

Four Rivers Sanitation Authority Rockford, Illinois

Bidding Requirements and Contract Forms for

2026-2027 Sanitary Sewer System Lining

Capital Project No. 2737

Four Rivers Sanitation Authority Rockford, Illinois

Bidding Requirements and Contract Forms and *General Provisions and Technical Specifications* *for Sanitary Sewer Construction* for

2026-2027 Sanitary Sewer System Lining Capital Project No. 2737

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Section I

Bidding Requirements

Article 1 — Notice to Bidders

The Four Rivers Sanitation Authority (FRSA) will receive signed and sealed bids for the 2026-2027 Sanitary Sewer System Lining, Capital Project No. 2737, at the Steve Graceffa Administration Building (Administration Building) at 3501 Kishwaukee Street, Rockford, Illinois until 10:00 a.m. on Tuesday, September 22, 2026, at which time and place responsive / responsible bids will be publicly opened and read aloud.

The 2026-2027 Sanitary Sewer System Lining project shall include all labor, materials, equipment, and supervision to line existing sanitary sewers with cured-in-place pipe (CIPP). This project consists of lining up to approximately 19,520 LF of existing sanitary sewers ranging from 8" to 24" in diameter, reinstating existing service connections on lined sewer mains, and all other appurtenances as indicated in the Contract documents.

Bidder's attention is called to Article 2 – Instructions to Bidders 3.8 requirements for Statement of Qualifications. **All Bidders must be prequalified to bid this project. Refer to Article 2 – Instructions to Bidders 2.3 for prequalification information.**

All lining, televising, and testing shall be completed by July 31, 2027. All corrective work shall be completed within thirty (30) calendar days of FRSA's notice of required corrective work. Failure to complete work by the completion deadline, and/or corrective work within the allowed time will result in liquidated damages. The liquidated damage amount will be as listed on the Schedule of Deductions per Calendar Day in Article 108.09 of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, current edition.

Bid documents may be obtained at a cost of \$50.00 per set (non-refundable) by contacting the FRSA Engineering Department at 815-387-7660.

Plans and specifications may also be viewed at the offices of the Northern Illinois Building Contractors Association at 1111 S. Alpine Rd, Rockford, Illinois. For more information, visit the FRSA website at fourrivers.illinois.gov.

All construction shall be done in accordance with specifications on file with FRSA, including the *General Provisions and Technical Specifications for Sanitary Sewer Construction, Four Rivers Sanitation Authority* (Current Edition).

Each Proposal must be accompanied by the FRSA Bid Bond form with an acceptable Bid Security attached, in the amount of five percent (5%) of the total bid price. This amount is a guarantee that, if the Proposal is accepted, a Contract will be entered into and its performance properly secured.

The successful bidder will be required to furnish a satisfactory Performance Bond in the full amount of the Bid or Proposal. No Bid shall be withdrawn without FRSA's consent for a period of sixty (60) days after the scheduled closing time for receipt of bids.

FRSA reserves the right to reject any or all bids, or any part thereof, or to accept any bid or any part thereof, or to waive any formalities in any bids, deemed to be in the best interest of FRSA.

Dated this 26th day of August, 2026.


BY: Christopher T. Baer, PE, Executive Director

Article 2 — Instructions to Bidders

1 General

1.1 Scope and Intent

This section of the contract documents provides detailed information and requirements for preparing bids to prospective bidders, bidders' responsibility, the preparation and the submission of bids, basis for awarding the contract and other general information concerned with bidding and executing the contract.

1.2 Contradictions

If in the case of apparent contradictions between or among the Contract Documents, the Contract Documents shall be consulted in the following order: Addenda, Agreement, Supplementary Drawings, Instructions to Bidders, Detailed Specifications, Plans, Four Rivers Sanitation Authority (FRSA) General Provisions and Technical Specifications for Sanitary Sewer Construction. The language in the first such document in which language regarding the conflict, error or discrepancy occurs shall control.

2 Legal Requirements

2.1 Illinois Regulations

- A. Public Act 100-1177 (820 ILCS 130/) entitled the "Prevailing Wage Act" requires the Bidder to comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on FRSA projects to submit certified payroll reports via the State's Certified Transcript of Payroll Portal currently found at: <https://labor.illinois.gov/laws-rules/conmed/certifiedtranscriptofpayroll.html>. The Bidder is responsible for verifying current information at the State's website.
- B. Public Act 83-1030 (30 ILCS 565/) entitled the "Steel Products Procurement Act" requires that steel products used or supplied in performance of this Contract or subcontract must be manufactured or produced in the United States with three exceptions.

The provisions of this Section shall not apply:

- 1. Where the Contract involves an expenditure of less than \$500.
- 2. Where the executive head of the public agency certifies in writing that
 - a) the specified products are not manufactured or produced in the United States in sufficient quantities to meet the agency's requirements, or
 - b) obtaining the specified products, manufactured or produced in the United States would increase the cost of the Contract by more than 10%.
- 3. When its application is not in the public interest.

- C. Public Act 96-929 (30 ILCS 570/) entitled the "Employment of Illinois Workers on Public Works Act" provides that Illinois residents be employed on Illinois public works projects, provided there has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and, further, that Illinois workers are available and capable of performing the particular type work involved.

D. Public Act 101-221 (820 ILCS 96/) entitled the “Workplace Transparency Act” requires that any party to a contract adopt and promulgate written sexual harassment policies that include, as a minimum, the following information:

1. the illegality of sexual harassment
2. the definition of sexual harassment under Illinois State law
3. a description of sexual harassment, utilizing examples
4. my (our) organization's internal complaint process including penalties
5. the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Illinois Human Rights Commission
6. directions on how to contact the Department and the Commission
7. protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act

Upon request, this information must be provided to the Illinois Department of Human Rights and FRSA.

E. With regard to nondiscrimination in employment, the Contractor for this project will be required to comply with the Illinois Fair Employment Practices Commission's Rules and Regulations.

F. The Contractor for this project must comply with the Occupational Safety and Health Act.

G. The Contractor for this project must comply with the Federal Drug-Free Workplace Act.

H. Public Act 96-1416 requires the Certification of Clean Construction and Demolition Debris (CCDD) and uncontaminated soil prior to disposal at a CCDD fill site. The Contractor for this project must comply with Public Act 96-1416 and be responsible for the certifications and any fees associated with the disposal at a CCDD fill site.

1. In the event that contaminated soil is uncovered on the project, the Contractor must notify FRSA immediately. Any extra costs resulting from the presence of contaminated soil must be evaluated in accordance with FRSA General Provisions & Technical Specs for Sanitary Sewer Construction; General Conditions: Article 5 – Time Provisions and Article 8 – Changes.

2.2 Americans with Disabilities Act

The Contractor for this project will comply with all applicable requirements of the Americans with Disabilities Act of 1990 (ADA). The Contractor will hold harmless and indemnify Four Rivers Sanitation Authority (FRSA) and their representatives from all:

- A. suits, claims, or actions
- B. costs, either for defense (including but not limited to reasonable attorney's fees and expert witness fees) or for settlement
- C. damages of any kind (including but not limited to actual, punitive, and compensatory damages) relating in any way to or arising out of the ADA, to which said firm is exposed or which it incurs in the execution of the Contract.

2.3 Bidder Prequalification

Prospective bidders shall submit pre-qualification information for approval by September 15, 2026, or bids will be rejected as unqualified. Pre-qualification submittals shall be presented to Mr. Matthew L. Campbell, PE, Director of Engineering.

Only bids from pre-qualified manufacturers and installers using pre-qualified products and methods will be opened and read. Bids submitted on products or from manufacturers/installers that have not been pre-qualified will be returned unopened. Bid Proposals shall be clearly labeled on the bid envelope with Contractor's name and C.I.P.P. manufacturer.

Bidders that have previously pre-qualified for completing sewer lining work for FRSA will be considered pre-qualified as long as they are using the same methods and materials as previously specified and as specified herein.

The following Contractors are pre-qualified to bid this project:

Contractor	CIPP Product
Insituform Technologies	Insituform
Kenny Construction	Inliner USA
Miller Pipeline Corporation	Masterliner
Visu-Sewer Clean and Seal	National Liner
George W. Kennedy	C.I.P.P. Corporation
Michels Pipe Services	Premier-Pipe USA
Terra Engineering & Construction Corporation	Liner Products / Interplastic Polyester Resin
Utility Services Authority, LLC	Mississippi Textile Corp. MTube Liner / AOC Polyester Resin
Reynolds – Inliner	Inliner USA
Municipal Pipe Tool Co., LLC	CoREZYN COR72-AT-470HT Polyester Resin & Applied Felts Tube
American Pipe Liners, Inc.	CoREZYN COR72-AT-470HT Polyester Resin & Applied Felts Tube
Hoerr Construction, Inc.	Interplastics COR72-AT-470HT Polyester Resin and Applied Felts Tube
Pipevision Products, Inc.	Liner Products / Interplastic Polyester Resin

In order to be considered pre-qualified to bid on this project, the product, manufacturer and contractor must each demonstrate, to FRSA's satisfaction, compliance with the following requirements:

- A. For the manufacturers product / installation method to be considered as acceptable, a minimum of 250,000 feet or 1,000 line sections of successful wastewater collection system installation in the USA must be documented. In addition, the product shall have been in service within the wastewater collection system for a minimum of two (2) years. The product must be shown to comply with the requirements of the detailed specifications.
- B. Submittal of FRSA approved Third Party test data supporting the following product performance requirements. Product samples used for testing shall be similar to those proposed

for installation. Test samples shall be prepared so as to simulate installation methods and trauma of the product.

- Chemical resistance – Test shall be conducted in accordance with ASTM F 1216, and meet the minimum guidelines listed therein.
- Long-term properties – Tests to confirm 50-year design values shall be conducted in accordance with ASTM D2990. As an alternative, third party testing of a 10,000 hour external loading test, conducted in a wet environment to simulate field conditions, can be used to verify long-term design values.
- Flow characteristics – The in-service product shall provide full flow capacity equal to at least 100% of the host pipe's original capacity.
- External hydrostatic pressure testing – Testing of external hydrostatic loading capacity of at least ten (10) restrained pipe samples to verify design techniques.
- Contractor / Manufacturer shall demonstrate structural properties meet or exceed the requirements listed below by providing test results from an independent laboratory for three (3) recent lining projects. A minimum of twelve (12) test results must be submitted.

STRUCTURAL PROPERTIES

Property	Minimum Value	ASTM Test Method
Flexural Strength	4,500 PSI	D790
Flexural Modulus	350,000 PSI	D790

- C. For a manufacturer to be considered acceptable, the manufacturer must have provided continuously for at least three (3) years, the specified materials for an acceptable product (as defined above). The manufacturer must be able to demonstrate sufficient in-house engineering support and manufacturing quality control.
- D. For a contractor to be considered acceptable, the contractor must have had at least two (2) years active experience in a commercial installation of the product and must have successfully installed at least 100,000 feet of the product in wastewater collection system installations. In addition, the contractor must certify that the installation of the product will be done in accordance with manufacturer's recommended procedures.
- E. The Contractor shall provide a list of personnel working on this project, including previous project experience of the Foreman / Job Superintendent and Operator responsible for reinstating sewer services.
- F. The manufacturer and/or contractor shall submit a copy of the license or certificate verifying the manufacturer's or licensor's approval of the installer.

The final decision to accept or reject the product/manufacturer/installer lies solely with FRSA.

3 General Instructions

3.1 Bidder's Responsibility

Bidders are cautioned not to submit proposals until having carefully examined the entire site of the proposed work and adjacent premises and the various means of approach and access to the site, and having made all necessary investigations to inform themselves thoroughly as to the facilities for delivering, placing and handling the materials at the site, and having informed themselves thoroughly as to all difficulties involved in the completion of all the work under this Contract in accordance with its requirements.

Bidders must examine the Plans, Specifications and other Contract Documents and shall exercise their own judgment as to the nature and amount of the whole of the work to be done and for the bid prices must assume all risk of variance, by whomsoever made, in any computation or statement of amount or quantities necessary to complete fully the work in strict compliance with the Contract Documents. The Bidder must satisfy himself by making borings or test pits, or by such methods as he may prefer, as to the character and location of the materials to be encountered or work to be performed. No pleas of ignorance of conditions that exist or that may hereafter exist, or of conditions or difficulties that may be encountered in the execution of the work under this Contract, as a result of failure to make the necessary examinations and investigations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill, in every detail, all of the requirements of the Contract Documents, or will be accepted as a basis for any claims whatsoever for extra compensation or for an extension of time.

The Contractor is responsible for verifying the location of all existing utilities in the project areas.

The Bidder, therefore, shall satisfy himself by such means as he may deem proper as to the location of all structures that may be encountered in construction of the work.

3.2 Addenda and Interpretations

No interpretation of the meaning of the Plans, Specifications, or other Contract Documents will be made to any bidder orally. Every request for such interpretation must be in writing addressed to the Four Rivers Sanitation Authority, 3501 Kishwaukee Street, Rockford, Illinois. To be given consideration, such request must be received at least five (5) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be sent by email, fax, or certified mail with acknowledgement of receipt requested, to all prospective bidders, at the respective addresses furnished for such purposes, not later than three (3) days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addenda or interpretation shall not relieve said bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

3.3 Laws and Regulations

The prospective bidder is warned that he must comply with all laws of the United States Government, State of Illinois, all ordinances and regulations of FRSA in the performance of the work under this contract. The Bidder's attention is specifically called to that provision of the General Conditions regarding the rate of wage to be paid on the work.

3.4 Quantities Estimated Only

Bidders are warned that the estimate of quantities of the various items of work and materials, as set forth in the proposal form, is approximate only and is given solely to be used as a uniform basis for the comparison of bids. The quantities actually required to complete the contract work may be less or more than so estimated, and if awarded a contract for the work specified, the Contractor further agrees that he will not make any claim for damages or for loss of profits or for an extension of time because of a difference between the quantities of the various classes of work assumed for comparison of bids and quantities of work actually performed.

3.5 Form, Preparation, and Presentation of Proposals

For particulars as to the quantity and quality of the supplies, materials and equipment to be furnished, and the nature and extent of the work or labor to be done, prospective bidders are referred to the Contract Documents, which may be examined or obtained at the FRSA office.

Each bid will be submitted upon the prescribed proposal form. All blank spaces for bid prices must be filled in, in ink, with the unit or total sum or both for which the proposal is made. If the proposal contains any omissions, erasures, alterations, additions or items not called for in the itemized proposal, or contains irregularities of any kind, such may constitute sufficient cause for rejection of bid. In case of any discrepancy in the unit price or amount bid for any item in the proposal, the unit price as expressed in figures will govern. In no case is the agreement form to be filled out or signed by the bidder.

Bidders may opt to contact FRSA's Engineering Department at (815)-387-7660 to obtain an electronic Proposal form. If used, this form must be attached to the hard copy proposal form and appropriately signed and executed with the bid.

The bid must be verified and be presented on the prescribed form in a sealed envelope on or before the time and at the place stated in the Advertisement for Bids, endorsed with the name of the person, firm or corporation presenting it, the date of presentation, and the title of the work for which the bid is made. If forwarded by mail, the sealed envelope containing the proposal and marked as directed above, must be enclosed in another envelope addressed to Clerk of Four Rivers Sanitation Authority, 3501 Kishwaukee Street, Rockford, Illinois, 61109 and be sent preferably by certified mail. FRSA will not accept facsimile generated bids.

