW 42" GRAVITY REPLACEMENT SEWER AND ABANDON EXISTING FCTS	FOLLOWS NORTH SIDE OF RR FROM MH 101/STP#1 TO MH240/STP#2 - HCE MODIFIED TO MORE CLOSELY FOLLOW TOPOGRAPHY AND PROPERTY LINES	NORTH SIDE	LIMITS GROWTH SOUTH OF FARM CREEK	5	DEEPER THAN ALTERNATIVE A	6	$11 MILLION + FCTS ABANDONMENT	6	I/I NOT CORRECTED, HIGH STP FLOWS	3	LESS MATURE FOREST AND WETLAND BUT STILL ENVIRONMENTAL IMPACT	4	NO	2	READILY ACCESSIBLE, BUT NEED TO PLAN FOR ACCESS	1	SOME DEEP PIPES, ACCESS ISSUES	6	3.8
C	PUDIK ALIGNMENT E-3	BUILD NEW 42" GRAVITY REPLACEMENT SEWER AND ABANDON EXISTING FCTS	FOLLOWS EXISTING ROW LINES NORTH OF THE RR FROM MH 101/STP#1 TO MH 240/STP#2 - HCE MODIFIED TO MORE CLOSELY FOLLOW TOPOGRAPHY AND PROPERTY LINES	NORTH SIDE	LIMITS GROWTH THE MOST OF ANY ALTERNATIVE	6	DEEPEST	7	$12.6 MILLION + FCTS ABANDONMENT	7	I/I NOT CORRECTED, HIGH STP FLOWS	3	LESS MATURE FOREST AND WETLAND BUT STILL ENVIRONMENTAL IMPACT	5	YES	5	READILY ACCESSIBLE, BUT NEED TO PLAN FOR ACCESS	2	SOME DEEP PIPES, ACCESS ISSUES	7	4.6
D	REFIEF SEWER/PUMP STATION	EVALUATION & REPAIR OF EXISTING FCTS AND PROVIDES A 16,200 GPM PUMP STATION AT STP#1 TO OFFLOAD FLOWS IN EXCESS OF THE CAPACITY OF THE EXISITNG SEWER, PUMPING THEM TO STP#2 WITH A NEW 12" FORCEMAIN AND A NEW 30" GRAVITY SEWER	EXISTING FCTS AND NEW ROUTE IS SIMILAR TO ALTERNATIVE C. PUDIK ALIGNMENT E-3	NORTH SIDE	INCREASES GROWTH POTENTIAL	2	SHALLOWEST ALTERNATIVE	3	$7.6 MILLION + </= $1.6 MILLION FCTS REPAIR	4	I/I NOT CORRECTED, HIGH STP FLOWS PLUS $30,000 / YEAR PUMP STATION AND O&M	4	SMALLER PIPES BUT STILL ENVIRONMENTAL IMPACT	3	YES, BUT LESS THAN C DUE TO SMALLER DIAMETER PIPE/TRENCH	4	NO IMPROVEMENT FROM EXISTING, AND NEED TO PLAN FOR ACCESS	5	MUCH SMALLER PIPE SO EASIER/CHEAPER CONSTRUCTION	4	3.1
E	RELIEF SEWERS	EVALUATION & REPAIR OF EXISTING FCTS AND PROVIDE 30" RELIEF SEWERS BETWEEN MANHOLES 229/218 AND MANHOLES 244/237	EXISTING FCTS AND NEW STP#1 RELIEF SEWER IS ON STP#1 PROPERTY, NEW TIMBER RAILS RELIEF SEWER IS NORTH OF THE RR AND SOUTH OF FARM CREEK	EXISTING + NORTH AND SOUTH SIDE	MINOR INCREASE IN GROWTH	4	SHALLOW	4	$1.2 MILLION + </= $1.6 MILLION FCTS REPAIR	3	I/I NOT CORRECTED, HIGH STP FLOWS	3	LEAST ENVIRONMENTAL IMPACT OF ALL BUILD OPTIONS	2	YES, ONE LANDOWNER WITH SIGNIFICANT EFFECT	3	NO IMPROVEMENT FROM EXISTING, AND NEED TO PLAN FOR ACCESS	4	TWO LIMITED-SCOPE PROJECTS	3	2.7
F	SSES	EVALUATION & REPAIR OF EXISTING FCTS AND PERFORM A CITY-WIDE SANITARY SEWER EVALUATION SURVEY (SSES)	EXISTING FCTS AND SSES IS CITY-WIDE	EXISTING + CITY-WIDE	INCREASES GROWTH POTENTIAL	3	N/A	2	AS BUDGET ALLOWS + </+ $1.6 MILLION FCTS REPAIR	2	I/I EVENTUALLY ELIMINATED	1	MINIMAL IMPACT FOR TESTING	1	SIGNIFICANT IMPACT DUE TO DISCONNECTS	6	NO IMPROVEMENT FROM EXISTING, AND NEED TO PLAN FOR ACCESS	3	UNKNOWN	2	2
G	NO BUILD	EVALUATION & REPAIR OF EXISTING FCTS	EXISTING FCTS	EXISTING	GRADUAL INCREASE OF GROWTH POTENTIAL	7	N/A	1	</= $1.6 MILLION FCTS REPAIR	1	MINOR I/I REDUCTION	2	MOST ENVIRONMENTAL IMPACT DUE TO SEWER OVERFLOW	7	MOST SIGNIFICANT NEGATIVE IMPACT DUE TO SEWER BACKUPS	7	NO IMPROVEMENT FROM EXISTING, AND NEED TO PLAN FOR ACCESS	7	N/A	1	3.6

Appendix B.
Existing Easement Documents



EASEMENT PLAT

A PART OF THE NW 1/4 AND THE NW 1/4 OF THE NE 1/4 SEC. 27 T26N R3W 3RD P.M., LYING SOUTH OF THE SOUTHERLY R.O.W. OF THE T.P.&W. R.R. CITY OF WASHINGTON, ILLINOIS

SCALE 1" = 300'

MARCH 1971

DAILY and ASSOCIATES, ENGINEERS, inc.

BOOK 891 PAGE 672

Appendix C.
Strand Associates Phase I, II, and III Engineering Proposal

Strand Associates, Inc.®
1170 South Houbolt Road
Joliet, IL 60431
(P) 815-744-4200
(F) 815-744-4215

March 31, 2016

Mr. Ed Andrews, P.E.
City of Washington
301 Walnut Street
Washington, IL 61571

Re: Farm Creek Trunk Sewer Replacement Project
Scope of Design Services

Dear Ed,

We are pleased to submit the following proposal to the City of Washington. Our proposal includes the proposed Scope of Services and associated fee for Strand Associates, Inc.® (Strand) to provide preliminary engineering, final engineering, and bidding-related service to the City of Washington (City) for the proposed Farm Creek Trunk Sewer Replacement Project (Project).

Background

The City has an existing trunk intercepting sewer that generally conveys flow from the existing sewage treatment plant (STP) No. 1 located at the south end of Woodland Trail to the existing STP No. 2 located at the end of Ernest Street. This trunk sewer is in poor condition and undersized for anticipated flow conditions. Furthermore, neither STP No. 1 nor the existing Farm Creek interceptor are capable of receiving nor treating flows in excess 0.6 mgd. Additionally, the City intends to decommission STP No. 1, thus, requiring the trunk sewer from STP No. 1 to STP No. 2 to meet the City's current and future needs.

The City has begun identification of existing easements and the existing interceptor sewer route. The City will be including the new trunk sewer in its facility plan for funding of the Project under the Illinois Environmental Protection Agency (IEPA) Water Pollution Control Loan Program (WPCLP).

Scope of Services

Phase 1 Preliminary Engineering

1. Attend one project kickoff meeting with the City to discuss project goals and schedule, gather supporting information, and discuss particular features, perspectives, and concepts for the Project. The City will provide our team copies of the existing easement documents. Intentions for land acquisition and construction access for the Project will also be discussed.

2. Gather existing plans and plat information and anticipated development data provided by the City. Perform a theoretical service area flow study of the area tributary to the Farm Creek Trunk Sewer.

3. Gather current topographic and contour data from the City in electronic format compatible with MicroStation CAD software to develop base drawings for project design.

4. Gather existing flow metering and treatment plant flow data for the Farm Creek Trunk Sewer service area, as provided by the City.

5. Perform a flow metering program to include installation, maintenance, interrogation, and removal of up to eight flow meters and two rain gauges for a period of 90 days. Collect and compile flow meter data to identify dry weather minimum, average, and maximum flow rates; identify peak flow rates measured in the system during monitored rain fall events; document dry and wet weather characteristics at each of the monitoring locations.

6. Compare theoretical flow calculations to the existing flow data provided by the City and the flow metering program data to determine, in concert with the City, the required flow capacity for the various segments of the new trunk sewer.

7. Develop conceptual drawings for up to three trunk sewer alternatives based on existing topographic mapping, aerial mapping, plat mapping, and easement documentation provided by the City. Route evaluation will include consideration of options for a combination of conveyance and storage of peak flows at STP No. 1 or STP No. 2. If the City desires to retain the existing sewer, we have assumed that the City will provide sewer cleaning and televising services. Engineering services related to reusing the existing interceptor will be provided under a separate agreement.

8. Complete preliminary engineering of a modified or new influent pumping station at STP No. 2 to accommodate a lower interceptor profile. It is anticipated that this effort will reuse/modify the existing wet well or create a new structure without a building. This effort will include replacing the existing excess flow pumps and reuse/replace the existing influent pumps.

9. Perform a hydraulic analysis of the trunk sewer to verify pipe size, slope, and pipe materials.

10. Develop concept level opinions of probable construction cost (OPCC).

11. Identify potential easement acquisition needs for each conceptual trunk sewer route.

12. Create a draft design memorandum presenting study findings and concept alternative plans. Provide draft design memorandum to City for review.

13. Meet with City to discuss draft design memorandum and finalize Project scope and parameters of the trunk sewer design project.

14. Finalize design memorandum and provide three final copies to City.

15. Submit a facilities plan to IEPA on the City's behalf for the purposes of project approval and funding. The City will provide section(s) pertaining to the description of the existing residential rate structure, average water consumption or the basis for billing, current average monthly residential bill, any proposed rate changes and the proposed average monthly residential bill as a result of the project(s).

16. Attend up to two additional meetings with the City during preliminary engineering. It is anticipated that these two meetings may also include meeting with property owners or other stakeholders to discuss the project.

Phase 2 Final Engineering

For the purposes of defining the level of effort for final engineering, we assumed a single, 48-inch interceptor installed along the existing route since flows and capacities still need to be established through a preliminary engineering effort.

17. Prepare and submit the IEPA Loan Pre-application.

18. Assist the City in preparing and submitting a financial aid application for the Illinois Water Pollution Control Revolving Loan Fund and communicate with IEPA funding staff.

19. Perform a topographic survey over the final trunk sewer corridor. This survey includes up to 13,500 feet of linear survey from STP No. 1 to STP No. 2 for a width of 20 feet either side of the proposed trunk sewer centerline. We have assumed that the City will provide clearing and grubbing services for the entire route of the proposed interceptor corridor.

20. Assist the City in soliciting proposals and contracting for geotechnical sampling, testing, and reporting. The extent of sampling shall be as determined by the City and our firm. We will develop a Request for Proposal for the City's use in soliciting proposals.

21. Perform a wetland identification and delineation study along the Project corridor and provide the City with a final report.

22. Develop 50 percent complete engineering drawings and OPCC for the trunk sewer and provide to the City for review. Engineering design and drawings are based on up to 13,500 feet of trunk sewer. Design and drawings for storage of peak flows at STP No. 1 or STP No. 2 are not included in the Project, but shall be handled under a separate agreement with the City.

23. Develop engineering drawings and OPCC for the proposed influent pumping station at STP No. 2 determined during preliminary engineering. This effort will include the submittal and meetings identified under the Final Engineering Phase 2 interceptor scope of work and will be performed concurrently. The influent pumping station will ultimately be bid as a separate contract. Again, it is anticipated that this effort will require an underground structure without an at-grade structure, with the exception of hoist equipment for pump removal.

24. Develop and provide to the City legal descriptions and exhibits of recommended land or easement acquisition for the City's use in negotiating acquisition with property owners. The City will be responsible for acquiring the necessary land or easements for the project and if legal land surveys are required, will contract separately with a Registered Land Surveyor for those surveys and plats.

25. Meet with the City to review 50 percent complete engineering and land acquisition documents.

26. Develop 75 percent complete engineering drawings, technical specification, and OPCC for the trunk sewer and provide to the City for review. Technical specifications shall be based on our firm's standard specifications and will incorporate City specifications.

27. Develop bidding and contracting documents using Engineers Joint Contract Documents Committee C-700 Standard General Conditions of the Construction Contract, 2007 edition and incorporating Illinois Revolving Loan Fund updates.

28. Meet with the City to review 75 percent complete engineering documents.

29. Following 75 percent complete review with City, update engineering documents and submit to permitting agencies, along with permit applications. The following permits are anticipated:

    a. IEPA Construction and Operation
    b. US Army Corps of Engineer Joint Permit Application
    c. IDNR–Office of Water Resources for Flood Plain Construction
    d. IDNR Threatened and Endangered Species Consultation
    e. US Fish and Wildlife Threatened and Endangered Species Consultation
    f. Illinois Historic Preservation Agency (see below for Service Elements Not Included)
    g. IEPA NPDES Permit for Construction Operations

30. Submit engineering drawings, technical specifications, bidding and contracting documents, along with a Certification of Plans/Specifications Compliance with Loan Rules to the IEPA for approval of the project for bidding.

31. Following receipt of all permit agency comments, revise engineering drawings and technical specifications and bring documents to final completion.

32. Attend up to two additional meetings with the City during final engineering. It is anticipated that these meetings may also include property owners or other stakeholders to discuss the project.

Phase 3 Bidding-Related Services

33. Distribute bidding documents electronically through QuestCDN, available at www.strand.com and www.questcdn.com.

34. Attend one pre-bid meeting with the City and prospective bidders.

35. Respond to bidder questions during bidding period and issue addenda, as necessary.

36. Attend one bid opening and provide the City with a tabulation of bids.

37. Assist the City in award of a construction contract.

38. Submit bids along with a WPCLP Bid Certifications Form executed by City.

Service Elements Not Included

The following services are not included in this proposal. If such services are required, they will be provided as noted.

1. Additional and Extended Services during construction made necessary by:

    a. Work damaged by fire or other cause during construction.
    b. A significant amount of defective or neglected work of any contractor.
    c. Prolongation of the time of the construction contract.
    d. Default by contractor under the construction contract.

    Any services of this type will be provided through an amendment to the agreement.

2. Archaeological or Botanical Investigations: If field investigations necessary for agency approval require the services of an archeologist or botanist, we will assist the City in engaging the services of said professionals through a separate agreement.

3. Construction-Related Services: Construction-related services for the project will require a separate agreement with the City.

4. IEPA SRF Loan Application and Financial Information Checklist: The City shall be responsible for executing and submitting the WPCLP Loan Application Form and the WPCLP Financial Information Checklist to IEPA for Project funding.

5. Land and Easement Surveys/Procurement: Any services of this type, including, but not limited to, field work, preparation of legal descriptions, or assistance to City for securing land rights necessary for siting sanitary force mains, sewer, and appurtenances will be provided through a separate agreement with the City.

6. Permit and Plan Review Fees: All permit and plan review fees payable to regulatory agencies shall be paid for by City.

7. Preparation for and/or Appearance in Litigation on Behalf of City: This type of service by our firm will be provided through a separate agreement with the City.

8. Revising Designs, Drawings, Specifications, and Documents: Any services required after these items have been previously approved by state or federal regulatory agencies, because of a change in project scope or where such revisions are necessary to comply with changed state and federal regulations that are put in force after services have been partially completed, will be provided through an amendment to the agreement.

9. Services Furnished During Readvertisement for Bids, if Ordered by City: If a contract is not awarded pursuant to the original bids, any services of this type will be provided through an amendment to the agreement.

10. Services Related to Buried Wastes and Contamination: Should buried solid, liquid, or potentially hazardous wastes or subsurface or soil contamination be uncovered at the site, follow-up investigations may be required to identify the nature and extent of such wastes or subsurface soil or groundwater contamination and to determine appropriate methods for managing of such wastes or contamination and for follow-up monitoring. Investigation, design, or construction-related services related to buried solid, liquid, or potentially hazardous wastes or soil or groundwater contamination will be provided through a separate agreement with the City.

11. Design Services related to Peak Flow Storage Facility, STP #1 Demolition/Decommissioning, or STP #2 Modifications related to Phase 2B Improvements: This type of service by our firm will be provided through a separate agreement with the City.

Compensation

Preliminary Engineering – Phase 1, Final Engineering – Phase 2, and Bidding-Related Services are proposed on a lump sum fee basis, to be billed monthly in proportion to the engineering services completed.

Task	Compensation
Preliminary Engineering – Phase 1	
Flow Metering	
Flow Capacity Analysis	
Influent Pumping Station Preliminary Engineering	
Route Study and Preliminary Engineering	
Administration, Meetings, and Final Report	
Final Engineering – Phase 2	
Bidding-Related Services	
Total	

Schedule

With each of these points in mind, we have developed the preliminary schedule for the major work items, as follows:

Task	Date
Project Kickoff	April 2016
Flow Metering	April 2016 through June 2016
Facilities Plan Submittal	August 2016
Topographic Survey	November 2016
Final Design Submittal	June 2017
Tentative IEPA Facilities Plan Approval Date	August 2017
Open Bids	September 2017
Construction	January through November 2018

The timelines for each task are dependent on the final scope identified in the preliminary engineering as well as agency review times. However, this schedule provides an overview of how the whole project fits together over time.

Please let us know if this proposal is acceptable. If so, we will forward an agreement for execution. If there are any questions or if additional information is required concerning this proposal, please call us at 815-744-4200.

Sincerely,

STRAND ASSOCIATES, INC.®

Michael R. Waldron, P.E.

Brian T. Molenaar, P.E.

9901.973/MRW:bsg

Appendix D.
Strand Associates Draft
Preliminary Engineering Design Supplement

City of Washington
Farm Creek Trunk Sewer
Draft Preliminary Engineering Design Supplement
June 3, 2020

In response to comments provided by property owners along the proposed Farm Creek Trunk Sewer route, Strand Associates, Inc. revisited alternatives for modifying the route with a goal of reducing impacts to the properties.

A site visit was performed to assess existing conditions north of the railroad as well as along the proposed trunk sewer corridor south of the railroad previously intended to be located 60 feet from the railroad right-of-way (ROW). From this site assessment it was confirmed that the trunk sewer route south of the railroad has some challenges but is more feasible and better meets the City's long-term maintenance and operation goals than a route north of the railroad.

North Route:
Following are key issues identified relative to a route north of the railroad.

- The north route is heavily wooded from STP-2 on the west to where Farm Creek passes under the railroad near Timber Rail cul-de-sac, similar to the wooded conditions south of the railroad. The north route does not appear to appreciably reduce the need for tree removal.
- The north route is entirely in the Farm Creek floodplain and would continue to cause operational problems for the City. Consideration was given to routing the sewer outside of the floodplain but that would result in the sewer being placed far into private properties, in many cases bisecting properties, and requiring easements from ten different property owners.
- The north route would be much longer than the proposed south route.
- The north route has more wetlands and environmentally sensitive areas than the south route.
- The north route is significantly restricted with regard to accessibility due to the number of private properties to cross and the serpentine nature of Farm Creek.

South Route:
The following issues were recognized regarding the route south of the railroad.

- The previously proposed trunk sewer route was located 60 feet off the railroad right-of-way and included an 80-foot permanent easement and an additional 40-foot temporary construction easement (120 feet total). The purpose behind this proposed route was to keep the sewer outside of the 50-foot buffer zone adjacent to the railroad right-of-way because additional railroad protective liability insurance is often required for facilities within the 50-foot buffer. We discussed this issue with insurance carriers and with the Real Estate Manager at Genesee and Wyoming Railroad Services, Inc., the owners of the railroad. It was determined that railroad protective liability insurance will be required during construction for any operations within 50 feet of the railroad right-of-way. However, upon completion of construction, the City will not be required to carry insurance on the completed trunk sewer as long as it is located outside the railroad right-of-way. Insurance

will be required for any sewers that are within the railroad right-of-way, which would include the two new and one existing sewer crossing of the railroad. See attached email correspondence with Genesee and Wyoming Railroad.

- From the site visit it was determined that an alignment closer to the railroad but still outside of the railroad right-of-way is feasible and would reduce impacts to the properties and allow for reduction of easement widths granted to the City. A new trunk sewer alignment is being proposed to center the sewer 25-feet off the railroad right-of-way within a 50-foot permanent easement as well as an additional 30-foot temporary construction easement (80 feet total). See attached revised route drawings.

- The general landscape of the southern route varies from open grass areas to wooded areas with predominantly small diameter trees and scattered large diameter trees with light underbrush, to similar wooded areas with thick underbrush. The areas with thick underbrush were mostly east of where Farm Creek passes under the railroad near Timber Rail cul-de-sac. See photos below.

Figure 1 Wooded areas with light underbrush

Figure 2 Wooded areas with heavy underbrush

- Within the permanent and temporary easements, it is anticipated underbrush and small trees will have to be cleared for construction of the sewer and construction access.

- Within the permanent easement, it is anticipated that most of the large diameter trees will need to be removed to allow for construction of the new trunk sewer. However, final alignment adjustments could be made to avoid significant trees as much as possible.

- Within the temporary construction easement, it is anticipated some of the large trees will need to be removed, but coordination with the contractor would be required under the construction specifications to identify trees to be avoided and saved and to reduce tree

removal as much as possible since the temporary easement area is only required to allow the contractor accessibility to install the new sewer.

- It was also noted that the western half of the proposed route already has cleared access corridors. We suggest coordinating with the property owners to modify the trunk sewer route to use the open corridors as feasible. This would require moving the sewer and easements away from the railroad but would reduce overall disturbance.

- Similarly, we suggest coordinating with the property owners who participate in the Conservation Reserve Enhancement Program to modify the trunk sewer route to avoid their tree restoration areas as much as feasible.

- Tree planting will be a part of the construction specifications to reestablish tree growth in the wooded area.

- With the new proposed route, some of the trenchless construction lengths that were required under the original route can be reduced or eliminated completed.

Attached are drawings for the newly proposed sewer route. As noted above, this route can be modified to take advantage of current open corridors and avoidance of particular tree restoration areas. This is not reflected in the drawings but should be discussed with the property owners.

Waldron, Mike

From: GWAPPSWEST <gwappswest@gwrr.com>
Sent: Monday, May 18, 2020 8:33 AM
To: Druszkowski, Ethan; GWAPPSEAST
Cc: Waldron, Mike
Subject: RE: Insurance Requirements for Outside of ROW Access for the City of Washington Illinois

[EXTERNAL EMAIL]: Verify sender before opening links or attachments.

Hi Ethan,

If the sewer line will remain outside of railroad right of way, then the City will not need to maintain insurance for the railroad. If the line is within the railroad right of way, then the City will need to permit and maintain insurance for the life of the pipeline.

Thanks,

Crystal Galbreath
Manager - Real Estate
Genesee & Wyoming Railroad Services, Inc.
13901 Sutton Park Drive South
Suite 270
Jacksonville, Florida 32224
904-596-7782
crystal.galbreath@gwrr.com

Preliminary property research or application review will take approximately 3-4 weeks. To minimize duplicate reviews and obtain faster process times, we request that you submit the information you have as an application package for review. If additional information/revisions are needed or if the underlying land owner is an alternate railroad, you will be directed upon review.

From: Druszkowski, Ethan <Ethan.Druszkowski@strand.com>
Sent: Friday, May 15, 2020 3:11 PM
To: GWAPPSEAST <GWAPPSEAST@gwrr.com>; GWAPPSWEST <gwappswest@gwrr.com>
Cc: Waldron, Mike <Mike.Waldron@strand.com>
Subject: Insurance Requirements for Outside of ROW Access for the City of Washington Illinois

Good afternoon Donna and Crystal,

I am unsure if my project in central Illinois falls within Genesee & Wyoming's east or west region, so I am contacting you both. I am a design engineer for Strand Associates in Joliet, Illinois, who has been hired by the City of Washington, Illinois to design a proposed trunk sanitary sewer that connects its two sanitary treatment plants within the City. Both these plants are next to the Toledo, Peoria, and Western Railroad. The proposed alignment runs parallel with the railroad for its entire length for a little over 2 miles. The main sewer is proposed to be outside of Genesee & Wyoming right of way (ROW), but within 50 feet of it.

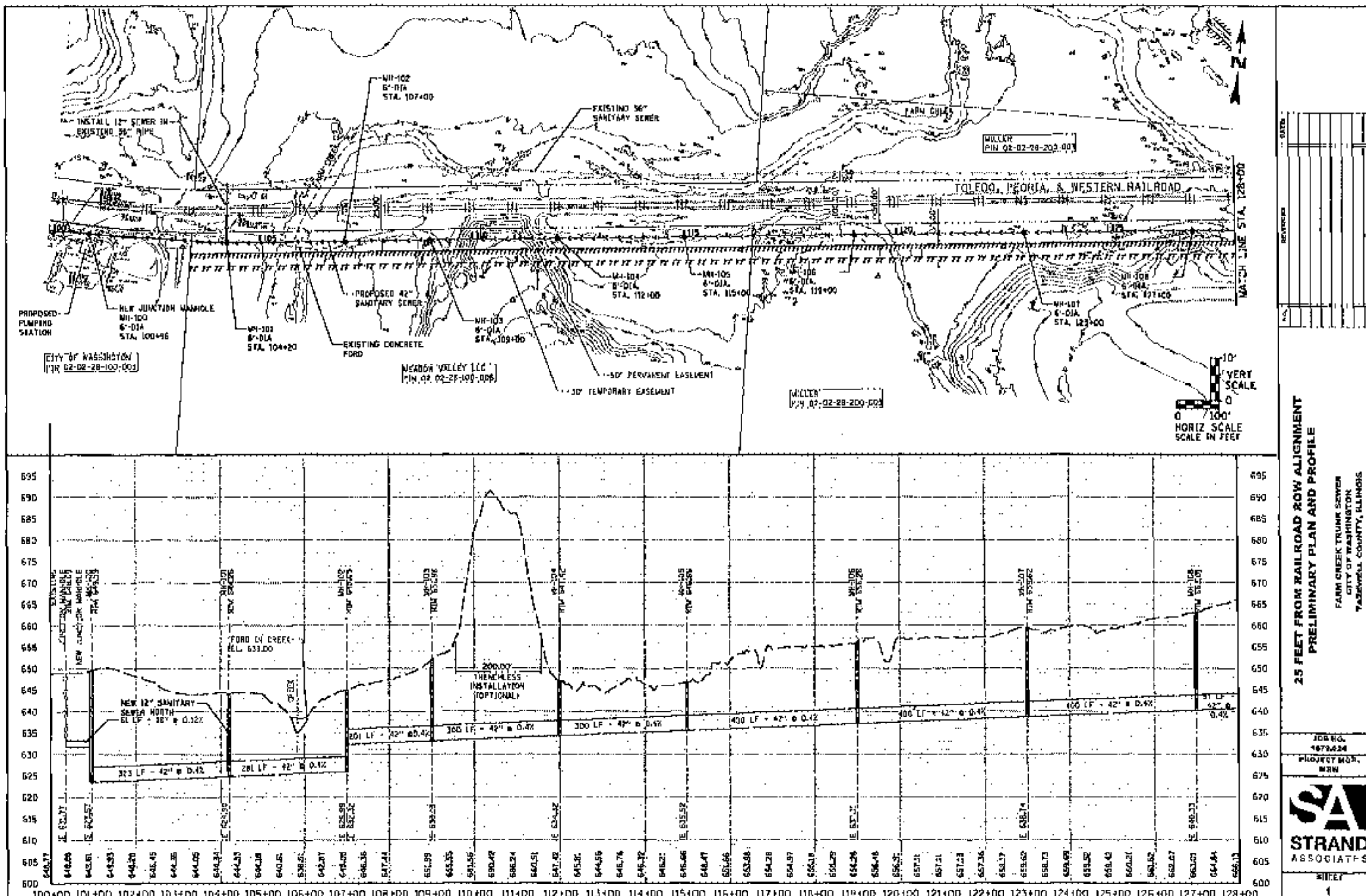
Your insurance requirements are clearly stated on the website for the contractor during construction, but will the City be required to have railroad insurance after construction to access their sewer that is within 50 feet of your ROW? If it will be required, what would those requirements be?

The location of the project begins at the latitude and longitude of 40.684470, -89.460837 at the City's Plant 2 and continues to Plant 1 at 40.693755, -89.425642.

Please let me know if you have any questions.
Thanks,

Ethan Druszkowski
Strand Associates, Inc.®
815.744.4200 ext. 3161
Ethan.Druszkowski@strand.com | www.strand.com

Excellence in Engineering Since 1946.


TOLEDO, PEORIA, & WESTERN RAILROAD
MATCH LINE STA. 128+00
FARM CREEK
EXISTING 36" SANITARY SEWER
INSTALL 12" SEWER IN EXISTING 36" PIPE
MH-102 6'-DIA STA. 107+00
PROPOSED PUMPING STATION
NEW JUNCTION MANHOLE MH-100 6'-DIA STA. 100+96
MH-101 6'-DIA STA. 104+20
PROPOSED 42" SANITARY SEWER
EXISTING CONCRETE FORD
MH-103 6'-DIA STA. 109+00
MH-104 6'-DIA STA. 112+00
MH-105 6'-DIA STA. 115+00
MH-106 6'-DIA STA. 119+00
MH-107 6'-DIA STA. 123+00
MH-108 6'-DIA STA. 127+00
50' PERMANENT EASEMENT
30' TEMPORARY EASEMENT
CITY OF WASHINGTON PIN 02-02-28-100-001
MEADOW VALLEY LLC PIN 02-02-28-100-006
MILLER PIN 02-02-28-200-003
10' VERT SCALE
100' HORIZ SCALE
SCALE IN FEET
FORD IN CREEK EL. 633.00
NEW 12" SANITARY SEWER MONTH 61 LF - 36" @ 0.32%
323 LF - 42" @ 0.1%
281 LF - 42" @ 0.1%
201 LF - 42" @ 0.4%
300 LF - 42" @ 0.4%
200.00' TRENCHLESS INSTALLATION (OPTIONAL)
300 LF - 42" @ 0.4%
400 LF - 42" @ 0.4%
400 LF - 42" @ 0.4%
400 LF - 42" @ 0.4%
CREEK
25 FEET FROM RAILROAD ROW ALIGNMENT
PRELIMINARY PLAN AND PROFILE
FARM CREEK TRUNK SEWER
CITY OF WASHINGTON
TAZEWELL COUNTY, ILLINOIS
STRAND ASSOCIATES
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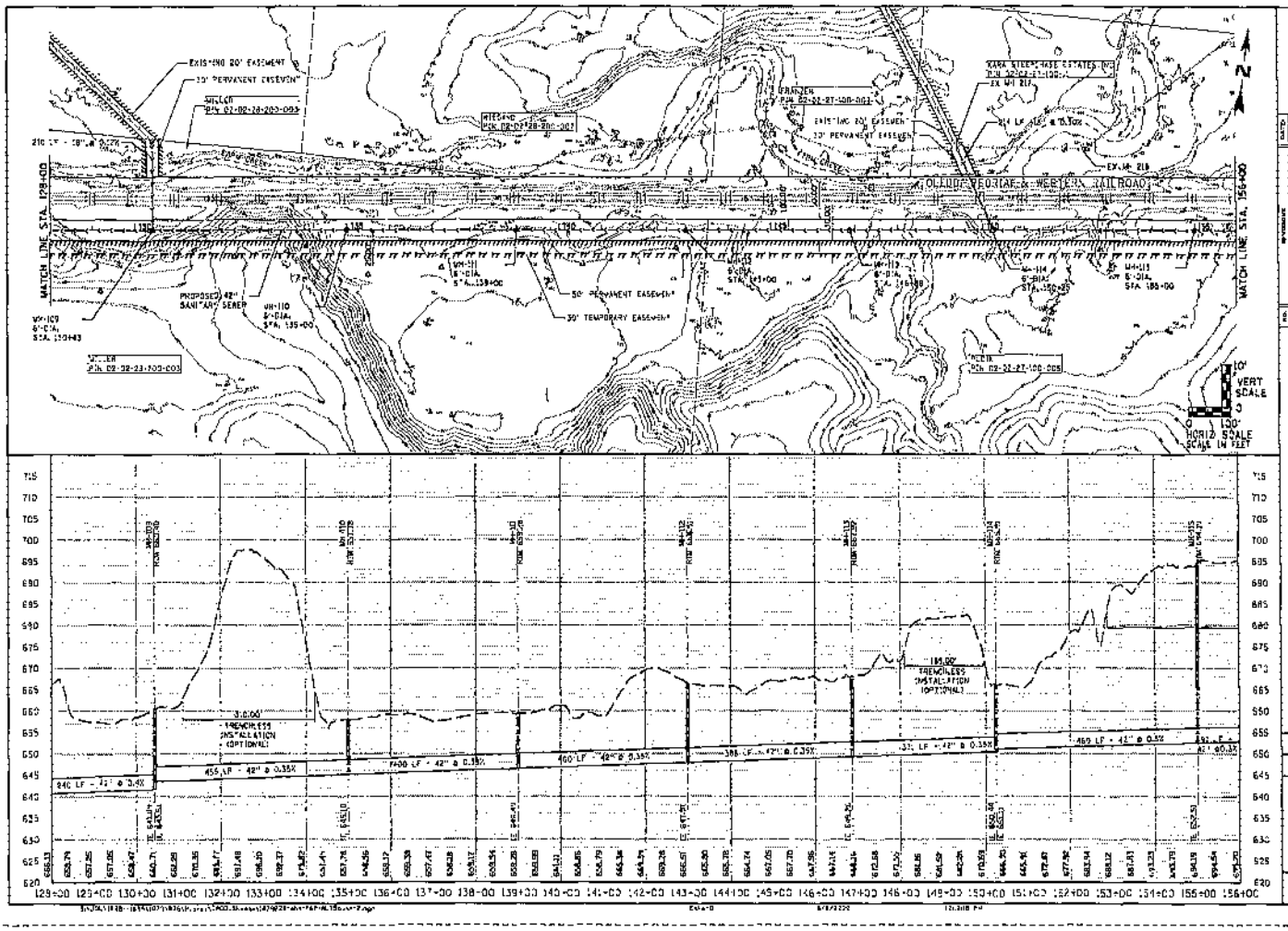

25 FEET FROM RAILROAD ROW ALIGNMENT
PRELIMINARY PLAN AND PROFILE

FARM CREEK TRUNK SEWER
CITY OF WASHINGTON
TAZEWELL COUNTY, ILLINOIS

JOB NO.
1079.034
PROJECT MGR.
MW

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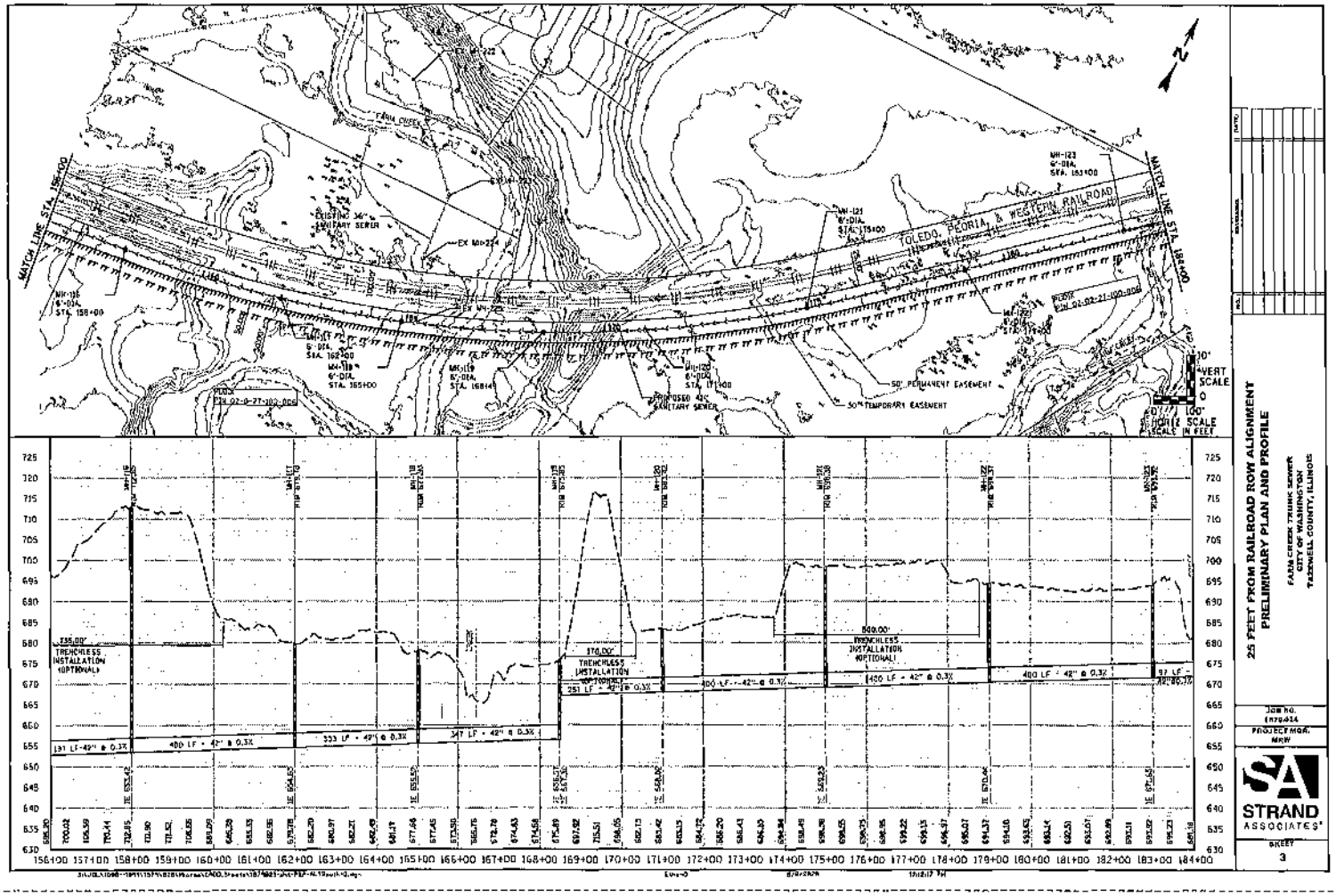

25 FEET FROM RAILROAD ROW ALIGNMENT
PRELIMINARY PLAN AND PROFILE

FARM CREEK TRUNK SEWER
CITY OF WASHINGTON
TAZEWELL COUNTY, ILLINOIS

Job No.
170434
PROJECT MGR.
MKW

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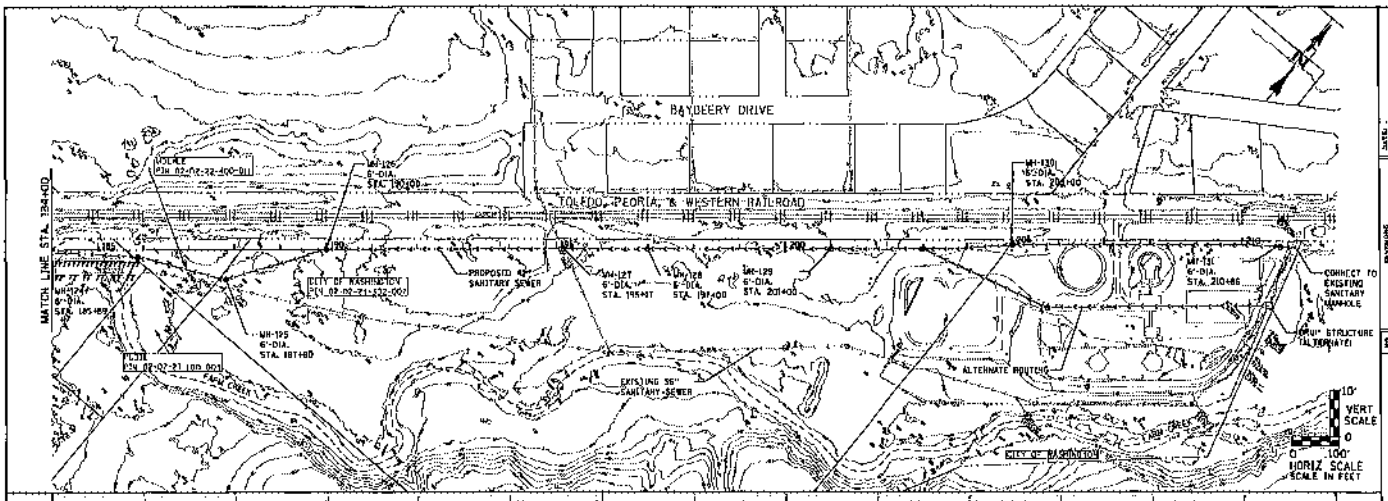

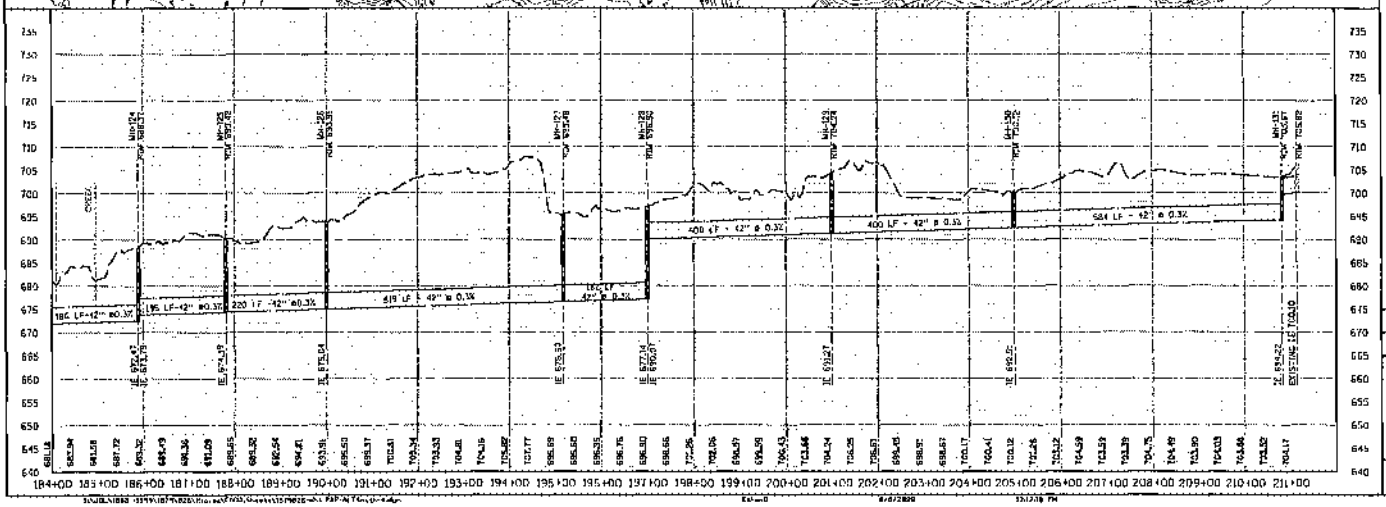

25 FEET FROM RAILROAD ROW ALIGNMENT
PRELIMINARY PLAN AND PROFILE

FARM CREEK TRUNK SEWER
CITY OF WASHINGTON
TAZEWELL COUNTY, ILLINOIS

JOB NO.
4878.084
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MRW

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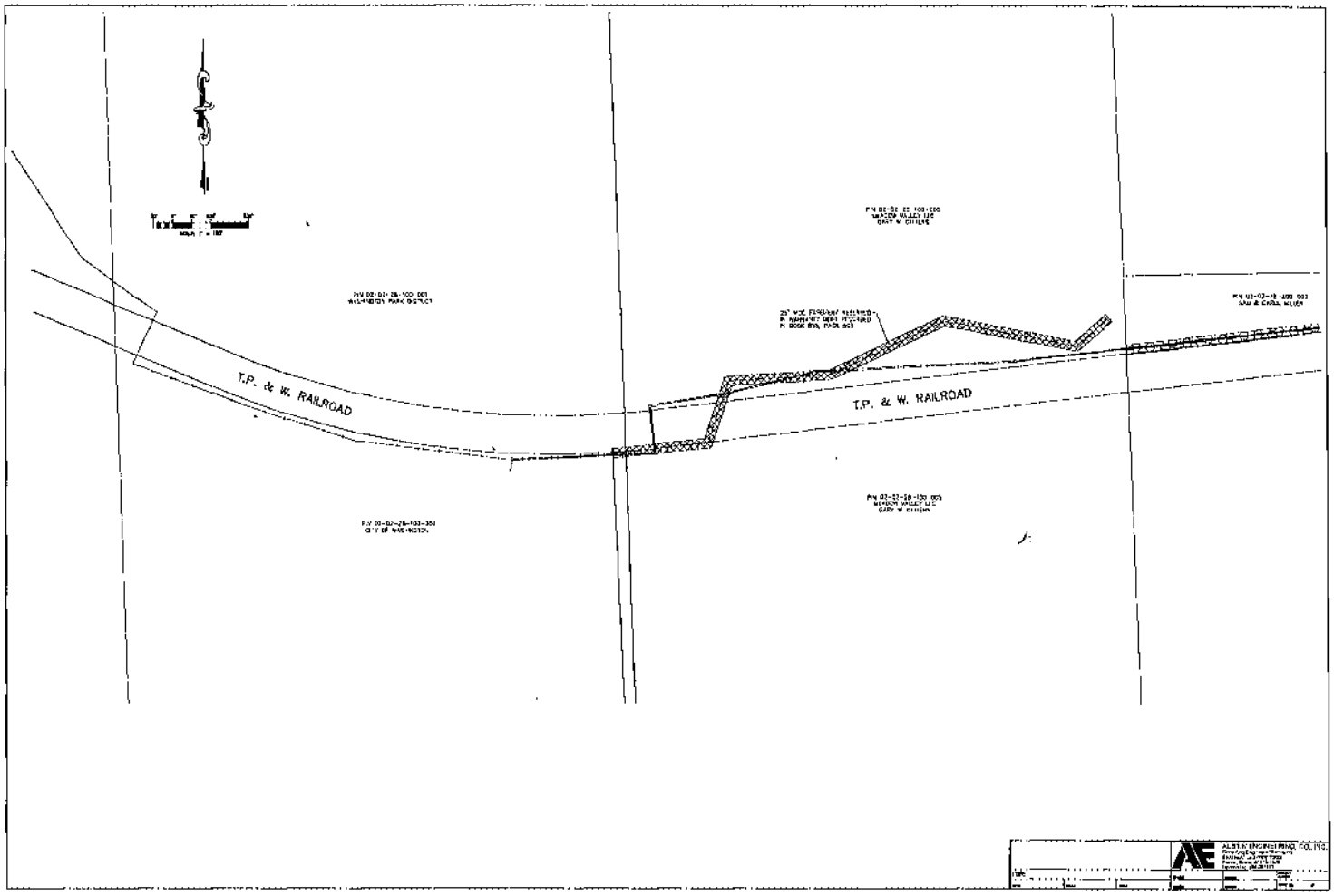
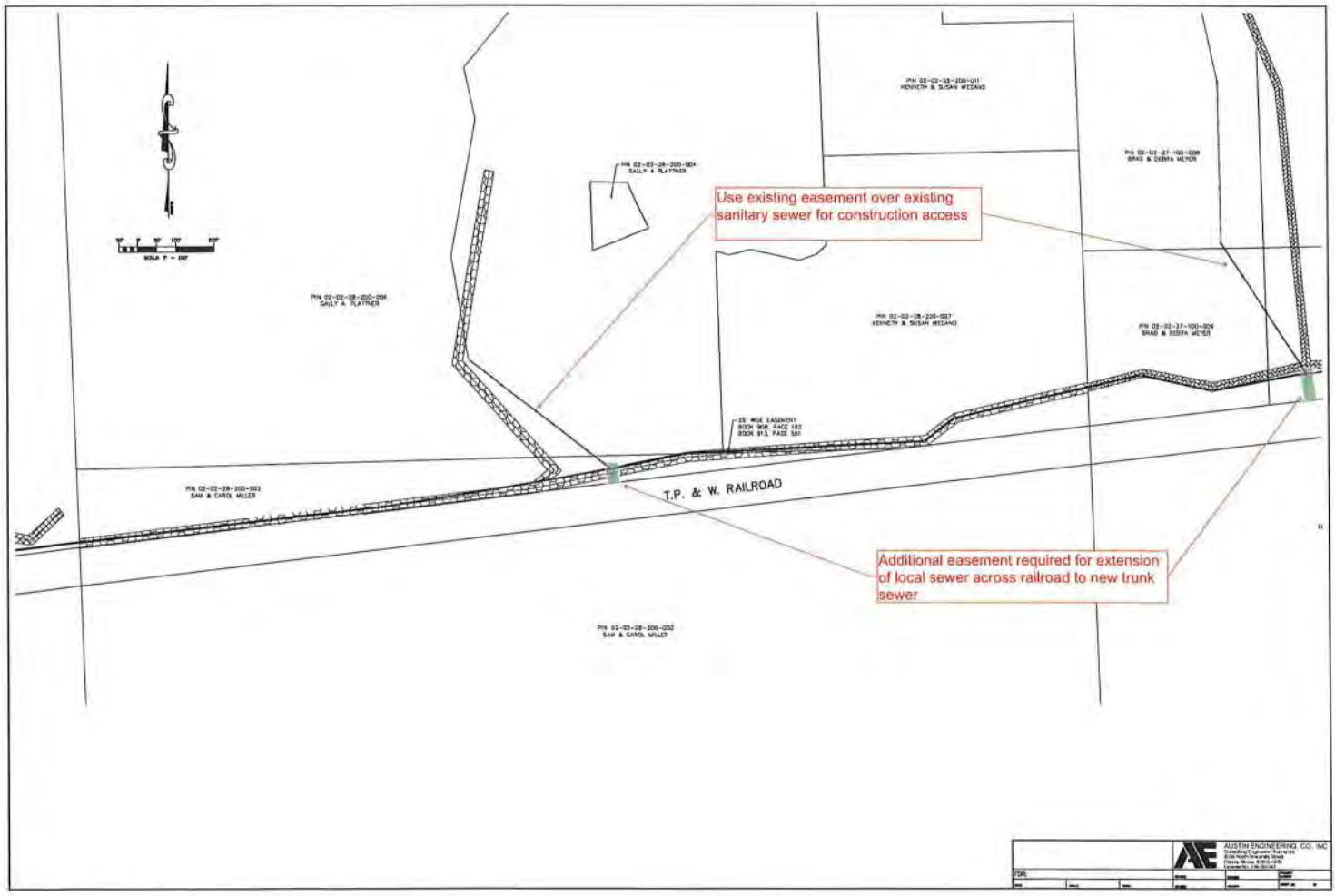
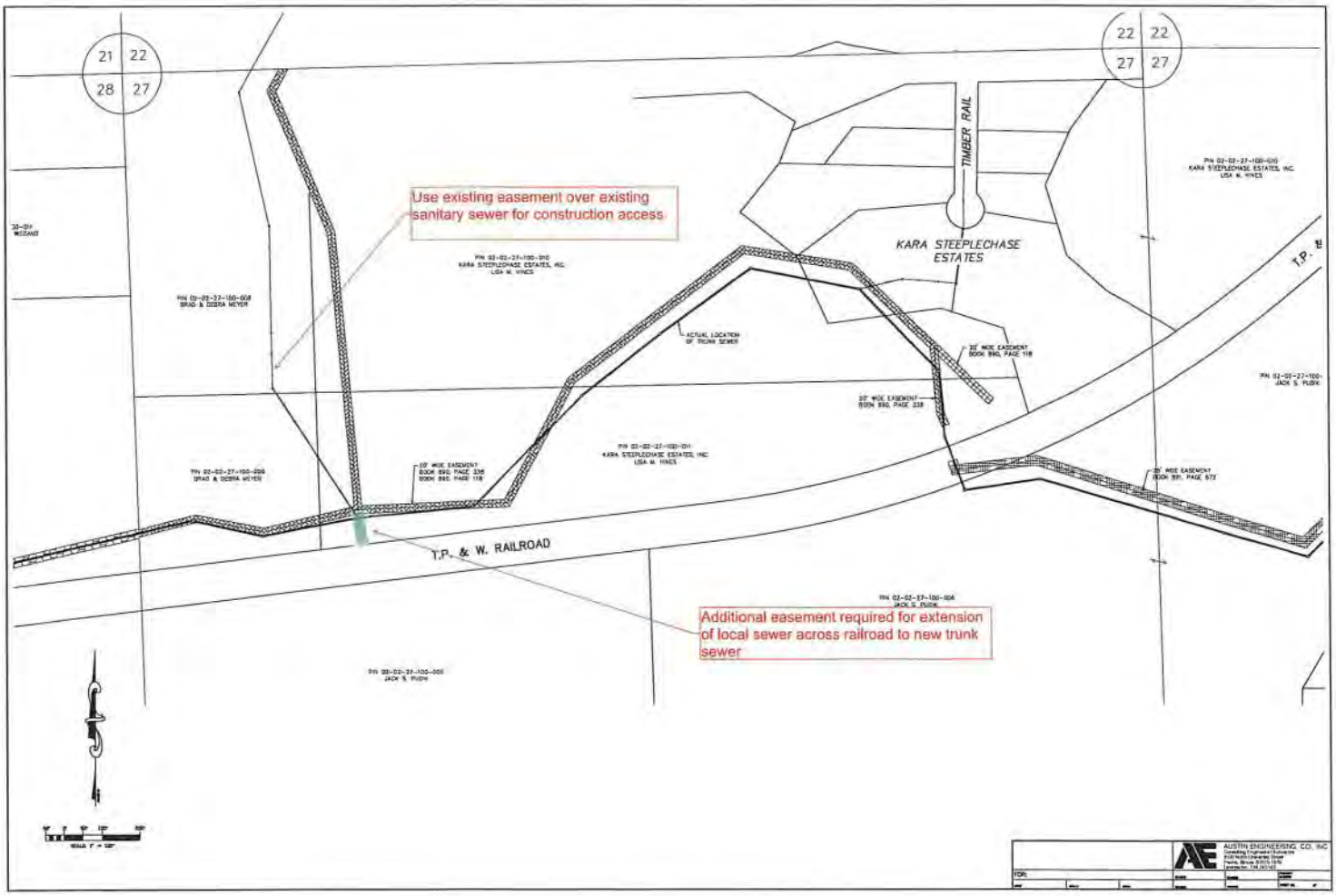

T.P. & W. RAILROAD
T.P. & W. RAILROAD


Use existing easement over existing sanitary sewer for construction access
T.P. & W. RAILROAD
Additional easement required for extension of local sewer across railroad to new trunk sewer
AUSTIN ENGINEERING CO. INC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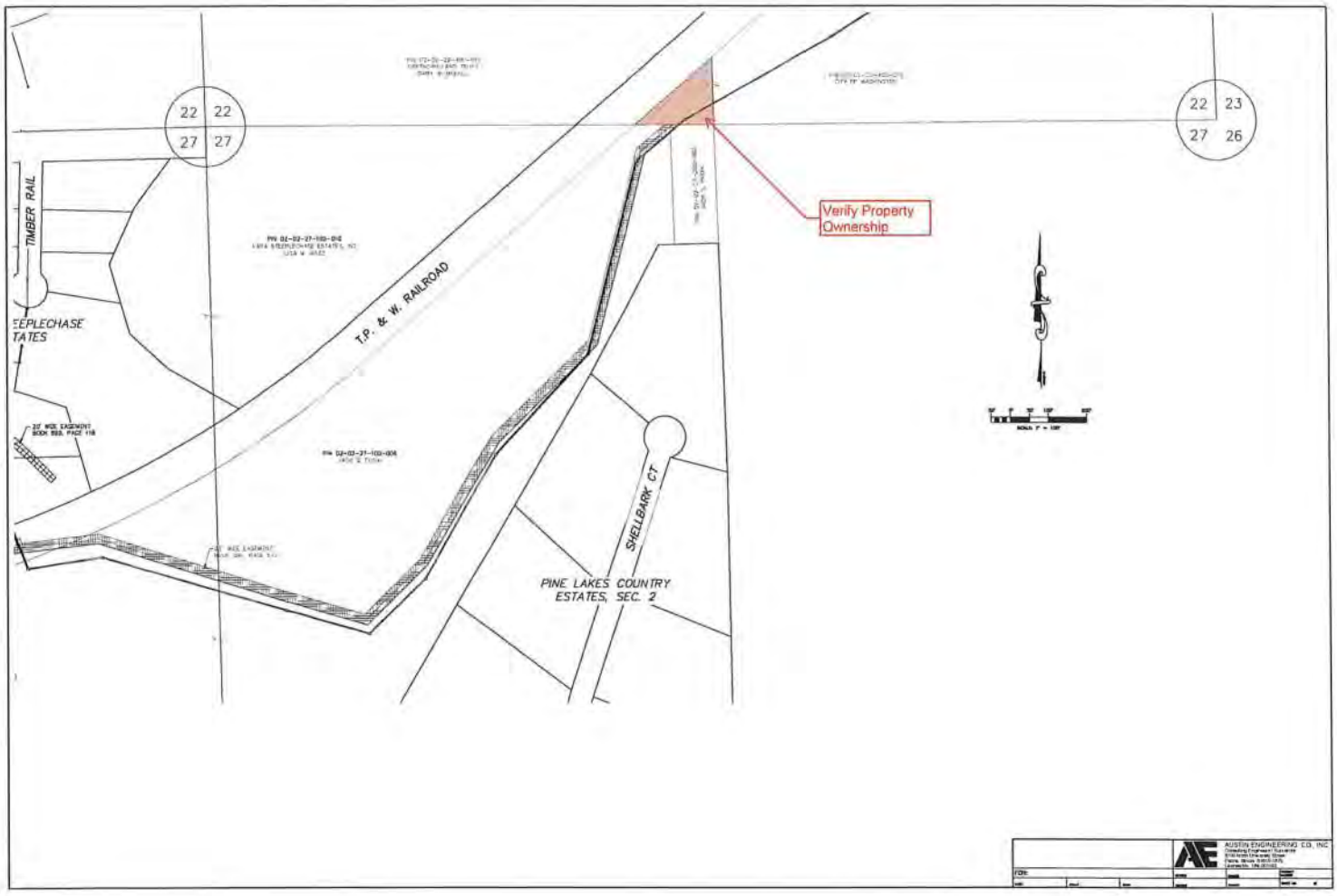
Use existing easement over existing sanitary sewer for construction access
T.P. & W. RAILROAD
Additional easement required for extension of local sewer across railroad to new trunk sewer
ACTUAL LOCATION OF TRUNK SEWER
20' WIDE EASEMENT BOOK 890, PAGE 118
20' WIDE EASEMENT BOOK 890, PAGE 238
20' WIDE EASEMENT BOOK 890, PAGE 235
20' WIDE EASEMENT BOOK 891, PAGE 672
T.P. &
AUSTIN ENGINEERING CO., INC.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Verify Property Ownership
SHELLBARK CT.
PINE LAKES COUNTRY
ESTATES, SEC. 2

Appendix E.
Practicable Alternatives Analysis,
Pudik Architecture, PC

1. Practicable Alternatives Analysis

Introduction

PUDIK
ARCHITECTURE P.C.

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January 26, 2021

Practicable Alternatives Analysis

Introduction

The Pudik family first heard of the City's proposed trunk sewer project in early Spring of 2020. When they looked further into the specifics of the proposed project they were surprised to find out the City had been planning the new trunk sewer project since 2016, as this was the first they had heard of it. The Pudik family was curious as to why they were not communicated with until the city requested new easements across the entire length of their north property boundary. The City has neglected communicating with a property owner – the Pudik family (Goat Springs, LLC) - whose property consists of 45% of the entire proposed trunk sewer's new route (most of any property owner along the proposed route). For the record, the existing trunk sewer – the one to be decommissioned and abandoned - traverses over Pudik property via an existing easement 25% of its entire existing route between treatment plants (again, most of any property owner along the existing route). One would think that communicating with a property owner most burdened by both easements, by a long shot, would be an initial objective in planning the new trunk sewer improvements.

The Pudik family quickly organized and dug into finding out more about this proposed project planned across their property. Seeing that this was going to be difficult, the family organized its own team. Tasks of research, legal research, site observations, assessments and agency communications took place. As the team got well into the various tasks it became apparent the City had not properly vetted alternative routes – routes that have much less environmental impact and cost taxpayers less money, especially over the life of a new trunk sewer improvement. Common-sense alternatives north of Farm Creek and the railroad seemed obvious. Thus, the process of alternatives analysis was started by the team.

Process:

I. Due-diligence: Research, Information gathering and review, site observations and documentation
II. Identification of design criteria to assist in evaluation of route alternatives
III. Data gathering, measurements & geometry, inputs, communication with agencies, legal (due-diligence Rd. 2)
IV. Identification of route possibilities for further exploration and vetting based upon I. – III. Above

The results of the process confirmed the initial hypothesis that indeed more practicable solutions do exist north of Farm Creek and the TP&W railroad tracks closer to existing and projected development within city limits. Many routes and route hybrid alternates were studied (Figure 1). For purposes of this analysis, more practicable alternatives D-1 (Figure 5), and E-3 (Figure 6), were evaluated against the proposed route B (Strand's 'South' route and referenced as 'B' in their report). Other more practicable routes are most likely available on the north side of Farm Creek and the railroad – at least ones with less environmental impact and ones that are less costly.

The study our team performed should have been performed early in the pre-design process of the new trunk sewer study by Strand Associates – the City's design consultant, and perhaps others. Something similar to the 'Route Comparison Matrix' (Figure 13), located at the end of this section, should have been used as ***evidence of real data vs. opinion-based bias*** to properly evaluate potential route options to set the design direction. Such approach would better assist in gaining consensus among stakeholders and taxpayers.

