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August 29, 2023

City of Washington
c/o Jim W. Snider, City Administrator
301 Walnut Street
Washington, IL 61571

Re: City of Washington Phase 2B Trunk Sewer Project – Cost-effectiveness Analysis - Addendum

Dear Mr. Snider:

Please accept this letter and the attached documentation as an Addendum to the July 17, 2023 letter and attachments. Our strict application of the rule that trenchless construction means and methods be applied to areas that are 30' deep or deeper requires that we convert certain stretches along all route alignments that had previously been considered eligible for open-cut construction to the trenchless construction column. We have identified these converted areas on the attached plans and profiles with a red triangle for your ready review. These adjustments are relatively minor and, in our opinion, do not change the cost-effectiveness conclusions outlined in our July 17, 2023 letter.

Giving consideration to the adjustments made to the plans and profiles for the route alignments as depicted in the Addendum, the table of facts that drive the cost-effectiveness analysis of the route alignments has been updated as follows:

| Phase 2B Alternative Route Alignments | Total Estimated Costs | Avg. MH Depth/ Deepest MH | Farm Creek/New RR Crossings | Avg. Open-Cut Depth | Total LF Trenchless |
|---|---|---|---|---|---|
| • County Route: | $10,093,649 | 22.5'/46' | 6/3 | 20.6' | 3,784 |
| • City Route - N: | $ 8,203,934 | 19.9'/44' | 0/2 | 18.2' | 2,102 |
| • City Route - S: | $ 8,069,736 | 20.7'/33' | 2/2 | 19.6' | 1,970 |
| • City Route – S Alt: | $ 8,487,406 | 19.7'/34' | 0/2 | 18.3' | 2,280 |

We look forward to presenting our work to the City Council during the work session scheduled for September 11, 2023. We will be reaching out to you to discuss the logistics of our presentation as the scheduled date approaches. In the meantime, please feel free to reach out to me with any questions or clarifications.

Very Truly Yours,

Devin Moose, P.E., Director

cc.
Honorable Gary Manier, Mayor
Dennis Carr, City Engineer
Members of City Council
Brett S. Pudik
Troy N. Pudik
R. Case Pudik

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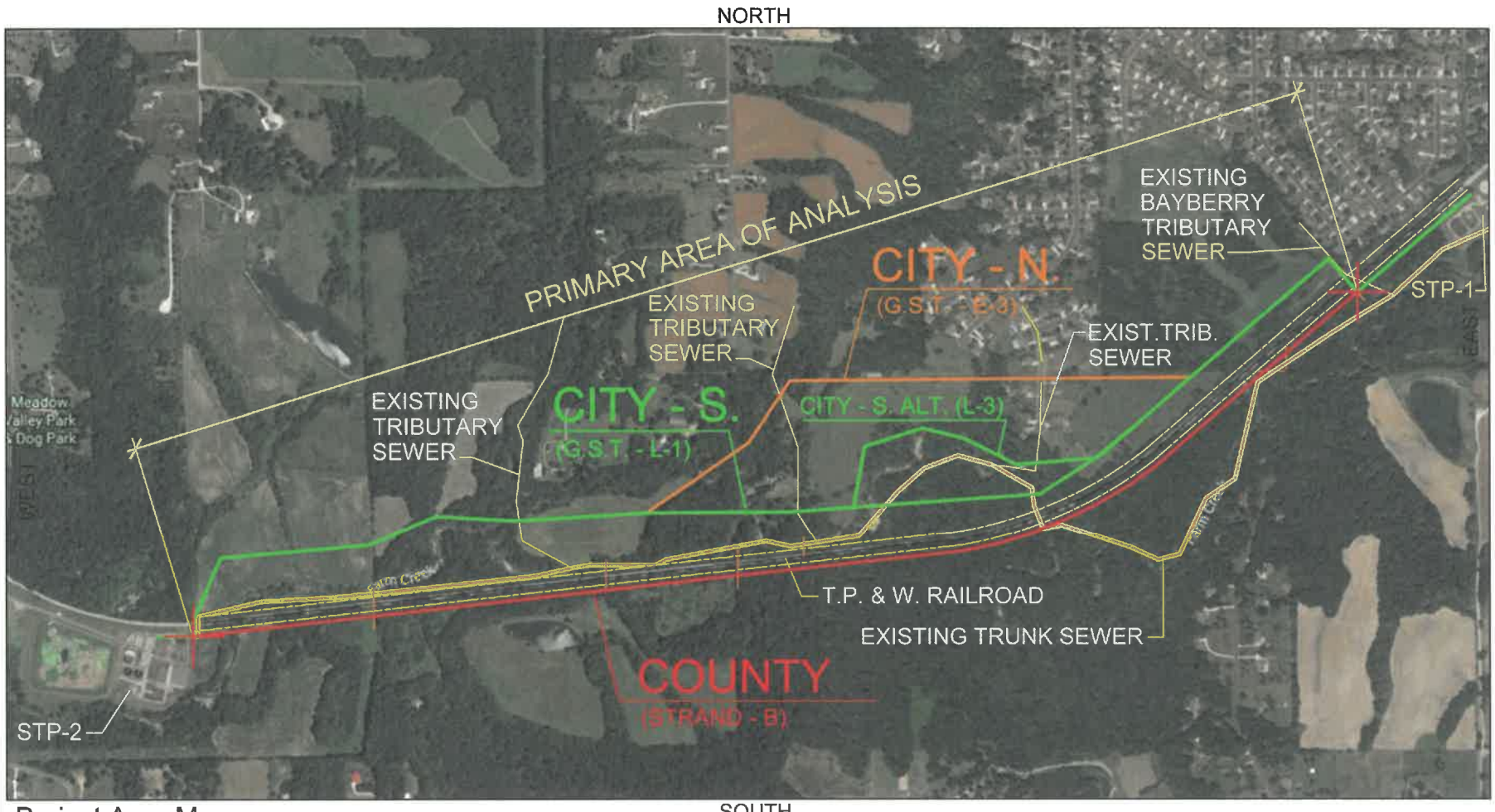
** LARGE SCALE MAPS, DRAWINGS AND ADDITIONAL INFORMATION AVAILABLE UPON REQUEST.
*** G.S.T. - GOAT SPRINGS TEAM

**NOTE: THE CONCEPT PLANS AND PROFILES IN THIS DRAWING SET ARE PRELIMINARY AND NOT TO BE USED FOR CONSTRUCTION.**

## Route Naming Key - Previously Recognized Routes:

- **ROUTE B = COUNTY ROUTE** (STRAND), (60% OF THE ROUTE WITHIN THE COUNTY JURISDICTION)
- **ROUTE E-3 = CITY ROUTE NORTH** (GOAT SPRINGS TEAM (G.S.T.)), (82% OF THE ROUTE WITHIN THE CITY LIMITS)
- **ROUTE L-1 = CITY ROUTE SOUTH** (GOAT SPRINGS TEAM (G.S.T.)), (82% OF THE ROUTE WITHIN THE CITY LIMITS)
- **ROUTE L-3 = CITY ROUTE SOUTH ALT.** (GOAT SPRINGS TEAM (G.S.T.)), (83% OF THE ROUTE WITHIN THE CITY LIMITS)

## Map of Previously Recognized Routes




Project Area Map

APTIM

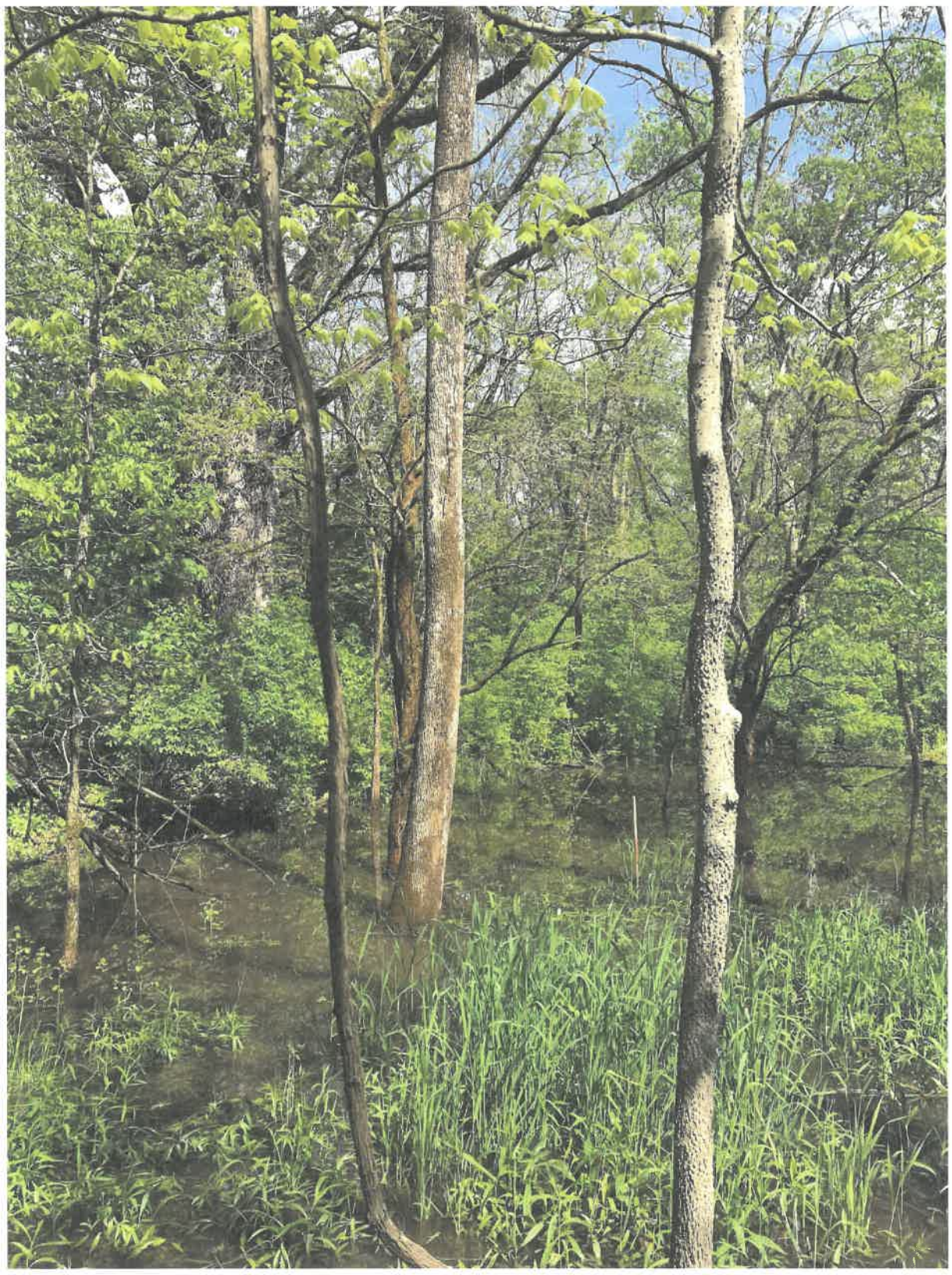
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

T.O.C.

# GENERAL INFORMATION



PURPOSE:

During the seventeen-month period following the placement of the Project on indefinite hold by the City, Goat Springs and APTIM promptly went to work to develop Preliminary Concept Plans and Profiles for four (4) previously recognized route alignments that had been shared with the City and HCE. The purpose and goal of completing this project was to determine the most cost-effective route alignment for the Phase 2B Farm Creek Trunk Sewer Project and to do so by applying objective, fact-based engineering methods that would withstand public scrutiny:

- Only previously recognized route alignments were studied
- Use of LIDAR-based elevations and topography uploaded from Tazewell County
- Equal and consistent application of rules that serve as cost drivers: (i) the depth at which the pipe installation means and methods of construction transitions from open-cut to trenchless was 30' [applied by Strand in the July 26, 2021 Strand OPCC for Strand Route B], (ii) use of steel-cased pipe materials applied to all trenchless pipe installation, impaired US Water crossings [i.e. Farm Creek] and underneath existing improvements [i.e. Railroad crossings, existing infrastructure, etc.]
- The unit costs used to calculate the total costs for each route alignment studied were the same unit costs used by Strand as depicted in the Strand OPCC for the Strand Route B dated July 26, 2021 [established in February 2020]

No adjustments were made to the previously recognized route alignments. All three of the City route alignments studied were previously designed in a manner consistent with the design criteria outlined below [See Evaluation Criteria below]. The reason for this is to provide a document that is accurate, fact-based and objective, and capable of supporting policy decisions to be made by the City Council that are consistent with preserving and enhancing the public's health, safety and welfare.

# GENERAL INFORMATION

FINDINGS:

WHAT YOU WILL FIND IN THE FOLLOWING ANALYSIS:

- PROOF AS JUSTIFICATION TO THE LOGIC BEHIND THE ROUTE SELECTION SUPPORTING THAT OF **CITY ROUTE - NORTH (ALSO KNOWN AS ROUTE E-3 SUBMITTED BY THE GOAT SPRINGS TEAM) AS THE RECOMMENDED ROUTE**.
- **THREE CITY ROUTES ANALYZED WITHIN ARE SUPERIOR TO THE PROPOSED COUNTY ROUTE, ALSO KNOWN AS STRAND ROUTE B**.

CITY ROUTE - NORTH, (ROUTE E-3 - G.S.T. VERSION, NOT HAMILTON'S):

- A MORE COST-EFFECTIVE SOLUTION FOR INITIAL INSTALLATION (ALL THINGS CONSIDERED EQUALLY)
- A MORE COST-EFFECTIVE SOLUTION OVER ITS LIFE-CYCLE FOR OPERATING AND MAINTAINING THIS NEW CITY IMPROVEMENT
- THE BEST OVERALL ROUTE IN TERMS OF CONSTRUCTABILITY (WITH 15 CONSTRUCTABILITY CATEGORIES GRADED)
- HAS MUCH LESS AMOUNT OF EXPENSIVE TRENCHLESS CONSTRUCTION THAN THE COUNTY ROUTE
- HAS THE SHALLOWEST OVERALL AVERAGE DEPTH OF OPEN-CUT PIPE INSTALLATION OVER ITS ENTIRE ROUTE
- HAS THE LEAST AMOUNT OF IMPACT ON THE ENVIRONMENT
- A NEW CITY UTILITY OPERATED AND MAINTAINED FROM THE CITY SIDE OF FARM CREEK AND THE RAILROAD AND OUTSIDE THE INFLUENCE OF FARM CREEK, THE MAIN CULPRIT OF MANY MAINTENANCE ISSUES THAT AFFECT THE PERFORMANCE OF THE EXISTING TRUNK SEWER, INCLUDING THE ISSUE OF INFLOW & INFILTRATION - A MAJOR PROBLEM WITH THE CITY'S EXISTING SANITARY SEWER SYSTEM
- ABILITY TO GRAVITY-SERVE THE FULL BUILD-OUT OF THE NEW 2023 COMPREHENSIVE PLAN
- PRESERVES DEVELOPABLE PROPERTY


THOUGH OUR EVALUATION CRITERIA WAS NOT WEIGHTED IT WAS APPLIED EQUALLY AND CONSISTENTLY TO ALL ROUTES.

EVALUATION CRITERIA (SHOULD BE):

- SELECTED AND WEIGHTED EARLY WITHIN A PROFESSIONAL DESIGN PROCESS USING CONSENSUS-BASED METHODOLOGY
- USED FOR THE IDENTIFICATION OF POTENTIAL ROUTE ALIGNMENTS TO BE INITIALLY CONSIDERED
- USED FOR THE EXPLORATION OF ADDITIONAL ALTERNATIVES FOUND IN THE PRELIMINARY DESIGN PROCESS
- USED IN MAKING DESIGN ADJUSTMENTS TO IMPROVE DESIGN OF BASE ROUTE ALIGNMENTS UNDER CONSIDERATION
- APPLIED EQUALLY TO ALL ROUTE ALIGNMENTS UNDER CONSIDERATION IN THE FINAL EVALUATION PROCESS

OPEN-CUT VS. TRENCHLESS CRITERIA:

PIPE INSTALLATION MEANS & METHODS SHOULD BE APPLIED CONSISTENTLY AND EQUALLY TO ALL ROUTE ALIGNMENT ALTERNATIVES TO BEST DETERMINE RELATIVE COSTS. THE FOLLOWING CRITERIA WAS USED IN THE DETERMINATION OF TRANSITIONING THE MEANS AND METHODS OF PIPE INSTALLATION FROM OPEN-CUT TO TRENCHLESS:

- **DEPTH** OVER 30' (CONSISTENT WITH: STRAND'S PROFESSIONAL OPINION - 7-26-2021 C.O.W. PRESENTATION TO COUNCIL)
- **IMPAIRED U.S. WATERS** AS LISTED ON IEPA'S SECTION 303.D LIST (OTHER CONSIDERATIONS COULD INCLUDE RIPARIAN BUFFER OF 50' FROM EACH BANK, ADJACENT WETLANDS AND BUFFERS PER USACE GUIDANCE, HIERARCHY OF U.S. WATERS AS LISTED: RELATIVELY PERMANENT WATERS (RPW) DIRECTLY CONNECTED TO TRADITIONAL NAVIGABLE WATERS (TNW), TRIBUTARIES TO RPWs, TRIBUTARY WETLANDS & BUFFERS, ETC.); THE GOAT SPRINGS TEAM USED ONLY FARM CREEK AS A U.S. WATER FOR TRENCHLESS CONSTRUCTION MEANS AND METHODS SINCE IT IS CONSIDERED AN IMPAIRED WATER AND A RPW DIRECTLY CONNECTED TO THE ILLINOIS RIVER (A TNW), ALSO AN IMPAIRED WATER. IF TRIBUTARY WATERS TO FARM CREEK ARE CONSIDERED FOR TRENCHLESS THEN THIS CRITERIA SHOULD BE APPLIED EQUALLY & CONSISTENTLY TO TRIBUTARY WATERS ON BOTH SIDES OF FARM CREEK.
- **EXISTING DEVELOPMENT** INCLUDING: RAILROADS, STREETS, PUBLIC UTILITIES, PRIVATE PROPERTY DEVELOPMENT
- **FOREST PRESERVATION** BEST MANAGEMENT PRACTICES (BMPs) BASED ON FOREST ASSESSMENTS OF TYPE AND MATURITY; GOAT SPRINGS TEAM CALCULATED BOTH SCENARIOS: LF OF ADDITIONAL TRENCHLESS FOR FOREST PRESERVATION AND WITHOUT IT AS A BASE COST USED IN THIS ANALYSIS.

EVALUATION CRITERIA CONSIDERED BY GOAT SPRINGS TEAM ON PREVIOUSLY RECOGNIZED CITY ALIGNMENTS:

THE IDENTIFICATION OF THE FOLLOWING RELEVANT CRITERIA AS THE LOGIC USED TO JUSTIFY ROUTE ALIGNMENTS OUR TEAM CONSIDERED, NAMELY THE THREE CITY ROUTE ALIGNMENTS:

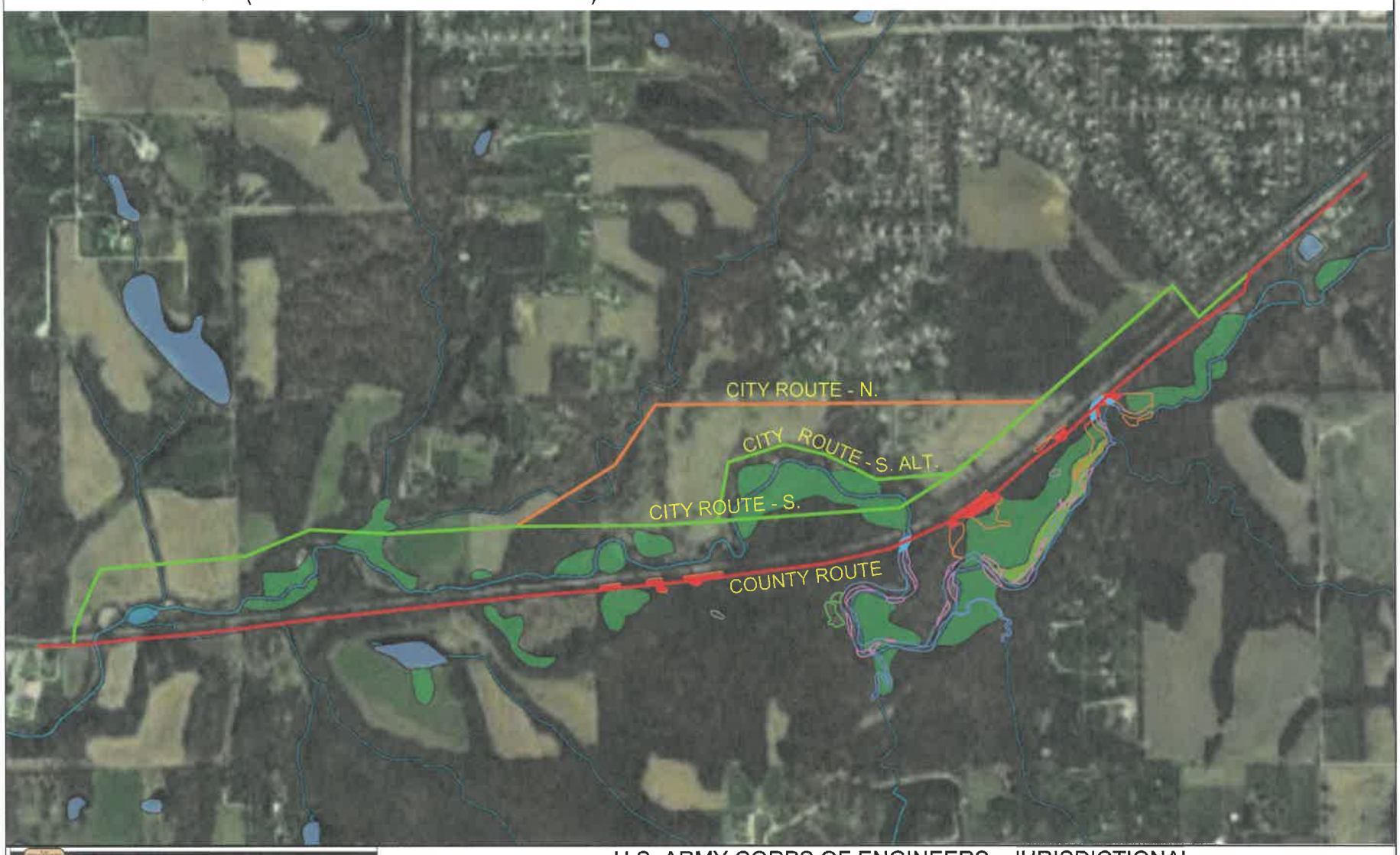
- SERVICE AREA: ABILITY TO GRAVITY-SERVE THE FULL BUILD-OUT OF THE NEW COMPREHENSIVE PLAN WHICH HAS A POPULATION EQUIVALENT OF APPROXIMATELY 98,925. USING THE PAST 10-YEAR TREND-LINE ANALYSIS, THE FULL BUILD OUT OF THE NEW COMPREHENSIVE PLAN PROJECTS TO TAKE APPROXIMATELY 884 YEARS. ALL ROUTES WITHIN THIS ANALYSIS MEET THE FULL BUILD-OUT OF THE NEW COMPREHENSIVE PLAN. THE NORTH SIDE OF THE CITY (U.S RT. 24 BYPASS SIDE) IS WHERE THE CITY'S GROWTH HAS TAKEN PLACE OVER THE PAST 20 YEARS.
- CROSSING OVER PRIVATE PROPERTY WITH EASEMENTS: THE FUNDAMENTAL CONSIDERATION FOR THE LOCATION OF EASEMENTS WAS PRESERVING PRIVATE PROPERTIES' ABILITY TO DEVELOP IN AREAS THAT ARE CONSIDERED DEVELOPABLE. FEMA 100-YR FLOOD MAPS/ FLOOD INSURANCE MAPS WERE USED AS A REFERENCE GUIDE FOR BASE ROUTE LOCATIONS SINCE ONE SIDE IS DEVELOPABLE AND ONE SIDE IS NOT. SINCE INFLOW AND INFILTRATION HAS BEEN A MAJOR ISSUE (2,040% ON PAGE 33 WITHIN HAMILTON REPORT), PRIORITIZATION WAS GIVEN TO LOCATING THE ALIGNMENTS ON THE EDGE OF FLOOD PRONE AREAS - THIS WAS AN OBVIOUS ASSUMPTION DUE TO THE ONGOING ISSUES THE CITY IS CURRENTLY DEALING WITH. THE ALIGNMENTS ON THE CITY SIDE OF FARM CREEK (NORTH SIDE) HAVE A LOT OF DESIGN FLEXIBILITY. SHOULD THE CRITERIA BE WEIGHTED IN A MANNER WHERE FLOOD PRONE AREAS ARE NO LONGER AN ISSUE, SIMPLE ALIGNMENT ADJUSTMENTS COULD EASILY BE MADE THAT MIGHT ALSO SAVE INITIAL INSTALLATION COSTS. EXISTING DEVELOPMENT ON PRIVATE PROPERTIES WAS ALSO CAREFULLY CONSIDERED ALONG WITH ACCESS TO THE NEW CITY UTILITY. PERMANENT ACCESS TO THE COUNTY ROUTE (STRAND - B) IS STILL UNDETERMINED AND WILL MOST LIKELY INTERFERE WITH PRIVATE PROPERTY AREAS OUTSIDE THE PLANNED EASEMENTS.
- CRITERIA USED IN THE EVALUATION OF ALL PREVIOUSLY RECOGNIZED ROUTE ALIGNMENTS BY THE GOAT SPRINGS TEAM ALSO INCLUDED:
  - ACCESS/ LOCATION RELATIVE TO USERS AND MAINTENANCE
  - ENVIRONMENTAL IMPACTS
  - CONSTRUCTABILITY
  - COST - BOTH INITIAL CONSTRUCTION COST AND LONG-TERM COST