3.6 Bid Security

Each proposal must be accompanied by FRSA Bid Bond form with an acceptable Bid Security attached, in the amount specified in Article One, Notice to Bidders. This sum is a guarantee that, if the Proposal is accepted, a contract will be entered into and its performance properly secured. FRSA's Bid Bond Form included in the bid packet must be used. No other Bid Bond form may be substituted.

Within ten (10) days after the award of the bid, the deposits of all but the three lowest bidders will be returned. The deposits of the remaining two unsuccessful bidders will be returned within three (3) days after the execution of the Contract, or, if no such Contract has been executed, within sixty (60) days after the date of opening bids. The deposit of the successful bidder will be returned only after he has duly executed the Contract and furnished the required bond and insurance.

3.7 Affidavit of Compliance

Each proposal must be accompanied by an executed Affidavit of Compliance. A separate Affidavit of Compliance form is enclosed with the Proposal packet. Failure to submit an executed Affidavit of Compliance with the proposal may constitute sufficient cause for rejection of the bid.

3.8 Statement of Qualifications

Each proposal must be accompanied by a Statement of Qualifications certifying that the bidder is registered to do business in the State of Illinois and provide documentation that the bidder possesses the appropriate financial, material, equipment, facility and personnel resources and expertise necessary to meet all contractual obligations. The bidder shall document no less than three (3) contracts for sanitary sewer system lining within the past five (5) years having equal or greater value to the bid being submitted. FRSA reserves the right to request additional information as needed to evaluate bids prior to making an award.

3.9 Comparison of Proposals

Bids on item contracts will be compared on the basis of a total computed price arrived at by taking the sum of the estimated quantities of each item, multiplied by the corresponding unit prices and including any lump sum bids on individual items, in accordance with the estimate of quantities set forth in the proposal form. Bids on lump sum contracts will be considered upon the basis of the lowest sum bid.

3.10 Acceptance of Bids and Basis of Award

The contract will be award, if at all, to the lowest responsive, responsible bidder. No bidder may withdraw his bid after the scheduled closing time for receipt of bids, for at least sixty (60) days. Four Rivers Sanitation Authority also reserves the right to reject any and all bids.

The bidder whose proposal is accepted will be notified of the Notice of Award issued by FRSA Executive Director. Within ten (10) days of issuance of a Notice of Award by the FRSA Executive Director, the successful bidder shall enter into a written contract for the performance of the Proposal work and shall furnish the required bonds and insurance certificates upon being served such Notice, personally, by mailing, or via email.

If the bidder does not comply with the Notice of Award, FRSA will issue a Deficiency Notice. If the bidder to whom the contract is awarded refuses or neglects to execute the Contract or fails to furnish the required bonds and insurance within five (5) days after receipt of the Deficiency Notice, the amount of his deposit shall be forfeited and shall be retained by FRSA as liquidated damage and not as a penalty. It being now agreed that said sum is a fair estimate of the amount of damages that FRSA will sustain in case said bidder fails to enter into a contract and furnish the required bond and insurance. No plea of mistake in the bid shall be available to the bidder for the recovery of his deposit or as a defense to any action based upon the neglect or refusal to execute a contract.

3.10.1 Evaluation of Responsiveness

The responsiveness of bidders will be judged on the basis of the completeness of the bid submitted. To be responsive, a Bid must be submitted on the forms provided as part of the Bid Documents and comply with all the requirements of the Instruction to Bidders.

3.10.2 Evaluation of Responsibility

To be judged as responsible, the bidder shall:

- A. Have adequate financial resources for performance, the necessary experience, organization, technical qualifications, and facilities, or a firm commitment to obtain such by subcontracts;
- B. Be able to comply with the required completion schedule for the project;
- C. Have a satisfactory record of integrity, judgment, and performance, including, in particular, any prior performance on contracts from FRSA;

- D. Have an adequate financial management system and audit procedures, that provide efficient and effective accountability and control of all property, funds, and assets;
- E. Conform to the civil rights, equal employment opportunity and labor law requirements of the Bid Documents.
- F. Have satisfactorily completed no less than three (3) sanitary sewer system lining contracts within the past five (5) years of equal or greater value to the bid being submitted.

3.11 The Rejection of Bids

FRSA reserves the right to reject any bid if the evidence submitted in the statement of the bidder's qualifications, or if investigation of such bidder fails to satisfy FRSA that such bidder is properly qualified to carry out the obligations and to complete the work contemplated therein. Any or all proposals will be rejected if there is reason to believe that collusion exists among the bidders. Conditional bids will not be accepted. FRSA reserves the right to reject any and all bids and to accept the bid which they deem most favorable to the interest of FRSA after all proposals have been examined and canvassed.

3.12 Insurance and Bonding

Contractor shall provide all necessary insurance and bonds required to complete the project. No more than ten (10) calendar days subsequent to FRSA's issuance of an award letter, the Contractor shall provide documentation to prove that he has obtained all required insurance and bonds. FRSA shall be the sole judge as to the acceptability of any such proof.

Contractor shall provide and maintain all insurance and bonds as required by FRSA.

3.12.1 General

The Contractor shall ensure that:

- A. All insurance policies shall be specific to the project.
- B. The insurance certificate shall state: This certifies that the insurance coverage meets or exceeds that required for the 2026-2027 Sanitary Sewer System Lining, Capital Project No. 2737.
- C. FRSA shall be named as Additional Insured in all policies; this shall include the Owners Contractors Protective Policy option.
- D. All completed operations coverages and bonds shall remain in force for a period of two (2) years following acceptance of the project and completed operations shall stay in force for two (2) years following completion of the project.

3.12.2 Insurance

The Contractor shall, for the duration of the contract and for two (2) years following project acceptance, maintain the following:

- A. General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit. The Contractor shall provide "XCU" coverage.
- B. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage including coverages for owned, hired or non-owned vehicles, as applicable.

- C. Workers' Compensation and Employers Liability: Workers' Compensation limits as required by statute and Employers Liability limits of \$500,000 per accident and \$500,000 per disease.
- D. Umbrella: \$2,000,000 per occurrence/aggregate for contracts valued at \$500,000 or over, or \$1,000,000 for contracts below \$500,000. \$10,000 is maximum allowable self-retained limit.
- E. Errors and Omissions: If the Contractor performs professional services, he shall maintain errors and omissions insurance with a limit no lower than \$1,000,000 for the duration of the contract.

The policies shall contain, or be endorsed to contain, the following provisions in the General Liability and Automobile Liability Coverage's:

1. Unless otherwise provided in paragraph "c" of this section, FRSA, its officers, officials, employees and volunteers shall be covered as additional insureds as respects liability arising out of activities performed by or on insured's general supervision of the Contractor, products and completed operations of the Contractor, premises owned, occupied or used by the Contractor, or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to FRSA, its officers, officials, employees, volunteers, or agents.
2. Unless otherwise provided in paragraph "c" of this section, the Contractor's insurance coverage shall be primary insurance as respects FRSA, its officers, officials, employees, volunteers, and agents. Any insurance or self-insurance maintained by FRSA, its officers, officials, employees, volunteers, or agents shall be excess of the Contractor's insurance and shall not contribute with it.
3. As an acceptable alternative to provisions "a" and "b" of this section, the Contractor may provide owner's and contractor's protective liability insurance with coverage limits, named insureds, and in conformity with all applicable specifications of this section.
4. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to FRSA, its officers, officials, employees, volunteers, or agents.
5. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
6. All Coverages — Each insurance policy required by this clause shall not be suspended, voided, canceled by either party, reduced in coverage, or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to FRSA.

3.12.3 Best's Ratings

FRSA shall be the sole judge of whether or not said insurer's ratios are satisfactory. FRSA's decision shall be final and FRSA's bidding procedures contain no appeal provision.

- A. Alphabetical Rating: For purposes of this Request for Bids, "insurer" shall mean any surety, insurance carrier, or other organization which proposes to provide an insurance policy or bond for the Contractor. No insurer or surety rated lower than "A-, Excellent" in the current *Best's Key Rating Guide* shall be acceptable to FRSA.
- B. Financial Size Rating: Provided an insurer's alphabetical rating is satisfactory, FRSA will examine said insurer's financial size rating.
 1. If Best classifies the insurer XII or larger, said insurer shall be acceptable to FRSA.

2. If Best classifies the insurer as smaller than XII, but larger than VI, said insurer shall be submitted to FRSA's Director of Finance and/or FRSA's insurance consultant for review.

Financial Size ratings less than VII are not acceptable and will disqualify the Contractor.

3.12.4 Performance Bond and Labor & Materials Payment Bond Form

The Contractor shall provide a Performance Bond and Labor & Materials Payment Bond form acceptable to FRSA. The performance bond shall be for either 100% of the contract price or for the Contractor's unit price times the estimated number of units, as applicable.

This Request for Bids contains a Performance Bond and a Labor & Material Bond form for the Contractor's use.

If the Contractor fails to provide acceptable bonds within the specified time, he shall be in default.

3.12.5 Correction of Contractor's Insurance or Bond Deficiencies

If FRSA determines that the Contractor's insurance or bond documentation does not conform to these specifications, FRSA shall inform said Contractor of the non-conformity. If said Contractor fails to provide conforming insurance or bond documentation within five (5) calendar days of FRSA's deficiency notice, he shall be in default.

3.12.6 Indemnification Clause

Contractor shall protect, indemnify, hold and save harmless and defend FRSA, its officers, officials, employees, volunteers, and agents against any and all claims, costs, causes, actions and expenses, including but not limited to attorney's fees incurred by reason of a lawsuit or claim for compensation arising in favor of any person, including the employees, officers, independent contractors, or subcontractors of the Contractor or FRSA, on account of personal injuries or death, or damages to property occurring, growing out of, incident to, or resulting directly or indirectly from the performance by the Contractor or subcontractor, whether such loss, damage, injury or liability is contributed to by the negligence of FRSA or by premises themselves or any equipment thereon whether latent or patent, or from other causes whatsoever, except that the successful bidder shall have no liability for damages or the costs incident thereto caused by the sole negligence of FRSA.

The indemnification shall not be limited by a limitation on amount or type of damages payable by or for the Contractor or its subcontractor under any employee benefits act including, but not limited, to the Workers Compensation Act.

No inspection by FRSA, its employees, or agents shall be deemed a waiver by FRSA of full compliance with the requirements of the Contract. This indemnification shall not be limited by the required minimum insurance coverages in the Contract.

3.13 Tax Exemption

FRSA is exempt, by law, from paying bidder Federal Excise Tax and Illinois Retailers' Occupational Tax. Therefore, the bidder shall exclude those taxes from his bid. FRSA's tax exemption number is E9992-3696-06. The bidder shall include all other applicable taxes in his bid price.

Article 3 – Detailed Specifications

1 General

The intent of these *Detailed Specifications* is to provide a description of the work to be done so that qualified bidders may submit formal proposals to the Four Rivers Sanitation Authority (FRSA) for Capital Project No. 2737, 2026-2027 Sanitary Sewer System Lining. This project involves the rehabilitation of sanitary sewers by lining with a heat cured, thermosetting resin-impregnated felt tube, conformed to the inside walls of existing sanitary sewer pipes.

Throughout these specifications, the terms “Owner,” “FRSA” and “Engineer” shall be synonymous.

The Illinois Department of Transportation (IDOT) *Standard Specifications for Road and Bridge Construction* referenced in this specification shall be current edition.

The Contractor shall be responsible for any damages caused by his operations to existing structures above or below the ground as described under *G.C. 12:1, Suits at Law*, of the *General Provisions and Technical Specifications for Sanitary Sewer Construction*.

The Contractor shall notify all utility companies, as well as JULIE (800-892-0123), at least seventy-two (72) hours prior to any construction. The Contractor shall notify the City of Rockford Department of Public Works, Rockford Township Highway Department, the Village of Cherry Valley Department of Public Works, the Village of Machesney Park Department of Public Works, the City of Loves Park Department of Public Works, the Winnebago County Highway Department, the FRSA, and private property owners as applicable forty-eight (48) hours before beginning work.

The Contractor shall be responsible for maintaining the current level of utility and other services to all properties affected by construction for the duration of this project.

The Contractor shall provide access to the residences and/or businesses, schools, etc., at all times during construction (i.e., drives, roadways, ramps must remain open or must be provided).

Suppliers shall be deemed to impliedly warrant that their products and all component materials incorporated therein are suitable and fit for the intended use of such products and shall be free from defects in material, workmanship or design, such warranty to run to the benefit of the FRSA. The foregoing applies whether the products or their component materials are specified in the contract documents or are of supplier's design.

The FRSA will not supervise, direct, control, have authority over or be responsible for the Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws and regulations applicable to the furnishing or performance of the work. The FRSA will not be responsible for the Contractor's failure to perform or furnish the work in accordance with the contract documents.

2 Scope of Work

2.1 General

This section contains detailed specifications relating to proposal items. The work to be done under each item is discussed along with units for payment and measurement for payment. However, the descriptions given do not necessarily outline all the work to be done under any item. The materials and workmanship provided for this project shall meet or exceed the requirements specified herein and the technical specifications referenced below. In the case of contradictions between these *Detailed Specifications* and the technical specifications referenced, these *Detailed Specifications* shall govern. The current editions of the following specifications shall apply:

1. *Standard Specifications for Water and Sewer Main Construction in Illinois*
2. *General Provisions and Technical Specifications for Sanitary Sewer Construction*, by the Four Rivers Sanitation Authority.
3. *Standard Specifications for Road and Bridge Construction*, Illinois Department of Transportation.
4. *American Society for Testing and Materials (ASTM)*:
 - A. *ASTM D 543* Test Method for Resistance of Plastics to Chemical Reagents
 - B. *ASTM D 638* Test Method for Tensile Properties of Plastics
 - C. *ASTM D 790* Test Method for Tensile Properties of Non-reinforced and Reinforced Plastics and Electrical Insulating Materials
 - D. *ASTM F 1216* Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
 - E. *ASTM F 1743* Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Resin Pipe

Bidders shall provide the FRSA with a copy of all the applicable ASTM specifications listed for the materials to be used.

The Contractor shall be responsible for all site investigations, all necessary permits and fees, mobilization, access procurement, flow control (bypass pumping), water acquisition, site preparation, traffic control, pipe lining with a cured-in-place lining system, reinstatement of sanitary services, complete restoration, and all other appurtenances required for completing the project in accordance with the specifications.

The Contractor shall comply with all OSHA and manufacturer's safety requirements. Particular attention is drawn to those safety requirements involving work operations within confined spaces and with hot water. The FRSA assumes no responsibility for enforcement of safety standards.

Excavated material or material removed from sewers shall not be stored or cast upon the pavement. All materials cleaned from sewers shall be transported to and disposed of at an approved offsite dumping area. Work areas shall be cleaned at the end of each day by sweeping, washing or other approved methods.

The Contractor shall comply with all permit, notification, safety and traffic control requirements as specified elsewhere herein.

The Contractor shall provide the FRSA with a construction schedule prior to performing any work. Any work performed by the Contractor without the FRSA's permission or not in the presence of a FRSA inspector may, at the FRSA's sole discretion, be rejected.

If required, all roadway removal and restoration shall be inspected and approved by the governing municipality.

The Contractor shall be responsible for all tests of materials and final installation required by the FRSA. All deficiencies noted by the inspectors shall be promptly corrected by the Contractor without cost to the FRSA and prior to final payment.

2.2 Existing Sewer Video Inspection Records

Sewer television inspection logs and video recordings are available for Contractor's use and inspection at the FRSA Engineering Department, 3501 Kishwaukee St., Rockford, IL, Monday through Friday from 8:00 am to 3:30 p.m. A computer and monitor will be made available for viewing video recordings. The television reports and video recordings indicate the condition of the sewer at the time of the inspection and are no guarantee of the conditions that may be encountered at the time of construction. Contractors wishing to view inspection videos of the existing sewers must schedule visits with the FRSA forty-eight (48) hours in advance.