Sewer Alignment Route – Data and Criteria Evaluation Categories

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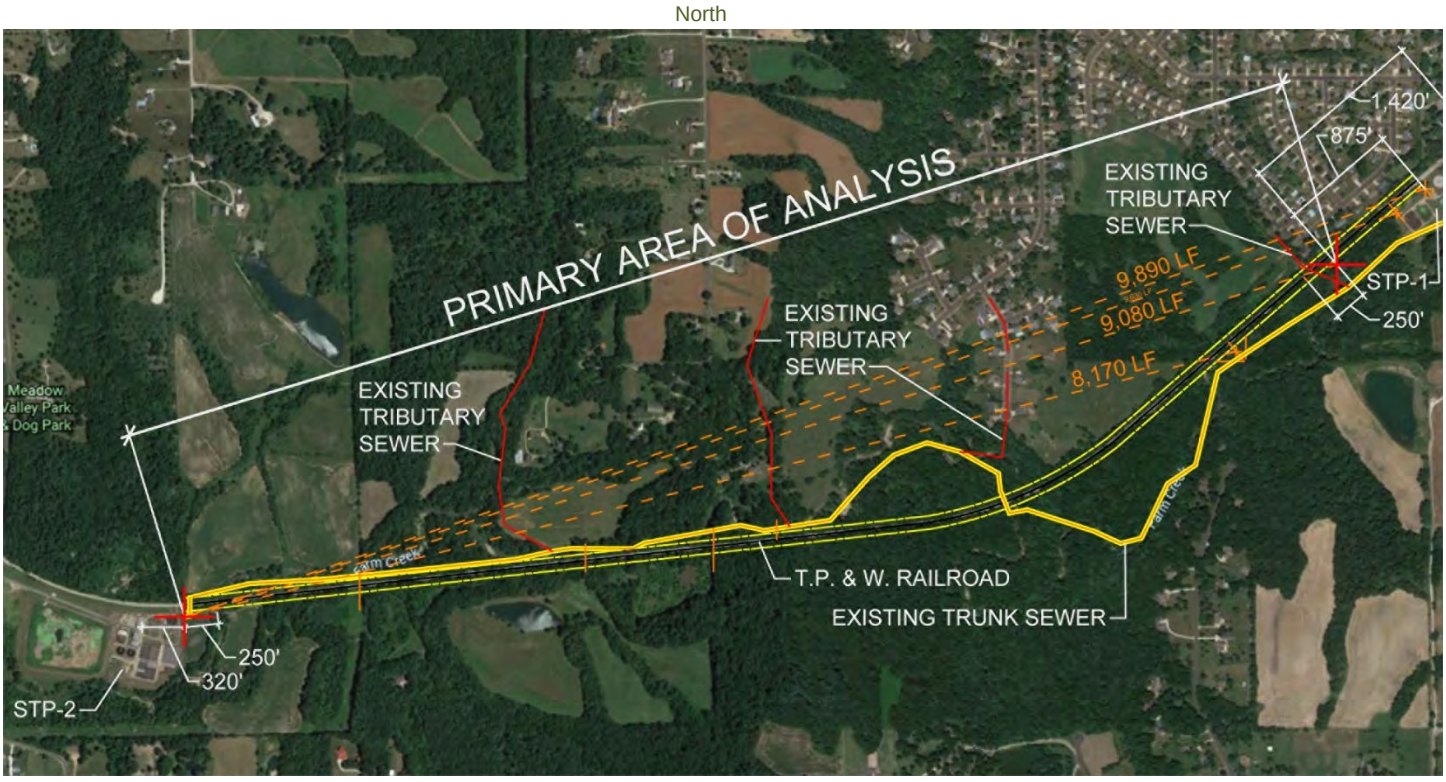
Sewer Alignment Route – Data and Criteria Evaluation Categories

Route Length

For purposes of route alignment comparisons, two points were chosen as a common starting point and as a common ending point – one near the West Plant, STP-2 (downstream side) and another near the East Plant, STP-1 (upstream side). The downstream point near STP-2 was located approximately 250' west of Farm Creek, or approximately 100' west of the existing manhole receiving the existing trunk sewer coming from the north under the railroad tracks. The remainder of the proposed sewer line (estimated to be 320 LF) heading west and connecting into existing infrastructure remains a constant in all route comparison analysis. At the upstream point near STP-1, the eastern point used in the analysis is located approximately 250' east from the end of Bayberry Street extending NE (parallel to RR) along the south side of the railroad tracks. This point is located just east of the existing tributary sewer tie-in on the south side of the railroad tracks. The remainder of the proposed sewer line (estimated to be 1,420 LF) heading east and connecting into existing infrastructure remains a constant in all route comparison analysis except one. So, for purposes of ***Route Length*** as defined in this analysis, the length of the sewer alignment that falls within the ***'Primary Area of Analysis'*** shown below in the Project Area Map and connecting back to the points are used for the alternatives' analysis herein.



Project Area Map

Depth, slope and distance are all part of a gravity-based alignment's geometric design. The proposed design (Strand – Route B, Figure 4) has a total distance of 11,125 LF, of which 9,385 LF are within the 'Primary Area of Analysis'. It also has a total drop of 77.07 ft. and various slopes along the route, especially before crossing Farm Creek. The existing trunk

Sewer (Figure 2) has a total distance of approximately 12,350 LF, of which 10,600 LF are within the 'Primary Area of Analysis'. It has a total drop of 68.67 ft.

Seven alternate routes, primarily north of the railroad and Farm Creek, had less than or equal length of trunk sewer route as that of the proposed Route B. It is important to note that not just trunk sewer route, but also tributary sewer route extensions should be considered in the overall evaluation. For this evaluation, Route D-1 (Figure 5) with a route length of 9,975 LF, and Route E-3 (Figure 6) with a route length of 9,725 LF, were evaluated as more practicable routes than Route B.

The Problem of Farm Creek on Strand's Route B Geometry:

Route B crosses Farm Creek, a U.S. waterway, 4 times on the south side of the railroad tracks including a double-crossing counted as 2 crossings where Farm Creek bends sharply up against the railroad embankment. Heading downstream from STP-1, Route B slopes drastically to get under Farm Creek and the existing trunk sewer which is currently exposed within Farm Creek just south of the railroad bridge.

Observations:

- The first & second crossings (double-crossing) of Farm Creek, less than a quarter of the route distance from STP-1, require 37% of the overall route drop in its vertical dimension to get below the creek bed elevation.
- The third crossing of Farm Creek (just south of the railroad bridge), located just 40% of the route distance from STP-1, requires 57% of the overall drop to get below the alleged creek bottom elevation of 666.0.
- Farm Creek's massive forces of storm water during storm events re-arranges the geometry and path of the creek including erosion of its banks and creek bottom – see *Property Observation Report – Goat Springs LLC. – eastern half of proposed 'Route B' Trunk Sewer (C.O.W.), November 9, 2020*. This report shows some of the effects of the July 15, 2020 100-year flood event including debris trapped in riparian saplings 10-12' high from the dry portion of the creek bed. Also shown in this report is the exposure of the existing trunk sewer within the Farm Creek where the smell of raw sewage was noticed.
- The erosion of Farm Creek at the railroad bridge was observed during an on-site visit on November 7, 2020. It was estimated that approximately 8' of erosion has occurred since the original construction of the existing trunk sewer based on the observations of the banks at this particular location along Farm Creek. Field measurements taken with a laser device from the underside of the railroad bridge structure to the creek bottom at this particular location indicate a potential, yet critical, discrepancy with the creek bottom elevation as depicted in Strand's drawings. Field measurements show an approximate 4-5' deeper creek bottom at this location than that shown on Strand's drawings. ***Detailed survey work is recommended to confirm actual creek bottom elevations where the alignment design crosses Farm Creek.***
- Question to ponder: Is the City making the same mistake all over again by contending with the powerful forces of Farm Creek? … History would suggest so. (See referenced: *Property Observation Report – Goat Springs LLC. – eastern half of proposed 'Route B' Trunk Sewer (C.O.W.), November 9, 2020*)

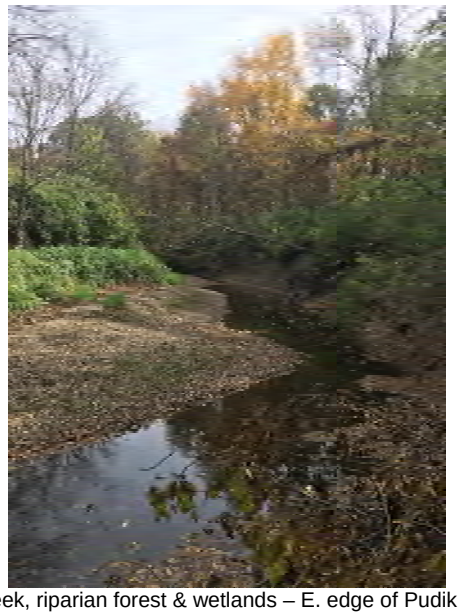
More practicable Routes D-1 and E-3 show alignments north of Farm Creek. These routes do not have the encumbrances of crossing below Farm Creek or the existing trunk sewer along the route thereby making better use of vertical flexibility (see Figures 11 & 12). Strand compared their Route B to their Route A (Figure 3) in terms of existing trunk sewer interferences – ***this is a weak comparison as Route A is basically the same existing trunk sewer alignment*** with a few minor tweaks of pulling it out of the Farm Creek waterway (existing trunk sewer has manholes exposed in the Farm Creek waterway). Route A (Strand) conflicts with the existing trunk sewer alignment too many times to count and should not be considered a relevant alternative to compare against. A strong case can be made that a trunk sewer alignment north of Farm Creek, and not crossing Farm Creek or the existing trunk sewer until it reaches its final destination, could enter STP-2 infrastructure at the existing influent elevation (+631.35). This could save the project initial construction costs and defer pump station upgrades until a future time when more accurate information will be known to properly design and size the station improvements.

U.S. Waterway Crossings (Farm Creek):

Crossing U.S. Waterways with development and construction activities is a complicated process requiring special permits and special construction means and methods driving up construction costs and complicating the permit process. Streams such as Farm Creek also include wetlands, recommended waterway riparian buffers, and floodplains constraining construction access and maintenance. Trenchless construction methods are requirements used to minimize impacts to these sensitive environments. It is best to avoid these types of areas if at all possible, or if not possible, then to minimize disturbance.

Farm Creek is considered a Relatively Permanent Waterway (RPW), a water protected by The Clean Water Act per United States EPA guidance. The U.S. Army Corps of Engineers – Regulatory Program provides Illinois stream mitigation guidance for Perennial Streams and classifications of priority waters. Farm Creek, an 18.93-mile long tributary to the Illinois river, was listed on the IEPA's section 303(d) list as an impaired water with the issue of aquatic life – PH, Phosphorus (total); total suspended solids – and therefore considered a priority water. Farm Creek was a major contributor to the sedimentation issues that led to the federally-funded dredging operation and creation of a 21-acre island in Peoria Lake from the dredged sedimentation. The Tazewell County Comprehensive Land Use Plan 2011 addresses this impaired water body specifically and recommends development activities to be located within developed areas as opposed through natural 'Local Legacy Areas' which are considered 'environmentally significant' and should be 'recognized and preserved'. The Route B alignment disregards the Principles and Strategies set forth by this document – see sections 'Quality Sustainable Development' and 'Illinois River and Waterways' – Tazewell County Comprehensive Land Use Plan 2011.

Route B (Figure 4), crosses Farm Creek 6 times and the depth of the alignment is influenced by Farm Creek. In the Strand Report (10 /2019), Strand compares the Route B, which crosses Farm Creek with all its respective wetlands and floodplains 6 times, to that of the Strand Route A (Figure 3), which crosses Farm Creek 15 times – this is hardly a fair comparison and should not be considered a more practicable alternative to one (Strand – A) that crosses a U.S. waterway 15 times and has existing trunk sewer interferences all the way along the existing route, as it (Strand – B) neglects a true comparison study and analysis required for responsible design and development of this trunk sewer project. Several alignment routes to the north of Farm Creek, adjacent to existing development, would have less impact or no impact at all on Farm Creek (20). ***More practicable routes D-1 (Figure 5), and E-3 (Figure 6), better meet the goals of non-disturbance of U.S. waterways as neither route crosses Farm Creek.*** These goals include better flood control by natural means, non-disturbance of riparian forested stream buffers, non-disturbance of hydrologically connected wetlands and forested wetland buffers and better control of erosion and sedimentation leading to better water quality, better habitat for both aquatic species and non-aquatic species, and better quality of life for the residents. Routes D-1 and E-3 are located adjacent to and within areas of existing development which coincides with the strategies set forth in the Tazewell County Comprehensive Land Use Plan 2011 (by the Tri-County Regional Planning Commission).



Farm Creek, riparian forest & wetlands – E. edge of Pudik property

Exposed existing trunk sewer with railroad bridge in background & flood damage

Railroad Crossings:

The analysis performed on the proposed Route B (Figure 4) and alternative routes consider the number of new railroad crossings the trunk sewer and all connected tributary sewers make for a fully functional sewer system. These crossings require trenchless construction. These crossings are categorized as 'new work' and added to the total of existing crossings within the 'Primary Area of Analysis'.

Our team tried to reach out to the railroad (TP&W) but did not get a response. We made the following assumptions to base our evaluation on:

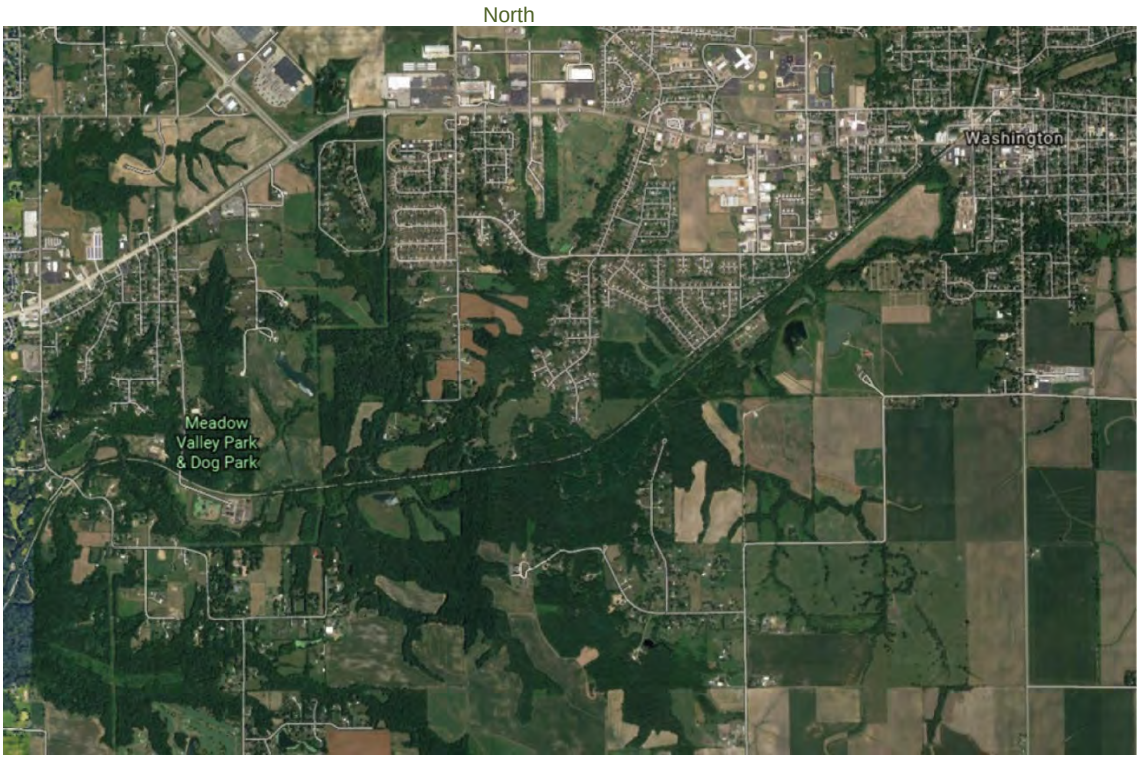
- **New work sewers** at railroad crossings:
  - Require trenchless construction
  - Include existing sewers re-worked/ re-configured/ renovated/ repaired
  - Require construction insurance from RR
  - Require on-going insurance during the life of the sewer while it is live/ operational
- **Existing sewers** at railroad crossings to be **connected and maintained as live and operational**:
  - Require protection during construction activities related to new trunk sewer installation
  - Require connection construction to new trunk sewer at either side of RR outside the RR easement (not a new extension underneath the railroad as this would be considered 'new work')
  - Does not require construction insurance from RR
  - Requires continuous on-going insurance during the life of the sewer while it is live/ operational
- **Existing sewers** at railroad crossings to be **decommissioned and abandoned**:
  - Require protection during construction activities related to new trunk sewer installation
  - Require RR-specified decommissioning construction
  - Require construction insurance from RR during decommissioning construction activities
  - No longer requires on-going insurance due to being decommissioned/ abandoned

The TP&W railroad primarily follows Farm Creek. Farm Creek passes under the railroad twice within the 'Primary Area of Analysis' as depicted in the Project Area Map. As history suggests, railroads were constructed in low areas typically following waterways in order to prevent extreme topographical differences for ease of freight train travel among other benefits. A trunk sewer alignment following the path of a railroad will most likely be contending with environmental impacts due to natural topography and all associated waterways, tributaries and their respective wetlands and floodplains.

The Strand Route B has these environmental impact issues to compound the problem of not only boring under the railroad, but also in areas where wetlands and floodplains exist. Strand's Route B, the proposed route, consists of 3 new work sewer railroad crossings – 2 new trenchless installations plus the re-worked crossing at the west near STP-2 where a new 12" sewer will be installed through the existing trunk sewer pipe after the existing trunk sewer is decommissioned. Bore pits will need to be located outside of these environmentally sensitive areas to reduce additional mitigation and construction costs thereby making longer jack-and-bore extensions. Extending 2 of the 3 north tributary sewers to the south side of the railroad tracks not only makes construction difficult but also makes future maintenance and repair access very difficult – especially as proposed, to be within wetlands and floodplains. Pumping and de-watering of the pits during construction will be a constant challenge and probable change order to the project cost. ***Post construction, the City will have 4 tributary sewers serving the population and development on the north side (city side) of the railroad and Farm Creek connected to the new trunk sewer on the south side (rural side) of the railroad requiring very difficult site access for maintenance and repairs – this makes no sense.*** The city will be required to carry insurance on 4 live/ operational sewers penetrating the railroad easement. The City will most likely need access easements from the railroad and property owners to access these remote manhole junctions located at the tributary connections to the trunk sewer – mostly within wetlands, wetland buffers and floodplains. This is a short-sighted solution and one that will be costly for years to come.

More practicable solutions exist on the north side of both the railroad and Farm Creek – better solutions that could connect a north trunk sewer route to existing tributary sewers within existing city development and adjacent to city growth areas - those most likely to need maintenance, repairs, connections – and, with limited impact on the railroad and that which abuts it. More practicable trunk sewer routes D-1 (Figure 5) and E-3 (Figure 6) are such solutions. Strand's report projects 71% of the ADF (average daily flow) to come from north of the railroad between STP-1 and STP-2 where the city population and business community is mostly located; (projections show only 9% coming from south of RR between STP-

1 & STP-2, 15% from east of STP-1, and 5% from west of STP-2). It would only make sense to follow the guidance of strategic planning found in the Tazewell County Comprehensive Land Use Plan 2011 and locate this new trunk sewer development within/ mostly within existing development/ projected development – that which is north of both the railroad and Farm Creek.



Route Utility Extension/ Interference:

Analysis of trunk sewer routes considered how the route connected to existing and future tributary sewers. Approximate LF of interference with the existing trunk sewer and other potential utility infrastructure was also studied. The existing trunk sewer (Figure 2) will remain in operation during construction of the new trunk sewer and will need to be protected.

The proposed Route B (Figure 4) crosses or runs adjacent to the existing trunk sewer in three locations. The proposed trunk sewer runs deeper than the existing trunk sewer route making it more critical to support the existing trunk sewer at these three locations so as to not undermine the existing trunk sewer which could cause collapse. Two of these three locations occur at Farm Creek causing further complications with adjacent wetlands and within floodplains. Tributary sewer interferences also happen at four locations. Significant tributary sewer extensions are needed with this particular route alignment. Two of these are negatively affected by wetlands and floodplains. Route B includes approximately 1,040 LF of pipe extension to connect tributary sewers. Route B has approximately 680 LF of utility interference. The Strand report compared this positively to their Route A option (Figure 3) which is estimated to have 6,980 LF of utility interference and approximately 90 LF of extensions. Again, Route A is not a good comparison route when several other much better alternatives exist north of the railroad and Farm Creek closer to existing development and its tributary sewers.

More practicable alternative routes D-1 (Figure 5) and E-3 (Figure 6) also require tributary sewer extensions needed for connectivity, but to a much lesser extent. Also, these alternative routes have utility interferences but do not interfere with the existing trunk sewer until reaching its final destination near the west plant STP-2. Route D-1 requires approximately 480 LF of pipe extensions at four tributary sewer locations. Route D-1 has an estimated 710 LF of potential utility infrastructure interference mostly at 2 locations (Cummings Lane R.O.W. and Timber Rail R.O.W.). These have been estimated to be trenchless locations so utility interferences may be over-estimated. Route E-3 also requires approximately 480 LF of pipe extensions at four tributary sewer locations. Route E-3 has an estimated 170 LF of potential utility infrastructure interference mostly at 1 location (Timber Rail R.O.W.). This is also estimated to be a trenchless location so utility interferences may be over-estimated here as well.

Route through Wetlands:

Wetlands have several functions that include flood control, sedimentation filtration, breaking down bacteria and contaminates (ex.: pesticides & herbicides), groundwater flow and providing wildlife habitat. The functions of the wetlands with hydrological connectivity to Farm Creek are important to restoring this U.S. waterway and preventing further impairment as noted in the Tazewell County Comprehensive Land Use Plan 2011. Construction activities within or adjacent to these wetlands should be avoided as much as feasibly possible.

The U.S. Fish & Wildlife Service - Wetlands Mapper of National Wetlands Inventory was used to identify potential wetlands along the entire Farm Creek length within the 'Primary Area of Analysis' depicted in the Project Area Map. Goat Springs LLC also commissioned Weaver Consultants to conduct a wetlands delineation and habitat assessment on its property in the Spring of 2020. The U.S. Army Corps of Engineers – Regulatory Program issued a jurisdictional wetlands delineation in September of 2020 for the Goat Springs property. All of these tools, reports and official documents were used in determining the LF of pipe route through wetlands along each particular route evaluated. The jurisdictional wetlands on Goat Springs, LLC property were used in conjunction with the wetland mapper tool for locating wetlands on other properties along Farm Creek. Although wetland buffers are not included in any ordinance, a wetland buffer of 100' (50' minimum) would be recommended to allow the wetlands to function better based on the steep slopes and forested-type wetlands adjacent to Farm Creek, a U.S. waterway. A 100' riparian buffer along the waterway would also be highly recommended.

For purposes of this route alternatives evaluation, wetland boundaries without buffers were analyzed. Route B (Figure 4) has approximately 2,200 LF (10 sites) of route within wetland boundaries. With a 50' buffer this would expand to 3,200 LF. Strand's Route B is better in comparison with Strand's Route A (Figure 3) which has approximately 2,350 LF through wetlands. However, better more practicable routes are available and having less impact on wetlands. For example, Route D-1 (Figures 5 & 7) crosses through no wetlands (0 LF), and Route E-3 (Figures 6 & 8) has only 200 LF of route through wetlands.

Wetlands – Site 1; Steep bank erosion potential & importance of adjacent riparian forest buffer;
Notice staking has eroded into Farm Creek during Summer flood event

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Route through Floodplains:

Farm Creek represents a large perennial stream (18.93 miles long) that directly connects to the Illinois River. This water body takes on massive quantities of forceful water during flood events. Evidence of the July 15, 2020 flood (a 100-year flood event) showed debris as high as 12' above Farm Creek bed trapped in the upper branches of adjacent riparian forest saplings. Dried mud was evident throughout the forest floor and seen on matted down vegetation adjacent to Farm Creek well inside the bank edge. Locating manholes and trunk sewer line outside of these floodplains should be of high priority. Farm Creek's banks and creek bottom have eroded significantly over the past 50 years. The existing trunk sewer line is exposed on Goat Springs property and pollutes the water with raw sewage – see photos below. Storm water also infiltrates this trunk sewer especially during storm events and wet periods of the year. Locating a trunk sewer with minimal coverage over the top of the pipe and expecting it to last 50 years without exposure is making the same mistake all over again – this type of irresponsible development should be halted in its tracks as better more practicable routes are available outside of Farm Creek. FEMA maps were used to identify base flood elevations and flood zones within the 'Primary Area of Analysis' located on the Project Area Map.

The proposed Route B (Figure 4) has an estimated 3,300 LF of trunk sewer routed through these FEMA floodplains – this is 35% of the entire route. This Route B was compared to Route A (Figure 3) which has an estimated 8,950 LF of route through floodplains which accounts for 84% of the total route length. This is comparing a bad route to an extremely worse route – hardly a fair comparison. More practicable alternative routes are plentiful to the north (20). Routes D-1 (Figures 5 & 9), and E-3 (Figures 6 & 10), provide such relief. Route D-1 has approximately 610 LF through floodplains (6% of the route) and Route E-3 has approximately 1,310 LF through floodplains (13% of the route). These examples represent a route that is safer for the water quality of Farm Creek, much better against infiltration of storm water and much easier to maintain due to less manholes being inaccessible within the flood hazard.

Existing trunk sewer pipe & joint exposed – west side creek bank

Existing trunk sewer pipe & joint exposed – east side creek bank

U.S. Waterway Bank Disturbance:

Erosion and sedimentation are real issues affecting the health, safety and welfare of waterways in Tazewell County including Farm Creek and the Illinois River. Protecting waterways, their banks, their adjacent wetlands and riparian forests are crucial to preventing further degradation of Farm Creek which was on the IEPA's Section 303(d) list as an impaired water body. If construction must go through areas such as these, trenchless construction should be considered. Banks will need to be protected and grades maintained through construction and not altered.

Bank disturbance was measured from GIS maps using the easement width on both sides of the stream at each crossing. The proposed Route B (Figure 4) has 6 U.S. waterway crossings that amount to approximately 1,210 LF of bank disturbance as measured using the GIS maps. These banks are steep and high in certain locations (15-20' high) which will make access nearly impossible and long-term maintenance very difficult and unlikely – see photos below of Farm Creek banks on Goat Springs property within the proposed Route B option by Strand. This Route B was compared to Route A (Figure 3) which crosses Farm Creek 15 times with an approximate 3,560 LF of bank disturbance. Much better alternatives exist north of the railroad and Farm Creek. Two such alternatives, Routes D-1 (Figure 5) and E-3 (Figure 6), have zero Farm Creek crossings and therefore disturb no U.S. waterway banks.

18' high banks directly adjacent to Farm Creek in proposed route on Goat Springs property

11 ft. bank ht. w/ new trunk sewer marker stake above rt

Route through Forest/ Riparian Forested Waterways:

The Illinois Forest Action Plan (A Statewide Forest Resource Assessment and Strategy, 2018 Revision) indicates historic Illinois landcover used to be 40% and today forest land occupies only 13% of the state's surface area. ***The #1 threat is the reduction of Oak-Hickory forests and the #1 strategy/ action plan is to save and expand Oak-Hickory forests.*** Simply put, Oak-Hickory forest (especially those of larger tracts) are considered 'threatened' in Illinois and should be protected. The Illinois Department of Natural Resources has identified the top two forest stewardship priority areas to be Private Forests (which Goat Springs would be considered as) and Riparian Corridors. These are followed in order by: Forest Patches, Wetlands, Priority Watersheds and Development Pressure – all of which apply to Goat Springs, Farm Creek and the relevant trunk sewer development project's proposed Route B (Figure 4). Preservation of these areas is critical to the plan of saving and expanding these valuable forests.

The Tazewell County Comprehensive Land Use Plan 2011 also includes the property of Goat Springs within their Local Legacy Area as shown on their map. Congruent to the State's strategy / action plan of saving and expanding Oak-Hickory forests, Tazewell County's strategy of 'environmentally significant' local legacy areas is to recognize these areas and preserve them (see section 'Quality Sustainable Development' – Tazewell County Comprehensive Land Use Plan 2011 – Tri-County Regional Planning Commission). The goal of preserving land and natural resources in specified areas of the county and preventing ill-advised development within these areas is extremely important to the vitality of its residents' health, safety and welfare.

In Spring of 2020, Goat Springs LLC commissioned Weaver Consultants to perform a wetland delineation and habitat assessment of the Goat Springs property located within the City's proposed trunk sewer project area. Native trees within the Oak-Hickory forest were found to be up to 298 years old. Conclusions reached – ***"The habitat assessment revealed the Investigation Area consists of a high-quality remnant oak-hickory woodland which supports local fauna including numerous migratory bird species, in addition to hosting several rare plant species. The floristic quality of the woodland alone classifies this area as an environmental asset and is recommended to be protected to preserve a piece of Illinois' natural heritage."*** – *Weaver Associates, Erin Hokanson, Project Manager/ Ecologist, ISA Arborist (IL-9144A).* The property owner identified these qualities years ago when he decided to purchase the property with a vision of preserving and protecting this valuable asset.

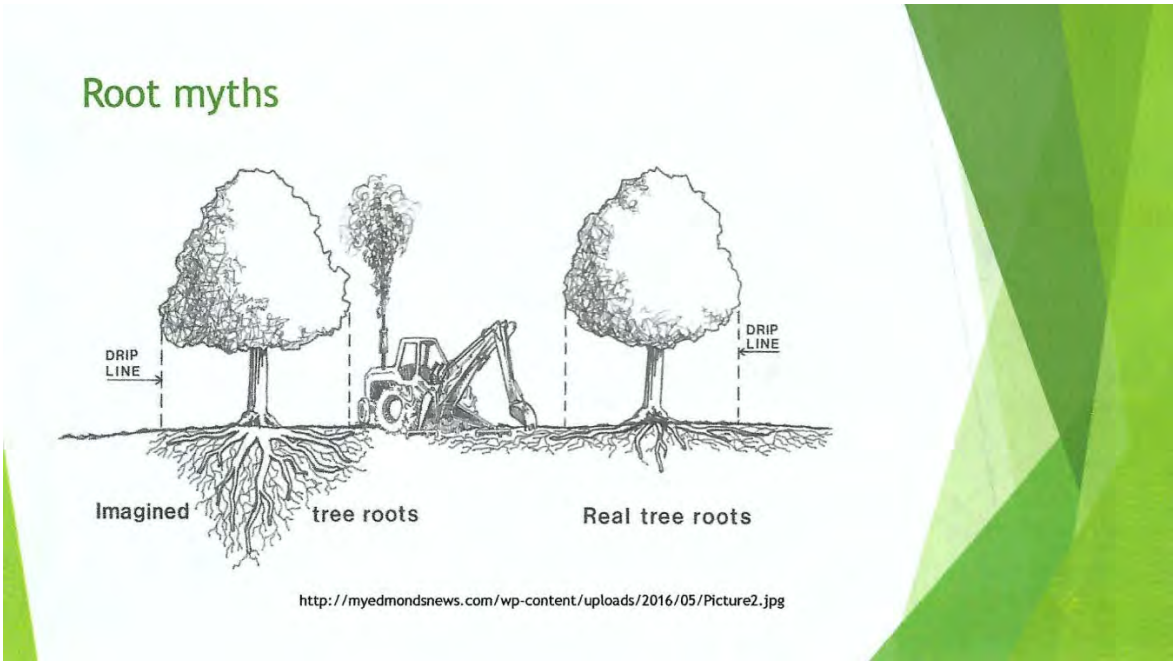
Benefits of Trees:

Trees have many environmental benefits including: natural water purification, water storage, promote cleaner waterways, fight floods, introduce moisture into the air, carbon sequestration, oxygen producer, noise reduction, light trespass blocker for nocturnal species, wind block …

Large healthy trees can remove more than 70 times more pollution than small trees. Healthy trees depend upon healthy soil.

Compaction of natural soil does permanent damage to the soil structure that has taken millennia to develop.

Construction equipment should avoid traversing over the grade – especially in heavily wooded areas to be preserved. Tree roots extend twice as far as the tree canopy in all directions (real root zone = 3 x drip line). Protection of the tree needs to consider: staying outside the real tree root zone to avoid trenching and compaction, maintaining existing grade elevations – no piling of dirt within the real tree root zone. Healthy root structure for healthy trees depends upon construction equipment avoiding these areas altogether.



Riparian Forests:

Riparian forest areas adjacent to Farm Creek (just over a mile long on Goat Springs property) serve critical functions along the entire stream route on the property. These important functions include: sediment filtering, flood control, nutrient control, pollutant control, water quality maintenance, shade and temperature control, stream channel stability and habitat and food for wildlife. So, 5% of the entire length of Farm Creek is located on the Goat Springs Property alone and the riparian forest adjacent to this U.S. waterway will have a significant impact of the overall waterway's health. Like wetlands, a 100' buffer along this waterway is recommended for the riparian forest to efficiently function the way nature intended it. The steep slopes and banks and the sheer scale of the native woodland itself call into account a wide buffer recommendation.

Goat Springs LLC property is unique and more distinguished than any property along the Farm Creek valley between STP-1 and STP-2 due to its features of dense native oak-hickory forest land characteristics, its serpentine waterway – Farm Creek, and its topography and significant elevation changes. The natural features of this property depend on one another and degradation of one negatively affects all others.

The proposed Route B ignores the importance of trees, riparian forests and the overall environmental importance of their inter-connectivity. Route B will do permanent damage to the soil structure. This in turn will do permanent damage to the vegetation, waterways and wildlife so dependent to survive. Route B traverses along the most natural side of the railroad tracks – the south side. The route is estimated to extend through 8,735 LF of forest/ riparian forested waterways – this is 93% of the entire route. Route A (Figure 3) traverses 9,811 LF through forest/ riparian forested waterways – also 93% of its route.

More practicable routes D-1 (Figure 5) and E-3 (Figure 6) provide much better options in terms of significantly reduced forest damage and riparian forest damage. Route D-1 has 2,570 LF of its route within forest/ riparian forested waterway areas, or, only 26% of its route. Route E-3 has 2,580 LF of its route within forest/ riparian forested waterway areas which calculates to 27% of its route. Several other alternatives also provide much better environmental advantages in terms of forest and riparian forested waterway disruption.

Route within City Limits:

This category provides the LF of route within the City of Washington limits. Those within the city limits are most likely to be users of city utilities – some sooner than later depending upon development. The trunk sewer route is projected to go through properties within the City limits and those outside the City limits (County jurisdiction).

The following list identifies private landowners within the City limits (City parcels) vs. private landowners outside the City limits (County parcels):

Private Landowners within the City limits include:

- Miller
- Plattner
- Weigand (south parcel)
- Franzen
- Hines
- Moehle
- Pudik (upper NE corner parcel)

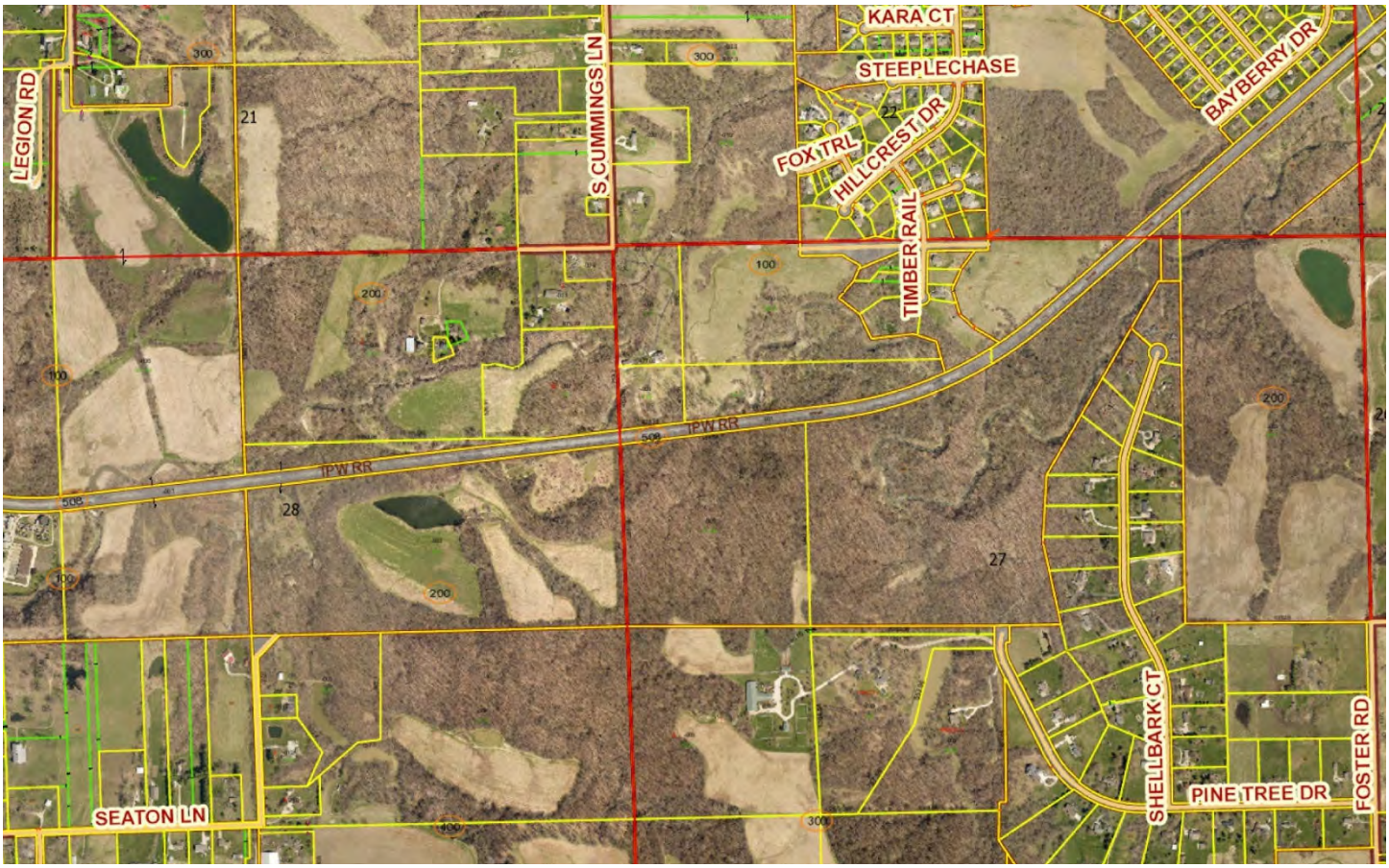
Private Landowners outside the City limits include:

- Deiters (both parcels north and south of the railroad tracks)
- Weigand (north parcel(s))
- Pudik (both large parcels south of the railroad tracks)

Compared to neighboring properties and based on past neighborhood development trends and existing city utility infrastructure, it appears the properties belonging to Moehle and Hines are ripe for development and immediately adjacent to existing tributary sewer infrastructure and potential near-future extension/ basin expansion. These adjacent neighborhoods are already on city sewer infrastructure. It is assumed (not confirmed) that Franzen, Weigand, Plattner, Deiters, Miller and Pudik properties are served by individual septic systems.

The proposed Strand Route B option (Figure 4) passes through property within the City limits twice and through property outside the City limits (county) twice between STP-1 and STP-2. Most of this city utility within the area of analysis (approximately 5,592 LF or 60%) is located outside the city limits on properties whose landowners are not users of the utility – when more practicable routes to the north are available through property of landowners most likely to be users of the city utility and within city limits adjacent to existing development already using the same utility.

More practicable Routes D-1(Figure 5), with 7,499 LF (75%) of its route within the city limits, and E-3 (Figure 6), with 7,770 LF (80%) of its route within city limits, provide the City and its users an upgraded utility closer to the majority of its users, both existing and projected development, within properties mostly within city limits. This strategy coincides with the strategies laid out in the Tazewell County Comprehensive Land Use Plan 2011 – ‘Quality Sustainable Development’.



Tazewell County GIS – Overall map of project area showing property parcels

Private Land Owners Affected:

This category highlights the number of private landowners affected by the new trunk sewer route – easements, construction, on-going maintenance. It does not consider the burden of the existing trunk sewer easement, decommissioning construction and on-going maintenance until the new trunk sewer is fully operational.

The proposed Route B (Figure 4) affects 5 private landowners. All these landowners already have existing sewer easements on their properties. New wider easements would take the place of existing easements. See ***'Alignment Route Data Sheet'*** for each route's breakdown of LF of route across each landowner's property. The number of private landowners also includes those affected by tributary sewer connections.

Route D-1 (Figure 5) affects 5 private landowners. All but one already have sewer easements across their property – however, the newly affected private landowner requiring a new sewer easement stands to benefit most from the new trunk sewer upgrade – at least initially.

Route E-3 (Figure 6) affects 6 private landowners. All but one already have sewer easements across their property – however, the same newly affected private landowner of route D-1 above requiring a new sewer easement, again, stands to benefit most from the new trunk sewer upgrade – at least initially.

Initial Cost:

This category's data was derived from Strand's 10-2019 Opinion of Probable Construction Cost within their report. Unit costs and format were determined by Strand and used with each route's quantitative data and quantities associated with the respective route as best as could be determined.

Commentary on Strand – Alternate Route B, Preliminary Engineering OPCC:

- Cost sheet indicates 48" sanitary sewer, plans show 42"
- LF of 18-in sanitary sewer lists 220, plans show longer runs over 220 combined
- Some manhole depths on plans are deeper than those listed
- Trenchless construction in the cost sheet is much less than that shown on the plans
- Work shafts for trenchless construction also are much less on the cost sheet
- New 12" inside existing 30" shows only 12' – this seems significantly less than the plans
- No cost shown for granular backfill CA-7
- Restoration seed is calculated by taking sanitary sewer 48-in length X 6.667 X $2 – seems light
- Both 'Silt fence/ erosion controls' and 'Tree Removal' calculations use same formula of sanitary sewer – 48in. LF X .8 (engineer's est. quantity) X unit cost. This formula is not route specific, is too generalized and not representative of actual cost. Costs look light.
- No costs for stabilized construction entrance(s)
- Other costs missing – mitigation, environmental impacts, permits …
- 93% of this route is through forest and riparian forested U.S. waterways, wetlands, steep topography changes of 50+ feet, high banks – there will be significant costs associated with protection, reconstruction, preservation of such …

In general, these costs seem very low and not customized to the route's difficult site constraints and specifics.

While a difference of opinion on construction costs exist, and, in order to make an 'apples-to-apples' comparison, the Strand cost format and unit costs were used to analyze other more practicable routes north of Farm Creek and the railroad – specifically for Routes D-1 (Figure 5) and E-3 (Figure 6). These cost breakdowns are included in the detail behind each route included herein – ***'Alignment Route Cost Sheet'***. Generally speaking the quantities of pipe, quantities of various depth manholes, quantities of trenchless construction and associated work shafts were adapted to each specific route. These line items were then summarized into four main categories on the ***'Alignment Route Data Sheet'*** as:

- Pipe:
- Manholes:
- Special Construction:
- Site Preparation and Restoration:

These categories are summed into a 'Construction Subtotal' similar to Strand's OPCC format. Then percentages of the Subtotal are added for:

- Mobilization
- Legal and Land Acquisition
- Contingencies

These additional costs then are added up in total to the Construction Subtotal as the 'Total Opinion of Probable Construction Cost' … just as it is in the Strand format in their 10-2019 Report.

After all the measurements and calculations were quantified and entered for each route in each route's respective spreadsheet the costs are as follows:

Strand Route A: $7,950,949

Proposed Strand Route B: $7,823,773

More Practicable Route D-1: $8,073,720

More Practicable Route E-3: $7,321,953

A more detailed analysis of cost is recommended as both Strand Routes appear to be short on costs relative to environmental impacts which are heavy in both Routes A & B. Other alternatives exist that may be more beneficial in initial cost savings (i.e. shorter routes, shallow with less trenchless construction, less tributary sewer extensions, less existing utility interferences, and obviously less environmental impacts).

Long-Term Cost:

This category considers the following criteria in evaluating the routes as 'Low', 'Moderate', or 'High' in terms of on-going operational costs over the long-term of 50 years.

- Maintenance Costs of the line itself, access paths to the line's manholes to scope and provide required maintenance – both proactive and reactive.
- Repair construction and access to the location of the line to perform potential repairs
- Potential tapping for future tributary line construction (although this is unlikely)
- Number of Farm Creek crossings since the existing line is already exposed in several locations leaking raw sewage into a U.S. waterway – if history repeats itself, either dropping the line and adding pump station(s) or reconstructing the stream bed of Farm Creek or both.
- Flood damage potential to the infrastructure
- Insurance requirements – Railroad crossings of live operational sewers running underneath the railroad
- Maintenance of additional equipment, pumps at SWP-2 to pump sewage from lower elevation

Since both of Strand's Route A (Figure 3) and proposed Route B (Figure 4) are contending with Farm Creek, and, within floodplains in remote areas requiring special remote access requirements navigating steep embankments, wetlands and dense forested access routes – these were considered 'High' long-term costs. History has suggested so and a new trunk sewer crossing Farm Creek with minimal coverage over the pipe year one will most likely require attention in the years to come. Consider the fact also that this sewer is coming into STP-2 at a much lower elevation and the likely possibility of pump maintenance/ upgrades at STP-2 adding to the on-going long-term costs.

Again, the question to ponder: Is the City making the same mistake again? … by contending with Farm Creek and its associated wetlands, floodplains, riparian forest, steep embankments, erosion? … It would seem so.

More practicable route alternatives D-1 (Figure 5) and E-3 (Figure 6) solve the problems that have existed for the past 50 years with the existing trunk sewer by pulling the alignment out of Farm Creek northward towards existing and projected development. These routes provide ease of access, and maintenance will more likely have a pro-active approach vs. a reactive approach. Better maintenance plans can extend the life of the improvement and give city taxpayers more cost-effective sewer service for years to come. These routes do not contend with Farm Creek, its floodplains, and dense forest like Route B does. A north alignment is not constrained by the depth (ever-eroding depth) of Farm Creek thereby providing the possibility of entering STP-2 at the existing elevation and reducing initial construction work required for modifications of depth and associated on-going maintenance of STP-2 equipment upgrades. These routes were graded as 'Low'.

Appendix F.
COW Farm Creek Trunk Sewer
Summary of Alternative Route Analyses
July 7, 2021
Strand Associates

City of Washington
Farm Creek Trunk Sewer
Summary of Alternative Route Analyses
July 7, 2021

This document is a summary of the route analyses performed in determination of the proposed route for construction of the new Farm Creek Trunk Sewer.

Since the City approved the *Preliminary Engineering Study for the Farm Creek Trunk Sewer* (Study) dated October 2019, questions have been raised whether sufficient alternative analyses were performed in selection of the proposed route. While the final Study document focuses on two alternate routes, these were not the only routes considered. However, the other routes were found to be significantly deficient in aspects critical to the City, thus focusing the Study on the two most viable routes.

Figure 1 (attached) shows five primary routes that were considered in the Study. Numerous variants of these routes were also considered, but for summary purposes these five routes generally represent the primary corridors identified through the Study. Portions of these routes also correlate to alternate routes recommended by local property owners. This document is only intended as a summary. More detailed discussion of these primary routes and the alternate routes suggested by local property owners has been documented in correspondence to the United States Army Corps of Engineers (USACE) and the Illinois Environmental Protection Agency (IEPA) on February 25, 2021 and March 31, 2021, respectively, and are included with his summary.

Primary Sewer Routes

- **The existing trunk sewer** is shown in orange on Figure 1. This route extends from the City's decommissioned Sanitary Treatment Plant No. 1 (STP-1) on the east to STP-2 on the west, generally following and bisecting Farm Creek. It is not unusual for gravity sewers to be constructed along rivers and creeks since these waterbodies are generally in low elevations.
- **Route A** is shown in blue and generally represented removal and replacement of a majority of the existing sewer in place.
- **Route B** is shown in red. This is the recommended and currently proposed route. It generally follows the lower ground elevations along the creek and the railroad while reducing influence from Farm Creek.
- **Route C** is shown in pink and generally follows lower ground elevations along Farm Creek while still trying to reduce influence from Farm Creek.
- **Route D** is shown in green and generally relocates the sewer completely away from Farm Creek on the south side of the railroad.
- **Route E** is shown in purple and generally relocates the sewer completely away from Farm Creek on the north side of the railroad. The majority of this route also correlates with the two primary alternative routes presented by local property owners.

Route Analysis

The general project purpose of the Study was to evaluate potential routes for replacing the existing Farm Creek Trunk Sewer in order to provide sufficient capacity following decommissioning of STP-1 as well as for future development with goals of locating the new sewer so that inflow and infiltration influences of Farm Creek are reduced or eliminated and the City can effectively operate and maintain the sewer. In evaluating the route, several other critical goals were also considered such as constructability, easement acquisition, environmental impacts, local sewer connections, and cost.

- **Farm Creek Influence**.
    - Routes A and C are still highly influenced by Farm Creek being right next to the creek, having numerous creek crossings, and being almost entirely in floodplain.
    - Route B reduces the influence of Farm Creek by putting the railroad between the creek and a majority of the sewer. Although portions of the sewer are still in floodplain, all manholes are being provided with watertight, lockdown lids and all rims will be set above floodplain elevation. This route has four creek crossings, two for the trunk sewer intended to be open cut and placed 5 feet below the creek bed and two for connection of local sewers intended to be bored in casing under the creek.
    - Routes D and E are not influenced by Farm Creek because they are separated by distance and significantly higher ground elevations.
- **Operation and maintenance**. This factor includes the ability for City staff to access sewer manholes and the depth of the sewer for maintenance.
    - Routes A and C are fairly shallow for maintenance, averaging about 18 feet deep, but accessing many of the manholes is very difficult because many of the manholes are isolated and require several creek crossings. They are also very serpentine and do not have a defined access route.
    - Route B averages about 23 feet deep and has five short segments over 30 feet deep. This route allows manholes to be located to avoid excessive depths. It also presents a very linear, accessible route along the railroad corridor from City property on both east and west ends with only two creek crossings. One crossing is an existing ford in the creek that is significantly deteriorated and will be replaced with concrete box culverts. The other will be a new crossing provided with stone tracking paths. In both cases the creek and creekbanks at the crossings will be stabilized and significantly improved over existing conditions.
    - Routes D and E both average over 30 feet deep with long segments between 60 and 80 feet deep and limited access from public right-of-way.
    - Route D has over 2,000 feet of sewer between 40 feet and 80 feet deep. It also has two crossings of Farm Creek and five tributaries for the trunk sewer and will require several more crossings of Farm Creek to connect the local sewers.
    - Route E, which is similar to the alternate routes suggested by local property owners has over 1,200 feet of sewer between 30 and 60 feet deep in the Timber Rail area and an additional 1,500 linear feet of sewer between 35 and 80 feet deep along Cummings Lane. These are long segments will require excessively deep manholes.

This route avoids crossing Farm Creek but has three tributary crossings for the trunk sewer and will require future crossings of Farm Creek to connect future local sewers from the south.

- **Constructability**.
    - Routes A and C are challenged by conflicts with Farm Creek and construction accessibility. However, they only have two railroad crossings, one of which already exists. Route A follows the existing sewer and would require significant by-pass pumping during construction, which adds to the project cost.
    - Route B does not pose a significantly challenging construction route due to reasonable sewer depths and areas already disturbed by the railroad corridor. Short segments of trenchless construction are required along with three railroad crossings, one of which already exists.
    - Routes D and E both pose significant challenges to construction due mostly to the depths of sewer required. Construction on these routes will require consistently deep open excavations and tall shoring. Several thousand feet of excessively deep sewer will require trenchless construction methods more than double the cost of open excavations. Also, the deeper sewer requires deeper, more expensive manholes.
    - Route E in particular has problems through Timber Rail and Cummings Lane where construction across the cul-du-sacs and driveways will completely cut off access for several homes for extended periods of time.
- **Easement Acquisition.**
    - Route A, where it follows the exiting sewer would be placed in the existing permanent easements. However, where it doesn't follow the existing sewer at least one permanent easement would be required, and the entire route would require temporary easements for construction operations.
    - Route C appears to require six new easements with property owners who have the existing sewer easement to be abrogated from their property. However, four new easements with new property owners would be required.
    - Route B only requires three easements from property owners along the trunk sewer and two easements for connection of local sewers. However, all of these property owners already have the existing sewer easement that would be abrogated from their properties. More importantly, this route does not encumber the properties it crosses. It is located along the property edges and still allows use and development of the properties.
    - Routes D and E both require multiple new easements from property owners that don't currently have the existing easements on their property. But more troublesome with these routes is how they bisect properties which encumbers the use of the property and future development possibilities.
- **Environmental Impacts**. Concerns related to environmental impacts has included wetlands, trees, waterways, and habitat, among others. Although the currently proposed trunk sewer Route B received all of its required preliminary engineering stage environmental clearances, the City, on its own accord, performed further detailed

environmental studies and pursued updated environmental clearances in order to confirm the final sewer route met environmental regulatory requirements.

Comparing the relative environmental impacts of each route is difficult without performing detailed studies, which to date has only been performed for Route B, as detailed in the letters to USACE and IEPA. In summary:

- Route B has received regulatory approval for the waterway crossings from the Illinois Department of Natural Resources (IDNR)-Office of Water Resources.
- Route B has received regulatory approval for habitat impacts from the IDNR.
- Route B has received regulatory historic preservation approval from the State Historic Preservation Office (SHPO). The USACE recently requested a Phase 1 archeological study be performed for Route B, but SHPO reconfirmed their opinion that it is not necessary due to prior disturbance from railroad construction. USACE may still require this study, but it is being discussed between the two agencies.
- All USACE regulatory comments relative to wetland impacts for Route B have been addressed and final review for regulatory approval is currently underway.

No detailed study has been performed for the other routes. However, in light of the fact that publicly available waterway and wetland inventories as shown on Figure 1 indicated Route B would have minimal to no impacts to these areas and that Route B subsequently received all of its regulatory clearances yet the City was still required to address environmental concerns related to Route B, it seems reasonable to infer that all of the other routes would also pose environmental impacts since all of the other routes actually do show impacts to waterways and wetlands.

Finally, analysis reveals that tree removal will be required for all of the routes. Granted some routes more than others, but clear cutting of trees will only be allowed within the 50-foot permanent easement and only as necessary for installation of the sanitary sewer. The 30-foot temporary easement is only intended to assist in the contractor's operations and tree removal will not be allowed without the City's approval in order to limit overall tree removal. It is the City's intent to maintain as many quality trees as possible and will require the contractor to work around significant trees wherever practical in performing its operations.

- **Local Sewer Connections**. This entails whether existing local sewers (shown in yellow on Figure 1) or future local sewers can be connected to the new sewer.
  - Routes A and C are both generally along the route of the existing sewer and will allow easy connection of the existing local sewers. But both routes will not allow connection of local sewers from the south without additional crossings of the railroad and Farm Creek.
  - Route B provides the best connection of existing and future local sewers. This does require two new crossings of the railroad and Farm Creek but with those crossings the entire City north of the railroad will be served. Route B's location on the south side of the railroad also allows easy service to the entire City south of the railroad.

- Route D allows service south of the sewer itself but does not provide service to the north without several creek and railroad crossings that would be very deep or may require pumping.
- Route E provides service to the north of the sewer itself and easily connects the existing local sewers, but it cuts off service to the south without several creek and railroad crossings that would be very deep or may require pumping.

- Cost. The most significant influences on cost are sewer length, depth, and trenchless construction needs.
  - From the Study it was shown that the cost for Routes A and B were very similar with Route B being slightly less expensive.
  - A cost estimate for Route C was not developed, but it can be inferred based on it being longer and deeper than Route B that it is also more expensive than Route B.
  - A cost estimate for Route E was developed as part of the February 25, 2021 letter to USACE and is attached to this summary (see Route D1 in the table). This route is longer, deeper, and requires significantly more trenchless construction than Route B. The estimated cost for this route is about $1.3M or 17% more than Route B. A variant to Route E is Route E3 in the table which is still $752,645 or 10% more than Route B.
  - A cost estimate for Route D was not developed, but it can be inferred based on it being longer and deeper than Route B, in similar character to Route E, that it is also significantly more expensive than Route B.

Other Considerations

Two other issues have been raised concerning the proposed and recommended Farm Creek Trunk Sewer project.

- **Decommissioning of Existing Sewer.** Final engineering is still in process and will include decommissioning of the existing sewer. However, it must be noted that the existing sewer follows a very serpentine route with numerous crossings of Farm Creek through several wetland areas and across forested property. As such, not all of the existing sewer is accessible without causing significant additional impacts and tree removal. Therefore, it is the City's intent that wherever existing manholes are adjacent to proposed construction operations and accessible without causing significant additional impacts, those manholes will be removed to three feet below final grade and the remaining manhole filled with concrete including up to two feet inside the connecting sewer pipes. The manhole excavation will be backfilled and the surface restored to existing conditions. Additionally, the existing sewer where exposed in the bed of Farm Creek adjacent to construction operations and as far as possible on either side of the creek will be removed and the void backfilled with native earth and a stone creek bed. Upon completion of the project, the City intends to abrogate the existing sanitary sewer easements over the abandoned sewer.

- **Influent Pump Station Modifications.** It must be noted that although sewer crossings of Farm Creek are intended to be 5 feet below the bottom of the creek, these crossings do not control sewer grade and do not require reconstruction of the existing influent pumping station at STP-1. During preliminary engineering, it was determined the existing influent pumping station could be retrofit to accept the new trunk sewer if the depth of cover at Farm Creek were reduced to three and one-half feet. This would have been an acceptable crossing depth; however, the existing influent pumping station was determined to be incapable of handling the projected future sanitary flows to STP-2 and would eventually need to be replaced. City staff also documented recurring operational and maintenance problems with the existing station. These determinations led to the decision to replace the influent pumping station, giving the City flexibility to expand plant capacity in the future. This new station also provides the City greater hydraulic control at STP-2.

Conclusion

Route B was ultimately selected as the recommended route for the new Farm Creek Trunk Sewer for the following reasons:

- It reduces the influence of Farm Creek by putting the railroad between the creek and a majority of the sewer and providing manhole protection in the limited flood plain locations.
- Averages 23 feet deep compared to over 30 feet deep for the other suggested routes.
- Has only five short segments over 30 feet deep requiring trenchless construction compared to over 2,700 feet for the other suggested routes.
- Does not pose significant construction challenges, certainly in comparison to the other suggested routes.
- Only requires three easements for the trunk sewer and two for connection of local sewers all from property owners who already have the existing sewer easements on their properties.
- Has received most of the required environmental clearances and is in the process of receiving the remaining clearances.
- Requires tree removal, as do all other routes, but will endeavor to limit tree removal to the extent possible.
- Provides the best scenario for connection of existing and future local sewers.
- Is the least expensive route.

0 0.1 0.2 0.4 0.6 0.8 Miles

Legend

Routes

- A
- Recommended Trunk Sewer Alignment (Route B)
- C
- D
- E
- Existing Local Sewers
- Existing Trunk Sewer

NWI Wetlands

- Wetlands
- Steams and Lakes

CUMMINGS LN

WOODLAND TRAIL

City of Washington STP-1

TP&W RAILROAD

ERNEST ST

City of Washington STP-2

SHELLBARK CT

PINE TREE DR

SEATON LN

FARM CREEK TRUNK SEWER REVIEWED ROUTES

FARM CREEK TRUNK SEWER REPLACEMENT
CITY OF WASHINGTON
TAZEWELL COUNTY, ILLINOIS

STRAND ASSOCIATES®

FIGURE 1
1824.024

Path: S:\JOL\1800--1899\1879\026\Data\GIS\Maps\Alternative Route.mxd User: EthanD Date: 7/7/2021 Time: 5:03:18 PM

EXCELLENCE IN ENGINEERING

STRAND ASSOCIATES

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1170 South Houbolt Road
Joliet, IL 60431
(P) 815.744.4200

February 25, 2021

Ms. Samantha Chavez
Ecologist, Regulatory Branch
United States Army Corp of Engineers
P.O. Box 2004, Clock Tower Building
Rock Island, IL 61204-2004

Re: Farm Creek Trunk Sewer
City of Washington, Illinois (City)
CEMVR-OD-P-2020-393
Review of Goat Springs, LLC Letter dated January 25, 2021

Dear Ms. Chavez:

The City has requested Strand Associates, Inc.®, as its authorized agent, to respond to the letter from Elias, Meginnes, & Seghetti, P.C. on behalf of Jack S. Pudik and Goat Springs, LLC (Interested Party), dated January 25, 2021, regarding the City's Farm Creek Trunk Sewer Improvement Project (Project) under CEMVR-OD-P-2020-393.

Please note that the City has asked the Interested Party to grant a 50-foot-wide utility easement and a 30-foot-wide temporary construction easement for the Project's proposed route along the northern edge of its property parallel to and south of the existing railroad right-of-way (ROW). This Project will replace the existing trunk sewer already located on its property as described further in the following.

In its letter, the Interested Party noted several concerns with the Project that are addressed in the following in order of the bullet points presented in its letter.

The Interested Party also presented aerial exhibits of three alternate sewer routes located north of the existing railroad to be evaluated and considered by the City. Strand evaluated the specific alternate routes and provide considerations with summarized data in the enclosed Summary Table. It must be noted that the City previously evaluated potential routes north of the railroad as part of its preliminary engineering study efforts completed in 2019 and found the currently proposed route to be most practicable. This determination was made, not only on the basis of environmental considerations, but also on constructability, maintenance, and cost-effectiveness, which are equally important to the overall project.

1. Regarding the Interested Party's assertion that the Project fails to satisfy the stated purpose and goals of the Project to "relocate" the trunk sewer from the influence of Farm Creek, its floodplain, and to allow significantly improved operation and maintenance (O&M) access, Strand offers the following response.

    a. The Interested Party has asserted that the proposed new trunk sewer route, similar to the existing trunk sewer, will be difficult to access for maintenance due to its location on a "landlocked" parcel, with steep streambanks, stream bed, and adjacent wetlands. The proposed route is parallel to and along the edge of the existing railroad, not serpentine like the existing sewer, and provides the City access from both the east and west ends of the sewer. The referenced "landlocked" portion can be accessed by crossing Farm Creek

at the proposed stone riffle stabilized creek bed. The proposed route in-fact does provide a very linear, reasonable, and cost-effective access for significantly improved O&M.

b. The Interested Party presented three alternative routes in order to address Farm Creek and related environmental issues, placing the sewer outside of the Flagg Creek valley (still within the Flagg Creek watershed) across significantly higher ground elevations than the proposed route. The depth of any new sewer route considered is controlled by the existing sewer at Sanitary Treatment Plant No. 1 (STP 1). Therefore, the alternate routes result in long stretches of exceedingly deep sewer posing significant constructability, maintenance, and safety concerns.

(1) All three alternate routes appear to average near 30 feet in depth and all three have at least 1,200 linear feet of sewer between 30 and 60 feet deep in the Timber Rail area. Alternatives D-1 and D-2 have an additional 1,500 linear feet of sewer between 35 and 80 feet deep along Cummings Lane. Construction on these alternate sewer routes will require consistently deep open excavations. Particularly near Timber Rail, this work will require 60 feet tall shoring to prevent the excavation from impacting house foundations on either side of the roadway. Construction through Timber Rail and the driveways off Cummings Lane will completely cut off access for several homes for multiple days. Additionally, where sewer depths exceed 35 feet, trenchless construction methods would be recommended, which is more than double the cost of open excavations. Also, the deeper sewer requires deeper, more expensive manholes.

(2) The consistently deeper alternate sewer routes also pose additional access issues for maintenance and operation by the City. Regulatory design requirements limit the length of sewer between manholes, which results in very deep manholes. The City could seek a regulatory variance to extend the length of sewer between manholes beyond 800 feet, but this would require the City to purchase new cleaning and jetting equipment. The equipment still has limitations that would not eliminate deep manholes and would certainly increase O&M burden on the City.

(3) Although details were not provided for the alternate route cost estimates, Strand's assessment of the costs for each alternate is provided in the enclosed Summary Table.

(4) In contrast, a majority of the proposed route is less than 30 feet deep, averaging 23 feet deep. The proposed route has five locations at or over 35 feet deep that will be installed by trenchless methods, but these are isolated, short segments allowing manholes to be located to avoid excessive depths.

2. Regarding Strand's previous statement that, "The new sanitary trunk sewer will be located away from Farm Creek…to protect the sewer and creek…" the following response is offered.

a. In contrast to the existing trunk sewer that runs parallel and sometimes within Flagg Creek, the proposed route is mostly separated from the creek. It does have four perpendicular crossings under Farm Creek, but two crossings are bore and jack in casing pipe and will not impact the creek. The other two crossings are being placed a minimum of five feet below the creek beds, the creek beds are being reinforced with stone riffles, and the existing creek banks are being stabilized with vegetated boulder revetments, significantly improving the existing creek conditions at these locations.

b. As previously noted, the City studied potential alternate routes north of the railroad and determined them to be less practicable. Additionally, Strand studied the specific alternate routes presented by the Interested Party and the summarized findings are in the Summary Table enclosed with this letter.