IDENTIFYING ROUTE ALTERNATIVES THAT STRUCK A GOOD BALANCE WITH ALL CONSIDERED CRITERIA WAS THE LOGIC USED IN THIS STUDY. THAT CRITERIA INCLUDED: CONSIDERATION OF DEVELOPABLE VS. NON-DEVELOPABLE LAND, PRIMARY USERS OF THE UTILITY, INFLOW AND INFILTRATION POTENTIAL, ACCESS FOR MAINTENANCE AND REPAIRS, COSTS - BOTH INITIAL CONSTRUCTION COSTS AND LONG-TERM COSTS, CONSTRUCTABILITY AND ENVIRONMENTAL IMPACTS.

* SEE PROJECT CORRIDOR MAP FOR REFERENCE - LAST PAGE OF THIS SUBMITTAL

# GENERAL INFORMATION

## WETLANDS (COUNTY ROUTE vs. CITY ROUTES)




U.S. Fish and Wildlife Service
National Wetlands Inventory

Farm Creek

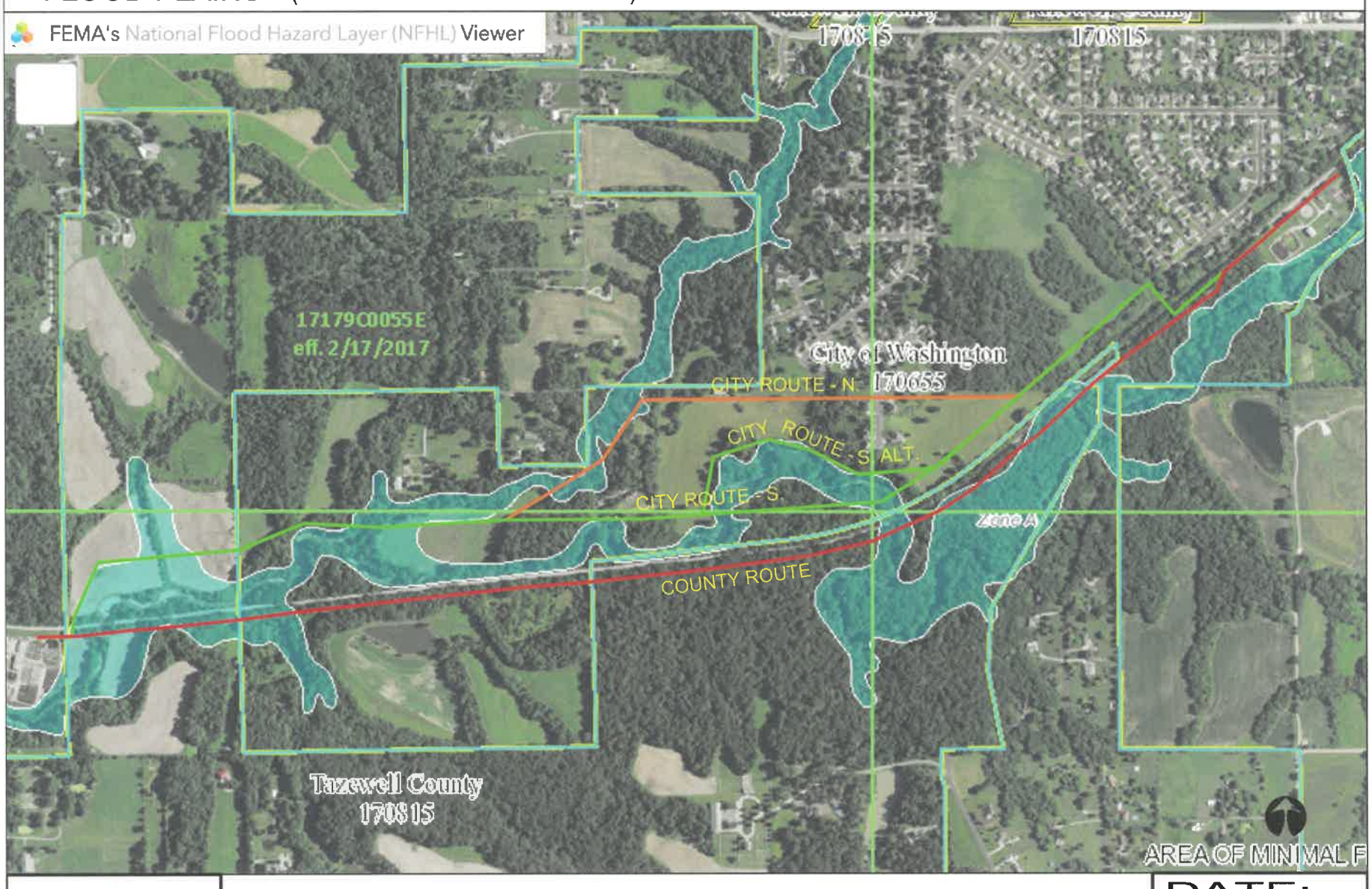
**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

U.S. ARMY CORPS OF ENGINEERS - JURISDICTIONAL WETLANDS ON GOAT SPRINGS PROPERTY

- WETLANDS WITHIN SEWER EASEMENT
- U.S. WATERWAY WITHIN SEWER EASEMENT

## FLOOD PLAINS (COUNTY ROUTE vs. CITY ROUTES)




APTIM

PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 7-17-2023

# GENERAL INFORMATION

INCOMPLETE & MISSING INFORMATION:

OTHER MAJOR ITEMS MISSING INCLUDE:

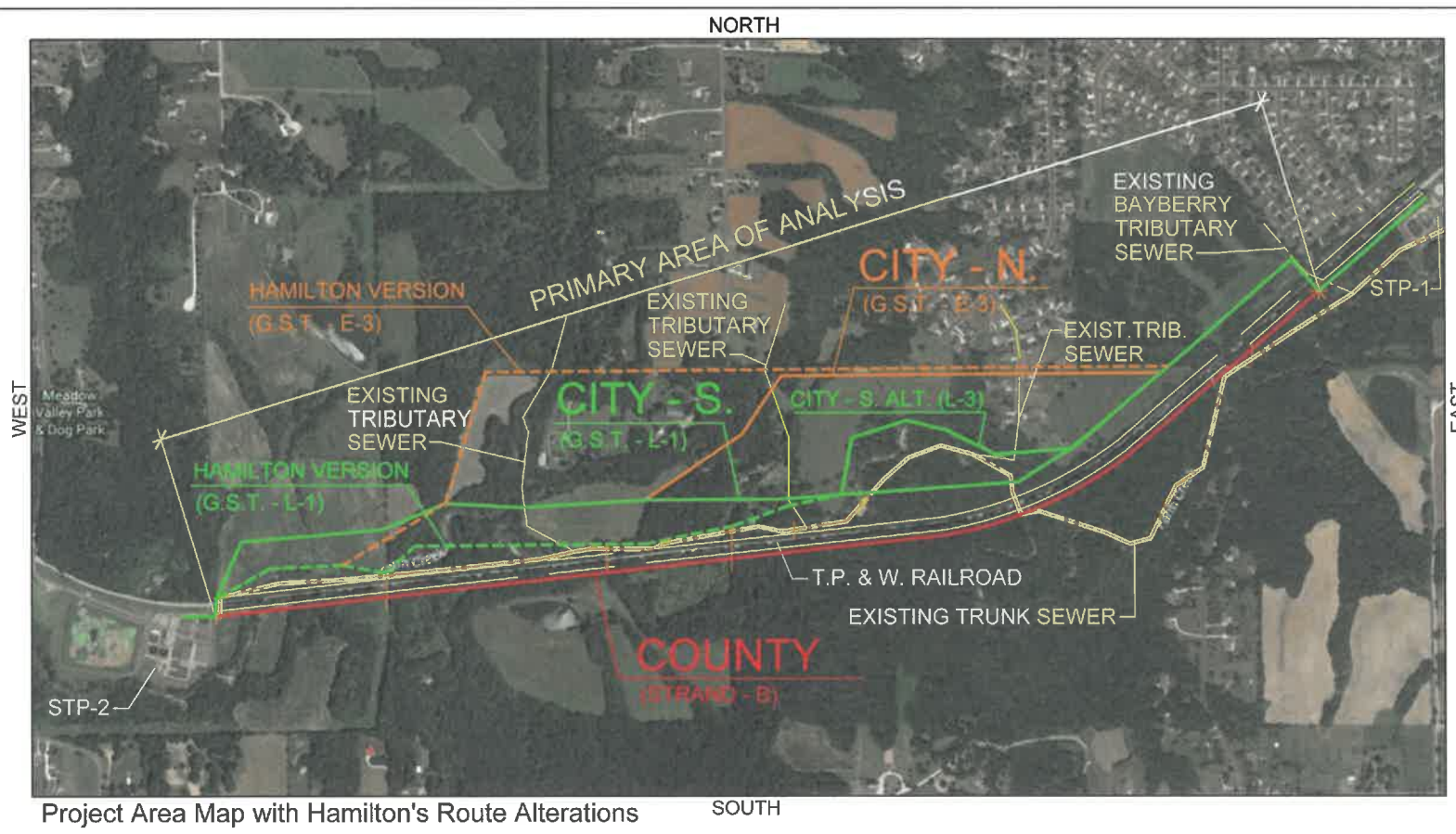
- DECOMMISSIONING EXISTING TRUNK LINE SEWER - BOTH SCOPE AND COSTS INCLUDING BUT NOT LIMITED TO:
  - ACCESS PLANS AND ACCESS EASEMENTS
  - REMOVAL OF EXISTING PIPE FROM 20 FARM CREEK CROSSINGS TO 10' BEYOND BANK, CAP & STABILIZE; RESTORATION
  - REMOVAL OF ALL MANHOLE STRUCTURES TO 4' MINIMUM BELOW EXISTING GRADE AND CAP
  - FILL WITH FLOWABLE FILL ALL EXISTING PIPE/ MH STRUCTURE VOIDS
  - RESTORATION OF ALL ACCESS PATHS AND REMOVAL AREAS
  - WETLAND & STREAM BANK MITIGATION
- PROJECT SITE ACCESS AND RESTORATION; PERMANENT ACCESS EASEMENTS FOR FUTURE OPERATION AND MAINTENANCE
- FOREST PRESERVATION & RESTORATION - PROFESSIONAL ASSESSMENTS AND DOCUMENTS SUPPORTING BEST MANAGEMENT PRACTICES; CONSTRUCTION TECHNIQUES, MEANS AND METHODS SUPPORTING FOREST BMPs
- COMPLETE DOCUMENTATION SCOPE AND COSTS ASSOCIATED WITH TIE-IN OF ALL TRIBUTARY SEWER EXTENSIONS
- SOIL TESTING, DEWATERING REQUIREMENTS, ADDITIONAL PROFESSIONAL ENGINEERING
- MITIGATION COSTS - WETLAND AND STREAM BANK MANDATED BY PERMITTING AGENCIES
- EASEMENTS; PERMITS; PROJECT FINANCING (MEETING WASTEWATER LOAN PROGRAM REQUIREMENTS)

MANY UNKNOWNS AND MAJOR COST OMISSIONS (STRAND ROUTE B) EXIST. A LOT OF WORK REMAINS TO BE COMPLETED.

## 5.00 - MISSING PROJECT COSTS

| | | | | COUNTY ROUTE (Strand - Route B) | | CITY ROUTE - NORTH (G.S.T. - Route E-3) | | CITY ROUTE - SOUTH (G.S.T. - Route L-1) | | CITY ROUTE - S.-ALT. (G.S.T. - Route L-3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Strand - Design Drwgs. | | G.S.T. - Design Drwgs. | | G.S.T. - Design Drwgs. | | G.S.T. - Design Drwgs. | |
| | Description | Units | Unit Cost | Quantity | OPCC | Quantity | OPCC | Quantity | OPCC | Quantity | OPCC |
| 5.01 | Pipe removal from all F.C. Xings & Restoration | LF | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.02 | Fill/ cap existing pipe to remain in place | CY | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.03 | Remove exist. MHs to 4' below grade/ restore | EA | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.04 | Restoration Allowance | Acre | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.05 | EX. T-LINE DECOMM. CONST. SUB-TOTAL | | | | $0 | | $0 | | $0 | | $0 |
| 5.06 | Mobilization | | 2.0% | | $0 | | $0 | | $0 | | $0 |
| 5.07 | Legal and Land Acquisition | | 5.0% | | $0 | | $0 | | $0 | | $0 |
| 5.08 | Contingencies | | 25.0% | | $0 | | $0 | | $0 | | $0 |
| **5.09** | **EXIST. T-LINE DECOMM. CONST. TOTAL** | | | | **TBD** | | **TBD** | | **TBD** | | **TBD** |
| 5.10 | Access, Entrances, Laydown/ Storage, Const. Stabilization, Maintenance, Restoration | TBD | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.11 | Legal and Land Acquisition | | 5.0% | | $0 | | $0 | | $0 | | $0 |
| 5.12 | Contingencies | | 25.0% | | $0 | | $0 | | $0 | | $0 |
| **5.13** | **ACCESS & RESTORATION CONST. TOTAL** | | | | **TBD - $$$$** | | **TBD - $** | | **TBD - $$$** | | **TBD - $$** |
| 5.14 | Forest/ Tree Screening | Acre | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.15 | Detailed Forest/ Tree Inventory & Assessment | Acre | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.16 | Forest Preserv./ Restoration BMPs Bid Docs. | Acre | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.17 | Forest BMPs -Bid Ph./ Const. Ph.: On-site Rep. | Acre | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.18 | Forest Restoration - Post-Const., 5-Yr. Period | Acre | TBD | | $0 | | $0 | | $0 | | $0 |
| 5.19 | PRO. SER: FOR. P. & R. BMPs SUB-TOTAL | | | | $0 | | $0 | | $0 | | $0 |
| 5.20 | Addtl. Trenchless Const.: 42" HOBAS | LF | $800 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.21 | Add. T-less Const.: J & B - 42" H./ 60" Stl.-Csd. | LF | $1,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.22 | Work Shaft - Trenchless Const. - 42" San. Swr. | EA | $12,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.23 | Work Shaft - Trenchless Const. - 24" San. Swr. | EA | $8,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.24 | Trenchless Const.: 18" San. Swr./ 30" Stl.-Csd. | LF | $450 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.25 | Reforestation/ Forest Preserv. BMPs - Const. | Acre | TBD | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.26 | CONST.: FOREST P. & R. BMPs SUB-TOTAL | | | | $0 | | $0 | | $0 | | $0 |
| 5.27 | Mobilization | | 2.0% | | $0 | | $0 | | $0 | | $0 |
| 5.28 | Legal and Land Acquisition | | 5.0% | | $0 | | $0 | | $0 | | $0 |
| 5.29 | Contingencies | | 25.0% | | $0 | | $0 | | $0 | | $0 |
| **5.30** | **FOREST PRESERV. & RESTOR. TOTAL** | | | | **TBD - $$$$** | | **TBD - $** | | **TBD - $$$** | | **TBD - $$** |
| | | | | | | | | | | | |
| 5.31 | Bayberry Trib. Swr. Extension (replace V.C.P.) | TBD | TBD | TBD | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.32 | Timber Rail Trib. Sewer Tie-In/ Pump/ Emerg. | TBD | TBD | TBD | $0 | TBD | $0 | 0 | $0 | 0 | $0 |
| 5.33 | Hillcrest/ Cummings Trib. Swr. Extension Mod. | TBD | TBD | TBD | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.34 | Westlake Tributary Sewer Extension | TBD | TBD | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.35 | Meadow Valley Park Sewer: Mods for future | TBD | TBD | TBD | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 5.36 | CONST.: FOREST P. & R. BMPs SUB-TOTAL | | | | $0 | | $0 | | $0 | | $0 |
| 5.37 | Mobilization | | 2.0% | | $0 | | $0 | | $0 | | $0 |
| 5.38 | Legal and Land Acquisition | | 5.0% | | $0 | | $0 | | $0 | | $0 |
| 5.39 | Contingencies | | 25.0% | | $0 | | $0 | | $0 | | $0 |
| **5.40** | **EXIST. TRIB. SEWER EXTENSIONS TOTAL** | | | | **TBD - $$$$** | | **TBD - $$** | | **TBD - $** | | **TBD - $** |
| 5.45 | Extended General Conditions/ Change Order potential due to weather delays and difficult site constraints on private property (i.e. Farm Creek/ flood areas, environmental sensitivity, topo.) | | | | **TBD - $$$$** | | **TBD - $** | | **TBD - $$$** | | **TBD - $$** |
| 5.50 | Environmental Mitigation | | | | **TBD - $$$$** | | **TBD - $** | | **TBD - $$$** | | **TBD - $$** |
| 5.55 | Easements | | | | **TBD - $$** | | **TBD - $** | | **TBD - $$$** | | **TBD - $$$$** |
| 5.60 | Other | | | | | | | | | | |
| 5.65 | Other | | | | | | | | | | |
| | **MISSING/ UNKNOWN PROJECT COSTS** $$$$ = Most; $$$ = 2nd Most; $$ = 2nd Least; $ = Least | | | | **$$$$** | | **$** | | **$$$** | | **$$** |