2.3 Main Line Repairs (by Others)

The Contractor shall provide the FRSA with a complete listing of any sanitary sewer main line repairs that, in the Contractor's opinion, are required prior to lining. If a main line repair is requested by the Contractor a minimum of two (2) weeks advance notice will be required by the FRSA. The FRSA may, at its discretion, have this work performed by a third party.

2.4 Required Submittals

1. Construction Schedule.
2. All applicable ASTM specifications for materials to be used.

2.5 Payment – Not Used.

3 Permit Requirements

3.1 General

All work in streets, highways, railroad Right-of-Way or flood plains shall be subject to the regulations and requirements of the permitting agencies. Should conflicts or contradictions arise between the permit requirements and these specifications, the permits shall govern. Upon completion of work, the Contractor shall restore the area as required by the permitting agency.

The Contractor shall secure and comply with the requirements of any and all permits required for the construction of this project. For any excavation in roadways, a road cut permit will be required from the roadway authority. The Contractor shall provide all insurance, bonds, etc., as required by the necessary permits

The following contacts are provided for the roadway agencies impacted by this project:

Roadway Authority	Contact	Phone	Email
City of Loves Park	Shannon Messinger	(815) 654-5040	ShannonMessinger@CityofLovesPark.com
City of Rockford	Jordan Masemore	(779) 348-7634	Jordan.Masemore@rockfordil.gov
Rockford Township	Barry Palm	(815) 962-7313	BarryPalm@rockfordtownshipil.gov
Village of Machesney Park	Mitch Hilden	(779) 315-3094	MitchH@machesneypark.org
Village of Cherry Valley	Andy Wesseln	(815) 580-8874	awesseln@cherryvalley.org
Winnebago County	Carlos Molina		cmolina@hwy.wincoil.gov

Online permit applications can be found on the following websites:

- City of Rockford: <https://rockfordil-prd.rhythmllabs.infor.com/home>
- City of Loves Park: <https://cityoflovespark.com/departments/street-department/>
- Village of Machesney Park: <https://machesneypark.org/citizenserve.php>
- Winnebago County: <https://wincoil.gov/departments/highway-department/permits>

The City of Rockford will issue a blanket Right-of-Way permit for work within City Right-of-Ways. The Contractor will be responsible for the permit application. Contact Jordan Masemore at (779)-348-7174, Jordan.masemore@rockfordil.gov. By way of intergovernmental agreement, application fees are waived for this permit.

Where Railroad Right-of-Entry permits are required, (Item No. 61, *Section III Lining List*) the FRSA will be responsible for all permit and flagger fees. The Contractor will be responsible for obtaining the permit and payment for any necessary Railroad insurance and bonds.

The FRSA will procure IDOT Utility Permits as applicable (Item No. 12, *Section III Lining List*).

3.2 Required Submittals

1. Copies of executed Right-of-Way permits, as applicable

3.3 Payment

Payment for compliance and procurement of permits shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

4 Notification & Access

4.1 General

A public notification program shall be implemented and shall, as a minimum, require the Contractor to be responsible for contacting each home or business connected to the sanitary sewer and informing them of the work to be conducted and when the sewer will be out of service. The Contractor shall be responsible for the following:

1. Secure any temporary or permanent access, storage or construction easements from property(ies) which he deems necessary to perform the work as defined in the specifications. The cost of acquiring these easements shall be considered incidental to project.
2. Notify the FRSA and local roadway authorities three (3) working days, minimum, prior to beginning work.
3. Provide a minimum of forty-eight (48) hours advance written notice (door hanger) to be delivered to each home or business describing the work, schedule, how it affects them, and a telephone number of the Contractor they can call to discuss the project or any problems or concerns that arise. Notification shall also include contact information for the FRSA's Survey and Field Operations Manager, Ben Christiansen, (815) 209-7952.
4. Personally contact all affected residents one (1) day prior to beginning work on a particular sewer section.
5. Personally contact any home or business owner that cannot be reconnected within the time stated in the written notice.

The Contractor shall make every effort to maintain the current level of sanitary sewer service usage for the duration of the project. Sanitary sewer users shall not be without sewer service for more than eight (8) hours.

4.2 Special Access Considerations

Certain businesses and organizations, (i.e., schools and/or hospitals) may require that lining operations be performed on specific dates or during certain hours of the day to maintain access for normal operations. The Contractor shall collaborate with FRSA personnel to make a reasonable effort to accommodate the needs of these businesses and organizations.

- Item No. 3: Contractor shall notify Maria Montessori at Marsh School five (5) business days minimum prior to beginning construction. Sanitary sewer lining will occur on the property and access is located in the school park. Contact Marsh School at (815) 654-4906.
- Item No. 7: Contractor shall notify owners of 1702 Delroy Avenue and 4240 11th Street five (5) business days minimum prior to beginning construction. Manholes 129-084 and 129-083 are located in the front yard of residences.
- Item No. 9: Searles Avenue is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to Rockford Township Highway Department five (5) business days minimum prior to beginning construction. Contact Barry Palm at BarryPalm@RockfordTownshipil.gov. Reference IDOT Standard Detail 701501-07 for lane closure. Contractor shall notify owners of 2930 Searles Avenue five (5) business days minimum prior to beginning construction. Manhole 079-093 is located in the front yard of residence.
- Item No. 10: Searles Avenue is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure. Contractor shall notify owners of 3310 Searles Avenue five (5) business days minimum prior to beginning construction. Manhole 079-097 is located near the residence.

- Item No. 11: Searles Avenue is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to Rockford Township Highway Department five (5) business days minimum prior to beginning construction. Contact Barry Palm at BarryPalm@RockfordTownshipil.gov. Reference IDOT Standard Detail 701501-07 for lane closure. Contractor shall notify owners of 2816 and 2808 Searles Avenue five (5) business days minimum prior to beginning construction. Manhole 079-169 and 079-091 are located near the residences.
- Item No. 12: South Alpine Road is classified as a principal arterial and traffic control will be required. Traffic control shall be in accordance with the IDOT Utility Permit. Reference IDOT Standard Detail 701701-11 for lane closure in multilane intersection.
- Item No. 15: Contractor shall notify owners of 2611 and 2515 Knight Avenue five (5) business days minimum prior to beginning construction. Manholes 069-060 and 069-059 are located near the residences.
- Item No. 19: Brooke Road is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Region 2 / District 2 Standard 40.1 for road closure. Reference Item 19 Traffic Control Map provided in *Section IV Lining Maps* for suggested detour route. A foreign object is present in the main 340' downstream of manhole 004-067. The object must be removed prior to lining.
- Item No. 26: Kishwaukee Street is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701701-11 for lane closure in multilane intersection.
- Item No. 28: 11th Street is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701611-02 for half road closure. Reference Item 28 Traffic Control Map provided in *Section IV Lining Maps* for suggested detour route.
- Item No. 29: South 6th Street is classified as a minor arterial and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701601-10 for single lane closure on multilane road.
- Item No. 30: Guilford Road is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.

- Item No. 32: 15th Street is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.
- Item No. 33: 15th Street is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.
- Item No. 34: 15th Avenue is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.
- Item No. 35: 11th Street is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701611-02 for half road closure. Reference Item 35 Traffic Control Map provided in *Section IV Lining Maps* for suggested detour route.
- Item No. 38: Montague Street is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.
- Item No. 40: Montague Street is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.
- Item No. 43: Clifton Avenue is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.
- Item No. 44: Clifton Avenue is classified as a major collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.

- Item No. 47: 11th Street is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701701-11 for multilane intersection.
- Item No. 50: Evans Avenue (from Elm Ave west) is classified as a minor collector and traffic control will be required. Contractor shall submit traffic control plans to the Village of Machesney Park five (5) business days prior to beginning construction. Contact Mitch Hilden at (779) 315-3094 or mitchh@machesneypark.org. Reference IDOT Standard Detail 701501-07 as needed, manhole is located in parkway.
- Item No. 52: Genoa Road is classified as a major collector and traffic control will be required for any work performed in the street. Contractor shall submit traffic control plans to the Village of Cherry Valley (5) business days minimum prior to beginning construction. Contact Andy Wesseln (815) 580-8874 or awesseln@cherryvalley.org. Reference IDOT Standard Detail 701501-07 as needed, manhole is located in parkway. Contractor shall notify owners of 597 Genoa Road five (5) business days minimum prior to beginning construction. Manhole 157-013 is located near the residence.
- Item No. 55: Welty Avenue is classified as a minor collector and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701501-07 for lane closure.
- Item No. 57: Contractor shall notify Sherwin Williams Powder Coatings, at 4472 Technology Drive five (5) business days minimum prior to beginning construction. Sanitary sewer lining will occur on the property and access to manholes 129-043 and 129-042 is located near the parking lot. Contact Sherwin Willimans at (815) 398-4089.
- Item No. 58: North Springfield Avenue is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to Rockford Township Highway Department and Winnebago County Highway Department five (5) business days minimum prior to beginning construction. Contact Barry Palm at BarryPalm@RockfordTownshipil.gov. Contact Carlos Molina at cmolina@hwy.wincoil.gov. Reference IDOT Standard Detail 701606-11 for lane closure.
- Item No. 59: North Springfield Avenue is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to City of Rockford and Winnebago County Highway Department five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Contact Carlos Molina cmolina@hwy.wincoil.gov. Reference IDOT Standard Detail 701606-11 for lane closure.
- Item No. 60: North Springfield Avenue is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to Winnebago County Highway Department five (5) business days minimum prior to beginning construction.

Contact Carlos Molina at cmolina@hwy.wincoil.gov. Reference IDOT Standard Detail 701606-11 for lane closure.

- Item No. 61: The main segment 003-103 – 003-030 is located under the Illinois Railway Railroad. Reference Paragraph 3.1 regarding Railroad Right-of-Entry permit requirements. Harrison Avenue is classified as a principal arterial and traffic control will be required. Contractor shall submit traffic control plans to the City of Rockford five (5) business days minimum prior to beginning construction. Contact Jordan Masemore (779) 348-7174 or jordan.masemore@rockfordil.gov. Reference IDOT Standard Detail 701606-11 for lane closure.
- Item No. 63: Contractor shall notify owner of 1981 Chatham Court five (5) business days prior to construction. Access through the property will be required to reach manhole 087-056. Allow FRSA to coordinate work with owner of 2016 Randolph Drive prior to beginning any work at this location. Manhole 087-033, scheduled to be abandoned, is located beneath a wooden deck in the backyard.
- Item No. 64: Allow FRSA to coordinate work with owner of 2016 Randolph Drive prior to beginning any work at this location. Access through the property will be required to reach manhole 087-055.
- Item No. 65: Windsor Road is classified as a minor arterial and traffic control will be required. Contractor shall submit traffic control plans to Loves Park Street Department five (5) business days minimum prior to beginning construction. Contact DavidJacobson@cityoflovespark.com. Reference IDOT Standard Detail 701606-11 for lane closure.
- Item No. 66: Contractor shall notify Merced Auto Accessories, at 280 North Phelps Avenue five (5) business days minimum prior to beginning construction. Sanitary sewer lining will occur on the property and access to manholes 110-012 and 110-011 will require use of the rear alley and parking area. Contact Merced Auto Accessories at (815) 510-7214.
- Item No. 67: Contractor shall notify owner of 2415 Pierce Avenue five (5) business days minimum prior to beginning construction. Sanitary sewer lining will occur on the property and access to manhole 079-145 is located in the front drive. In 2024, a fiber optic conduit was bored through the main approximately 209 feet downstream of manhole 079-145. StratusNet has confirmed that the fiber services have been removed from the originally installed duct passing through the pipe. The conduit has not been removed. The work shall include cutting out the conduit, grouting the hole, and lining the entire main.

4.3 Required Submittals

1. Copy of proposed door-hanger notification.

4.4 Payment

Payment for notification and access shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

5 Traffic Control and Protection

5.1 General

The Contractor shall be solely responsible for the safety of the operations, and shall comply with all state, local and OSHA regulations and shall implement and maintain approved traffic control measures, including detour routes as required by permits. Traffic control and protection shall be in accordance with the current IDOT standards and specifications.

During the course of construction, a minimum of one (1) lane of traffic shall be kept open on any affected street.

The Contractor shall comply with all rules and regulations of the State, County, and City authorities regarding closing or restricting the use of public streets or highways, including restricted hours of work. No public or private road shall be closed, unless prior permission is obtained from the roadway authority. Contractor shall conduct the work as to ensure the least possible obstruction to traffic and normal commercial pursuits. Contractor shall protect all work areas within traveled roadways by installing approved signs, barricades, and lights, where necessary, for the safety of the public. The Contractor shall notify the appropriate roadway authority a minimum of seventy-two (72) hours prior to beginning any work for approval of traffic control on any affected street, as well as required detour routes and signage.

Contractor shall provide detailed traffic control plans as required by the roadway authority or permit conditions. See *Section III Lining List* for items requiring traffic control plans.

The Contractor shall furnish flagmen or guards with approved high-visibility apparel and other traffic control devices when required by regulation or when deemed necessary for safety.

5.2 Safety Program

The Contractor shall develop and maintain for the duration of this contract, a safety program that will effectively incorporate and implement all required safety provisions as determined by OSHA 29 CFR.

5.3 Required Submittals

1. Traffic control plans as applicable/required by Roadway Authority to obtain permit.
2. Contractor's safety program and standards (for record only).

5.4 Payment

Payment for safety related work shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

Payment for Traffic Control and Protection will be made at the Contract Lump Sum (LS) price. Individual progress payments will be pro-rated in accordance with the amount of lining completed during the given pay period.

6 Sewer Cleaning

6.1 General

The Contractor shall be responsible for removing foreign materials from the sewer lines and for restoring the sewer lines to an acceptable condition that will permit proper installation of the pipe lining materials. Sewer cleaning and televising work shall not be subcontracted; this work shall be performed by the Company named in the Agreement. The sewer line cleaning shall be accomplished

by using a hydraulically propelled, high-velocity jet, or mechanically powered equipment. Selection of the equipment shall be the responsibility of the Contractor and shall be approved by the FRSA prior to starting the work. Should the Contractor wish to perform an internal inspection of the lines to be cleaned to determine the optimal cleaning techniques to employ, he may do so at his sole expense.

The cleaning equipment shall be capable of removing dirt, grease, rocks, sand, roots, mineral deposits and other materials and obstructions from the sewer lines. As many passes shall be made as necessary to clean the sections of sewer to be televised. If cleaning of an entire section cannot be successfully performed without destroying the existing pipe, the FRSA shall be notified and the line will either have to be repaired or lined over the debris. Upon completion of a repair, the Contractor shall clean, televise, and line the section of the sewer. The cleaning effort shall be abandoned if it is determined by the FRSA that a major blockage exists which cannot be cleared or removed by cleaning equipment.

Mineral Deposits greater than 1/4" thick and/or prohibit the TV camera movement shall be removed utilizing a Nozzteq Lumberjack Multi-Purpose Cutter (or FRSA-approved equivalent).

6.2 Cleaning Precautions

The Contractor shall take all necessary precautions when using cleaning equipment to prevent flooding or damage to any of the sewer lines, services, manholes and public or private property. To ensure safe operation, all machines shall be fully enclosed and shall have an automatic overload clutch or relief valve.

When hydraulically propelled cleaning tools or tools which retard the flow in the sewer line are used, precautions shall be taken to ensure that the water pressure generated does not further damage deteriorated pipe or cause flooding of public or private property being served by the sewer.