3. Regarding Strand's previous statement that, "The proposed new sanitary trunk sewer alignment has been chosen to avoid existing flood plain and environmental areas (wetland, riparian, etc.) as much as possible," the following response is offered.

a. **Wetland sites depicted in the Interested Party's wetland delineation.** The City has not been provided a copy of the Interested Party's wetland delineation (Wetland Delineation and Habitat Assessment Report, dated July 29, 2020, prepared by Weaver Consultants Group). However, Strand (on behalf of the City) performed a wetland delineation that was submitted to you on January 29, 2021, as part of the City's Joint Permit Re-Application. According to Strand's delineation, the sewer does not impact any wetlands between Stations (Sta.) 169+00 and 174+00 nor between Sta. 143+00 and 151+00. However, based on Strand's delineation, the proposed route does have wetland impacts in other locations, as do the three alternate routes. Minimal wetland impacts have been identified for the proposed sanitary sewer route permittable under a Nationwide Permit, and all disturbed wetlands will be restored upon completion of the work.

b. **Property located in the Conservation Reserve Enhancement Program (CREP).** Strand is aware of one property adjacent to the Interested Party's property that participates in the CREP program. It is the intent of this project to avoid the CREP areas as much as possible and to restore removed trees.

c. **Seasonal creek tributary to Farm Creek between Sta. 114+00 and 115+00**. This unnamed tributary was not identified as wetlands and is being restored to near existing conditions.

d. **Existing concrete ford at Sta. 106+00**. The existing ford, used by the landowner and Ameren Corporation, is falling apart resulting in significant upstream and downstream erosion and sedimentation. As part of this project, the City will be removing and replacing the ford with low-head concrete box culverts and restoring the eroded creek banks with vegetated boulder revetment.

e. **Section 303(d), with 20 percent landlocked and no reasonable access.** The Interested Party states the City's proposed route extends through portions of the Farm Creek watershed, listed on Section 303(d). It must also be noted that all three alternate routes are also located within the Farm Creek watershed and do not present more favorable conditions. The Interested Party further states that 20 percent of the City's proposed route is landlocked with no reasonable access. As previously noted, there is reasonable access to the proposed sewer along the railroad ROW, across the reconstructed ford, and across the stone riffles in Farm Creek.

f. **Upland assessment of woodlands**. The Interested Party references an upland assessment of its parcel affected by the Project (Parcel) identifying it as high-quality remnant oak-hickory woodland. The City has not been provided with a copy of the referenced assessment so Strand cannot comment whether portions of high-quality

woodland are within the proposed alignment. However, as noted on the drawings provided to you on January 29, 2021, clear cutting of trees is only allowed within the 50-foot easement as necessary for installation of the sanitary sewer in order to control the number of trees being removed. Within the 30-foot temporary easement, the contractor will not be allowed to remove trees without the City's approval. It is the City's intent to maintain as many quality trees as possible and will require the contractor to work around trees wherever practical in performing his operations.

4. Regarding the accuracy of our previous statement that, "Disturbance of wetlands and riparian areas will be restored to existing conditions along with existing ground elevations and runoff patterns," Strand offers the following response.

   a. As previously noted, the City has not been provided a copy of the wetland delineation performed for the Parcel, but the delineation performed by Strand does not indicate any wetlands being impacted on the Parcel. However, where there are wetlands along the route, these will be restored as noted on the drawings. Additionally, there are no manholes being located within the wetlands and the proposed access for City maintenance of the sewer is a 12-foot-wide stabilized path as shown and detailed on the drawings. Final placement of this path will avoid wetlands and other sensitive features.

5. Regarding the Interest Person's request that a wetland delineation study for the entire City Alignment and Project be completed during the growing season to adequately locate all protected wetlands delineated within the area comprising the City Alignment, Strand offers the following response.

   a. Contrary to the Interested Party's assertion, all three alternate routes result in similar wetland disturbance to the City's proposed route. This can be seen in Strand's Wetland Delineation Technical Memorandum covering the entire proposed sewer route and provided to you in with the City's Joint Permit Application on January 29, 2021. This delineation included a field review performed on October 21, 2020, within the recognized growing season.

6. Regarding the Interested Party's assertion that the Project has been improperly segmented and fails to include the necessary component of the Project associated with abandonment of the existing trunk sewer improvements and associated easement that are being replaced, Strand offers the following response.

   a. The existing trunk sewer shown on the engineering drawings follows a very serpentine route with numerous crossings of Farm Creek, through several wetland areas, and across significant forested property. As such, not all the existing sewer is accessible without causing significant additional impacts and tree removal. Therefore, it is the City's intent that wherever existing manholes are adjacent to proposed construction operations and accessible without causing significant additional impacts, those manholes will be removed to three feet below final grade. The remaining manhole will be filled with concrete including up to two feet inside the connecting sewer pipes. The top of the manhole will be backfilled, and the surface restored to existing conditions. Additionally, the existing sewer at Sta. 166+50 will be removed where exposed in the bed of Farm Creek and as far as possible on either side of the creek. Upon completion of the project, the City intends to abrogate the existing sanitary sewer easements over the abandoned sewer.

7. Regarding the Interested Party's assertion that the Project is influenced by the crossings underneath Farm Creek that seemingly require additional influent pump station improvements to be constructed at STP-2, Strand offers the following response.

   a. The proposed sewer route has been designed to provide a minimum 5 feet of cover between the Farm Creek bed and the top of the new pipe. As such, the depth of the new trunk sewer into STP-2 is lower than the existing. During preliminary engineering it was determined the existing influent pumping station could be retrofit to accept the new trunk sewer if the depth of cover at Farm Creek were reduced to 3.5 feet. However, the existing influent pumping station is not capable of handling the projected future sanitary flows to STP-2 and would eventually need to be replaced. The City staff also documented O&M problems with the existing station. These determinations lead to the decision to replace the influent pumping station giving the City flexibility to expand plant capacity in the future. This new station also provides the City greater hydraulic control at STP-2. It should also be noted that Alternative Route E-3 requires crossing of a tributary to Farm Creek resulting in a sewer depth at STP-2 similar to the proposed route.

8. Regarding the Interested Party's assertion that the City Alignment extends the Project though the Farm Creek watershed and floodplain, so susceptibility to inflow and infiltration (I/I) will continue to exist, Strand offers the following response.

   a. The proposed sewer route, as well as all three alternate routes, are in the Farm Creek watershed and all routes cross or run through floodplain, so all routes would require flood protection to minimize I/I. In the case of the proposed route, to the extent possible, manholes have not been located outside floodplain boundaries. Where placement of a manhole in floodplain is unavoidable, the rim has been raised to above the base flood elevation. Additionally, all new manholes on the project, regardless of location, are being provided with bolt-down, waterproof frames and castings.

9. In addition to the issues addressed previously, the City notes the following concerns with the alternate routes:

   a. As noted in the enclosed Summary Table, the alternate routes cross more private properties than the proposed route.

   b. The alternate routes will run through and bisect private properties as opposed to the proposed route that will be located only 25 feet off the railroad ROW along the edge of the properties. An important aspect of the proposed route was to locate the sewer so that it does not bisect private properties making the sewer significantly obtrusive to the landowners and encumbering the current and future uses of the property.

   c. The Interested Party noted utility extensions and interferences in its route exhibits. This was also an important aspect of the proposed sewer route in that the Farm Creek trunk sewer provides sanitary sewer service for most of the current and projected City development, both north and south of the railroad. The proposed route is located to serve both sides of the railroad, but the alternate routes make connection for expansion to the south significantly more difficult.

   d. The proposed route allows for connection of existing local sanitary sewers to the new trunk sewer and maintains sewer service to the properties north of the railroad. The

alternate routes are further north and while they can connect the local sewers, they cutoff service between the alternate route and the railroad.

Strand welcomes any questions or comments you may have and look forward to working with you to permit the City's proposed Farm Creek Trunk Sewer project.

Sincerely,

STRAND ASSOCIATES, INC.®

Michael R. Waldron, P.E.

c/enc: Ray Forsythe, City Administrator, City of Washington
Dennis Carr, City Engineer, City of Washington
Kevin Shone, Public Works Director, City of Washington
Brian Rittenhouse, Utilities Superintendent, City of Washington
Keith Braskich, Davis and Campbell LLC
Jay Scholl, Davis and Campbell LLC
Ellen Waters, Project Manager, Illinois Environmental Protection Agency
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R. Case Pudik

Summary Table									
		Proposed Trunk Sewer Routes (as described by Interested Party letter)							
		Route D1		Route D2		Route E3		City Route B	
Items	Unit	Jan. 25, 2021 Interested Party Review	SAI Review	Jan. 22, 2021 Interested Party Review	SAI Review	Jan. 22, 2021 Interested Party Review	SAI Review	Jan. 22, 2021 Interested Party Review	SAI Review
Route Length	Linear Foot	9975	11781	Not provided Alternate to D1.	11700	9725	11435	9385	11043
US Waterway Crossings (Farm Creek)	Each	0	0		0	0	0	6	5
Railroad Crossings	Each	2	2		2	2	2	3	2
Utility Extensions	Linear Foot	1190	1539		1539	650	1539	1720	577
LF through Wetland	Linear Foot	0	486		812	200	766	2200	812
LF through 100 year Floodplain	Linear Foot	610	1092		1092	1310	1891	3300	2848
LS US Waterway Bank Disturbance	Linear Foot	0	360		360	0	1082	1200	1070
LF through Forest	Linear Foot	2570	1552		2120	2580	2236	8735	7100
Number of Affected Property Owners	Each	5	5		4	6	6	5	4
Initial Cost	Dollars	$ 8,073,720.00	$9,169,097.52			$ 7,321,953.00	$8,576,417.52	$ 7,823,773.00	$ 7,823,773.00

EXCELLENCE IN ENGINEERING

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March 31, 2021

Ms. Ellen Watters
Illinois Environmental Protection Agency
1021 North Grand Avenue
P.O. Box 19276
Springfield, Illinois 62794

Re: IEPA Loan Project No L175813
City of Washington Farm Creek Trunk Sewer
Review of Goat Springs, LLC Letter dated February 22, 2021

Dear Ms. Watters:

On behalf of the City of Washington, Illinois (City), Strand Associates, Inc.® has reviewed the letter from Hepler Broom, LLC on behalf of Jack S. Pudik and Goat Springs, LLC (Landowner), dated February 22, 2021, and we offer the following responses regarding the City's Farm Creek Trunk Sewer Improvement Project (Project) under IEPA Loan Project No. L175813.

Please note that the City has asked the Landowner to grant a 50-foot-wide utility easement and a 30-foot-wide temporary construction easement for the Project (proposed route) along the northern edge of the Landowner's property parallel to and south of the existing railroad right-of-way. This Project will replace the existing trunk sewer already located on Landowner's property.

In a letter, the Landowner noted several concerns with the Project as presented in the City's March 20, 2020 Project Plan submittal to IEPA and the 50% Engineering Drawings dated August 2020. We address these concerns below in order of the points presented in their letter. It must be noted that Pre-Final Engineering Drawings dated January 2021, were subsequently provided to the Landowner that address some of the concerns.

I. City of Washington Loan Application

A. Project Goals–The Landowner notes that decommissioning of the existing trunk sewer should not be segmented from the Project scope.

The City intendeds to decommission the existing sewer as part of the Project. Final engineering is still in process and will include this decommissioning. However, it must be noted that the existing sewer follows a very serpentine route with numerous crossings of Farm Creek through several wetland areas and across forested property. As such, not all the existing sewer is accessible without causing significant additional impacts and tree removal. Therefore, it is the City's intent that wherever existing manholes are adjacent to proposed construction operations and accessible without causing significant additional impacts, those manholes will be removed to three feet below final grade. The remaining manhole will be filled with concrete including up to two feet inside the connecting sewer pipes. The manhole excavation will be backfilled and the surface restored to existing conditions. Additionally, the existing sewer at Station 166+50 will be removed where exposed in the bed of Farm Creek and as far as possible on either side of the creek. Upon completion

of the project, the City intends to abrogate the existing sanitary sewer easements over the abandoned sewer.

B. Alignments Proposed by the City–The Landowner states that the City's Project Plan does not include the analysis of route alignments lying north of Farm Creek or north of the railroad (RR).

The City previously evaluated several potential routes north of the railroad as part of its preliminary engineering study efforts completed in 2019. Just as the Landowner evaluated 20 alternative routes but focused on two or three, the City also focused on the two most-feasible routes and found the currently proposed route to be most practicable. This determination was made, not only on the basis of environmental considerations, but also on constructability, maintenance, and cost-effectiveness, which are equally important to the overall project.

1. Route A Alignment–The Landowner questions how Route A qualifies as an alternative alignment since it is "similar" to the existing sewer and doesn't meet one of the Project goals to relocate the sewer away from the influence of Farm Creek.

   Route A is an alternate because it does not follow the same route as the existing sewer. Much of Route A does address the goal of minimizing influence from Farm Creek, but similar to other routes, there are segments that don't fit well into a particular project goal. Ultimately, Route A was not selected.

2. Route B Alignment–The Landowner presents the following challenges to the Project goals.

   - Avoid Farm Creek as much as possible:

     Avoiding Farm Creek does not simply mean avoiding crossing the creek. In contrast to the existing trunk sewer that runs along and sometimes within Farm Creek, the proposed route is mostly separated from the creek. Where the new trunk sewer does cross Farm Creek, it is being placed a minimum of five feet below the creek bed. Creek beds are also being reinforced with stone riffles, and the existing creek banks are being stabilized with vegetated boulder revetments, significantly improving the existing creek conditions at these locations. Two of the crossings for local sewers will be installed via bore and jack in casing pipe and will not impact the creek.

   - Provide an accessible route for continued operation and maintenance:

     The City will have access to the proposed sewer route from the City's two wastewater treatment plant sites and along the entire route pending utility easement agreements with the Landowner and two other property owners.

     Contrary to the Landowner's assertions, the proposed trunk sewer will not be inaccessible for continued operation and maintenance. The proposed route is parallel to and along the edge of the existing railroad, not serpentine like the existing sewer. The referenced "landlocked" portion can be accessed by crossing Farm Creek at the proposed stone-stabilized creek beds and banks.

     Supplementary access routes have been requested from the three property owners to aid in traversing some of the taller hills and embankments along the route. With the exception of the Landowner's parcel, these supplementary access routes already exist

and are being used by the property owners. But the existing embankments are generally at a 3-foot horizontal to 1-foot vertical slope or less, which is accessible by City vehicles without the supplementary access routes.

Restoration of the entire route will include construction of a 12-foot-wide stabilized aggregate access road. This access road will either be at surface grade or under 6 inches of topsoil and vegetation, depending on restoration requirements at a given location. The proposed route does provide a very linear, reasonable, and cost-effective access for significantly improved operation and maintenance.

- Avoid conflicts with the existing trunk sewer improvements:

  a. There is a conflict between the proposed sewer route and the existing trunk sewer at Station 166+00, but the proposed sewer will be approximately 2 feet below the existing sewer. The contractor will be required to protect the existing sewer while crossing.

  b. As noted above, the City intends to remove the existing sewer where exposed in the bed of Farm Creek near Station 166+00 and as far as possible on either side of the creek and provide vegetated boulder revetment stabilization of the creek banks.

  c. Contrary to the Landowner's concern that crossing the existing sewer or Farm Creek near Station 166+00 forces the proposed sewer to be deeper, review of the proposed downstream sewer profile shows that these crossings do not control sewer grade, nor do they impact sewer grades at STP-2.

     The proposed sewer route crossing is controlled at the Farm Creek crossing near STP-2. All the Farm Creek crossings have been designed to provide a minimum five feet of cover between the creek bed and the top of the new pipe. As such, the depth of the new trunk sewer into STP-2 is lower than the existing sewer. During preliminary engineering, it was determined the existing influent pumping station could be retrofit to accept the new trunk sewer if the depth of cover at Farm Creek were reduced to three and one-half feet. This would have been an acceptable crossing depth; however, the existing influent pumping station was determined to be incapable of handling the projected future sanitary flows to STP-2 and would eventually need to be replaced. City staff also documented operational and maintenance problems with the existing station. These determinations led to the decision to replace the influent pumping station, giving the City flexibility to expand plant capacity in the future. This new station also provides the City greater hydraulic control at STP-2.

     It should also be noted that the Landowner's proposed Alternate Alignment E-1 (discussed further below) would need to be at the same elevation as the proposed sewer at STP-2.

- Minimize environmental impacts and permitting:

  Wetlands located on the Property: On February 26, 2021, the City was provided a copy of the Landowner's wetland delineation (Wetland Delineation and Habitat Assessment Report dated July 29, 2020, prepared by Weaver Consultants Group) and the Landowner

JD letter. Additionally, Strand Associates, Inc.® on behalf of the City performed a wetland delineation that was submitted to the United States Army Corps of Engineers (USACE) on January 29, 2021, as part of the City's Joint Permit Reapplication. From this combination of wetland delineations and assessments, we are continuing final engineering for the Project and will continue to work through the USACE for final approval of the Project.

a. Final engineering will include relocation of manholes so that they are not located in wetlands that are being restored.

b. Intended Farm Creek crossings and proposed sewer route access has been detailed above and will be reviewed with USACE for final project approval.

c. The City's response to the Landowner's "Hard Look Letter" was provided to the USACE and copied to you on February 25, 2021.

Other wetlands within the Route B alignment: The wetland delineation performed by Strand Associates, Inc.® on behalf of the City was performed in October 2020, within the recognized growing season. This delineation was provided to the USACE as part of the City's Joint Permit Reapplication on January 29, 2021, and was subsequently provided to the Landowner.

Manholes:

a. To the extent possible, manholes have not been located inside the floodplain footprint. Where placement of a manhole in the floodplain footprint is unavoidable, the rim has been raised to above the base flood elevation. Additionally, all new manholes on the project, regardless of location, are being provided with bolt-down, waterproof frames and castings.

b. As noted above, final engineering will include relocation of manholes, so that they are not located in wetlands that are being restored.

c. As noted above, the City will have access to all manholes along the sewer route. This includes Manhole #114, which is a deep manhole that would be constructed upon completion of the trenchless sewer installation.

Farm Creek: Impacts to Farm Creek will be temporary during construction with limitations on the contractor as to the area of disturbance. Additionally, temporary construction operations are not influencers on IEPA Section 303(d) impaired waters listings. It must also be noted that the Alternate Alignments presented by the Landowner are also located within the Farm Creek watershed and do not present more favorable conditions. The Interested Party further states that 20 percent of the City's proposed route is landlocked with no reasonable access. As previously noted, there is reasonable access to the proposed sewer along the railroad right-of-way across the reconstructed ford and across the stone riffles in Farm Creek.

Remnant oak-hickory woodland located on the Property: The Weaver Report references the Landowner's property as high-quality remnant oak-hickory woodland. The City understands that the property has high-quality trees but cannot comment whether portions of high-quality woodland are actually within the proposed alignment. In any event, clear cutting of trees will only be allowed within the 50-foot easement and only

as necessary for installation of the sanitary sewer to control the number of quality trees being removed. The 30-foot temporary easement is only intended to assist in the contractor's operations, but the contractor will not be allowed to remove trees in this easement without the City's approval. It is the City's intent to maintain as many quality trees as possible and will require the contractor to work around trees wherever practical in performing its operations.

Other environmentally sensitive elements located within the Route B alignment:

a. Erosion controls will be implemented and maintained along the construction corridor. Temporary impacts to the streambanks and bed during construction will be restored with vegetative boulder revetment and stone riffles. The vegetated boulder revetment will significantly improve the already heavily eroded streambanks by providing deep-rooted vegetation to stabilize the soils, which is currently missing under the tree canopy.

b. The City is aware of one property adjacent to the Landowner's property that participates in the Conservation Reserve Enhancement Program (CREP). It is the intent of this project to avoid the CREP areas as much as possible and to restore removed trees.

c. The existing concrete ford across Farm Creek on the west end of the project was constructed and is used by that property owner and Ameren Corporation. This ford is deteriorating, resulting in significant upstream and downstream erosion and sedimentation. As part of this project, the City will be removing and replacing the ford with low-head concrete box culverts and will be restoring the eroded creek banks with vegetated boulder revetment.

d. The unnamed tributary at Station 114+00 to 115+00 is being restored to existing conditions.

- Connection of existing tributary sewers between STP-1 (upstream) and STP-2 (downstream):

a. Each of the three properties for the local sewer extensions already have the existing trunk sewer and existing local sewer on their property.

b. The two Farm Creek crossings were discussed above and will be installed via bore and jack trenchless construction with no impact to Farm Creek.

c. The existing Timber Rail sewer serves seven or eight home sites and is being redirected north to the existing sewer on Timber Rail via a proposed grinder pumping station at the end of the cul-de-sac, and it will not impact Farm Creek or any environmental areas.

C. June 3, 2020 Design Supplement–The initial 120-foot-wide area was identified in preliminary engineering and reduced to the current 80-foot-wide area in response to discussions with property owners along the corridor; in particular, the April 7, 2020, discussion between Mr. Troy Pudik and Michael Waldron of Strand Associates, Inc.® in which Mr. Pudik expressed concern with the project and the size of the area proposed to be disturbed. Mr. Waldron indicated in that discussion that Strand Associates, Inc.® had already evaluated alternative routes north of the railroad (as noted above) but would reconsider the project corridor and the proposed design. Additionally, starting in April 2020,

the City's easement consultant, Kaskaskia Engineering, has been in contact with the Landowner for discussion and negotiation of the easements.

II. Alternative Alignments

The City provided a review of the Landowner's two Alternate Alignments in its February 25, 2021, letter to the USACE and copied to you in response to the Landowner's January 25, 2021 "Hard Look Letter." We summarize the City's review as follows.

A. The two Alternative Alignments traverse significantly higher ground elevations than the proposed sewer route, resulting in long stretches of exceedingly deep sewer and posing significant constructability, maintenance, and safety concerns.

   1. Both Alternate Alignments appear to average near 30 feet in depth and all three have at least 1,200 linear feet of sewer between 30 and 60 feet deep in the Timber Rail area. Alternative D-1 has an additional 1,500 linear feet of sewer between 35 and 80 feet deep along Cummings Lane. Construction on these alternate sewer routes will require consistently deep open excavations. This work will require 60-foot-tall shoring to prevent the excavation from impacting house foundations on either side of the roadway, particularly across the platted right-of-way at Timber Rail. Construction through Timber Rail and the driveways off Cummings Lane will completely cut off access for several homes for multiple days. Additionally, where sewer depths exceed 35 feet, trenchless construction methods would be recommended, which is more than double the cost of open excavations. Also, the deeper sewer requires deeper, more expensive manholes.

   2. The consistently deeper alternate sewer routes also pose additional access issues for maintenance and operation by the City. Regulatory design requirements limit the length of sewer between manholes, which results in very deep manholes. The City could seek a regulatory variance to extend the length of sewer between manholes beyond 800 feet, but this would require the City to purchase new cleaning and jetting equipment. The equipment still has limitations that would not eliminate deep manholes and would certainly increase the operations and maintenance burden on the City.

   3. In contrast, a majority of the proposed route is less than 30 feet deep, averaging 23 feet deep. The proposed route has five locations at or over 35 feet deep that will be installed by trenchless methods, but these are isolated, short segments allowing manholes to be located to avoid excessive depths.

B. The City notes the following additional concerns with the Alternate Alignments:

   1. The Landowner states that the Alternate Alignments utilize existing public access roads or planned rights-of-way. This is only true for a portion of the routes. A majority of the alternate routes are not in public-owned property.

   2. The alternate routes will run through and bisect private properties, as opposed to the proposed route that will be located only 25 feet off the railroad right-of-way along the edge of the properties. An important aspect of the proposed route was to locate the sewer so that it does not bisect private properties and cause the sewer to be obtrusive to the landowners or encumber the current and future uses of the property.

   3. The Landowner noted utility extensions. This was also an important aspect of the proposed sewer route in that the Farm Creek trunk sewer provides sanitary sewer service for most of

the current and projected City development, both north and south of the railroad. The proposed route is located to serve both sides of the railroad, but the alternate routes make connection for expansion to the south significantly more difficult.

4. The proposed route allows for connection of existing local sanitary sewers to the new trunk sewer and maintains sewer service to the properties north of the railroad. The alternate routes are further north and, while they can connect the local sewers, they cut off service between the alternate route and the railroad.

III. Information Available from the City

The process the City used to undertake this project is in line with typical project study, planning, and design processes. The City studied its sanitary sewer and conveyance needs including various means of conveyance, rehabilitation, and potential new sewer routes, and, in November 2019, decided to reconstruct the Farm Creek Trunk Sewer along the proposed route (Route B). The City also assessed its options for funding the project and determined to apply for an Illinois Environmental Protection Agency (IEPA) low interest loan fund based on its study and concept level planning. Concurrently, the City began detailed design, including data collection and field surveys, to start development of preliminary engineering drawings. In February 2020, the City felt engineering had progressed sufficiently to identify potential easements and construction impacts and with enough detail that the City could engage the impacted property owners to begin discussion of the project and easement negotiations.

- **February 26, 2020.** In their April 7, 2020, telephone discussion, Mr. Waldron informed Mr. Pudik that surveyors would stake the proposed sewer route on the Landowner's property to assist the Landowner in visualizing the proposed route. Mr. Pudik did not express disapproval of this operation.

- **March 16, 2020.** Understanding that the IEPA loan application was made based on preliminary plans and National Wetland Inventory mapping that did not show the proposed sewer impacting mapped wetlands, the City always intended to supplement this information with a field delineation later in the engineering process when the proposed sewer location, profile, and construction impacts were more developed. That delineation was intended to be done earlier in 2020, but was delayed as discussions with the property owners progressed and the final sewer location was better determined.

  The delineation was performed in October 2020, well within the recognized growing season. The delineation was a draft until submitted with the USACE permit application in January 2021, at which point it was also provided to the Landowner.

Regarding FOIA communications between the City and the landowners, it is our understanding that all FOIA responses have been updated and completed, most recently as of February 23, 2021.

IV. Conclusion

In line with the procedures cited and the statement of the Crosscutter Handbook, the City continues to work with the state and federal environmental agencies for appropriate permitting and approvals of the City's proposed trunk sewer project to allow it to be funded through the IEPA low-interest loan program.

As you know, a project of this type has several goals and presents numerous challenges. Selection of a final determined route is based on a balance of those goals and challenges as determined by the City, who will ultimately construct, operate, and maintain the system. The Landowner has cited concerns relative to his property and has presented Alternative Alignments entirely removing the proposed sewer

from his property. In response, the City considered its prior route evaluations and the Landowner's Alternative Alignments and it has identified herein the concerns facing the City in using either of the Alternative Alignments. While, as noted by the Landowner, the Alternative Alignments have not undergone full engineering design analysis, but are seen to have "certain common-sense aspects", the City has performed engineering and has also identified common-sense aspects that make the City's proposed sewer route the most advantageous for the City.

We welcome any questions or comments you may have and look forward to working with you to fund this project.

Sincerely,

STRAND ASSOCIATES, INC.®

Michael R. Waldron, P.E.
Senior Associate

c: Samantha Chavez, USACE
Gary Bingenheimer, IEPA
Stephanie Flowers, IEPA
Heidi Allen, IEPA
Bradley Hayes, IDNR
Mayor Gary Manier, City of Washington
City Council of the City of Washington
Ray Forsythe, City Administrator
Dennis Carr, City Engineer
Goat Springs, LLC
Jack S. Pudik
Troy N. Pudik
Brett S. Pudik
R. Case Pudik

Appendix G.
Farm Creek Trunk Sewer Replacement Project: Landowners' Concerns & Recommendations

Farm Creek Trunk Sewer Replacement Project: Landowners' Concerns & Recommendations

PRESENTED TO CITY OF WASHINGTON, COMMITTEE OF THE WHOLE

JULY 12, 2021

Apton
Dewar
Moose

Presentation Overview

- Review of need for and purpose of Farm Creek Trunk Sewer replacement project
- Understanding of progress to date and current project status
- New trunk sewer design objectives and landowners' concerns
- Potential alternative alignments identified by landowners
- Recommended steps for resolution of concerns

Review of Need for and Purpose of Farm Creek Trunk Sewer Replacement Project

Farm Creek Trunk Sewer Replacement - Area Map

- Both treatment plants are located north of Farm Creek
- Open access corridors are prevalent north of the railroad and Farm Creek
- Future City growth is expected to continue north of the railroad, given lack of north/south roads to provide access south of the railroad

City-Stated Goals and Purpose of Trunk Sewer Replacement

Existing trunk sewer pipe & joints exposed

- Address existing trunk sewer performance, maintenance, and pollution issues
  (see excerpt from Preliminary Engineering Study below)
- Reroute sewer flows from STP-1 to STP-2 due to IEPA-required decommissioning of STP-1, driven by 2013 violation for sewer overflow into Farm Creek
- Increase trunk line capacity to accommodate flow from STP-1 and future City development

City of Washington, Illinois
Preliminary Engineering Study for the Farm Creek Trunk Sewer **Section 6–Recommendations**

6.01 CONCLUSIONS

The City has documented numerous concerns with the existing 50-year-old Farm Creek Trunk Sewer including:

- Operational problems because of its proximity to Farm Creek.
- Instability and erosion of Farm Creek leading to exposed sewer pipe in several locations.
- Excess flow conditions in the sewer during wet weather and high creek flow conditions.
- Anticipated continued growth and development potentially exceeding trunk sewer capacity.

The City has also been mandated by the IEPA to decommission existing STP 1, which will result in additional burden on the trunk sewer by flow that was previously sent to STP 1.

Source: Strand Associates, October 2019, p. 6-1

Power of Farm Creek Led to Current Trunk Sewer Condition

Existing trunk sewer pipe & joint exposed – west Farm Creek bank

- Experience shows Farm Creek creek bed has eroded
- Exposed pipe = risk of surface water contamination
- The power of Farm Creek will continue to erode the creek bed

8' high bank created from erosion; original bank above, new Farm Creek bottom below

Current Trunk Sewer Condition

- Exposed existing trunk sewer with railroad bridge in background
- Large trees washed down creek during powerful flood event
- Proposed alignment will NOT alleviate these issues
  - Will be in close proximity to the current trunk line
  - A creek crossing is planned proximate to this location

Goals of a New Trunk Sewer

Thorough investigation and understanding of current problems is necessary to identify practical, logical, and effective solutions for trunk sewer replacement. The new trunk sewer should:

- Alleviate existing issues and problems with the Farm Creek Trunk Sewer
- Achieve durability and reliability in trunk sewer function / operation
- Be respectful of nature and the environment
- Be responsible to the taxpayer by implementing a cost-effective solution through both construction and ongoing operation and maintenance costs
- Be responsive to and consistent with long-range plans, initiatives, and missions, including from:
  - City of Washington, Tazewell County, and Tri-County Regional Planning Commission
  - Illinois DNR and Illinois EPA
  - Illinois Forestry Development Council and Illinois Forest Action Plan
  - US Army Corps of Engineers and US EPA

Landowners Agree With The Project...

- **Sewer infrastructure is essential** to the City and its property owners / taxpayers
- **Trunk sewer replacement is necessary** to address significant operation and maintenance issues with existing line
- The City is making a **responsible decision to design replacement trunk sewer with added capacity**, supporting future system demand
- Adequate capacity and infrastructure to **support IEPA-required decommissioning of STP-1** provides additional opportunity to improve trunk line design and operations

...Following Proper Planning and Analysis

The Farm Creek Trunk Sewer is critical public infrastructure that **impacts EVERY City ratepayer** - not just the individual property owners where the trunk line will be located

- Design approach must be **thoughtful and thorough to ensure long-term operational reliability**
- Alignment must be both **environmentally and fiscally responsible**
- **There is time to properly analyze prudent alternatives** - final engineering and loan funding are not completed

Understanding of Progress to Date and Current Project Status

Alignments Considered by City

- Two alignments considered and presented to City Council in October 2019:
  - Route A - Runs along Farm Creek, largely similar to current alignment
  - **Route B (selected alternative) - South of railroad tracks, generally more linear alignment of trunk line but with remote, serpentine access**
- **The City has not evaluated <u>any</u> alternative alignment to Route B** - the Route A alignment is essentially reflective of the existing alignment
- Alignments considered without public input, transparency, or documentation:
  - No public input or affected property owner input sought prior to City selection of Route B alignment
  - No discussion with property owners about easements prior to route selection
  - No documented consideration or analysis of any alternatives other than Route A and Route B - including no evaluation of alternatives located further north of Farm Creek within City of Washington

Project Progression Since Selection of Route B Alignment (October 2019)

- Landowners contacted to discuss easements (February 2020)
  - Raised concerns regarding proposed alignment's location relative to Farm Creek, wetlands, floodplain, remnant woodlands and protected trees
  - Questioned availability of alternative alignment analyses
- Design advanced to 50% design stage (August 2020)
  - New influent pumping station incorporated into trunk line replacement project to be completed concurrently
  - Landowners' concerns and questions about alternative alignments were not addressed
  - Costs increased (refer to slide 25 for further discussion)
- Proposed alignment continues to be revised, with costs likely to continue increasing

Permit Reviewers Have Requested More Information

- US Army Corps of Engineers has issued a number of requests before making a permit decision, including:
  - Investigation / verification of several more potential wetland areas
  - Investigation and assessment of stream and wetland impacts north of railroad tracks
  - Completion of archaeological study in all upland areas adjacent to wetlands
  - Additional information on alternative locations considered and options to avoid stream and wetland impacts
  - Identification of tree area to be removed and resulting impact on habitat of endangered bat species

US Army Corps of Engineers Correspondence Regarding Alternatives

Inquiry From US Army Corps of Engineers:

As a part of the application process we need to know what the City is doing to avoid stream and wetland impacts and/or minimize steam and wetland impacts for this project. Have other alternatives to this project location been discussed? I am new to the project so maybe this has already been discussed for example, on the northern side of the rail road tracks it seems the stream could be avoided completely.

Source: Email correspondence from US Army Corps of Engineers (Wendy Frohlich) to City of Washington and Strand Associates, May 24, 2021

Response From Strand Associates:

As part of the project planning, we have reviewed alternate alignments as a part of our preliminary engineering and also provided Samantha back in February 2021 a letter regarding alternate alignments. It is attached.

Source: Email correspondence from Strand Associates to US Army Corps of Engineers, June 10, 2021

The Interested Party also presented aerial exhibits of three alternate sewer routes located north of the existing railroad to be evaluated and considered by the City. Strand evaluated the specific alternate routes and provide considerations with summarized data in the enclosed Summary Table. It must be noted that the City previously evaluated potential routes north of the railroad as part of its preliminary engineering study efforts completed in 2019 and found the currently proposed route to be most practicable. This determination was made, not only on the basis of environmental considerations, but also on constructability, maintenance, and cost-effectiveness, which are equally important to the overall project.

Source: Letter correspondence from Strand Associates to US Army Corps of Engineers, February 25, 2021

New Trunk Sewer Design Objectives and Landowners' Concerns

Design Objectives for New Trunk Line

City / Strand previously identified the following design objectives (Preliminary Engineering Study, October 2019):

- Tie to elevation of existing influent pumping station
  - *This objective appears to be no longer applicable - a new $2.815M STP-2 influent pumping station is being proposed concurrent with the new trunk line*
- Minimize potential for excess flow into the system, particularly from inflow and infiltration
- Be accessible for maintenance
- Minimize railroad crossings
- Reduce wetland, floodplain, and other environmental impacts
- Reduce Farm Creek crossings
- Ensure adequate cover over any Farm Creek crossings (Strand indicated 5+ feet of cover required)
- Minimize or avoid conflicts with existing trunk sewer

Recommended, More Stringent Design Objectives Identified by Landowners Appear to be Available and Achievable:

- **Avoid** Farm Creek crossings
- **Avoid** wetland and floodplain areas
- **Avoid** potential for pollution and contamination of surface water and land
- **Avoid** destruction of trees and endangered species habitat
- **Avoid** archaeologically significant areas
- **Maximize** alignment within open access corridors
  - Ease of access during construction and maintenance
  - Faster land recovery rate post-construction

Multiple Farm Creek Crossings

- Historical impacts of erosion and continual creek bed changes indicate 5 feet cover at Farm Creek crossings may be inadequate
- Route B alignment includes 6 Farm Creek crossings
- Crossings increase project costs
- Results in limited - and unreliable - access to trunk line

Evidence of Farm Creek bed changes, bank erosion, and high water flow / debris impacts

Continued Erosive Influence of Farm Creek

- Erosive nature of Farm Creek is observed following normal rainfall events and exacerbated during flooding events
- Current issues with exposure / erosion of sewer line under erosive force of Farm Creek are likely to recur as a result of not moving away from creek influence
- Trunk line being proximate to, and crossing, Farm Creek will negatively impact sewer function and design integrity
  - Increased inflow and infiltration (I&I) volumes to be managed
  - Risk of future contamination of Farm Creek

Steep bank erosion & importance of adjacent riparian forest

Staking for new alignment eroded into Farm Creek during Summer 2020 flood event

Tributary Sewer Extensions

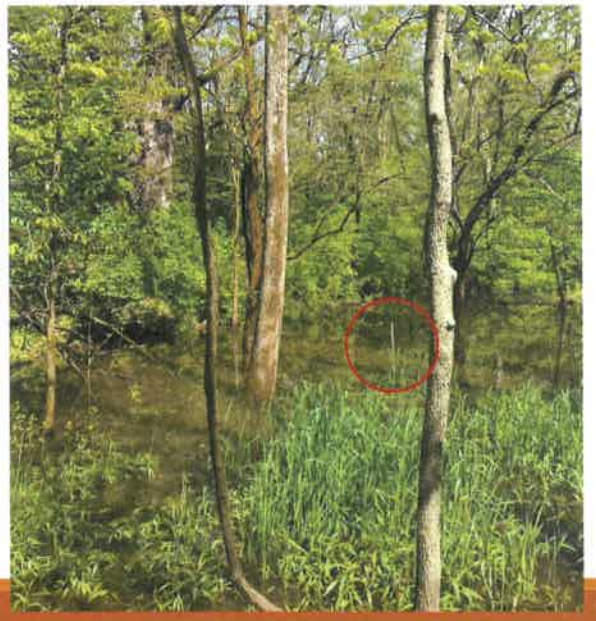
- Route B requires extension of several tributary sewer lines (which serve majority of City's service area)
- All tributary sewer extensions will have to cross under the railroad
- Installation of pump station at Timber Rail cul-de-sac will be necessary
- Tributary sewer extensions and railroad crossings increase project costs

Steep RR embankment directly adjacent to Farm Creek & wetlands

Impact of Tree Removal

- Route B alignment impacts remnant oak-hickory woodlands with protected trees
  - **93%** of Route B alignment is in forest or forested riparian waterway
- Impacts will occur during - and possibly after - construction due to planned tree removal and root system damage due to construction
- Tree replacement will be required for adjacent properties included in the USDA Conservation Reserve Enhancement Program (CREP)
- Tree removal and replacement increase project costs
- Tree removal is inconsistent with City's comprehensive land use plan and other area agency land use plans

Mature high-quality oak-hickory riparian forest along alignment



Forested wetland with stake identifying centerline of proposed trunk line sewer

Continued Access Problems

- Multiple Farm Creek crossings will be required to access manholes and perform maintenance
- Manholes will not be accessible during peak flow periods / flood events when access is critical
- Planned crossings will be difficult to maintain and sustain, increasing life-cycle operating costs

Existing ford adjacent to STP-2; Farm Creek washed out portions and further eroded east bank to maintain flow around crossing. Note sizable trees that have been washed down the creek.

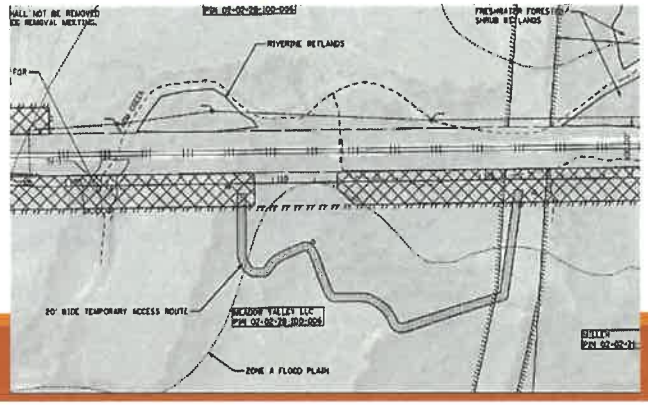
Farm Creek on May 9, 2021 following 2"-3" rainfall, looking NE at the railroad oxbow

Access is Limited

- Access is not continuous along trunk line
  - East half accessible from STP-1 only
  - West half accessible from STP-2 only
- North/south access is not available
  - Landlocked by railroad to north
  - No existing public ROW to south
- Access will be needed through private properties at multiple locations, further impacting property owners
  - Access is not linear along the railroad ROW, but serpentine around cliffs and wetlands
- Construction and maintenance of access roads will increase construction and life-cycle operating costs

Farm Creek, riparian forest, and wetlands looking SW away from railroad oxbow

Farm Creek following moderate rainfall of 2"-3" on May 8-9, 2021; photo taken May 9



Example of serpentine, non-linear access on private property

Source: Pre-Final Engineering for Permitting drawing set, Strand Associates, January 2021, Sheet 8

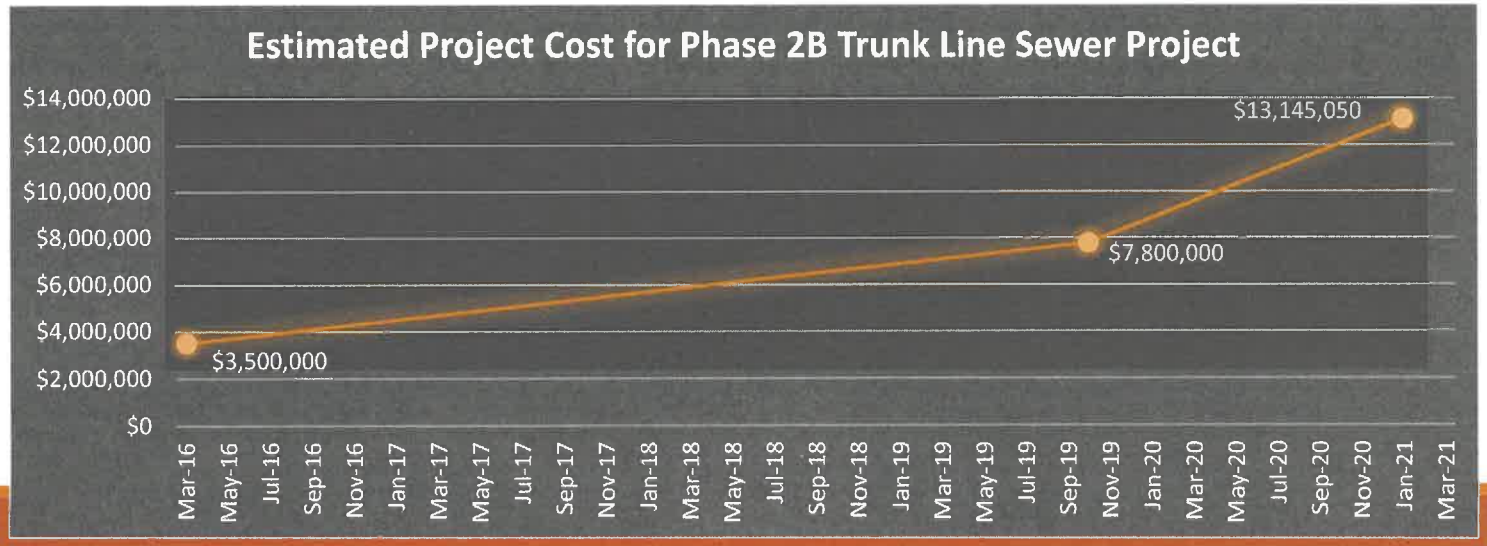
Landowners Have Sought Information & Alternatives for 15+ Months

- Since April 2020, affected landowners have requested additional information and expressed concerns with the proposed Route B alignment
  - Several FOIA requests were not responded to or did not provide information responsive to the request
  - No technical or cost analysis has been provided by the City for any alternatives beyond the Route A and Route B options presented to City Council in October 2019

- Landowners believe alternative alignments can be identified north of Farm Creek
  - Preliminary investigation by landowners has identified multiple reasonable, beneficial, and preferable alignments that should be studied to assess engineering and cost feasibility

Project Cost Escalation Over Time

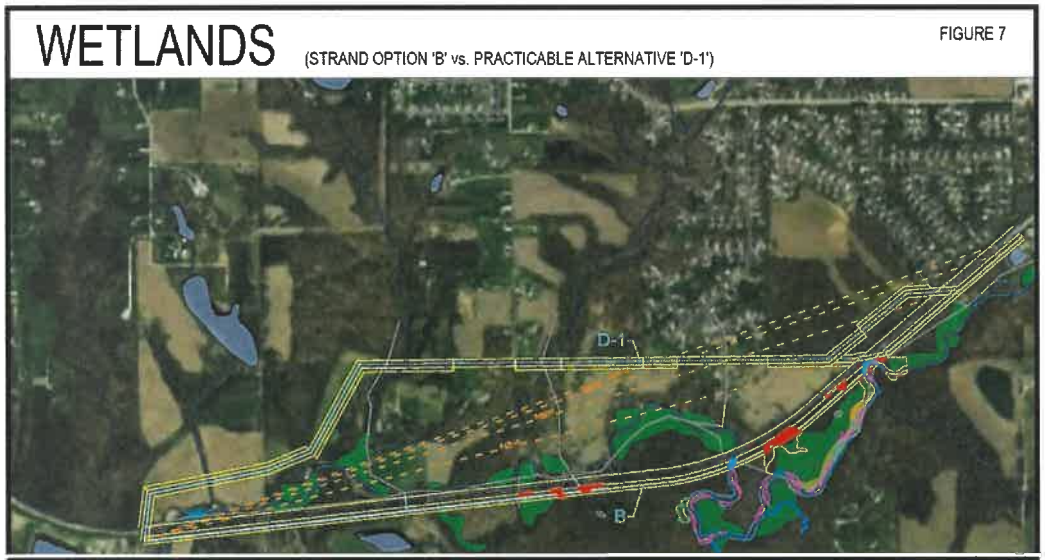
- Project costs have increased significantly as design has proceeded - what is the current OPCC, and what is the City's project budget?
  - Specific impacts to project cost not identified in documents reviewed by landowners
  - No documentation that most recent increase was discussed in City Council or other public meetings
  - Ongoing permitting, permit conditions, and design changes expected to result in more cost increases

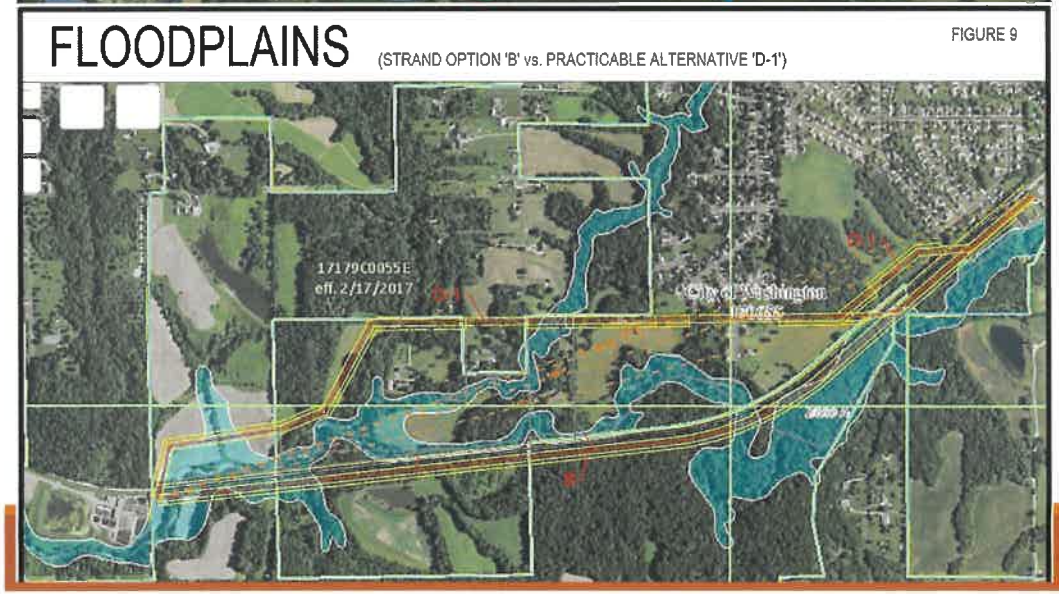


Potential Alternative Alignments Identified by Landowners

Alternative Alignments are Available

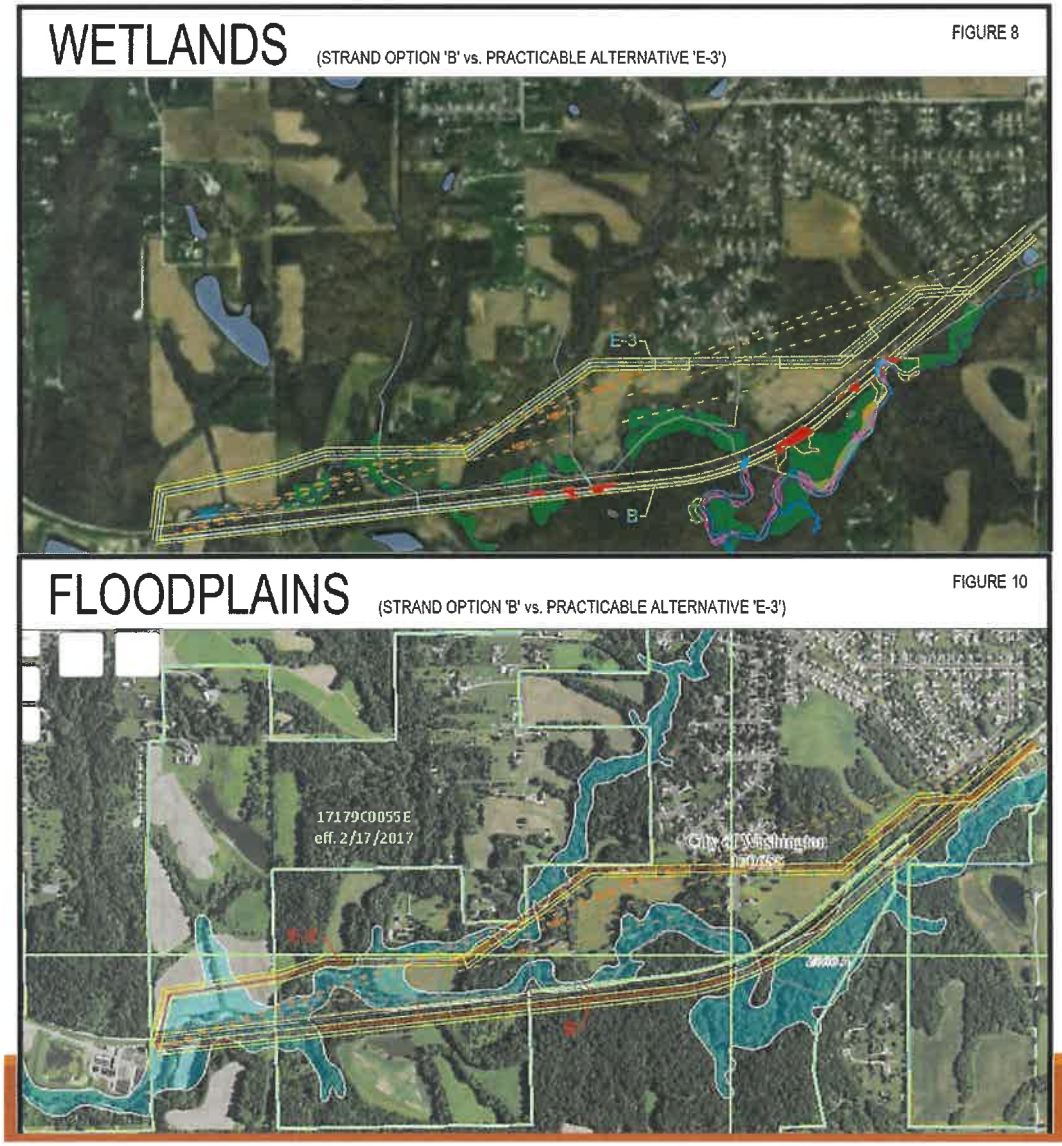
- Significant assumptions and objectives have changed:
  - Alternatives were described as being constrained to slope to final sewer elevation at current STP-2 influent pumping station elevation (630.42 feet MSL); this is no longer at issue, because the pumping station is being replaced concurrent with the trunk line and constructed at a lower elevation (~623 feet MSL)
- Landowners have identified a number of alternatives north of the railroad and Farm Creek that:
  - Avoid Farm Creek and wetland impacts
  - Significantly reduce sewer line presence in floodplain
  - Avoid remnant woodland and protected tree removal impacts
  - Are located predominantly in open access corridors, improving access for construction and maintenance and allowing for quicker land recovery
  - Are located nearer to development, reducing costs to access the sewer
  - Eliminate the need to extend tributary sewers across Farm Creek
  - Consistent with City and other local government planning





Potential North Alternative D-1

- Avoids Farm Creek (0 crossings)
- Avoids wetlands
- Maximizes avoidance of floodplain areas
- Maximizes use of open access corridors
- Meets the tributary sewers
- Utilizes existing and planned public ROW
- Consistent with City's Comprehensive Land Use Plan
- Provides continuous trunk line access with multiple access points
- Potential arrival at STP-2 at existing influent elevation



Potential North Alternative E-3

- Avoids Farm Creek (0 crossings)
- Avoids wetlands in all but one location (200 feet)
- Significantly reduces placement within floodplain (compared to Route B)
- Reduces construction costs
  - Less trenchless construction
  - Fewer jack and bore locations
- Maximizes use of open access corridors
- Meets the tributary sewers
- Utilizes existing and planned public ROW
- Consistent with City's Comprehensive Land Use Plan
- Provides continuous trunk line access with multiple access points
- Potential arrival at STP-2 at existing influent elevation

Potential North Alternatives Appear Preferable to Route B Alignment

Feature / Element	Alternative D-1	Alternative E-3	Route B
Total Linear Feet (inc. trunk and tributary extensions)	10,455	10,205	10,425
Average Manhole Depth	24.04 ft	21.20 ft	22.35 ft
Trenchless Construction	3,100 LF	1,610 LF	3,095 LF
Jack & Bore Locations	8	5	12
Farm Creek Crossings	0	0	6
Floodplain Crossings	610 LF	1,310 LF	3,300 LF
Wetland Crossings	0 LF	200 LF	2,200 LF
Open Access Corridors	7,405 LF (74%)	7,145 LF (73%)	650 LF (7%)
Forest / Forested Riparian	2,570 LF (26%)	2,580 LF (27%)	8,735 LF (93%)
Alignment in Public ROW	2,710 LF (27%)	2,000 LF (21%)	0 LF (0%)

Compared to the Route B alignment, a northern alignment may have:

- Cost savings - both in construction and ongoing operation and maintenance
- Significantly less environmental impacts

- Similar length
- Similar depth
- Similar - or less - trenchless construction
- Fewer jack and bore locations
- Avoid Farm Creek crossings
- Significantly reduce floodplain crossings
- Avoid (or nearly avoid) wetland crossings
- Substantially located in open access corridors, protecting valuable remnant oak-hickory woodlands and tree habitats
- Places approximately ¼ of alignment in existing public right-of-way (existing / planned future streets)
- Closer to generators, minimizing or avoiding tributary extensions

Recommended Steps for Resolution of Concerns

Request Completion of Alternatives Analysis

- Retain engineering consultant to identify and evaluate alternatives north of Farm Creek for comparison to proposed Route B alignment
  - Objective analysis, not impacted by pride of ownership or justification of prior work
  - Transparency and opportunity for public input
  - Drive public buy-in and support for identified preferred alternative before funding and permitting for the project is secured

- Next steps / timing
  - Develop and issue RFP (2 weeks)
  - Secure proposals (30 days to respond)
  - Select consultant by September 15
  - Complete alternatives analysis by December 31
  - Evaluate and select most practicable alignment for project by January 31, 2022

Components of Alternatives Analysis

An alternatives analysis would **identify alternate alignments north of Farm Creek and evaluate cost and environmental impacts** with comparison to proposed Route B alignment. Key considerations include:

- Meets standards for permitting and development
- Avoid flooding and erosive influence of Farm Creek, which is continually changing and is volatile during flood events
- Accessibility during construction and for ongoing maintenance
- Environmental protection for wetlands, floodplain, trees, and other sensitive features
- Number, size, and impact of easements required
- Total project construction cost
- Ongoing O&M costs
- Consistency with City's comprehensive plan and other local / regional agency plans

Benefits to City of Completing Alternatives Analysis

There are **NO negative impacts** to the City as a result of completing the alternatives analysis. Potential impacts are all positive and include:

- Potential for **cost reduction** during construction and/or lifecycle O&M if an alternative alignment is more cost-effective
- Potential for **increased performance** of sewer system if an alternative alignment is more accessible and more easily maintained
- Demonstrated **fiscal and environmental responsibility to City taxpayers**, ensuring the optimal alignment is selected; there is time to complete this prior to submittal of loan application to IEPA
- **Build credibility with, and buy-in from,** affected landowners

Questions / Discussion

Appendix H.
COW Farm Creek RFQ for a 3rd Party Analysis and Addendum

CITY OF WASHINGTON NOTICE OF REQUEST FOR STATEMENTS OF INTEREST AND QUALIFICATIONS: Addendum #1

PROFESSIONAL ENGINEERING SERVICES FOR THE COMPLETION OF a 3rd PARTY ALTERNATIVE ANALYSIS FOR FARMDALE CREEK TRUNK SEWER IN WASHINGTON, ILLINOIS, TAZEWELL COUNTY.

The following portions of the request should be amended as follows:

1. STATEMENTS DUE: 4:00 p.m. WEDNESDAY, September 8, 2021

2. The Critical dates have been shifted back as follows:

Selection will be made according to the following table:

RFQ/QBS placed on City Website	August 12, 2021
Due Date Statement of Interest/Qual.	September 8, 2021 at 4:00 P.M.
Selection Committee Ranks submittals	September 13, 2021
Selection Committee Interviews (If Necessary)	September 14-16, 2021
Committee informs highest ranked team and begin negotiations	September 17, 2021
Contract submitted to Council for approval	October 4, 2021
Executed Contract	October 2021

3. The City may conduct interviews with up to the top three firms.

4. The Criteria for Evaluation will now also include the following:

A) Qualifications of Firm:
- Success of Previous Projects
- Project Understanding
- Overall Gravity Sewer Design Experience

B) Project Management and Key Personnel
- Experience on recent projects of similar size and scope
- Ability to meet schedule and budget on similar projects
- Gravity Sewer Design Experience
- Professional Qualifications

C) Staffing and Workload:
- Staff Capabilities
- Workload capacity and ability to provide range of personnel for tasks

D) Analysis Methodology

5. The new scoring matrix will be as follows:

Criteria	Weight	Rank	Total
Qualifications of Firm	3	10	30
Project Management and Key Personnel	3	10	30
Staffing & Workload	2	10	20
Analysis Methodology	2	10	20
Total Maximum Points			100

** - Total Maximum Points Possible assumes that a team receives a best rank of 10 on all criteria. Ranks range from 0 points to 10 points and 0 points can be applied if the consultant's proposal omits a section.

6. The Selection Committee will be assembled from a combination of the following:

City Engineer
Director of Public Works
Utilities Superintendent
Planning and Development Director
Public Works Committee Chairman
Finance Committee Chairman

CITY OF WASHINGTON NOTICE OF REQUEST FOR STATEMENTS OF INTEREST AND QUALIFICATIONS:

PROFESSIONAL ENGINEERING SERVICES FOR THE COMPLETION OF a 3rd PARTY ALTERNATIVE ANALYSIS FOR FARMDALE CREEK TRUNK SEWER IN WASHINGTON, ILLINOIS, TAZEWELL COUNTY.

STATEMENTS DUE: 4:00 p.m. WEDNESDAY, September 1, 2021

The City of Washington is requesting Statements of Interest and Qualifications from multifaceted professional service firms to assist the City in the completion of a highly transparent 3rd party alternative analysis for the Farm Creek Trunkline Sanitary Sewer Project. The goal of this project is to provide full assistance in analyzing at least five (5) alternative alignments and giving a clear recommendation presentation to City Council. The City of Washington will accept sealed proposals submitted to City Hall, 301 Walnut Street, Washington, Illinois, until 4:00PM Wednesday, September 1, 2021, for establishing a contract with a qualified team.

The notice of Public Advertisement for Professional Engineering Services will be posted to the City of Washington's Webpage (www.ci.washington.il.us), and sent to engineering firms that responded to the City's most recent request for proposals. The advertisement will provide for at least 20 calendar days' notice until all proposals are due on September 1st.

Time is of the essence and any Statement of Interest and Qualifications received after the announced time and date for submittal, whether by mail or otherwise, will be rejected. Teams are responsible for ensuring that the City of Washington receives their Statements before the deadline indicated. Statements received after the announced time and date of receipt, by mail or otherwise, will not be considered. Teams should submit three (3) hard copies and one (1) electronic copy of a Statement of Interest and Qualifications.

1.0 INTRODUCTION

The City of Washington requires professional multifaceted engineering services interested in providing services in the review of sewer alignment alternatives, project cost estimates, environmental impacts, and accessibility issues, for a gravity sanitary sewer collection system connecting the decommissioned wastewater treatment plant 1 to wastewater treatment plant 2.

Funding for the design of this project will be using local funds. Each team will be considered and ranked by a selection committee based upon the criteria listed herein. The City will then enter into negotiations with the top-ranked team. The negotiations will be to establish a detailed scope of services and total cost for services. Should the top-ranked team and the City of Washington not be able to reach an agreement, the City will terminate negotiations with that team and open negotiations with the second ranked team.

This process does not obligate the City to award a contract, or pay any cost incurred in the preparation of the teams responding to this request. The City reserves the right to accept or reject any or all statements received as a result of this request. All information submitted in response to this request will become the property of the City.

2.0 PROJECT DESCRIPTION

The City of Washington requires professional engineering services for the completely transparent 3rd party analysis of at least five (5) previously recognized sanitary sewer alternatives.

Strand and Associates did an initial preliminary study that led to an alignment selection in October of 2019. During land acquisition and final engineering, a second engineering firm was contacted by the affected property owners and other alternatives were brought forward. Each firm had differences in their analysis and the City of Washington is looking for a neutral 3rd party to evaluate all previously recognized alternatives and offer an opinion on preferred alignment for the City to move forward with.

Firms must acknowledge they have received electronic copies of the Preliminary Engineering Study for the Farm Creek Trunk Sewer, the presentation made by Aptim on behalf of the property owners, and the presentation given by Strand for their proposal to be considered. Copies of these can be obtained by emailing the City Engineer, Dennis Carr, at dcarr@ci.washington.il.us

3.0 GENERAL SCOPE OF SERVICES

The scope of services sought by the City of Washington shall include professional engineering related to the Project. The goal of the project is to analyze sanitary sewer alignment alternatives.

The scope shall include identifying that the alignments meet professional standards, their potential for flooding, accessibility both during and after construction, environmental impacts, easements required, and construction cost.

The following should also be included in the scope of services:

3.1 MEETINGS, PUBLIC INVOLVEMENT, AND REPORTS

An initial meeting and various project meetings may be required with City staff. Meetings with individual property owners may also be needed. Periodic reports to City staff on the progress of the project are required. A report of findings and subsequent recommendation should be made to the City Council.

3.2 DELIVERABLE PRODUCTS

The selected team shall provide all deliverable products to the City of Washington staff for approval and dissemination. Hard copies and electronic copies of the deliverables will be required. The number of hard copies will depend on the deliverable. Electronic format for all submittals will be required as well. Deliverables include:

1. Alternative Analysis
    a. Field investigations and data gathering;
    b. Prepare detailed Alternative Exhibit
    c. Analyze each alignment
        i. Offer any alignment modifications for betterment of project
    d. Summarize the Analysis
    e. Present Findings to the City Council

2. This analysis is intended to be completely transparent. Upon execution of a contract, all information will be available for public review
    a. Copies of all emails and phone call summaries shall be included in a communications file upon completion of the project.
    b. All documents created for analysis purpose shall be included in a project file upon completion of the project.

4.0 PROJECT DURATION

It is anticipated that, after a team is selected, the engineering process will start in September 2021 and will have 3-4 months to perform an analysis with a presentation to be made to the City Council in early 2022.
Specific timelines will be mutually agreed upon between the selected team and the City.