# DESIGN CRITERIA ( ROUTE DATA COMPARISON )



Project Area Map with Hamilton's Route Alterations

| | | 1 DESIGN CRITERIA: ROUTE DATA COMPARISON | COUNTY ROUTE (Strand Route B) | | CITY ROUTE - N. (G.S.T. Route E-3) | | CITY ROUTE - S. (G.S.T. Route L-1) | | CITY RT. - S. ALT. (G.S.T. Route L-3) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Data Input | Rk. | Data Input | Rk. | Data Input | Rk. | Data Input | Rk. |
| LOCATION/ ACCESS | 1.01 | Ability to gravity-serve full build-out 2022 Comp. plan? | Yes | 1T | Yes | 1T | Yes | 1T | Yes | 1T |
| | 1.02 | Percent of route within City limits for this City utility | 40% | 4 | 82% | 2T | 82% | 2T | 83% | 1 |
| | 1.03 | Percent of route outside City limits (County) for this City utility | 60% | 4 | 18% | 2T | 18% | 2T | 17% | 1 |
| | 1.04 | Percent of route using Open Access corridors | 7% | 4 | 77% | 1 | 66% | 3 | 69% | 2 |
| | 1.05 | Percent of route using: Exist./ Proj. + Exist. R.O.W.s | 0%/ 0% | 4 | 14%/ 47% | 1 | 1%/ 12% | 2T | 1%/ 12% | 2T |
| | 1.06 | Percent of route requiring Private Property easements | 82% | 2 | 81% | 1 | 95% | 3T | 95% | 3T |
| | 1.07 | # Pr. Prop. using city utility/ # Pr. Prop. req. easements/ % | 0/ 6/ 0% | 4 | 2/ 6/ 33% | 1T | 2/ 6/ 33% | 1T | 4/ 8/ 50% | 3 |
| | 1.08 | % route same side of Farm Creek w/ both STPs & City proper | 33% | 4 | 100% | 1T | 87% | 3 | 100% | 1T |
| | 1.09 | Percent route same side of R.R. with City proper | 0% | 4 | 82% | 2T | 82% | 2T | 83% | 1 |
| | 1.10 | % route blocked by R.R. & Farm Crk. from STPs & City proper | 86% | 4 | 0% | 1T | 13% | 3 | 0% | 1T |
| | 1.11 | Safety - O & M: MH depth & access during Farm Creek flooding | Worst | 4 | Best | 1 | Decent | 3 | Good | 2 |
| ENVIRON-MENTAL IMPACTS | 2.01 | Farm Creek crossings | 6 | 4 | 0 | 1T | 2 | 3 | 0 | 1T |
| | 2.02 | Farm Crk. streambank erosion potential (approx. LF - G.I.S.) | 1,210 | 4 | 0 | 1 | 460 | 3 | 170 | 2 |
| | 2.03 | Floodplain crossings (% route/ approx. LF - FEMA maps/ G.I.S.) | 36% (3,300) | 4 | 16% (1,570) | 2 | 17% (1,620) | 3 | 11% (1,140) | 1 |
| | 2.04 | Wetland crossings (% route/ approx. LF - USACE/ U.S. F&WS) | 24% (2,200) | 4 | 3% (260) | 1 | 9% (900) | 3 | 4% (370) | 2 |
| | 2.05 | % route through forest/ forested riparian waterways (LF - G.I.S.) | 92% | 4 | 20% | 1 | 32% | 3 | 29% | 2 |
| | 2.06 | % route w/in Primary Analysis Area requiring addtl. forest BMPs | 37% | 4 | 14% | 2 | 19% | 3 | 13% | 1 |
| | 2.07 | Route's land recovery rate/ duration from development disturb. | Long-term dur. | 4 | Shortest dur. | 1 | Moderate dur. | 3 | Moderate dur. | 2 |
| | 2.08 | Overall route character (Natural, Domesticated, Developed) | Natural | 4 | Domesticated | 1T | Domesticated | 1T | Domesticated | 1T |
| CONSTRUCT-ABILITY | 3.01 | Total LF of New Sewer Pipe Route (Trunk + Trib. Ext.) | 12,385 | 4 | 12,080 | 2 | 12,005 | 1 | 12,370 | 3 |
| | 3.02 | Trunk line Sewer LF | 11,125 | 1 | 11,580 | 3 | 11,485 | 2 | 11,850 | 4 |
| | 3.03 | Tributary Sewer Extensions LF | 1,260 | 4 | 500 | 1 | 520 | 2T | 520 | 2T |
| | 3.04 | Open-Cut Pipe Installation - Total LF/ % of total route | 8,606/ 69% | 4 | 9,978/ 83% | 2 | 10,035/ 84% | 1 | 10,090/ 82% | 3 |
| | 3.05 | Trenchless Jack & Bore Pipe Installation - Total LF/ % tot. route | 3,784/ 31% | 4 | 2,102/ 17% | 2 | 1,970/ 16% | 1 | 2,280/ 18% | 3 |
| | 3.06 | Trenchless J & B: Locations/ Work Shafts/ Total W.S. depth (Ft) | 15/ 26/ 688' | 4 | 7/ 12/ 312' | 2 | 7/ 13/ 314' | 3 | 7/ 13/ 295' | 1 |
| | 3.07 | LF addtl. trenchless J & B substituted for open-cut: forest BMPs | 3,350/ 27% | 4 | 1,340/ 11% | 2 | 1,785/ 15% | 3 | 1,310/ 11% | 1 |
| | 3.08 | Addtl. T-less J & B: Loc. / Wk. Sh. / Wk.Sh. D (Ft): forest BMPs | 9/ 5/ 130' | 4 | 3/ 3/ 51' | 2 | 5/ 2/ 43' | 1 | 4/ 3/ 74' | 3 |
| | 3.09 | Open-Cut Pipe Installation - Total Average Depth (FT.) | 20.6' | 4 | 18.2' | 1 | 19.6' | 3 | 18.3' | 2 |
| | 3.10 | Manholes: Number of new MHs/ Average Depth (FT.) | 34/ 22.5' | 4 | 29/ 19.9' | 1 | 29/ 20.7' | 2 | 30/ 19.7' | 3 |
| | 3.11 | Deepest Manhole (MH) - Depth (FT) | 46' | 4 | 44' | 3 | 33' | 1 | 34' | 2 |
| | 3.12 | Existing trunk line crossings needing protection | 2 | 3T | 0 | 1T | 2 | 3T | 0 | 1T |
| | 3.13 | New RR crossings | 3 | 4 | 2 | 1T | 2 | 1T | 2 | 1T |
| | 3.14 | Exist. RR crossings - sewers requiring decommissioning | 1 | 1 | 3 | 2T | 3 | 2T | 3 | 2T |
| | 3.15 | Constructability: delay pot'l, access, site constraints, dewatering | Worst | 4 | Best | 1 | Decent | 3 | Good | 2 |
| COST | 4.01 | Route Const. Cost (incl. contingencies), (without forest BMPs) | $10,093,649 | 4 | $8,203,934 | 2 | $8,069,736 | 1 | $8,487,406 | 3 |
| | 4.02 | Route Const. Cost (incl. contingencies), (including forest BMPs) | $14,029,563 | 4 | $9,721,866 | 1 | $10,083,407 | 2 | $10,083,475 | 3 |
| | 4.03 | Decommissioning Exist. Trunk Line (same scope all route alts.) | $$$ - TBD | -- | $$$ - TBD | -- | $$$ - TBD | -- | $$$ - TBD | -- |
| | 4.04 | STP-2 Improvements: (factors in route depth & contingencies) | $$$ Most Expensive $4.19 M + | 4 | $ Less Expensive | 1T | $ Less Expensive | 1T | $ Less Expensive | 1T |
| | 4.05 | Cost of Missing Costs (see list of missing or unknown costs) | $$$ - Highest | 4 | $ - Lowest | 1 | $ - 2nd Highest | 3 | $ - 2nd Lowest | 2 |
| | 4.06 | Total Project Cost: (known/ estimated to date - Strand format), (w/out forest BMPs) | $$$$ Most Expensive (4.01 + 4.03 + 4.04 + 4.05) | 4 | $ Least Expensive (4.01 + 4.03 + 4.04 + 4.05) | 1 | $$ 2nd Least Expensive (4.01 + 4.03 + 4.04 + 4.05) | 2 | $$$ 2nd Most Expensive (4.01 + 4.03 + 4.04 + 4.05) | 3 |
| | 4.07 | Total Project Cost: (known/ estimated to date - Strand format), (incl. forest BMPs) | $$$$ Most Expensive (4.02 + 4.03 + 4.04 + 4.05) | 4 | $ Least Expensive (4.02 + 4.03 + 4.04 + 4.05) | 1 | $$$ 2nd Most Expensive (4.02 + 4.03 + 4.04 + 4.05) | 3 | $$ 2nd Least Expensive (4.02 + 4.03 + 4.04 + 4.05) | 2 |
| | 4.08 | Cost to the Environment (clean water, clean air, habitat loss) | $$$ Highest - Significantly | 4 | $ Lowest - Minimal | 1 | $ Moderately Low | 3 | $ Low | 2 |
| | 4.09 | Life Cycle Cost: (O & M, Repair & Replacement, I/ I Mgmt.) (Access- corridor maint., flooding emergencies, R.R. insurance) | Most Expensive | 4 | Least Expensive | 1 | 2nd Most Expensive | 3 | 2nd Least Expensive | 2 |
| | | | COUNTY ROUTE | | CITY ROUTE - N. | | CITY ROUTE - S. | | CITY RT. - S. ALT. | |

APTIM

PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

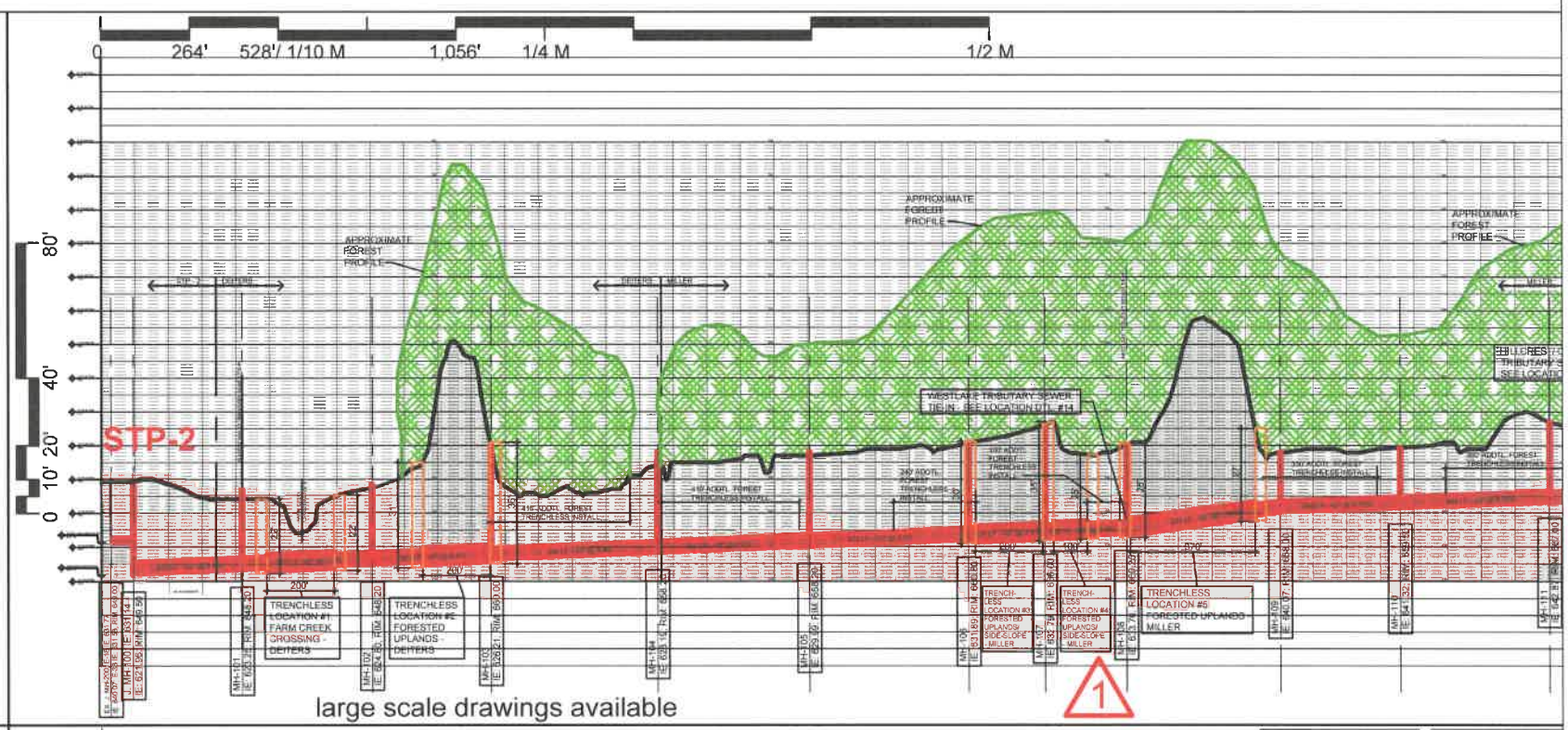
# COST COMPARISON ( ROUTE - INFLUENCED )

| 1.00 - ROUTE CONSTRUCTION ⚠1 | | | | COUNTY ROUTE (Strand - Route B) | | CITY ROUTE - NORTH (G.S.T. - Route E-3) | | CITY ROUTE - SOUTH (G.S.T. - Route L-1) | | CITY ROUTE - S.-ALT. (G.S.T. - Route L-3) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Strand - Design Drwgs. | | G.S.T. - Design Drwgs. | | G.S.T. - Design Drwgs. | | G.S.T. - Design Drwgs. | |
| | Description | Units | Unit Cost | Quantity | OPCC | Quantity | OPCC | Quantity | OPCC | Quantity | OPCC |
| 1.01 | Sanitary Sewer - 42" HOBAS, Open-cut | LF | $350 | 7,599 | $2,659,650 | 9,478 | $3,317,300 | 9,515 | $3,330,250 | 9,570 | $3,349,500 |
| 1.02 | Trenchless Const.: 42" HOBAS | LF | $800 | | | | | | | | |
| 1.03 | Trenchless Const.: J & B - 42" H./ 60" Stl.-Csd. | LF | $1,000 | 3,465 | $3,465,000 | 2,102 | $2,102,000 | 1,970 | $1,970,000 | 2,280 | $2,280,000 |
| 1.04 | Work Shaft - Trenchless Const. - 42" San. Swr. | EA | $12,000 | 26 | $312,000 | 12 | $144,000 | 13 | $156,000 | 13 | $156,000 |
| 1.05 | Sanitary Sewer - 12" PVC SDR 26, Open-cut | LF | $80 | 490 | $39,200 | 500 | $40,000 | 520 | $41,600 | 520 | $41,600 |
| 1.06 | Sanitary Sewer - 18" PVC SDR 26, Open-cut | LF | $140 | 378 | $52,920 | 20 | $2,800 | 20 | $2,800 | 20 | $2,800 |
| 1.07 | Trenchless Const.: 8" San. Swr./ 20" Stl.- Csd. | LF | $400 | 140 | $56,000 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.08 | Trenchless Const.: 18" San. Swr./ 30" Stl.-Csd. | LF | $450 | 319 | $143,550 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.09 | New 12" Sanitary Sewer inside existing 30" | LF | $1,250 | 134 | $167,500 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.10 | Foundation Material | CY | $52 | 338 | $17,562 | 421 | $21,883 | 422 | $21,968 | 425 | $22,095 |
| 1.11 | Protect existing Sanitary Sewer at crossings | EA | $4,000 | 5 | $20,000 | 3 | $12,000 | 5 | $20,000 | 3 | $12,000 |
| 1.12 | Select granular backfill - CA-7 | CY | $30 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.13 | Sanitary MH, Type A, 6' Dia., < than 20' deep | EA | $9,000 | 8 | $72,000 | 12 | $108,000 | 10 | $90,000 | 15 | $135,000 |
| 1.14 | Sanitary MH, Type A, 6' Dia., 20' - 25' deep | EA | $12,000 | 7 | $84,000 | 3 | $36,000 | 7 | $84,000 | 3 | $36,000 |
| 1.15 | Sanitary MH, Type A, 6' Dia., 25' - 30' deep | EA | $15,000 | 3 | $45,000 | 4 | $60,000 | 3 | $45,000 | 4 | $60,000 |
| 1.16 | Sanitary MH, Type A, 6' Dia., 30' - 35' deep | EA | $18,000 | 3 | $54,000 | 2 | $36,000 | 4 | $72,000 | 3 | $54,000 |
| 1.17 | Sanitary MH, Type A, 6' Dia., 35' - 40' deep | EA | $21,000 | 0 | $0 | 1 | $21,000 | 0 | $0 | 0 | $0 |
| 1.18 | Sanitary MH, Type A, 6' Dia., 40' - 45' deep | EA | $25,000 | 0 | $0 | 1 | $25,000 | 0 | $0 | 0 | $0 |
| 1.19 | Sanitary MH, Type A, 6' Dia., 45' - 50' deep | EA | $26,000 | 1 | $26,000 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.20 | Sanitary MH, Type A, 6' Dia., 50' - 55' deep | EA | $28,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.21 | Sanitary MH, Type A, 6' Dia., 55' - 60' deep | EA | $30,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.22 | Sanitary MH, Type A, 6' Dia., 60' - 65' deep | EA | $31,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.23 | Sanitary MH, Type A, 6' Dia., 65' - 70' deep | EA | $32,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.24 | Sanitary MH, Type A, 6' Dia., 70' - 75' deep | EA | $33,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.25 | Sanitary MH, Type A, 6' Dia., 75' - 80' deep | EA | $34,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.26 | Sanitary MH, Type A, 6' Dia. on ex. sewer pipe | EA | $12,000 | 3 | $36,000 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.27 | Sanitary MH, Type A, 8' Dia., < than 20' deep | EA | $18,000 | 3 | $54,000 | 5 | $90,000 | 2 | $36,000 | 2 | $36,000 |
| 1.28 | Sanitary MH, Type A, 8' Dia., 20' - 25' deep | EA | $22,000 | 2 | $44,000 | 0 | $0 | 2 | $44,000 | 2 | $44,000 |
| 1.29 | Sanitary MH, Type A, 8' Dia., 25' - 30' deep | EA | $26,000 | 2 | $52,000 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.30 | Sanitary Manhole, Type A, 8' Dia. Junction MH | EA | $20,000 | 2 | $40,000 | 1 | $20,000 | 1 | $20,000 | 1 | $20,000 |
| 1.31 | Outside Drop Manhole Connection, 18" | EA | $8,000 | 1 | $8,000 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.32 | Restoration-Seed, class 2: topsoil, fertilizer, excelsior blanket, mulch incidental | Acre | $9,655 | 3.5 | $33,685 | 4.4 | $42,014 | 4.4 | $42,178 | 4.4 | $42,422 |
| 1.27 | Restoration-Seed, class 4/5: topsoil, fertilizer, excelsior blanket, mulch incidental | Acre | $9,655 | 3.5 | $33,685 | 4.4 | $42,014 | 4.4 | $42,178 | 4.4 | $42,422 |
| 1.28 | Restoration-Seed, class 4B/5B: topsoil, fertilizer, excelsior blanket, mulch incidental | Acre | $9,655 | 3.5 | $33,685 | 4.4 | $42,014 | 4.4 | $42,178 | 4.4 | $42,422 |
| 1.29 | Silt fence/ erosion controls | FT | $4 | 6,079 | $24,317 | 7,582 | $30,330 | 7,612 | $30,448 | 7,656 | $30,624 |
| 1.30 | Stabilized construction entrance | EA | $6,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.31 | Tree removal (over 6 units (in.) dia.) | EA | $12 | 6,079 | $72,950 | 1,896 | $22,747 | 1,903 | $22,836 | 1,914 | $22,968 |
| 1.32 | Forest Preservation - Professional Services | Acre | $30,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.33 | Reforestation/ Forest Preserv. BMPs - Const. | Acre | $30,000 | 0 | $0 | 0 | $0 | 0 | $0 | 0 | $0 |
| 1.34 | | | | | | | | | | | |
| 1.35 | ROUTE CONSTRUCTION SUB-TOTAL | | | | $7,646,704 | | $6,215,102 | | $6,113,436 | | $6,429,853 |
| 1.36 | Mobilization | | 2.0% | | $152,934 | | $124,302 | | $122,269 | | $128,597 |
| 1.37 | Legal and Land Acquisition | | 5.0% | | $382,335 | | $310,755 | | $305,672 | | $321,493 |
| 1.38 | Contingencies | | 25.0% | | $1,911,676 | | $1,553,775 | | $1,528,359 | | $1,607,463 |
| 1.39 | ROUTE CONSTRUCTION TOTAL | | | | $10,093,649 | | $8,203,934 | | $8,069,736 | | $8,487,406 |
| 2.00 | EXIST. TRUNK LINE DECOMM. | | | | | | | | | | |
| 2.01 | Pipe removal from all F.C. Xings & Restoration | | | | $0 | | $0 | | $0 | | $0 |
| 2.02 | Fill/ cap existing pipe to remain in place | | | | $0 | | $0 | | $0 | | $0 |
| 2.03 | Remove exist. MHs to 4' below grade/ restore | | | | $0 | | $0 | | $0 | | $0 |
| 2.04 | Restoration Allowance | | | | $0 | | $0 | | $0 | | $0 |
| 2.05 | EX. T-LINE DECOMM. CONST. SUB-TOTAL | | | | $0 | | $0 | | $0 | | $0 |
| 2.06 | Mobilization | | 2.0% | | $0 | | $0 | | $0 | | $0 |
| 2.07 | Legal and Land Acquisition | | 5.0% | | $0 | | $0 | | $0 | | $0 |
| 2.08 | Contingencies | | 25.0% | | $0 | | $0 | | $0 | | $0 |
| 2.09 | EXIST. T-LINE DECOMM. CONST. TOTAL | | | | TBD | | TBD | | TBD | | TBD |
| 3.00 | STP #2 IMPROVEMENTS | | | | | | | | | | |
| 3.01 | Sitework - Route-Influenced | | | | $827,000 | | TBD | | TBD | | TBD |
| 3.02 | New Submersible Pump Stn. - Rt.-Influenced | | | | $1,290,000 | | TBD | | TBD | | TBD |
| 3.03 | Exist. Pump Stn. Mods./ Reno. - Rt.-Influenced | | | | $987,000 | | TBD | | TBD | | TBD |
| 3.04 | Back-up Generator & Elect. Service Upgrade | | | | $0 | | $0 | | $0 | | $0 |
| 3.05 | STP #2 IMPROVE. CONST. SUB-TOTAL | | | | $3,104,000 | | TBD | | TBD | | TBD |
| 3.06 | General Conditions/ Technical Services | | 10.0% | | $310,400 | | TBD | | TBD | | TBD |
| 3.07 | Contingencies | | 25.0% | | $776,000 | | TBD | | TBD | | TBD |
| 3.08 | STP #2 IMPROVEMENTS CONST. TOTAL | | | | $4,190,400 | | TBD | | TBD | | TBD |
| 4.00 | CONSTRUCTION SUB-TOTAL | | | | $14,284,049 *+2.00* | | $8,203,934 *+2.00 +3.00* | | $8,069,736 *+2.00 +3.00* | | $8,487,406 *+2.00 +3.00* |
| 4.01 | Project Contingency (10% of Total Const. Cost) | | 10.0% | | TBD | | TBD | | TBD | | TBD |
| 4.02 | Design Engineering (Plan/ Form Prep.) | | | | $662,400 | | TBD | | TBD | | TBD |
| 4.03 | Construction Engineering (Incl. Bid Phase) | | | | $700,000 | | TBD | | TBD | | TBD |
| 4.04 | Additional Engineering - Alternatives Analysis | | | | $165,000 | | TBD | | TBD | | TBD |
| 4.05 | Other Professional Services | | | | $80,000 | | TBD | | TBD | | TBD |
| 4.06 | | | | | $0 | | $0 | | $0 | | $0 |
| | TOTAL PROJECT COST | | | | TBD | | TBD | | TBD | | TBD |

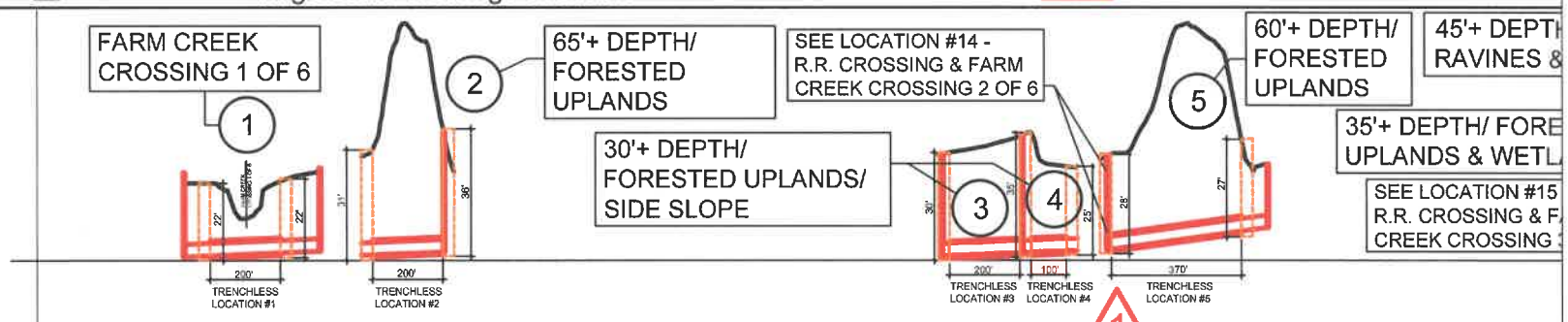
IMPORTANT NOTE: SEE PAGE 4 FOR MISSING COSTS YET TO BE DETERMINED.