The Contractor shall be solely responsible and liable for any damage caused by sewer back-ups that result from sewer cleaning operations.

6.3 Water and Electricity

Any electricity required shall be the responsibility of the Contractor.

The Contractor shall be responsible for coordinating with the appropriate water authority for the availability of public water for this project. If public water is not directly available at specific sites, the Contractor shall be responsible for delivery of water to the site. The Contractor shall be responsible for any fees charged for water usage. If required, the Contractor shall obtain a calibrated water meter from the Water Department to gauge usage of water. The City of Rockford Hydrant meter request form can be submitted online ([Rockford Water Hydrant Meter Request \(google.com\)](https://www.rockford.il.gov/DocumentCenter/View/10000/Rockford-Water-Hydrant-Meter-Request-Form)). Contacts for area water utilities are listed below

Water Department	Contact	Telephone
City of Rockford	Jamie Rott	(779) 348-7654
City of Loves Park	Craig McDonald	(815) 877-1421
North Park Public Water	Josh Beeman	(815) 633-5461
Village of Cherry Valley	Andy Wesseln	(815) 580-8874

6.4 High-Velocity Jet (Hydro-cleaning) Equipment

All high-velocity sewer cleaning equipment shall be capable of producing a minimum of 1,200 pounds per square inch pressure at the pump and a volume capacity of 60 gallons per minute. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel.

6.5 Direction of Cleaning

Consecutive manhole sections shall generally be cleaned, with cleaning proceeding from upstream to downstream.

6.6 Solids Disposal

All foreign materials shall be removed at the downstream manhole for the section of sewer being cleaned. Foreign materials shall not be allowed to pass into other pipe sections. Debris removed from sewers during cleaning may be deposited at the FRSA's Sewer Plant dump pad, located at 3333 Kishwaukee St, Rockford, IL, at no cost to the Contractor. Contractor shall coordinate access with the FRSA Survey and Field Operations Manager, Ben Christiansen, (815) 209-7952. The Contractor will be responsible for keeping the dump site clean. All materials shall be removed from the project site and properly disposed of by the Contractor at the end of each work day. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the work site except in totally enclosed containers or as otherwise approved by the FRSA.

6.7 Acceptance of Sewer Line Cleaning

All roots in the sewer pipes that would prevent the proper installation of the liner or that would affect the hydraulic cross-section of the pipe shall be removed.

The Contractor shall televise all sewer lines after they are cleaned to verify satisfactory condition. If the television inspection shows the cleaning to be unsatisfactory, the sewer line shall be re-cleaned and re-televised until it is acceptable to FRSA. No additional compensation will be awarded for re-cleaning or re-televising of sewers.

6.8 Required Submittals

1. Cleaning equipment list and associated specifications, including proposed jet nozzles and cutting attachments.

6.9 Payment

Payment for sewer cleaning shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

7 Sewer Flow Control

7.1 General

The Contractor shall be responsible for controlling the flow in the sewers so that the liner can be installed properly and to allow for proper televising of the lines. The depth of flow shall not exceed 20% of the pipe diameter while televising the line. The Contractor shall be allowed to reduce or eliminate the amount of flow by plugging or blocking an upstream line, or by pumping the flow at the upstream manhole. All plugs or blocking shall be restrained to ensure that they cannot be washed downstream.

Sewer service to all properties upstream of the sewer to be lined must be maintained at all times. This may require bypass pumping of the sewer main during liner installation.

7.2 Acceptable Flow Control Measures

Flow control measures, if approved by the FRSA, may include one or more of the following:

1. Temporary plugging or blocking of the flow.
2. Diversion pumping of the flow to bypass the sewer sections being cleaned and televised.

7.3 Temporary Plugging

The Contractor shall insert an acceptable temporary plug into the sewer line upstream of the section where work is being performed. The plug shall be designed that any or all of the sewage can be quickly released. During TV inspection and cleaning operations, flow shall be reduced to within the limits specified above. Contractor shall remove the plug well in advance of any possible sewage surcharge or basement flooding. After the work has been completed, flow shall be restored to normal.

7.4 Diversion/Bypass Pumping

When diversion pumping is required, the Contractor shall supply the pumps, conduits, and other equipment to divert the flow of sewage around the manhole section in which work is to be performed. The diversion system shall be of sufficient capacity to handle peak flows that may occur due to a rainstorm. The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the diversion pumping system. Estimated peak flowrates are provided in *Section III Lining List* for sanitary mains that are 12" diameter or larger. This estimated peak flow rate is based upon the FRSA's existing hydraulic model that estimates flowrate during a 10-year rain event (EPA SWMM 5.0).

Diverted flows shall only be pumped into sanitary sewer manholes approved by the FRSA. The Contractor shall provide sufficient inspection personnel to ensure that surcharging and backups do not occur on public or private property while pumping or plugging operations are being conducted. If bypass pumping is required on a 24-hour basis, the equipment shall be equipped with mufflers to minimize noise levels to 90 decibels or less.

Contractor must obtain permission from property owners prior to routing pipes or hoses through private property.

7.5 Flooding Precautions

While flow in a sewer line is plugged, blocked, or diverted, the Contractor shall take sufficient precautions to protect the sewer lines from damage that might result from sewer surcharging, and to insure that sewer flow control operations do not cause flooding or damage to the public or private property being served by the sewer involved.

The Contractor shall be solely responsible and liable for all claims and damages caused by sewer back-ups.

7.6 Required Submittals

1. Proposed bypass pumping plan(s) as applicable.
2. Bypass pumping equipment list and specifications, including pump capacities.

7.7 Payment

Payment for sewer flow control shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

8 Television Inspection

8.1 General

After cleaning the sewer lines and prior to installing the liner, the Contractor shall televise and document all sewer line conditions. Final televising and digital recording will also be required after the liner is installed and after all services are reinstated. The FRSA will review the digital recordings for final acceptance of the lining work. The flow in the sewer section being televised shall be controlled as stated in these specifications. All televising shall be performed by experienced technicians. The footage counter shall be reset to 0.00 at each manhole when televising through a manhole.

The Contractor shall also provide equipment to play back the digital recordings in the field as requested by the FRSA; the minimum monitor size shall be seventeen inches (17"). The equipment shall play back at the same speed that it was recorded and shall have a slow-motion or stop-action feature.

Prior to installing the liner, the interior of the pipeline shall be carefully inspected to verify the inside diameter and to determine the locations of any conditions that would prevent the proper installation of the sewer liner. These conditions shall be noted and corrected by the Contractor prior to lining. The Contractor shall keep all documentation for the televised inspections on site for the duration of the project.

If the camera is submerged due to a sag in the pipe, a high velocity jet shall be utilized to divert water away from the camera lens.

8.2 Television Equipment

All televising equipment utilized for television inspection of sanitary sewer pipes by the Contractor shall conform to the minimum standards established herein.

8.3 Definitions

1. MPEG Video: For this specification, MPEG Video shall be defined as ISO-MPEG Level 1 (MPEG-1) coding having a minimum resolution of 352 pixels by 240 pixels and an encoded frame rate of 29.97 frames per second.

8.4 Equipment Scope

Television equipment shall include television camera, television monitor, cables, power source, lights, skids, and other required equipment. The television camera shall be specifically suited for sewer inspection operations.

8.5 Camera Specifications

The camera, television monitor, and other components of the video system shall be capable of producing a minimum 600-line resolution color video picture. The camera shall be rated at three LUX or less.

The camera shall be operative in 100 percent (100%) humidity conditions and shall be equipped with lighting that will illuminate the pipe while minimizing reflective glare. Lighting and camera quality shall be suitable to provide a clear, in-focus picture of the entire inside periphery of the

sewer pipe under all conditions encountered during the work. Focal distance shall be adjustable through a range of six inches (6") to infinity. Picture quality and definition shall be to the satisfaction of the FRSA. The camera shall be of the rotating pan and tilt type capable of spanning 360 degrees circumference and 270 degrees on the horizontal axis and small enough to be able to traverse a six-inch diameter sewer with offset joints.

8.6 Camera Mounting

The camera shall be mounted on skids, tracks or a self-propelled transporter suitably sized for each pipe diameter to be investigated. The skids or transporter shall be capable of keeping the camera axis at the centerline of the pipe.

8.7 Digital Recording Requirements

All sewer televising shall be documented on digital media. The digital recording shall include information that accurately reproduces the original picture of the video inspection. The digital recording shall be free of electrical interference and shall produce a clear and stable image. Separate MPEG Video files shall be created for each item inspected.

The pipeline inspection shall consist of identifying a location both within the pipe segment (physical location) and within the digital recording (video frame location) for each observation. The use of time codes for defect location shall not be deemed equivalent or acceptable. This will allow the digital recording and inspection data to be cross-referenced for instant access to any point of interest within the digital recording.

Continuous measurements along sewer lines between manholes shall be permanently electronically recorded for purposes of referencing locations of pipe defects. The following items shall be permanently electronically recorded:

1. Report number
2. Date of TV inspection
3. Upstream and downstream FRSA ACS manhole numbers (Example: Item No. 1= 011069 - 011182)
4. Current distance along reach (counter footage)
5. Item Number of sewer segment (refer to *Section III Lining List*)
6. Observation, Location, Clock Position, etc.

8.8 Labeling and Ownership

The files shall be labeled with the item number listed in *Section III Lining List*, section and manhole numbers to identify the video contents. All final video files shall be delivered to the FRSA on a single SSD external hard drive. The hard drive shall become the property of the FRSA at no additional charge.

8.9 Electrical Power

The electricity for all operations will be the responsibility of the Contractor.

8.10 TV Inspection and data collection practices

All inspection and recording operations shall conform to the minimum standards specified herein and all inspection recordings shall be evaluated against these standards.

1. **Color:** All recordings shall be in color with the ability to achieve proper balance of tint and brightness. The loss of color or severe redness due to equipment malfunction and black and white pictures, irrespective of quality, may be cause for rejection.
2. **Focus:** All pictures (recordings) shall be clearly in focus, properly illuminated with good contrast and without interference.
3. **Cleaning:** Prior to televising, all lines shall be subject to cleaning by the Contractor as defined in previous specification sections.
4. **Reverse Setups:** If during the inspection, the television camera will not pass through the entire section from manhole to manhole, the Contractor shall reset his equipment in a manner so that the inspection can be performed from the opposite manhole.
5. **Maximum Flow Depth:** If possible, televising shall be performed while the line segments are in service without plugging or flow diversion. Recordings are to be made such that the water depth is no greater than twenty percent (20%) of the pipe diameter. The intent is to be able to view a minimum of eighty percent (80%) of the pipe periphery. The camera lens must remain above the visible water level and may submerge only while passing through clearly identifiable line sags. If at any time the upstream flow exceeds the above cited maximum allowable twenty percent (20%) of the diameter such that the camera lenses become obscured, the Contractor shall reduce the flow/water depth to allow the television inspection to proceed by one of the above-mentioned flow control procedures. It is recommended that the Contractor advance the camera with the sewer jet cleaner to allow flow to be forced out of said sags by the water jetting.
6. **Observation of Service Reinstallments:** For the FRSA to properly assess the condition reinstated services the Contractor shall rotate and radially view all service connections. The camera shall be repositioned, if necessary, in order to provide a clear, distinct view of the entire perimeter of the reinstated service.
7. **Camera Movement:** The camera shall be moved forward through the line in the direction of flow from upstream to downstream and shall proceed at a uniform rate, stopping when necessary to properly document the sewer's condition. However, in no case shall the speed of the camera exceed 30 feet per minute. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line.
8. **Lens Cleaning:** The camera lens must be kept clean and clear. Any fogging due to oil, grease, or other wastewater content or debris that obscures the lens shall be cleaned off before proceeding with the recording operations.
9. **Camera Position:** Camera units shall have adjustable supports and shall be set so the camera axis is at the centerline of the pipe.
10. **Audio Recording Requirements:** The recording shall contain an audio descriptive narration by the operator/inspector, which will include, but not be limited to, the following information:
 - A. Date and time of TV inspection, operator name, and the name of the adjacent street.

- B. Verbal confirmation of upstream and downstream FRSA manhole numbers and TV direction in relation to the direction of flow.
 - C. Verbal description of the pipe size, type and condition.
 - D. Verbal description and location of each service connection including whether or not the service is active and/or capped at the main.
11. **Sewer Length Accuracy:** Measurement meters shall be accurate to ± 1.0 feet over the length of the section being inspected. Marking on cable, or the like, which would require interpolation for the depth of the manhole, will not be allowed. Accuracy of the measurement meter shall be checked daily by the use of a walking meter, roll-a-tape, or other suitable device.
12. **Equipment Recovery:** If any equipment becomes stuck in the sewer line such that excavation is required, the Contractor shall be responsible for the cost of all work necessary to free equipment, including but not limited to: removal and replacement of sanitary sewer, excavation and backfill, restoration, pipe repair, and damage due to back-up of the wastewater.

8.11 Digital Recording Review

The Contractor shall provide digital recordings (1 copy) of all sewer segments before and after rehabilitation with visual and audio records of all services and problem areas in a format that is compatible with the FRSA's equipment. Video files shall be formatted such that the post-lining follows pre-lining for each sewer segment. A complete recording shall be made of each line televised.

All recordings shall be subject to the review process as described herein. The Contractor shall provide an acceptable picture that is distinct, clear, properly illuminated, of good contrast, and without distortion. The picture shall be of true and adequate color and tint, free from interference and at least eighty percent (80%) of the pipe periphery shall be visible above the waterline.

- 1. **General Review:** All recordings submitted by the Contractor to the FRSA shall be subject to review for acceptability of quality conforming to the minimum standards established herein and to check the Contractor's recording logs against the visible features.
- 2. **Unacceptable Inspection:** Review of the acceptability of a line segment video shall include the entire line from manhole to manhole. If any portion of the video inspection of a line is unacceptable, the entire segment will be deemed unacceptable and must be re-televised from manhole to manhole. A line that is partially televised and is incomplete due to an excusable condition (i.e., collapsed line) will be accepted for that televised segment only. Loss of color for all or part of a line may be cause for rejection.
- 3. **Lighting:** The picture, while moving forward, should be adequately illuminated to clearly ascertain with certainty cracks or fractures and their severity, in addition to the typical features, i.e., laterals and joints.
- 4. **Picture Clarity:** The picture must be clear and distinct without being obscured by dirty lenses, foggy pipeline condition, or out of focus due to operator inattentiveness.
- 5. **Unacceptable Flow Conditions:** Heavy flow exceeding the foregoing established criteria will be cause to reject the line segment televised. Any flow where the camera is underwater

and is not clearly in a line sag condition will, in general, be unacceptable recording conditions and the line segment shall be subject to rejection.

6. **Incorrect Manhole Identifications:** Incorrect written manhole identifications shall be cause for rejection if confusion is created and leaves doubt as to which line has been televised.
7. **Complete Line Segments:** All line segments must be televised complete from manhole to manhole on the same recording in a continuous run. Partial recording on one file and then completing the run on a separate file will not be accepted.
8. **Inaccurate Locations:** Any inaccuracy in the continuous footage meter or identified defect or features which leave doubt as to the accuracy of the locations or total length shall render the line segment recording unacceptable.
9. **Unknown Interference:** Any other unidentifiable defect such as equipment interference or malfunction, blurred or obscured images from an unknown source that inhibits the ability to completely, reliably and accurately review the recording shall constitute a basis for rejection.