5.0 INVOICES AND PAYMENT

The selected team shall submit invoices at the end of each calendar month; such statements shall be inclusive of a detailed breakdown of all charges incurred. The team lead shall review and approve any such invoice. The invoice detail shall indicate the personnel name, title, rate of pay, hours charged per day, and task worked. All direct costs and subconsultants/vendor participation shall be itemized. Multipliers will be clearly indicated and applied to total man-hours summated for the period. Invoices shall be based upon actual hours of performance.

6.0 CRITICAL DATES

Selection will be made according to the following table:

RFQ/QBS placed on City Website	August 12, 2021
Due Date Statement of Interest/Qual.	September 1, 2021 at 4:00 P.M.
Selection Committee Ranks submittals	September 3, 2021
Committee informs highest ranked team and begin negotiations	September 7, 2021
Contract submitted to Council for approval	September 13, 2021
Executed Contract	September 2021

7.0 EVALUATIONS OF QUALIFICATIONS

Respondents are to submit a written Statement of Interest and Qualifications for the project which presents the team's qualifications and understanding of the work to be performed.

Please Provide:

1. General work plan that demonstrates the Firm’s complete understanding of the scope of work.
2. Firm’s comparable recent experience
3. Overall qualifications of project’s managers and key personnel.
4. Experience in developing route options, environmental impacts, and construction issues.
5. Name, size and brief description of the firm/team.
6. Location of offices for the firm and the office location responsible for managing the project.
7. Name, address, and phone number of a contact person responsible for and knowledgeable of the submittal. Resumes of key personnel anticipated being available for this project.

Offerors will need to address each of the evaluation criteria set forth in Section 9 carefully and thoroughly, as all submittals will be ranked on a point value system, per Section 10. The evaluation will be based upon a head-to-head comparison with the other teams submitting.

The selection will be on the basis of the following:
1. Scored Statement of Interest and Qualifications.
2. The City will not conduct interviews.

7.1 SUBMITTAL FORMAT

The submittal should be as concise as possible. Additional promotional information should be avoided. See the page limits listed below. One page equals one side of a sheet of paper. Three (3) hard copies and one (1) electronic copy of the submittal will be required.

8.0 CRITERIA FOR EVALUATION

A) Qualifications of Firm:

Success of Previous Projects
Project Understanding
Overall Gravity Sewer Design Experience

B) Project Management and Key Personnel

Experience on recent projects of similar size and scope
Ability to meet schedule and budget on similar projects
Gravity Sewer Design Experience
Professional Qualifications

C) Staffing and Workload:

Staff Capabilities
Workload capacity and ability to provide range of personnel for tasks

9.0 SELECTION PROCEDURE

Each criterion in the evaluation will be ranked on a scale of 0 to 10, where 10 equals the highest ranking of submittals received. A rank of 10 for any criterion indicates the most qualified team for that criterion. Each numerical ranking will be multiplied by the weighted value below. A total point value for each submittal will be determined by the composite evaluation of the Selection Committee, each providing his/her independent scores. Individual scores will be averaged for a committee score. The team with the highest overall point total will be ranked first.

Criteria	Weight	Rank	Total
Qualifications of Firm	3	10	30
Project Management and Key Personnel	5	10	50
Staffing & Workload	2	10	20
Total Maximum Points			100

** - Total Maximum Points Possible assumes that a team receives a best rank of 10 on all criteria. Ranks range from 0 points to 10 points and 0 points can be applied if the consultant's proposal omits a section.

The City of Washington will not have in person interviews for this Project.

The Selection Committee will be assembled from a combination of the following:
City Engineer
Director of Public Works
Utilities Superintendent
Planning and Development Director

The Selection Committee will determine the best qualified team by consensus. The electronic version of each proposal will be made public on the City's Website. The City reserves the right to waive technicalities and to reject any or all Statements of Interest and Qualifications.

The City Administrator or his designee shall institute negotiations with the best-qualified firm per committee consensus. The firm shall provide fee structure, multipliers, staffing, direct and indirect costs in a competitive manner at the negotiation of the contract.

The City Administrator shall submit the proposed contract, with negotiated rates, to the Washington City Council for the Contract Award.

10.0 CONFLICT OF INTEREST

The City of Washington procedures require consultants to submit a disclosure statement with their Proposal.

10.1 SUSPENSION AND DEBARMENT

The City of Washington's procedures require verification of suspension and debarment actions to ensure the eligibility of firms short-listed and selected for projects. The City uses the SAM Exclusions and IDOT's CPO's website to verify suspensions and debarments.

11.0 OMMISSION OF SCOPE

Please indicate if you believe a major item(s) is (are) missing from scope of services outlined in the RFQ.

12.0 QUESTIONS

Questions or comments regarding the request or the process related to the request should be submitted via email to the City Engineer, Dennis Carr, at dcarr@ci.washington.il.us.

Appendix I.
Table 6.1, Flow Monitoring Results Detailed Analysis

Appendix I.

Expanded Table 6.1
Flow Monitoring Results

Information from *Table 2.02-3 Wet Weather Flow Metering Data*

Flowmeter	Location	Average Dry Flow (gpm)	Peak Day Recorded (gpm)	Excess Flow (gpm)	Check for Accuracy	Peaking Factor	Typical Peaking Factor
FM 1 [1]	Basin 1	179	2,290	2,111		12.79	3.50
FM 2 [1]	FCTS U/S of STP 2	1,024	12,114	11,090		11.83	2.79
FM 3 [2]	Basin 3	17	139	122	**3 + 4 + 5 = 2?, No** [4]	8.18	4.11
FM 4	Basin 4	349	909	560		2.60	3.24
FM 5	FCTS U/S of Basin 4	981	11,470	10,489		11.69	2.80
FM 6 [3]	FCTS U/S of STP 1	633	11,671	11,038	**5 ≥ 6?, No** [5]	18.44	2.99
FM 7	Basin 7	56	3,142	3,086		56.11	3.86
FM 8	Basin 8	636	9,584	8,948	**7 + 8 + 9 < 6?, No** [6]	15.07	2.99
FM 9	Basin 9	78	3,391	3,313		43.47	3.77
Total Input Flows to STP 2 from East [7]		1,136	17,165	16,029		15.11	2.74
Total Flows to STP 2, 1 + 2		1,203	14,404	13,201		11.97	2.72
Total Input Flows to STP 2 [8]		1,315	19,455	18,140		14.79	2.68

[1] Results are lower than actual due to flow interference
[2] Flow meter was not present during the peak flows recorded at other locations
[3] Flow records may be innaccurate due to uprstream overflows
[4] Excess Flow from 3 +4 +5 = 11,171 gpm, 2 = 11,090 gpm, no flow added from FCTS this reach
[5] Overflows at MH 240 and MH 245 may account for this discrepency
[6] The sum of 7 + 8 + 9 = 15,347 gpm, but only 11,038 gpm was recorded at FM 6 due to probable upstream overflows
[7] 3 + 4 + 7 + 8 + 9
[8] 1 + 3 + 4 + 7 + 8 + 9

Appendix J.
Engineer's Opinion of Probable Construction Costs, And Alignment and Profiles for Each Alternative

Strand Associates, Inc. July 26, 2021

Appendix J-1

Project: **Farm Creek Trunk Sewer Replacement**
Owner: **City of Washington Illinois**

Item No.	Description	Units	Estimated Unit Price	ENGINEER'S OPCC (ROUTE B) Preliminary Engineering Report OPCC Estimated Quantity	Estimated Probable Cost
	FOUNDATION MATERIAL	CY	$52.00	417.12	$21,690.00
	RESTORATION-SEED, class 2 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	4.3	$41,707.67
	RESTORATION-SEED, class 4/5 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	4.3	$41,707.67
	RESTORATION-SEED, class 4B/5B (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	4.3	$41,707.67
	PERIMETER EROSION BARRIER	FT	$4.00	7508	$30,032.00
	TREE REMOVAL (OVER 6 UNITS DIAMETER)	EA	$12.00	7508	$90,096.00
	STABILIZED CONSTRUCTION ACCESS	EA	$6,000.00	0	$0.00
	SANITARY SEWER, 42-IN HOBAS - OPEN CUT	LF	$350.00	9385	$3,284,750.00
	SANITARY SEWER, 42-IN HOBAS - TRENCHLESS	LF	$896.55	1740	$1,560,000.00
	SANITARY SEWER, 12-IN PVC SDR 26 - OPEN CUT	LF	$80.00	520	$41,600.00
	SANITARY SEWER, 18-IN PVC SDR 26 - OPEN CUT	LF	$140.00	220	$30,800.00
	SANITARY SEWER, 42-IN HOBAS - BORE AND JACK 60" STEEL CASING (RAILROAD CROSSING)	LF			$0.00
	TRENCHLESS CONSTRUCTION, 8-IN SANITARY SEWER WITH 20-IN STEEL CASING	LF	$400.00	140	$56,000.00
	TRENCHLESS CONSTRUCTION, 18-IN SANITARY SEWER WITH 30-IN STEEL CASING	LF	$450.00	280	$126,000.00
	NEW 12-IN INSIDE EXISTING 30-IN	LF	$1,250.00	12	$15,000.00
	PROTECT EXISTING SANITARY SEWER AT CROSSINGS	EA	$4,000.00	3	$12,000.00
	ABANDONMENT OF EXISTING SANITARY MANHOLES	EA	$2,000.00	39	$78,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, LESS THAN 20' DEEP	EA	$9,000.00	14	$126,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 20' TO 25' DEEP	EA	$12,000.00	3	$36,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 25' TO 30' DEEP	EA	$15,000.00	1	$15,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 30' TO 35' DEEP	EA	$18,000.00	1	$18,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 35' TO 40' DEEP	EA	$21,000.00	1	$21,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 40' TO 45' DEEP	EA	$25,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 45' TO 50' DEEP	EA	$26,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 50' TO 55' DEEP	EA	$28,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 55' TO 60' DEEP	EA	$30,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 60' TO 65' DEEP	EA	$31,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 65' TO 70' DEEP	EA	$32,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 70' TO 75' DEEP	EA	$33,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 75' TO 80' DEEP	EA	$34,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 80' TO 85' DEEP	EA	$35,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 85' TO 90' DEEP	EA	$42,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 90' TO 95' DEEP	EA	$45,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, 90' TO 95' DEEP	EA	$50,000.00		$0.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA CONSTRUCTED ON EXISTING SEWER PIPE	EA	$12,000.00	3	$36,000.00
	SANITARY MANHOLE, TYPE A, 8-FT DIA, LESS THAN 20 FT DEEP	EA	$18,000.00	5	$90,000.00
	SANITARY MANHOLE, TYPE A, 8-FT DIA, 20 -25 FT DEEP	EA	$22,000.00	3	$66,000.00
	SANITARY MANHOLE, TYPE A, 8-FT DIA JUNCTION MANHOLE	EA	$20,000.00	2	$40,000.00
	OUTSIDE DROP MANHOLE CONNECTION, 18"	EA	$8,000.00	1	$8,000.00
	SUBTOTAL CONSTRUCTION				**$5,927,091.00**
	MOBILIZATION (CONTRACTOR PROFIT, BONDS, INSURANCE)	LS		2%	$118,541.82
	ENGINEERING AND LEGAL	LS		5%	$296,354.55
	TOTAL BASE PROJECT				$6,341,987.37
	Contingencies - Base			25.00%	$1,481,772.75
	Total - Base Project w/ Contingencies				**$7,823,760.12**

Alt. A, Stand Align B - South Gravity

WASHINGTON SEWER MAIN EASEMENTS

Date: 2/11/2022

Property Owner	PIN	EASEMENT							
		Station			Permanent		Temp		
		From	To	Length (Foot)	Width (Foot)	Area (Acre)	Width (Foot)	Area (Acre)	
NORTH SIDE OF TP&W UNLESS OTHERWISE NOTED									
City of Washington	02-02-28-100-003	0+00	103+38	340					
Meadow Valley, LLC (Gary Deiters) - S/o TP&W	02-02-28-100-006	103+38	116+60	1,322	50	2.07	30	2.43	1, 2
Meadow Valley, LLC (Gary Deiters) - N/o TP&W	02-02-28-100-006							0.17	
Sally Plattner	02-02-28-200-006				20	1.07			3
Sam & Carol Miller - S/o TP&W	02-02-28-200-003	116+60	143+50	2,690	50	3.59	30	4.94	1, 2
Sam & Carol Miller - N/o TP&W	02-02-28-200-003				30	0.06			
Goat Springs, LLC	02-02-27-100-005	143+50	156+85	1,335	50	1.57	30	0.94	4
Katherine Franzen	02-02-27-100-008				20	0.31			3
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-011				30	0.06			
Jack S Pudik	02-02-27-100-006	156+85	185+62	2,877	50	3.57	30	2.03	1, 4
City of Washington	02-02-22-400-015	185+62	188+20						
	02-02-22-400-012	188+20	204+98						
	02-02-23-302-007	204+98	211+20						

[1]Permanent Easement includes Ingress/Egress Easements

[2]Temporary Easement includes Permenant Easement Acreage as provided in Strand documents

[3]Easement is an Ingress/Egress route for sewer access

[4]Easement documents were not provided and were calculated by HCE.

Alternative B
Pudik L-1

FARM CREEK TRUNK SEWER REPLACEMENT
City of Washington, Illinois

HCE Date: 2/9/2022

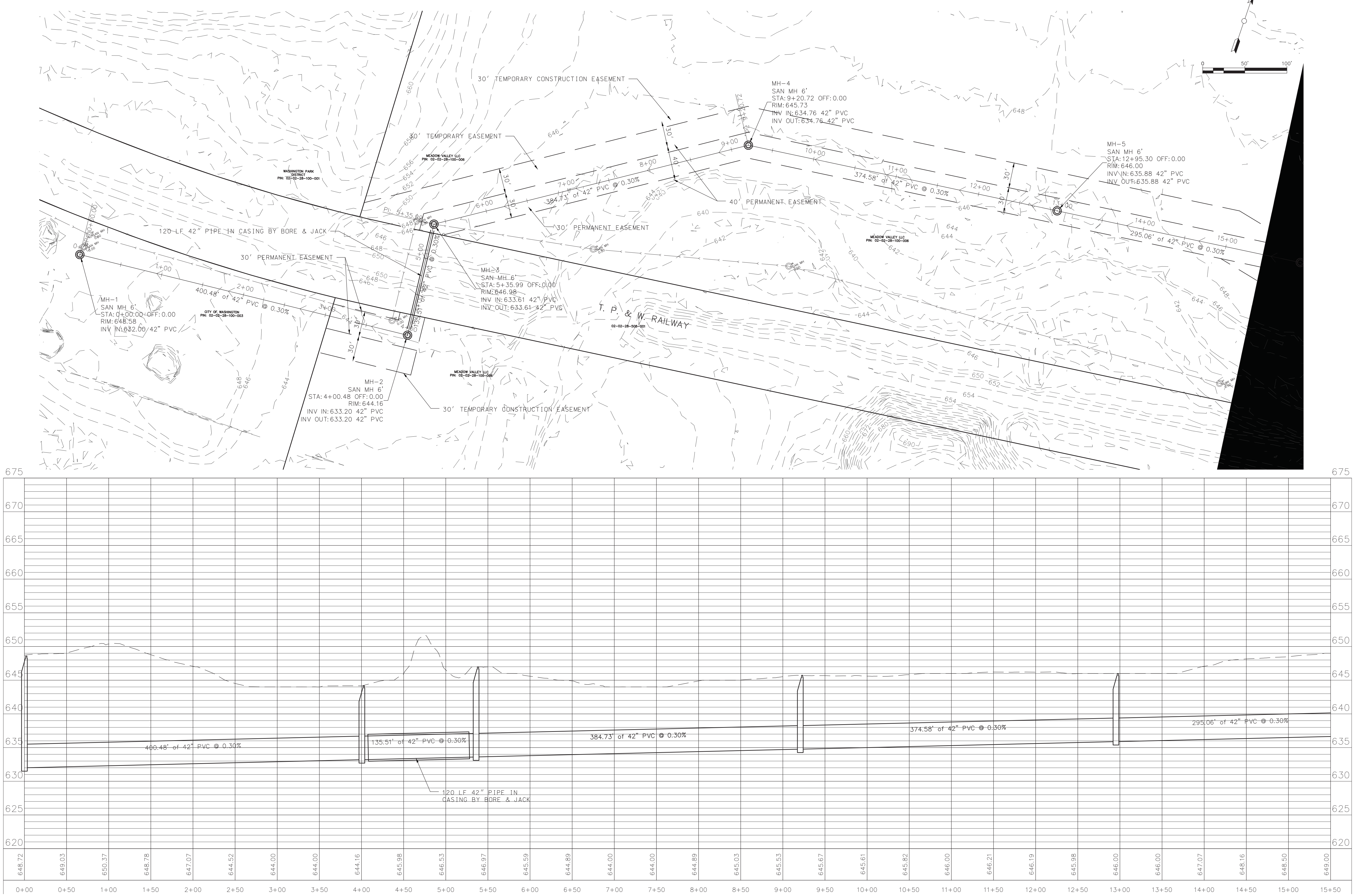
Description	Units	Estimated Unit Price	ENGINEER'S OPCC Third Party Analysis EOPCC	
FOUNDATION MATERIAL	CY	$52.00	825.00	$42,900.00
RESTORATION-SEED, class 2 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	2.8	$27,032.74
RESTORATION-SEED, class 4/5 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	2.8	$27,032.74
RESTORATION-SEED, class 4B/5B (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	2.8	$27,032.74
PERIMETER EROSION BARRIER	FT	$4.00	20,456	$81,824.00
CLEAR & GRUB	ACRE	$2500.00	2.6	$6,500.00
STABILIZED CONSTRUCTION ACCESS	EA	$6,000.00	2	$12,000.00
SANITARY SEWER, 42-IN HOBAS - OPEN CUT	LF	$350.00	5565	$1,947,750.00
SANITARY SEWER, 42-IN HOBAS - TRENCHLESS	LF	$896.55	3028	$2,714,753.40
SANITARY SEWER, 42-IN HOBAS - BORE AND JACK 60" STEEL CASING	LF	$1,000.00	2990	$2,990,000.00
PROTECT EXISTING SANITARY SEWER AT CROSSINGS	EA	$4,000.00	3	$12,000.00
ABANDONMENT OF EXISTING SANITARY MANHOLES	EA	$2,000.00	3	$6,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, LESS THAN 20' DEEP	EA	$9,000.00	28	$252,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 20' TO 25' DEEP	EA	$12,000.00	4	$48,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 25' TO 30' DEEP	EA	$15,000.00	1	$15,000.00
SUBTOTAL CONSTRUCTION				$8,209,825.62
MOBILIZATION (CONTRACTOR PROFIT, BONDS, INSURANCE)	LS		2%	$164,197.00
ENGINEERING AND LEGAL	LS		5%	$410,491.00
TOTAL BASE PROJECT				$8,784,513.62
Contingencies - Base				25%
Total - Base Project w/ Contingencies				$10,980,642.00

Alt. B, Pudik Align L-1 - South Gravity

WASHINGTON SEWER MAIN EASEMENTS

Date: 2/11/2022

Property Owner	PIN	EASEMENT						
		Station			Permanent		Temp	
		From	To	Length (Foot)	Width (Foot)	Area (Acre)	Width (Foot)	Area (Acre)
NORTH SIDE OF TP&W UNLESS OTHERWISE NOTED								
City of Washington - S/o TP&W	02-02-28-100-003	0+00	3+05	305				
Meadow Valley, LLC (Gary Deiters) - S/o TP&W	02-02-28-100-006	3+05	4+25	120	30	0.08	30	0.08
Meadow Valley, LLC (Gary Deiters) - N/o TP&W	02-02-28-100-006	5+25	18+34	1,309	30	0.92	30	0.92
Sam & Carol Miller	02-02-28-200-003	18+34	20+02	168	30	0.12	30	0.12
Sally Plattner	02-02-28-200-006	20+02	36+12	1,610	30	1.13	30	1.13
Kenneth & Susan Wegand	02-02-28-200-007	36+12	45+97	985	30	0.69	30	0.69
Katherine Franzen	02-02-27-100-009	45+97	50+96	499	30	0.35	30	0.35
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-011	50+96	59+86	890	40	0.84	30	0.63
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-011	59+86	69+87	1,001	50	1.18	30	0.71
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-101-005	69+87	73+81	394	20	0.19		
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	73+81	83+90	1,009	40	0.95	30	0.71
Firethorn, LLC	02-02-22-400-014	83+90	95+99	1,209	40	1.14	30	0.85
Firethorn, LLC	02-02-22-400-014	95+99	97+44	145	40	0.14		
City of Washington - S/o TP&W	02-02-22-400-012	99+44	109+34	990				
City of Washington - S/o TP&W	02-02-23-302-007	109+34	115+78	644				



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HAMILTON CONSULTING ENGINEERS, INC.
3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

REVISIONS	DATE
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ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
STA 0+00 TO STA 15+50

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
DATE 2-2-2022
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SHEET 1 OF 8

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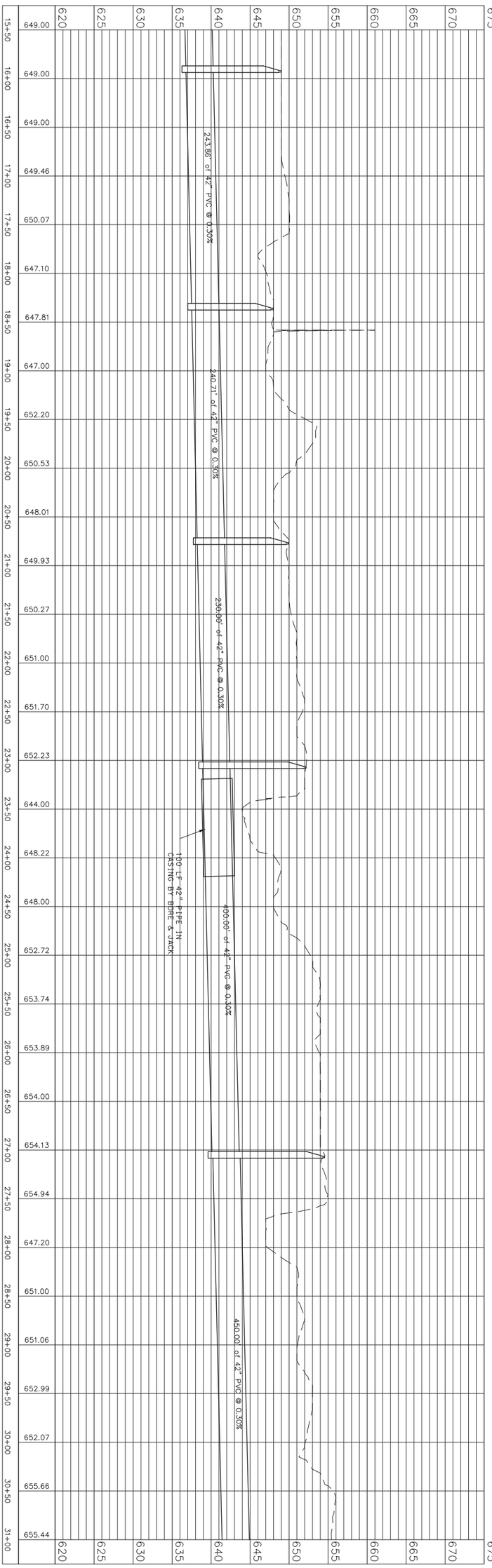

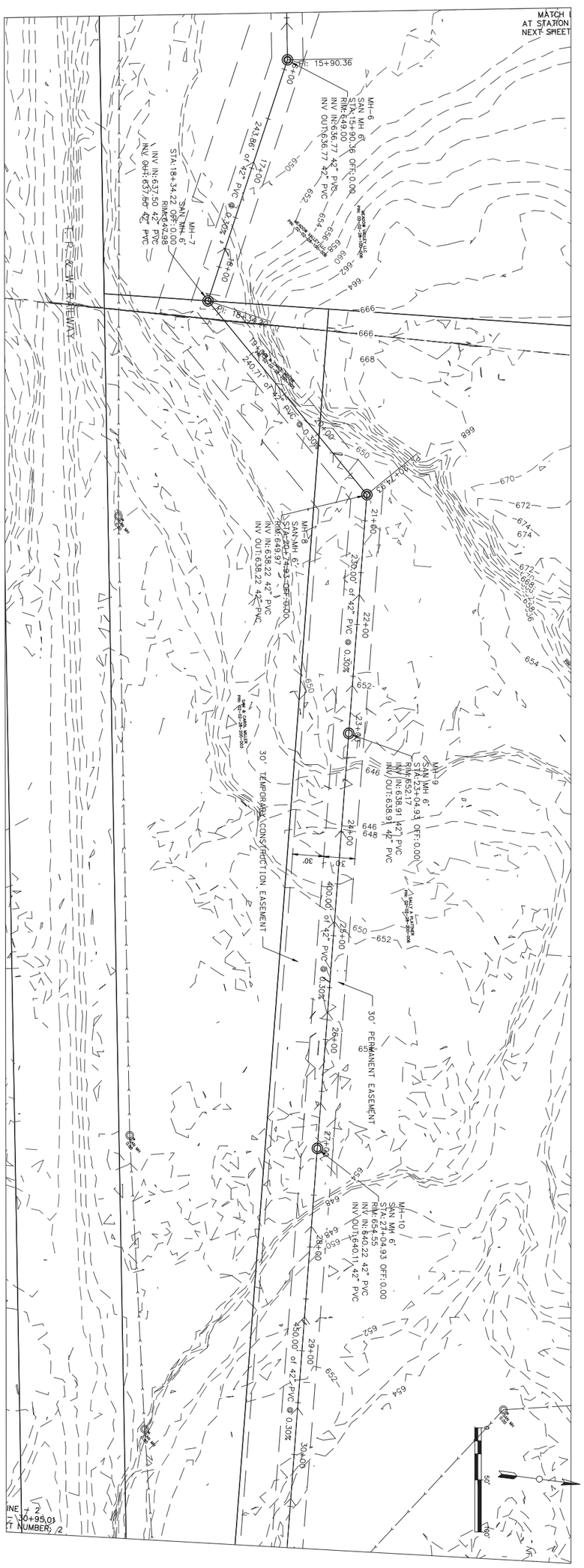

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CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
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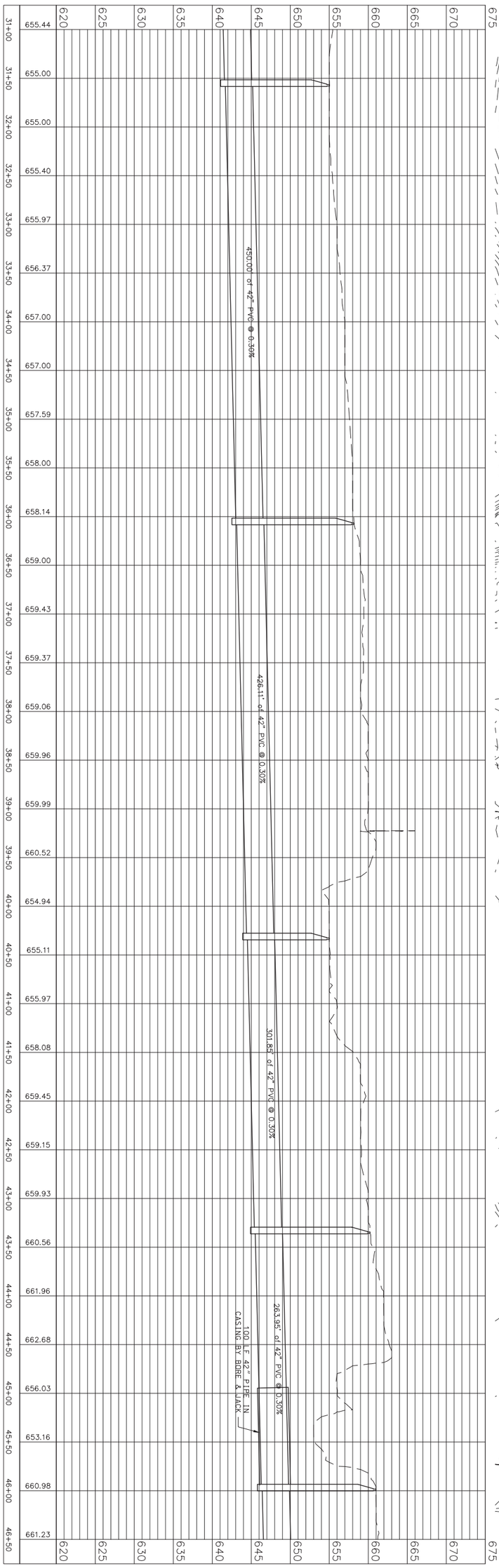

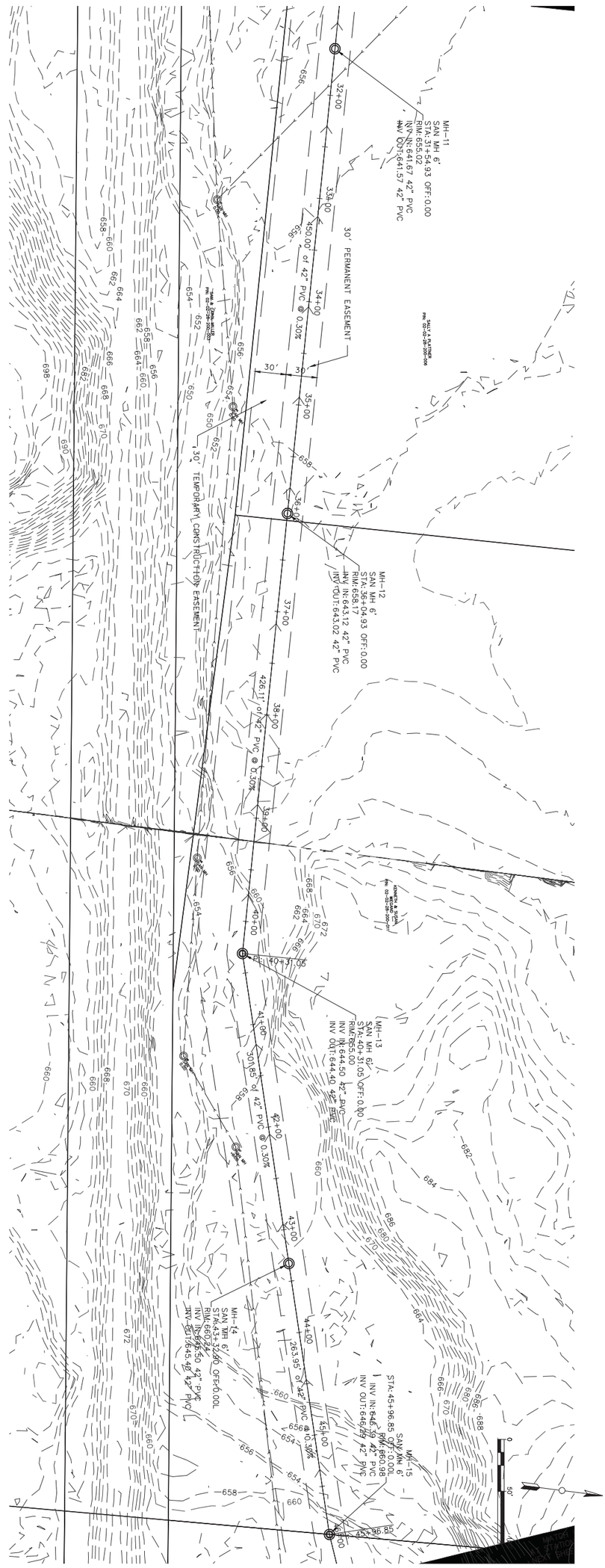

SHEET	SCALE	DESIGN	DRAWN	PROJECT NO.
3 OF 8	1" = 50'	DATE 2-2-2022	DWS	21911

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
STA 31+00 TO STA 46+50

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HAMILTON CONSULTING ENGINEERS, INC.
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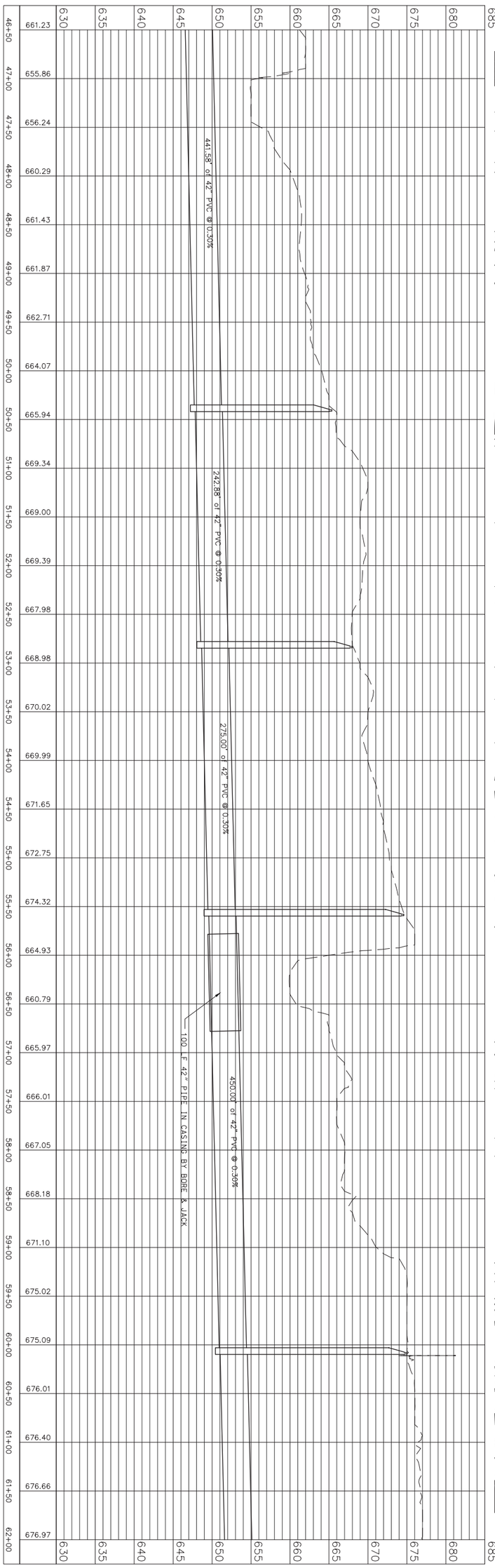

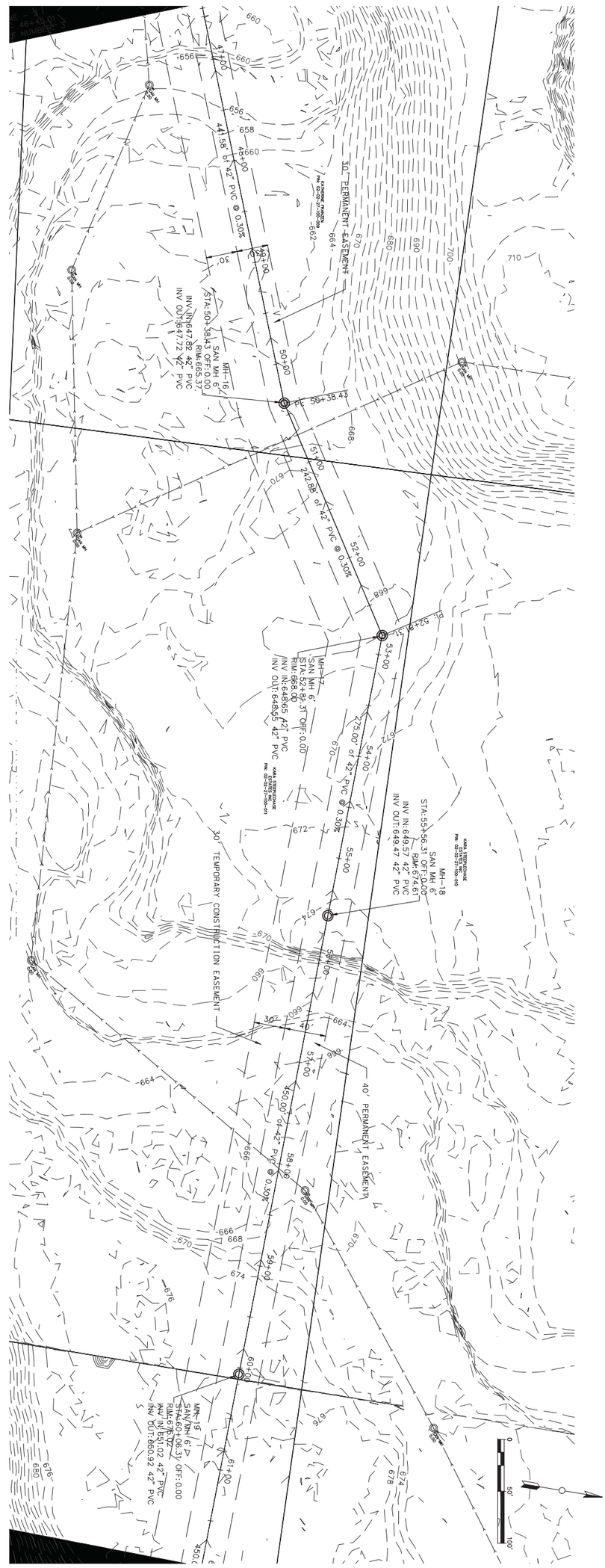

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SCALE	1" = 50'
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DESIGN	DWS
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CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
STA 46+50 TO 62+00

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3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

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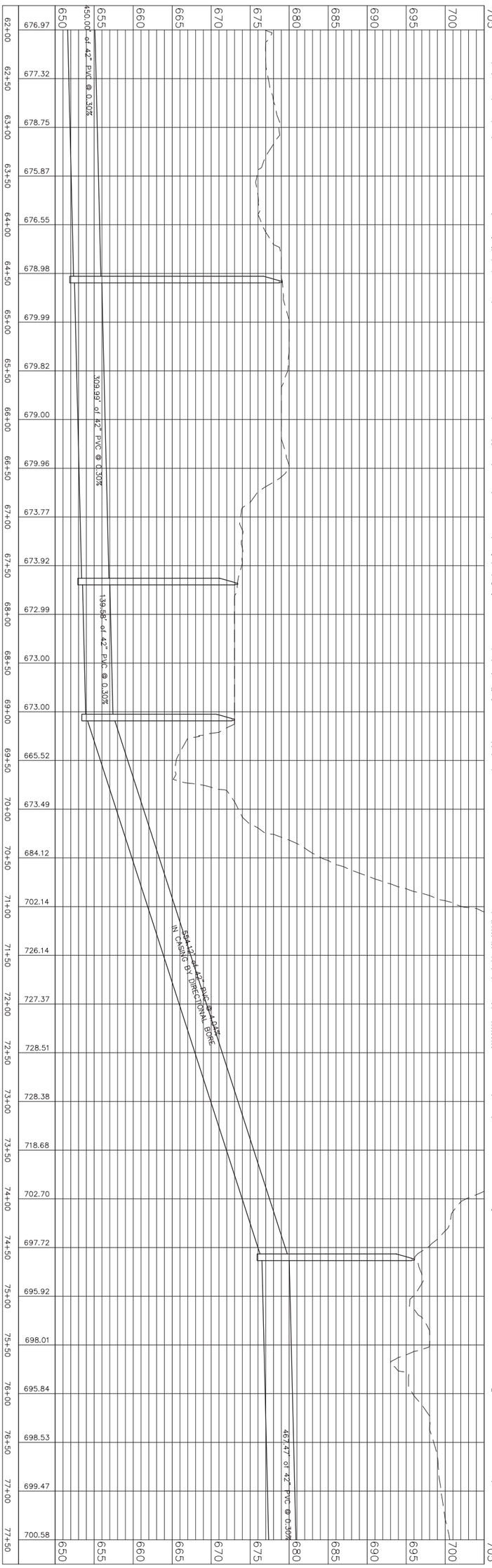

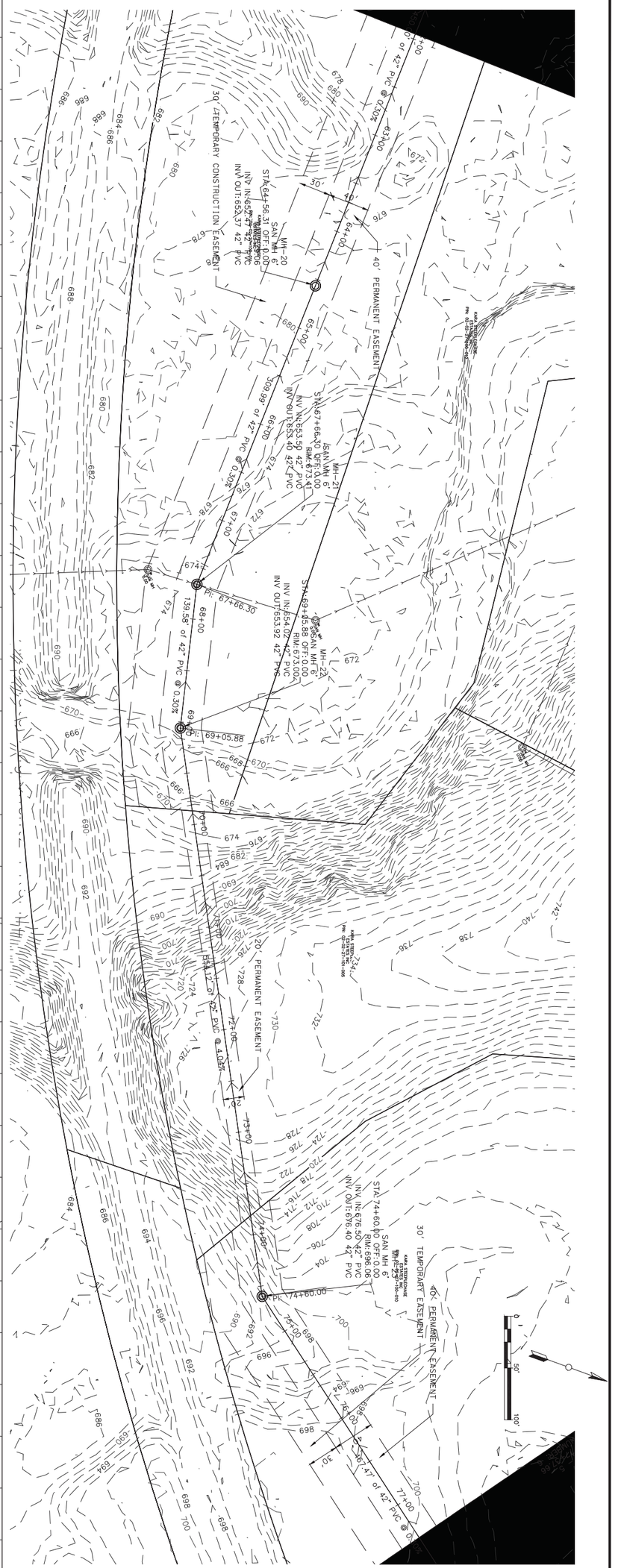

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
STA 62+00 TO STA 77+50

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HAMILTON CONSULTING ENGINEERS, INC.
3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

SHEET 5 OF 8
PROJECT NO. 21911
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DATE 2-2-2022
SCALE 1"=50'

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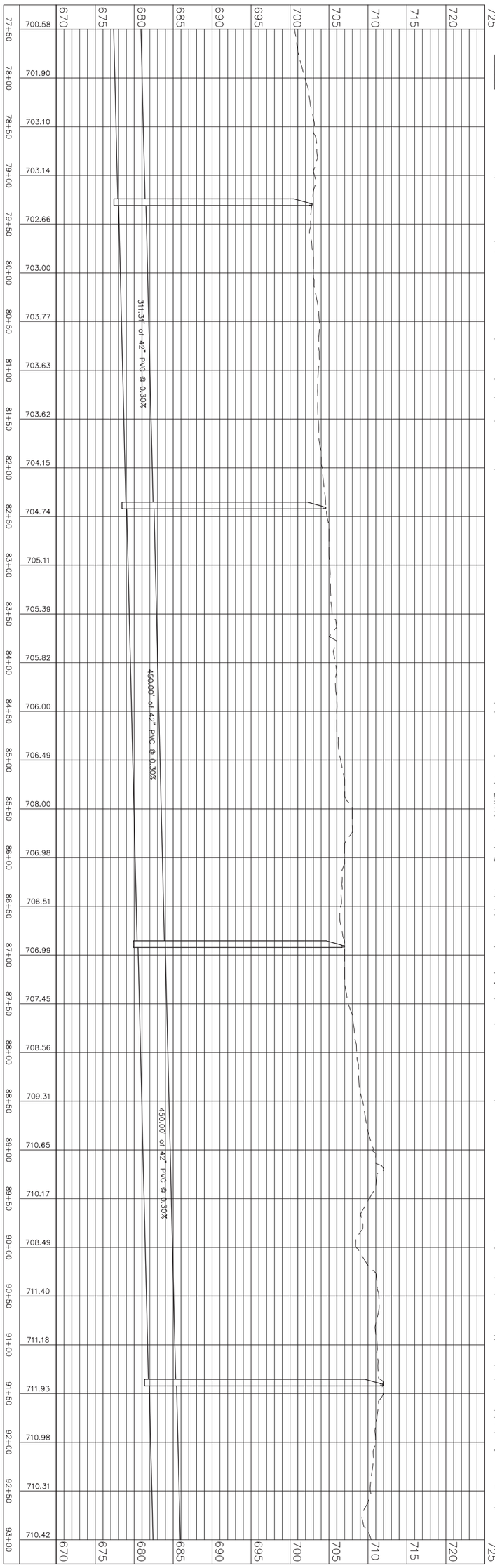

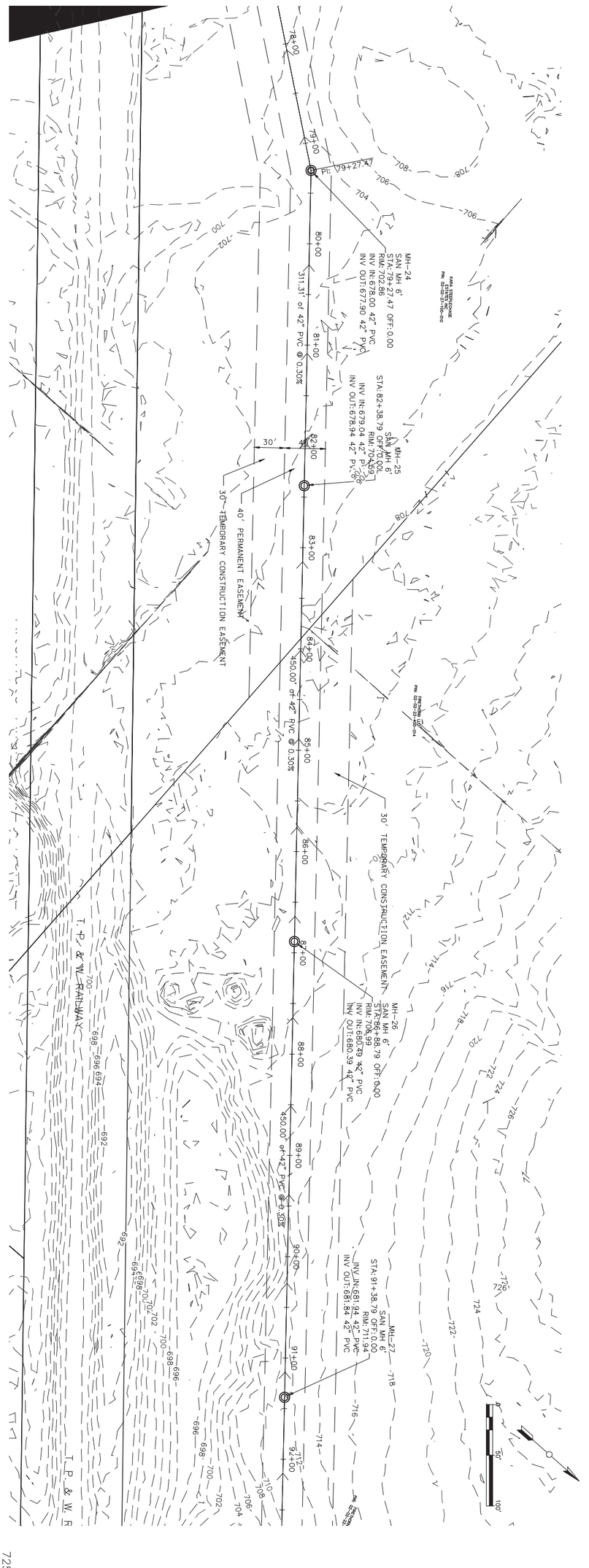

SHEET	6 of 8
SCALE	1" = 50'
DATE	2-2-2022
DESIGN	DRAWN: DWS, CHECKED
PROJECT NO.	21911

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
STA 77+50 TO STA 93+00

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3230 Executive Drive, Joliet, Illinois 60431
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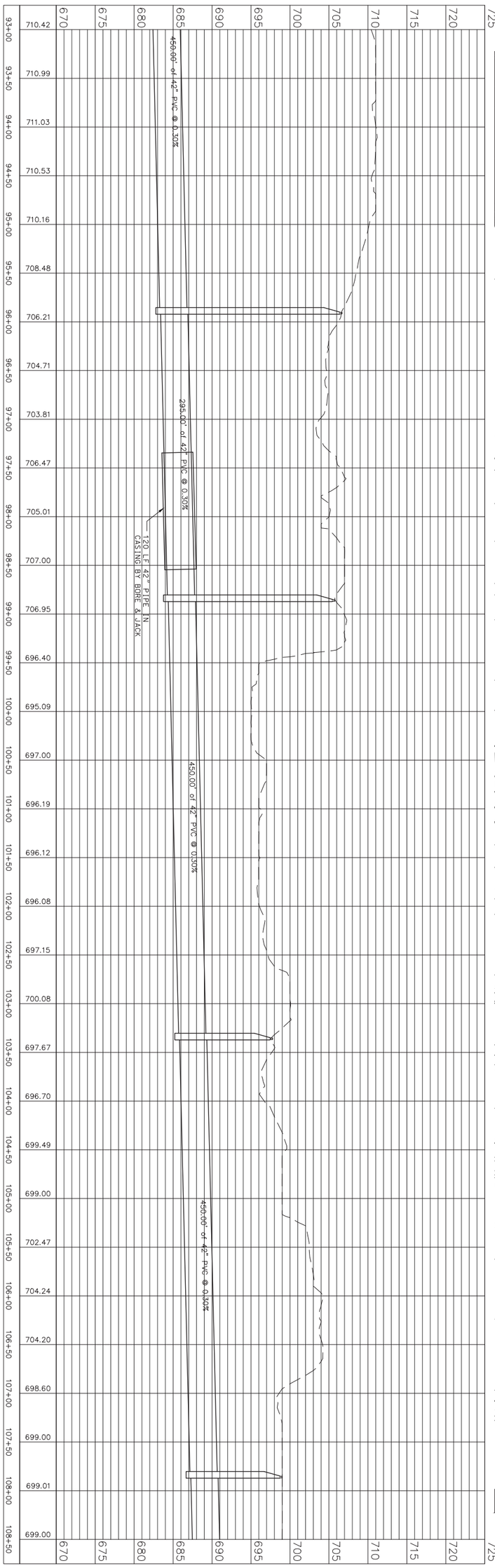

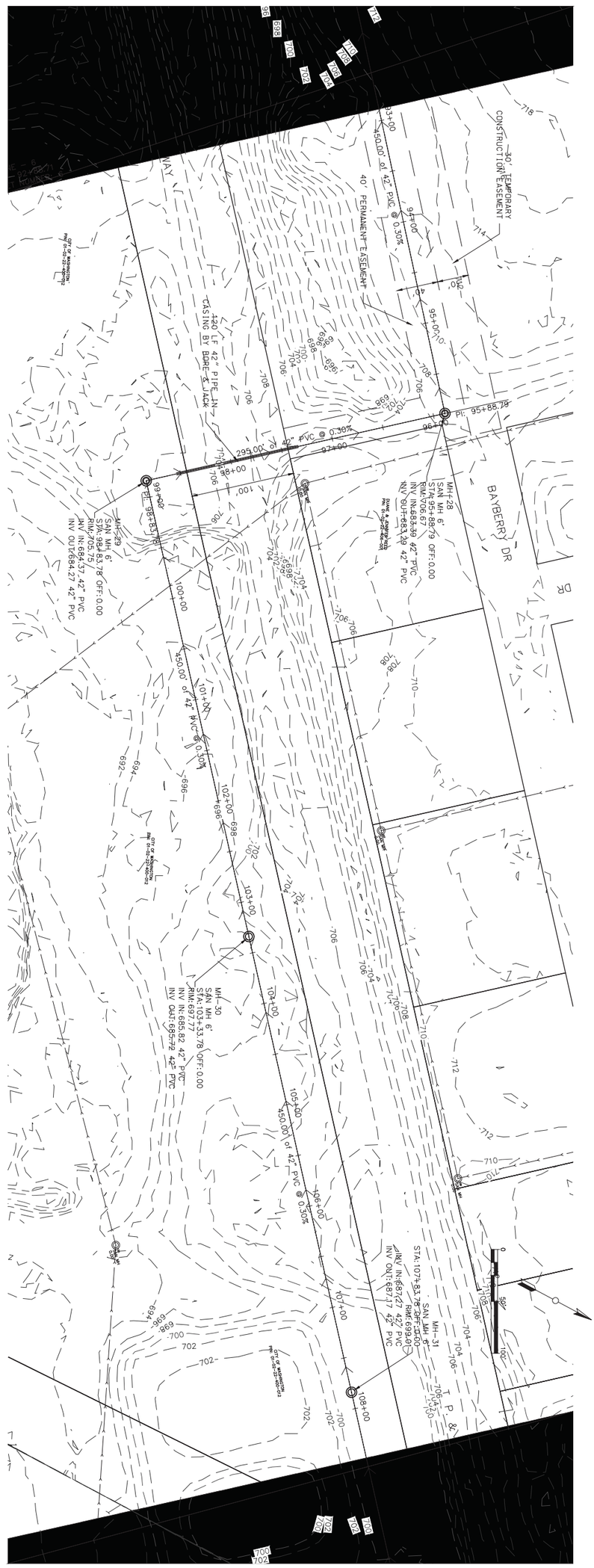

SHEET	SCALE	DATE	DESIGN	DRAWN	PROJECT NO.
7 of 8	1" = 50'	2-2-2022	CHECKED	DWS	21911

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
STA 93+00 TO STA 108+50

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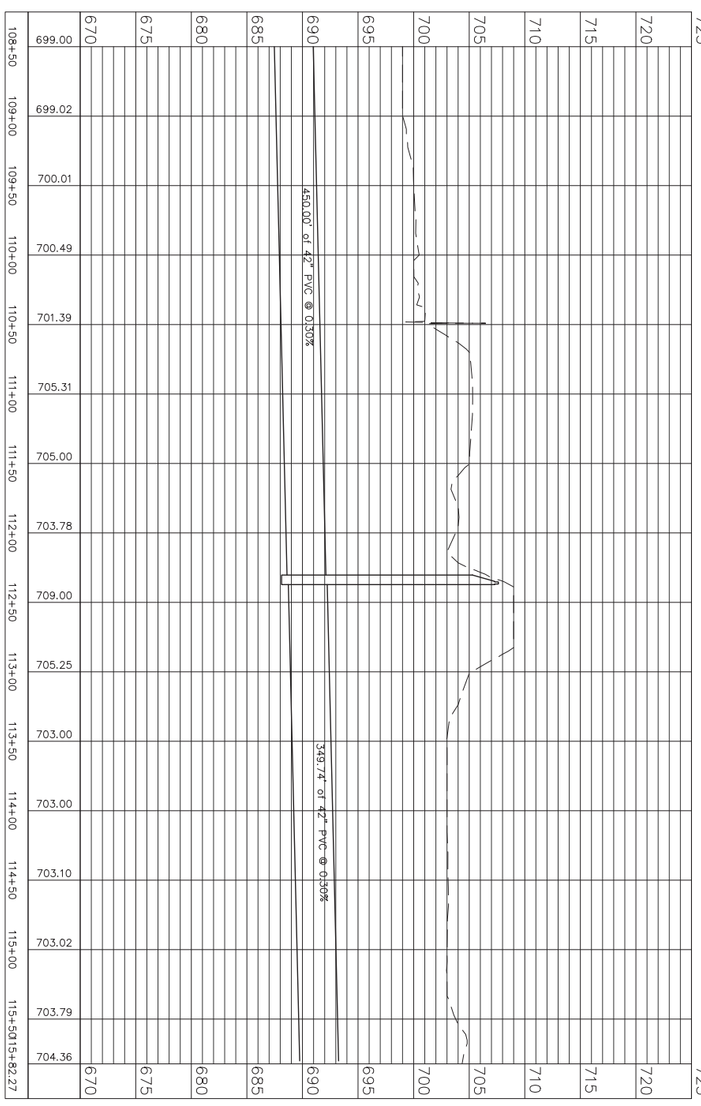

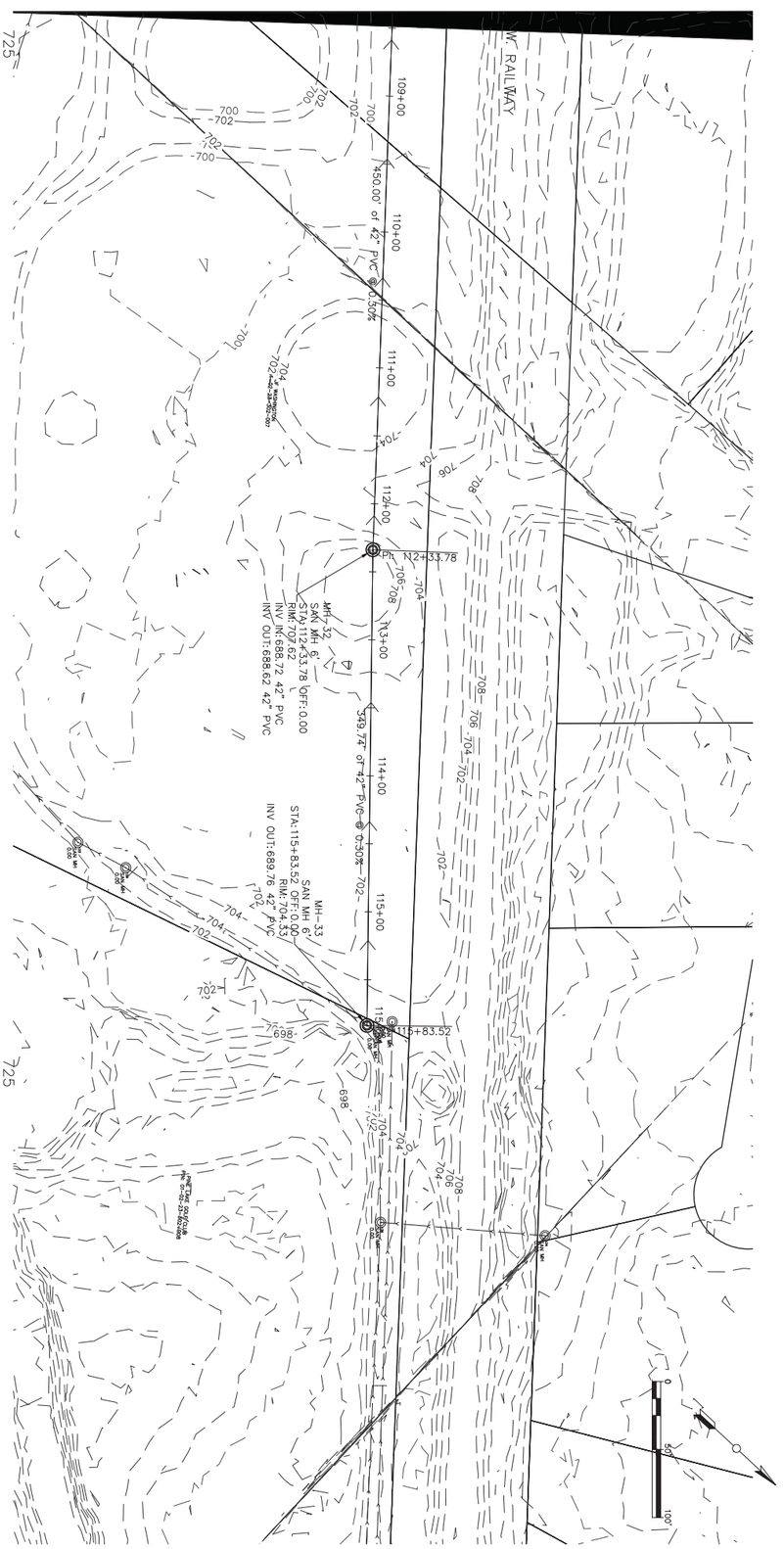

SHEET	8 of 8
PROJECT NO.	21911
DRAWN	DWS
DESIGN	
CHECKED	
DATE	2-2-2022
SCALE	1" = 50'

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE B, PUDIK L-1
PLAN AND PROFILE
STA 108+50 TO STA 115+82.27

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HAMILTON CONSULTING ENGINEERS, INC.
3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

FARM CREEK TRUNK SEWER REPLACEMENT
City of Washington, Illinois

Appendix J-3

Description	Units	Estimated Unit Price	ENGINEER'S OPCC Third Party Analysis EOPCC	
FOUNDATION MATERIAL	CY	$52.00	451.00	$23,452.00
RESTORATION-SEED, class 2 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	2.0	$19,309.10
RESTORATION-SEED, class 4/5 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	2.0	$19,309.10
RESTORATION-SEED, class 4B/5B (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	2.0	$19,309.10
PERIMETER EROSION BARRIER	FT	$4.00	8,818	$35,272.00
CLEAR & GRUB	ACRE	$2500.00	1.4	$3,500.00
STABILIZED CONSTRUCTION ACCESS	EA	$6,000.00	3	$18,000.00
SANITARY SEWER, 42-IN HOBAS - OPEN CUT	LF	$350.00	3043	$1,065,050.00
SANITARY SEWER, 42-IN HOBAS - TRENCHLESS	LF	$896.55	5159	$4,625,301.45
SANITARY SEWER, 42-IN HOBAS - BORE AND JACK 60" STEEL CASING	LF	$1,000.00	3155	$3,155,000.00
PROTECT EXISTING SANITARY SEWER AT CROSSINGS	EA	$4,000.00	3	$12,000.00
ABANDONMENT OF EXISTING SANITARY MANHOLES	EA	$2,000.00	3	$6,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, LESS THAN 20' DEEP	EA	$9,000.00	13	$117,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 20' TO 25' DEEP	EA	$12,000.00	6	$72,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 25' TO 30' DEEP	EA	$15,000.00	2	$30,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 30' TO 35' DEEP	EA	$18,000.00	4	$72,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 35' TO 40' DEEP	EA	$21,000.00	2	$42,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA CONSTRUCTED ON EXISTING SEWER PIPE	EA	$12,000.00	6	$72,000.00
SUBTOTAL CONSTRUCTION				$9,406,502.75
MOBILIZATION (CONTRACTOR PROFIT, BONDS, INSURANCE)	LS		2%	$188,130.00
ENGINEERING AND LEGAL	LS		5%	$470,325.00
TOTAL BASE PROJECT				$10,064,957.75
Contingencies - Base				25%
Total - Base Project w/ Contingencies				$12,581,197.00