# COUNTY ROUTE (STRAND - RT. B / HAMILTON - RT. A)

## PROFILE

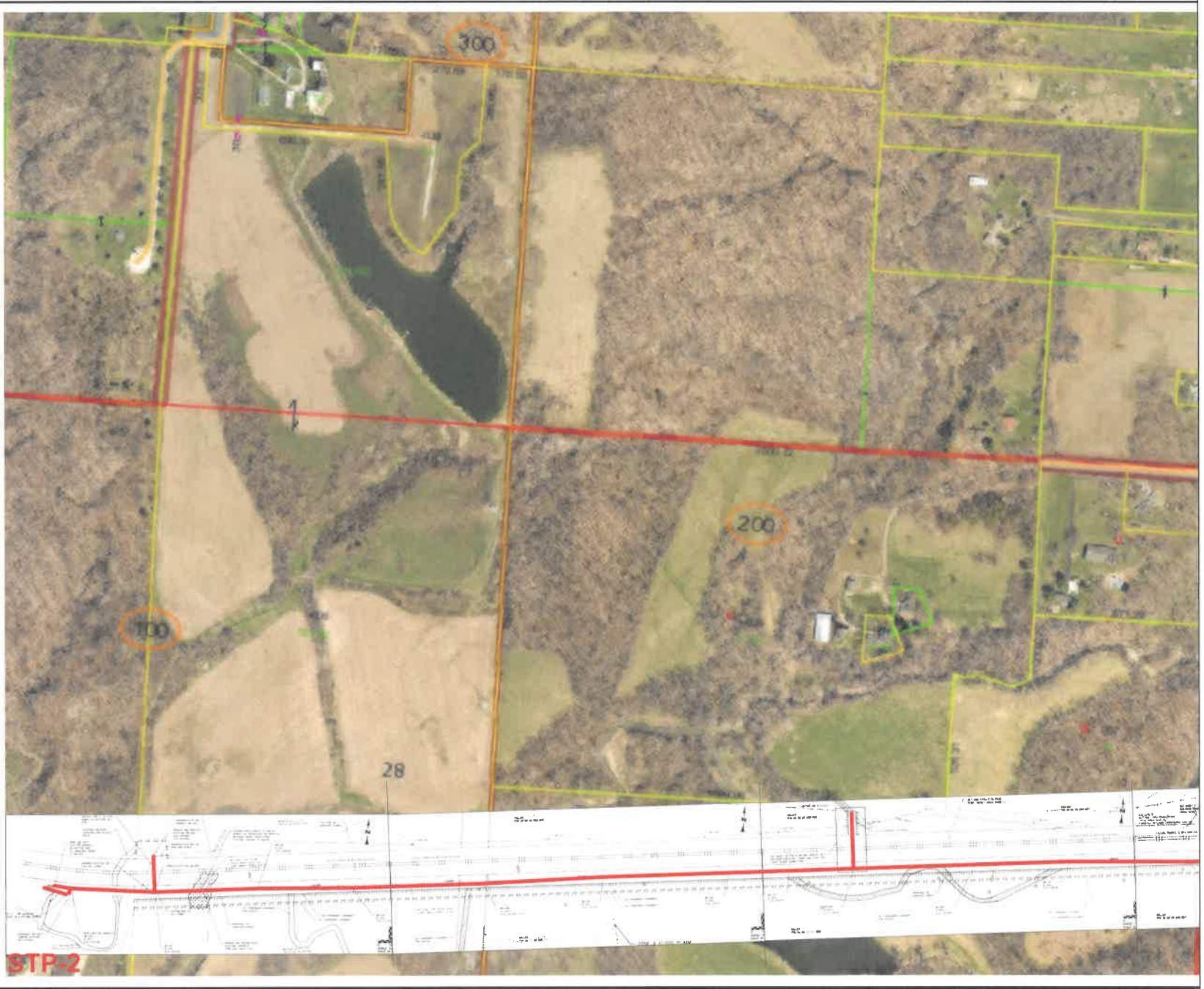



## TRENCHLESS LOCATIONS




Profile generated from Strand Design Drawings, and verified by Lidar.
Trenchless locations generated from Strand Design Drawings. Additional trenchless added per 30' rule.

## PLAN




large scale sheets available

APTIM

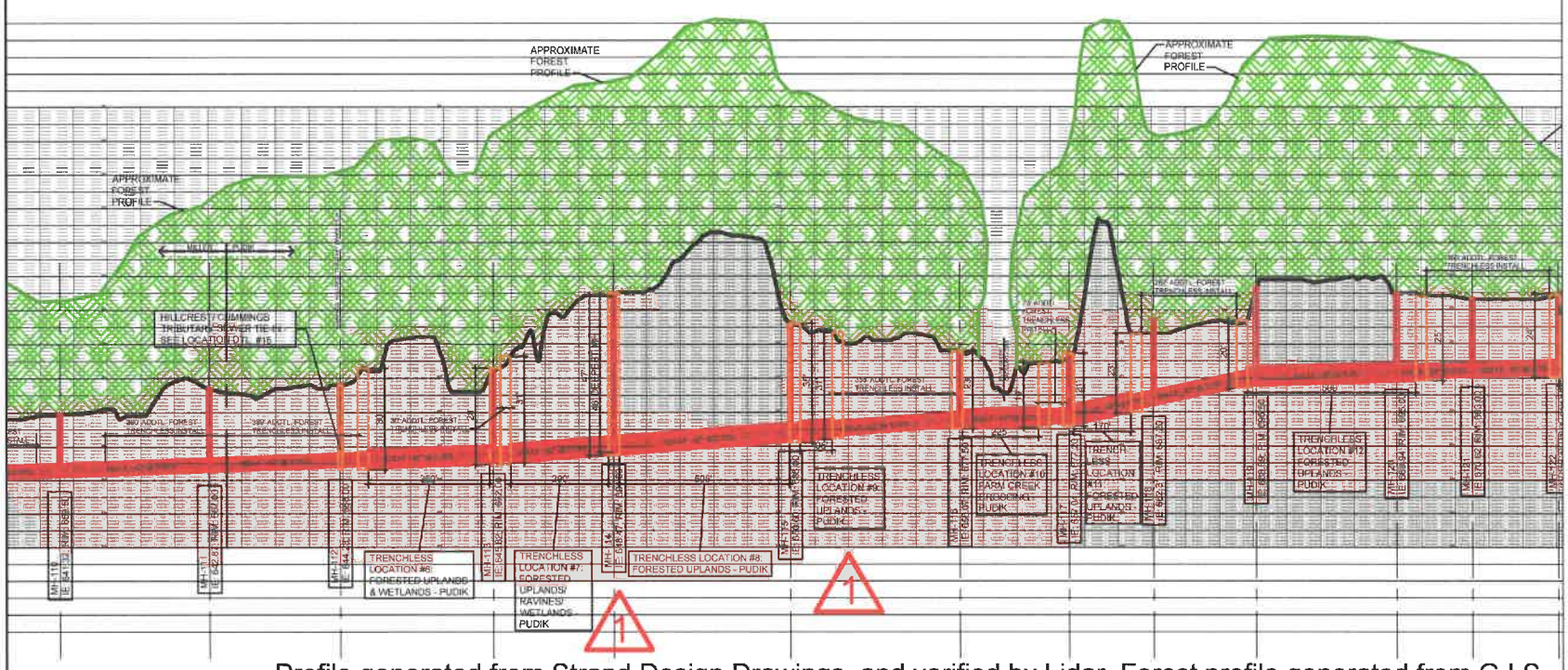
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

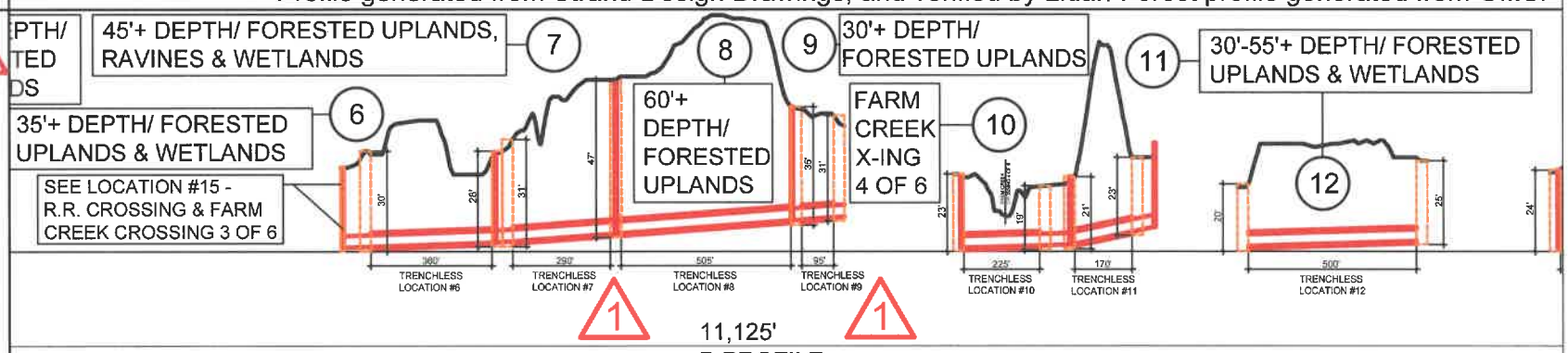
# COUNTY ROUTE (STRAND - RT. B HAMILTON - RT. A )

## PROFILE

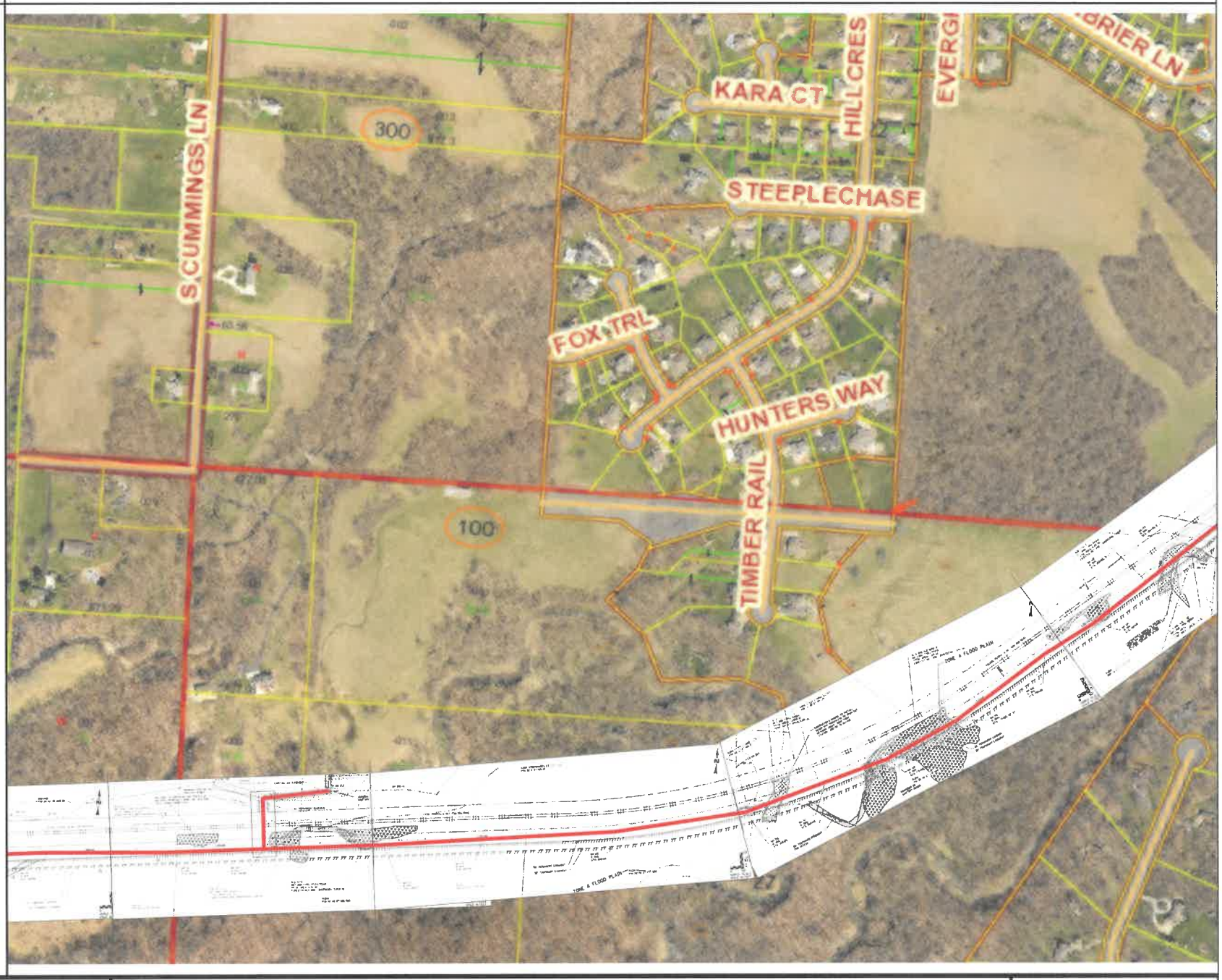



Profile generated from Strand Design Drawings, and verified by Lidar. Forest profile generated from G.I.S.

## TRENCHLESS LOCATIONS



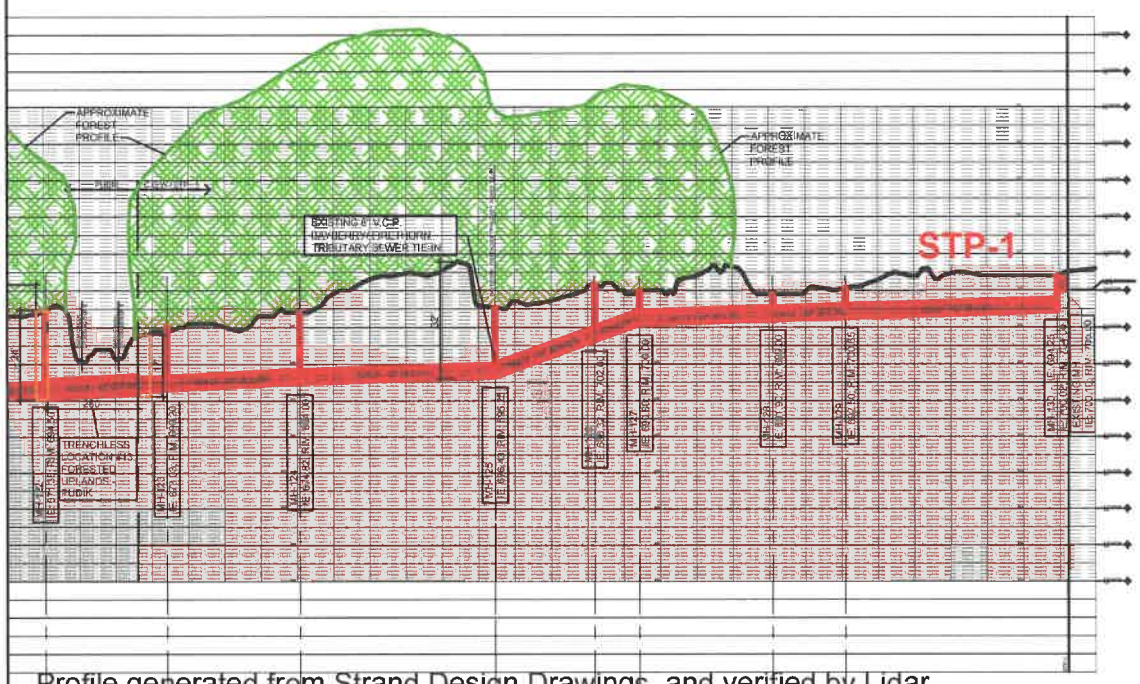

## PLAN




| | | |
|---|---|---|
| APTIM | PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS WASHINGTON, ILLINOIS | DATE: 8-23-2023 |
| | PREPARED BY: GOAT SPRINGS TEAM | 8 of 21 |

# COUNTY ROUTE (STRAND - RT. B / HAMILTON - RT. A)

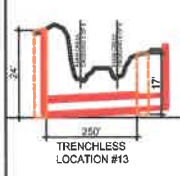
## PROFILE




Profile generated from Strand Design Drawings, and verified by Lidar.
Forest profile generated from G.I.S.

## TRENCHLESS LOCATIONS 1

13 FARM CREEK CROSSINGS 5 & 6 OF 6/ FORESTED WETLANDS




Profile generated from Strand Design Drawings, and verified by Lidar.
Trenchless locations generated from Strand Design Drawings.

## PLAN


PLAN NORTH

1/10 M

0 264' 528' 1,056'

SCALE: 1" = 1/10 MILE

APTIM

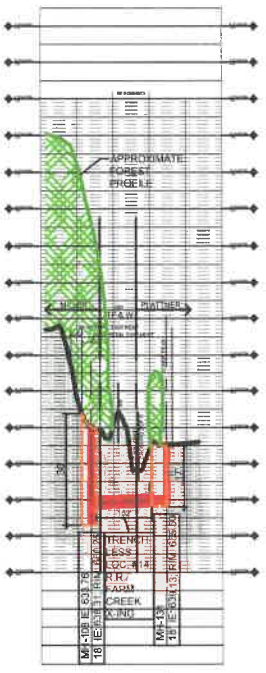
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

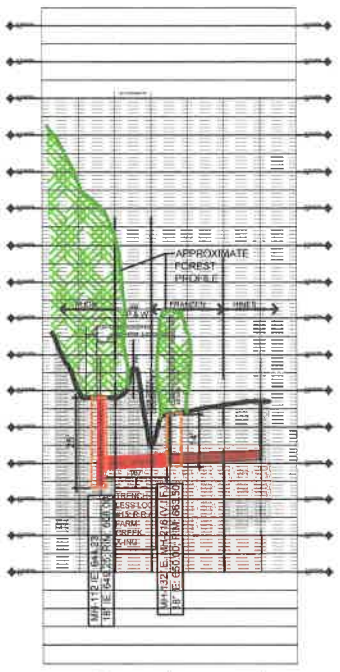
PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

# COUNTY ROUTE (STRAND - RT. B / HAMILTON - RT. A)

PROFILE



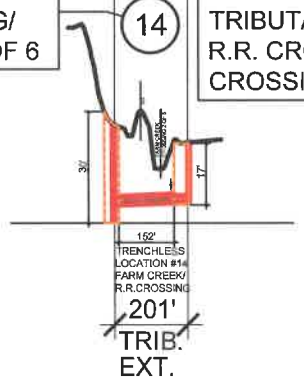

## COUNTY ROUTE

| | |
|---|---|
| MANHOLES 0'-20': | 14 |
| MANHOLES 21'-25': | 9 |
| MANHOLES 26'-30': | 7 |
| MANHOLES 31'-35': | 3 |
| MANHOLES 36'-40': | 0 |
| MANHOLES 41'-45': | 0 |
| MANHOLES 46'-50': | 1 |
| MANHOLES 51'-55': | 0 |
| TOTAL: | 34 |
| TOTAL DEPTH: | 765' |
| AVG. DEPTH: | 22.50' |
| DEEPEST MH: | 46' |

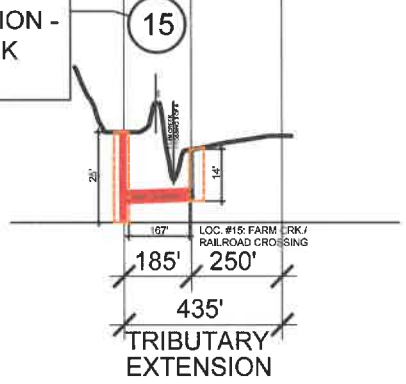
ADDITIONAL TRENCHLESS LOCATIONS

1

WESTLAKE TRIBUTARY SEWER EXTENSION - R.R. CROSSING/ FARM CREEK CROSSING 2 OF 6




HILLCREST/ CUMMINGS TRIBUTARY SEWER EXTENSION - R.R. CROSSING/ FARM CREEK CROSSING 3 OF 6




## COUNTY ROUTE 1

| | |
|---|---|
| TRENCHLESS LF: | 3,784 (3,465 - 42" Trunk Sewer; 319 - 18" Tributary Branch Sewers) |
| T-LESS LOCATIONS: | 15 |
| WORK SHAFTS: | 26 |
| W.S. DEPTH LF: | 688 |
| ADD. FOREST T-LESS LF: | 3,350 |
| ADD. FOREST WK. SHAFTS: | 5 |
| ADD. FOREST W.S. D. LF: | 130 |
| AVG. DEPTH OPEN-CUT: | 20.6' (20.4' incl. trib. sewers) |