8.12 Required Submittals – Not Used.

8.13 Payment

Payment for television inspection shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

9 Grouting Sanitary Sewer Pipe Joints

9.1 General

This work shall consist of all labor, materials, tools, equipment and incidentals required to grout pipeline joints using a packer injection method. The intent of grouting joints is to eliminate or reduce severe active infiltration on main line pipe scheduled for CIPP lining as part of this Contract to ensure the quality of the installed CIPP liner. The Contractor shall be trained in the appropriate safety methods regarding the grouts used under this Contract. The estimated number of main lines that will require grouting to remediate infiltration prior to CIPP Liner installation are identified in *Section III Lining List*.

9.2 Equipment

The equipment employed shall provide a means for introducing air under pressure into the void area created by the expanded ends of the packer pushing against the host pipe. The equipment shall also provide a means for continuously measuring, viewing, and recording the actual static pressure of the test medium and grout within the void area only

Void pressure data shall be transmitted from the void area directly to the monitoring equipment in the grouting truck or to the grouting truck via a video picture of a pressure gauge mounted on the packer and connected to the void area. All test monitoring shall be above ground and in a location to allow for simultaneous and continuous observation of the televising monitor and test monitoring equipment.

Grouting equipment shall consist of the packer and appropriate pumping and hosing systems capable of supplying an uninterrupted flow of sealing materials to completely fill the voids. Grout

pumping systems shall be sized to deliver a mixed volume of grout at a minimum of three gallons per minute (3 GPM) and thirty (30) gallons of uninterrupted flow within ten (10) minutes.

The volume of mixed grout pumped must be measured and recorded for each grouted joint.

The Contractor shall provide back-up bladders for pipe packers on-site any time grouting work is being conducted.

9.3 Material

Acrylamide and/or Acrylic based grouts shall be utilized and have the following characteristics:

1. A minimum of ten percent (10%) acrylamide base material by weight in the total grout mix. A higher concentration of acrylamide base material is recommended to increase strength or offset dilution during injection.
2. Product(s) and Manufacturer(s):
 - i. Avanti AV-100;
 - ii. Avanti AV-118; or
 - iii. FRSA Approved equal(s).

At the Contractor's discretion as necessitated by field conditions, the following additives may be selected and used in accordance with the Manufacturers' recommendations:

1. Strengthening Agents: A latex or diatomaceous earth additive may be added to increase compressive and tensile strength. The quantity of strengthening agent additive shall be as recommended by the Manufacturer and approved by the Engineer.
2. Dye: A Manufacturer approved water soluble dye without trace metals may be added to the grout tank(s) for visual confirmation.
3. Gel Time Modifier: A gel time extending agent may be used in accordance with the Manufacturer(s)' recommendations to extend gel time as necessary.

When using non-soluble additives, the grout tanks must have mechanical mixing devices to keep the additives in suspension and maintain a uniform solution of grout and additive.

9.4 Control Tests

1. Packer Tests – The Contractor shall demonstrate the acceptable performance of air test(s), including:
 - a. To ensure the accuracy, integrity and performance capabilities of the testing equipment, a demonstration test (barrel test) shall be performed by the Contractor. The test procedures shall be as follows:
 - i. After entering each pipeline segment with the test equipment, but prior to the commencement of joint testing, the Contractor shall position the test equipment on a section of sound sewer pipe between pipe joints, and perform a test as specified. The equipment shall hold a seven to ten PSI (7-10 PSI) test pressure for a period of fifteen (15) seconds with a pressure drop of less than one PSI (<1 PSI). In the event of a failed test, the Contractor shall repair any defective equipment and re-test to verify proper operation of all equipment.

2. Pump Tests - At the beginning of work, prior to application of grout, the Contractor shall perform a pump test. This test shall determine if proper ratios are being pumped from the grout component tanks at the proper rates and shall also measure pump rates. The Contractor shall use separate containers to capture the discharges from each of the grout component hoses to simulate the actual volumes of each component through the interconnect hoses, hose reel and length of grout hose, and to confirm accuracy of the grout pump totalizer. The Contractor shall take corrective action if ratios or rates are not within the Manufacturers' recommended standards.
3. Grout Tests – The Contractor shall perform and record a grout gel test in the presence of the Engineer. This test shall include the recording of the grout tank solution temperature, catalyst tank solution temperature, ambient air temperature in truck, and gel time of the sample. The test shall be performed whenever the following conditions occur:
 - a. At the beginning of each day. The material in the hoses shall be recycled to the tanks and a sample shall be taken;
 - b. Whenever new batches of grout are mixed; and
 - c. Whenever the temperature in the tanks or ambient temperature have changed by more than plus or minus ten degrees Fahrenheit ($\pm 10^{\circ}\text{F}$) from the previous gel test.

9.5 Pipe Preparation

1. Contractor shall clean and inspect pipe in accordance with Article 3, Parts 6 through 8. Contractor shall notify FRSA of obstructions or defects that may prevent the use of grouting equipment following initial cleaning and inspection.

9.6 Grout Preparation

1. The Contractor shall follow the manufacturers' recommendations for mixing and safety procedures.
2. Gel time shall be adjusted as necessary to compensate for changes in temperature in grout component tanks or hoses. The addition of dilution water to extend gel times is not acceptable unless the resulting base material exceeds ten percent (10%) by weight for solution grouts.
3. Gel times shall be within the following formula calculations unless the Contractor's experience and/or field conditions dictate otherwise.

a. **Gel Time** = $\left(\frac{\text{Volume of Packer Pipe Void Space (gal)}}{\text{Pumping Rate (gpm)}} \right) \left(\frac{60 \text{ sec}}{1 \text{ min}} \right) + (20 \pm 5 \text{ sec})$

- i. Packer/Pipe void shall be defined as the volume between the inflated packer and the inside pipe wall when the packer is inflated per manufacturer recommendations.
- ii. For example: an 8" pipe with a pack void space of 0.3 gallons would provide

$$\text{Gel Time} = \left(\frac{.3(\text{gal})}{3(\text{gpm})} \right) \left(\frac{60 \text{ sec}}{1 \text{ min}} \right) + (20 \text{ sec}) = 26 \text{ sec}$$

9.7 Joint Sealing for Mainlines

1. The Contractor shall position the mainline packer over the joint to be sealed with the aid of a CCTV camera in the line.
2. The Contractor shall pneumatically expand the packer sleeves such that they seal against the inside periphery of the pipe. This shall form a void area at the joint that shall be completely isolated from the remainder of the pipe line.
3. The Contractor shall then pump grout materials into this isolated area. The pump shall be operated until "refusal". The goal of this procedure is the applying of one quarter to one half (0.25 to 0.5) gallons of grout per inch of pipe diameter per pipe joint. Refusal shall mean the joint will not accept any more grout (because it has flowed throughout the void, through any joint failure and into the surrounding soil; or gelled or filled the available void space; and formed a cohesive seal stopping further grout flow). The Contractor shall record the amount of grout pumped on the sealing log.
4. Upon completion of the injection, the Contractor shall deflate the packer to break away from the ring of gel formed by the packer void. The packer should then be re-inflated and the joint retested at a pressure equal to the initial test pressure. If the joint fails this air test, the Contractor shall repeat the grouting procedure at no additional cost to the Owner, except for the additional grout injected. This sequence of air testing, grouting and subsequent air testing should be repeated until either the joint is sealed or it is determined that the grout consumption is too high. The final determination to stop subsequent attempts to seal a joint shall be made jointly between the Engineer and the Contractor. Should the void pressure meter not read zero point zero PSI plus or minus zero point five PSI (0.0 PSI $\pm$ 0.5 PSI), the Contractor shall clean the equipment of residual grout or make the necessary equipment repairs/adjustments to produce accurate void pressure readings.
5. If a mainline joint requires more than one (1) gallon of grout per pipe diameter inch per pipe joint, the Contractor shall modify grouting procedures. This modification shall stage grouting by pumping additional grout in up to four (4) gallon increments, waiting one (1) gel set cycle time or one (1) full minute, whichever is greater between stages. The maximum number of stages shall not exceed two (2) stages of four (4) gallons each unless approved by Owner.

9.8 Joint Sealing Verification

1. The grouting Contractor shall keep a record of grouted joints. This shall include recording the void pressure drop continuously on video and in writing immediately before sealing, and immediately after grouting. After the packer is deflated and moved, the Contractor shall record on video the visual inspection of the joint.
2. After grouting is complete, all pipe sections shall be final inspected by means of a color CCTV system. The inspection shall be conducted per the NASSCO Pipeline Assessment and Certification Program (PACP). One set of DVDs and reports shall be submitted by the Contractor to the Engineer and/or Owner. The costs for this inspection shall be incidental to the various grouting Contract pay items.

9.9 Required Submittals Payment

1. Equipment operating procedures and systems.
2. Chemical Grout information:
 - a. Description of chemical grout materials to be used.
 - b. MSDS sheets for all materials to be used.
3. Identification of the Manufacturers of the packers to be utilized on the project.

9.10 Payment

Payment for all labor, materials (except grout), equipment, tools and incidentals related to chemically grouting sanitary sewer pipe joints will be made at Contract unit price per EACH joint sealed of the applicable diameter.

Payment for grout shall be made at the Contract unit price per Gallon (Gal) of Chemical Grout installed.

10 Cured-In-Place Pipe Lining

10.1 General

This work shall consist of the rehabilitation of existing sewer lines by the installation of cured-in-place pipe (CIPP). A CIPP is formed by the insertion of a resin-impregnated flexible felt tube into the existing pipe. The tube is expanded in an inversion process so that it conforms to the inside walls of the host conduit, and is then heated to cure the thermosetting resin/felt tube composite, in place.

This specification covers the work necessary to furnish and install the CIPP, complete and in place. The Contractor shall provide all materials, labor, equipment, and services necessary for bypass pumping of sewage flows, cleaning and television inspection of sewer to be lined, installation and curing of liner, service re-connections, and final television inspection and testing of lined pipe system.

10.2 Material Specifications

1. **Tube:** The tube material shall meet the requirements of ASTM F 1216 or ASTM F 1743, Section 5.1.
 - A. **Absorbent Fabric Tube:** The tube shall consist of one or more layers of absorbent fabric capable of carrying resin, and capable of withstanding installation pressures and curing temperatures. The tube shall be compatible with the resin system used. The tube material shall be able to stretch to fit irregular pipe sections and negotiate bends. The outside layer of the tube shall be plastic coated with a material that is compatible with the resin system used. The tube shall be fabricated to a size so that when installed, will fit the internal circumference and the length of the pipe. Allowance should be made for circumferential stretch during inversion. For the pull-in methods of lining, the resin soaked felt tube shall have an outer plastic lining that effectively prevents the scrape off or wash off of resin.

For sewer lines with varying pipe diameters, the Contractor shall construct a custom made liner to ensure a tight fit in the host pipe with no wrinkling.

- B. Thickness: The finished tube shall have a uniform thickness within $\pm 10\%$ of the specified nominal tube thickness. Thickness shall be measured by compressing the tube material under a load equivalent to typical CIPP installation pressures.
- C. Plastic Coating: The outside layer of the tube (before inversion) shall be plastic coated with a transparent flexible material that is compatible with the resin system used. The plastic coating shall not be subject to delamination after cure of the CIPP in accordance with Section 5.2 of ASTM F 1216 or ASTM F 1743.
- D. Color: The tube shall be a light reflective color so that a clear, detailed examination with closed circuit television equipment may be made.
- E. Delaminations: The bond between all CIPP layers shall be strong and uniform. All layers, after cure, must form one homogeneous structural pipe wall with no part of the tube left unsaturated by resin. Delaminations in the test samples will be cause for rejection of the line segment rehabilitated. If in the opinion of the FRSA the video disks of the finished liner fail to show similar delamination, then more sampling and re-testing of the CIPP liner may be done by the Contractor to verify or refute the previous tests.
- F. Minimum Structural Properties: The CIPP system shall have the minimum structural properties given below:

CIPP Structural Properties

<u>Property</u>	<u>ASTM Test</u>	<u>Minimum Value</u>
Flexural strength	D790	4,500 PSI
Flexural modulus	D790	350,000 PSI

- 2. **Resin**: The resin system used shall be a thermoset polyester (or FRSA-approved) meeting the requirements of ASTM F 1216 or ASTM F 1743, Section 5.2.
 - A. The manufacturer shall certify that the proposed resin system and cure schedule are appropriate for the proposed application, and have been tested in laboratory and field conditions. The resin shall produce CIPP in accordance with the structural and chemical resistance requirements specified.
 - B. The resin used shall be compatible with the felt tube and be able to cure in the presence of water. The initiation temperature for cure shall be less than 180°F. Thixotropic agents that enable the resin system to possess pseudo plastic fluid flow properties and that do not interfere with visual inspection shall be added for viscosity control and to minimize resin washout. Resins may contain pigments that do not interfere with visual inspection or the physical testing of the CIPP filler materials as long as the final pipe product meets or exceeds the minimum standards set forth in this specification.
- 3. **Deviations**: The Contractor shall submit his price proposal for the appropriate length, size and thickness designated or required. No changes in prices will be entertained by the FRSA as a result of the Contractor modifying the properties of the liner due to unexpected parent pipe conditions.

10.3 CIPP Structural Requirements

1. The CIPP shall be designed in accordance with the requirements of ASTM F 1216, Appendix XI, with the following design parameters. Design calculations shall be submitted to the FRSA for approval prior to lining. The following values must be used in design calculations:

Design safety factor.....	2.0
Reduction factor of long-term effects..... (applied to flexural modulus)	0.50
Ovality – Review Video Recordings.....	2% minimum
Enhancement factor, K.....	7
Groundwater depth.....	to grade
Soil depth (above crown).....	to the surface
Soil modulus.....	1,000 psi
Soil density.....	120#/cf
Live load.....	0
Design condition.....	fully deteriorated
CIPP flexural strength.....	4,500 psi
CIPP flexural modulus.....	350,000 psi

Exclusion: No factors of design relating to adhesion or bonding to the existing pipe will be allowed in the design.

Cured CIPP Thickness: The finished thickness of the cured pipe shall not vary from the nominal minimum thickness specified or required by more than 10%. The minimum liner thickness for structurally sound pipe on this project shall be 4.5 mm. No liner will be approved for installation until the liner thickness calculations have been reviewed and approved by the FRSA.

10.4 General Liner Installation Procedures

Liner installation shall be per ASTM F 1216 or ASTM F 1743. The following installation procedures shall be adhered to unless otherwise approved by the FRSA:

1. **Cleaning of Sewer Line:** It shall be the responsibility of the Contractor to remove all internal debris and root intrusions from the sewer.
2. **Inspection of Pipelines:** Inspection of pipeline shall be performed by experienced personnel trained in locating breaks, obstacles, and service connections by closed-circuit television. The Contractor shall be responsible for field verifying the inside diameters of all sewers to be lined.
3. **Line Obstructions:** It shall be the responsibility of the Contractor to clear the line of obstructions such as solids, roots, protruding service connections or pipe fragments that will inhibit or prevent the insertion of the lining. If inspection reveals an obstruction that cannot be removed by conventional sewer cleaning/cutting equipment, the Contractor shall request that FRSA make a main line excavation to uncover and remove or repair the obstruction.
4. **Reinforced Pre-Liner Installation:** If required, pre-liners shall consist of two (2) or more layers of polyethylene or similar material and a reinforcing cord grid. Contractor shall

report any additional lines with significant inflow/infiltration or other defects that may warrant a pre-liner installation to the FRSA upon completion of the pre-lining television inspection.