Alt. C, Stand Align E-3 - North Gravity

WASHINGTON SEWER MAIN EASEMENTS

Date: 2/11/2022

Property Owner	PIN	EASEMENT						
		Station			Permanent		Temp	
		From	To	Length (Foot)	Width (Foot)	Area (Acre)	Width (Foot)	Area (Acre)
NORTH SIDE OF TP&W UNLESS OTHERWISE NOTED								
City of Washington - S/o TP&W	02-02-28-100-003	0+00	3+05					
Meadow Valley, LLC (Gary Deiters) - S/o TP&W	02-02-28-100-006	3+05	4+25	120	30	0.08	30	0.08
Meadow Valley, LLC (Gary Deiters) - N/o TP&W	02-02-28-100-006	5+25	18+85	1,360	30	0.96	30	0.96
Sally Plattner	02-02-28-200-006	18+85	29+00	1,015	40	0.95	30	0.72
Sally Plattner	02-02-28-200-006	29+00	41+30	1,230	50	1.45	30	0.87
Sally Plattner	02-02-28-200-006	41+30	46+23	493	20	0.23		
Kenneth & Susan Wiegand	02-02-28-200-011	46+23	49+49	326	20	0.15		
William Feeney	02-02-28-200-009	49+49	52+95	346	20	0.16		
Katherine Franzen	02-02-27-100-008	52+95	53+40	45	20	0.02		
Katherine Franzen	02-02-27-100-008	53+40	57+68	428	40	0.40	30	0.30
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	57+68	65+45	777	40	0.73	30	0.55
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	65+45	66+32	87	20	0.04	30	0.06
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	79+73	88+67	894	40	0.84	30	0.63
Firethorn, LLC	02-02-22-400-014	88+67	99+09	1,042	40	0.98	30	0.73
Firethorn, LLC	02-02-22-400-014	99+09	100+54	145	40	0.14		
City of Washington - S/o TP&W	02-02-22-400-012	101+54	112+44	1,090				
City of Washington - S/o TP&W	02-02-23-302-007	112+44	118+92	648				

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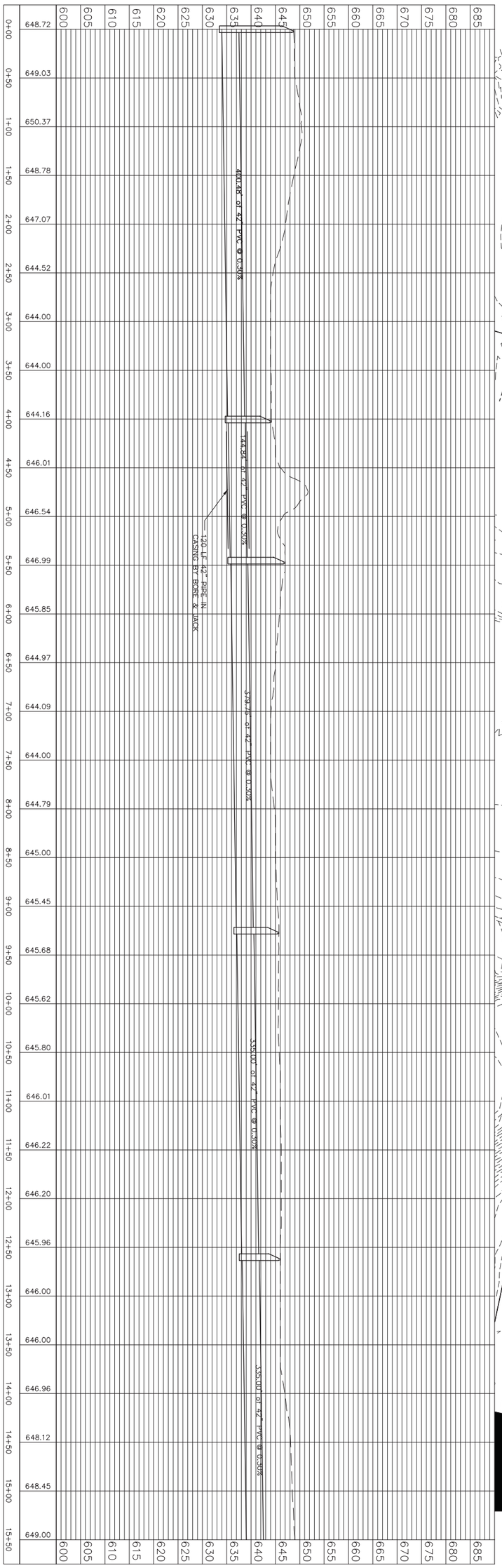

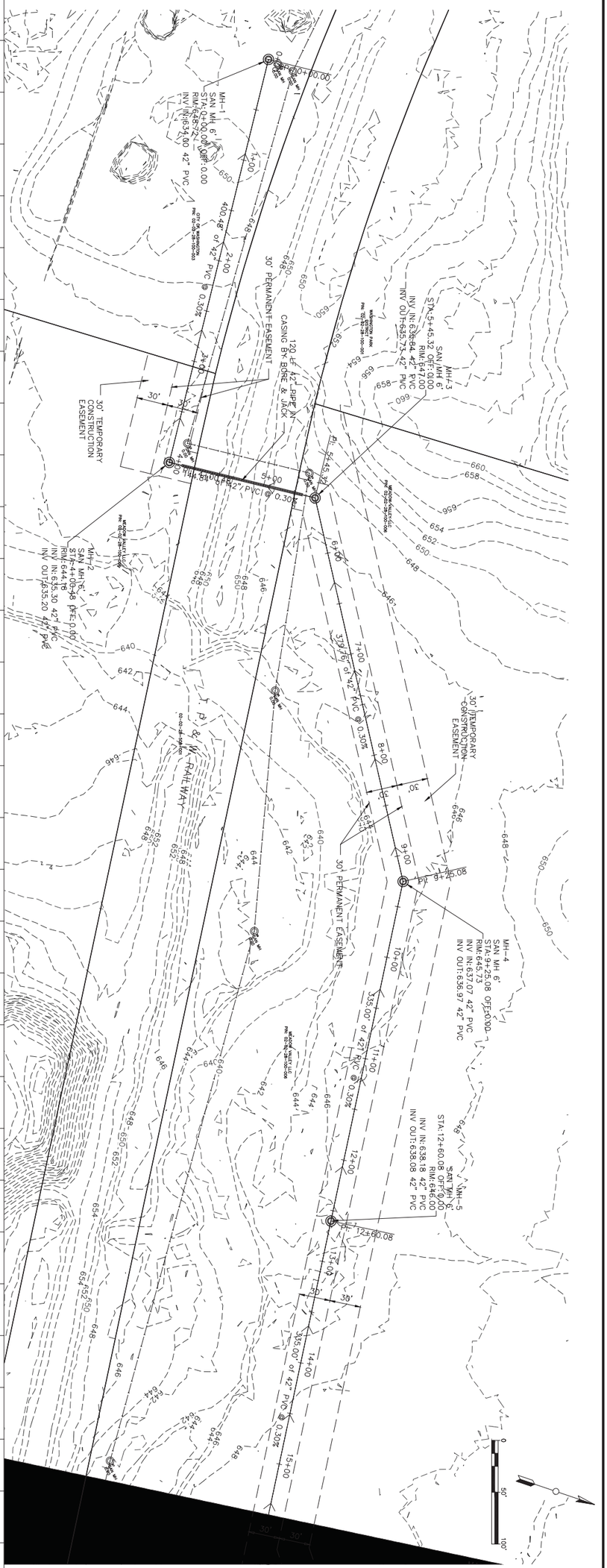

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DATE	2-2-2022
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PROJECT NO.	21911
SHEET	1 of 8

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 0+00 TO STA 15+50

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HAMILTON CONSULTING ENGINEERS, INC.
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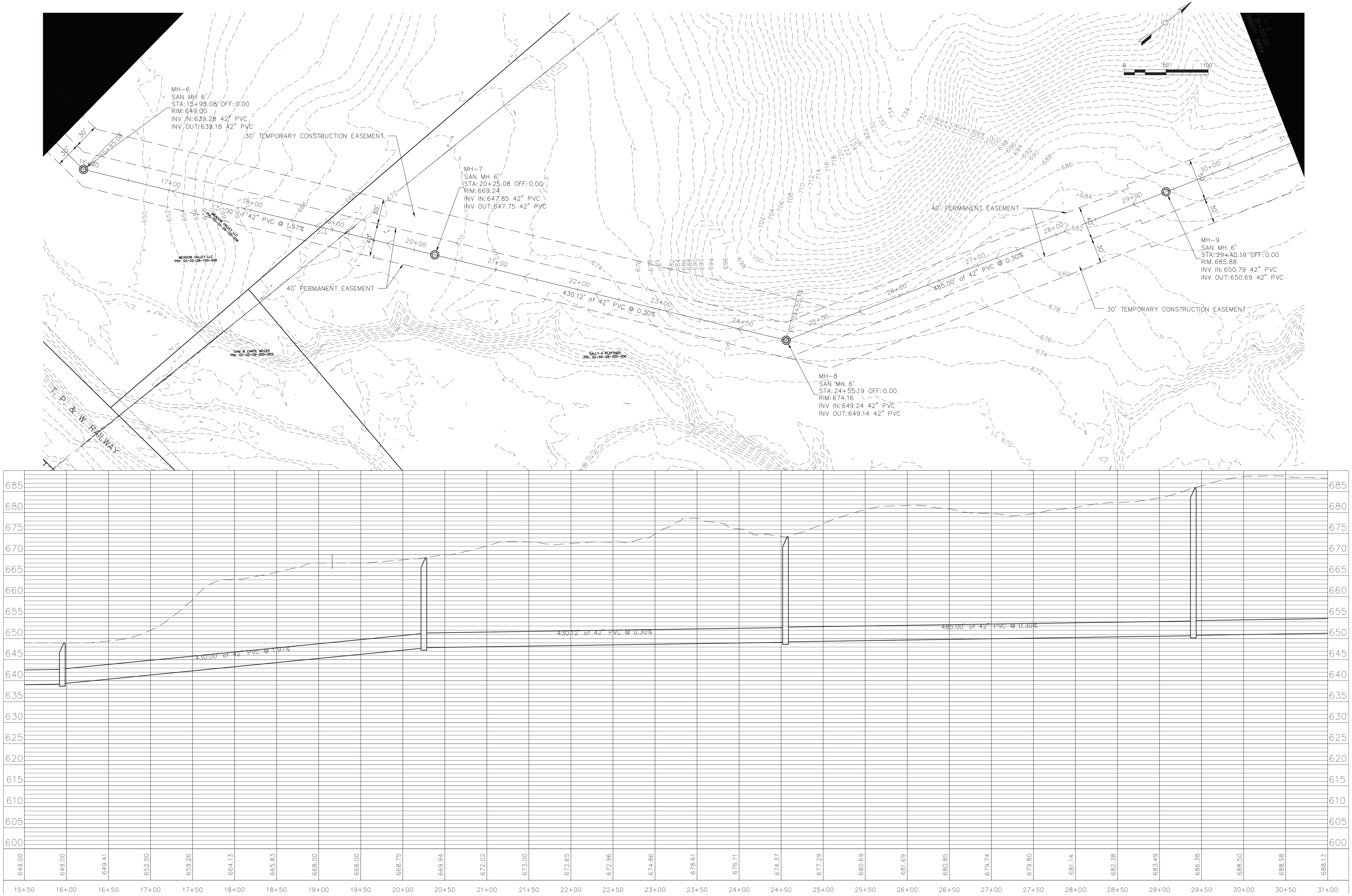

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ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 15+50 TO STA 31+00

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
DATE 2-2-2022
DESIGN HJH
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PROJECT NO. 21911
SHEET 2 OF 8

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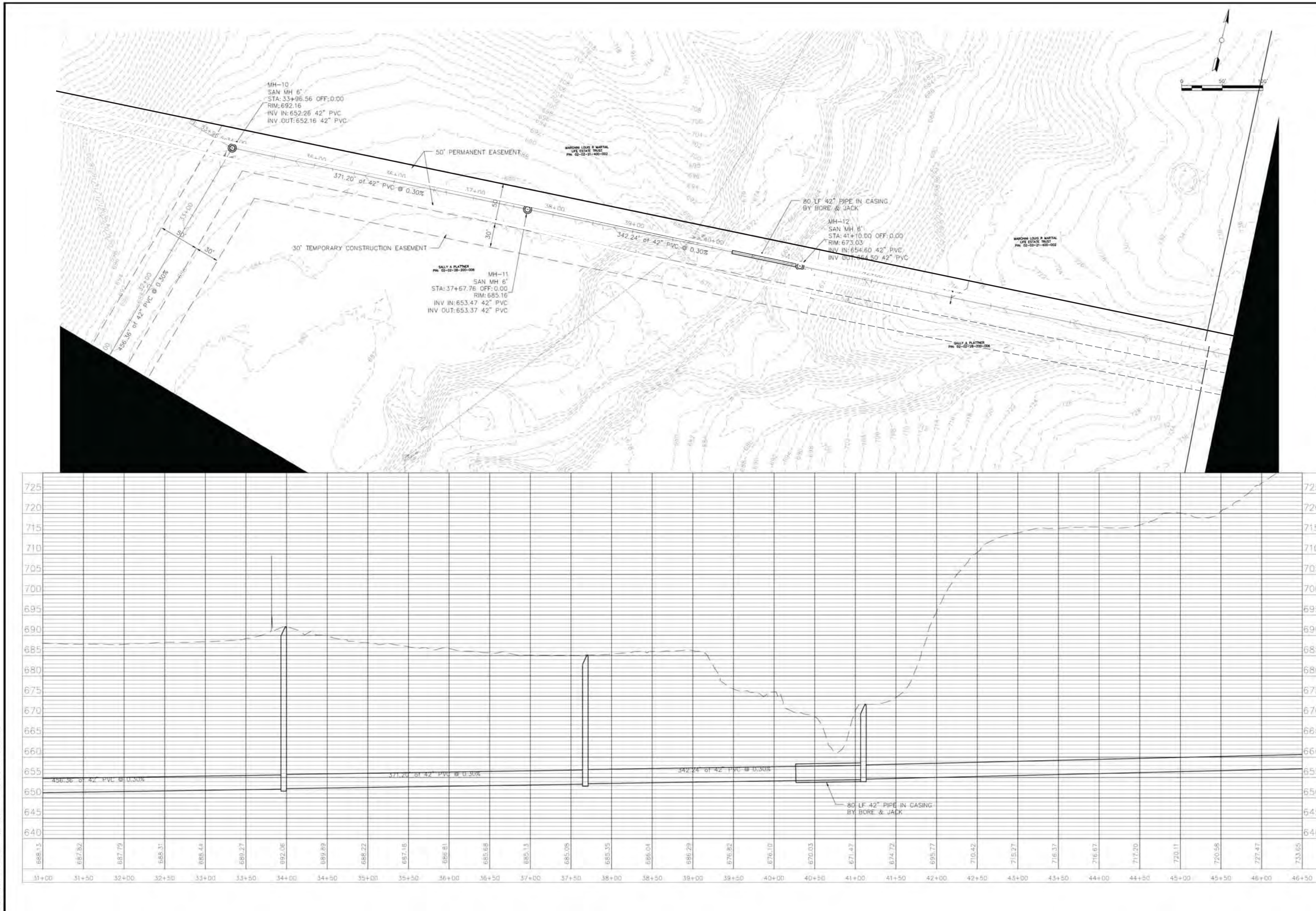

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ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 31+00 TO STA 46+50

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
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DESIGN HJH
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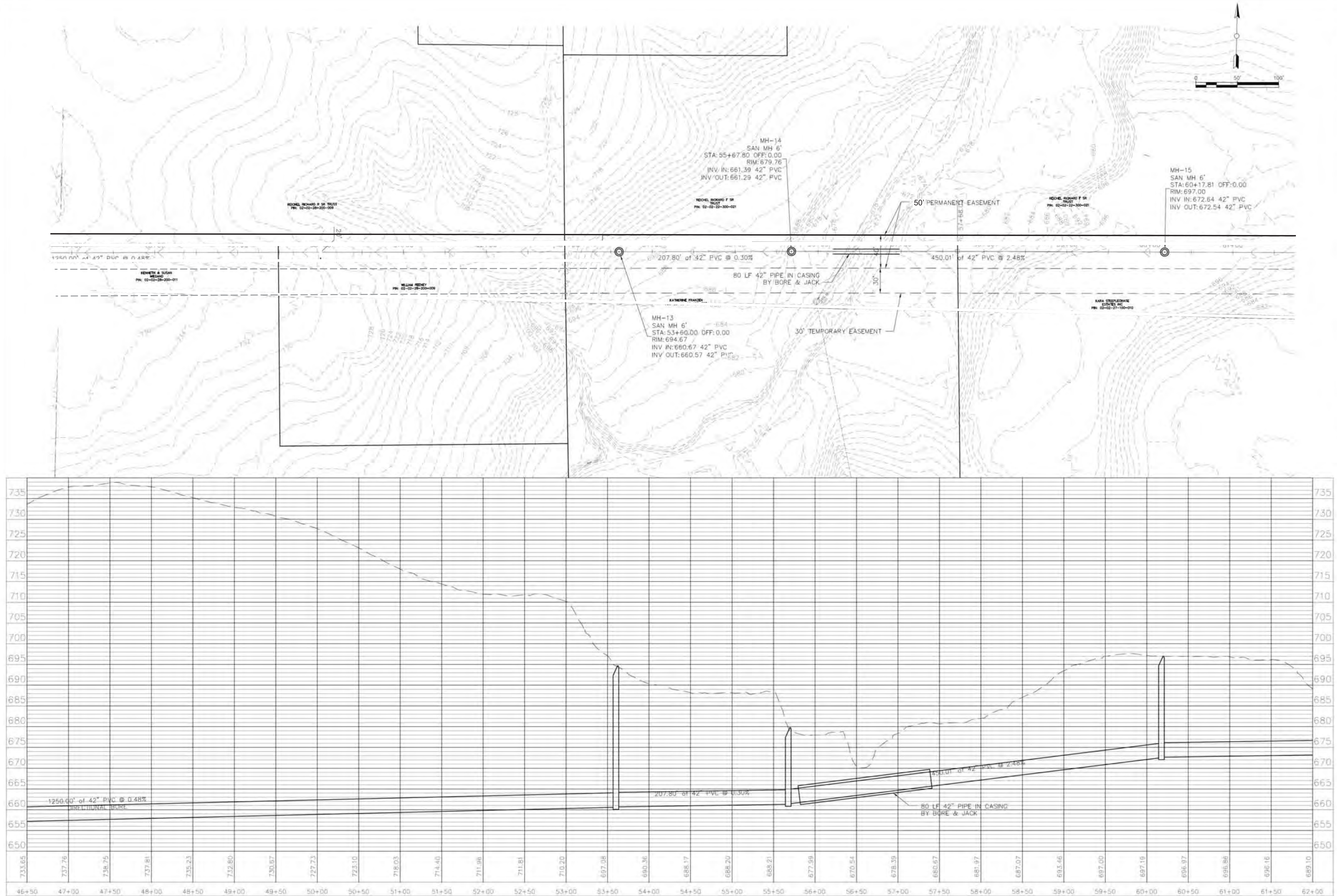
SHEET 3 of 8



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Ph: (815) 730-3444 Fax: (815) 730-6703
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ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 46+50 TO STA 62+00

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
DATE 2-2-2022
DESIGN HJH
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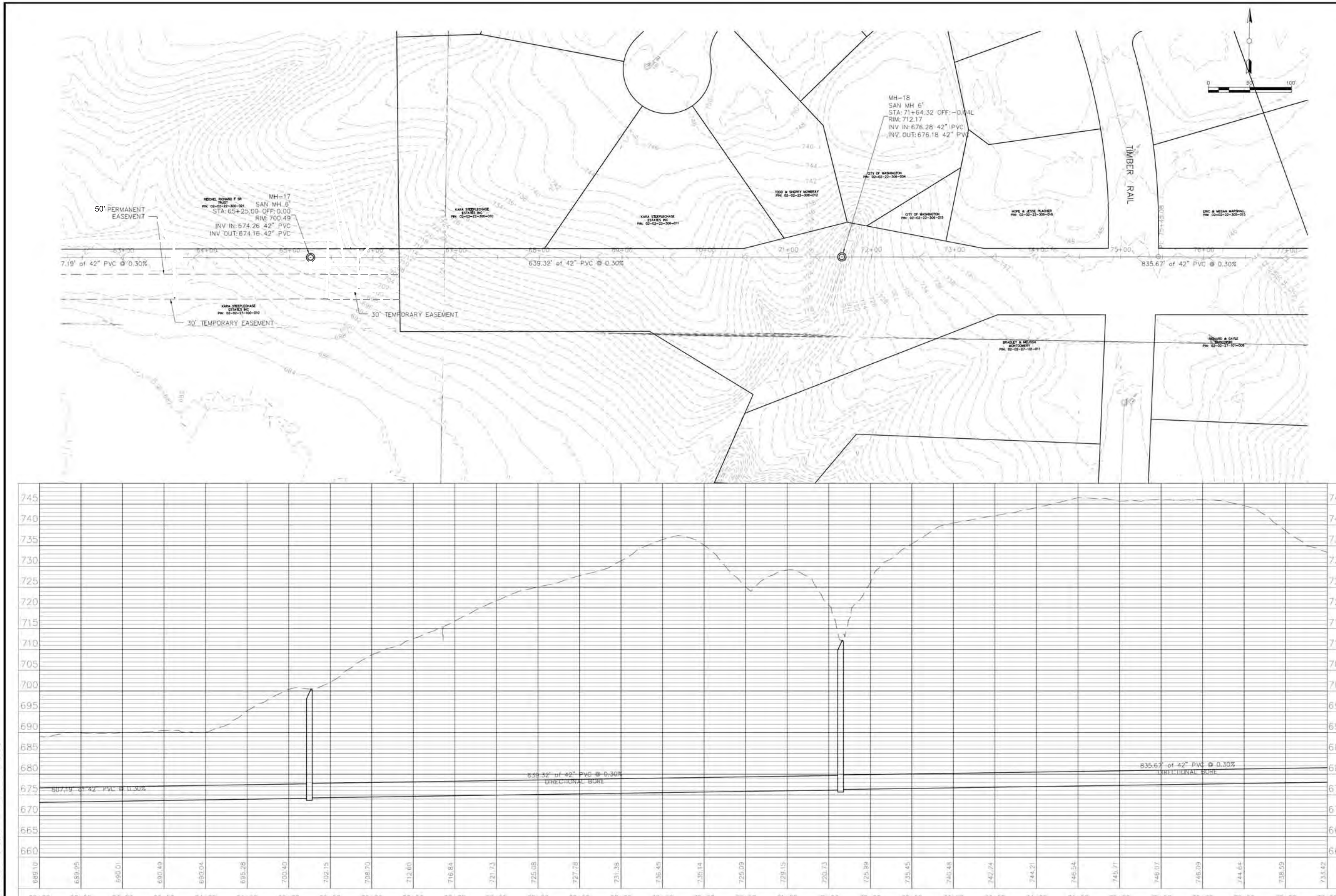
PROJECT NO. 21911
SHEET 4 OF 8



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ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 62+00 TO STA 77+50

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
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DESIGN HJH
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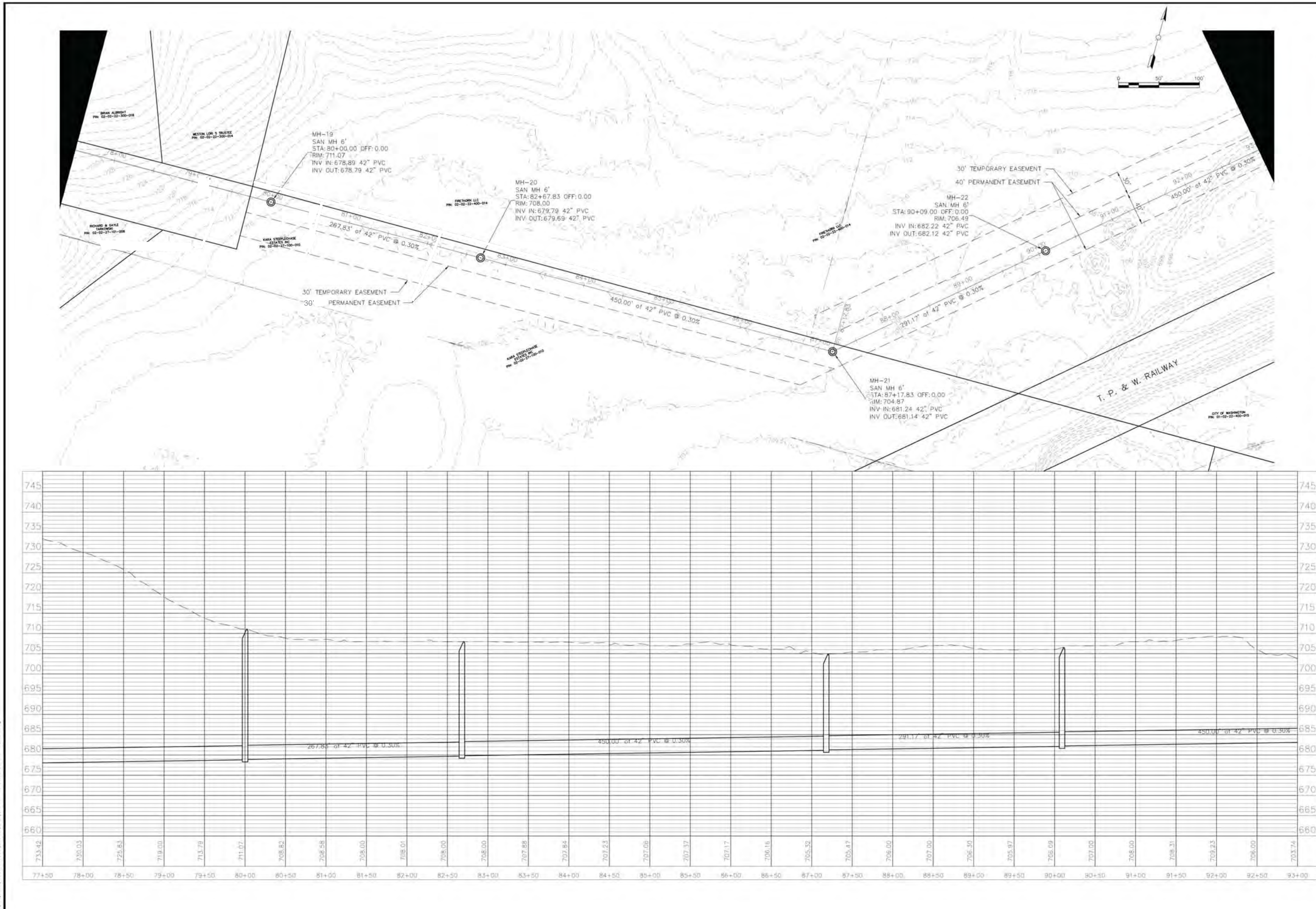
PROJECT NO. 21911
SHEET 5 OF 8



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3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
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ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 77+50 TO STA 93+00

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
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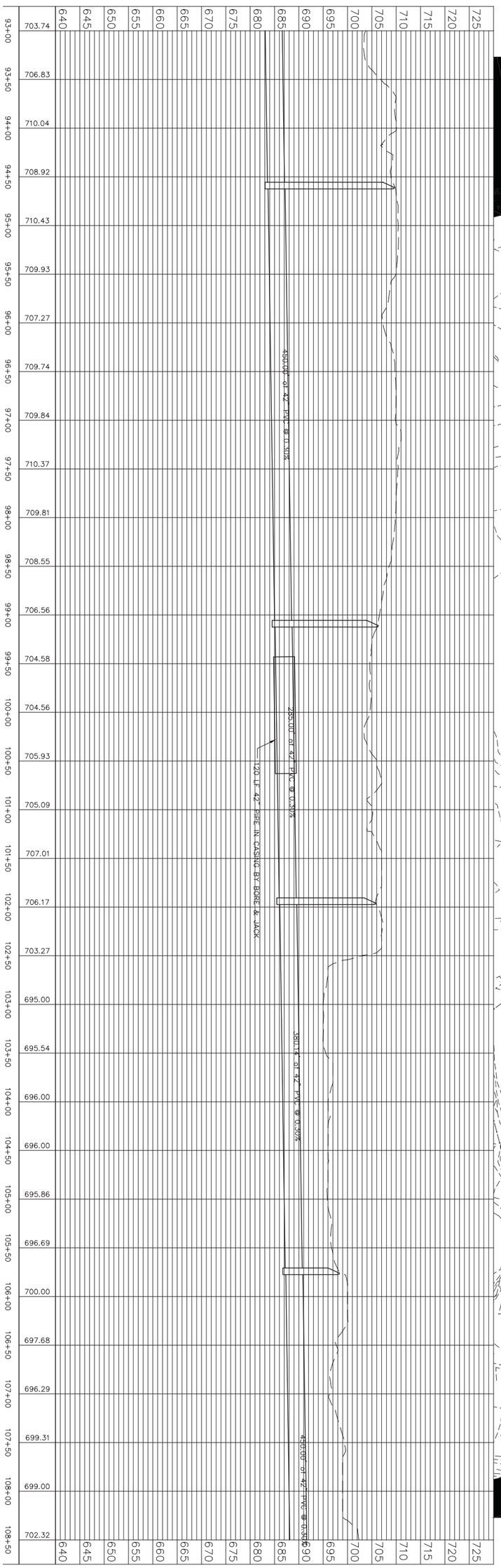

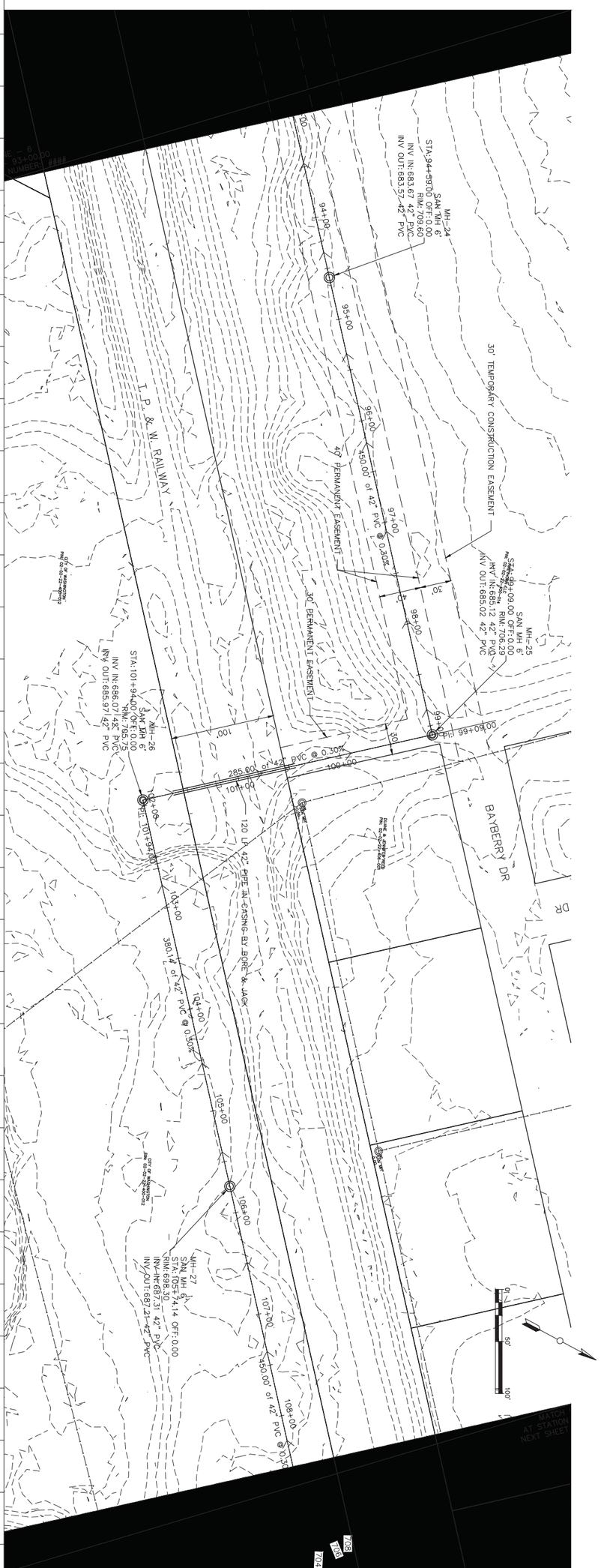

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 93+00 TO STA 108+50

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3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

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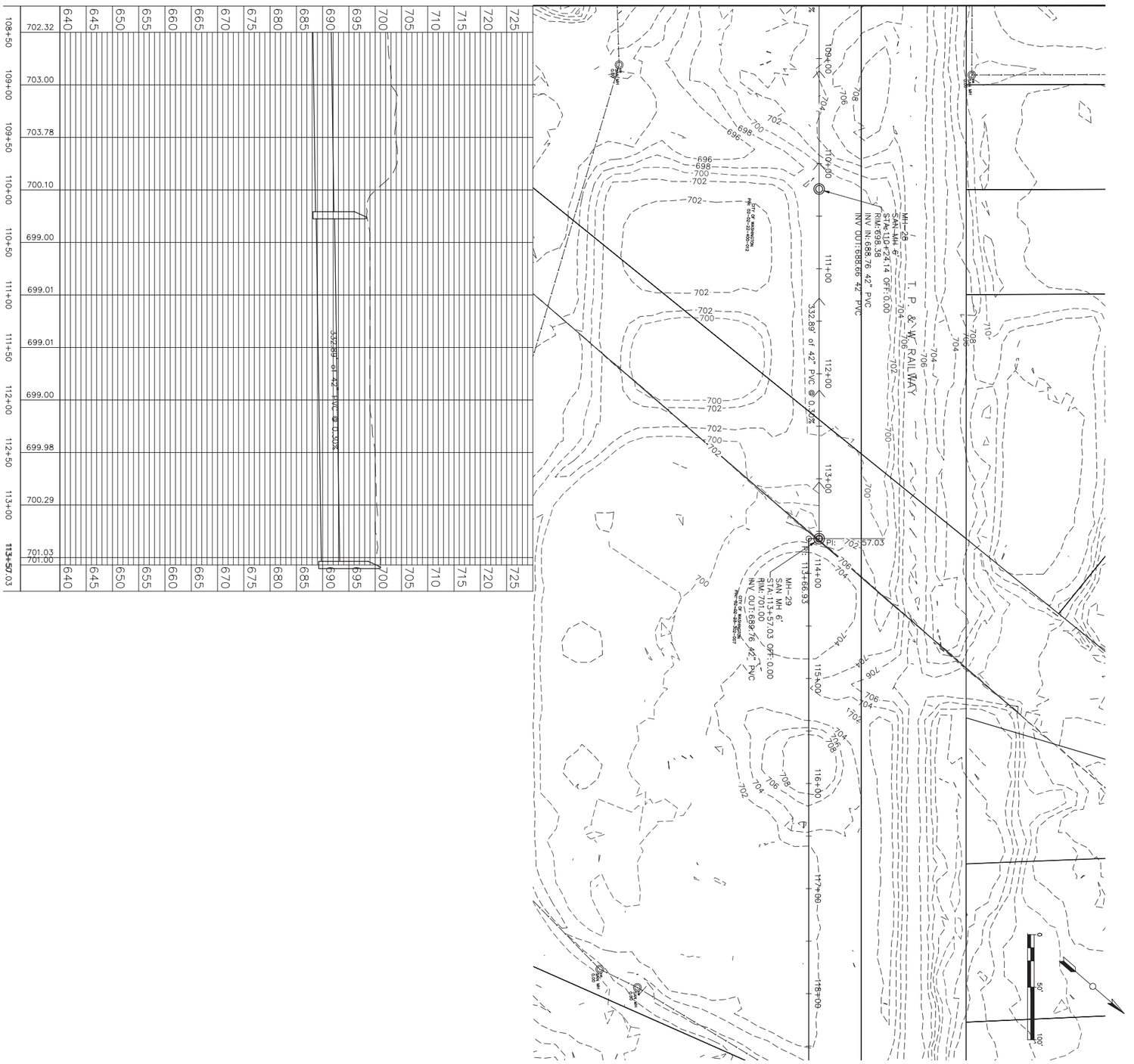

SHEET	8 of 8
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SCALE	1" = 50'

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE C, PUDIK E-3
PLAN AND PROFILE
STA 108+50 TO STA 113+57.03

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3230 Executive Drive, Joliet, Illinois 60431
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IL LICENSE NO. 184-003205

Alternative D
Pump Station and Relief Sewer

FARM CREEK TRUNK SEWER REPLACEMENT
City of Washington, Illinois

HCE Date: 2/9/2022

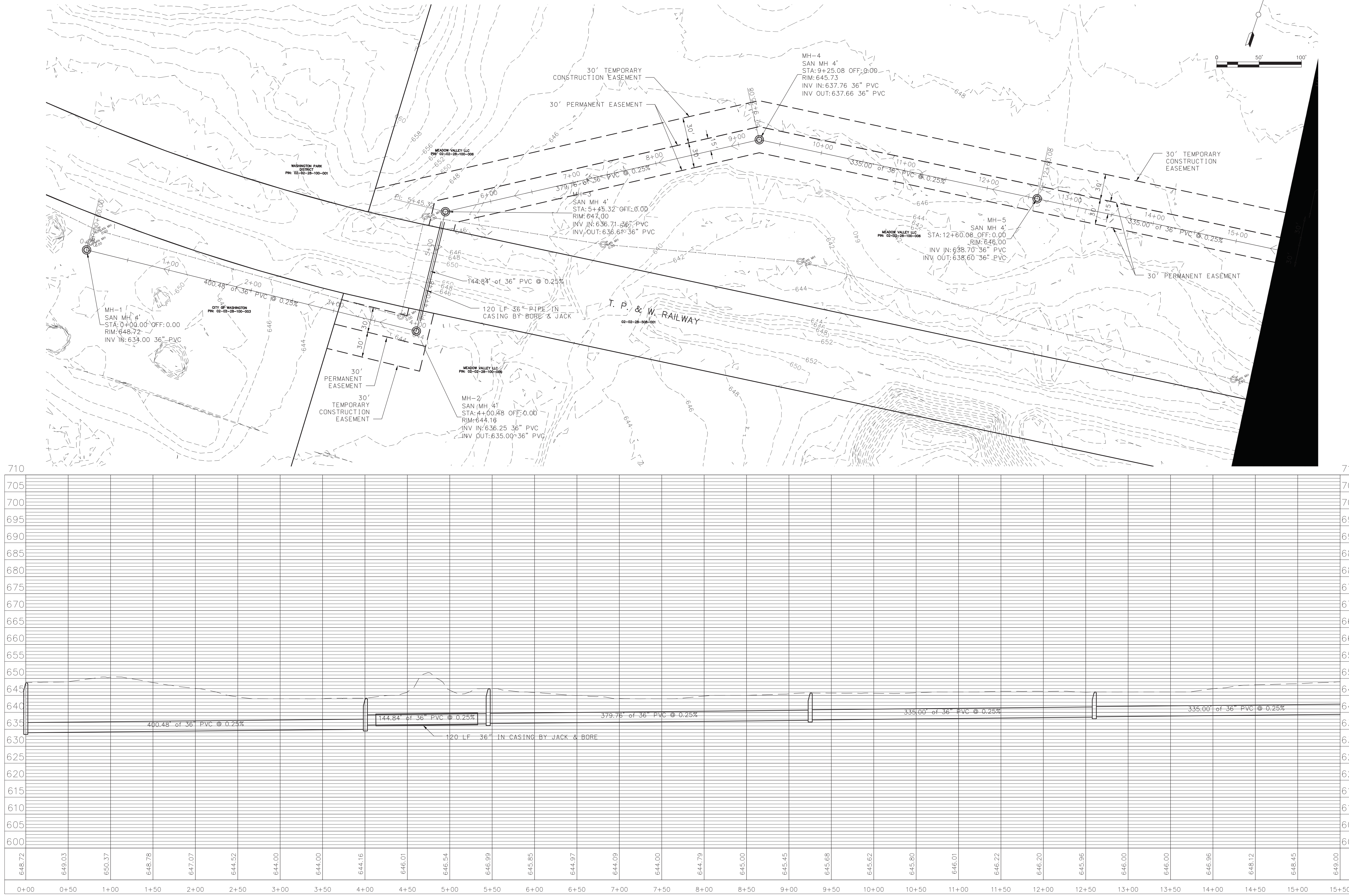
Description	Units	Estimated Unit Price	ENGINEER'S OPCC Preliminary Engineering Report OPCC	
FOUNDATION MATERIAL	CY	$52.00	32.00	$1,664.00
BORROW EXCAVATION	CY	$50.00	2894.00	$144,700.00
RESTORATION-SEED, class 2 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	1.2	$11,585.46
RESTORATION-SEED, class 4/5 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	1.2	$11,585.46
RESTORATION-SEED, class 4B/5B (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	1.2	$11,585.46
PERIMETER EROSION BARRIER	FT	$4.00	4940	$19,760.00
CLEAR & GRUB	ACRE	$2500.00	1.3	$3,250.00
STABILIZED CONSTRUCTION ACCESS	EA	$6,000.00	3	$18,000.00
SANITARY SEWER, 36-IN PVC SDR 26 - OPEN CUT	LF	$160.00	1450	$232,000.00
SANITARY SEWER, 42-IN PVC SDR 26 - OPEN CUT	LF	$180.00	475	$85,500.00
SANITARY SEWER, 12-IN PVC- BORE AND JACK 24" STEEL CASING	LF	$800.00	300	$240,000.00
SANITARY SEWER, 36-IN PVC- BORE AND JACK 54" STEEL CASING (RR XING)	LF	$1,000.00	145	$145,000.00
TRENCHLESS CONSTRUCTION, 8-IN DIP SAN SEWER WITH 20-IN STEEL CASING	LF	$400.00	6954	$2,781,600.00
TRENCHLESS CONSTRUCTION, 21-IN PVC SAN SEWER WITH 33-IN STEEL CASING	LF	$500.00	2305	$1,152,500.00
PROTECT EXISTING SANITARY SEWER AT CROSSINGS	EA	$4,000.00	3	$12,000.00
ABANDONMENT OF EXISTING SANITARY MANHOLES	EA	$2,000.00	3	$6,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, LESS THAN 20' DEEP	EA	$9,000.00	6	$54,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 20' TO 25' DEEP	EA	$12,000.00	2	$24,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA, 25' TO 30' DEEP	EA	$15,000.00	2	$30,000.00
SANITARY FORCE MANHOLE, TYPE A, 6-FT DIA, LESS THAN 20' DEEP	EA	$12,000.00	5	$60,000.00
SANITARY FORCE MANHOLE, TYPE A, 6-FT DIA, 20' TO 25' DEEP	EA	$15,000.00	1	$15,000.00
SANITARY MANHOLE, TYPE A, 6-FT DIA CONSTRUCTED ON EXISTING SEWER PIPE	EA	$12,000.00	3	$36,000.00
INSTALL LIFT STATION WITH WET WELL	EA	$300,000.00	2	$600,000.00
SUBTOTAL CONSTRUCTION				$5,695,730.38
MOBILIZATION (CONTRACTOR PROFIT, BONDS, INSURANCE)	LS		2%	$113,915.00
ENGINEERING AND LEGAL	LS		5%	$284,787.00
TOTAL BASE PROJECT				$6,094,432.38
Contingencies - Base				25%
Total - Base Project w/ Contingencies				$7,618,040.00

Alt. D, Forcemain Alignment

WASHINGTON SEWER MAIN EASEMENTS

Date: 2/11/2022

Property Owner	PIN	EASEMENT						
		Station			Permanent		Temp	
		From	To	Length (Foot)	Width (Foot)	Area (Acre)	Width (Foot)	Area (Acre)
NORTH SIDE OF TP&W UNLESS OTHERWISE NOTED								
City of Washington - S/o TP&W	02-02-28-100-003	0+00	3+05					
Meadow Valley, LLC (Gary Deiters) - S/o TP&W	02-02-28-100-006	3+05	4+25	120	30	0.08	30	0.08
Meadow Valley, LLC (Gary Deiters) - N/o TP&W	02-02-28-100-006	5+25	18+85	1,360	30	0.96	30	0.96
Sally Plattner	02-02-28-200-006	18+85	39+00	2,015	30	1.42	30	1.42
Sally Plattner	02-02-28-200-006	39+00	46+23	723	15	0.25	30	0.51
Kenneth & Susan Wiegand	02-02-28-200-011	46+23	49+49	326	15	0.11	30	0.23
William Feeney	02-02-28-200-009	49+49	52+95	346	15	0.12	30	0.24
Katherine Franzen	02-02-27-100-008	52+95	57+68	473	15	0.17	30	0.33
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	57+68	66+32	864	15	0.30	30	0.61
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	79+73	88+67	894	15	0.32	30	0.63
Firethorn, LLC	02-02-22-400-014	88+67	99+09	1,042	15	0.37	30	0.73
Firethorn, LLC	02-02-22-400-014	99+09	100+54	145	30	0.10		
City of Washington - S/o TP&W	02-02-22-400-012	101+54	112+44	1,090				
City of Washington - S/o TP&W	02-02-23-302-007	112+44	118+92	648				



SAVED BY: dws
SAVED: 2/8/2022
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HAMILTON CONSULTING ENGINEERS, INC.
3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703

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ALTERNATIVE D
PUMP STATION & RELIEF SEWER
PLAN AND PROFILE
STA 0+00 TO STA 15+50

CITY OF WASHINGTON
301 WALNUT ST.
WASHINGTON, IL 61571

SCALE 1" = 50'
DATE 2/1/2022
DESIGN HJH
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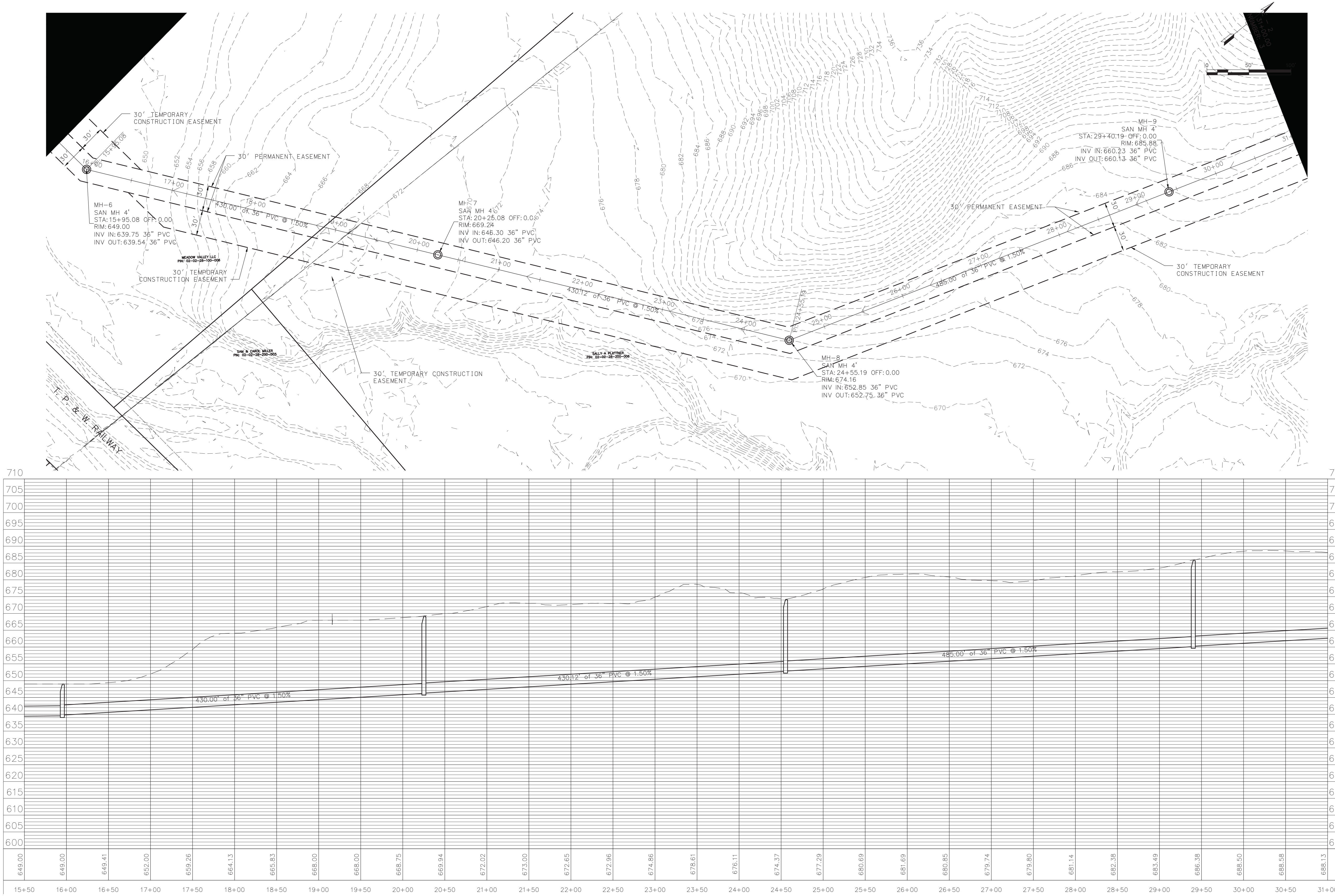
PROJECT NO. 21911
SHEET 1 OF 8



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2/2/2022

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3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

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ALTERNATIVE D
PUMP STATION & RELIEF SEWER
PLAN AND PROFILE
STA 15+50 TO STA 31+00

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
DATE 2/1/2022
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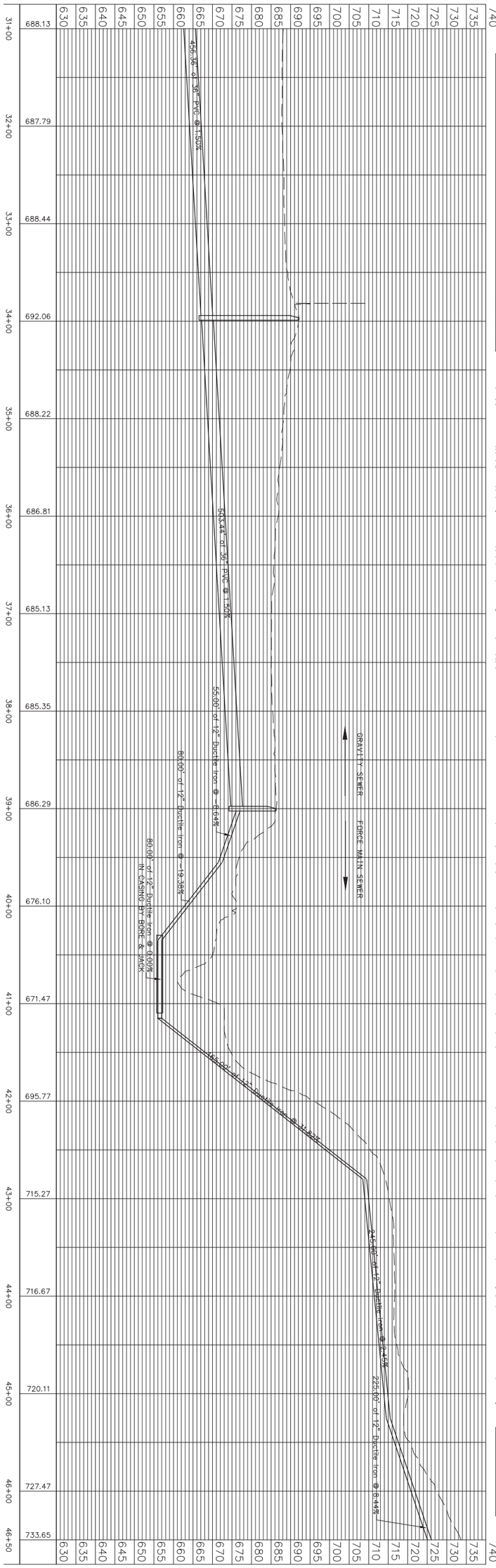
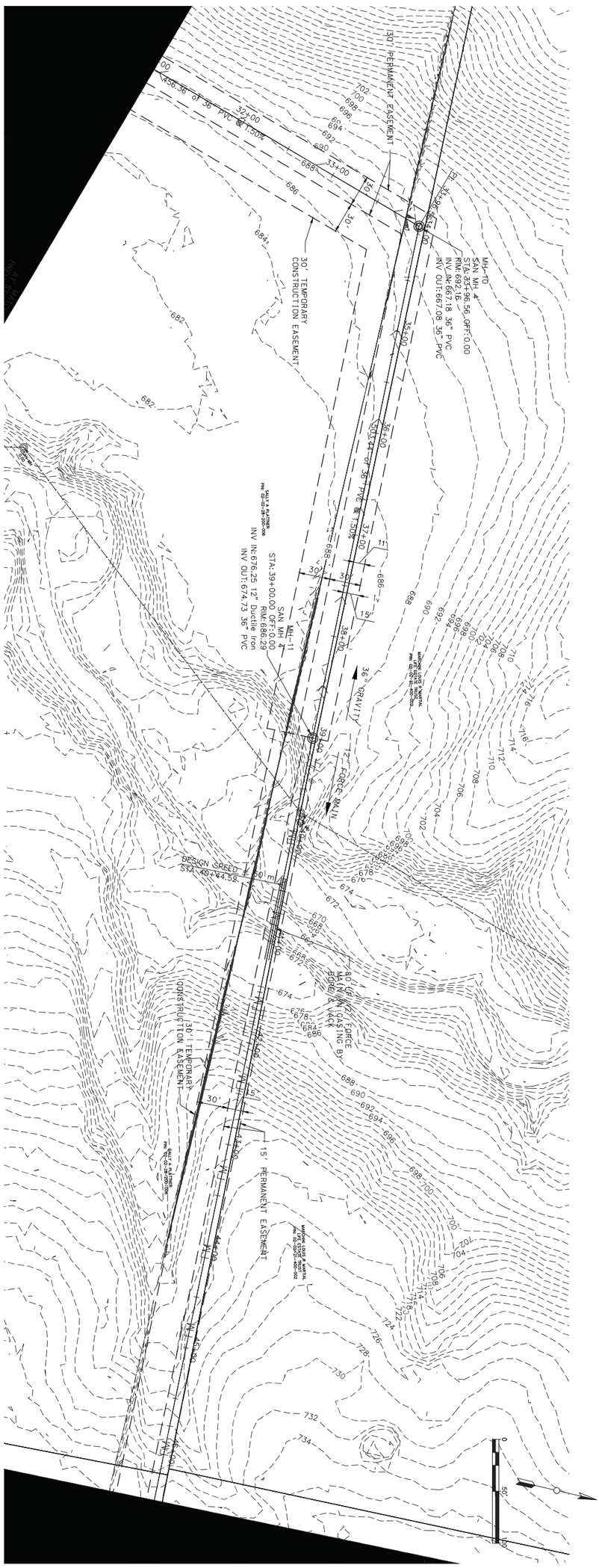
PROJECT NO. 21911
SHEET 2 OF 8





CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

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PLAN AND PROFILE
STA 31+00 TO STA 46+50

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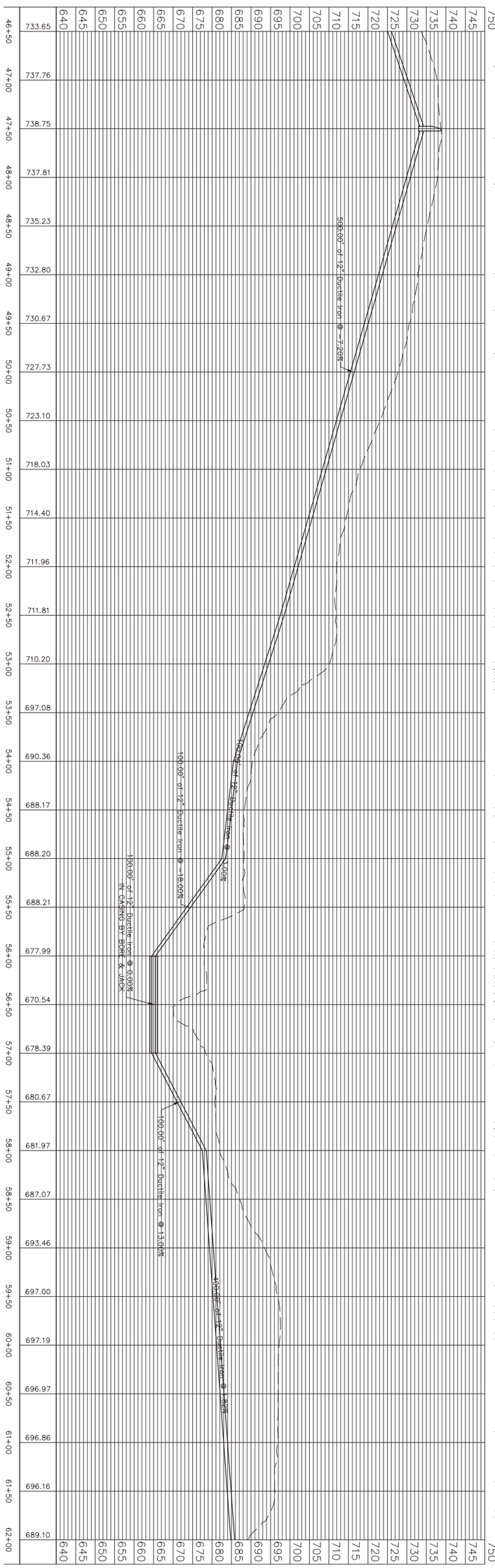
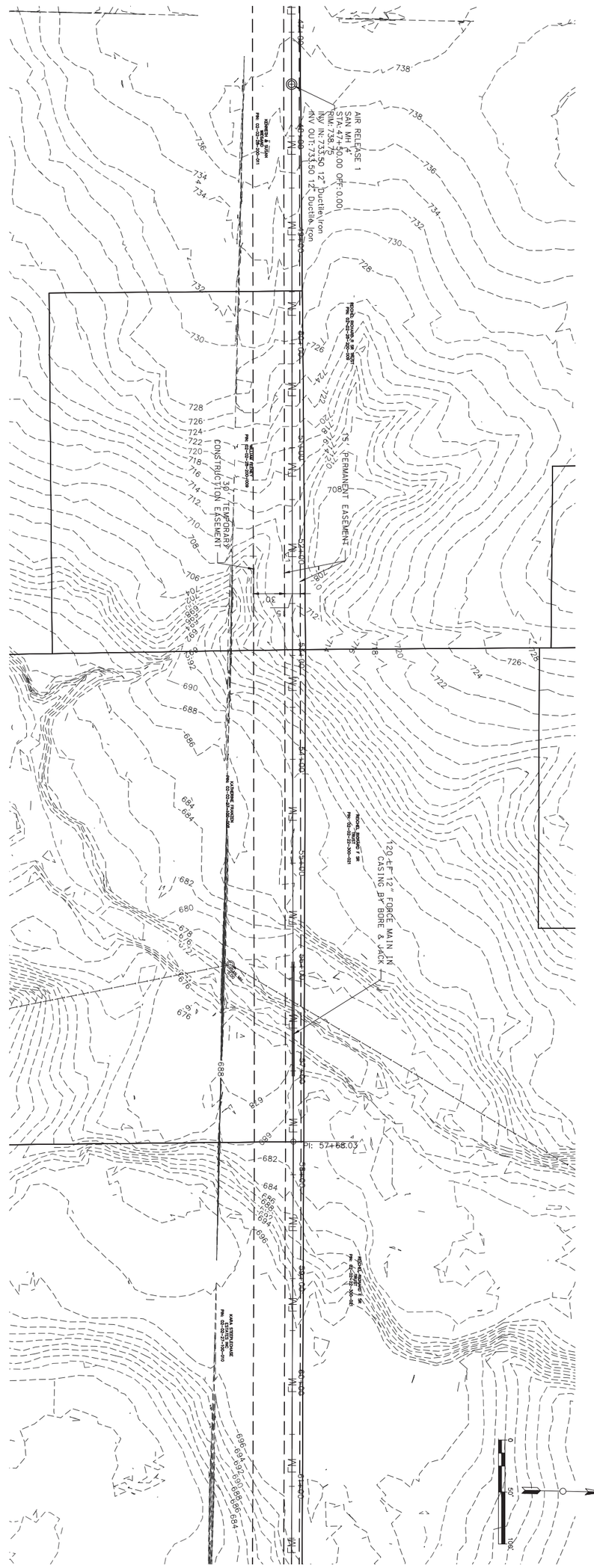
PROJECT NO. 21911
SHEET 3 OF 8

HAMILTON CONSULTING ENGINEERS, INC.
3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205





CITY OF WASHINGTON
301 WALNUT ST.
WASHINTON, IL 61571

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PUMP STATION & RELIEF SEWER
PLAN AND PROFILE
STA 46+50 TO 62+00

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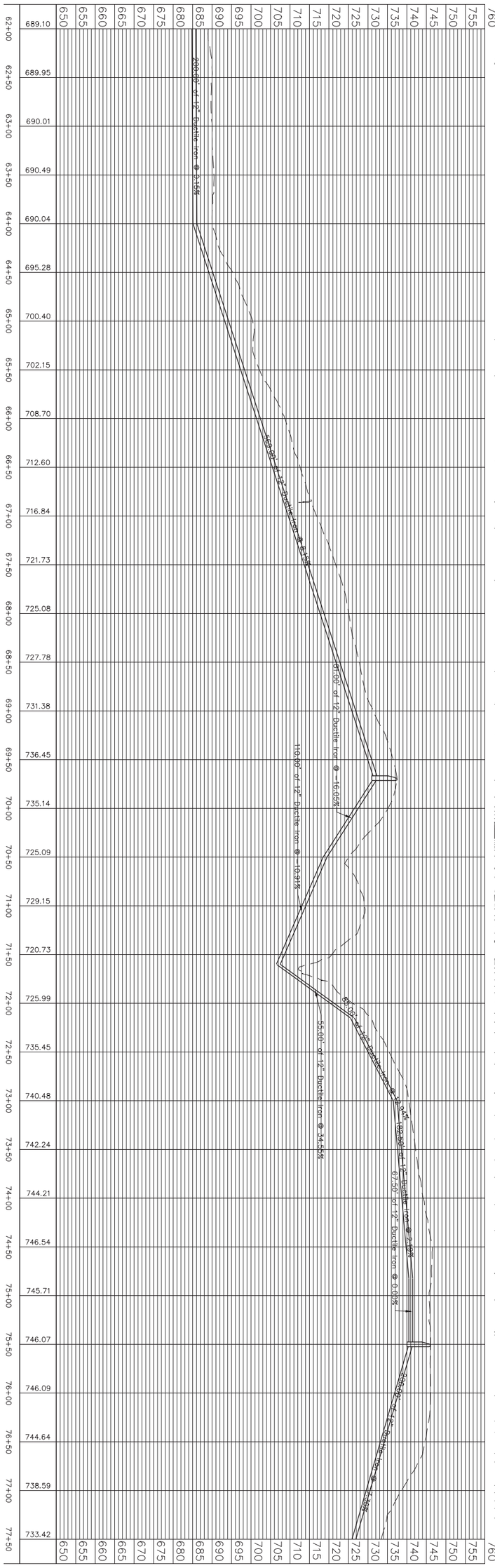
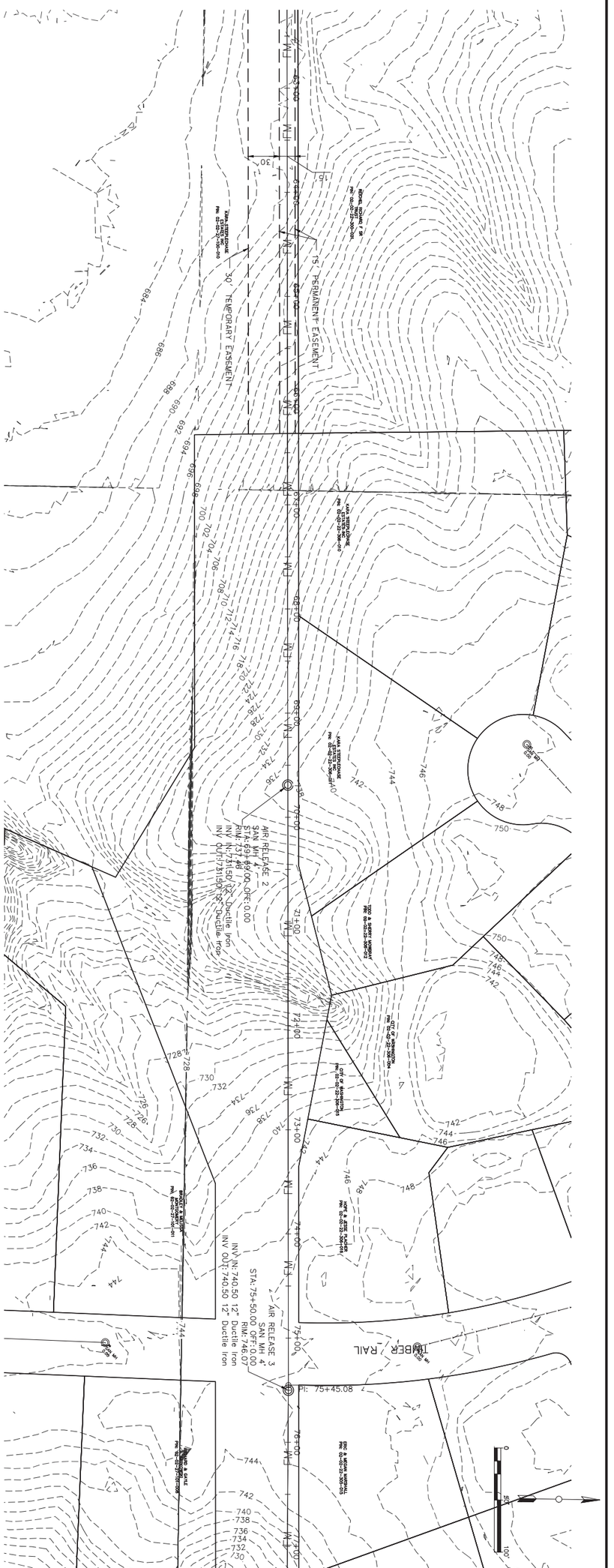
HAMILTON CONSULTING ENGINEERS, INC.
3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