SEE PAGE 7

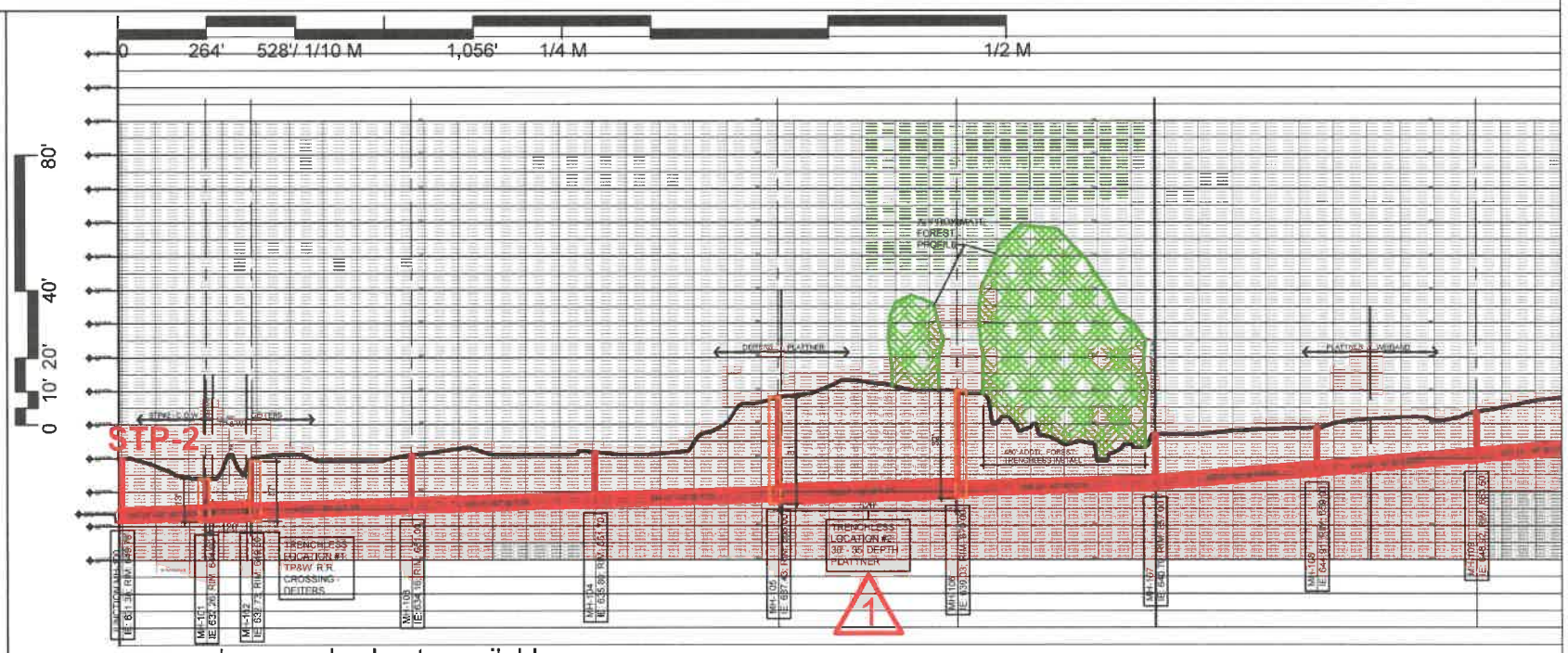
SEE PAGE 8

PLAN

Note: The latest version of the Strand drawings (footnoted in the Hamilton draft report, page 14, footnote 8, as "Strand Associates, *Farm Creek Trunk Sewer Replacement for the City of Washington Tazewell County, Illinois January 2021 (Rev. 2 Prefinal Engineering for Permitting 1/2/2021)* ..." were not included in the Hamilton draft report appendices nor the Hamilton Draft Report itself. The plans and profiles on pages 6-10 here within resemble information extracted from Strand's design drawings, also used by Hamilton in the Hamilton Draft Report. The above-referenced design documents were obtained through FOIA.

# CITY ROUTE - N. (GOAT SPRINGS TEAM (G.S.T.) E-3 )

## PROFILE

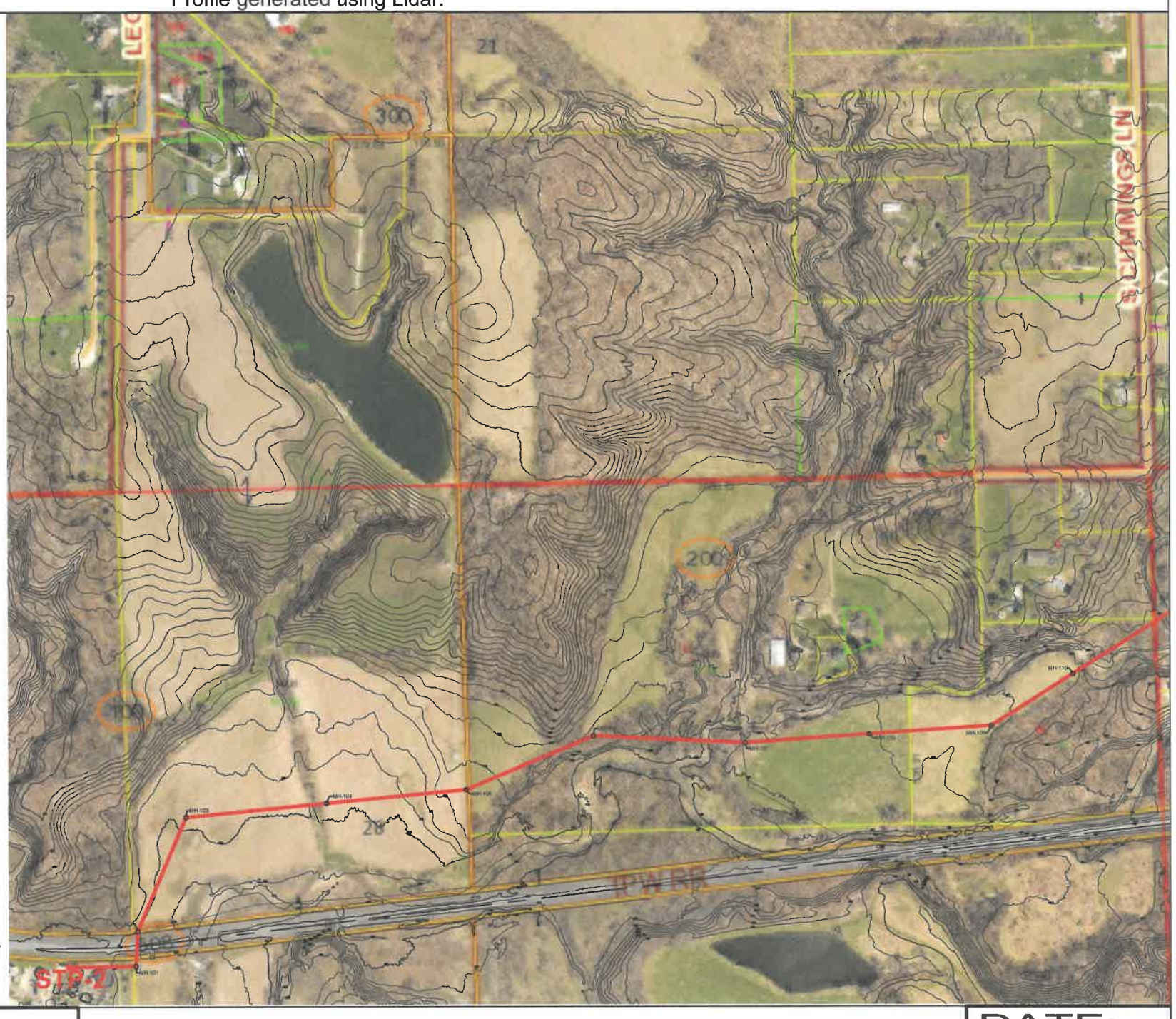



large scale sheets available

## TRENCHLESS LOCATIONS 1


Profile generated using Lidar.

## PLAN




large scale plans available

APTIM

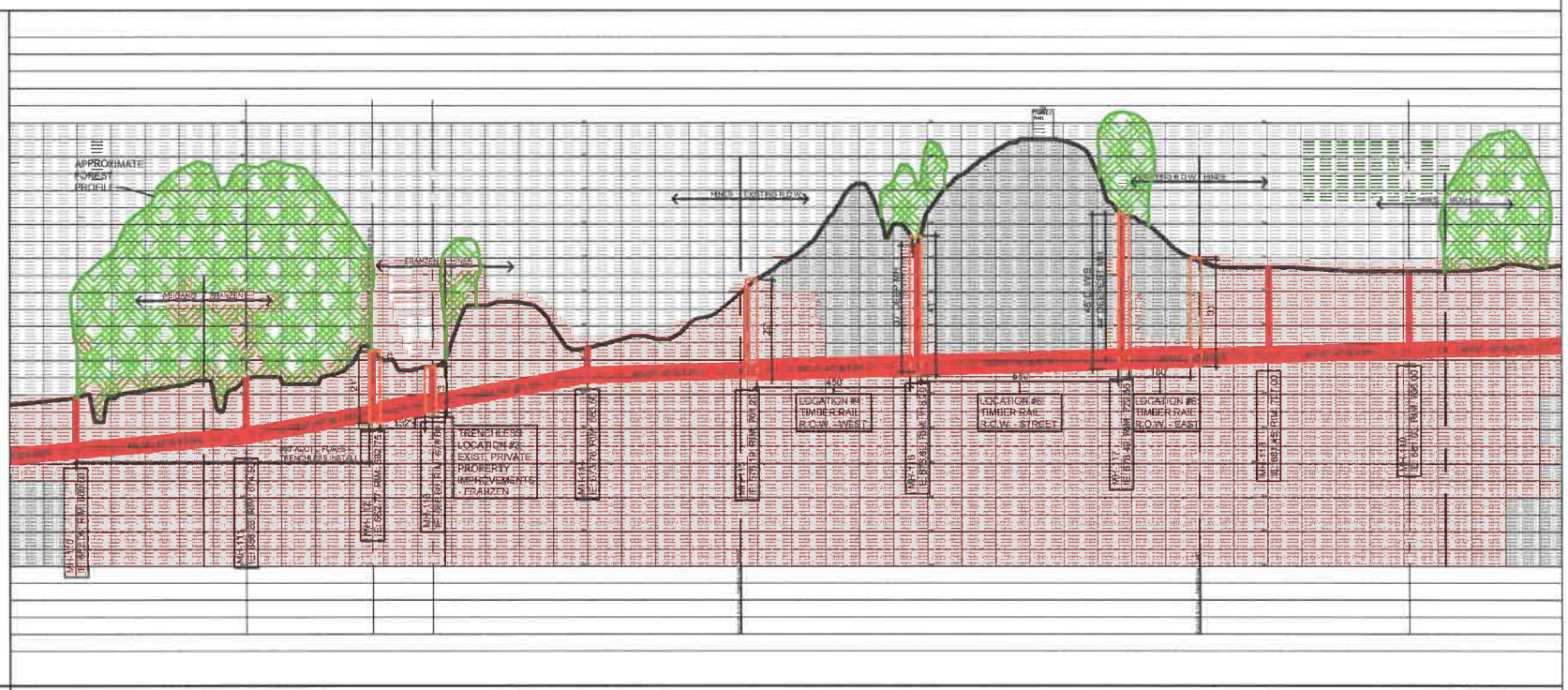
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

# CITY ROUTE - N. (GOAT SPRINGS TEAM (G.S.T.) E-3 )

## PROFILE




## TRENCHLESS LOCATIONS 1

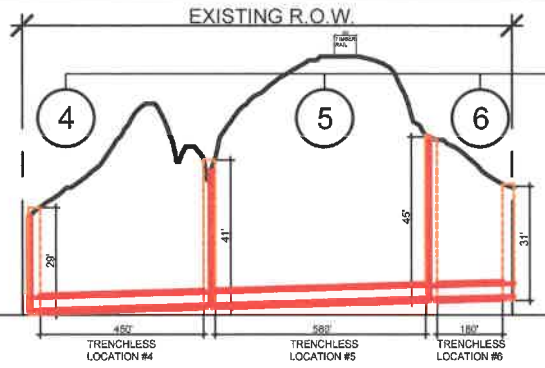
EXIST. PRIVATE PROPERTY IMPROVEMENTS

3


EXISTING R.O.W.

4 5 6

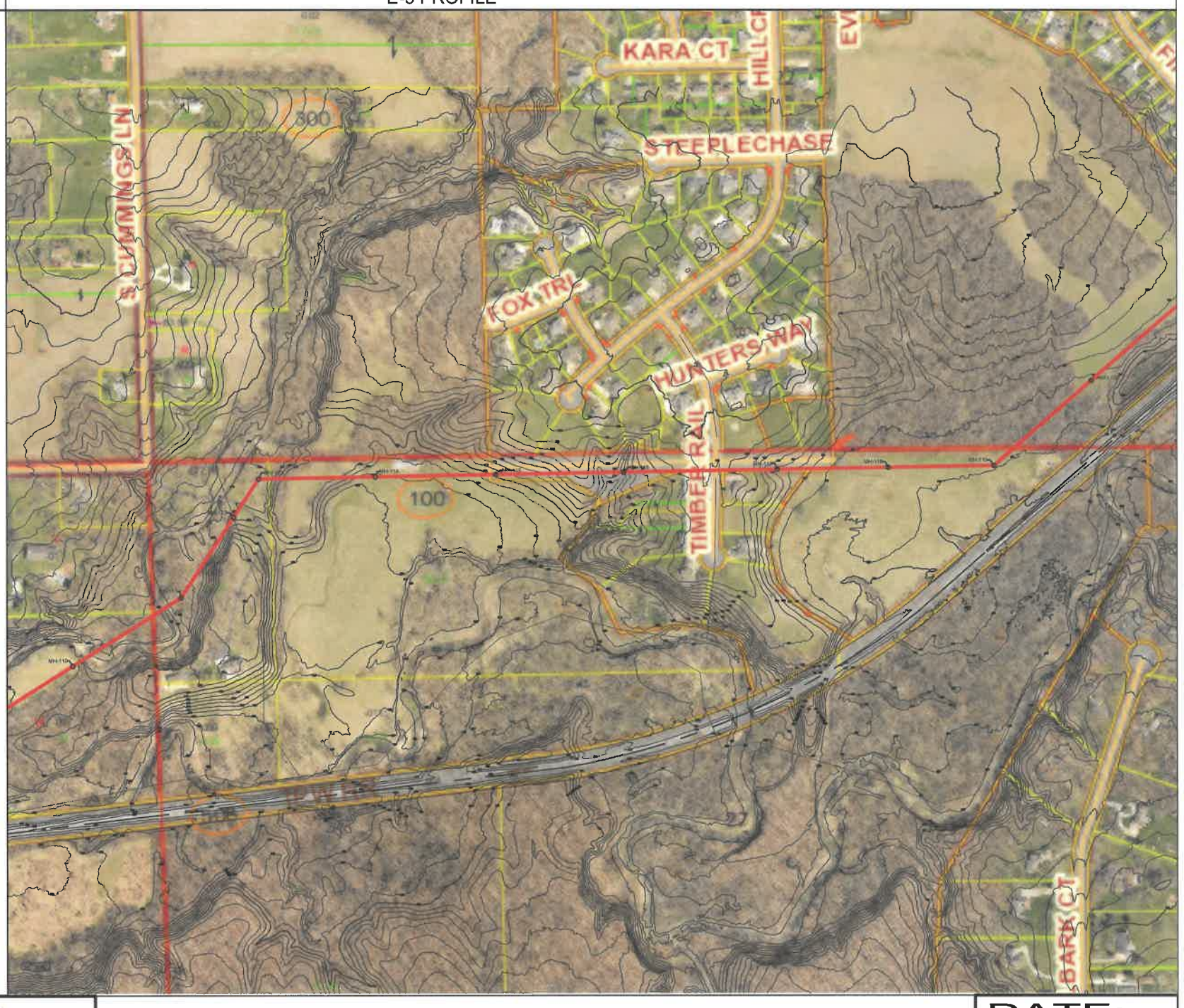
30' - 65'+ DEPTH/ EXIST. TIMBER RAIL STREET IMPROVE.




11,580'

E-3 PROFILE

## PLAN

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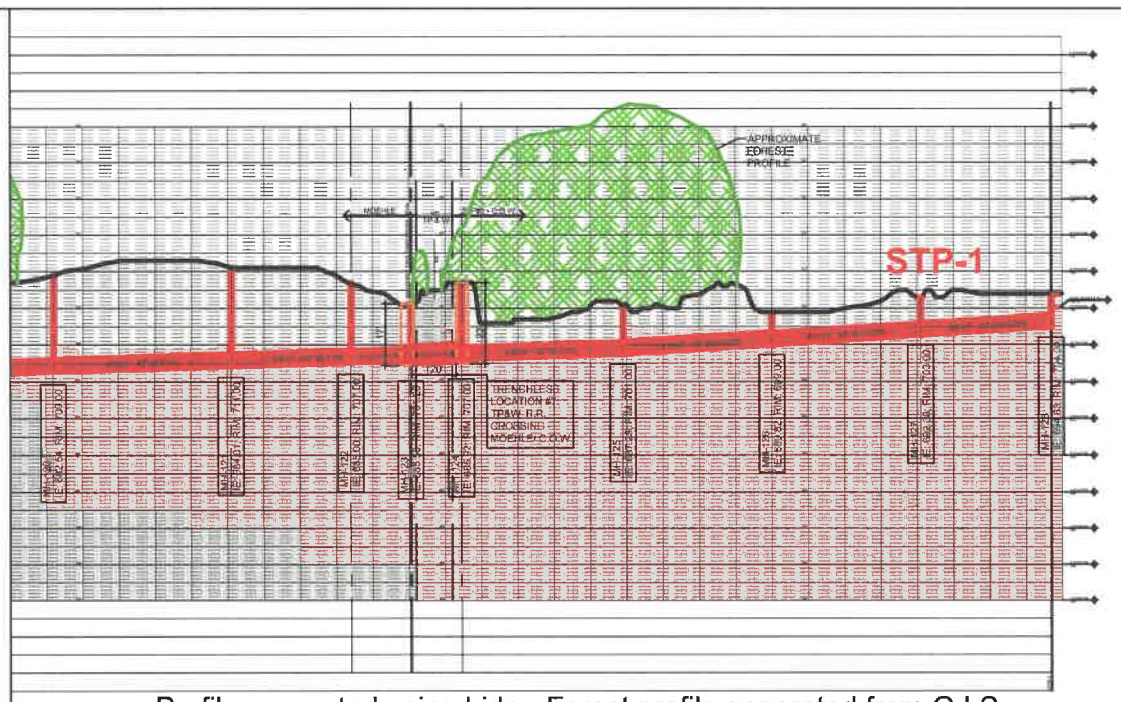
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

# CITY ROUTE - N. (GOAT SPRINGS TEAM (G.S.T.) E-3 )

## PROFILE



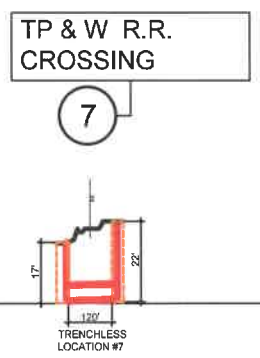

Profile generated using Lidar. Forest profile generated from G.I.S.

## CITY ROUTE - NORTH (E-3)

| | |
|---|---|
| MANHOLES 0'-20': | 18 |
| MANHOLES 21'-25': | 3 |
| MANHOLES 26'-30': | 4 |
| MANHOLES 31'-35': | 2 |
| MANHOLES 36'-40': | 1 |
| MANHOLES 41'-45': | 1 |
| MANHOLES 46'-50': | 0 |
| MANHOLES 51'-55': | 0 |
| TOTAL: | 29 |
| TOTAL DEPTH: | 578' |
| AVG. DEPTH: | 19.93' |
| DEEPEST MH: | 44' |

## TRENCHLESS LOCATIONS

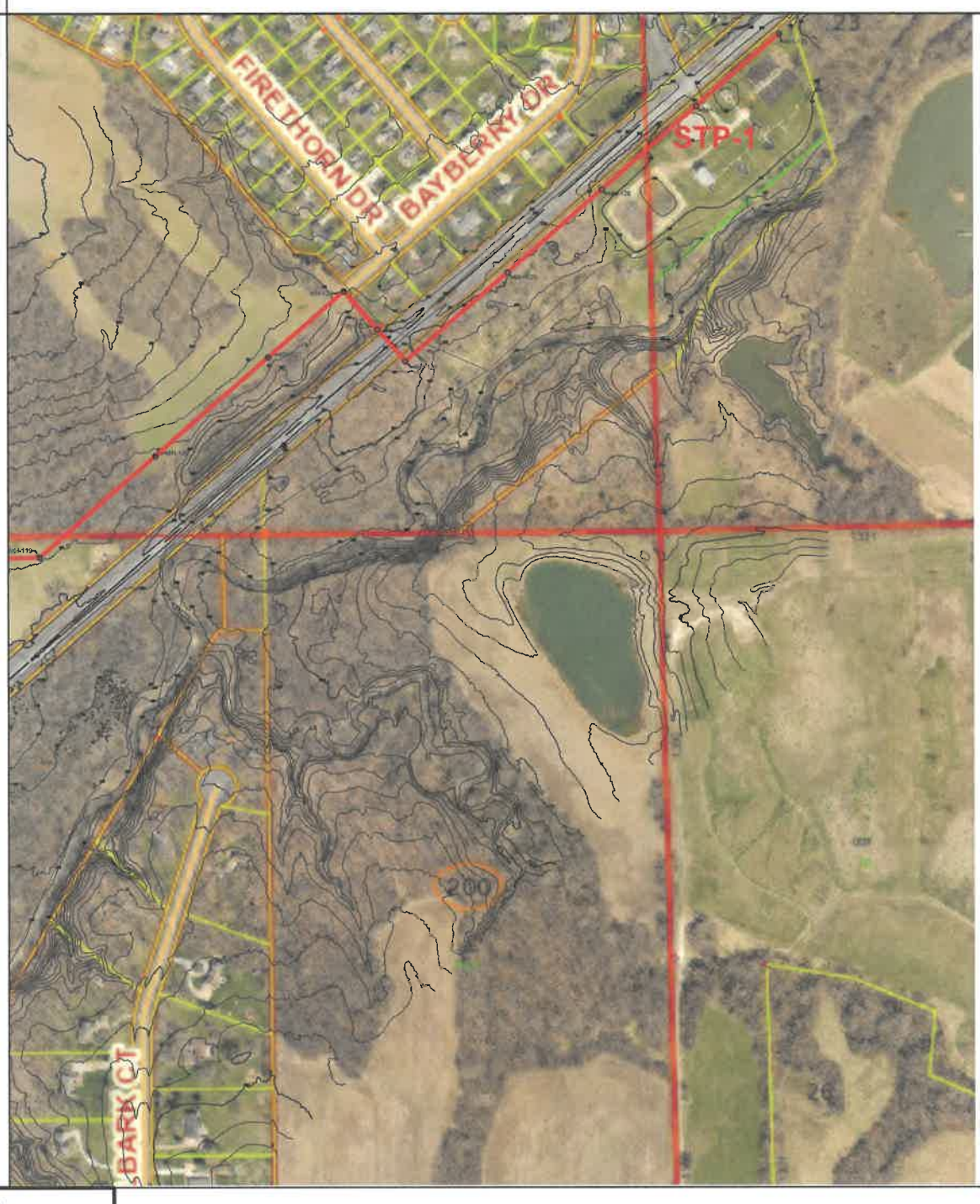
1




1

| | |
|---|---|
| TRENCHLESS LF: | 2,102 |
| T-LESS LOCATIONS: | 7 |
| WORK SHAFTS: | 12 |
| W.S. DEPTH LF: | 312 |
| ADD. FOREST T-LESS LF: | 1,340 |
| ADD. FOREST WK. SHAFTS: | 3 |
| ADD. FOREST W.S. D. LF: | 51 |
| AVG. DEPTH OPEN-CUT: | 18.2' |

## PLAN




1/10 M

0 264' 528' 1,056'

SCALE: 1" = 1/10 MILE

PLAN NORTH

Topography generated from Lidar.