5. Preparation of Liner:

- A. Designate location where uncured resin and un-impregnated liner will be vacuum impregnated prior to installation. Contractor shall allow FRSA to inspect materials and “wet-out” procedure if requested.
- B. Material shall be to manufacturer’s standards and meet the lining thickness required.
- C. Wet Out: The tube shall be impregnated with resin under controlled conditions. The volume of resin used should be sufficient to fill all voids in the tube material at nominal thickness and diameter. Excess resin shall be added to adjust volume changes due to polymerization and to compensate for any resin migration into cracks and joints in the host pipe. A nip roller system shall be used to uniformly distribute the resin throughout the tube. Unsaturated areas of the impregnated tube that are to be installed in the host pipe (the downstream turn back and the down-tube are excluded) will be cause for rejection. Should the unsaturated section of the tube be noticed before inversion, the unsaturated area of the tube shall be re-impregnated with the resin using methods developed by the Contractor, to the satisfaction of the FRSA.
- D. Transport resin impregnated liner to site immediately prior to inversion in suitable light-proof container with temperature maintained below 40 degrees Fahrenheit.
- E. In order to verify that the tube is wet out properly, batch tickets verifying the amount of resin used for each tube (lbs. per tube) and corresponding volume calculations shall be provided to the FRSA prior to tube delivery.

6. Inversion / Installation: Insert liner through existing manholes by means of an inversion process and application of hydrostatic head sufficient to fully extend liner to next designated manhole or by means of winching the liner through the pipe to the next designated manhole. Alternatively, the tube can be pulled into place and expanded by water inversion process with an inflation bladder. Non-toxic lubricant may be used to reduce friction. The inversion / installation process shall be conducted at a maximum controlled speed of two feet per second (2 ft./sec.)

7. Pressure: Tube installation forces or pressures shall be limited so as not to stretch the tube longitudinally by more than five percent (5%) of the original length. The tube manufacturer shall specify the minimum pressure required to hold the tube tight against the host pipe and the maximum allowable pressure so as not to over stretch or damage the tube. During installation, the pressure shall be maintained between the minimum and the maximum pressures until the installation has been completed.

8. Heated Water Curing of Liner:

- A. Description: After inversion is completed, a suitable heat source with equipment to circulate heated water throughout the pipe liner will be required. The equipment should be capable of delivering hot water throughout the section to uniformly raise the temperature above the temperature required to effect a cure of the resin. Incoming

water temperature during the cure period shall be 190 degrees Fahrenheit, $\pm$ 15 degrees Fahrenheit or as otherwise recommended by the manufacturer.

- B. Temperature Gauges: The heat source shall be equipped with suitable gauges to monitor the temperature of the incoming and outgoing water supply. Another such device should be placed between the impregnated tube and the pipe invert at the termination to monitor the temperatures for the duration of curing.
- C. Curing Temperatures: Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound, and the remote temperature sensor indicates that the temperature is of a magnitude to realize an exotherm or cure in the resin. Water temperature in the line during the cure period should be as recommended by the resin manufacturer. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. The post-cure temperature should be held for a period as recommended by the resin manufacturer, during which time the re-circulation of the water and cycling of the boiler to maintain temperature continues. The curing of the CIPP must take into account the existing pipe material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of soil). Temperature gauges shall be monitored by the Contractor every 15 minutes. A curing temperature / time log shall be maintained and provided to the FRSA Inspector immediately after the curing schedule is completed. The Contractor shall adhere to the resin manufacturer's guidelines and recommendations and shall retain a copy of the same on the jobsite.
- D. Cool Down: Using Cool Water after Heated Water Cure: The new pipe shall be cooled to a temperature below 100 degrees Fahrenheit (38 degrees Celsius) or as recommended by the resin manufacturer before relieving the static head in the inversion standpipe. Cool-down may be accomplished by the introduction of cool water into the inversion standpipe water being drained from the downstream end. Care must be taken in the release of head so that a vacuum will not be developed that could damage the newly installed pipe.

9. Steam Curing of Liner:

- A. After inversion is completed, suitable steam-generating equipment is required to distribute steam throughout the pipe liner. The equipment shall be capable of delivering steam throughout the section to uniformly raise the temperature within the pipe above the threshold required to effect a cure of the resin.
- B. The temperature in the line during the cure period shall be as recommended by the resin manufacturer.
- C. The steam-generating equipment shall be equipped with a gauge to monitor the temperature of the outgoing steam. The temperature of the resin being cured shall be monitored by placing gauges between the impregnated tube and the existing pipe at both ends to determine the temperature during cure. Temperature gauges shall be monitored by the Contractor every fifteen (15) minutes and recorded on logs which shall be provided to the Inspector immediately after the curing schedule is completed.

- D. Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound, and the remote temperature sensor indicates that the temperature is sufficient to realize an exotherm or cure in the resin. After initial cure is reached, the temperature shall be raised to post-cure temperatures recommended by the resin manufacturer. The post-cure temperature shall be held for a period as recommended by the resin manufacturer, during which time the distribution and control of steam to maintain the temperature continues. The curing of the CIPP must take into account the existing pipe material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of soil).
- E. Cool down using cool water after steam cure. The new pipe should be cooled to a temperature below 113 degrees Fahrenheit (45 degrees Celsius) before relieving the internal pressure within the section. Cool-down may be accomplished by the introduction of cool water into the section to replace the mixture of air and steam being drained from the liner. Care must be taken in the release of the air pressure so that a vacuum will not be developed that could damage the newly installed pipe.
10. **Required Pressures:** Before the curing begins, the pressure required to hold the flexible tube tight against the existing conduit shall be within the acceptable range specified by the tube manufacturer. Once the cure has started and dimpling for laterals is completed, the required pressure shall be maintained until the cure has been completed. Should the pressure deviate more than 2.3 ft of water (1 psi) from the required pressure, the installed tube shall be removed from the existing conduit. A continuous log of pressure during cure shall be maintained.
11. **Bypass Pumping:** The Contractor shall provide for the flow of sewage around the section or sections of sewer lines being installed.
12. **Water:** The Contractor shall be responsible for coordinating with the appropriate water authority for the availability of public water for this project. Refer to *Article 3, Part 6.3* for additional information.
13. **Liner Termination in Manholes:** Except where the liner extends through a manhole, the liner pipe shall be cut flush with the manhole wall and there shall be no visible annular space between the liner and invert. In manholes where the liner extends through the manhole, the top of the liner shall be cut flush with the manhole bench. Any voids shall be filled with a FRSA-approved grout. Both upstream and downstream liner ends shall be beveled to 22.5° from the flow line to mid-pipe by grinding.
14. **Annular Seal at Manholes:** Hydrophilic seals shall be installed at all liner-to-manhole connections. Hydrophilic seals shall be LMK Technologies Hydrophilic O-Rings, Hydrotite O-Ring (RSS-040P), LMK Technologies Insignia Hydrophilic End Seal Sleeves or approved equivalent.

Pipe Diameter

End Seal Requirements

8" – 12"

Require double-o rings or single LMK Insignia seals

15" – 30"

LMK Insignia end seals

- 15. Lining through Manholes to be Abandoned:** When the project requires the Contractor to line sanitary sewer through an existing manhole to be abandoned in place, the Contractor shall place sandbags over the liner once the inversion has taken place to keep the liner from raising up in the manhole. If sand bags cannot be placed over the liner, the Contractor shall be required to utilize water inversion method for liner installation, at no extra cost.
- Items 63 and 64: Abandon manhole 087-033 located beneath wooden deck in backyard of 2016 Randolph Drive. Allow FRSA to coordinate work with owner prior to beginning any work at this location.

10.5 Required Submittals

1. **Material and Curing Details:** The Contractor shall provide submittals on all lining materials and resins, and shall furnish manufacturer certification that the liner materials are in compliance with the Specifications, Codes, and standards referenced herein. The submittals shall include details of all component materials (end seals, pre-liners, etc.) and construction details including MSDS sheets and complete manufacturer's recommendations for storage procedures and temperature control, (step curing temperature/hours at each and final stage for each section thickness and length) handling, inserting the liner, and curing details.
2. **Chemical Resistance Data:** The CIPP shall meet the chemical resistance requirements of ASTM F 1216, Appendix X2. Test data from CIPP samples similar to that proposed for actual construction shall be submitted prior to installation. CIPP samples with and without plastic coating shall meet these chemical testing requirements.
3. **Long - Term Creep Data:** Long-term creep data in accordance with ASTM D 2990 shall be submitted by each manufacturer and/or pipe product supplier prior to installation. Duration of creep testing shall be a minimum of 10,000 hours.
4. **Structural Property Testing:** To verify past performance, the manufacturer shall submit a minimum of ten (10) independent laboratory test results from previous field installations of the same liner materials proposed for the actual installation. These test results must verify that the structural properties specified under Section 10.3.1 have been achieved in previous field applications.
5. **Design Thickness Calculations:** Prepared in accordance with these Detailed Specifications.
6. **Hydraulic Capacity Calculations:** The Contractor shall provide calculations which demonstrate that the liner pipe shall have at least 100% of full flow capacity of the original pipe before rehabilitation in a full gravity flow condition. Calculated capacities may be derived using a commonly accepted roughness coefficient.
7. **Training Certification:** Contractor shall submit evidence of installer training, testing and / or certification for the proper installation and use of manufacturer's products.
8. **Design Guide/BMP Manual:** Contractor shall submit installer's and/or manufacturer's manual of best management practices for design, quality control of liner manufacture and installation, including detailed inspection, testing of physical properties, retention of production samples, and taking of field samples.

10.6 Payment

Payment for sanitary sewer lining will be made at Contract unit price per Linear Foot (LF) of the various diameters of CIPP Lining installed. Measurement for payment will be based upon the section footage provided in *Section III Lining List*. Distance is measured from center-of-manhole casting to center-of-manhole casting. Should actual measured lengths and lengths provided *Section III* differ from the Contractor's field measurement by more than five (5) linear feet, FRSA field measurement shall be used to determine measurement for payment.

11 Sewer Service Reinstatement

11.1 General

1. Prior to installing the sewer liner and after performing any repair work, the Contractor shall locate the sewer lateral openings in the main by televising. Services capped or plugged at the main shall be documented.
2. Services that are capped, plugged, or not in use shall not be reopened. All live services shall be reinstated at the main. The Contractor shall utilize the pan and tilt feature of the TV camera to ascertain which services are capped at the main.
3. If the Contractor cannot ascertain through pan and tilt televising methods whether a sewer service is live or in use, he shall notify the FRSA a minimum of seventy-two (72) hours in advance of liner installation. The FRSA will provide final direction regarding service reinstatement for services in question.
4. After the sewer lining has been completed as required, the Contractor shall re-establish service connections to 100% of the original opening. Service reinstatement shall be done without excavation from the interior of the pipe by means of a television camera and a remotely controlled cutting device. The service cut-ins shall be smooth and even with no rough or jagged edges. All sewer services reinstated shall be smoothed with a wire brush upon reinstatement. The entire circumference (360°) of the sewer service reinstatement shall be televised and recorded on the post-lining recording.

Over-cutting of the opening will be cause for rejection. In the event of said over-cutting, the Contractor shall either make an open cut saddle type main line repair, or use a method of short-lining the service that overlaps the over-cut portion of the sewer liner. Other methods of correction may be used. The method of correcting an over-cut service must be approved by the FRSA prior to performing the corrective work.

The operator responsible for sewer service reinstatement shall be approved by the FRSA. The Contractor shall provide documentation to indicate the operator has sufficient prior training and experience to complete this work.

5. Sanitary sewer users shall not be without sewer service for more than eight (8) hours.
6. Any pieces of the liner that were cut from the service connections shall be captured at the downstream manhole and disposed of by the Contractor. No cut liner pieces shall be left in the pipe lateral, main, or manhole.

11.2 Offsite Sewer Service Reinstatement

In certain cases, the FRSA may direct the Contractor to a location offsite in order to reinstate a sanitary sewer service that has been previously lined over. Service reinstatement be completed as

specified elsewhere herein. Work shall also include a separate mobilization to the service site, traffic control and safety measures as specified elsewhere herein.

11.3 Required Submittals

1. Names and documentation of experience and training for all operators responsible for service reinstatement.
2. Reinstatement equipment list and specifications.

11.4 Payment

Payment for sewer Service Reinstatement will be made at the Contract unit price per Each (EA).

Payment for Offsite Service Reinstatement will be made at the Contract unit price per Each (EA).

12 Protruding Service Removal

12.1 General

It shall be the responsibility of the Contractor to clear the line of service connections protruding greater than one inch (1"), regardless of service pipe material. Protruding services shall be ground or cut within one-half inch (1/2") of the main line pipe prior to lining. Protruding services must be removed/ground utilizing a robotic cutting tool; the use of "can" cutters will not be allowed. The FRSA must be notified of each service protruding greater than one inch (1") prior to removal. If inspection reveals the protruding service cannot be removed by conventional cutting equipment, the Contractor shall request that FRSA to make an open-cut repair to remove the obstruction.

12.2 Required Submittals

1. Protruding service removal equipment list and specifications.

12.3 Payment

Payment for Protruding Service Removal will be made at the Contract unit price per Each (EA).

13 Quality Assurance

13.1 General

The Contractor shall televise the liner after installation and after services have been reinstated. The television recording shall be used by the FRSA to perform final inspection on the line. The lining shall be impervious and free of any leakage between the pipe and the surrounding ground, as well as any leakage at the manholes between the parent pipe and the liner. All service cuts shall be in precise alignment with the actual service pipe; displacement of the liner cut from the service due to shrinkage, creep, etc., will not be permitted.

The Contractor shall repair, at his own expense, any defects in the liner that will affect the integrity or strength of the pipe and any visual or functional defects such as wrinkles, drill holes, folds, pillows, etc. All repairs will be performed in a manner that is mutually agreed upon by the FRSA and the Contractor.

Leakage testing of the installed liner pipe will not be required on this project.

Hydraulic infiltration testing will not be required on this project.

Defects: The finished liner shall be continuous over the entire length of an inversion run between two manholes or access points and shall be free of visual defects such as foreign inclusions, dry spots, pin holes, lifts, and de-laminations.

Wrinkles: Any wrinkles in the bottom half of the finished liner pipe that are larger than 5% of the pipe diameter are unacceptable and shall be removed and repaired by the Contractor at the Contractor's expense; method to be approved by the FRSA.

Annular void: If an annular void exists, Contractor shall either devise a method to grout the void to the satisfaction of the FRSA or repair or replace that section of pipe at his sole expense. Methods of repair shall be proposed by the Contractor and submitted to the FRSA for review and approval.

Post-Lining Televising: Visual inspection of the CIPP shall be in accordance with *ASTM F 1216*.

Third Party Testing: All material testing referred to in this contract specification shall be done by accredited THIRD PARTY testing laboratories. The Contractor shall inform the FRSA at the pre-construction meeting of the testing laboratory he intends to use. All costs for testing shall be incidental to the lining work.

Physical Samples

Pipe samples shall be cut and tested from a minimum number of segments of the cured pipe segments installed in this project based on the table below. Liner segments to be tested will be determined by the FRSA by random methodology. Samples shall be prepared and tested in accordance with *ASTM F 1216*. Copies of certified test reports by an approved testing laboratory shall be provided to the FRSA. If ten percent (10%) or more of the samples tested do not meet the test requirements listed below, the Contractor will be required to provide an extended ten (10) year warranty (total) for all sewer segments lined under this contract. Line segments with structural properties less than fifty percent (50%) of specification shall be removed and new sewer installed from manhole to manhole per FRSA standards.