SCALE: 1" = 50'
DATE: 2/1/2022
DESIGN: DRAWN: DWS CHECKED:
PROJECT NO. 21911
SHEET 4 OF 8





CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE D
PUMP STATION & RELIEF SEWER
PLAN AND PROFILE
STA 62+00 TO STA 77+50

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HAMILTON CONSULTING ENGINEERS, INC.
3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

SCALE: 1" = 50'
DATE: 2/1/2022
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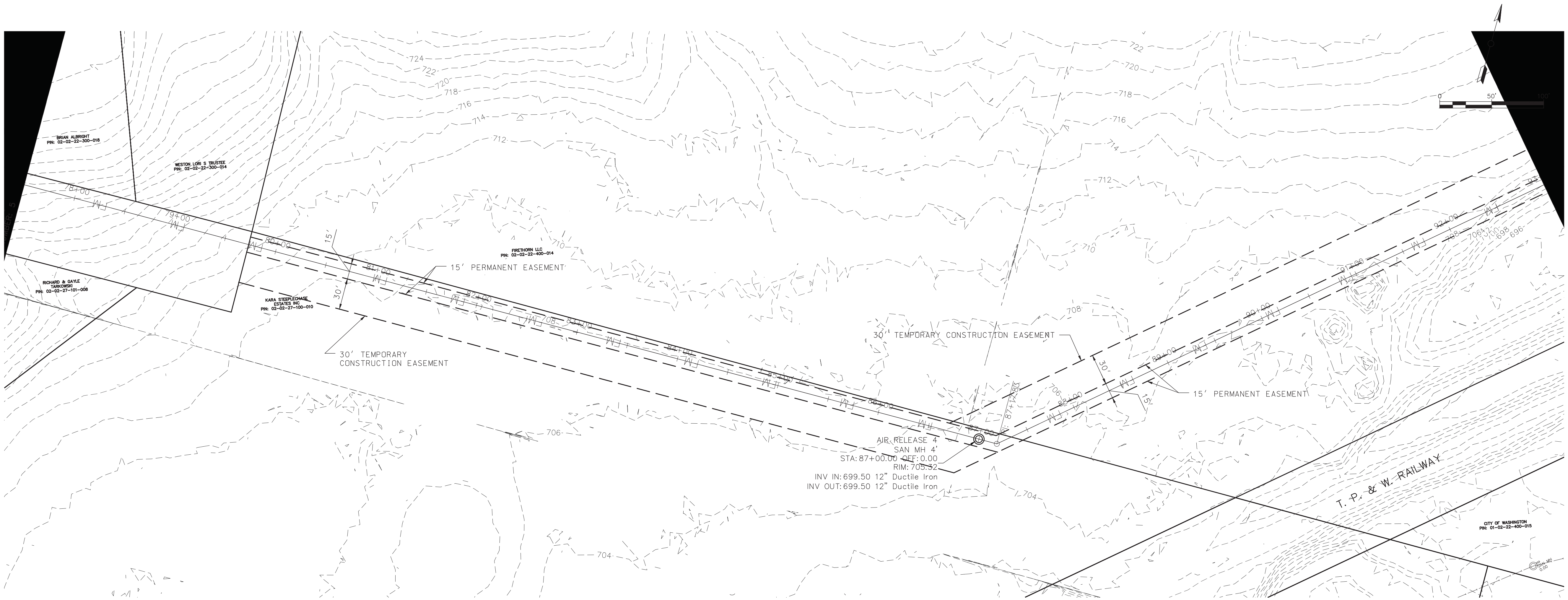
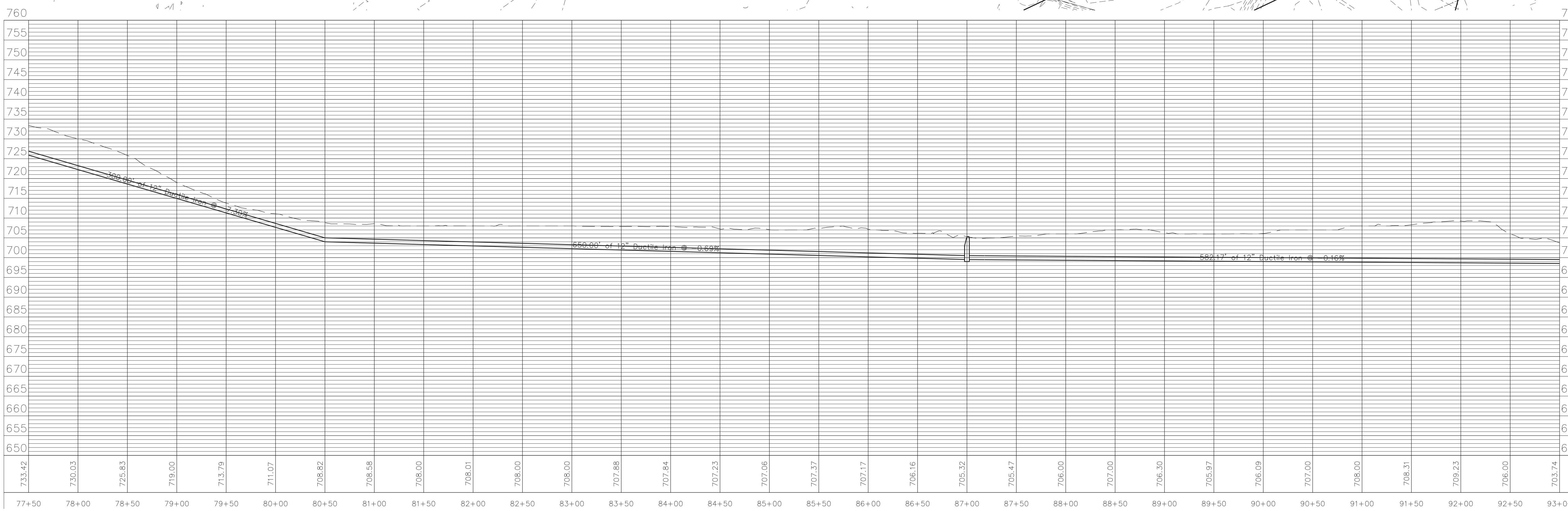
PROJECT NO. 21911
SHEET 5 OF 8





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2/2/2022

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3230 Executive Drive, Joliet, Illinois 60431
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IL LICENSE NO. 184-003205

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ALTERNATIVE D
PUMP STATION & RELIEF SEWER
PLAN AND PROFILE
STA 77+50 TO STA 93+00

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

SCALE 1" = 50'
DATE 2-1-2022
DESIGN HJH
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SHEET 6 OF 8

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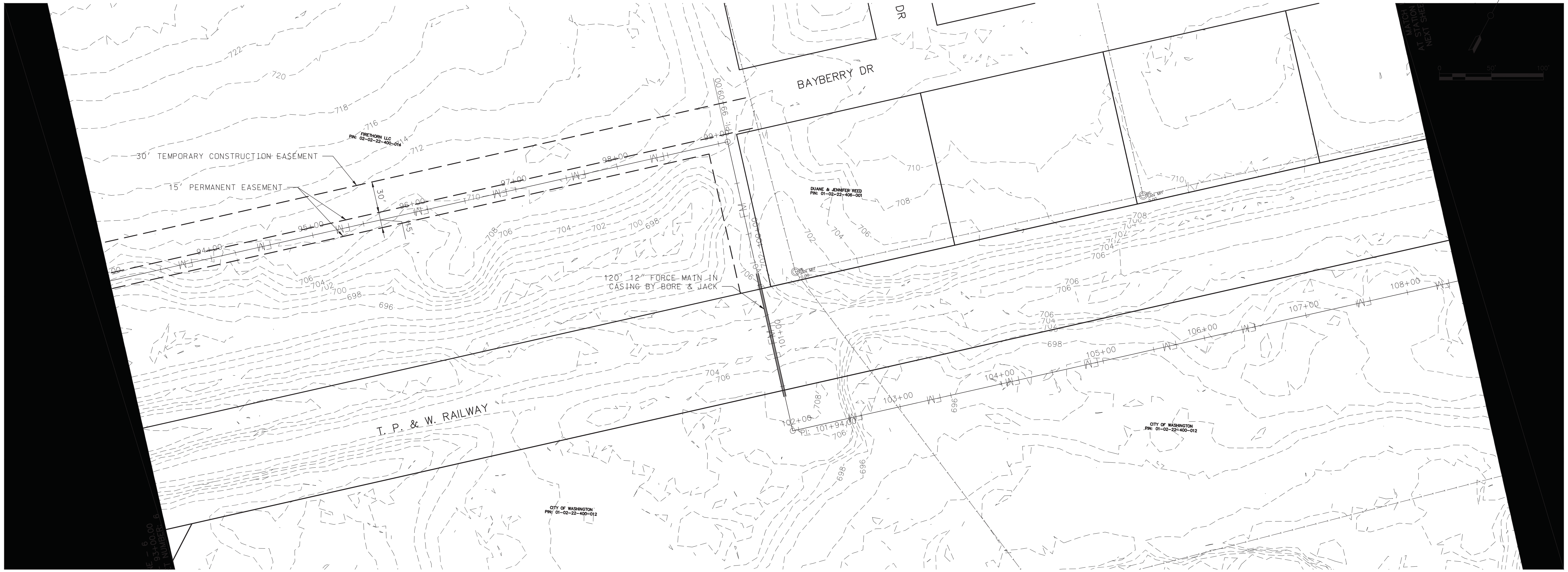

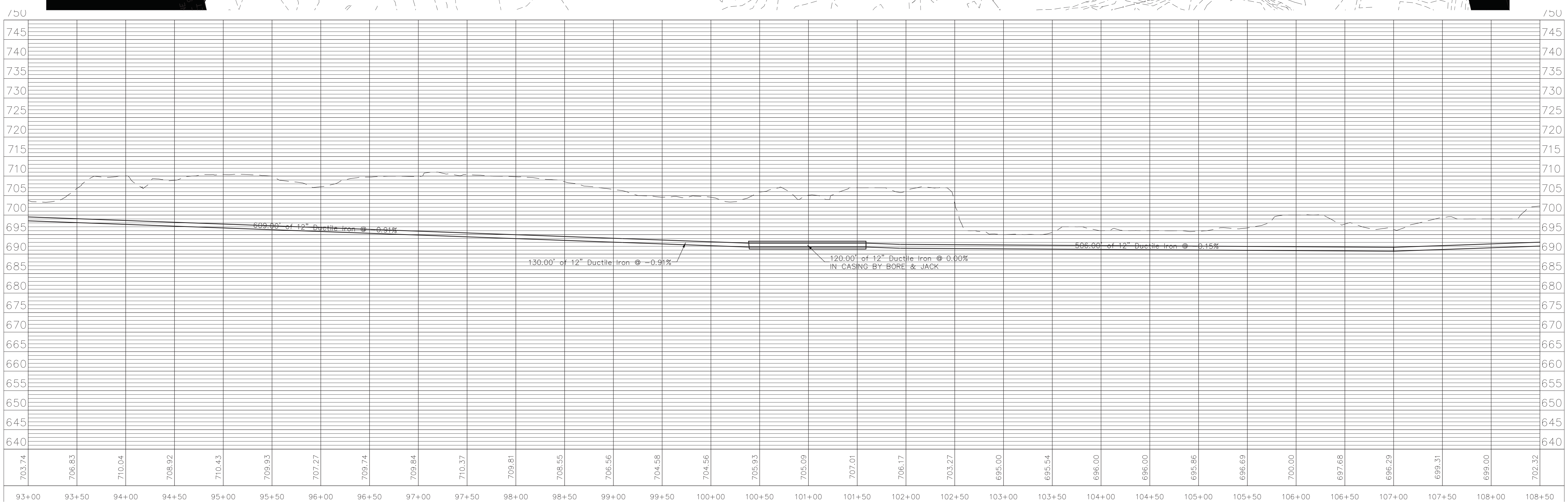

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3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

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ALTERNATIVE D
PUMP STATION & RELIEF SEWER
PLAN AND PROFILE
STA 93+00 TO STA 108+50

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

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DATE 2-1-2022
DESIGN HJH
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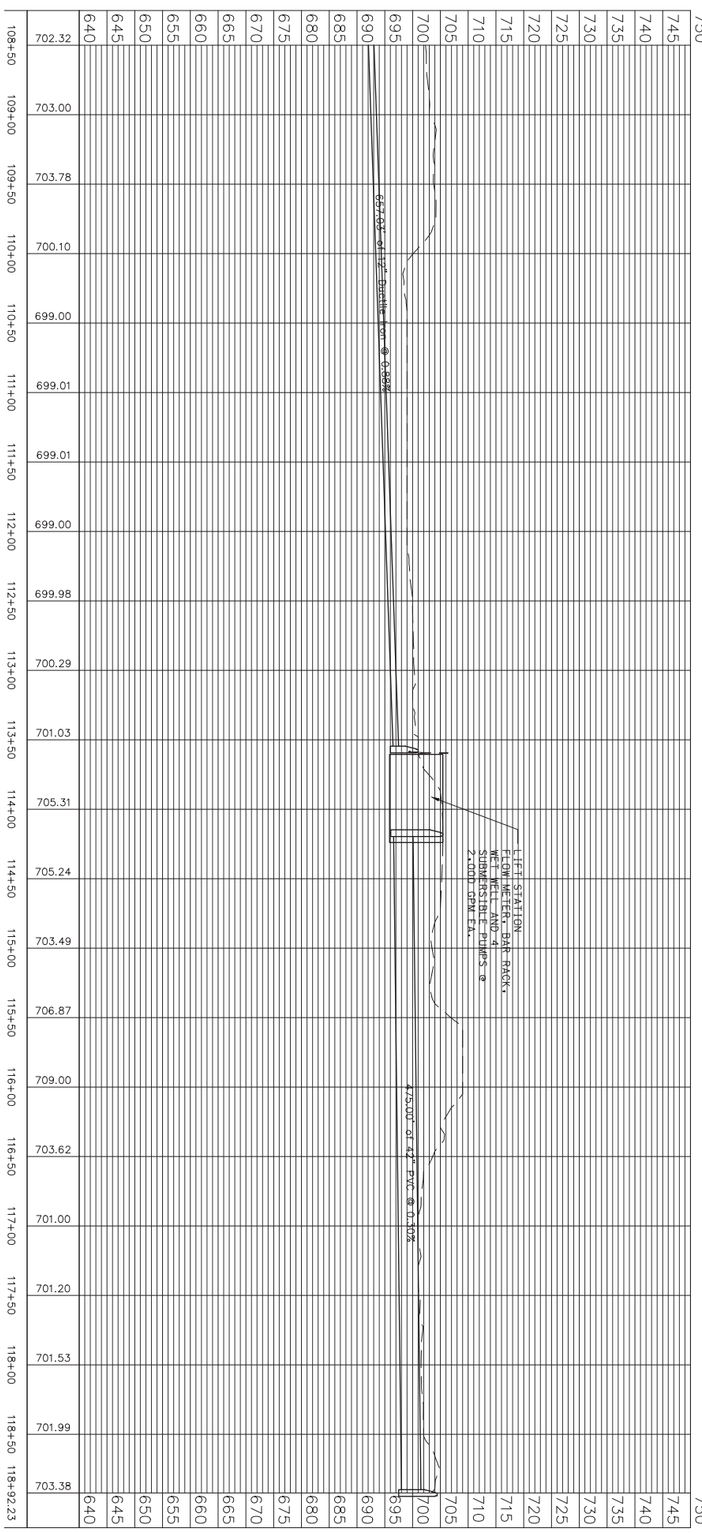
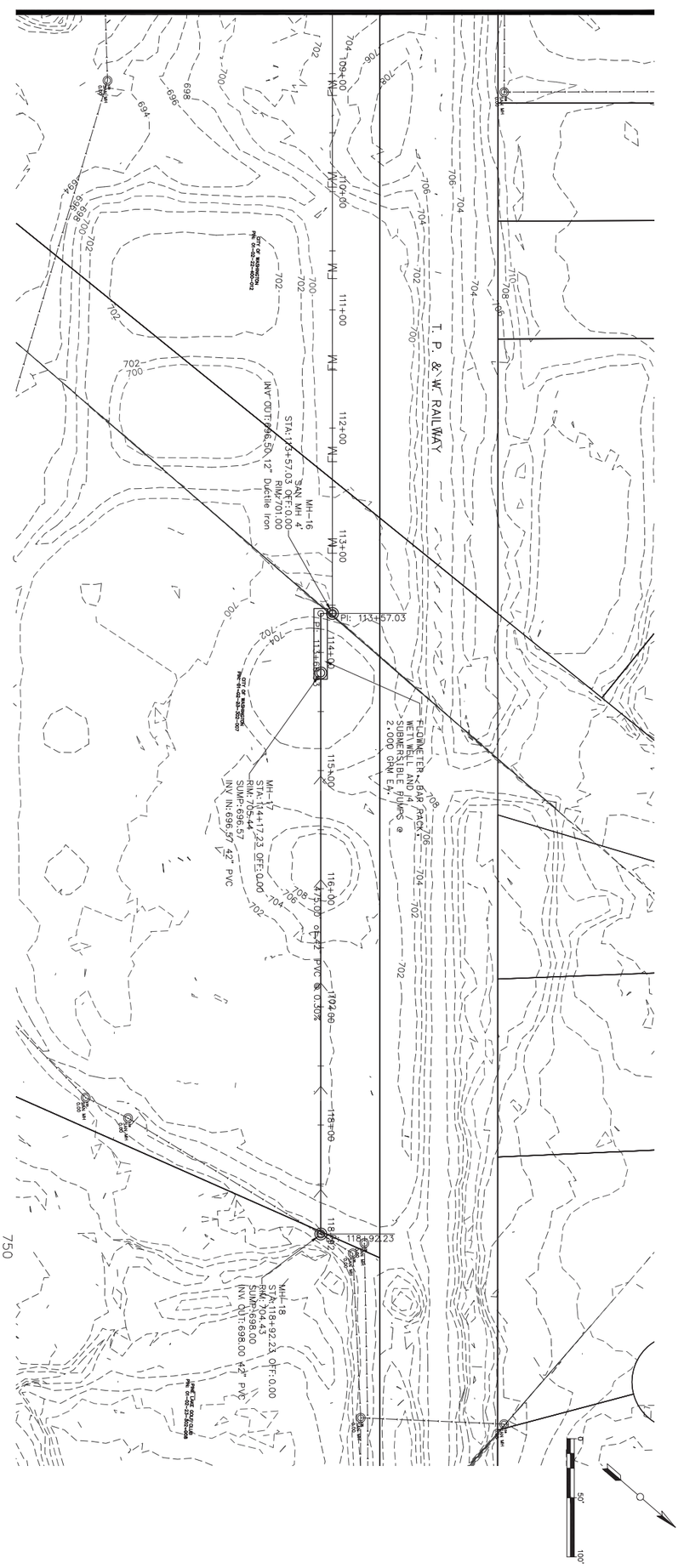
SHEET 7 OF 8





SHEET	8 of 8
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PROJECT NO.	21911
DATE	2-1-2022

CITY OF WASHINGTON
301 WALNUT ST
WASHINGTON, IL 61571

ALTERNATIVE D
PUMP STATION & RELIEF SEWER
PLAN AND PROFILE
STA 108+50 TO STA 118+92.23

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3230 Executive Drive, Joliet, Illinois 60431
Ph: (815) 730-3444 Fax: (815) 730-6703
IL LICENSE NO. 184-003205

Appendix J-5

Timber Rail Relief Sewer City of Washington Illinois

Item No.	Description	Units	Estimated Unit Price	ENGINEER'S OPCC Third Party Analysis Estimated	Estimated
	FOUNDATION MATERIAL	CY	$52.00	10.00	$520.00
	RESTORATION-SEED, class 2 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	1.7	$16,412.74
	Premium Landscaping Allowance	ACRE	$15,000.00	1.0	$15,000.00
	PERIMETER EROSION BARRIER	FT	$4.00	1670	$6,680.00
	CLEAR & GRUB	ACRE	$2500.00	1.7	$4,250.00
	STABILIZED CONSTRUCTION ACCESS	EA	$35,000.00	1	$35,000.00
	SANITARY SEWER, 30-IN HOBAS - OPEN CUT	LF	$250.00	920	$230,000.00
	SANITARY SEWER, 8-IN PVC SDR 26 - OPEN CUT	LF	$65.00	600	$39,000.00
	SANITARY SEWER, 8-IN HOBAS - BORE AND JACK 18" STEEL CASING (STREAM	LF	$500.00	100	$50,000.00
	ABANDONMENT OF EXISTING SANITARY MANHOLES	EA	$2,000.00	4	$8,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, LESS THAN 20' DEEP	EA	$9,000.00	4	$36,000.00
	OUTSIDE DROP MANHOLE CONNECTION, 18"	EA	$8,000.00	1	$8,000.00
	SUBTOTAL CONSTRUCTION				$448,862.74
	MOBILIZATION (CONTRACTOR PROFIT, BONDS, INSURANCE)	LS		2%	$8,977.00
	ENGINEERING AND LEGAL	LS		5%	$22,443.00
	TOTAL BASE PROJECT				$480,282.74
	Contingencies - Base				25%
	Total - Base Project w/ Contingencies				$600,353.00

STP 1 Bypass Sewer City of Washington Illinois

Item No.	Description	Units	Estimated Unit Price	ENGINEER'S OPCC Third Party Analysis Estimated Quantity	Estimated Probable Cost
	FOUNDATION MATERIAL	CY	$52.00	30.00	$1,560.00
	RESTORATION-SEED, class 2 (topsoil,fertilizer,excelsior blanket, mulch incidental)	ACRE	$9,654.55	2.4	$23,170.92
	PERIMETER EROSION BARRIER	FT	$4.00	4340	$17,360.00
	CLEAR & GRUB	ACRE	$2500.00	1.2	$3,000.00
	SANITARY SEWER, 30-IN HOBAS - OPEN CUT	LF	$250.00	2120	$530,000.00
	ABANDONMENT OF EXISTING SANITARY MANHOLES	EA	$2,000.00	8	$16,000.00
	SANITARY MANHOLE, TYPE A, 6-FT DIA, LESS THAN 20' DEEP	EA	$9,000.00	7	$63,000.00
	SUBTOTAL CONSTRUCTION				$654,090.92
	MOBILIZATION (CONTRACTOR PROFIT, BONDS, INSURANCE)	LS		2%	$13,082.00
	ENGINEERING AND LEGAL	LS		5%	$32,705.00
	TOTAL BASE PROJECT				$699,877.92
	Contingencies - Base				25%
	Total - Base Project w/ Contingencies				$874,847.00

Alt. E, Relief/Bypass Sewers

WASHINGTON SEWER MAIN EASEMENTS

Date: 2/11/2022

Property Owner	PIN	Station		Length (Foot)	Permanent		Temp	
		From	To		Width (Foot)	Area (Acre)	Width (Foot)	Area (Acre)
NORTH SIDE OF TP&W UNLESS OTHERWISE NOTED								
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	N/A	N/A	460	20	0.21		
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-010	N/A	N/A	245	30	0.17	20	0.11
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-011	N/A	N/A	1,335	30	0.92	20	0.61
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-100-011	N/A	N/A	50	30	0.03	20	0.02
Kara Steeplechase Estates, Inc. (Lisa Hines)	02-02-27-101-005	N/A	N/A	425	30	0.29	20	0.20
Scott Ehrsam	02-02-27-101-004	N/A	N/A	75	30	0.05		

Appendix K.
Sections 2.1 and 2.2 of EPA/625/6-91/030, Sewer System Infrastructure Analysis and Rehabilitation

Appendix K.

The following is reproduced from *EPA/625/6-91/030, Sewer System Infrastructure Analysis and Rehabilitation*[1] (bold, highlights, and underlines added).

"***2.1 Historical Background***

The Water Pollution Control Act Amendments (Public Law 92-500, October 18, 1972), ***require*** *that the U.S. EPA construction grant applicants investigate the condition of their sewer systems.******** ***The grant cannot be approved unless it is documented that each sewer system discharging into such treatment works is not subject to "excessive infiltration and inflow."*** *This requirement was implemented in the Rules and Regulations for Sewer Evaluation and Rehabilitation(40CFR35.927).*

In addition, ***I/I analysis and Sewer System Evaluation Surveys(SSES) were required to be conducted on a routine basis*** *to document I/I, and also to indicate the most cost-effective method of rehabilitation required to correct the sewer pipe and manhole structure damage.*

The I/I analysis should document the non-existence or possible existence of excessive I/I in each sewer system tributary to the treatment works*. The analysis should identify the presence and type of I/I that exists in the sewer system including estimated flow rates. The following information should be evaluated and included:*

- *Estimated flow data at the treatment facility, all significant overflows and bypasses, and, if necessary, flows at key points within the sewer system*
- *Relationship of existing population and industrial contribution to flows in the sewer system*
- *Geographical and geological conditions which may affect the present and future flow rates or correction costs for the I/I*
- *A discussion of age, length, type, materials of construction and known physical conditions of the sewer system*

The SSES should include a systematic examination of the sewer system to determine the specific locations, estimated flow rates, method of rehabilitation and cost of rehabilitation versus the cost of transportation and treatment for each defined source of infiltration and each defined source of inflow. The results of the SSES should be summarized in a report that should include:

[1] EPA/625/6-91/030, *Sewer System Infrastructure Analysis and Rehabilitation*, 7.

• A justification for each sewer section cleaned and internally inspected

• A proposed rehabilitation program for the sewer system to eliminate all defined excessive I/I

2.2 Summary of Applicable U.S. EPA and State Regulations*

The following is a Summary of Federal and State Regulations and Guidelines for I/I analysis and SSES applicable under the U.S. EPA construction grant program.

The grant applicant must determine the I/I conditions in the sewer system by analyzing the preceding year's flow records from existing treatment plant and pump stations.

For smaller systems where flow records may not be available, the grant applicant shall obtain flow data by conducting flow monitoring at a single point at the treatment plant during high groundwater periods and also during rainstorms.

If there is a likelihood of excessive I/I in a portion of the collection system, it is desirable to monitor that portion separately.

No further I/I analysis will be necessary if domestic wastewater plus non-excessive

infiltration does not exceed 120 gallons per capita per day (gpcd) during periods of high groundwater.

The total daily flow during a storm should not exceed 275 gpcd, *and there should be no operational problems such as* ***surcharges, bypasses*** *or poor treatment performance resulting from hydraulic overloading of the treatment works during storm events.*

The flow rate of 120 gpcd for infiltration analysis contains two flow components:

80 gpcd of domestic base flow and

40 gpcd of non-excessive infiltration*."*

* With the expiration of the Grants Program the enforcement of these requirements fell to the States. For the Illinois Water Pollution Control Loan Program, applicants must certify that they do not have excessive I/I and that they have an ongoing I/I elimination program.

Appendix L.
City of Washington Ordinance No. 3442

ORDINANCE NO. 3442

AN ORDINANCE AMENDING CHAPTERS 52 AND 96 OF THE CODE OF ORDINANCES OF THE CITY OF WASHINGTON, TAZEWELL COUNTY, ILLINOIS REGARDING THE CONNECTION AND REPAIR OF PRIVATE SANITARY SEWER LATERALS AND THE DISCHARGING OF SUMP PUMPS AND PERIMETER TILES INTO SANITARY SEWERS

WHEREAS, the City of Washington, Illinois (the "City") is a home rule municipality in accordance with the Constitution of the State of Illinois and as such, has the authority to create this Ordinance; and

WHEREAS, Sections 52.040 through 52.055 of the Code of Ordinances of the City (the "Code") provides for certain standards and procedures for making connections to the City's public sanitary sewer but does not expressly address the maintenance of said connections; and

WHEREAS, Section 52.065(A) of the Code provides that no person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof run-off, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer but does not set forth the procedures, including incentives, to be used to enforce that provision; and

WHEREAS, Section 96.01(13) of the Code declares a nuisance "to cause, allow, or permit storm water, surface water, ground water, runoff water, subsurface drainage water or the like to be discharged into the sanitary sewer system of the city, by way of downspouts, footing tile, or otherwise"; and

WHEREAS, Section 96.03 of the Code provides remedies for the abatement of the nuisance defined in Section 96.01(13) of the Code; and

WHEREAS, the City Council has determined that it is in the best interests of the City to amend the Code to clarify maintenance obligations for connections to the City's public sanitary sewer and outline the procedures, including incentives, to be used to enforce Section 52.065(A) of the Code and Section 96.01(13) of the Code.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Washington, Illinois as follows:

Section 1: The recitals; as set forth above, are incorporated herein as though fully set forth and shall be considered the express findings of the City Council.

Section 2: That Chapter 52 of the Code be, and the same hereby is, amended by adding the following Section 52.056:

§ 52.056 CONNECTION AND REPAIR OF PRIVATE SANITARY SEWER LATERALS

ORDINANCE NO. 3446

AN ORDINANCE AMENDING CHAPTERS 52 AND 96 OF THE CODE OF ORDINANCES OF THE CITY OF WASHINGTON, TAZEWELL COUNTY, ILLINOIS REGARDING THE CONNECTION AND REPAIR OF PRIVATE SANITARY SEWER LATERALS AND THE DISCHARGING OF SUMP PUMPS AND PERIMETER TILES INTO SANITARY SEWERS

WHEREAS, the City of Washington, Illinois (the "City") is a home rule municipality in accordance with the Constitution of the State of Illinois and as such, has the authority to create this Ordinance; and

WHEREAS, Sections 52.040 through 52.055 of the Code of Ordinances of the City (the "Code") provides for certain standards and procedures for making connections to the City's public sanitary sewer but does not expressly address the maintenance of said connections; and

WHEREAS, Section 52.065(A) of the Code provides that no person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof run-off, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer but does not set forth the procedures, including incentives, to be used to enforce that provision; and

WHEREAS, Section 96.01(13) of the Code declares a nuisance "to cause, allow, or permit storm water, surface water, ground water, runoff water, subsurface drainage water or the like to be discharged into the sanitary sewer system of the city, by way of downspouts, footing tile, or otherwise"; and

WHEREAS, Section 96.03 of the Code provides remedies for the abatement of the nuisance defined in Section 96.01(13) of the Code; and

WHEREAS, the City Council has determined that it is in the best interests of the City to amend the Code to clarify maintenance obligations for connections to the City's public sanitary sewer and outline the procedures, including incentives, to be used to enforce Section 52.065(A) of the Code and Section 96.01(13) of the Code.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Washington, Illinois as follows:

Section 1: The recitals; as set forth above, are incorporated herein as though fully set forth and shall be considered the express findings of the City Council.

Section 2: That Chapter 52 of the Code be, and the same hereby is, amended by adding the following Section 52.056:

§ 52.056 CONNECTION AND REPAIR OF PRIVATE SANITARY SEWER LATERALS

(A) The pipe or pipes and appurtenances that carry sewage and liquid waste from the building or facility that is required to be provided with public sanitary sewer service, or that is actually provided with public sanitary sewer service, to the public sanitary sewer main must be maintained by the person owning the real property on which such private sanitary sewer laterals are located, at such person's expense, in a condition so as to satisfy the standards of this Code and comply with all other requirements provided by law. For the avoidance of doubt, such private sanitary sewer lateral shall begin at the building or facility being served and continue to the first of: (i) the cleanout provided in accordance with Section 52.056(C); or (ii) in the event there is no cleanout provided in accordance with Section 52.056(C), the sanitary public sewer main.

(B) After obtaining any permit required under Section 52.040, but in no event later than two (2) days prior to the connection or repair of any private sanitary sewer lateral as provided under this Chapter, the person owning the real property shall provide notice of the time and place of such connection or repair to the City Administrator or his designee. The city shall have the right to have a designated representative present at the time of any connection to, or repair of, any connection to the public sanitary sewer main. The presence of a designated representative of the City at such connection or repair shall not waive any notice or inspection required under Section 52.054.

(C) After the receipt of notice under Section 52.056(B), the city will provide the person performing such connection or repairs with a cleanout that must be installed, at the expense of the owner of the real property, behind the curbline of such real property; provided that the city will repair any damage done to the roadway and curb that was necessarily caused in the installation of such cleanout. The owner of the real property shall be responsible for any and all maintenance to the cleanout provided by the city hereunder.

Section 3: That Chapter 52 of the Code be, and the same hereby is, amended by adding the following Sections 52.081 through 52.094:

DISCHARGING OF SUMP PUMPS AND PERIMETER TILES INTO SANITARY SEWERS

§ 52.081 PURPOSE

This ordinance is adopted to set forth the procedures, including incentives, that will be used to enforce the provisions of Section 52.065(A) of this Code, which provides as follows: No person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof run-off, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer.

§ 52.082 INSPECTION AUTHORIZATION

The City Administrator, or one or more of his designees, are authorized and directed to cause an inspection of the plumbing fixtures and facilities, downspouts, sump pumps, building drains, building sewers, yard drains, area drains, and building or lot storm water, surface water, or ground water drainage devices located on or used by premises located in the City, in an effort to locate conditions which would permit storm water, surface water, or ground water to enter directly or indirectly the public sanitary sewer. In certain cases, an inspection may require more than one entry to the premises.

The City Administrator shall develop a plan to inspect premises in those areas that have experienced surcharging and those areas that may contribute to surcharging and shall implement said plan as soon as reasonably practical.

§ 52.083 TESTING PROCEDURES

The City Administrator, or one or more of his designees, are authorized and directed to cause "smoke tests", "dye tests", "TV monitor tests", or any combination of such tests to be conducted within any "area subject to surcharging and any area that may contribute to surcharging" in order to locate conditions which would permit storm water, surface water, or ground water to enter a building sanitary drain, private sanitary sewer, or public sanitary sewer, or if the exact location of such conditions cannot be determined, to at least determine if, during such tests, water or dye placed in or on any such premises or in any storm water collection or diversion device located on such premises, reaches the public sanitary sewer or if smoke pumped into the public sanitary sewer emerges from locations on private property.

The aforesaid testing shall be paid for by the City, provided the owner and occupant of the premises have provided access for and consented to the inspection of the premises as provided in Section 52.085. Notwithstanding any other provisions of this ordinance, in those cases where an owner resides in the premises, and there is more than one owner, the consent of one owner only is sufficient, and the consent of any other occupant is not needed.

Each owner and occupant of a premises shall provide access in the premises to allow the inspection. Access for the purposes of this ordinance is providing a cleanout as defined in 77 Ill. Adm. Code §§ 890.420 & 890.430 as now in effect or as may from time to time be amended. The owner and/or occupant must also remove any obstructions that prevent access to a cleanout.

If upon first inspection the City determines that the owner and/or occupant does not have a proper cleanout (or it is obstructed), then the owner and/or occupant shall within thirty (30) days thereafter install a proper cleanout (or remove the obstruction) and allow the City to accomplish the inspection.

In the event the owner and occupant of a premises do not consent to the inspection as provided in Section 52.085, or provide access as defined in this Section, then the owner shall reimburse the City for the cost of testing. The cost of said testing is determined to be five hundred dollars ($500.00) and said amount shall be paid to the City within thirty (30) days of the date the City performed the testing. The payment of this cost shall not relieve the owner of a premises of the responsibility of otherwise complying with all of the terms of this ordinance.

§ 52.084 COURT ACTION

If the City is unable to secure the consent of the owner or occupant of the premises to conduct the inspection described in 52.082 (including the providing of proper access) then counsel for the City is hereby authorized and directed to seek judicial authorization for the City to enter the premises and conduct the inspection. In such action, counsel may also seek reimbursement for the cost of testing.

§ 52.085 PROCEDURE TO SECURE AUTHORIZATION

The City Administrator, or one or more of his designees, shall notify the owner and occupant of a premises that the City desires to inspect the premises for the purposes set forth in this ordinance. If an owner resides in the premises, then notice need be given only to one owner and need not be given to any other occupant.

Notification shall be by personal contact or by written notice sent by first class mail. In those cases where an owner does not reside in the premises, the owner shall be notified by first class mail. If there is more than one owner of a premises, notice may be given to one owner only, and it shall be deemed to be constructive notice to all other owners.

Refusal to allow inspection shall be deemed to have occurred in the following events:

(A) A verbal statement denying access for inspection made by an owner or occupant of the premises (in those cases where an owner does not reside in the premises) to the City employee requesting such inspection;

(B) In those cases where the City has been unable to contact an owner and the occupant (in those cases where an owner does not reside in the premises) in person, then if there is no response to the written notice by the owner and occupant (in those cases where an owner does not reside in the premises) within thirty (30) days of the date the City has mailed the written notice, allowing the City to make the inspection within said thirty (30) day period, refusal shall be deemed to have occurred. Refusal means that the owner and occupant (in those cases where an owner does not reside in the premises) have not permitted inspection within said thirty (30) day period.

§ 52.086 NOTIFICATION OF ACTION REQUIRED

After the City has inspected the premises, either by voluntary consent or pursuant to authorization received by court, the City shall notify the owner by written notice sent by first class mail if there is any violation of Section 52.065(A) of this Code.

The owner shall have the following periods to correct any violation:

(A) If a sump pump is hooked into the sanitary sewer, it shall be unhooked within one (1) month of such notice.

(B) If a perimeter tile (or more than one) is hooked into the sanitary sewer, then all of such tiles shall be disconnected within six (6) months of the date of such notice. If the disconnect date falls in the months of March, April, or May, the effective date shall be May 31 of the same year.

§ 52.087 NO EXTENSIONS

The time limits set forth in Section 52.086 are deemed to be critical to the procedures set forth herein, and to the orderly elimination of the problems cited herein. Therefore, no extensions to the time limits will be allowed, and failure to comply with same shall cause an owner to lose the grant referred to in Section 52.088, and to be subject to the penalties and other actions set forth in Section 52.092.

§ 52.088 GRANT INCENTIVE

The owner of a premises shall be eligible to receive a grant of the lesser of five hundred dollars ($500.00) or the reasonable costs of unhooking the perimeter tile from the sanitary sewer, if all of the following conditions are met:

(A) An owner and the occupant (in those cases where an owner does not reside in the premises) have provided access as defined in Section 52.083.

(B) An owner and the occupant (in those cases where an owner does not reside in the premises) have voluntarily consented to and allowed an inspection of the premises within the time frame set forth in Section 52.085.

(C) The owner has disconnected the perimeter tile within the time limits prescribed in Section 52.086 (There is no grant incentive for disconnecting a sump pump.)

With respect to the requirement of disconnecting perimeter tiles, all such work shall be done in accordance with all other ordinances of the City. The owner and occupant (in those cases where an owner does not reside in the premises) shall allow

the City to inspect all work to ensure that it has been done in conformity with all ordinances.

§ 52.089 GRANT INCENTIVE - REPAIRS ONLY

The owner shall also be eligible for a grant of the lesser of five hundred dollars ($500.00) or the costs of repairing a sewer lateral provided the following conditions have been met:

(A) The owner and occupant (in those cases where an owner does not reside in the premises) have complied with all provisions of this Chapter.

(B) The problem with the sewer lateral was discovered pursuant to one of the testing procedures set forth in this Chapter.

(C) The owner repairs the sewer lateral in a manner satisfactory to the City with the repair to be accomplished within one (1) year of the date of the test.

(D) The owner shall provide satisfactory proof to the City of the costs of the repair.

The grant shall be paid only to the owner of the property at the time of the repair. The owner shall provide satisfactory proof to the City within ninety (90) days of notification of same by the City of their eligibility.

§ 52.090 INELIGIBILITY FOR GRANT

An owner shall be ineligible to receive a grant if he or she or the occupant (in those cases where an owner does not reside in the premises) have done any of the following:

(A) Failed to provide access or remove any obstruction to access as defined in Section 52.083.

(B) Failed to consent and allow inspection of the premises within the time period set forth in Section 52.085. Failure to allow inspection includes withholding of consent by an occupant of the premises in those cases where an owner does not reside in the premises.

(C) Failed to complete all corrective action within the time period set forth in Section 52.086.

(D) Failed to comply with any other provisions of this Code.

§ 52.091 EFFECTIVE DATE FOR GRANT ELIGIBILITY

Any owner who has disconnected perimeter tile from the sanitary sewer after October 4, 2021, shall be eligible for the grant provided herein.

§ 52.092 PENALTIES

Any person who violates, neglects, or refuses to comply with, or who resists or opposes the enforcement of any provision of this ordinance shall be punished by a fine of One Hundred Dollars ($100.00) per month that such violation, neglect, or refusal continues. The first penalty may be enforced by issuance of a "Notice of Violation" for the fine amount enumerated herein, or by issuance of a "Notice to Appear." Subsequent penalties of One Hundred Dollars ($100) shall be assessed on the same day of each subsequent month following issuance of a Notice of Violation or Notice to Appear without further notice thereof. This penalty shall be in addition to the costs as provided in § 52.083, and in addition to any and all other remedies which may be available to the City under this Chapter, other Chapters of the Code of Ordinances, or other laws.

§ 52.093 OWNER RESPONSIBILITY FOR TENANT

In certain cases the occupant of a premises will not be the owner of the premises. Notice of actions required by this ordinance will be given to the owner of the premises. It shall be the responsibility of the owner to secure the consent and cooperation of all occupants for all procedures required by this ordinance, and if the owner does not or is unable to secure for any reason whatsoever the consent and cooperation of all occupants of a premises as to any procedure, then the owner shall be subject to all remedies provided for in this ordinance, and shall be responsible for the payment of all testing costs.

Owner is used in the singular in this ordinance. Where there is more than one owner of a premises, notice need be given to only one owner, and consent may be obtained from one owner only. Occupant is used in the singular in this ordinance. Notice or consent need be given to or obtained from only one occupant in those cases where an owner does not reside in the premises. (This is in addition to the notice and consent required by an owner.)

§ 52.094 SEVERABILITY CLAUSE

If any provision of this ordinance, or the application of any provision of this ordinance, is held unconstitutional or otherwise invalid, such occurrence shall not affect other provisions of this ordinance, or their application, that can be given effect without the unconstitutional or invalid provision or its application. Each unconstitutional or invalid provision, or application of such provision, is severable, unless otherwise provided by this ordinance.

Section 4: That Chapter 96 of the Code be, and the same hereby is, amended by striking Section 96.03.

Section 5: If any provision of this Ordinance or application thereof to any person or circumstances is ruled unconstitutional or otherwise invalid, such invalidity shall not affect other provisions or applications of this Ordinance that can be given effect without the invalid application or provision, and each invalid provision or invalid application of this Ordinance is severable.

Section 6: That all ordinances or parts thereof in conflict herewith are hereby expressly repealed.

Section 7: This Ordinance shall be in full force and effect from and after its passage, approval, and notification as provided by law and shall take effect upon its passage as required by law.

PASSED AND APPROVED this 6th day of December, 2021.

AYES:-8-Adams, Blundy, Boyles, Brownfield, Butler, Dingledine, Stevens, Yoder

NAYS:-0-

Gary W. Manier, Mayor

ATTEST:

Valeri L. Brod, City Clerk

Appendix M.
Basin-by-Basin Flow Analysis of Tributary Area

Table 2.02-3 Wet Weather Flow Metering Data

FM	Average Dry Flow (gpm)	Peak Wet Weather Flow (gpm)					
		July 6, 2016	Peaking Factor	August 12, 2016	Peaking Factor	August 30, 2016	Peaking Factor
FM 1	179	641	3.57	1,341	7.48	2,290	12.77
FM 2	1,024	5,759	5.62	10,571	10.32	12,114	11.83
FM 3[1]	17	139	8.27	139	8.27	139	8.27
FM 4	349	639	1.83	795	2.28	909	2.60
FM 5	981	5,708	5.82	8,867	9.04	11,470	11.69
FM 6	633	4,719	7.45	7,133	11.27	11,671	18.44
FM 7	56	511	9.20	1,754	31.57	3,142	56.57
FM 8	636	3,610	5.67	3,557	5.59	9,584	15.06
FM 9	78	622	7.97	914	11.71	3,391	43.45

[1] Wet weather flow for FM-3 is from June 22, 2016

Appendix N.
Website Questionnaire Responses

On January 18, 2022, the website:

Project Overview | Farm Creek Sewer Project - City of Washington, IL (hyperlink)

or www.farmcreeksewerproject.com (URL)

was posted to disseminate data and communications regarding the Farm Creek Trunk Sewer project.

As part of the site there is a questionnaire and the ability to offer comments.

This questionnaire portion of the site will close on February 28, 2022, at which point those comments will be included in this report.

However, the responses as of February 12, 2022, are included as a placeholder.

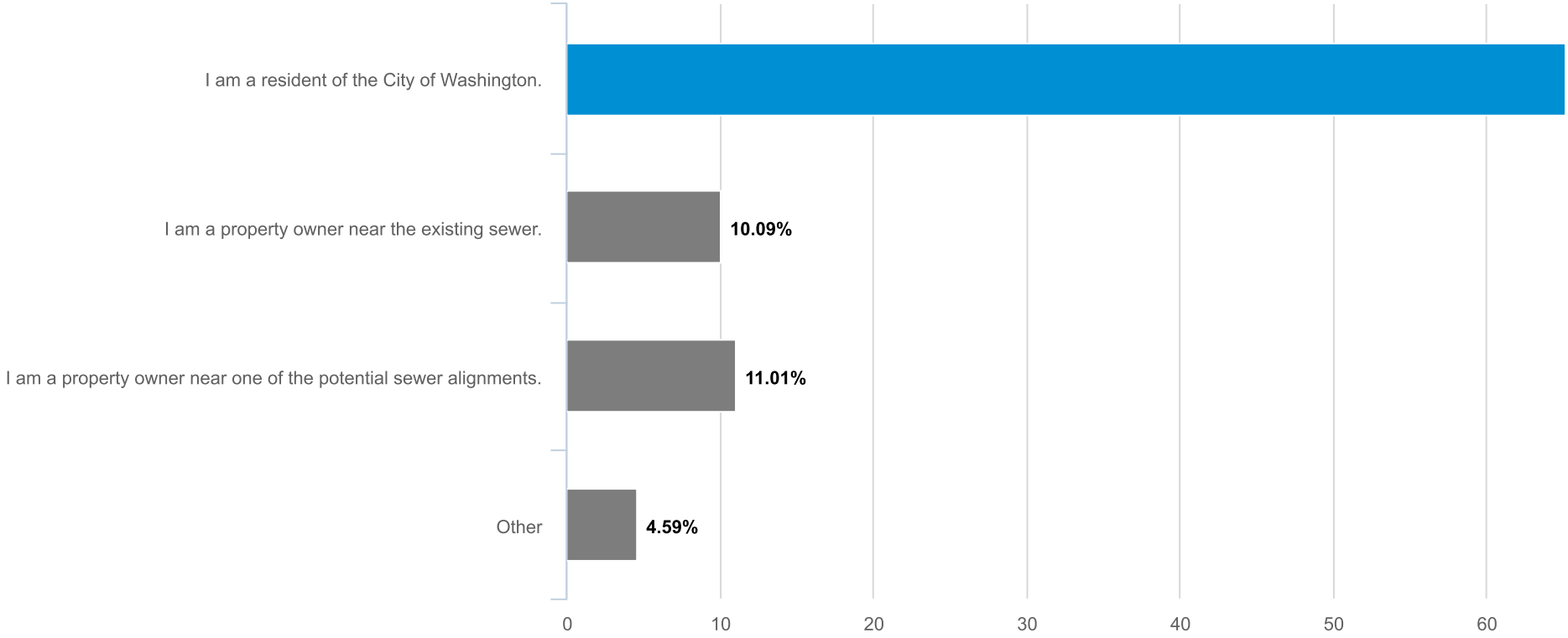
Farm Creek Trunk Sewer Project - Study Phase Questionnaire - Dashboard

370	146	50	34.25%	96
Viewed	Total Responses	Completed	Completion Rate	Dropouts

5 mins

Average Time

Please check all that apply:



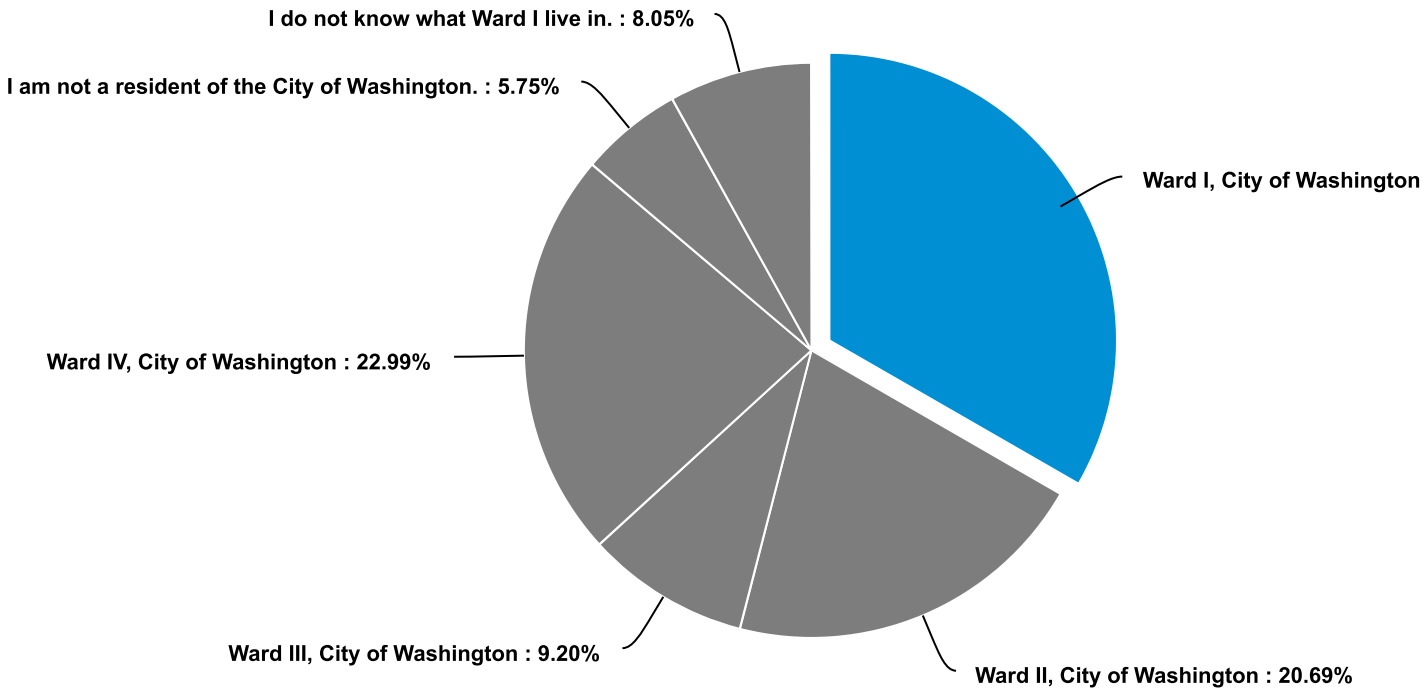
Answer	Count	Percent	20%	40%	60%	80%	100%
I am a resident of the City of Washington.	81	74.31%					
I am a property owner near one of the potential sewer alignments.	12	11.01%					
I am a property owner near the existing sewer.	11	10.09%					
Total	**109**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
Other	5	4.59%					
Total	**109**	**100%**					

Please check all that apply: - Text Data for Other

02/09/2022	65881350	Township
01/22/2022	64761797	I have a Washington address but am in an unincorporated area between washington & East Peoria
01/21/2022	64713231	Property owner adjacent to City.
01/20/2022	64666661	Not a resident
01/19/2022	64416783	Work in city; do not own property

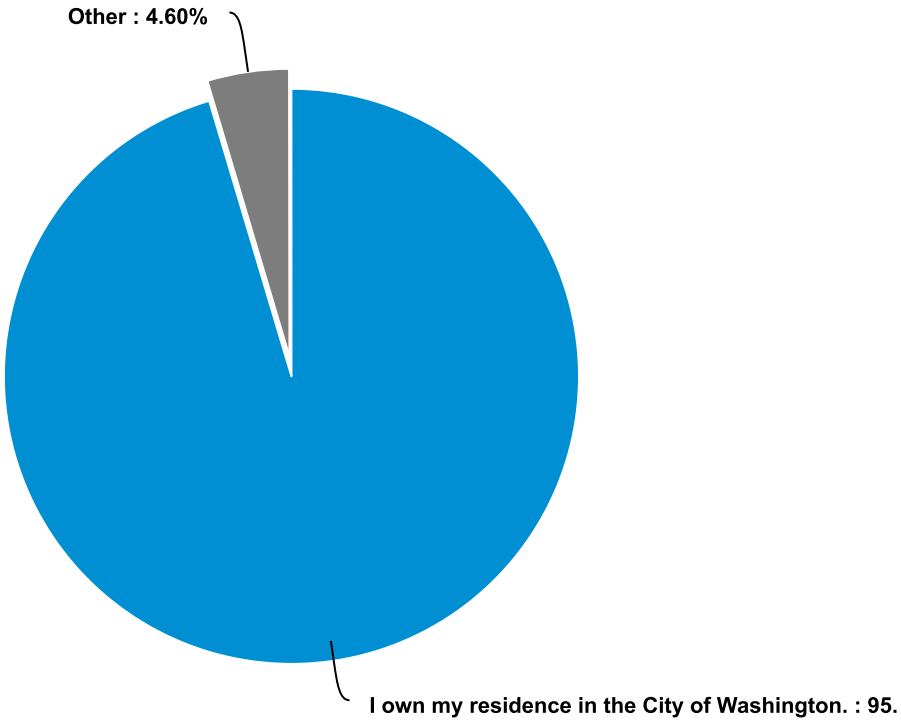
Where do you live?



Answer	Count	Percent	20%	40%	60%	80%	100%
Ward I, City of Washington	29	33.33%					
Ward IV, City of Washington	20	22.99%					
Ward II, City of Washington	18	20.69%					
Ward III, City of Washington	8	9.2%					
Total	**87**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
I do not know what Ward I live in.	7	8.05%					
I am not a resident of the City of Washington.	5	5.75%					
Total	**87**	**100%**					

Which best describes your residence situation?

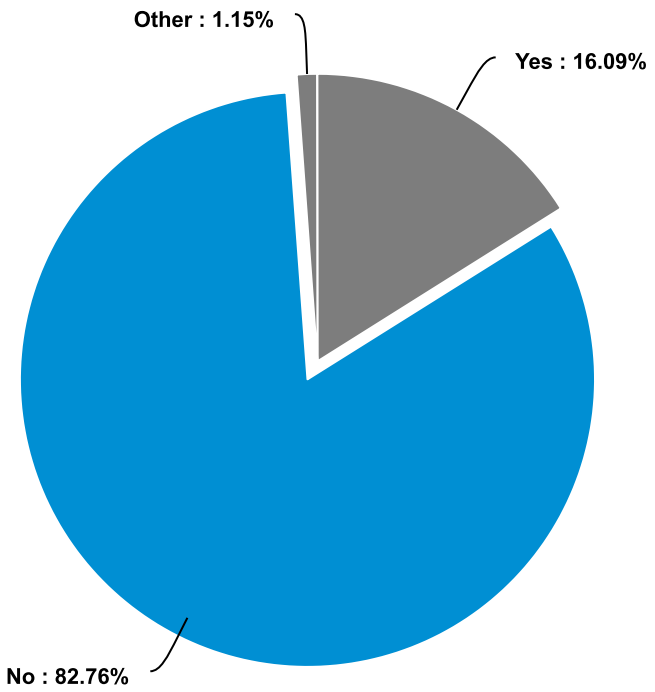


Answer	Count	Percent	20%	40%	60%	80%	100%
I own my residence in the City of Washington.	83	95.4%					
Other	4	4.6%					
I rent my residence in the City of Washington.	0	0%					
Total	**87**	**100%**					

Which best describes your residence situation? - Text Data for Other

01/22/2022	64761797	Own my home near the waste water plant
01/21/2022	64713231	Own a residence adjacent to the City.
01/20/2022	64666661	Not a resident
01/19/2022	64416783	Own outside city

Do you own or manage a business in the City of Washington?

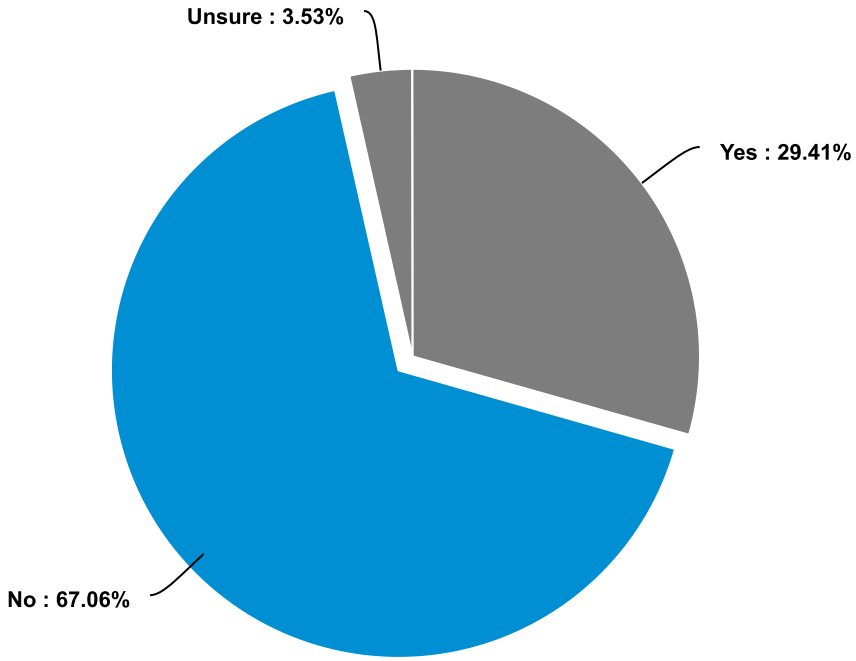


Answer	Count	Percent	20%	40%	60%	80%	100%
No	72	82.76%					
Yes	14	16.09%					
Other	1	1.15%					
Total	**87**	**100%**					

Do you own or manage a business in the City of Washington? - Text Data for Other

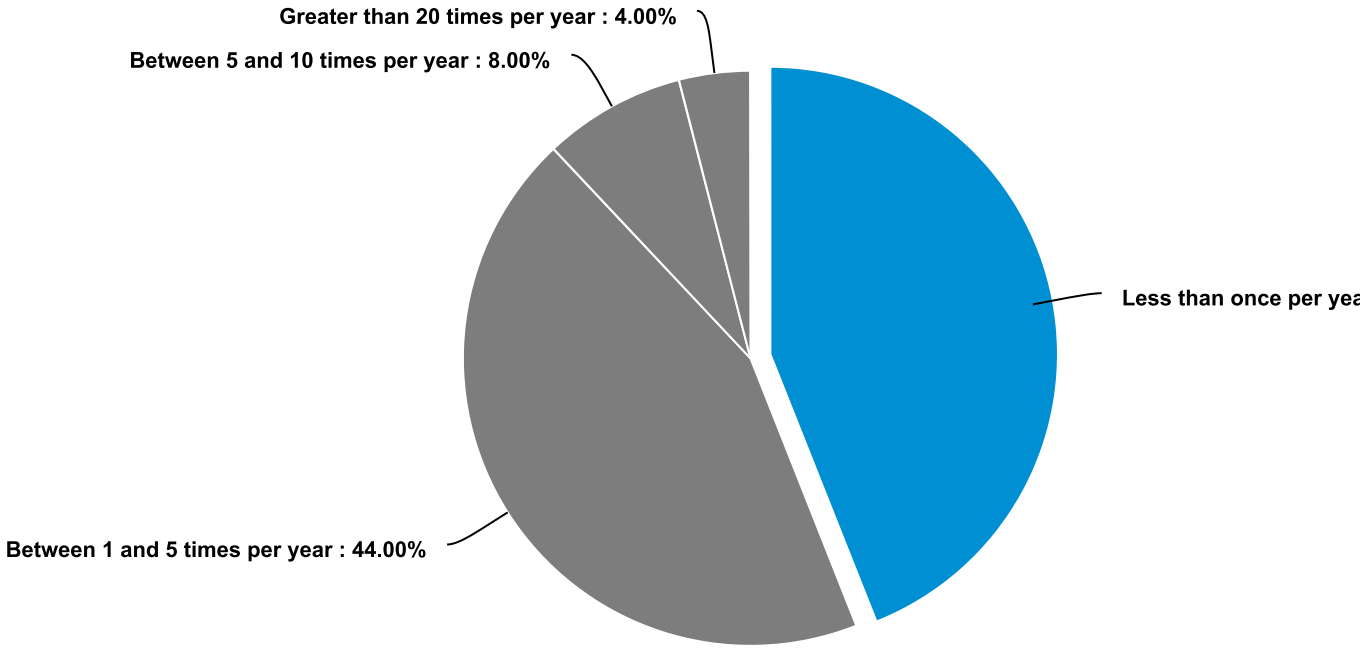
01/21/2022	64713231	Agri bisiness adjacent to City.

Have you experienced sewer backups in your residence or business?



Answer	Count	Percent	20%	40%	60%	80%	100%
No	57	67.06%					
Yes	25	29.41%					
Unsure	3	3.53%					
Total	**85**	**100%**					

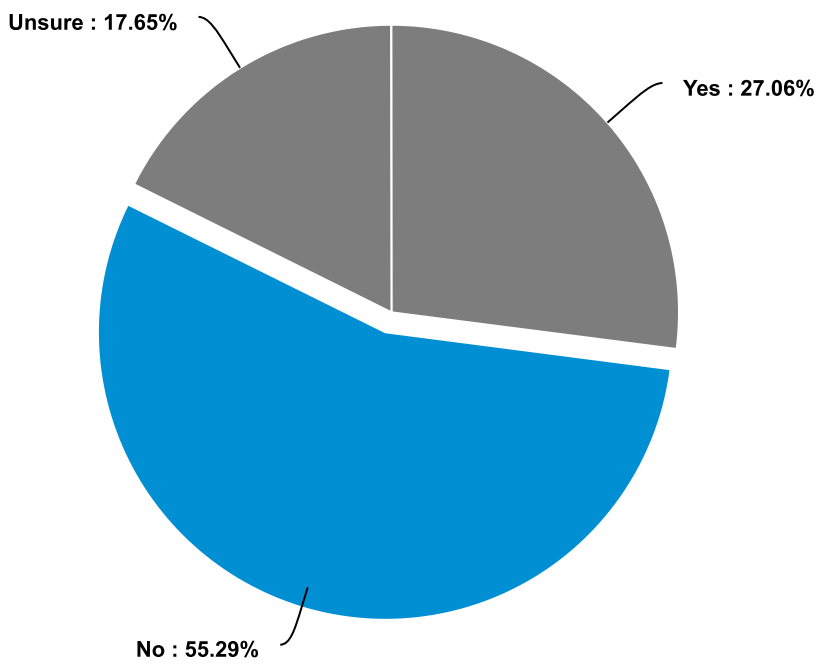
How many times have you experienced sewer backups in your residence or business?