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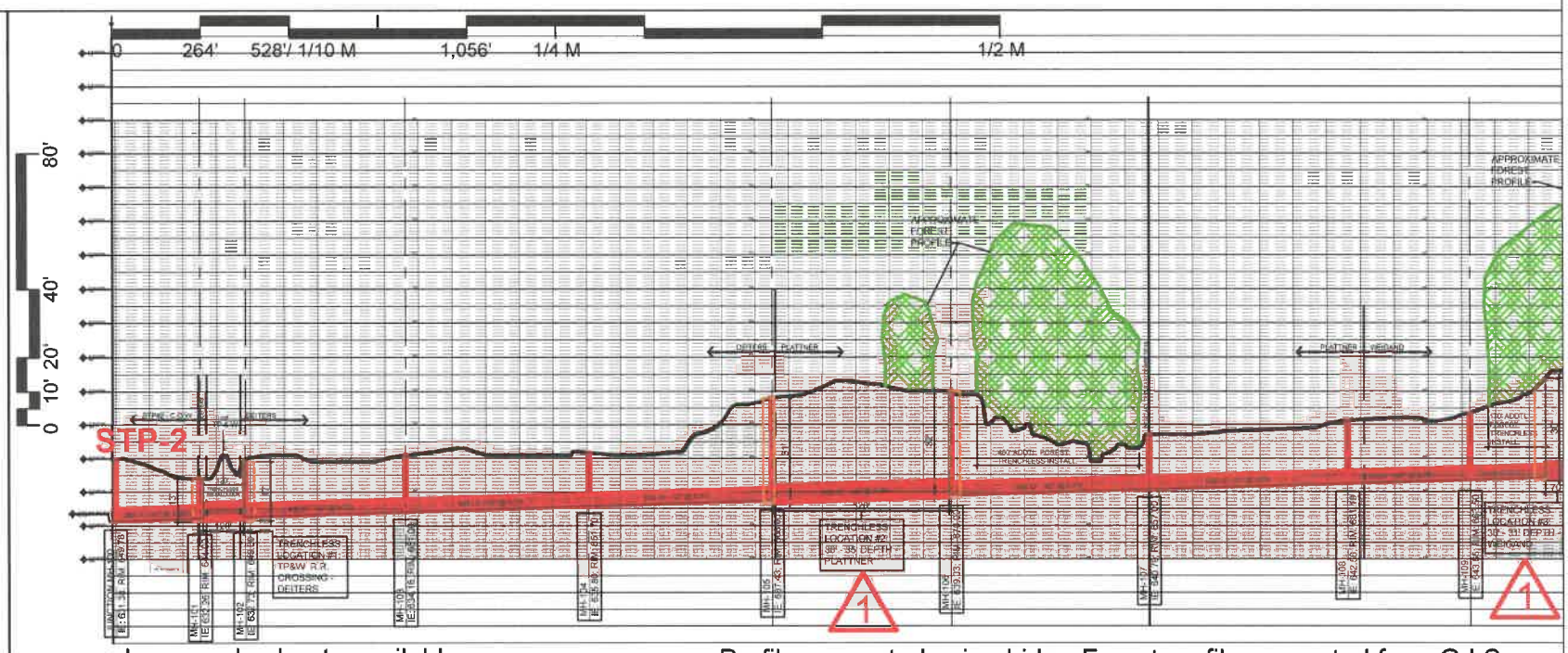
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

# CITY ROUTE - S. (GOAT SPRINGS TEAM (G.S.T.) L-1 )

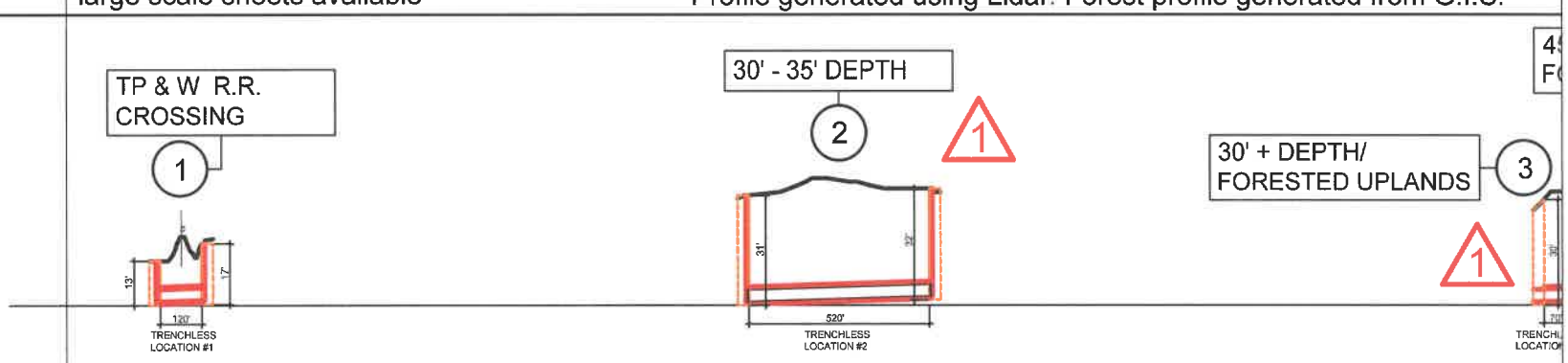
## PROFILE




large scale sheets available

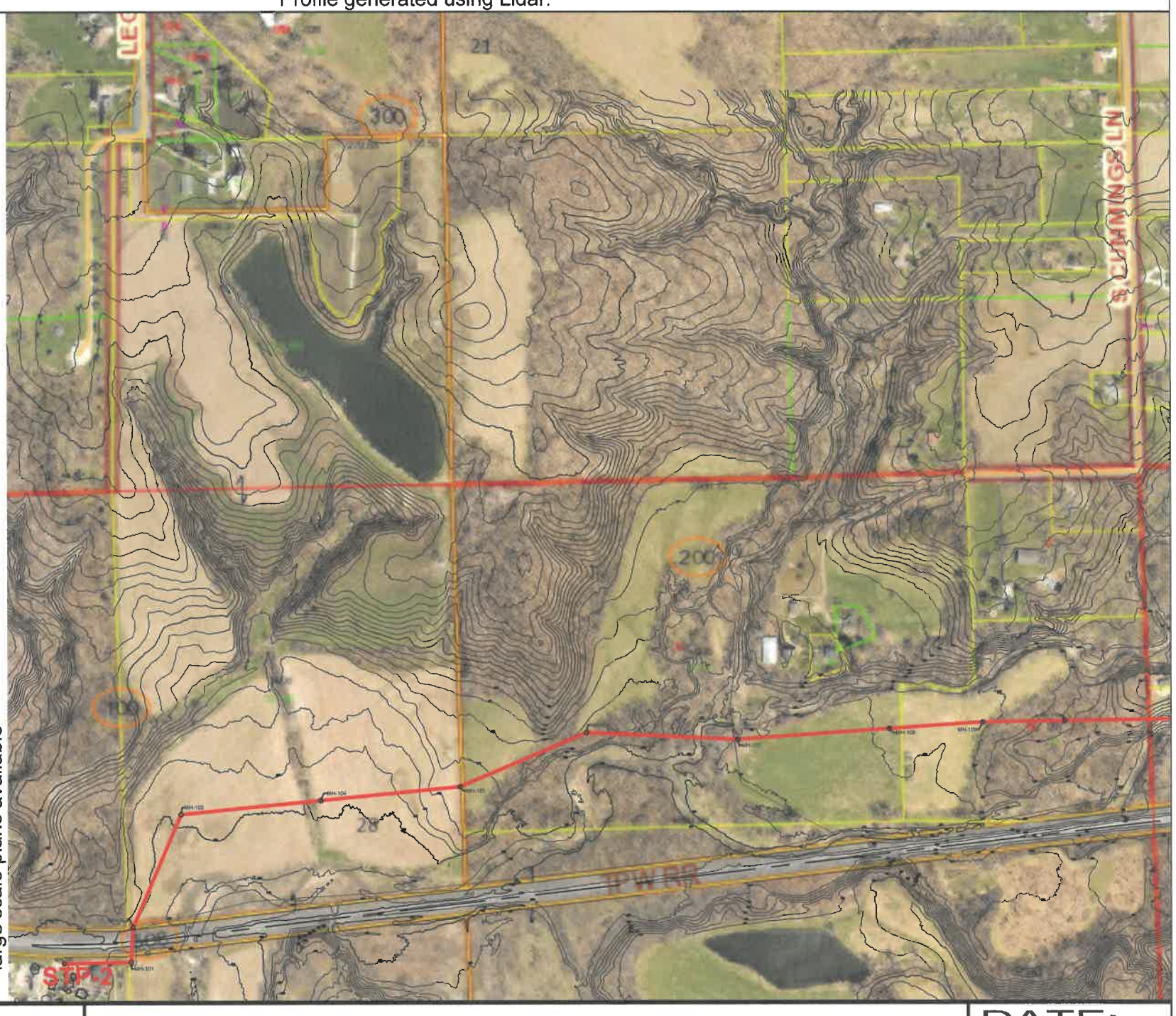
Profile generated using Lidar. Forest profile generated from G.I.S.

## TRENCHLESS LOCATIONS 1




Profile generated using Lidar.

## PLAN




large scale plans available

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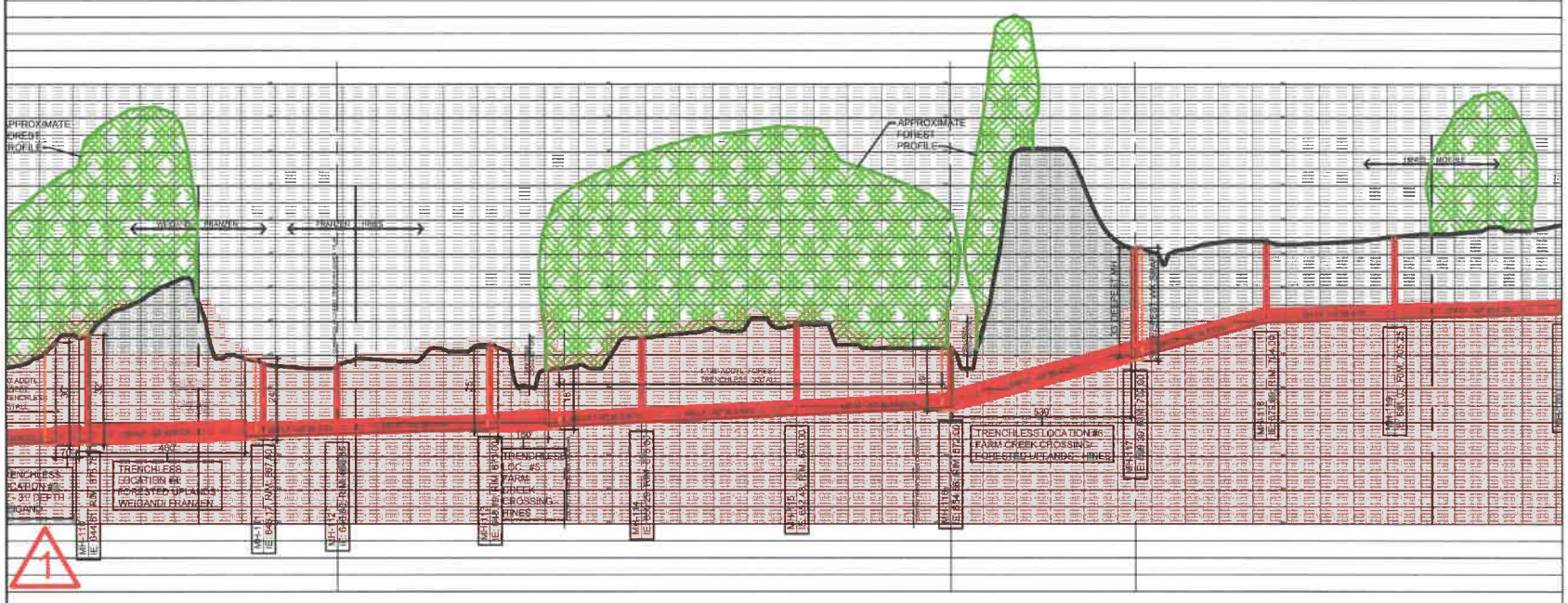
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

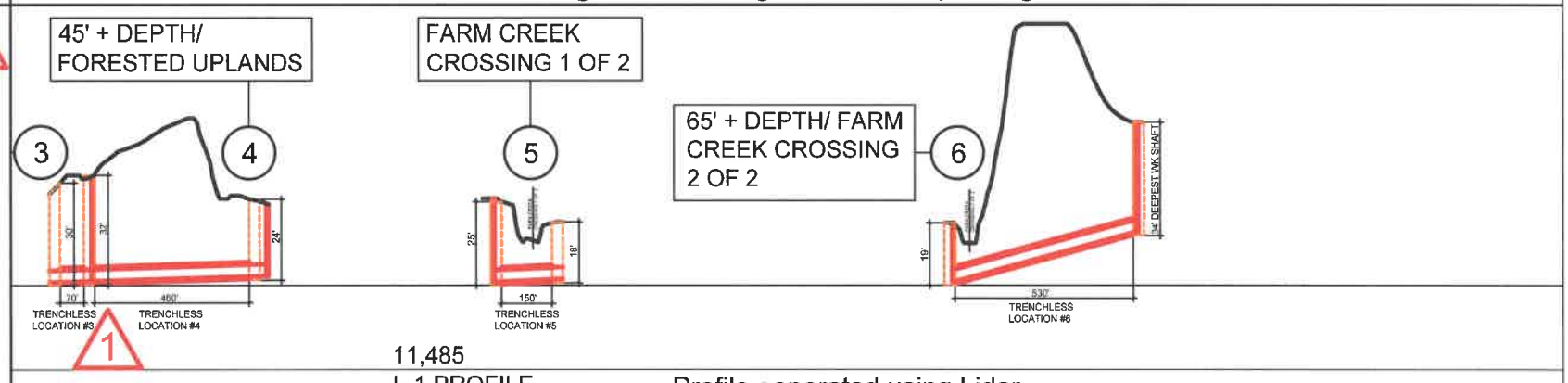
# CITY ROUTE - S. (GOAT SPRINGS TEAM (G.S.T.) L-1 )

## PROFILE




Profile generated using Lidar. Forest profile generated from G.I.S.

## TRENCHLESS LOCATIONS

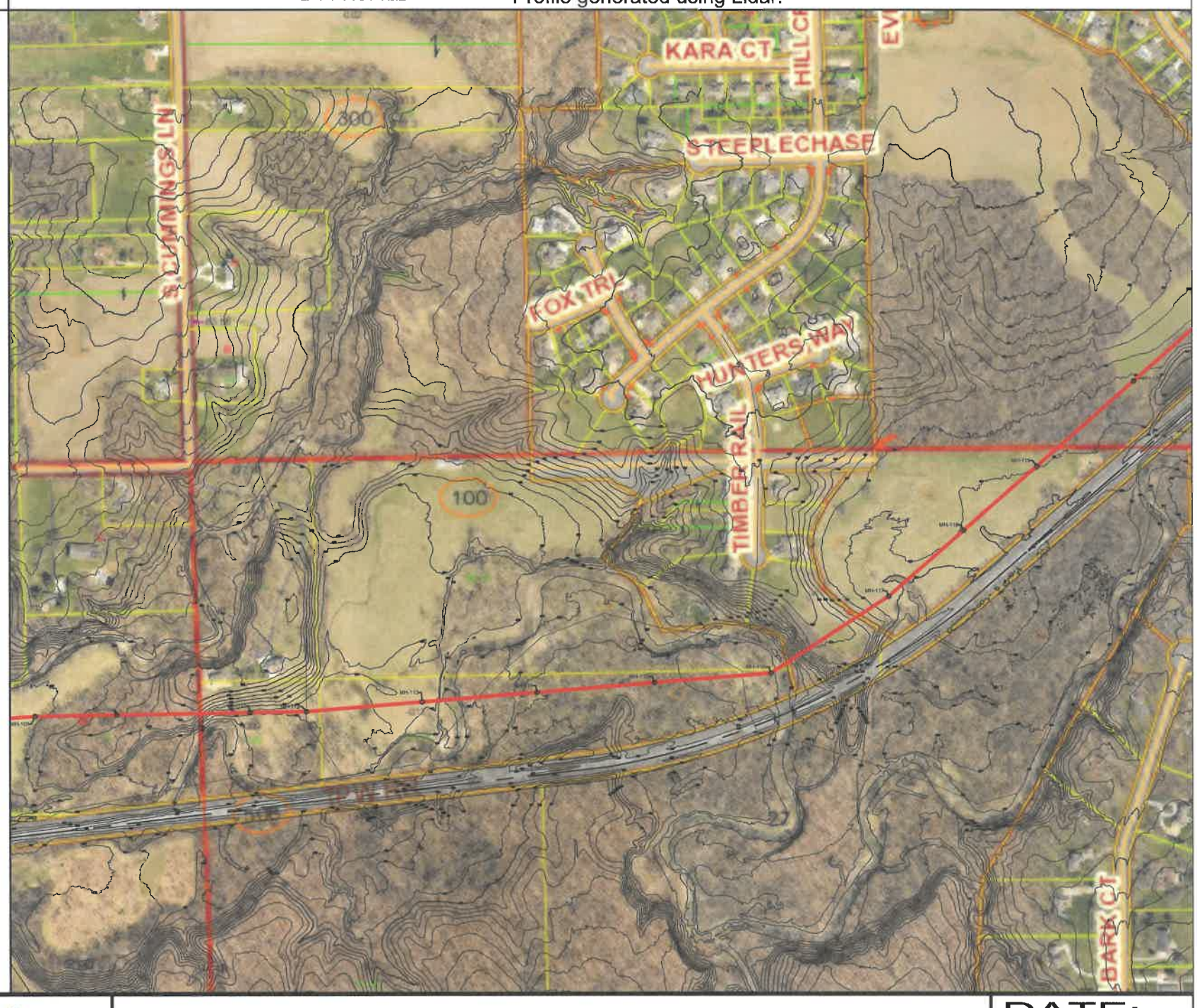



11,485

L-1 PROFILE

Profile generated using Lidar.

## PLAN

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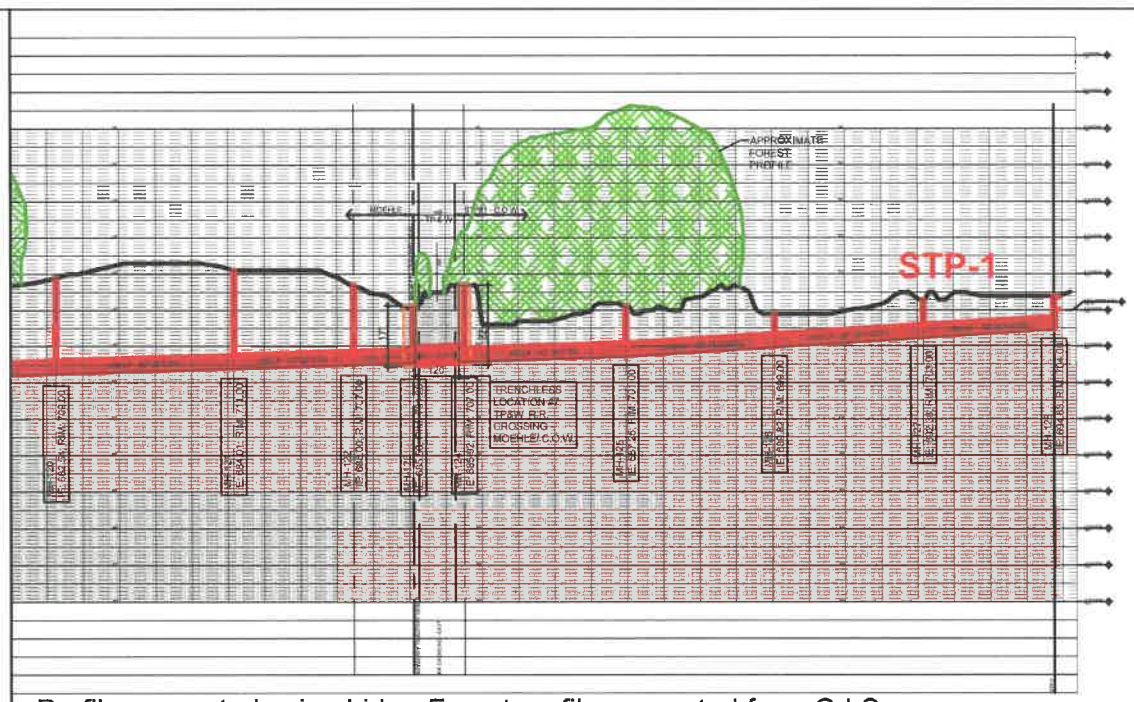
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

# CITY ROUTE - S. (GOAT SPRINGS TEAM (G.S.T.) L-1 )

## PROFILE




Profile generated using Lidar. Forest profile generated from G.I.S.