Testing Frequency Table

<u>Liner Diameter</u>	<u>Sample Frequency</u>
8-12"	25% of segments
15-21"	50% of segments
24"+	Each segment

Required Structural Properties

<u>Property</u>	<u>Minimum Value</u>	<u>ASTM Test Method</u>
Flexural Strength	4,500 PSI	D790
Flexural Modulus	350,000 PSI	D790

Sampling: For each inversion length tested, CIPP samples shall be cut from a section of cured pipe at an intermediate manhole or at the termination point that has been inverted through a like diameter pipe which has been held in place by a suitable heat sink, such as sandbags. All samples shall be labeled before shipment to the testing laboratory.

Sampling Procedure: The sample shall be large enough to provide a minimum of three but preferably five specimens for flexural testing. The full CIPP sample wall thickness shall be tested whenever possible. If the sample is irregular or distorted such that proper testing is inhibited, wall

thickness shall be machined away from only the inside pipe face of the sample. Test specimens shall be oriented on the testing machine with the interior surface of the CIPP in tension.

The following test procedures shall be followed after the sample is cured and removed.

1. **Flexural (bending) Properties:** The tangent flexural modulus of elasticity and flexural stress shall be measured for gravity and pressure pipe applications in accordance with Test Method D 790, Test Method #1 - Procedure A.
2. **Thickness Measurement:** The thickness of the CIPP will be monitored by the testing lab using the above referenced flexural samples. If there is a dispute between the Contractor and the FRSA as to the actual thickness of the CIPP based on these samples, then the thickness will be established by means of Ultrasonic Thickness Measurement. The thickness measurements will be taken using an ultrasonic thickness gauge or flaw detector. A series of four (4) measurements will be taken at various points inside the pipe and an average thickness will be determined. This thickness will be the basis for any penalty for substandard thickness and said testing will be done at the Contractor's expense.

13.2 Required Submittals

1. Third party test results.

13.3 Payment

Payment for quality assurance shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

The FRSA will retain ten percent (10%) of all payments until the physical testing data has been submitted, reviewed and approved.

14 Restoration Work

14.1 General

All restoration of private and public property, sidewalks, driveways, all other slab work, concrete and asphalt, drainage channels, storm sewers and dry wells, disturbed or damaged as a result of this construction project shall be promptly completed, in accordance with roadway authority standards or on private property equal to or better than the pre-construction conditions as directed by the FRSA and guaranteed by the Contractor for a period of two (2) years following satisfactory completion and final acceptance of the total Contract.

All excavated areas shall be guaranteed against subsidence and settlement for a period of three (3) years upon final completion of the contract. Any restoration work damaged as a result of trench subsidence shall be restored again at no cost to the FRSA.

All storm sewer, watermain, gas main, corrugated metal pipe, drainage tile or other drainage devices shall be repaired and re-laid or replaced at original elevations. Pipes which have been, in the estimation of the FRSA significantly damaged by the Contractor, shall be replaced with new pipe of the same diameter, length and type, at no added expense to the FRSA; any necessary couplings and fittings shall be used, as necessary, and the work shall be to the FRSA's satisfaction. When necessary, temporary restoration of roads, drives, fences, etc., will be required.

Reference *General Provisions and Technical Specifications for Sanitary Sewer Construction, Section 4:2*, for specifications on seeding and sodding and fertilizer, and *Sections 250, 251, and 252* of the *IDOT Standard Specifications for Road and Bridge Construction in Illinois*, Current Edition.

On private property and public Right-of-Way, the Contractor shall remove and replace (or replant) all bushes, shrubs and plants damaged or destroyed with species of similar type, size and quantity. These shall be guaranteed for a period of one (1) year after job completion.

14.2 Required Submittals – Not used.

14.3 Payment

Payment for restoration work shall be included in the Contract unit price per Linear Foot (LF) for the various sanitary sewer lining pay items.

15 Emergency Excavation

15.1 General

In the event that host pipe is damaged or fails as a result of the Contractor's operations and equipment becomes lodged or sanitary service is interrupted, the Contractor shall be responsible to restore sanitary service and retrieve equipment including but not limited to excavation, backfill, restoration, and pipe repair. The Contractor shall also be responsible for any damage to property resulting from a related backup of sewage in the pipe.

The Contractor shall retain or partner with a licensed and insured on-call excavating contractor available for immediate dispatch for the duration of the Contract. Contractor must be registered and bonded with the FRSA prior to beginning work. A list of licensed and bonded contractors is available upon request. FRSA Plumbing Contractor Registration information is provided in *Section VI*.

Upon discovery of a host pipe failure, the Contractor must immediately notify the on-call excavating contractor and FRSA. The on-call excavating contractor shall have personnel mobilized and on-site within two (2) hours of notification by the Contractor for initial evaluation and shall begin emergency excavation, repair, or bypass operations to restore sanitary sewer service within 24 hours.

The on-call excavating contractor must maintain access to the following equipment and materials for use in an emergency:

- Tracked excavators sized appropriately for the maximum sewer depth.
- Trench shoring, shields, etc. meeting OSHA requirements.
- Materials conforming to those detailed on the FRSA Standard Detail Sheet (provided in *Section V* of the contract documents)

FRSA will have representation on site during all emergency repair activities for the purposes of documenting all equipment labor and materials incorporated into the repair.

15.2 Equipment Entrapment/ Pipe Failure Protocol

1. The Contractor shall immediately dispatch the designated on-call excavating contractor to the site to expose the failed/ stuck equipment and/or pipe.
2. The Contractor shall immediately notify FRSA and the municipality or roadway authority having jurisdiction.
3. Where sanitary service is impeded, residents and businesses shall be notified as necessary. Emergency bypass pumping shall be implemented as necessary.
4. The Contractor shall expose the pipeline via open-cut excavation.

5. The failed section of piping shall be removed and any equipment retrieved.
6. The damaged section shall be replaced with new pipe and transition couplings. Materials must conform to those detailed on the FRSA Standard Detail Sheet provided in *Section V*.
7. Replacement pipe shall be bedded and backfilled with approved materials, per the FRSA Standard Detail Sheet.
8. Site restoration, including HMA or PCC pavement, curb and gutter, sidewalk, turf, etc. shall be completed following the emergency. Restoration shall be completed per the requirements of *Section 14, Restoration Work*, included herein.

15.3 Incident Reporting

Within 48 hours of any emergency excavation event resulting from stuck equipment or pipe failure, the Contractor shall submit a formal written incident report detailing the following:

- Root cause of failure.
- Timeline of the emergency response of the on-call contractor.
- Quantities of pipe, couplings, and backfill material.
- Measures implemented to prevent recurrence on subsequent work.

15.4 Required Submittals

1. On-call contractor statement of qualifications. Qualifications should demonstrate main line sanitary sewer repair projects.
2. List of available equipment.
3. List of contacts available for on-call work.

15.5 Payment

No separate payment will be made for Emergency Excavation work in cases that are determined, by FRSA, that the host pipe or equipment failure was caused by actions of the Contractor.

In cases it is determined, by FRSA, that the host pipe failure was not caused by actions of the Contractor, FRSA shall reimburse the Contractor for costs associated with Emergency Excavation work upon FRSA approval of Contractor submitted invoices detailing time, material, and labor costs.

16 Warranty

The Contractor shall unconditionally warrant their products and workmanship for a period of two (2) years commencing on the date installation of the entire system is completed and accepted, in writing, by the FRSA. The Contractor shall repair, at his own expense, any defects in the liner that will affect the integrity or strength of the pipe. All repairs will be performed in a manner that is mutually agreed upon by the FRSA and the Contractor. Any such repairs shall likewise be covered by the same warranty period from the date of subsequent installation and written approval by the FRSA.

Any repairs required after the liner is installed and within the two (2) year warranty period will require testing in accordance with *T.S. 9 Acceptance Tests, Pages 94 through 98 of the General Provisions and Technical Specifications for Sanitary Sewer Construction*. This testing shall be performed by the Contractor at no additional cost to the FRSA. Complete site restoration of any repairs shall also be the responsibility of the Contractor.

Not to be used for bidding purposes

Section II

Contract Forms

Proposal

Project: 2026-2027 Sanitary Sewer System Lining, Capital Project No. 2737

Location: Existing sanitary sewer collection systems located in the City of Rockford, the City of Loves Park, the Village of Machesney Park, the Village of Cherry Valley, and Rockford Township in Winnebago County, Illinois.

Completion Date for all lining, televising, and testing: July 31, 2027.

Completion Date for corrective work: 30 Calendar Days from FRSA's issuance of Notice of Required Corrective Work

Liquidated Damages: Deduction per Calendar Day per Article 108.09 of *IDOT Standard Specifications for Road and Bridge Construction*, current edition.

To: Board of Trustees
Four Rivers Sanitation Authority
3501 Kishwaukee Street
Rockford, IL 61109

From: _____
(Individual, Partnership or Corporation, as case may be)

(Address of Individual, Partnership or Corporation)

I (We), the undersigned, hereby propose to furnish all materials, equipment, tools, services, labor, and whatever else may be required to construct and place in service the above subject Sanitary Sewer for the Four Rivers Sanitation Authority all in accordance with the plans and specifications, provided by Four Rivers Sanitation Authority. The undersigned also affirms and declares:

1. That I (we), have, examined and am (are) familiar with all the related contract documents and found that they are accurate and complete and are approved by the undersigned.
2. That I (we), have carefully examined the site of the work, and that, from my (our) investigation, has satisfied myself (ourselves) as to the nature and location of the work, the character, quality, and quantity of materials and the kind and extent of equipment and other facilities needed for the performance of the work, the general and local conditions and all difficulties to be encountered, and all other items which may, in any way, effect the work or its performance.
3. That this bid is made without any understanding, agreement or connection with any other person, firm, or corporation making a bid for the same purposes, and is in all respects fair and

without collusion or fraud; and that I (we) are not barred from bidding as a result of a bid-rigging or bid-rotating conviction.

4. That accompanying the Proposal is a Bidder's Bond in the amount specified in Article 1, Notice to Bidders, payable to the Board of Trustees of the Four Rivers Sanitation Authority, which it is agreed, shall be retained as liquidated damages by said Four Rivers Sanitation Authority if the undersigned fails to execute the Contract in conformity with the contract documents incorporated in the contract documents and furnish bond as specified, within ten (10) days after notification of the award of the contract to the undersigned.
5. The Bidder is of lawful age and that no other person, firm or corporation has any interest in this Proposal or in the Contract proposed to be entered into.
6. The Bidder is not in arrears to the Four Rivers Sanitation Authority, upon debt or contract, and is not a defaulter, as surety or otherwise, upon any obligation to the Four Rivers Sanitation Authority.
7. No officer or employee or person whose salary is payable in whole or in part by the Four Rivers Sanitation Authority is, shall be or become interested, directly or indirectly as a contracting party, partner, stockholder, surety or otherwise, in this Proposal, or in the performance of the Contract, or in the work to which it relates, or in any portion of the profits thereof.
8. The Bidder which I represent complies with all applicable requirements of the Americans with Disabilities Act (ADA) and the Occupational Safety and Health Act (OSHA) and that if said bidder is awarded a contract, it will complete all OSHA-required or ADA-required employee and customer training, will make available all required information, and will hold harmless and indemnify the Four Rivers Sanitation Authority and the Four Rivers Sanitation Authority's representatives.

In regard to participation in an approved Apprenticeship program, upon request, Contractor will be required to provide written proof of participation.

9. The undersigned, as Bidder, declares that he has adopted and promulgated written sexual harassment policies in accordance with Public Act 101-0221 and will make this information available upon request.
10. The undersigned, as Bidder, declares he will comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on public works projects (including Four Rivers Sanitation Authority) to submit certified payroll reports via the State's Certified Transcript of Payroll Portal found at <https://labor.illinois.gov/laws-rules/conmed/certifiedtranscriptofpayroll.html>.
11. The undersigned, as Bidder, declares he will comply with the Federal Drug Free Workplace Act.
12. The undersigned, as Bidder, declares he will comply with Public Act 83-1030 entitled "Steel Products Procurement Act".
13. The undersigned, as Bidder, declares he will comply with Public Act 96-929 (30 ILCS 570) regarding Illinois residents' employment.

14. The undersigned, as Bidder, declares he will comply with non-discrimination in employment in accordance with the Illinois Fair Employment Practices Commissions Rules & Regulations.
15. The undersigned, as Bidder, declares that he currently participates in an apprenticeship or training program that is registered with the United States Department of Labor's Bureau of Apprenticeship and Training or other acceptable State of Illinois Department of Labor monitored program.

In submitting this bid, it is understood that the right is reserved by the Four Rivers Sanitation Authority to reject any and all bids. It is agreed that this bid may not be withdrawn for a period of sixty (60) days from the opening thereof.

The undersigned further declares that he (they) has (have) carefully examined the following items of work and that the cost of all the work to complete this project is given in this Proposal.

Not to be used for bidding purposes

2026-2027 Sanitary Sewer System Lining, Capital Project No. 2737

Proposal Form

Item No.	Quantity	Unit	Description	Unit Price (In Writing)	Unit Price (In Figures)	Total Price (In Figures)
1	6,037.5	LF	8" Diameter CIPP Lining			
2	7,484.9	LF	9" Diameter CIPP Lining			
3	4,052.2	LF	10" Diameter CIPP Lining			
4	595.3	LF	12" Diameter CIPP Lining			
5	755.0	LF	15" Diameter CIPP Lining			
6	306.3	LF	18" Diameter CIPP Lining			
7	289.1	LF	24" Diameter CIPP Lining			
8	350	EA	Service Reinstatement			
9	5	EA	Offsite Service Reinstatement			
10	113	EA	Protruding Service Removal			
11	111	GALLON	Chemical Grout			
12	13	EA	Grouting Pipe Joints, 8"			
13	7	EA	Grouting Pipe Joints, 10"			
14	2	EA	Grouting Pipe Joints, 24"			
15	1	LS	Traffic Control			
Bid Total:				(In Writing)	(In Figures)	

Please note: This Project will be awarded, if at all, to a single bidder. Bids will be compared on the total price bid. In accordance with Section I, Article 2, Parts 3.10 and 3.11, FRSA is responsible for selecting the lowest, responsive, responsible bidders. FRSA reserves the right to reject any and all bids and to accept the bid which they deem most favorable to the interest of FRSA after all proposals have been canvassed.

The undersigned acknowledges receiving Addendum numbers _____, _____, _____, and realizes that all Addenda are considered part of the Contract.