Answer	Count	Percent	20%	40%	60%	80%	100%
Less than once per year	11	44%					
Between 1 and 5 times per year	11	44%					
Between 5 and 10 times per year	2	8%					
Total	**25**	**100%**					

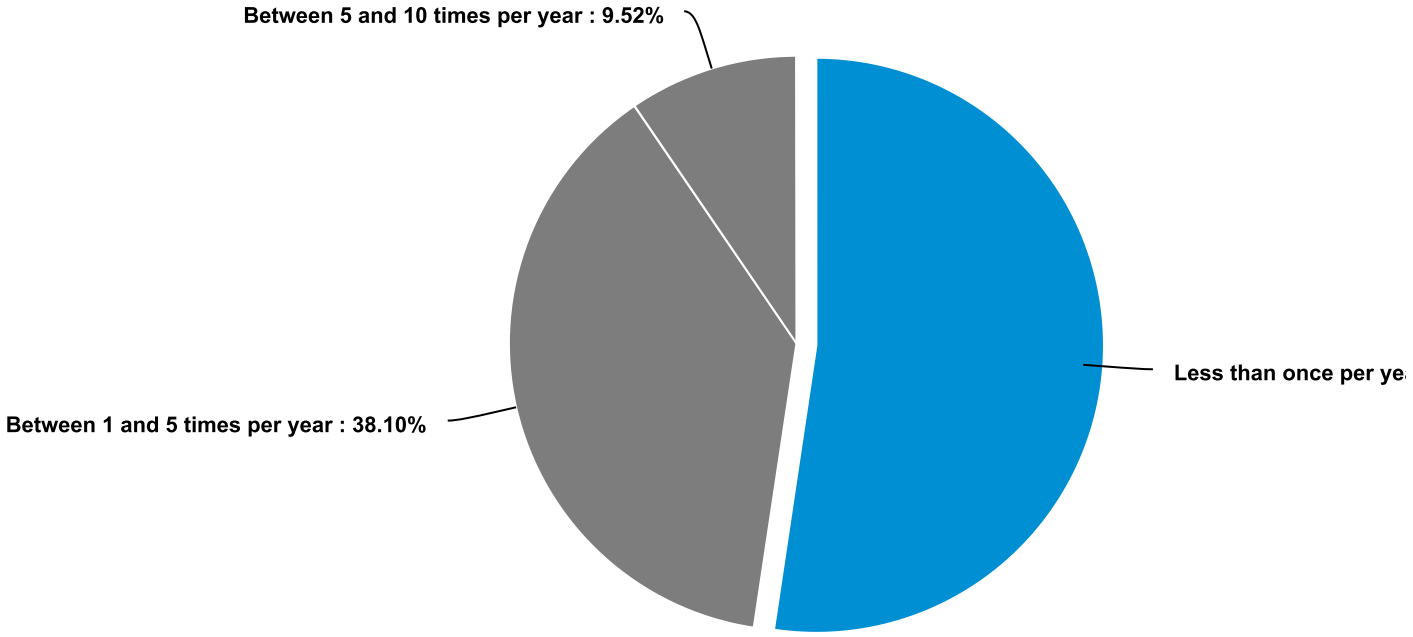
Answer	Count	Percent	20%	40%	60%	80%	100%
Greater than 20 times per year	1	4%					
Between 10 and 20 times per year	0	0%					
Total	**25**	**100%**					

Are you aware of others in your neighborhood that have experienced sewer backups in their residence or business?



Answer	Count	Percent	20%	40%	60%	80%	100%
No	47	55.29%					
Yes	23	27.06%					
Unsure	15	17.65%					
Total	**85**	**100%**					

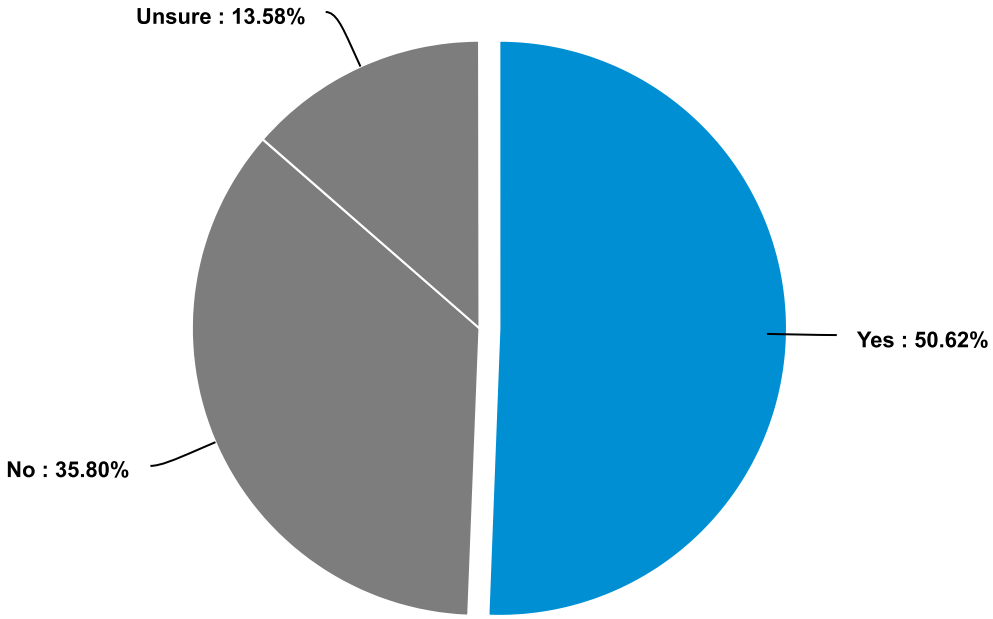
How many mes have they experienced sewer backups in their residence or business?



Answer	Count	Percent	20%	40%	60%	80%	100%
Less than once per year	11	52.38%					
Between 1 and 5 times per year	8	38.1%					
Between 5 and 10 times per year	2	9.52%					
Total	**21**	**100%**					

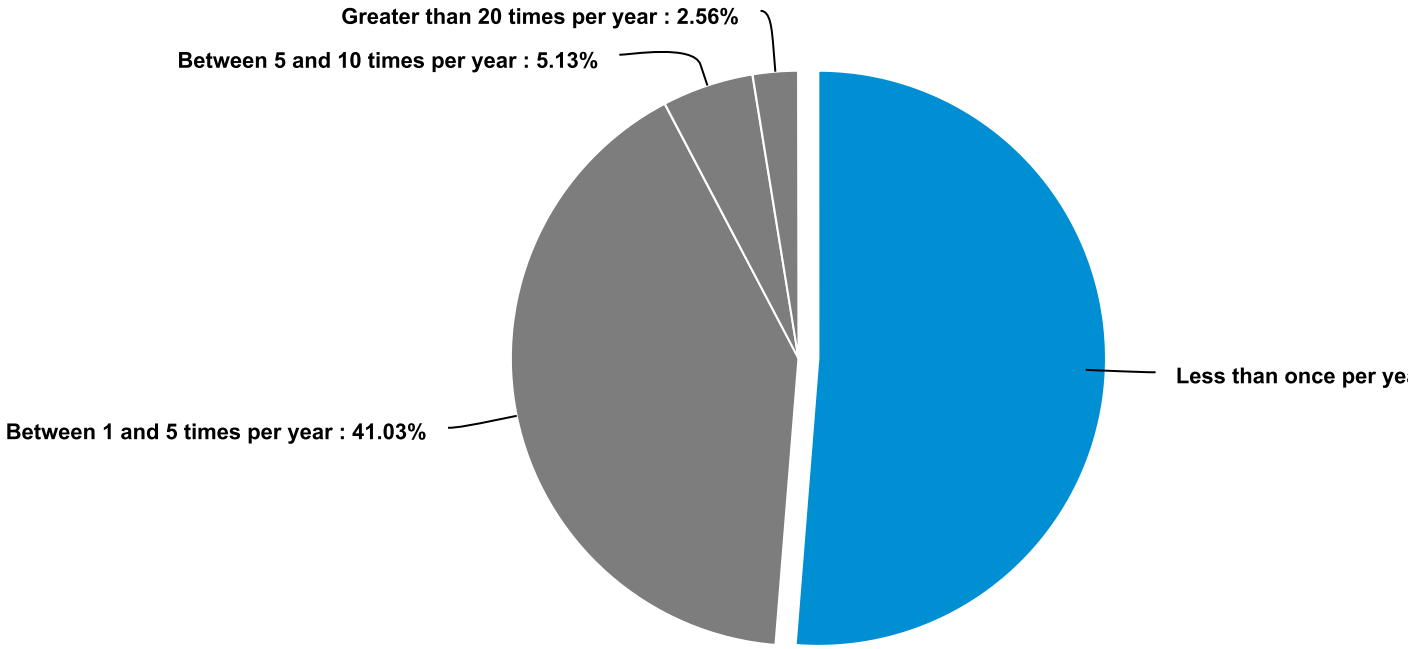
Answer	Count	Percent	20%	40%	60%	80%	100%
Between 10 and 20 times per year	0	0%					
Greater than 20 times per year	0	0%					
Total	**21**	**100%**					

Are you aware of others in the City of Washington, but NOT in your neighborhood, that have experienced sewer backups in their residence or business?



Answer	Count	Percent	20%	40%	60%	80%	100%
Yes	41	50.62%					
No	29	35.8%					
Unsure	11	13.58%					
Total	**81**	**100%**					

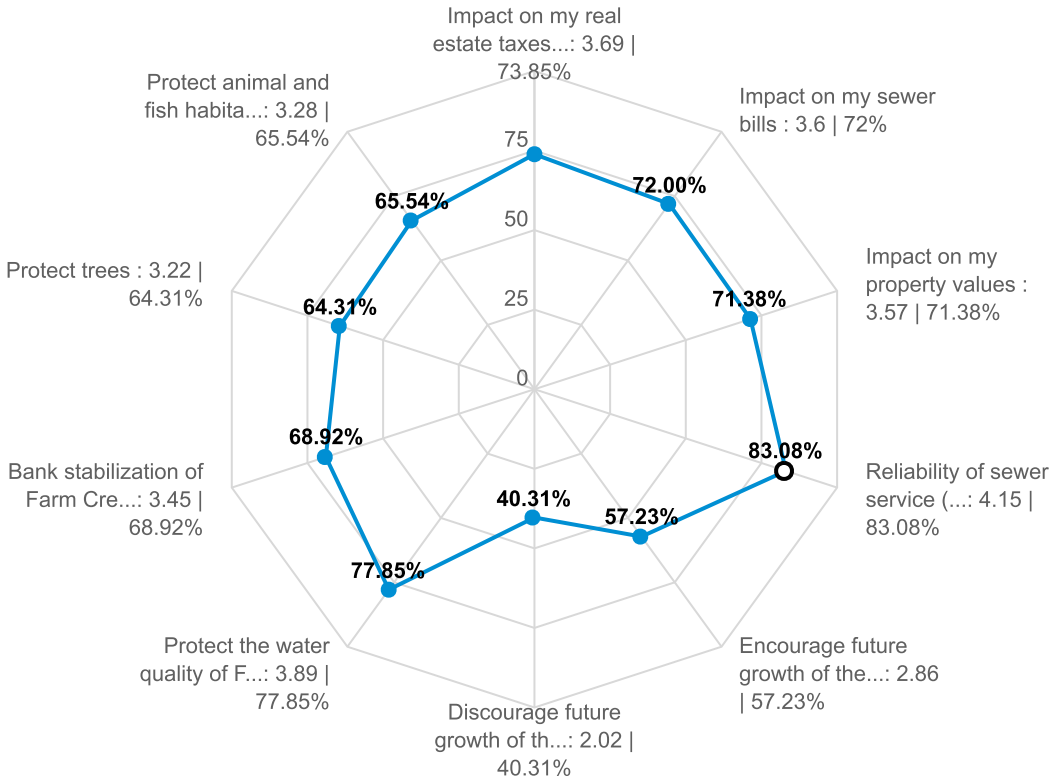
How many mes have they experienced sewer backups in their residence or business?



Answer	Count	Percent	20%	40%	60%	80%	100%
Less than once per year	20	51.28%					
Between 1 and 5 times per year	16	41.03%					
Between 5 and 10 times per year	2	5.13%					
Total	**39**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
Greater than 20 times per year	1	2.56%					
Between 10 and 20 times per year	0	0%					
Total	**39**	**100%**					

Please click and drag the marker for each of the listed concerns below, to indicate how important each concern is to you. We need your response to each concern - please indicate how high of a priority each is to you.

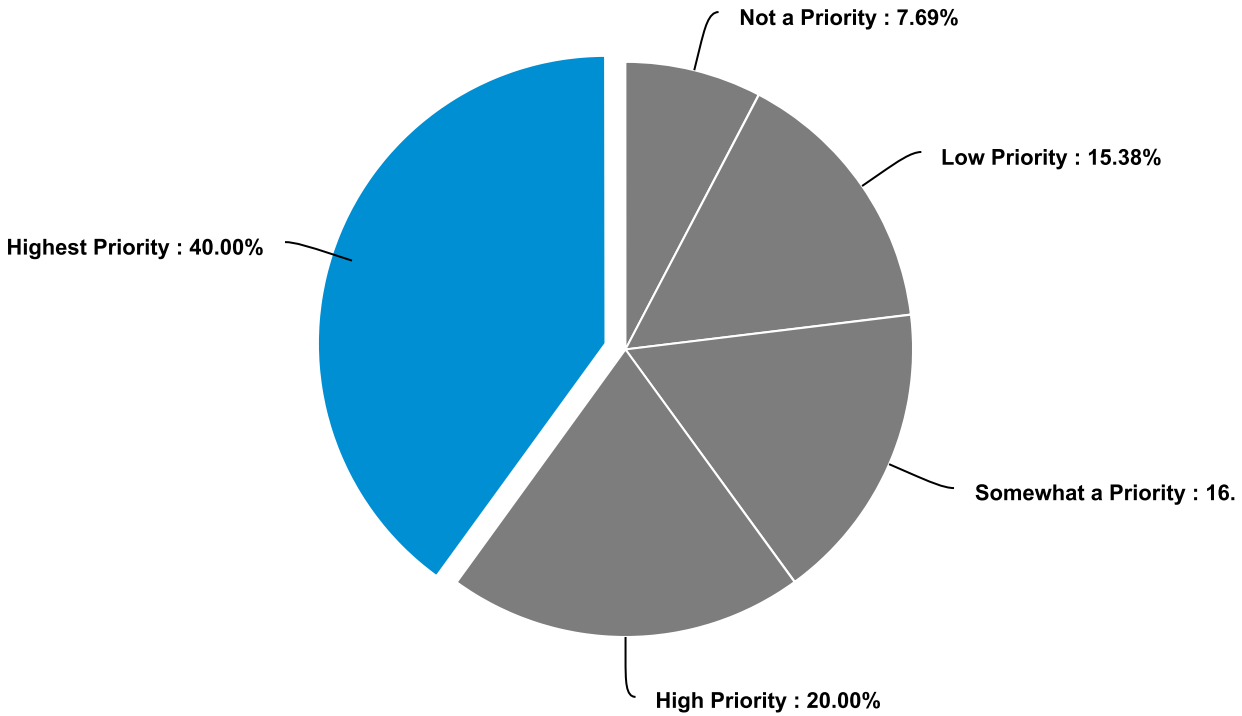


Powered by AI

Question	Count	Score	Not a Priority	Low Priority	Somewhat a Priority	High Priority	Highest Priority
Impact on my real estate taxes	65	3.69					
Impact on my sewer bills	65	3.6					
Average		**3.37**					

Question	Count	Score	Not a Priority	Low Priority	Somewhat a Priority	High Priority	Highest Priority
Impact on my property values	65	3.57					
Reliability of sewer service (eliminate backups and overflows)	65	4.15					
Encourage future growth of the City of Washington	65	2.86					
Discourage future growth of the City of Washington	65	2.02					
Protect the water quality of Farm Creek	65	3.89					
Bank stabilization of Farm Creek	65	3.45					
Protect trees	65	3.22					
Protect animal and fish habitats	65	3.28					
	Average	**3.37**					

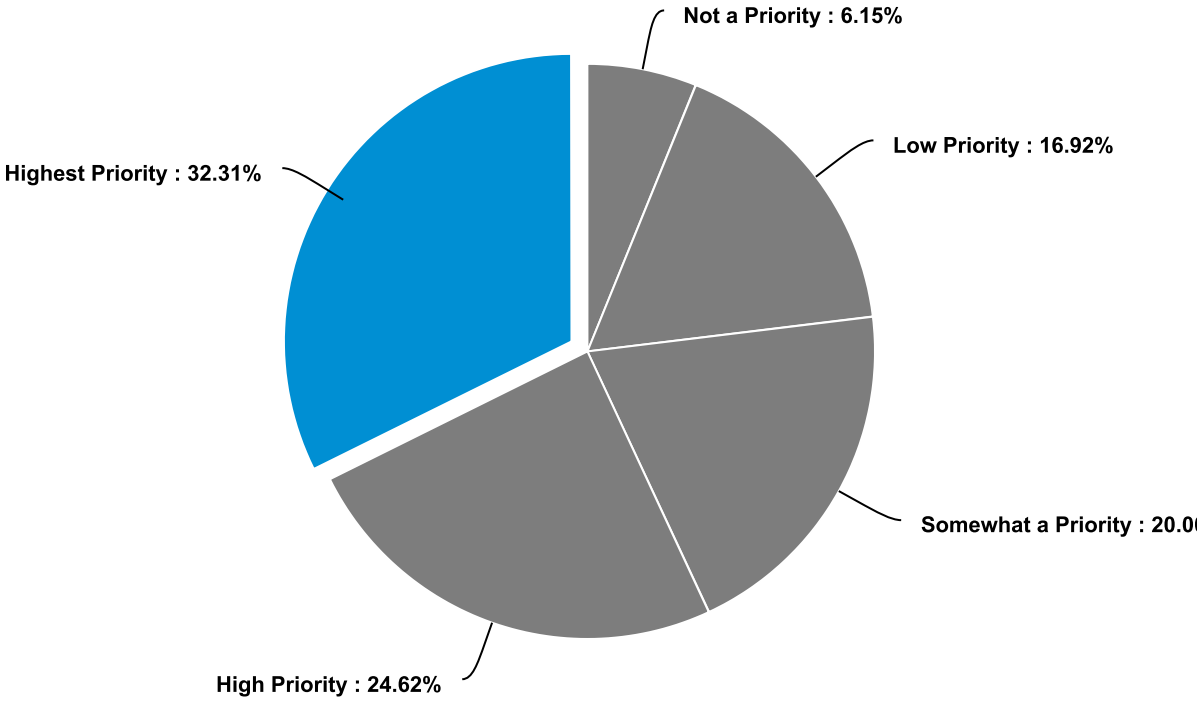
Impact on my real estate taxes



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	5	7.69%					
Low Priority	10	15.38%					
Somewhat a Priority	11	16.92%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	13	20%					
Highest Priority	26	40%					
Total	**65**	**100%**					

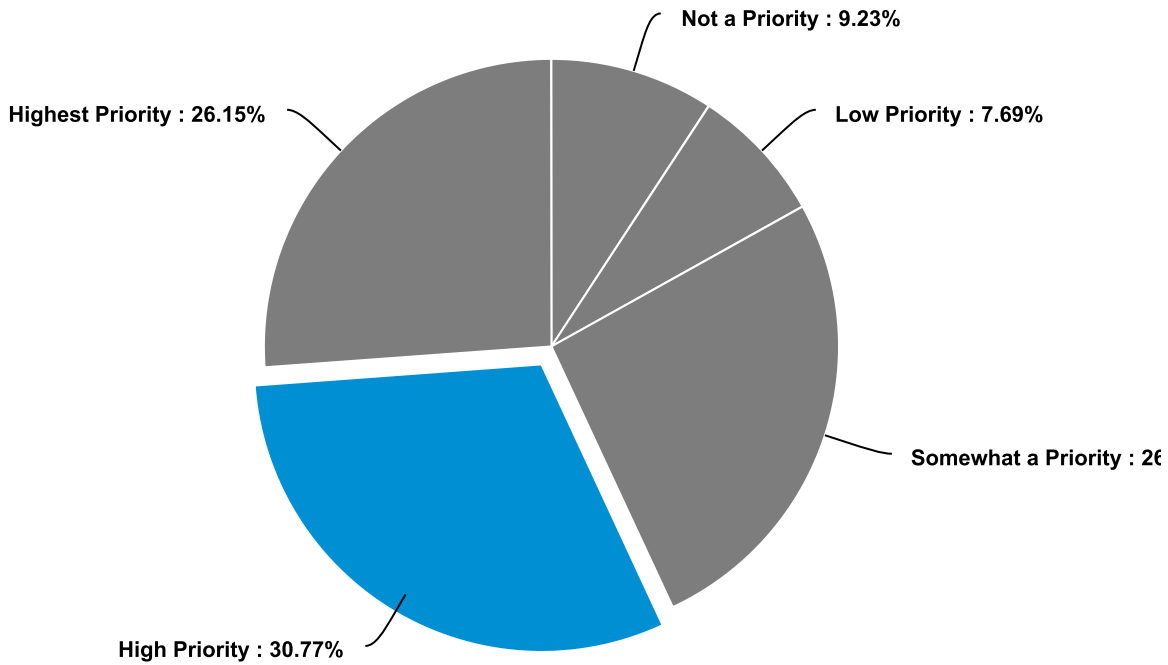
Impact on my sewer bills



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	4	6.15%					
Low Priority	11	16.92%					
Somewhat a Priority	13	20%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	16	24.62%					
Highest Priority	21	32.31%					
Total	**65**	**100%**					

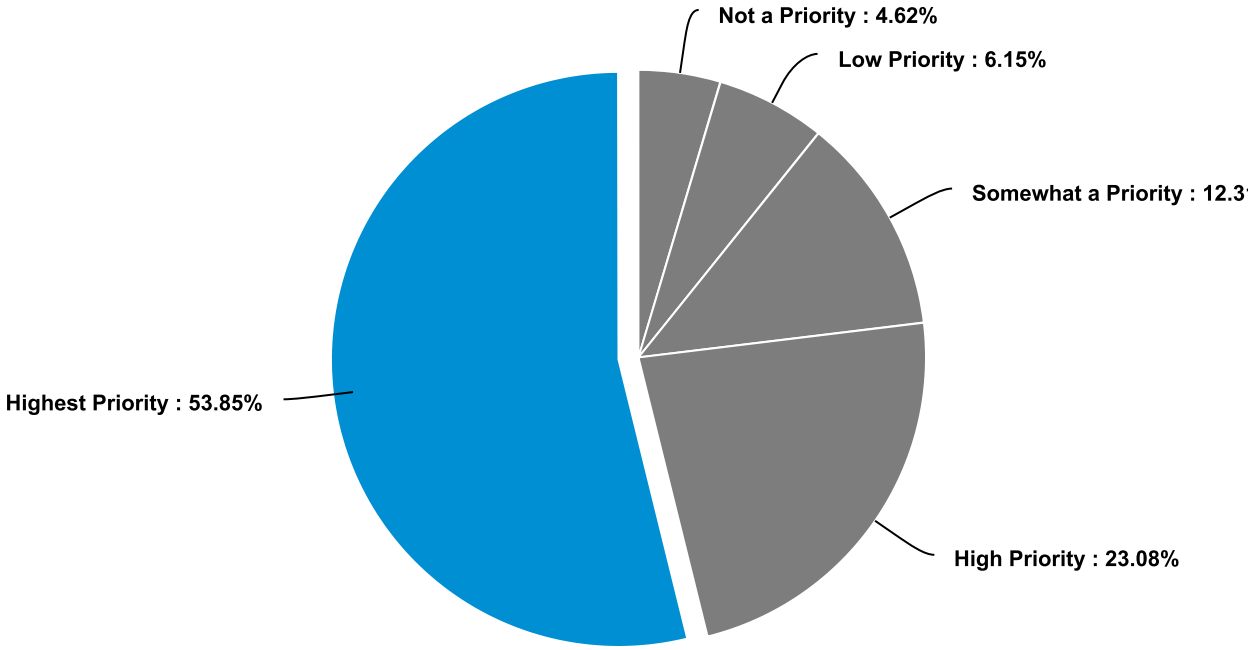
Impact on my property values



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	6	9.23%					
Low Priority	5	7.69%					
Somewhat a Priority	17	26.15%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	20	30.77%					
Highest Priority	17	26.15%					
Total	**65**	**100%**					

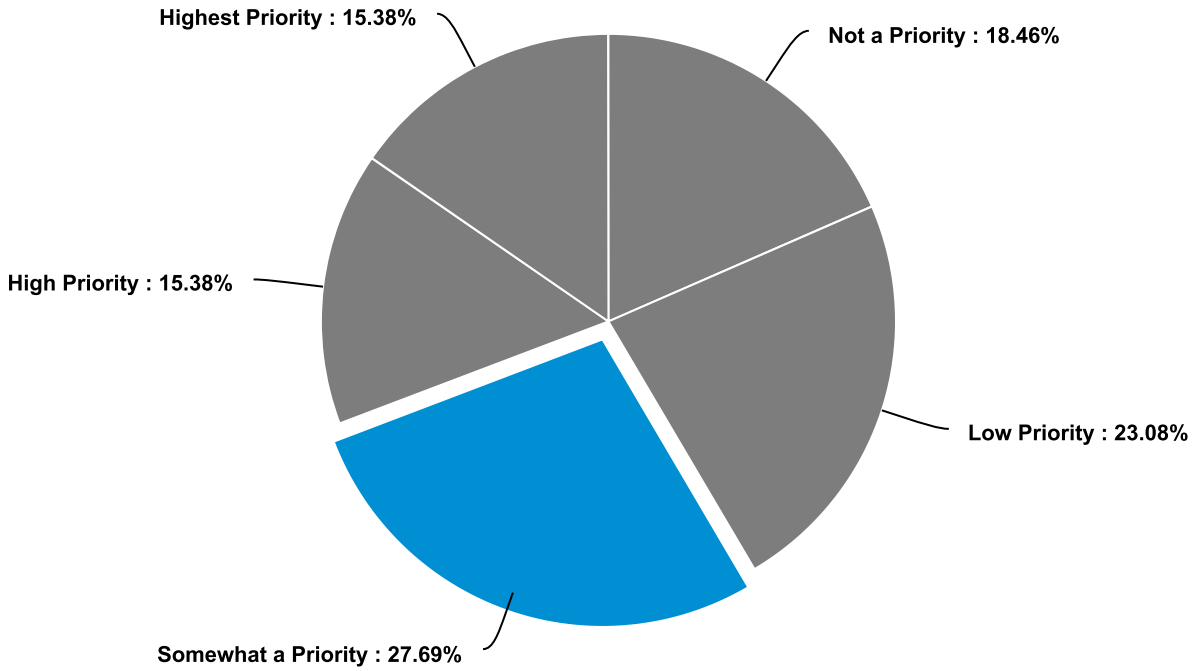
Reliability of sewer service (eliminate backups and overflows)



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	3	4.62%					
Low Priority	4	6.15%					
Somewhat a Priority	8	12.31%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	15	23.08%					
Highest Priority	35	53.85%					
Total	**65**	**100%**					

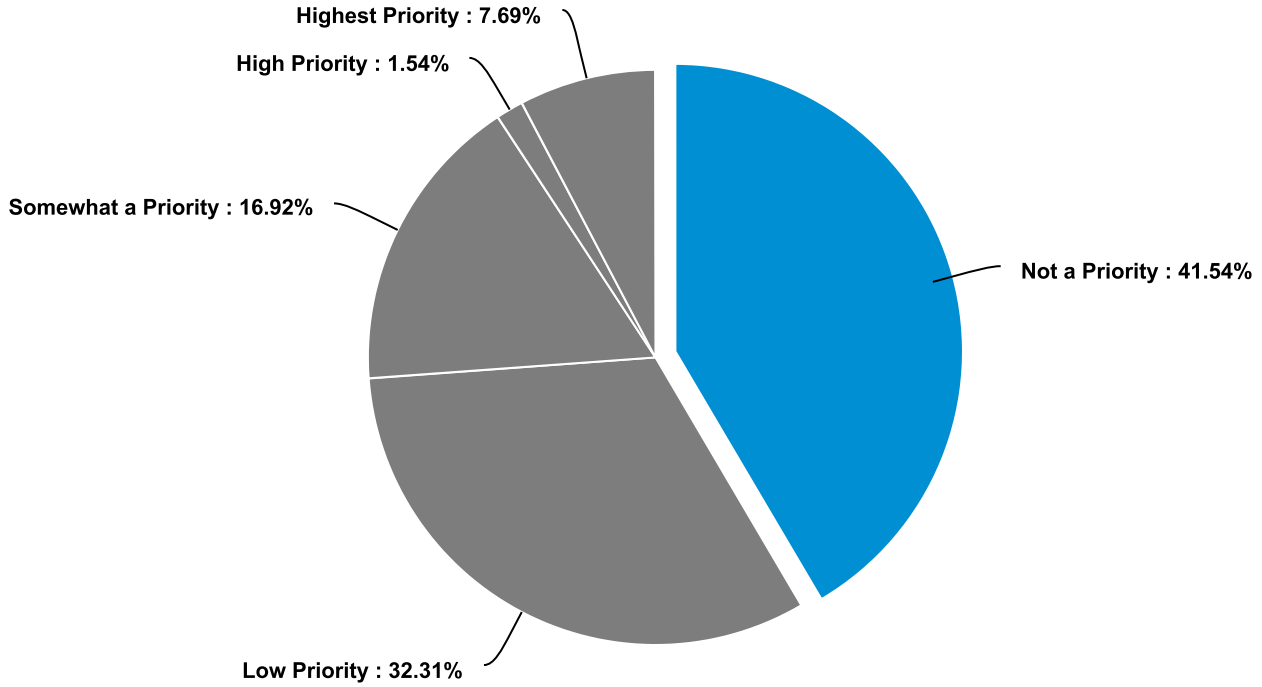
Encourage future growth of the City of Washington



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	12	18.46%					
Low Priority	15	23.08%					
Somewhat a Priority	18	27.69%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	10	15.38%					
Highest Priority	10	15.38%					
Total	**65**	**100%**					

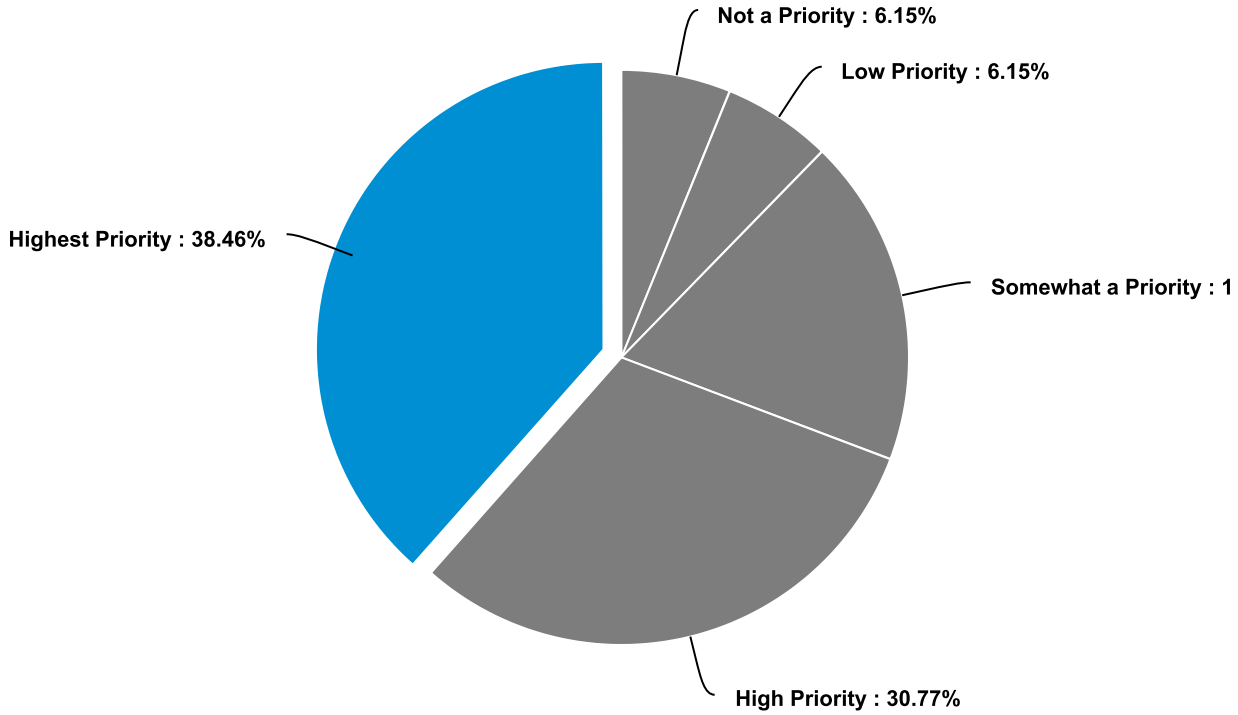
Discourage future growth of the City of Washington



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	27	41.54%					
Low Priority	21	32.31%					
Somewhat a Priority	11	16.92%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	1	1.54%					
Highest Priority	5	7.69%					
Total	**65**	**100%**					

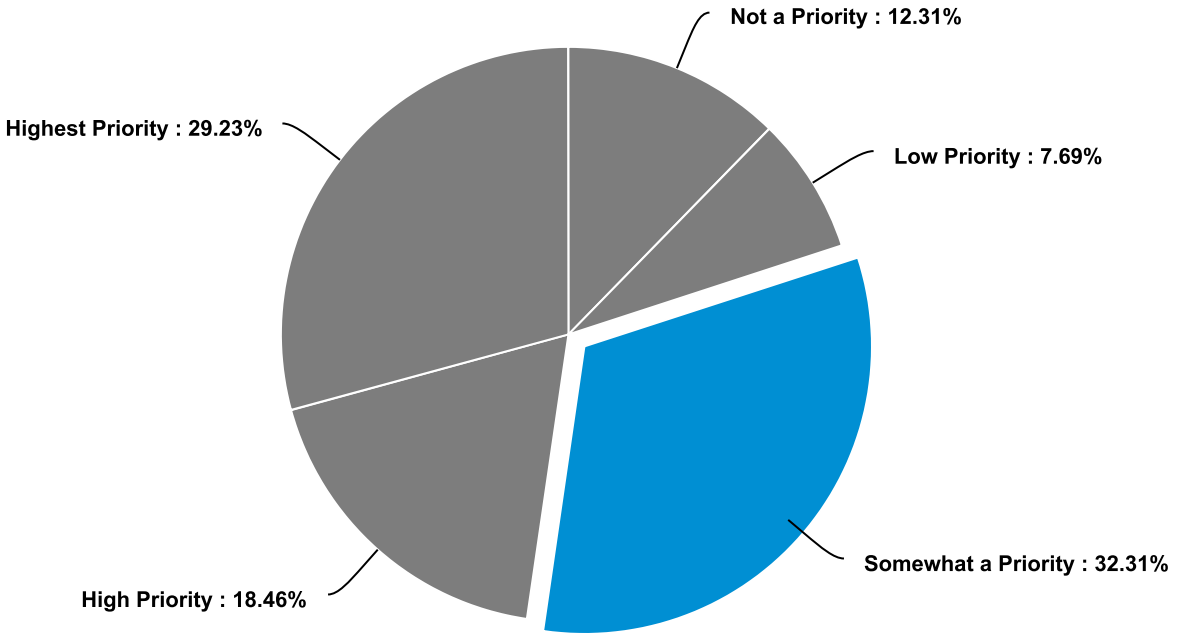
Protect the water quality of Farm Creek



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	4	6.15%					
Low Priority	4	6.15%					
Somewhat a Priority	12	18.46%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	20	30.77%					
Highest Priority	25	38.46%					
Total	**65**	**100%**					

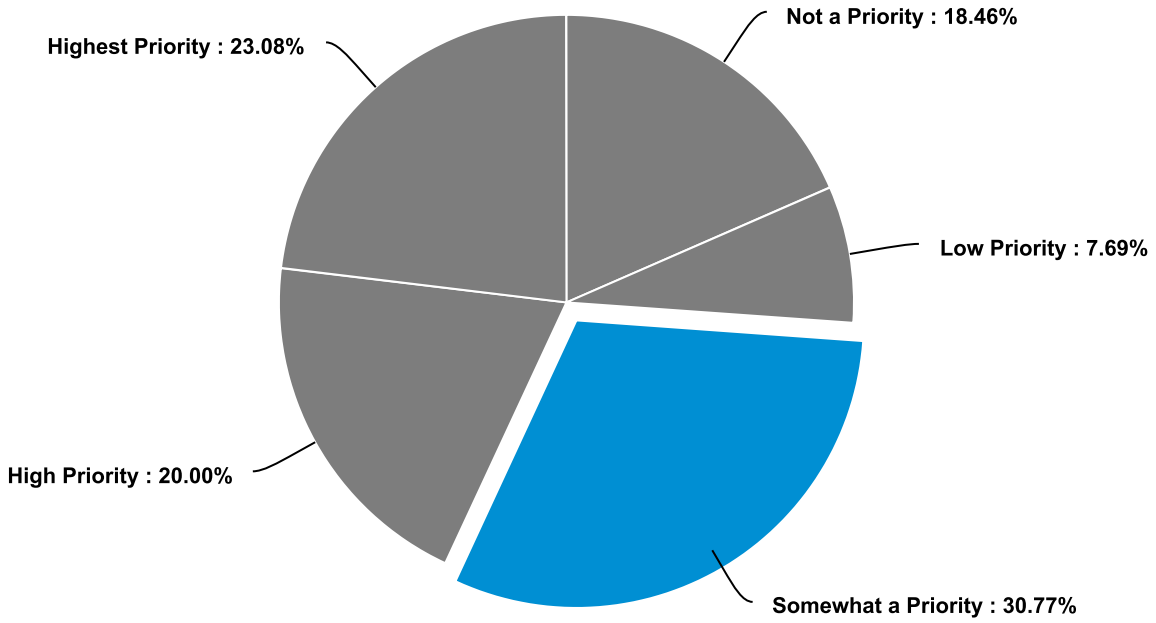
Bank stabilization of Farm Creek



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	8	12.31%					
Low Priority	5	7.69%					
Somewhat a Priority	21	32.31%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	12	18.46%					
Highest Priority	19	29.23%					
Total	**65**	**100%**					

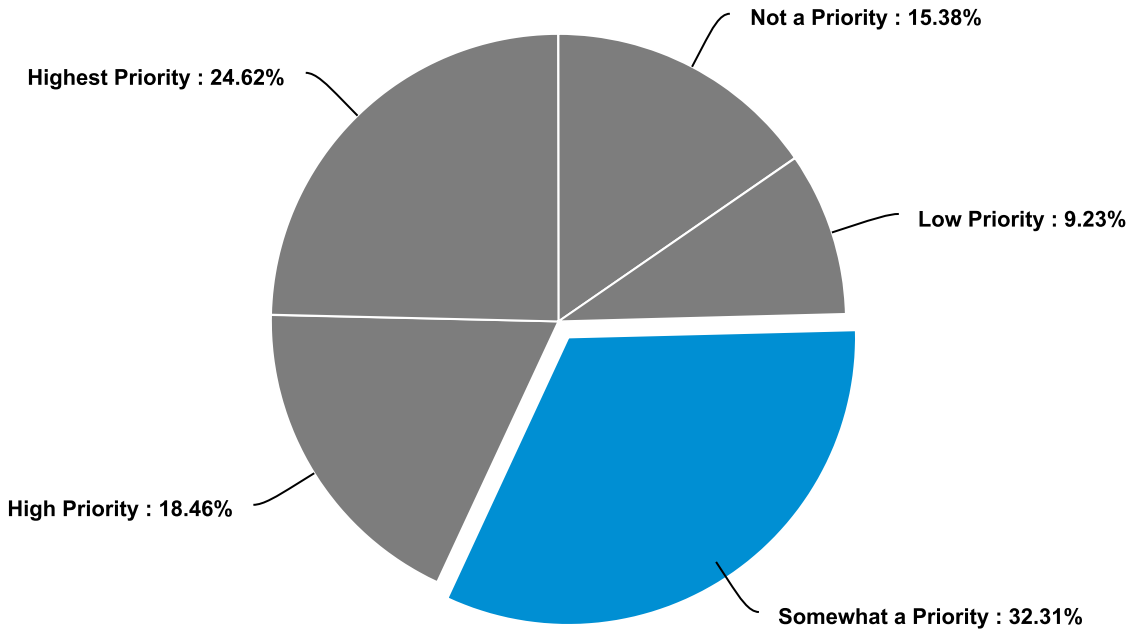
Protect trees



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	12	18.46%					
Low Priority	5	7.69%					
Somewhat a Priority	20	30.77%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	13	20%					
Highest Priority	15	23.08%					
Total	**65**	**100%**					

Protect animal and fish habitats



Answer	Count	Percent	20%	40%	60%	80%	100%
Not a Priority	10	15.38%					
Low Priority	6	9.23%					
Somewhat a Priority	21	32.31%					
Total	**65**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
High Priority	12	18.46%					
Highest Priority	16	24.62%					
Total	**65**	**100%**					

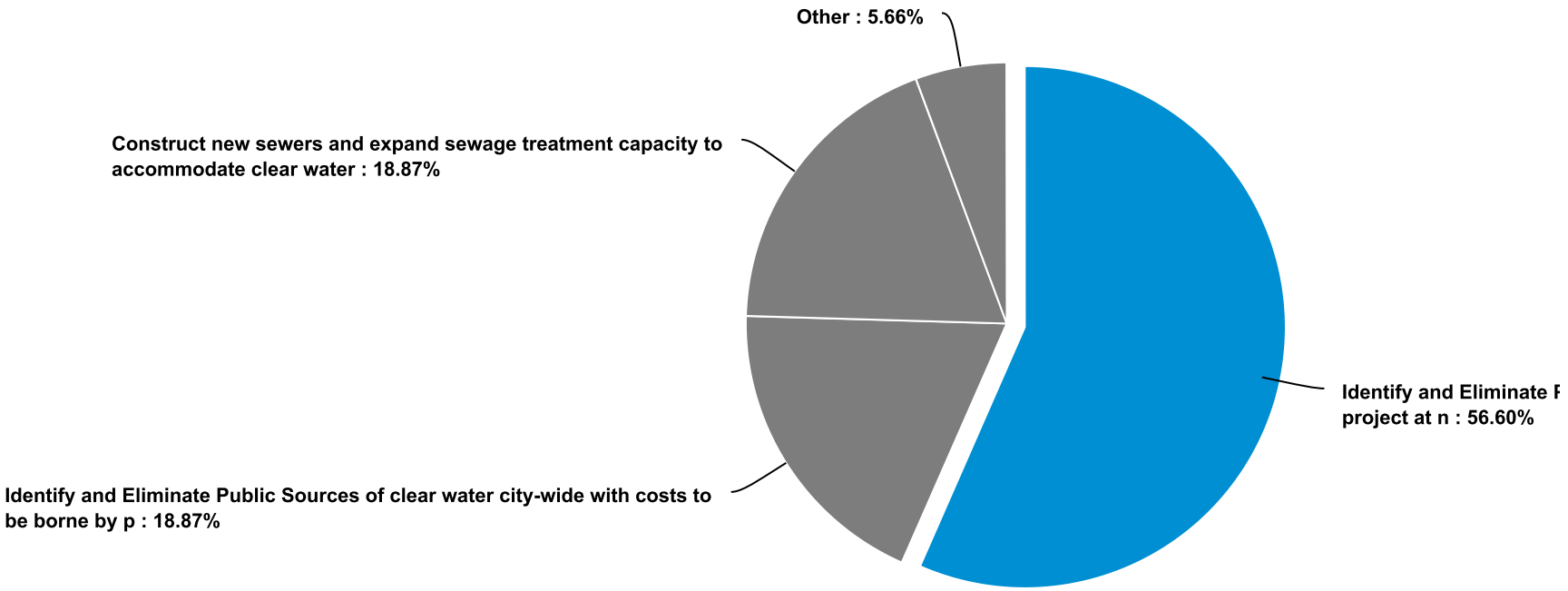
Other concern? Please describe, and include how high of a priority it is to you.

02/07/2022	65739481	The city routinely identifies a lack of funds for projects all over the city. The solution for this main utility of Washington should be extremely sensitive to the cost of construction and longer operation and maintenance. This is one of the highest priorities. You cannot detach environment and cost for the construction of this project. The more trees and creek crossings, the more expensive to construct and maintain. There are options that prioritize this and align with the original concerns outlined by the first engineering firm.
02/02/2022	65512337	I am concerned that the city is still considering other options after they already came to a good conclusion several months ago with the proposal by Strand. That agreed to alignment would impact only a few property owners but be best for the city. yet that small group was able to convince the city to spend even more money to evaluate the alignment again and delay the project just to keep it off of their property, push it on to actual homeowners and other property owners, and limit the ability for the city to grow. This is a public utility that is far too important to be deterred by a few bold loud folks. What is best for the whole of the city in the long run is most important.
02/02/2022	65511837	I want emphasize the importance that this project encourages growth of the city or at a minimum, does not limit future generations in their ambitions ro grow the city. It is also important that this line not bisect across the middle of properties as to not reduce the options in how those properties are used. Following the edge of property lines where other structures cannot be built anyway and limiting the number of impacted properties is important. Also, future maintenance costs for the city should be considered. This solution better consider the least amount of maintenance, and be the most robust, permanent long term option to make our future residents proud of the decision made.
01/31/2022	65371702	That taxpayers are not burdened with additional cost when the project needs to be done and residents don't trust city staff, or their consultants, to pick the right corridor. High Priority.
01/29/2022	65288098	I have a concern that uninhabited land is being prioritized over lived on lots.
01/24/2022	64887806	Just need a good capital improvement plan that addresses the needs and wants of its citizens, based upon a comprehensive community development plan.
01/22/2022	64775757	Trunk 2b project is a necessary project for the City. Cost should be primary concern,
01/22/2022	64772950	Washington shouldn’t have old sewers that back up, with broken lines that do not work correctly. We pay too much in taxes. Just update the old stuff.
01/22/2022	64772497	Health issues having the basement floor drain backup into the home and the black mold it creates. Plus the costs of cleaning it up and repairing the damage
01/22/2022	64771841	Having the floor drain backup into the basement during storms is a real pain and can’t finish the basement as nicely as would like. Not to mention the possible health problems of contaminated water in the home, And the black mold which we have had to deal with removing and remodel afterwards, plus the financial cost.

An additional other concern? Please describe, and also include how high of a priority it is to you.

02/07/2022	65739481	Long term viability of this utility will be impacted by its location. Farm Creek's instability will threaten the viability of this utility over the long term. The current pipe was exposed in Farm Creek within 30 years of its lifetime. This utility should last the city 90+ years. Keep it out of Farm Creek to maximize the investment being made today.
02/02/2022	65511837	It is important to recognize that trees do grow back. I hate to see trees cut down, but in 50 years, after they've re-grown, we will recognize them again the same as they are now. Enabling the growth of our city and reducing the impacts /interference on use long term of private property Re more important than counting the number of trees taken. That said, the city should be prepared to replant said trees.
01/31/2022	65371702	That an engineering firm familiar with the city, and has done much work on determining peak flows in areas of the city, is second guessed to the point of hiring another firm to review their work. This is wasteful spending and our elected officials cannot make a handful of residents happy and burden many other residents with additional costs on an already expensive project. More Important Priority.
01/22/2022	64772950	We do not need motorcycles. Fix our roads, make sure the park district is funded with what it needs, and update our sewers.
01/22/2022	64767209	This is a very big priority for me. It also affects the property values in the older parts of town. Nobody wants to buy a house with a sewer problem, and it’s extremely costly to repair when city streets or neighbor properties are involved since the older sewer lines could be anywhere. People who own homes in these parts of town often do not have the disposable income to drop on a thousands of dollars sewer project.
01/22/2022	64766311	My basement floor broke open and water start d coming in like a fountain. This is not something I can fix till the city fixes the sewer and drains in ward two
01/22/2022	64766309	I put a sump pump in my basement over a year ago. I am simply amazed at how much water it pumps, even without rain for weeks at a time, it never stops
01/22/2022	64765266	From what I know, the route wasn't feasible the way it had been laid out. Residents made suggestions to make this better. Let's do this project right, for all residents. It's a high priority to me, not just the work itself, but to prove the integrity of projects tackled by the city.
01/22/2022	64748289	Help those of us are in ward two who flood every damn time it rains because your drains don’t work properly
01/21/2022	64713231	High priority: will the report be weighted to level concerns of 7 (+ or -) property owners vs the 3 property owners with large tracts on southern route. For example, will input from someone with 1 mile or 2 acres of impacted land be valued equal to a property owner with 40' or 0.25 acres of impacted land? Finally, on any route, the valuation of timber, expense of harvesting it and the plan to reduce the risk of introducing disease (ex. oak wilt) while cutting and compacting soil with large equipment.
01/19/2022	64461585	The trunk line should absolutely not run through a residential area.

To eliminate sewer backups and overflows, the City of Washington should:



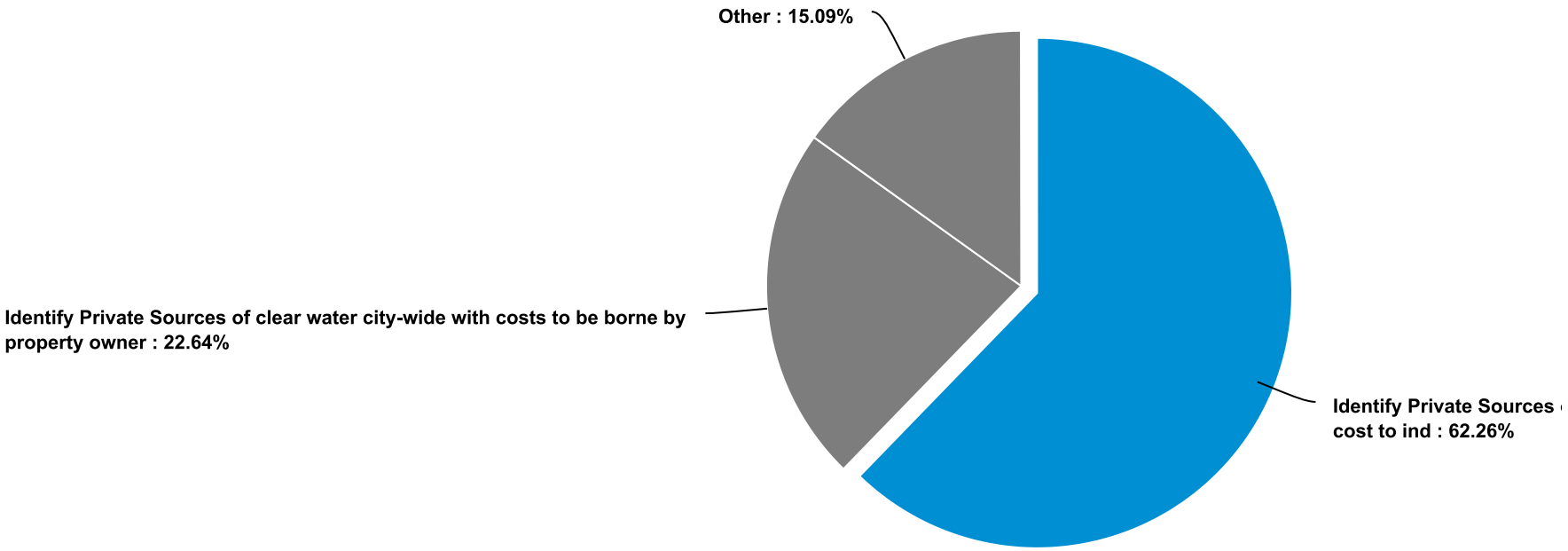
Answer	Count	Percent	20%	40%	60%	80%	100%
Identify and Eliminate Public Sources of clear water city-wide as a city-wide project at no cost to individual residents	30	56.6%					
Identify and Eliminate Public Sources of clear water city-wide with costs to be borne by property owners that are connected to the affected sewers	10	18.87%					
Total	**53**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
Construct new sewers and expand sewage treatment capacity to accommodate clear water	10	18.87%					
Other	3	5.66%					
Total	**53**	**100%**					

To eliminate sewer backups and overflows, the City of Washington should: - Text Data for Other

01/24/2022	64887806	Investigation part of san. sewer enterprise fund
01/22/2022	64783124	How in the world do I know what they should do. There are engineers with a lot more knowledge then I will ever have about this problem.
01/21/2022	64713231	City needs to aggressively replace its antiquated infrastructure. It should be a top priority in the budget process..

To identi the c use o sewer b kups and overflows, the City of Washington should:



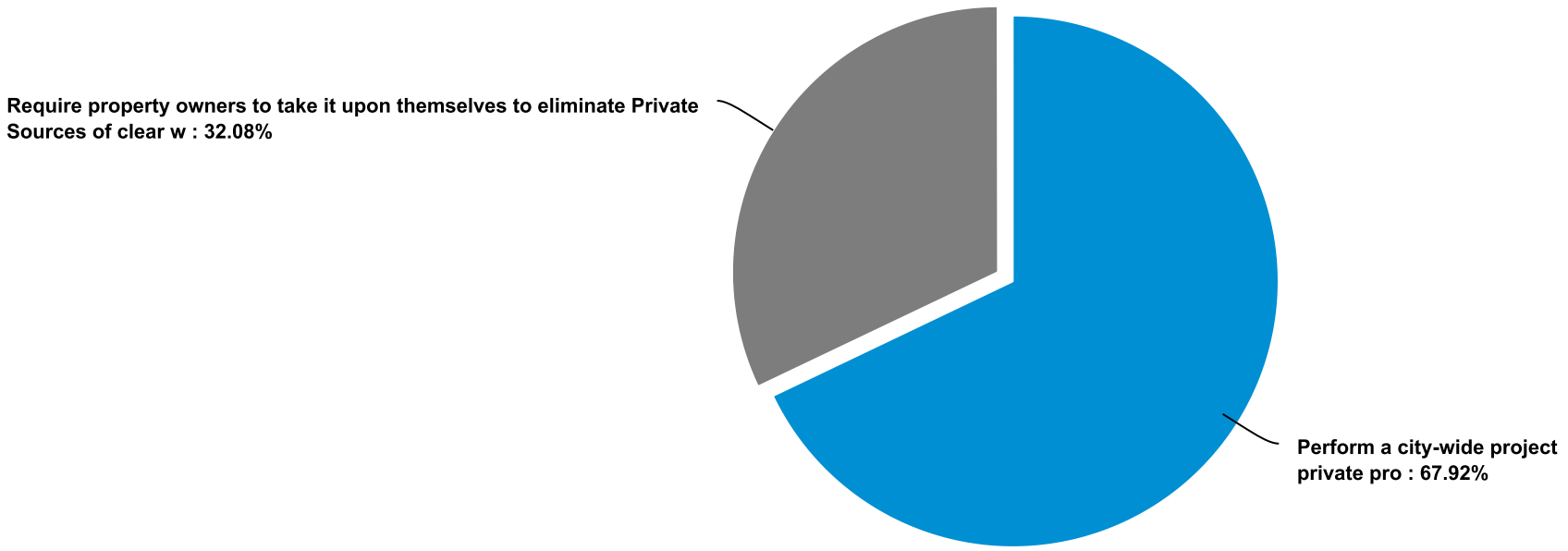
Answer	Count	Percent	20%	40%	60%	80%	100%
Identify Private Sources of clear water city-wide as a city-wide project at no cost to individual residents	33	62.26%					
Identify Private Sources of clear water city-wide with costs to be borne by property owners	12	22.64%					
Total	**53**	**100%**					

Answer	Count	Percent	20%	40%	60%	80%	100%
Other	8	15.09%					
Total	**53**	**100%**					

To identify the cause of sewer backups and overflows, the City of Washington should: - Text Data for Other

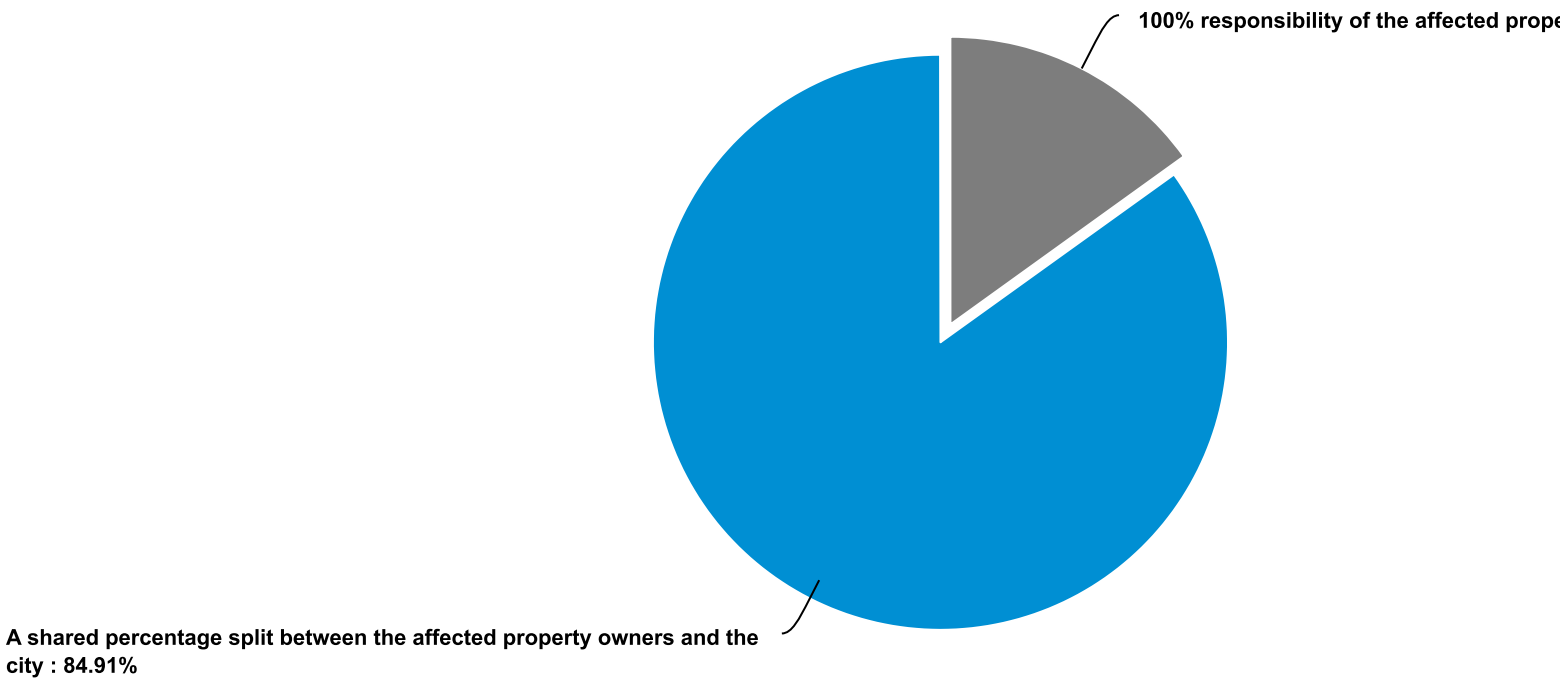
02/07/2022	65739481	It seems unrealistic to ask one entity to bear the full costs; All residents should participate in this repair, not just a single property owner or only the city.
01/24/2022	64887806	Indentification as part of san. sewer enterprise fund
01/22/2022	64783124	Ask the professionals
01/22/2022	64775757	Split cost between public and private sources
01/22/2022	64770976	Either way, residents will pay
01/22/2022	64768419	Shared cost
01/22/2022	64767209	I don’t know enough about this to answer right now.
01/21/2022	64713231	Examine the code for current homes and enforce it. Ensure ALL new construction has higher standards. The next question is impossible to answer due to some homes being 100 years old and other violators being newer homes.

To eliminate sewer backups and overflows, the City of Washington should:



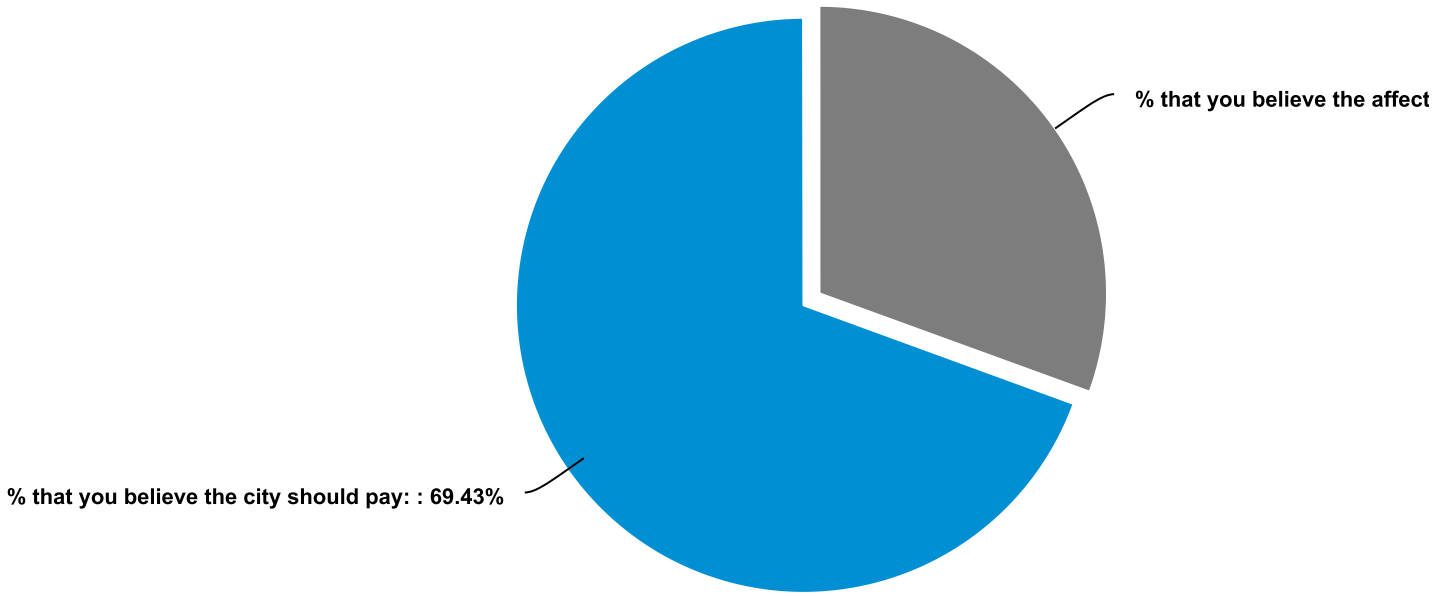
Answer	Count	Percent	20%	40%	60%	80%	100%
Perform a city-wide project to eliminate Private Sources of clear water on all private properties	36	67.92%					
Require property owners to take it upon themselves to eliminate Private Sources of clear water on their own private property	17	32.08%					
Total	**53**	**100%**					

For either option above, what percentage of the related costs for the elimination of Private Sources of clear water on private properties be:



Answer	Count	Percent	20%	40%	60%	80%	100%
A shared percentage split between the affected property owners and the city	45	84.91%					
100% responsibility of the affected property owners	8	15.09%					
Total	**53**	**100%**					

Please allocate 100 percent of the shared costs between the property owners and the city:



Answer	Count	Percent	20%	40%	60%	80%	100%
% that you believe the city should pay:	69.43	69.43%					
% that you believe the affected Property Owners should pay:	30.57	30.57%					
Total	**100**	**100%**					

Questions received via email

Sent: Wednesday, January 19, 2022, 12:09:46 PM CST
Subject: [Mysite] Contacts 3 - new submission

User 1 just submitted your form: Contacts 3
on Mysite

Message Details:

Submit a Question:
THANK YOU THANK YOU THANK YOU for providing an official, truthful source of information about this important project!!!!