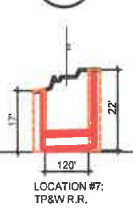
### CITY ROUTE - SOUTH (L-1)

| | |
|---|---|
| MANHOLES 0'-20': | 15 |
| MANHOLES 21'-25': | 7 |
| MANHOLES 26'-30': | 3 |
| MANHOLES 31'-35': | 4 |
| MANHOLES 36'-40': | 0 |
| MANHOLES 41'-45': | 0 |
| MANHOLES 46'-50': | 0 |
| MANHOLES 51'-55': | 0 |
| TOTAL: | 29 |
| TOTAL DEPTH: | 600' |
| AVG. DEPTH: | 20.69' |
| DEEPEST MH: | 33' |

## TRENCHLESS LOCATIONS 1

TP & W R.R. CROSSING

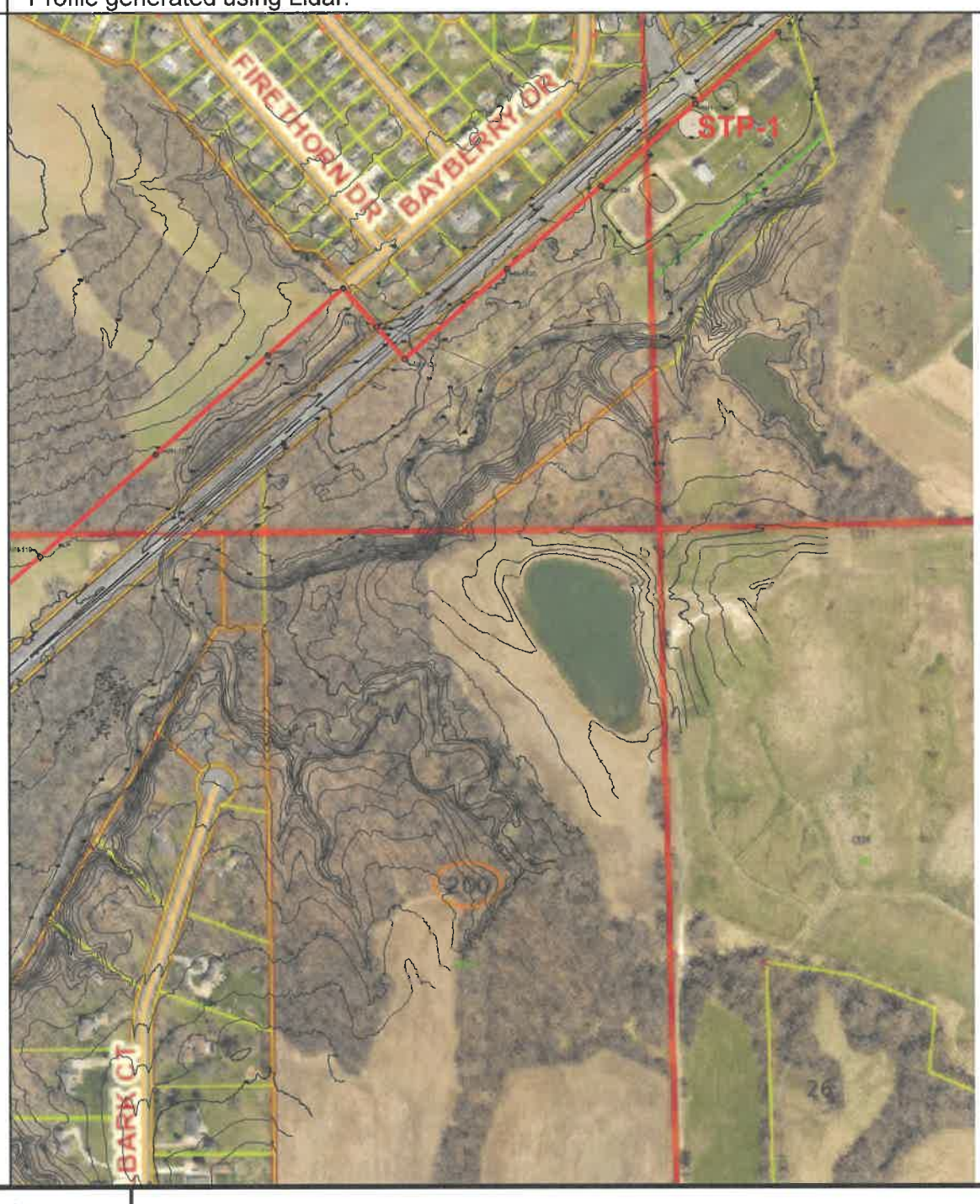
7




Profile generated using Lidar.

| | |
|---|---|
| TRENCHLESS LF: | 1,970 |
| T-LESS LOCATIONS: | 7 |
| WORK SHAFTS: | 13 |
| W.S. DEPTH LF: | 314 |
| ADD. FOREST T-LESS LF: | 1,785 |
| ADD. FOREST WK. SHAFTS: | 2 |
| ADD. FOREST W.S. D. LF: | 43 |
| AVG. DEPTH OPEN-CUT: | 19.6' |

## PLAN




Topography generated from Lidar.

PLAN NORTH

1/10 M

0 264' 528' 1,056'

SCALE: 1" = 1/10 MILE

APTIM

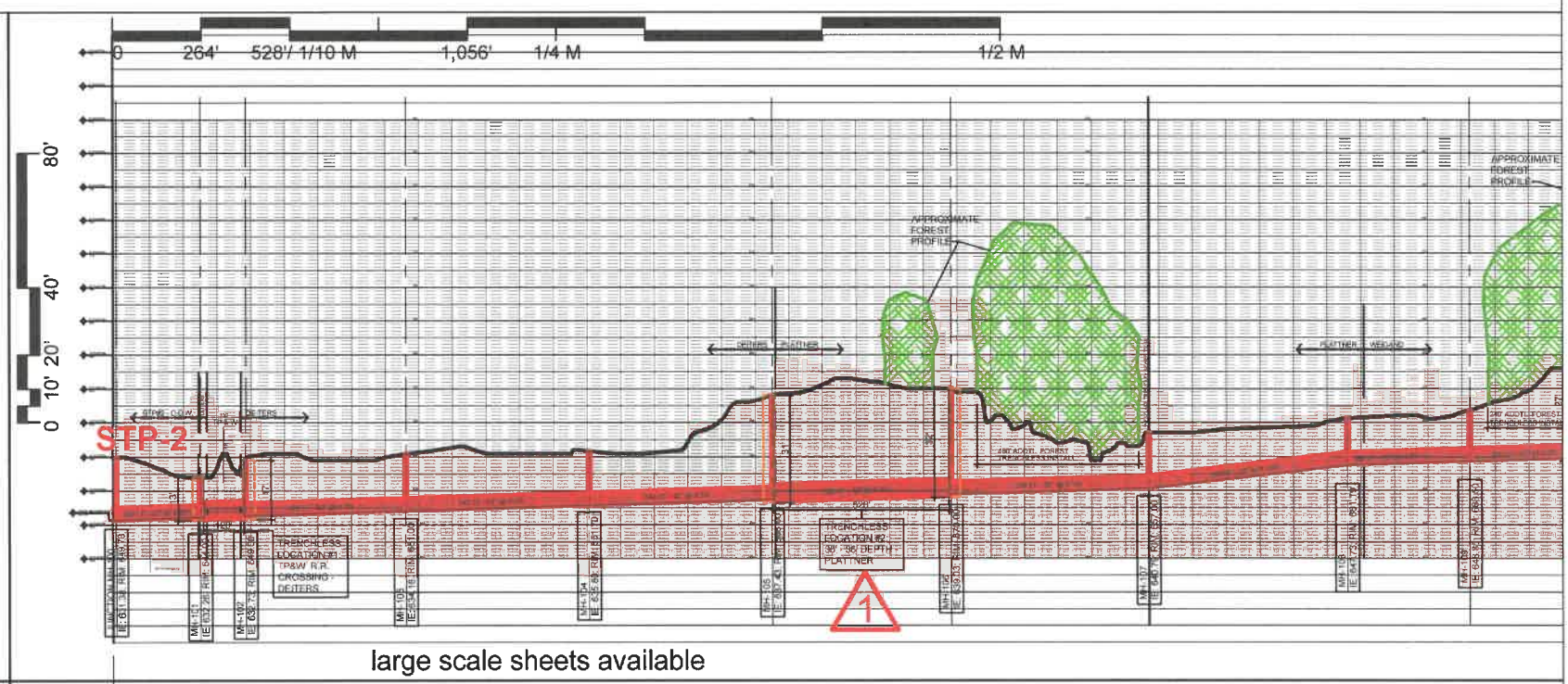
PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

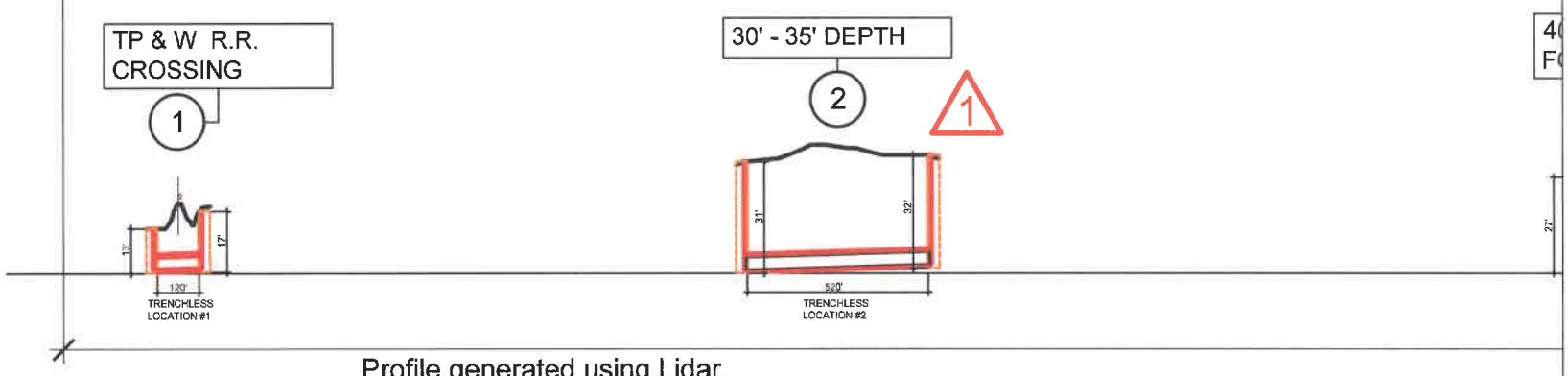
# CITY RT. - S. ALT. (GOAT SPRINGS TEAM (G.S.T.) L-3 )

## PROFILE



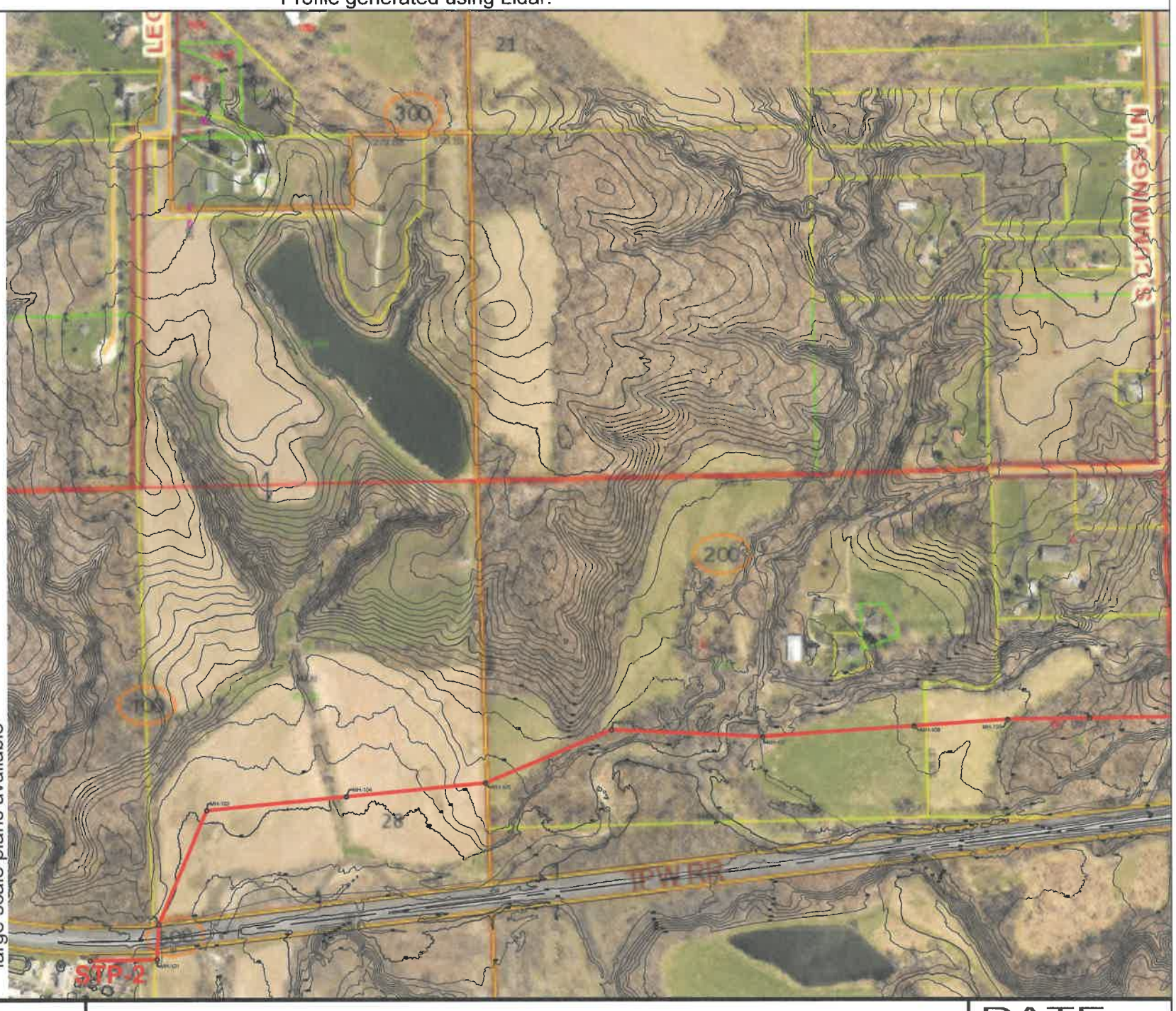

large scale sheets available

## TRENCHLESS LOCATIONS 1




Profile generated using Lidar.

## PLAN




large scale plans available

APTIM

PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

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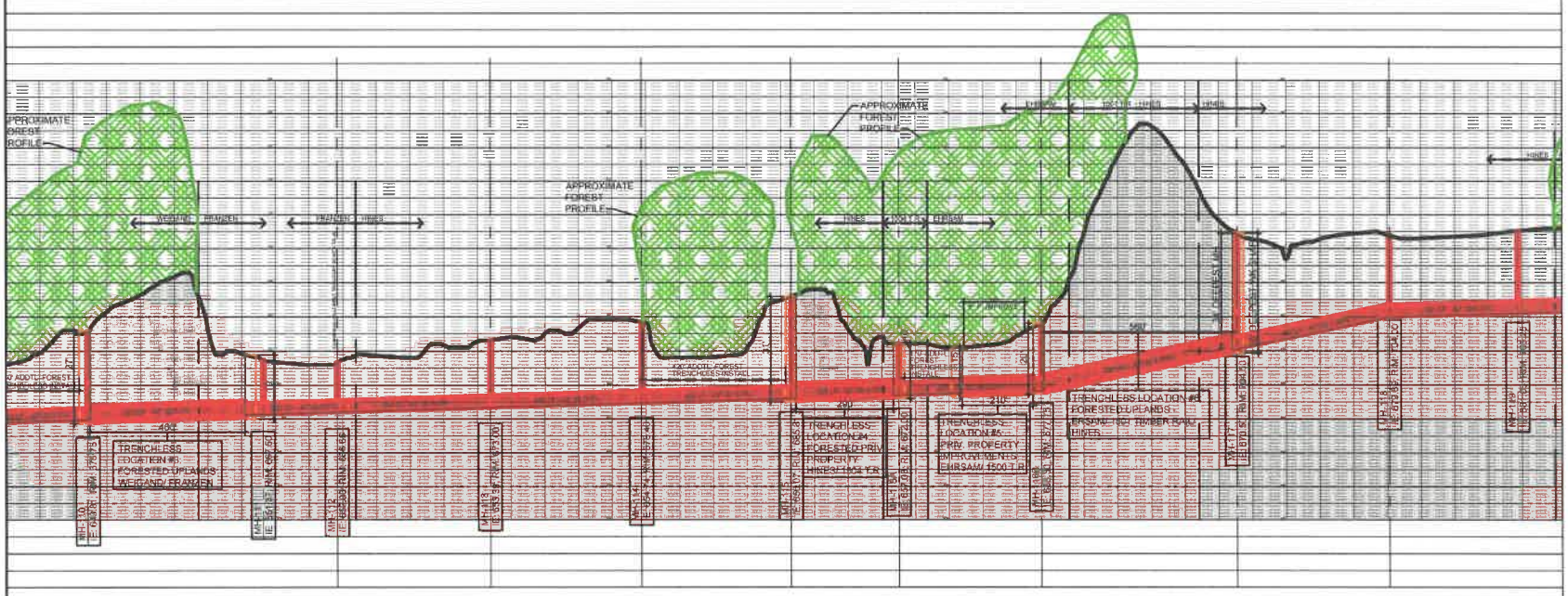
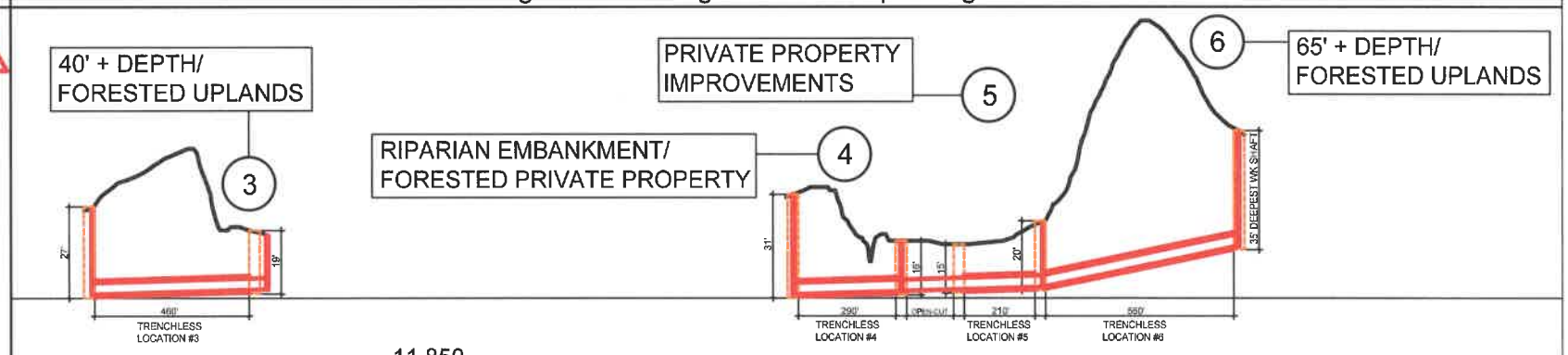
# CITY RT. - S. ALT. (GOAT SPRINGS TEAM (G.S.T.) L-3 )

## PROFILE




Profile generated using Lidar. Forest profile generated from G.I.S.

## TRENCHLESS LOCATIONS

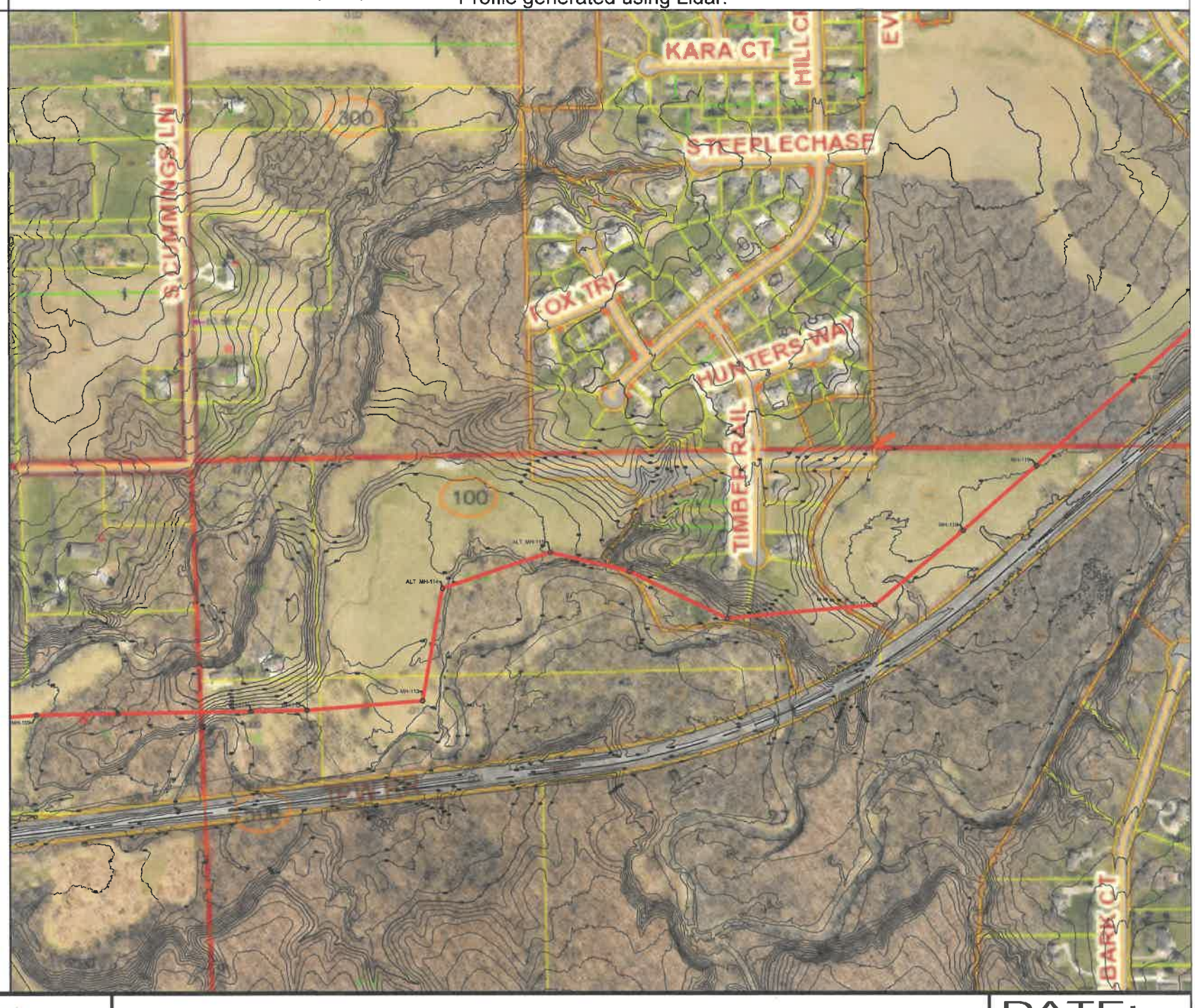



11,850

L-3 PROFILE

Profile generated using Lidar.