Date: February 9, 2022 at 5:47:20 PM CST
Subject: [Mysite] Farm Creek Sewer Project - Contact Us Form - new submission

User 2 just submitted your form: Farm Creek Sewer Project - Contact Us Form
on Mysite

Submit a Question:
Trees absorb carbon dioxide and are important in fighting climate change. Older trees accumulate far more carbon later in their life than previously thought and trees can accumulate 75% of their total carbon after they are 50 years old. To lower the risk of climate change it is not enough to simply plant new trees we must save our old trees as well. (" The Old Man and the Tree" Smithsonian Magazine, Vol 52: p.32, Jan-Feb 2022.)
My questions are:
1. Does Hamilton Consulting Engineers Inc, believe that global warming is real?
2. Does Hamilton Consulting Engineers Inc. believe saving old forests should be a priority to assist in reducing global warming?
3. Does Hamilton Consulting Engineers believe that saving old forests should be a priority to provide future wildlife habitat?

Appendix O.
Meeting Memoranda

MEETING MINUTES

Date: December 2, 2021
Meeting: City of Washington Farm Creek Trunk Sewer Project – Pudik Family with Aptim and HCE Meeting
10 a.m. at HCE and Zoom

Meeting Attendees:		
	Brett Pudik	bpudik@ameritech.net
	Case Pudik	cpudik@pudick.com
	Troy Pudik *via Zoom*	tpudik@emrslaw.com
	Christina Seibert, Aptim	christina.seibert@aptim.com
	Devin Moose, Aptim *via Zoom*	devin.moose@aptim.com
	Dennis Carr, City of Washington *via Zoom*	dcarr@ci.washington.il.us
	Howard Hamilton, HCE	hhamilton@hcemail.org
	Kristen Hamilton, HCE	khamilton@hcemail.org

1. The meeting commenced at 10 am (in person and via Zoom) with introductions per the Attendee List above.

2. The Agenda presented by Christina Seibert via email this morning was reviewed, and the meeting progressed per the Agenda (attached):

3. Howard Hamilton gave a brief overview of the project approach presented to the City.
   - Collect Data
     - HCE has City, Strand and some Austin information compiled
     - HCE has a computer model of the sewer system developed
     - Any information from this group will be valuable
   - Interview City Staff
   - Interview Homeowners
     - Walk the alignment with stakeholders – very valuable
   - Draft Report
   - Report Revisions
   - Public Hearing
   - Final Draft Report
   - Presentation to Council
   - Final Report

   Howard also explained that a survey to City residents re: the project and a website to make all information available are in development.
   - These tools for transparency will be promoted via City website and social media, with other options to be identified such as local newspaper
   - Security of survey responses will be addressed by developer

4. Brett Pudik gave a brief history of the project from the owner perspective, including discussion of the Route B alignment.

5. Brett discussed the data provided via jump drive
   - Listed per the Agenda
   - Brett developed spreadsheets for several comparisons including cost
   - Howard said he may ask for Excel versions of some of the spreadsheets
   - Howard also stated the Wetland report will be valuable

6. Alternative alignments were discussed
   - More alignments/options may be reviewed than those presented to date
   - Howard discussed the evaluation of alignments/options is typically subjected to a first level review of cost and increase in area served, then a variety of second level priorities as presented in both the Agenda Item 7. and in HCE presentation to the City
   - Howard also noted that the City is proud to be a ***growing community,*** and that their Planner is working on a new Comprehensive Plan

7. Parameters for evaluation of alignments were discussed

8. Next steps were discussed:
   a. Transparency and communication are key priorities for all stakeholders – Goat Springs LLC/Aptim will be glad to answer questions and help as needed, while HCE stressed the same – call Howard directly if you have questions.
   b. Transparency and communication will help build consensus, which the City fully supports, and all parties agreed that the City taking this step for a third-party analysis is a good thing
   c. Howard will review all information submitted
   d. HCE will work with the City and the Homeowners to set a date for the walk-through in the near future
   e. HCE will keep Goat Springs/Aptim apprised of the survey/website schedule
   f. All communications should be copied to City/Dennis Carr

City of Washington Farm Creek Trunk Sewer Replacement:
Third Party Alternatives Analysis
Meeting Agenda - Goat Springs, LLC / APTIM and Hamilton Consulting Engineers
December 2, 2021

1. Attendee Introductions

2. Overview of Meeting Objectives
    a. Understand analysis approach and data to be used by Hamilton
    b. Discuss concerns with proposed Route B alignment
    c. Review data and information being provided to Hamilton by Goat Springs / APTIM team
    d. Review potential alternative alignments developed by Goat Springs
    e. Discuss evaluation parameters to be applied to all alternatives
    f. Discuss next steps / opportunities for landowners to remain involved in project

3. Third Party Alternatives Analysis by Hamilton
    a. Analysis approach / scope of work review
    b. Data sources to be considered (existing and new)
    c. Process / factors to be used to identify evaluation parameters (discussion of potential parameters under Agenda Item 7)
    d. Public information and input opportunities (meetings, website, survey)
    e. Final Report – Technical Components
    f. Schedule

4. Concerns with Proposed Route B Alignment
    a. Farm Creek influence and floodplain impact – Project purpose
    b. Permanent impacts to environmental assets – US waters (Farm Creek/jurisdictional wetlands), remnant oak/hickory forest and threatened and endangered species
    c. Scope of Permitting and Mitigation Requirements – USACE/IEPA/IDNR/ISHPO
    d. Impact of constructability constraints posed by alignment – duration of construction and project costs/scope of contingencies
    e. Lack of access to and from alignment – temporary (construction) and permanent (O&M)
    f. Impact on scope and timing of STP-2/influent pumping station improvements
    g. Assessments and surveys to be completed – Tree Assessment/Archaeological Survey
    h. Potential for further project delays/challenges
    i. Source of funding and funding requirements – Illinois Water Pollution Control Loan Program regulations and requirements – submittals/timing/terms of financing
    j. Project construction and O&M costs – impact of items 4(a) – 4(i)

5. Data / Information Being Provided by Goat Springs / APTIM Team
    a. Communications with agencies and City of Washington
    b. Initial project design criteria presented by Strand / City of Washington
    c. Comparison Data
        i. Costs [FCTS – Cost Comparison Table, Project Cost Breakdown – Strand, Strand Route Comparison Table – OPCC dated July 26, 2021]
        ii. Project Area Map – Final

iii. Trunk Sewer Route Comparison Matrix – July 21, 2021
iv. Trunk Sewer Route Comparison Table – August 1, 2021

d. Preliminary Analysis
   i. Select Practicable Alternatives [Practicable Alternatives Analysis – January 26, 2021, Select Figures – January 22, 2021, References, Route D-1 Profile]
   ii. All Route Evaluation Matrix – January 31, 2021
   iii. Routes Appendix – January 30, 2021
   iv. Select Trunk Sewer Route Comparison Matrix – Practicable Alternatives – January 22, 2021

e. Route B
   i. Cost Data
      - Quality Assessment – October 26, 2021 [Additional Trenchless & Tree Removal Pricing Category Detail, Forest Detail, Costs per Strand Drawings, Costs per Strand Original, and Costs with Tree BMPs & Strand Drawings]
      - Strand's Project Cost Breakdown – October 2019
      - Strand's Route Comparison OPCC – July 26, 2021
   ii. Environmental Data
      - Forest [Forest vs. Open Access Corridors/ROW, Environmental Documents]
      - Illinois Forestry Association Board of Directors letter dated August 5, 2021
      - Forest Best Management Practices – Illinois Forestry Association – October 21, 2021
      - Wetlands – See separate Wetlands folder
   iii. Route Data
      - Data & Cost Analysis – October 26, 2021
      - Data Sheet (rev. October 26, 2021)
   iv. Strand Profile Drawings and Scope of Work
      - Pre-Final Drawings dated January 29, 2021
      - Markup of March 31, 2016 Scope of Work Letter with miscellaneous public meeting minutes

f. Route E-3
   i. Cost Data
      - Forest Detail – October 26, 2021
      - Costs per Strand July 26, 2021 OPCC (rev. by Goat Springs, LLC – October 26, 2021)
      - Strand's Project Cost Breakdown – October 2019
      - Strand's Route Comparison OPCC – July 26, 2021
   ii. Profile – Route E-3
   iii. Route Data
      - Data & Cost Analysis – October 26, 2021
      - Data Sheet (rev. October 26, 2021)

g. Route L-1
    i. Cost Data
        - Forest Detail – October 26, 2021
        - Costs per Strand format & minimum trenchless (rev. by Goat Springs, LLC – October 26, 2021)
        - Costs per Strand format & tree BMPs (rev. by Goat Springs, LLC – October 26, 2021)
    ii. Topo and Profile – Route L-1
    iii. Route Data
        - Data & Cost Analysis – October 26, 2021
        - Route Sheet – June 23, 2021
        - Data Sheet (rev. October 26, 2021)
    iv. Route L-1 Hybrid Routes
        - Route L-3 Topo & Profile
        - Route L-2 Map-Data-Cost June 23, 2021
        - Route L-3 Map-Data-Cost June 23, 2021

h. Wetlands Documents and USACE Correspondence

i. Archaeological Study

6. Alternative Alignments Identified by Goat Springs
    a. Route locations
    b. Factors impacting location of alternative routes
        i. Farm Creek crossings
        ii. Wetland and floodplain areas
        iii. Forested areas
        iv. Open access corridors
        v. Permitting and agency approvals
        vi. Permanent impacts to landowner property (environmental assets, use)
        vii. Access – Temporary construction and permanent (O&M)
        viii. Cost (initial and life-cycle)
        ix. Consistency with municipal, county, and related agency planning objectives

7. Potential Parameters to be Applied to Evaluate Alternatives
    a. Design
        i. Number of Farm Creek crossings and percent of route through floodplains
        ii. Percent of route through remnant woodland/forest/timber property
        iii. Percent of route through jurisdictional wetlands
        iv. Manholes (number, depth)
        v. Tributary sewers (number of extensions, impact of extensions, trenchless construction, Farm Creek and RR crossings)
        vi. Number of RR crossings

vii. Topography/Elevation constraints (trenchless vs. open cut/linear access)
viii. Need for influent pumping station replacement (initially vs. deferred)

b. Constructability
   i. Percent of route through open access corridors vs. forested areas
   ii. Number of Farm Creek encounters (installation of pipe/access)
   iii. Approvals and/or permits required
   iv. Access – existing ROW/easements granted to City
   v. Mitigation and restoration of disturbed areas
   vi. Duration of construction
   vii. Project cost contingency(ies)

c. Environmental
   i. Wetlands
   ii. Farm Creek and floodplains (I&I, sewer overflow)
   iii. Forested areas

d. Restoration / mitigation
   i. Trees
   ii. Wetlands
   iii. Existing use disturbance

e. Operations and maintenance
   i. Accessibility - particularly during / after storm events
   ii. Maintenance of Farm Creek crossings
   iii. Existing trunk sewer decommissioning

f. Costing
   i. Construction
   ii. Post-construction mitigation / land recovery
   iii. Operations and maintenance

g. Other
   i. Potential for landowner delay/challenge – analysis of each landowner parcel for the route
      - Scope of permanent impacts of trunk sewer improvements to use of property
      - Existing sanitary sewer easements/public ROW
      - Synergistic opportunities for abandonment of easements, improvements to tributary crossings, future use of sanitary sewer for property development

8. Next Steps for Landowner Involvement
   a. Opportunity(ies) and participants
   b. Timing

MEETING MINUTES

Date: December 14, 2021
Meeting: City of Washington Farm Creek Trunk Sewer Project – Property Owner – Hamilton Consulting Engineers, Inc. - City Meeting
Time/Location: 11 a.m. at Washington Fire Department Training Room

Meeting Attendees: Reference attached Sign-In Sheet

1. The meeting commenced at 11 a.m. with attendees getting lunch, followed by introduction of the Hamilton Consulting Engineers (HCE) team.

2. The agenda (attached) was presented, and the meeting progressed per the agenda.

   Howard J. Hamilton, PE, CFM, CPESC (HJH), the HCE Project Manager, gave a brief overview of the project approach per the presentation (attached) followed by a period of Q&A.

Question: Will interviews with individual property owners be held?
HJH: No, but an online questionnaire will be made available.

Question: How do you come up with the service area?
HJH: Topographic service area providing 8-foot sewer bury at 0.40%.

Question: Do you consider the flow of the creek in the future- NCRS said “increase of 10X”?
HJH: Do not know why they would say this – development without stormwater detention can increase flows, but that is not allowed.

Question: For the original sewer, do you know how much cover they had?
HJH: We would need to review the plans.

Question: Will you calculate scour?
HJH: Not part of the scope of this review but would be required if there is a new design. Casing pipes are required for any future stream crossing.

Question: What is the width of a construction easement?
HJH: It depends on the project – 25 feet each for both a temporary construction easement and permanent easement, so around fifty feet total during work, but it could be up to one hundred feet if deeper excavation is required.

Question: How deep is deep?
HJH: Over 10-15 feet.

Question: Why are alignments called “Better, best, etc.”?
HJH: We used same terminology as the Pudik’s report.

Question: Will the new sewer be on top the old one?
HJH: It depends, we are looking at several options and combination of options

Question: Any idea of the elevation for E3 alignment?
HJH: We plotted cross sections and had one approx. fifty-foot directional bore.

Question: Effects on tree lines?
HJH: Trees will be avoided when possible. Trenchless technology is not always a viable option.

Question: Is collapse of the pipe possible?
HJH: Not close to houses, proper pipe design and construction will minimize collapse potential.

Question: Any long-term issue for home foundations?
HJH: No – no settlement anticipated.

Question: Do you need easements?
HJH: It depends on the alignment:

- Permanent: 25-30 feet
- Temporary construction: additional 25+ feet

Question: There are no perfect options, so solutions will be found?
HJH: Yes, HCE will recommend solutions to problems identified in each of the design alternatives, which the City will ultimately weigh in choosing their preferred course.

Question: Safety hazards for kids playing near construction?
HJH: This is a critical consideration for all parties:

- Fencing – typically use orange mesh
- Typical to cover trenches at end of day when working near houses
- Contractors are required to minimize hazards

Question: Do you have sewer pipe elevations for whole project area?
HJH: No, not all but more than we had to start.

Question: Do you anticipate doing any survey work?
HJH: Not for this phase, probably in next phase

Question: Have you looked at the Route B elevations - B is south of the tracks?
HJH: Yes, off the top of my head that route has some 30–40-foot elevations.
*A property owner added that there is a 46-foot elevation

Question: What are HCE options?
HJH: Not ready to share yet, still reviewing and studying.

Question: Any other creative solutions such as using the existing sewer or other?
HJH: Yes but have to put costs with those options. They will be in the report.

Question: Were the diagrams in the power point supplied by HCE?
HJH: Yes, mostly.
But the ones showing the three options?
HJH: Yes, we compiled Strand and Pudik options
The good/better/best is HCE recommendation?
HJH: No, this is referring back to the Pudik report
Please stop using this terminology as it is misleading.
HJH: Good point, we will stop.

Question: Does this work cover sewer only?
HJH: Yes, there is no stormwater for this project. This is an EPA-mandated project, we are the third firm to review it.

Question: Will you address erosion?
HJH: Yes – maintaining banks and do not destabilize them is required for a typical stream in Illinois.

Question: Will you perform a cost analysis?
HJH: Yes, cost is a critical factor in review of options. And, cost is not always just Day 1 cost – operation and maintenance are also factors for review.

Question: Any non-gravity-flow technology that could be used?
HJH: Yes, there are several options, but they may not be appropriate here and yes, those options will be considered in the analysis.

Question: Is there a lot of stormwater passing through the sewer?
HJH: Yes, we can see this with the flow data.

Question: What about the existing sewer?
HJH: We have to evaluate options with the City – could leave in place and use it, could abandon it. But, it can't be abandoned in place, it must be removed which has a cost, or filled, though some could be abandoned. Each option has a cost, but access will be needed to the existing trunk line to complete this, even if it is not kept in use.

Question: If you have existing easements, why not use that route?
HJH:

- You cannot just put a new pipe in the existing easement because the waste has to go somewhere while you are building the new one.
- Easements are not wide enough

Question: What happens to the existing connections to houses?
HJH: There are no direct connections to houses on this line – all connections are on the laterals.

Question: Where will the walk take place relative to the railroad tracks?
HJH: Planning to look at both sides, using existing sewer as baseline.

Question: Does L-1 bisect private property?
HJH: Yes, all the options do.

Question: Route B is mostly RR property – isn't this a low impact on property owners' route?
HJH:

- Cannot access RR property or adjacent to RR property without permission
- Agriculture and heavily wooded

Question: Creek crossings needed?
HJH: Need three different permits to cross, or you can dig a hole/bore under with manholes required in each side, has to be analyzed on a case-by-case basis.

Question: How much access needed in the future?
HJH: Need access to manholes.

Question: Have you had a chance to drive both sides of the tracks?
HJH: Yes.

Question: Use of land bisected affected - plantings, future development?
HJH:

- No building on easement is typical, though some towns allow it
- Crops are encouraged to go back on the sites
- Trees are allowed depending on the depth of the sewer and the type of the tree

Question: How deep can a sewer be constructed?
HJH: Our job is to evaluate options:

- Cannot go too deep because we have to meet STP2
- Try to avoid going too deep due to construction and maintenance issues

Question: STP2 – reducing service area, how does it look long term? Can STP2 handle another trunk?
HJH: We really have a blank canvas:

- Reduce the peak flows
- Land-intensive technology at STP2
- Do not want too many lift stations
- STP 2 could also be expanded in the future for a larger service area as needed.

Question: What is the deepest you can bore?
HJH: We have gone down sixty-two feet for a short stretch, but typically like to be in the 10-foot range.

Question: There are some 70-foot elevation changes in some of the options?
HJH: The project has to be buildable – that elevation change is an issue.

Question: The original report has Cummings Lane showing this depth?
HJH: At that depth, standard pipes do not work.

Question: Safety must be considered for going down manholes that deep?
HJH: Yes, they typically only send cameras and not people down manholes today – no people.

Question: Those deep depths do not seem to fit residential areas?
HJH: Lift station could be an option.

3. The walk started early, at 12:30 pm instead of 1:30 pm since we were done with lunch and questions.
    a. Met at STP 2
    b. The group walked through to STP1, most arriving at 4 pm
        i. The first sub-group, with HCE Project Manager Howard Hamilton, split to the northerly route
        ii. The second sub-group, with HCE Project Engineer Jeffrey Snape, walked the southerly route

CITY OF WASHINGTON
FARM CREEK TRUNK SEWER PROJECT

SIGN-IN RECAP:
PROPERTY OWNER – ENGINEER – CITY MEETING & SITE WALK - 12/14/21

	ATTENDING:	
NAME	LUNCH	SITE WALK
BRETT PUDIK	X	X
DEVIN MOOSE	X	X
CASE PUDIK	X	
TROY PUDIK	X	X
BRIAN ALBRRIGHT	X	
MARK WESTON	X	
BRIAN BUTLER	X	X
MELISSA MONTGOMERY	X	
BRAD MONTGOMERY	X	
JESSE PLACHER	X	
BRIAN RITTENHOUSE	X	X
MICHAEL MAXHEIMER	X	
GARY DEITERS	X	
BRIAN TIBBS	X	X
RUSS PLATTNER	X	

	ATTENDING:	
NAME	LUNCH	SITE WALK
KENNY WEIGAND	X	X
KRIS HASTEN	X	X
JOE ARNOLD	X	X
DENNIS CARR	X	X
ROSS FULLER	X	X
KEVIN SCHONE	X	X
SAM MILLER	X	X
JIM SNIDER	X	X
JEFF SNAPE	X	X
KRISTEN HAMILTON	X	
HOWARD HAMILTON	X	X

Certified DBE-WBE-BEP

CITY OF WASHINGTON
FARM CREEK TRUNK SEWER PROJECT

AGENDA
PROPERTY OWNER – ENGINEER – CITY MEETING AND SITE WALK-THROUGH

Tuesday, December 14, 2021

1. **Working Lunch Meeting to gain Property Owner Input**
   11:00 am – 1:00 pm at the Washington Fire Department Training Room, 200 N. Wilmore Road

   - Introductions and settle in with lunch
   - Brief project presentation by HCE
   - Questions and discussion
   - Plan for Site Walk

2. **Site Walk of the Project Area per attached Site Map**

   1:30 – 4:00 pm - meet at Sewage Treatment Plant (STP) 2, 955 Ernest St.
   - Walk the Project Area to STP 1, 700 Woodland Trail
   - Questions and discussion during the walk
   - HCE and the City will have two vehicles parked at STP1 to "ferry" the walkers back to their vehicles at STP2

Kristen Hamilton's Cell # for use on 12/14/21: 815-791-3445

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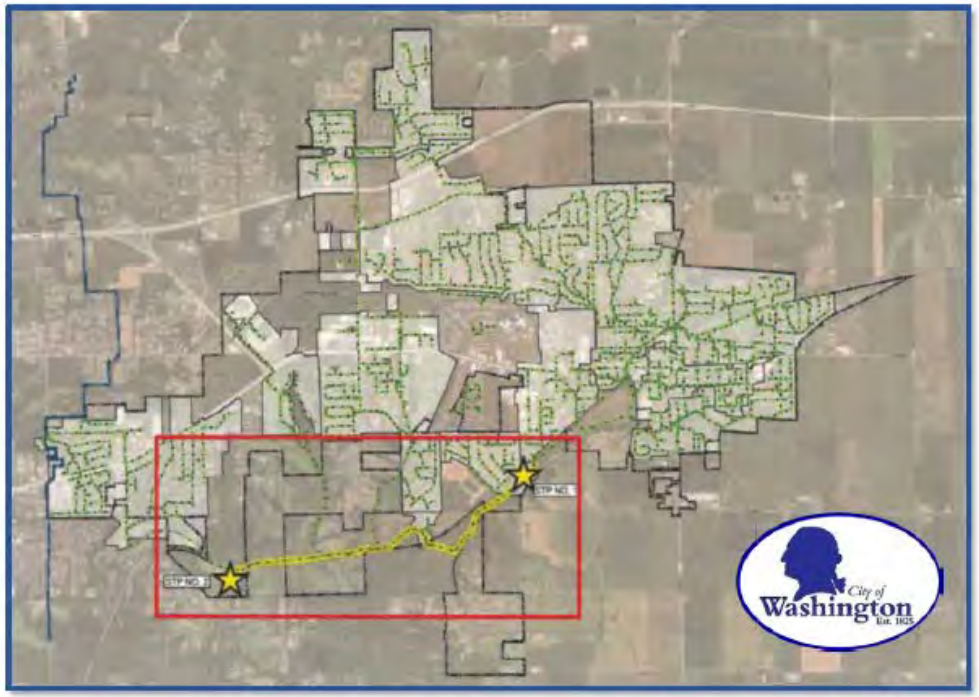
Proposal to Conduct a 3rd Party Alternative Alignment Analysis *for the* Farm Creek Trunk Sewer

City of Washington, Illinois



Hamilton Consulting Engineers, Inc. September 8, 2021

3230 Executive Dr. Joliet, IL 60431-8401 – HamiltonConsultingEngineers.com – 815.730.3444 – 815.730.6703

DBE-WBE-BEP

Hamilton Consulting Engineers, Inc.

Kristen R. Hamilton, Chairman/CEO	QA/QC
Howard J. Hamilton PE, CFM, CPESC	**Project Manager**
Jeffrey T. Snape PE, LEED-AP	Project Engineer

HAMILTON CONSULTING ENGINEERS, INC.
HCE
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Report Stated FCTS Replacement Project Purpose

- ❑ IEPA mandate to decommission STP No. 1
- ❑ Age and condition of the existing sewer system
- ❑ Excess flow conditions during wet weather (I&I)
- ❑ Operation and maintenance issues along the creek
- ❑ Future development exceeding current sewer capacity

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Report Stated **FCTS Replacement Project Goals**

- ❑Be accessible for maintenance
- ❑{Limit} Number, size, and impact of easements required
- ❑Protect the new sewer from instability and erosion of Farm Creek
- ❑Achieve durability and reliability for trunk sewer function and operation
- ❑Be respectful of nature and the environment
- ❑Cost-effective solutions – construction and O&M
- ❑Be responsive to and consistent with long-range plans, initiatives, and missions:
  - ❑City of Washington, Tazewell County, Regional
  - ❑IDNR and IEPA
  - ❑Illinois Forestry and Forest Action Plan
  - ❑USACE and USEPA

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Homeowner Stated Goals

- ❑ Avoid Farm Creek crossings
- ❑ Avoid wetland and floodplain areas
- ❑ Avoid potential for pollution and contamination of surface water and land
- ❑ Avoid destruction of trees and endangered species habitat
- ❑ Avoid archaeologically significant areas
- ❑ Maximize alignment within open access corridors
  - ❑ Ease of access during construction and maintenance
  - ❑ Faster land recovery rate post-construction

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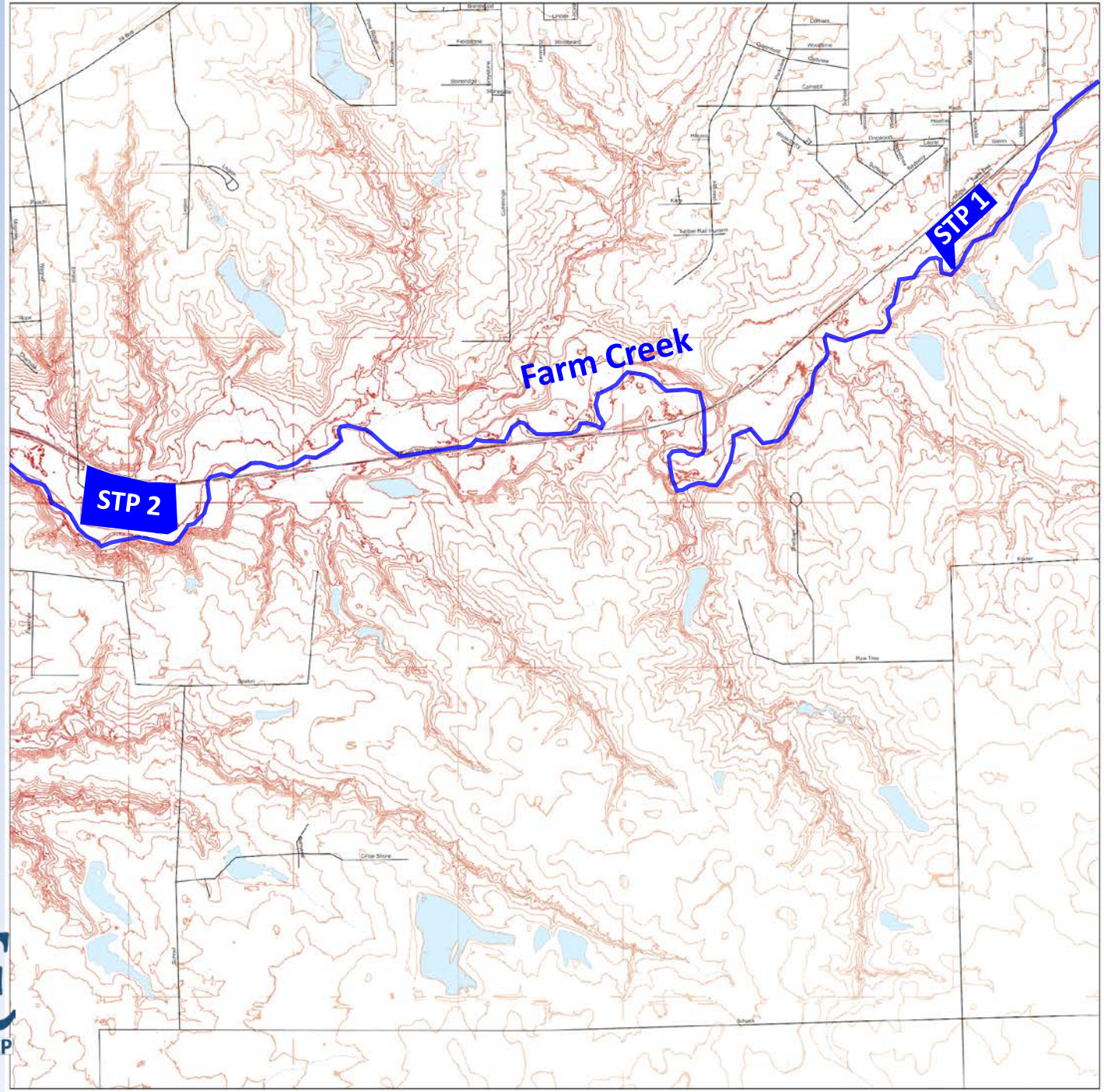

Farm Creek

Legend

- RAILWAYS
- STREETS
- Streams / Creeks / Ditches
- Tazewell_Hydro_Breaklines

10' Contours

Contour

840
830
820
810
800
790
780
770
760
750
740
730
720
710
700
690
680
670
660
650
640
630
620

1 inch = 600 feet

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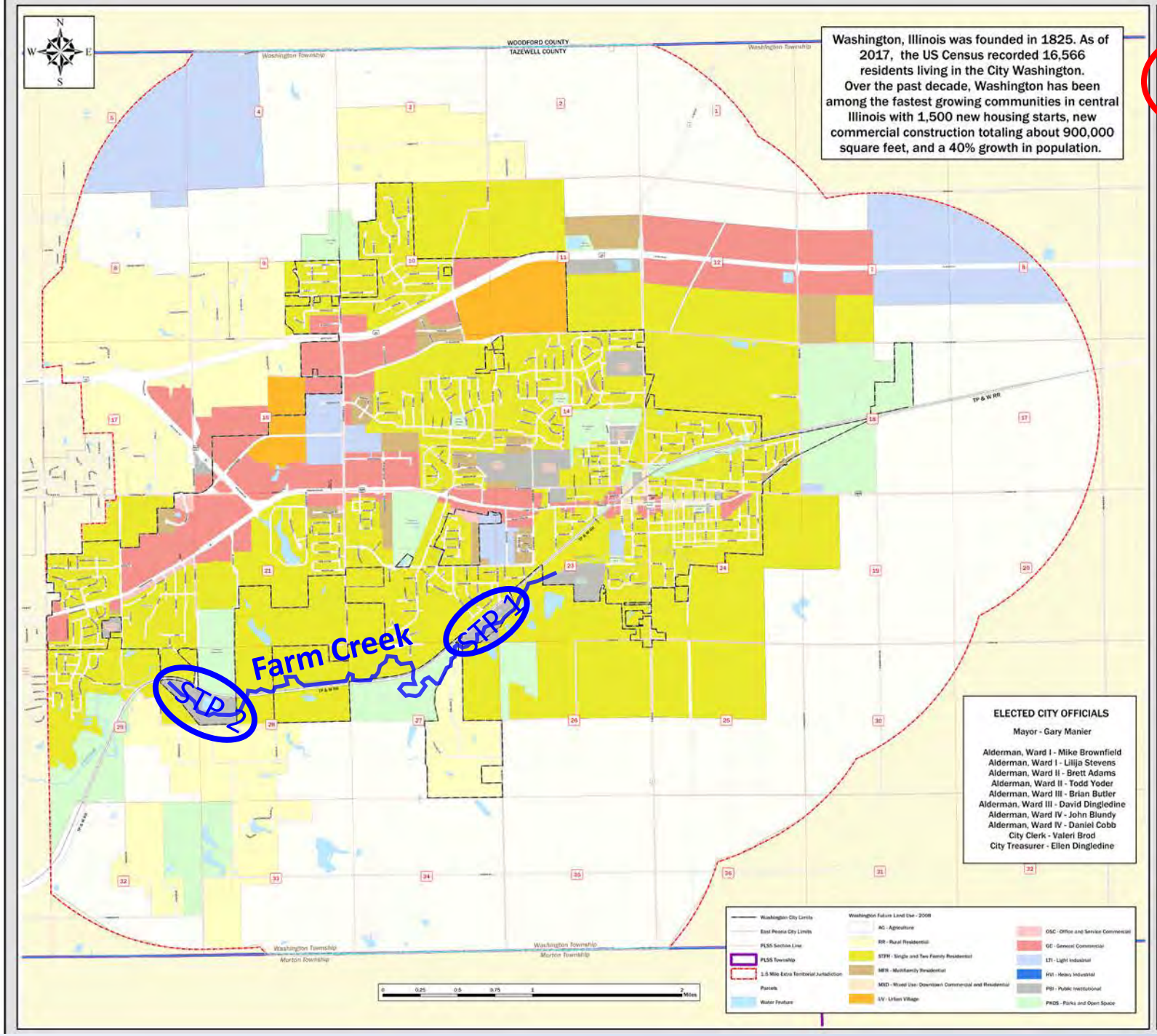
CITY OF WASHINGTON
TAZEWELL COUNTY, ILLINOIS
COMPREHENSIVE PLAN

City of Washington Est. 1825



Washington, Illinois was founded in 1825. As of 2017, the US Census recorded 16,566 residents living in the City Washington. Over the past decade, Washington has been among the fastest growing communities in central Illinois with 1,500 new housing starts, new commercial construction totaling about 900,000 square feet, and a 40% growth in population.

ELECTED CITY OFFICIALS

Mayor - Gary Manier

Alderman, Ward I - Mike Brownfield
Alderman, Ward I - Lilija Stevens
Alderman, Ward II - Brett Adams
Alderman, Ward II - Todd Yoder
Alderman, Ward III - Brian Butler
Alderman, Ward III - David Dingledine
Alderman, Ward IV - John Blundy
Alderman, Ward IV - Daniel Cobb
City Clerk - Valeri Brod
City Treasurer - Ellen Dingledine

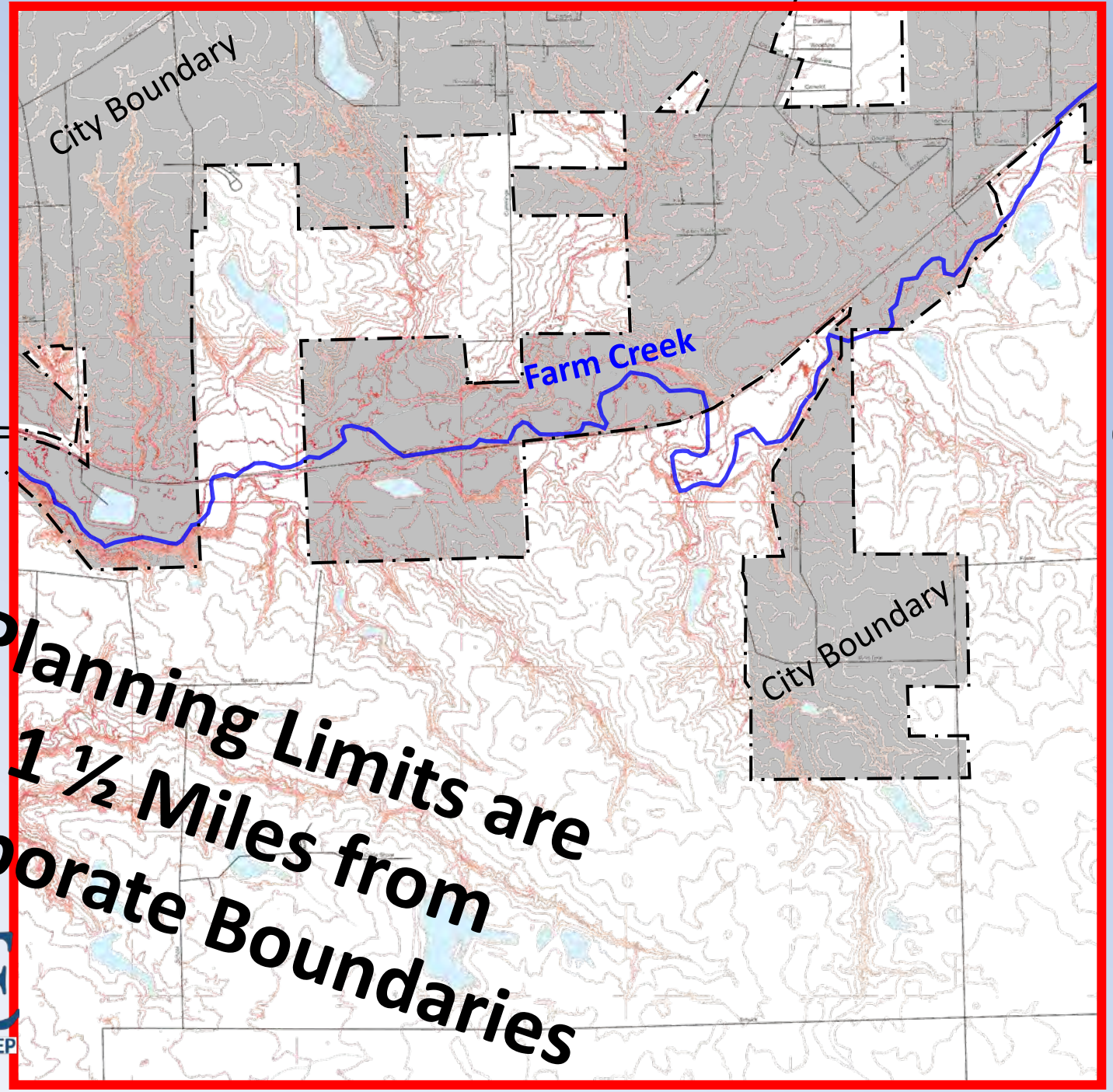
Map is provided for use as a planning tool & data is provided 'as is' without warranty or any representation of accuracy, timeliness, or completeness. Newly constructed streets or recently annexed areas may not be shown.

Printed: Date: 9/11/2020

Prepared by the City of Washington
Department of Planning & Development.
For information contact Planning & Development Director,
Jon Oliphant, AICP.

City Boundaries

Comprehensive Planning Limits



Planning Limits are 1 ½ Miles from Corporate Boundaries

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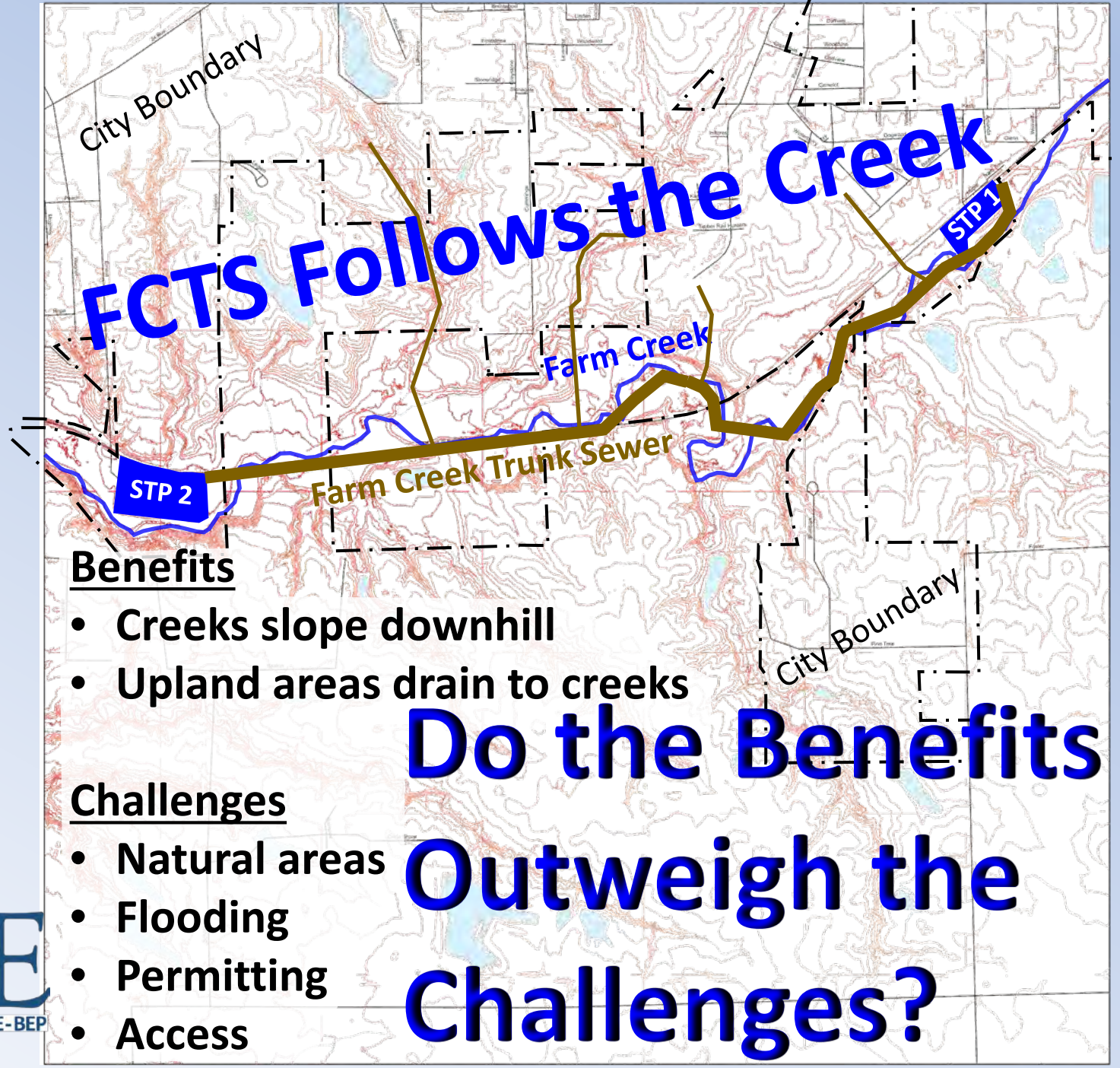
1 inch = 600 feet

Existing Farm Creek Trunk Sewer



Benefits

- Creeks slope downhill
- Upland areas drain to creeks

Challenges

- Natural areas
- Flooding
- Permitting
- Access

Do the Benefits Outweigh the Challenges?

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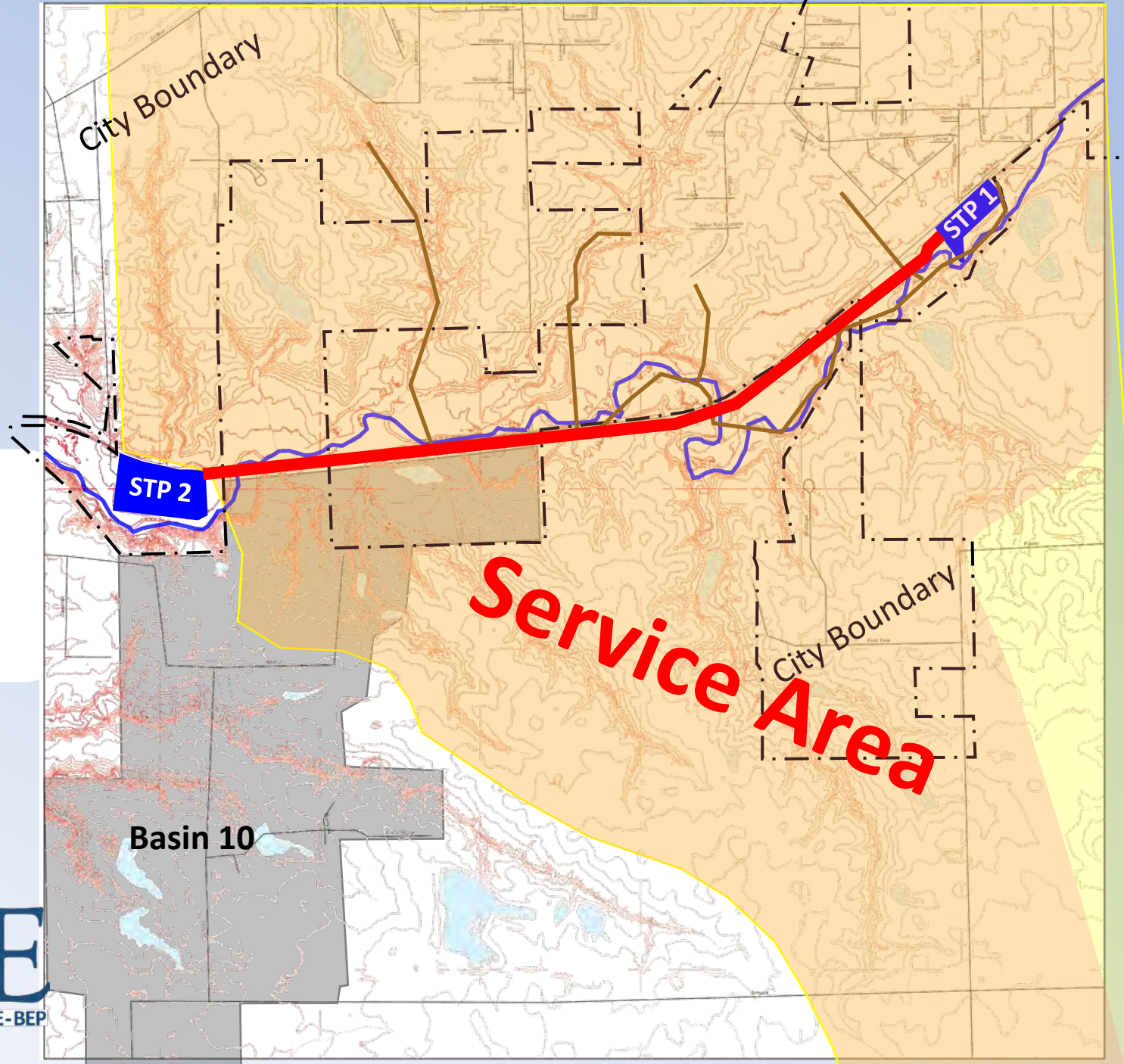
1 inch = 600 feet

Strand Alignment
Alternate B



Existing FCTS

HCE
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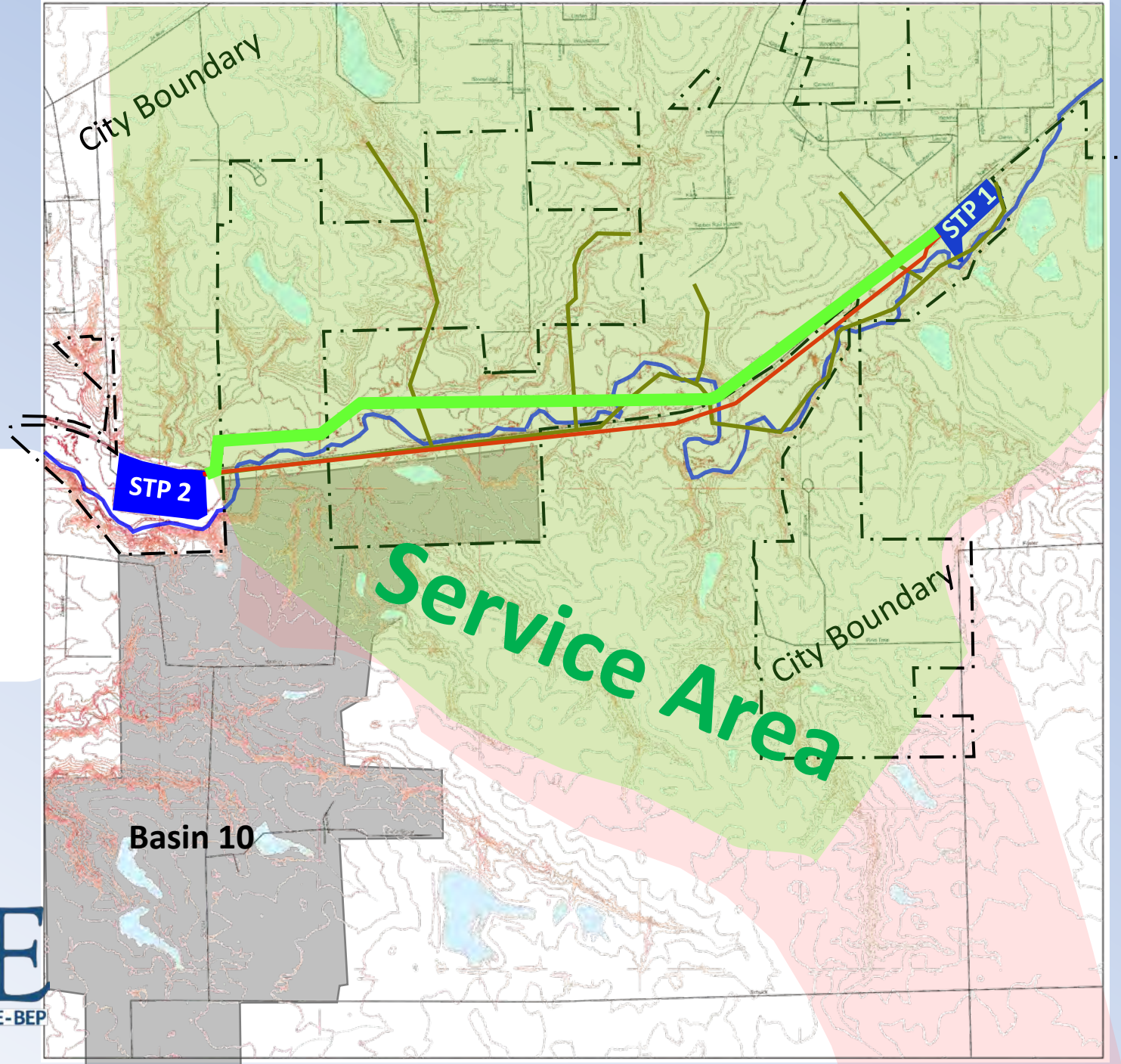
1 inch = 600 feet

Alternate L-1 "Best"



Strand Alignment
Alternate B
Existing FCTS

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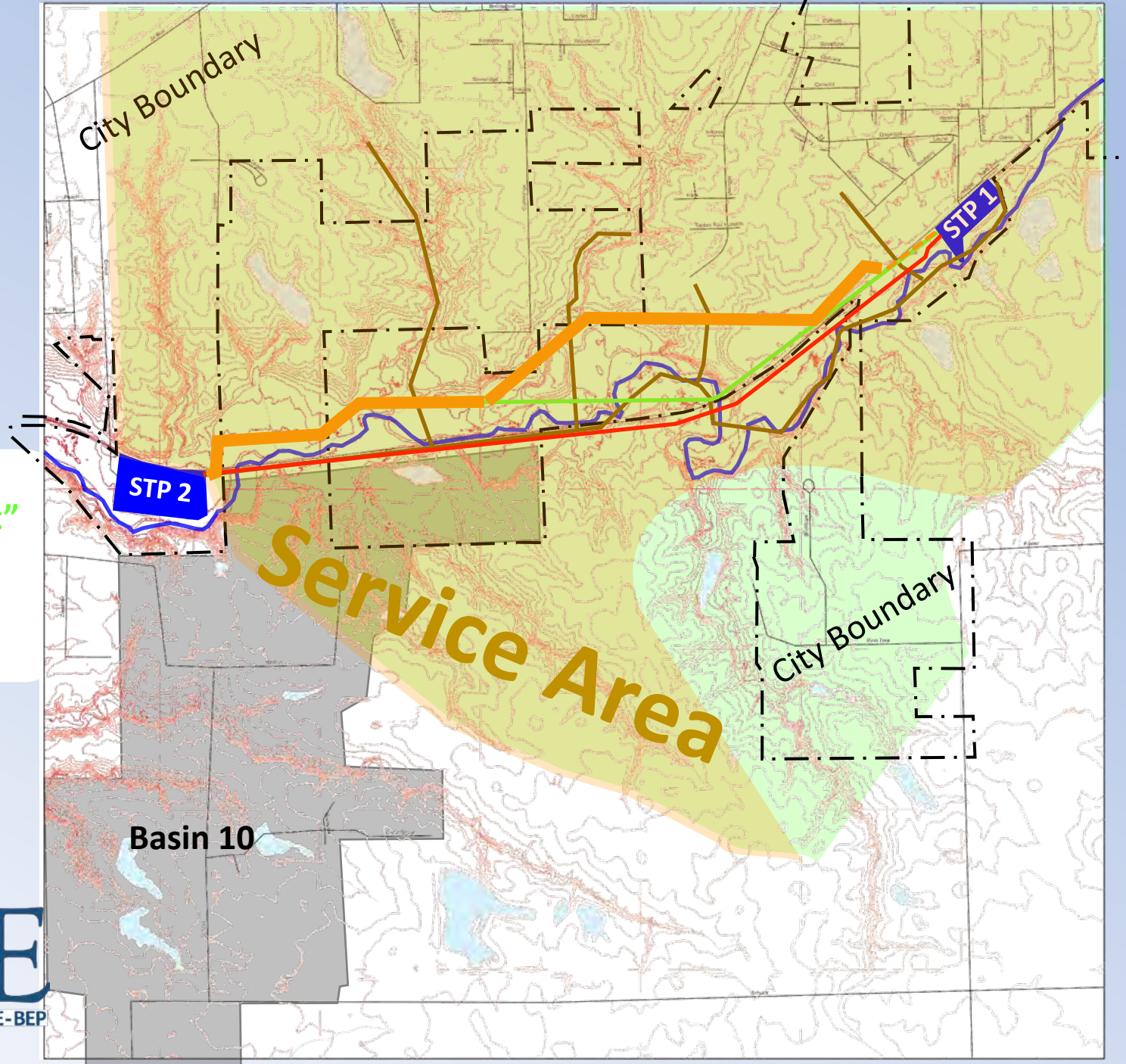
1 inch = 600 feet

Alternate E-3 "Better"



Alternate L-1 "Best"
Strand Alignment
Alternate B
Existing FCTS

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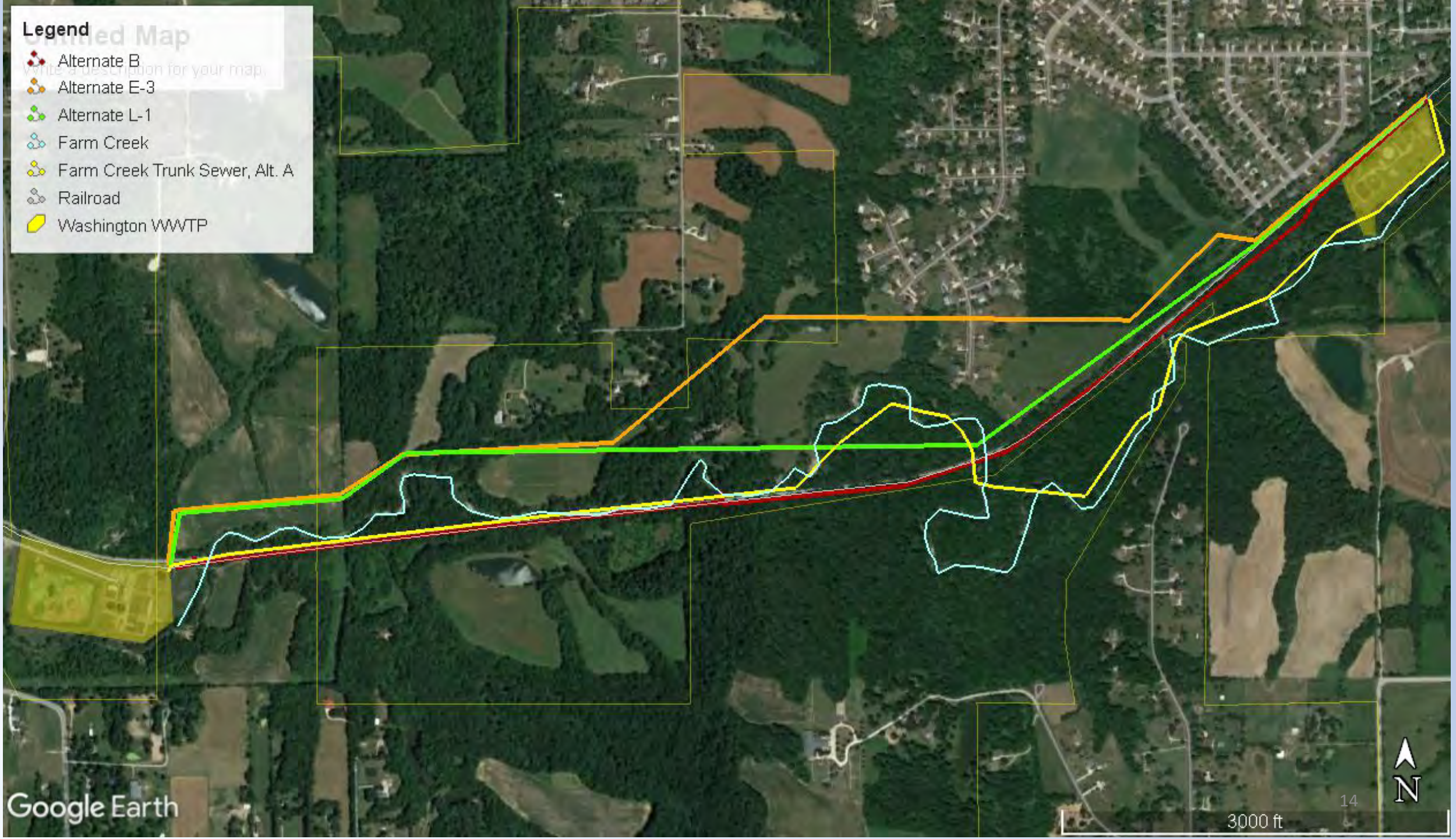
1 inch = 600 feet


Legend
Alternate B
Alternate E-3
Alternate L-1
Farm Creek
Farm Creek Trunk Sewer, Alt. A
Railroad
Washington WWTP
Google Earth
3000 ft
N

Technical Components of the Final Report

a. Environmental Impacts
b. Cultural Resource Impacts
c. Landowner Impacts (easement locations)
d. Accessibility
e. Future Service Area Expansion Opportunities
f. Permitting Issues (IDNR, USCOE, IEPA)
g. Licensing, Crossing Agreement Requirements
h. Impact On Residents of the City (immediate and long-term)
i. Opinions of the Residents of the City (if any)
j. Preferences of City Staff
k. Cost Effectiveness (short-term and long-term costs)
l. Constructability
m. Others as found necessary
n. Meeting Memoranda

What we hope to learn today

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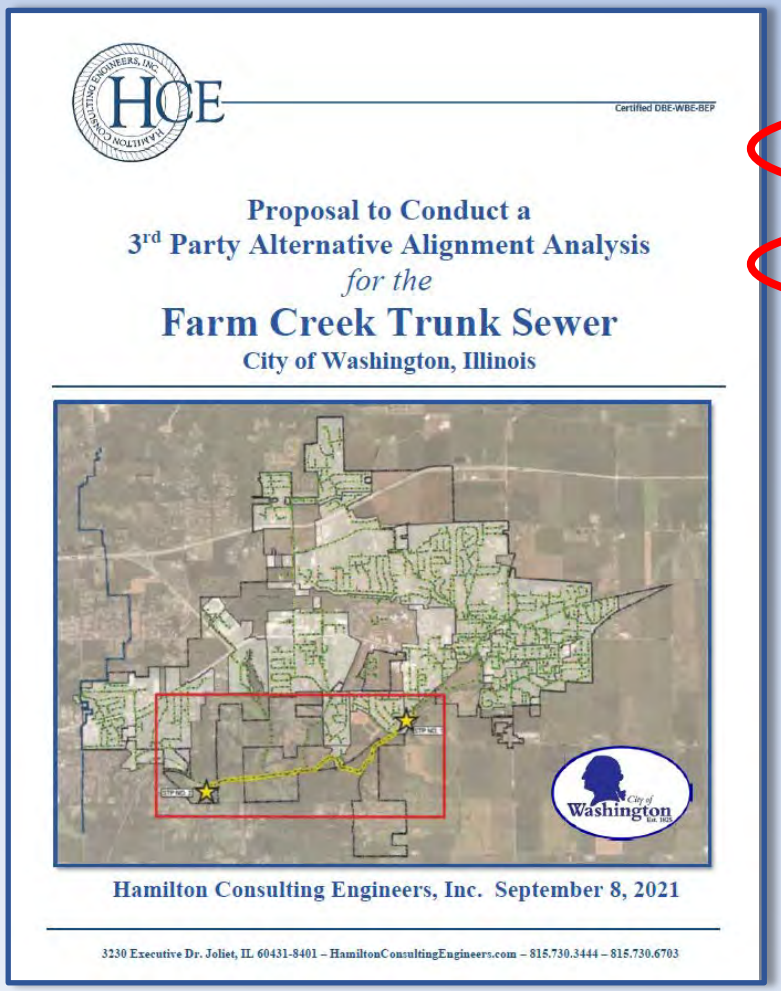
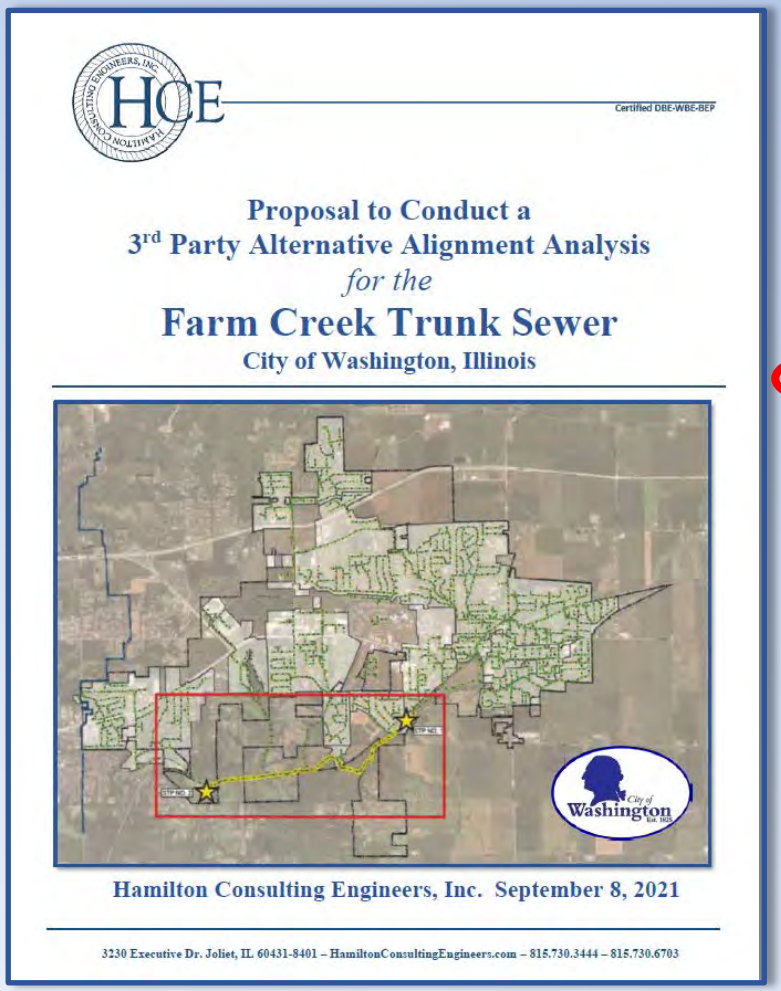


1. Collect Data
2. Interview City Staff
3. Interview Homeowners

Walk the alignment(s) as a group

HCE DBE-WBE-BEP



1. Collect Data
2. Interview City Staff
3. Interview Homeowners
4. Website, Questionnaire
5. Draft Report
6. Report Revisions
7. Public Hearing
8. Final Draft Report
9. Presentation to Council
10. Final Report

hhamilton@HCEmail.org

HAMILTON CONSULTING ENGINEERS, INC. HCE DBE-WBE-BEP

QUESTIONS?

Kristen R. Hamilton, Chairman/CEO	QA/QC
Howard J. Hamilton PE, CFM, CPESC	Project Manager
Jeffrey T. Snape PE, LEED-AP	Project Engineer

HAMILTON CONSULTING ENGINEERS, INC. HCE DBE-WBE-BEP


Legend
Alternate B
Alternate E-3
Alternate L-1
Farm Creek
Farm Creek Trunk Sewer, Alt. A
Railroad
Washington WWTP
Do we want to take a walk?
Google Earth
3000 ft
N