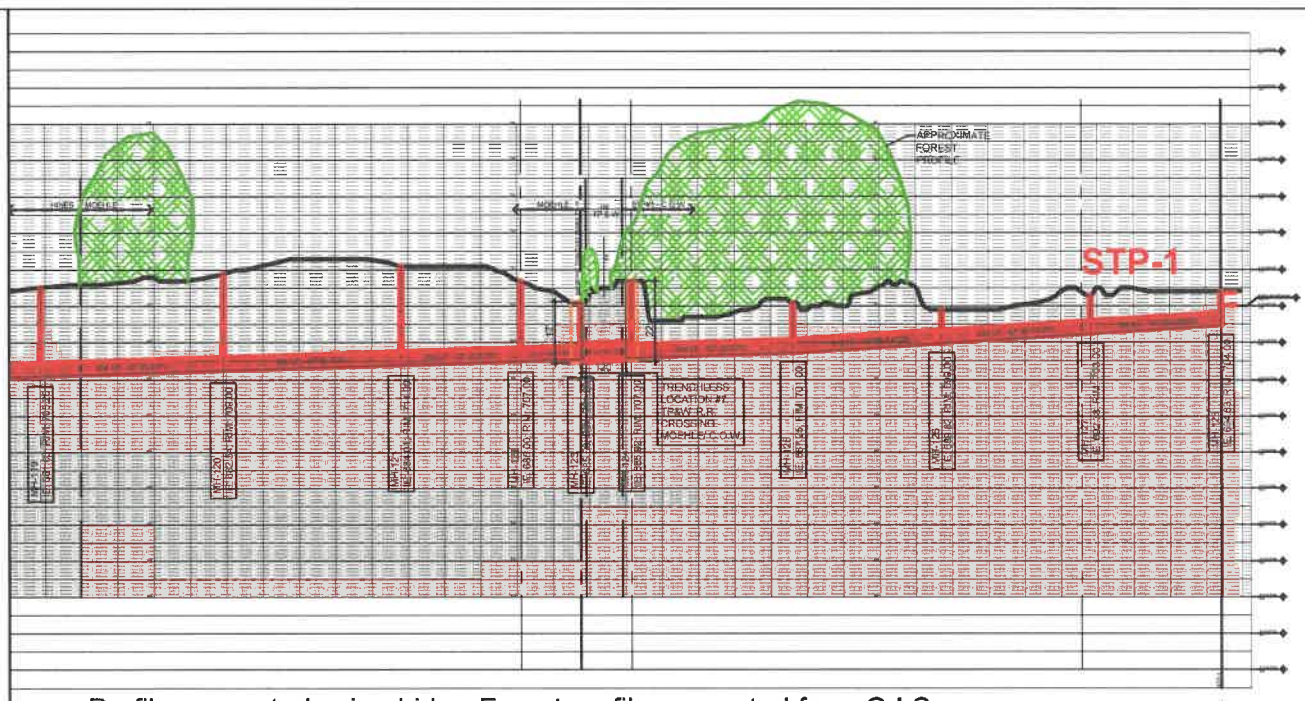
## PLAN




| | | |
|---|---|---|
| APTIM | PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS<br>WASHINGTON, ILLINOIS | DATE:<br>8-23-2023 |
| | PREPARED BY: GOAT SPRINGS TEAM | 18 of 21 |

# CITY RT. - S. ALT. (GOAT SPRINGS TEAM (G.S.T.) L-3 )

## PROFILE




Profile generated using Lidar. Forest profile generated from G.I.S.

### CITY RT. SOUTH ALT. (L-3)

| | |
|---|---|
| MANHOLES 0'-20': | 18 |
| MANHOLES 21'-25': | 5 |
| MANHOLES 26'-30': | 4 |
| MANHOLES 31'-35': | 3 |
| MANHOLES 36'-40': | 0 |
| MANHOLES 41'-45': | 0 |
| MANHOLES 46'-50': | 0 |
| MANHOLES 51'-55': | 0 |
| TOTAL: | 30 |
| TOTAL DEPTH: | 590' |
| AVG. DEPTH: | 19.67' |
| DEEPEST MH: | 34' |

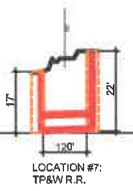
## TRENCHLESS LOCATIONS

1

NDS

TP & W R.R. CROSSING

7

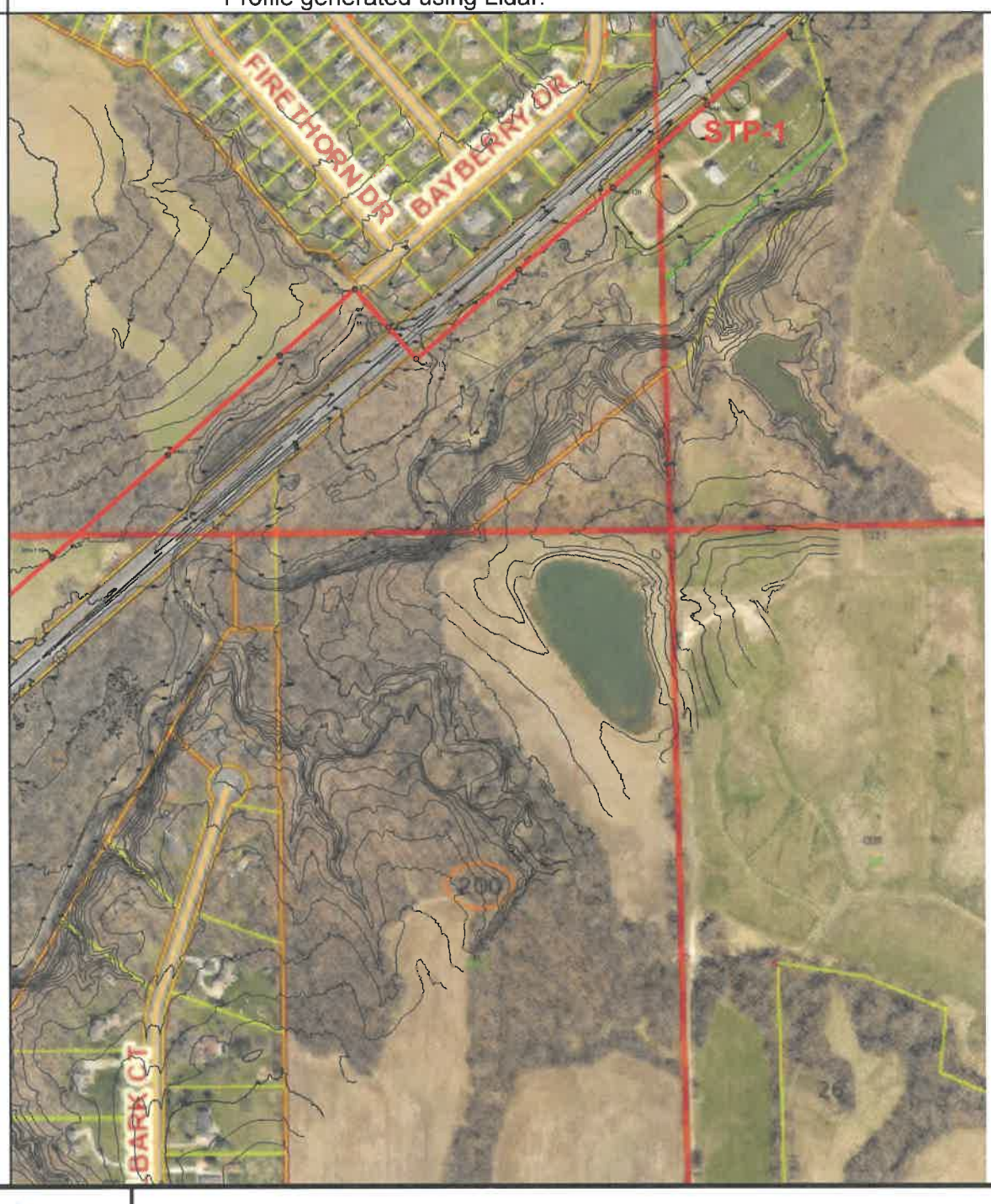



Profile generated using Lidar.

| | |
|---|---|
| TRENCHLESS LF: | 2,280 |
| T-LESS LOCATIONS: | 7 |
| WORK SHAFTS: | 13 |
| W.S. DEPTH LF: | 295 |
| ADD. FOREST T-LESS LF: | 1,310 |
| ADD. FOREST WK. SHAFTS: | 3 |
| ADD. FOREST W.S. D. LF: | 74 |
| AVG. DEPTH OPEN-CUT: | 18.3' |

1

## PLAN




Topography generated from Lidar.

1/10 M

0 264' 528' 1,056'

SCALE: 1" = 1/10 MILE

PLAN NORTH

APTIM

PHASE 2B TRUNK SEWER ALIGNMENT ANALYSIS
WASHINGTON, ILLINOIS

PREPARED BY: GOAT SPRINGS TEAM

DATE: 8-23-2023

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# KEYED NOTES ( TO HAMILTON'S MATRIX OF ALTERNATIVES (PG. 21) )

(#) = KEYED NOTE - SEE PAGE 21 (1)

---

(1) - NORTH SIDE IS THE CITY SIDE; SOUTH SIDE IS PRIMARILY COUNTY SIDE

- (1A) - ROUTE IS MOSTLY WITHIN COUNTY JURISDICTION; RURAL; RESIDENCES ON PRIVATE SEPTIC
- (1B) - ROUTE IS MOSTLY WITHIN CITY LIMITS; WITHIN/ ADJACENT TO EXISTING DEVELOPMENT; RESIDENCES PRIMARILY ON CITY UTILITIES INCLUDING DEPENDENT UPON PUBLIC SEWER SYSTEM
- (1C) - ROUTE IS MOSTLY WITHIN CITY LIMITS; WITHIN/ ADJACENT TO EXISTING DEVELOPMENT; RESIDENCES PRIMARILY ON CITY UTILITIES INCLUDING DEPENDENT UPON PUBLIC SEWER SYSTEM

(2) (2A) (2B) (2C) - ALL NEW ROUTE ALIGNMENTS GRAVITY-SERVE THE POPULATION EQUIVALENT OF 98,000+ DERIVED FROM THE NEW 2023 COMPREHENSIVE PLAN.

(3) - THIS ANALYSIS IN HAMILTON'S DRAFT REPORT APPEARS TO BE INCORRECT. THE FOLLOWING DATA WAS OBTAINED FROM THE DESIGN DRAWINGS AND REPRESENTS TRUTH IN DEPTH MEASUREMENTS

- (3A) - MOST AMOUNT OF TRENCHLESS OF ALL NEW ROUTES AT 31% OF ROUTE/ DEEPEST OPEN-CUT AVG. OF REMAINING ROUTE AT 20.6'/ DEEPEST MH AT 46' DEEP/ DEEPEST MH AVG. AT 22.5' DEPTH
- (3B) - LEAST AMOUNT OF TRENCHLESS OF ALL NEW ROUTES AT 16% OF ROUTE/ 2ND DEEPEST OF OPEN-CUT AVG. OF REMAINING ROUTE AT 19.6'/ DEEPEST MH AT 33' DEEP/ 2ND DEEPEST MH AVG. AT 20.7' DEPTH
- (3C) - 2ND MOST AMOUNT OF TRENCHLESS OF ALL NEW ROUTES AT 17% OF ROUTE/ SHALLOWEST OPEN-CUT AVG. OF REMAINING ROUTE AT 18.2'/ DEEPEST MH AT 44' DEEP/ SHALLOWEST MH AVG. AT 19.9' DEPTH

(4) - THIS ANALYSIS IN HAMILTON'S DRAFT REPORT APPEARS TO BE INCORRECT. THE FOLLOWING COSTS WERE OBTAINED FROM QUANTITY TAKEOFFS WITHIN THE DESIGN DRAWINGS AND USING STRAND'S UNIT COSTS

- (4A) - $10.1 M & MOST EXPENSIVE IN MISSING COSTS CATEGORY - SEE PAGE 4, 5.00 - MISSING PROJECT COSTS
- (4B) - $8.1 M & 2ND MOST EXPENSIVE IN MISSING COSTS CATEGORY - SEE PAGE 4, 5.00 - MISSING PROJ. COSTS
- (4C) - $8.2 M & LEAST EXPENSIVE IN MISSING COSTS CATEGORY - SEE PAGE 4, 5.00 - MISSING PROJECT COSTS

(5) - THIS ANALYSIS IN HAMILTON'S DRAFT REPORT SEEMS SUBJECTIVE WITHOUT FURTHER EXPLANATION. CITIZENS WHO LIVE IN THE CITY LIMITS ON R.O.W.S SHOULD EXPECT INFRASTRUCTURE UPGRADES.

- (5A) (5B) (5C) - ACCESS TRAFFIC, CONST. NOISE, AND LANDOWNERS ON BOTH SIDES OF FARM CREEK AFFECTED

(6) - ACCESS APPEARS TO BE MORE COMPLEX AND DIFFICULT ON THE COUNTY SIDE/ SOUTH SIDE OF THE TRACKS SINCE IT IS RURAL WITHOUT ROADWAYS, BLOCKED BY FARM CREEK AND THE RAILROAD FROM CITY PROPER - SEE PAGE 5, DESIGN CRITERIA, NEXT TO LOCATION/ ACCESS

(7) - THIS ANALYSIS IN HAMILTON'S DRAFT REPORT APPEARS TO BE INCORRECT. CONSTRUCTABILITY CONSIDERATIONS ARE HIGHLIGHTED ON PG. 5, DESIGN CRITERIA, WITHIN CONSTRUCTABILITY, 15 CATEGORIES

- (7A) - WORST
- (7B) - DECENT
- (7C) - BEST

(8) - CORRECTING THE RANKINGS FOR NEW ROUTES ONLY, WITHOUT WEIGHTED CRITERIA, BASED ON THE ANALYSIS PERFORMED BY THE GOAT SPRINGS TEAM YOU GET THE FOLLOWING RE-RANKED ALIGNMENTS:

- (8A) - LAST - COUNTY ROUTE (STRAND ROUTE B)
- (8B) - SECOND - CITY ROUTE - SOUTH (G.S.T. L-1)
- (8C) - BEST - CITY ROUTE - NORTH (G.S.T. E-3)

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

# APPENDIX A. MATRIX OF ALTERNATIVES

(#) = KEYED NOTE - SEE REMARKS ON PAGE 20



DRAFT

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

| ALTERNATIVE | DESCRIPTION | | LOCATION | (1) NORTH OR SOUTH OF RR | (2) INCREASE IN AREAS SERVED? | | (3) DEPTH OF SEWER | | (4) EOPCC + ENGINEERING (NOT INCLUDING EASEMENT COSTS) | | FUTURE COSTS - MAINTENANCE & OPERATION, ETC. | | ENVIRONMENTAL IMPACTS | | (5) ANY RESIDENCES / RESIDENTS AFFECTED? | | (6) ACCESSIBILITY | | (7) CONSTRUCTABILITY | | (8) 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 (1A) | INCREASES GROWTH POTENTIAL (2A) | 1 | DEEP POINTS (3A) | 5 | $8 MILLION + FCTS ABANDONMENT (4A) | 5 | I/I NOT CORRECTED, HIGH STP FLOWS | 3 | SOUTH LOCATION WITH MATURE TREES, WETLANDS, STREAM CROSSINGS | 6 | NO (5A) | 1 | LEAST ACCESSIBLE, BUT ACCESS ROUTES PLANNED | 6 | SOME DEEP PIPES, ACCESS ISSUES (7A) | 5 | 3.8 (8A) |
| 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 (1B) | LIMITS GROWTH SOUTH OF FARM CREEK (2B) | 5 | DEEPER THAN ALTERNATIVE A (3B) | 6 | $11 MILLION + FCTS ABANDONMENT (4B) | 6 | I/I NOT CORRECTED, HIGH STP FLOWS | 3 | LESS MATURE FOREST AND WETLAND BUT STILL ENVIRONMENTAL IMPACT | 4 | NO (5B) | 2 | READILY ACCESSIBLE, BUT NEED TO PLAN FOR ACCESS | 1 | SOME DEEP PIPES, ACCESS ISSUES (7B) | 6 | 3.8 (8B) |
| 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 (1C) | LIMITS GROWTH THE MOST OF ANY ALTERNATIVE (2C) | 6 | DEEPEST (3C) | 7 | $12.6 MILLION + FCTS ABANDONMENT (4C) | 7 | I/I NOT CORRECTED, HIGH STP FLOWS | 3 | LESS MATURE FOREST AND WETLAND BUT STILL ENVIRONMENTAL IMPACT | 5 | YES (5C) | 5 | READILY ACCESSIBLE, BUT NEED TO PLAN FOR ACCESS | 2 | SOME DEEP PIPES, ACCESS ISSUES (7C) | 7 | 4.6 (8C) |
| 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 |

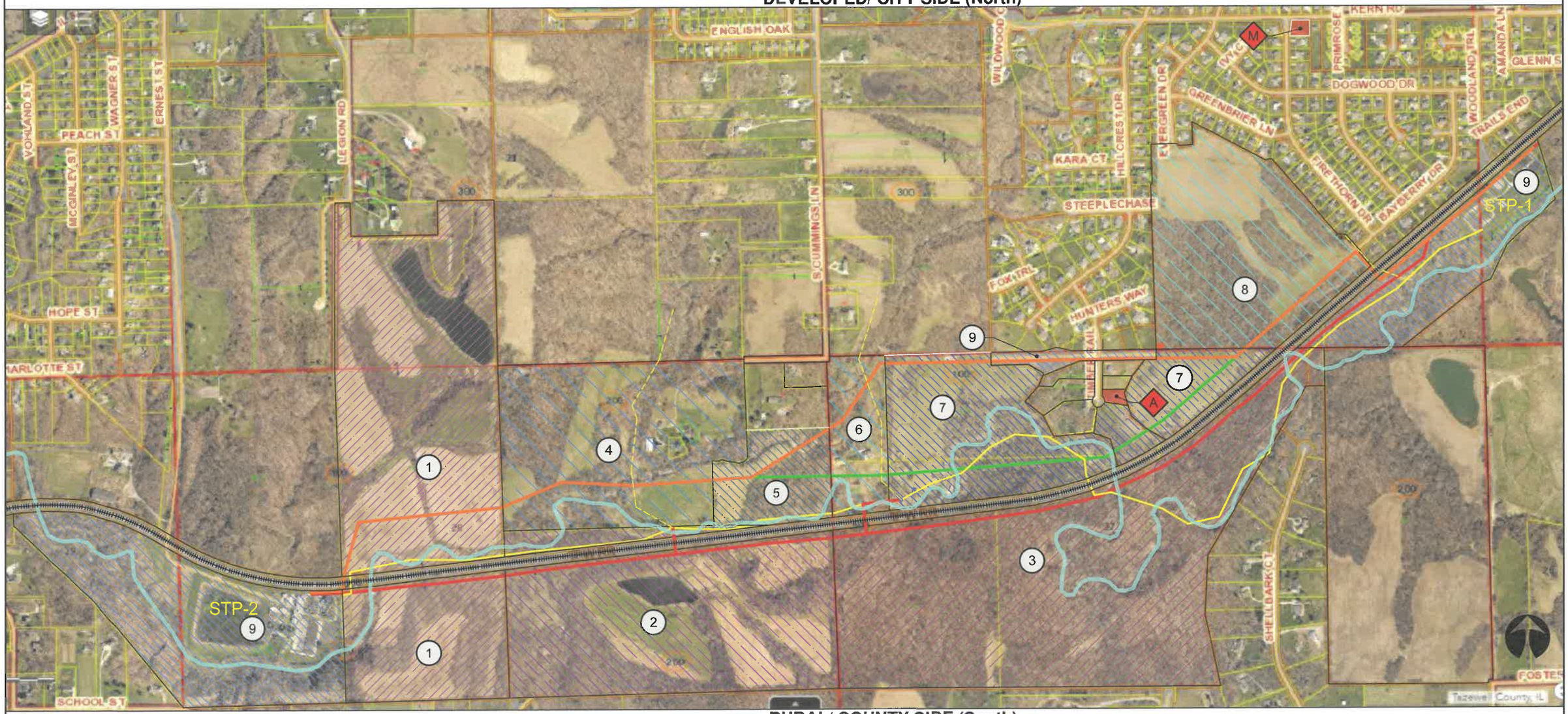
## LAND OWNERS

1. GARY DEITERS (MEADOW VALLEY LLC.)
2. SAM MILLER
3. PUDIK (GOAT SPRINGS LLC.)
4. PLATTNER
5. WEIGAND
6. FRANZEN
7. HINES (KARA STEEPLECHASE ESTATES, INC.)
8. MOEHLE (FIRETHORN, LLC.)
9. CITY OF WASHINGTON

## CITY OFFICIALS

- M — MAYOR GARY MANIER (RESIDES WITHIN FIRETHORN, LLC. DEVELOPMENT)
- A — ALDERPERSON BRIAN BUTLER (RESIDES WITHIN KARA STEEPLECHASE ESTATES, INC. DEVELOPMENT)

**DEVELOPED/ CITY SIDE (North)**




**RURAL/ COUNTY SIDE (South)**

- FARM CREEK
- TP&W RAILROAD
- EXISTING TRUNK SEWER
- EXISTING LOCAL SEWERS
- CITY OF WASHINGTON JURISDICTION
- TAZEWELL COUNTY JURISDICTION
- COUNTY RT. - STRAND B
- CITY RT. N. - G.S.T. E-3
- CITY RT. S. - G.S.T. L-1

# PROJECT CORRIDOR MAP