(Name of Contractor)

By: _____
(Signature)

Name: _____ Title: _____ Date: _____

Fair Employment Practices Affidavit of Compliance

Project: 2026-2027 Sanitary Sewer System Lining, Capital Project No. 2737

NOTE: THE BIDDER MUST EXECUTE THIS AFFIDAVIT AND SUBMIT IT WITH ITS SIGNED BID. THE FOUR RIVERS SANITATION AUTHORITY CANNOT ACCEPT ANY BID WHICH DOES NOT CONTAIN THIS AFFIDAVIT

_____, being first duly sworn, deposes and says that:
(Name of person making affidavit)

They are: _____ of _____
(Officer's Title) (Company Name)

that said company is and "Equal Opportunity Employer" as defined by Section 2000(e) of Chapter 21, Title 42 of the United States Code annotated and Federal Executive Orders #11375 which are incorporated herein by reference;

and that said company will comply with any and all requirements of Title 44 Admin. Code 750. APPENDIX A – Equal Opportunity Clause, Rules and Regulations, Illinois Department of Human Rights, which read as follows:

"In the event of the contractor's non-compliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), the contractor may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance to this contract, the contractor agrees as follows:

1. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizen status, age, physical or mental handicap unrelated to ability, sexual orientation, military status or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
2. That, if he or she hires additional employees in order to perform this contract or any portion of this contract, he or she will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the areas from which he or she may reasonably recruit and he or she will hire for each job classification for which employees are hired in a way that minorities and women are not underutilized.
3. That, in all solicitations or advertisements for employees placed by him or her or on his or her behalf, he or she will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, physical or mental handicap unrelated to ability, sexual orientation, military status or an unfavorable discharge from military service.
4. That he or she will send to each labor organization or representative of workers with which he or she has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the contractor's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations. If any labor organization or representative fails or refuses to cooperate with the contractor in his or her efforts to comply with such Act and Rules and Regulations, the contractor will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations under the contract.
5. That he or she will submit reports as required by the Department's Rules and Regulations, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Departments Rules and Regulations.
6. That he or she will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.
7. That he or she will include verbatim or by reference the provisions of this clause in every subcontract awarded under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply with the provisions. In addition, the contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

(Source: Amended at 32 Ill. Reg. 16484, effective September 23, 2008)"

Ill. Dept of Human Rights Registration No.: _____ Expiration Date: _____

Signature

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we:

_____ (hereinafter called the Principal) and

_____ (hereinafter called the Surety)

a Corporation chartered and existing under the laws of the State of _____ with its principal offices in the City of _____ and authorized to do business in the State of Illinois are held and firmly bound onto the Four Rivers Sanitation Authority (FRSA) of Winnebago County, Illinois, in the full and just sum of: **FIVE (5%) OF THE TOTAL BID PRICE** good lawful money of the United States of America, to be paid upon demand of the FRSA, to which payment will and truly to be made we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted to FRSA, a proposal for The 2026-2027 Sanitary Sewer System Lining project. Which shall include all labor, materials, equipment, and supervision to line existing sanitary sewers with cured-in-place pipe (CIPP). This project consists of lining up to approximately 19,520 LF of existing sanitary sewers ranging from 8" to 24" in diameter, reinstating existing service connections on lined sewer mains, and all other appurtenances as indicated in the Contract documents.

WHEREAS, the Principal desires to file this bond, in accordance with law, to accompany this Proposal.

NOW THEREFORE, The conditions of this obligation are such that if the Proposal be accepted, the Principal shall, within ten days after the date of receipt of a written notice of award of Contract, execute a Contract in accordance with the Proposal and upon the terms, conditions, and prices set forth therein, in the form and manner required by FRSA, and execute a sufficient and satisfactory Contract Performance Bond payable to said FRSA in an amount of one hundred percent (100%) of the Contract price (including alternates) in form and with security satisfactory to said FRSA, then this obligation to be void, otherwise to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid FRSA, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed
and sealed this _____ day of _____, 20_____.

Principal

(Seal)

By _____

Name: _____

Title: _____

Date: _____

Attest:

Secretary

Surety

(Seal)

By _____

Name: _____

Title: _____

Date: _____

Agreement

1. General

THIS AGREEMENT, made and concluded this _____ day of _____, 2026, between the Four Rivers Sanitation Authority (FRSA), Rockford, Illinois, acting by and through the Board of Trustees, and _____, his/their executors, administrators, successors or assigns:

2. Scope of Work

WITNESSETH: That for and in consideration of the payments and agreements made in the Proposal attached hereto, to be made and performed by FRSA and according to the terms expressed in the Bond referring to these presents, the Contractor agrees with FRSA at his/their own proper cost and expense to do all the work, furnish all equipment, materials and all labor necessary to complete the work in accordance with the plans and specifications hereinafter described, and in full compliance with all of the terms of this agreement and the requirements of FRSA and its representative.

And it is also understood and agreed that the Bidding Requirements, Detailed Specifications, Contract Forms, General Conditions, General Requirements, Technical Specifications, Plans, Addenda, and provisions required by law are all essential documents of the contract, and are a part hereof, as if herein set out verbatim or as if attached, except for titles, subtitles, headings, table of contents and portions specifically excluded.

3. Contract Price

FRSA shall pay to the Contractor, and the Contractor shall accept, in full payment for the performance of this Contract, subject to any additions or deductions provided for hereby, in current funds, the Total Contract Price of _____ and 00/100 (\$ _____).

Payments are to be made to the Contractor in accordance with and subject to the provisions of Section 7 of this Agreement, which is a part of this Contract.

4. Bond

The Contractor has entered into and herewith tenders a bond of even date herewith, in the penal sum of _____ and 00/100 (\$ _____) to insure the faithful performance of this Contract, which said bond is hereby made a part of this Contract by reference.

5. Maintenance and Guarantee

The Contractor shall promptly repair, replace, restore or rebuild any imperfections that may arise and shall maintain satisfactory to FRSA all work for a period three years from the date of final acceptance of the Contract for trench settlement and for a period of two years all other work, except where periods of maintenance and guarantee are provided for. The Contractor shall, for this period, indemnify and save harmless the FRSA, its officers and agents from any injury done to property or persons as a direct or alleged result of imperfections in the Contractors' work, and shall immediately assume and take charge of the defense of such action or suits in like manner and to all intents and purposes as if said actions and suits had been brought directly against the Contractor.

If the Contractor shall fail to repair, replace, rebuild or restore such defective or damaged work promptly after receiving notice given by FRSA, the FRSA shall have the right to have the work done by others and to call on the Contractor and his bondsman to pay the costs thereof.

6. Contract Execution

IT IS EXPRESSLY UNDERSTOOD AND AGREED that the entire improvement shall be done in a thorough and workmanlike manner, under the direction and to the satisfaction of FRSA and in full compliance with all the requirements of its representative under them. All loss or damage arising out of the nature of the work to be done, or from any detention of unforeseen obstruction or difficulty which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the Contractor.

The Contractor will be held responsible for all accidents, and hereby agrees to indemnify and protect FRSA from all suits, claims, and actions brought against it, and all cost, and damages which FRSA may be put to by reason of an injury or alleged injury, to the person or property of another in the execution of this contract, or the performance of the work, or in guarding the same, or for any material used in its prosecution or in its construction.

Any person employed on the work who shall refuse or neglect to obey the directions of FRSA or its representative, or who shall be deemed by FRSA to be incompetent, or who shall be guilty of any disorderly conduct, or who shall commit any trespass on any public or private property in the vicinity of the work, shall at once be removed from the work by the Contractor when so requested by FRSA.

Any request to extend the contract completion date must be considered by the Board at the Board meeting prior to the then-existing contract termination date. Any deviation from this action will result in the liquidated damage clause in the contract to be exercised.

7. Payments to Contractor

FRSA hereby covenants and agrees, in consideration of the covenants and agreements in this Contract, specified to be kept and performed by the Contractor and subject to the conditions herein contained, and if FRSA receives an acceptable invoice prior to the tenth day of the month and receives approval of the work by the FRSA's Director of Engineering, FRSA shall issue payment before the fifth day of the succeeding month. If FRSA receives an acceptable invoice on or after the tenth day of the month, FRSA shall issue payment before the fifth day of the second succeeding month.

FRSA reserves the right at all times to refuse to issue payment in case the Contractor has neglected or failed to pay any subcontractors, workmen or employee on the work.

8. Subcontracts

No part of the work herein provided for shall be sublet or subcontracted without the express consent of FRSA, to be entered in the records, and in no case shall consent relieve the Contractor from the obligation herein entered into, or change the terms of this Agreement.

9. Contractor's Responsibility

This Contract shall extend to and be binding upon the successors and assigns, and upon the heirs, administrators, executors, and legal representatives of the Contractor.

In consideration of and to induce the award of this Contract to him, the Contractor represents and warrants: that he is not in arrears to FRSA upon debt of the Contract and that he is not a defaulter, as surety, contractor or otherwise; that he is financially solvent and sufficiently experienced and competent to perform the work; that the work can be performed as called for by the Contract; that the facts stated in his proposal and the information given by him is true and correct in all respects, and that he is fully informed regarding all the conditions affecting the work to be done and labor and materials to be furnished for the completion of this Contract and that his information was secured by personal investigation and research.

The Contractor shall pay not less than the prevailing wage rate as determined by the Department of Labor, to all laborers, workmen and mechanics performing work under this Contract. Contractor shall comply with current revisions of the wage standards; as required by law. The Contractor shall be responsible for verifying the prevailing wages each month and notifying all subcontractors of the appropriate monthly rates. The State of Illinois requires contractors and subcontractors on FRSA projects to submit certified payroll reports via the State's Certified Transcript of Payroll Portal currently found at: <https://labor.illinois.gov/laws-rules/conmed/certifiedtranscriptofpayroll.html>. The Contractor is responsible for verifying current website.

In regard to nondiscrimination in employment, Contractor will be required to comply with the Illinois Fair Employment Practices Commission's Rules and Regulations as provided herein.

The Contractor shall comply with the American Disabilities Act of 1990 (ADA). The Contractor will hold harmless and indemnify FRSA and their representatives from all:

- (a) suits, claims, or actions;
- (b) costs, either for defense (including but not limited to reasonable attorney's fees and expert witness fees) or for settlement, and;
- (c) damages of any kind (including but not limited to actual, punitive, and compensatory damages)

relating in any way to or arising out of the ADA, to which said firm is exposed or which it incurs in the execution of the contract.

Contractor shall also comply with Public Act 101-0221, which requires any party to a contract to adopt and enforce a written policy regarding sexual harassment that includes, as a minimum, the following information:

- (a) the illegality of sexual harassment
- (b) the definition of sexual harassment under Illinois State law;
- (c) a description of sexual harassment, utilizing examples;
- (d) my (our) organization's internal complaint process including penalties;
- (e) through the Illinois Department of Human Rights and the Illinois Human Rights Commission;
- (f) directions on how to contact the Department and the Commission; and
- (g) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act.

Upon request this information will be provided to the Illinois Department of Human Rights. Upon FRSA award of a contract, FRSA will be provided this information described no more than ten working days after FRSA issues its award notification.

The Contractor shall comply with Public Act 96-929 (30 ILCS 570) which provides that Illinois residents be employed on Illinois public works projects, provided there has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and further, that Illinois workers are available and capable of performing the particular type work involved.

The Contractor shall comply with all rules and regulations of OSHA during the execution of this Contract.

The Contractor shall comply with the Federal Drug Free Workplace Act.

The Steel Products Procurement Act, Illinois Public Act 83-1030, requires that steel products used or supplied in performance of this Contract or subcontract shall be manufactured or produced in the United States with three exceptions, as explained in the Instructions to Bidders.

The Contractor shall comply with Public Act 96-1416 regarding the disposal of CCDD and uncontaminated soil at CCDD fill sites as explained in the Instructions to Bidders.

10. Time

Work under this Agreement shall be commenced upon written Notice to Proceed. All lining, televising, and testing shall be completed by July 31, 2027. All corrective work shall also be completed within thirty (30) days of FRSA's notice of required corrective work.

11. Liquidated Damages

Failure to complete work by the completion deadline, and/or corrective work within the allowed time will result in liquidated damages. The liquidated damage amount will be as listed on the Schedule of Deductions per Calendar Day in Article 108.09 of the *Illinois Department of Transportation Standard Specifications for Road and Bridge Construction*, current edition.

12. Counterparts

This Agreement may be executed and recorded in counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same instrument. The Parties hereby acknowledge and agree that facsimile signatures or signatures transmitted by electronic mail in so-called "pdf" format shall be legal and binding and shall have the same full force and effect as if an original of this Agreement had been delivered. Each of the parties (a) intend to be bound by the signatures on any document sent by facsimile or electronic mail, (b) are aware that the other party will rely on such signatures, and (c) hereby waive any defenses to the enforcement of the terms of this Agreement based on the foregoing forms of signature.

13. Seals

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals, and such of them as are corporations have caused these presents to be signed by their duly authorized officers.

(Seal)

Four Rivers Sanitation Authority
Winnebago County, Illinois

By _____
President, Board of Trustees

ATTEST: _____
Clerk of the Board

Contractor

(Corporate Seal)

By _____
Contractor's Officer

Name: _____

Title: _____

Date: _____

ATTEST: _____

Labor & Material Payment Bond

TO: _____ Contractor Name

_____ Contractor City, State

KNOW ALL MEN BY THESE PRESENTS

That _____ (Contractor)

as Principal, and _____

a corporation of the State of _____ as Surety, are held and firmly bound unto the Four Rivers Sanitation Authority, as Obligee, for the use and benefit of claimants as hereinafter defined in the amount of

_____ Dollars (\$ _____), for the payment where of Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____ 20__ Entered into a Contract with Obligee for _____ in accordance with contract documents prepared by the Four Rivers Sanitation Authority which Contract is by reference made a part hereof, and is hereinafter referred to as "the Contract".

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Principal shall promptly pay for all laborers, workers and mechanics engaged in the work under the Contract, and not less than the general prevailing rate of hourly wages of a similar character in the locality in which the work is performed, as determined by the State of Illinois Department of Labor pursuant to the Illinois Compiled Statutes 280 ILCS 130 / 1-12 et.seq. and for all material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

1. A claimant is deemed as any person, firm, or corporation having contracts with the Principal or with any of Principal's subcontractors for labor or materials furnished in the performance of the Contract on account of which this Bond is given.
2. Nothing in this Bond contained shall be taken to make the Obligee liable to any subcontractor, material man or laborer, or to any other person to any greater extent than it would have been liable prior to the enactment of The Public Construction Bond Act, approved June 20, 1931, as amended; provided further, that any person having a claim for labor and materials furnished in the performance of the Contract shall have no right of action unless he shall have filed a verified notice of such claim with the Obligee within 180 days after the date of the last item of work or the furnishing of the last item of materials, which claim shall have been verified and shall contain the name and address of the claimant, the business address of the claimant within the State of Illinois, if any, or if the claimant be a foreign corporation having no place of business within the State the principal place of business of the corporation, and in all cases of partnership the names and residences of each of the partners, the name of the Contractor

for the Obligee, the name of the person, firm or corporation by whom the claimant was employed or to whom such claimant furnished materials, the amount of the claim and a brief description of the public improvement for the construction or installation of which the contract is to be performed. No defect in the notice herein provided for shall deprive the claimant of its right of action under the terms and provisions of this Bond unless it shall affirmatively appear that such defect has prejudiced the rights of an interested party asserting the same.

3. No action shall be brought on this Bond until the expiration of 120 days after the date of the last item of work or of the furnishing of the last item of material except in cases where the final settlement between Obligee and the Contractor shall have been made prior to the expiration of the 120 day period, in which case action may be taken immediately following such final settlement; nor shall any action of any kind be brought later than 6 months after the acceptance by the Obligee of the work. Such suit shall be brought only in the circuit court of this State in the judicial district in which the Contract is to be performed.
4. Surety hereby waives notice of any changes in the Contract, including extensions of time for the performance thereof.
5. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.
6. The Principal and Surety shall be liable for any attorneys' fees, engineering costs, or court costs incurred by the Obligee relative to claims made against this Bond.

Signed and Sealed this _____ day of _____, 20____.

CONTRACTOR

SURETY

Contractor Firm Name

By: _____
Signature

Printed Name

Title

By: _____
Attorney-in-Fact Signature

Printed Name

Resident Agent

ATTEST:

Corporate Secretary (Corporations only)

Performance Bond

KNOW ALL MEN BY THESE PRESENTS, that WHEREAS, the Four Rivers Sanitation Authority has awarded to: _____ hereinafter designated as the “Principal”, a contract, dated, _____, for the Four Rivers Sanitation Authority.

WHEREAS, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract (the “Bond”);

NOW, THEREFORE, we the Principal and _____ as Surety, are firmly bound unto the Four Rivers Sanitation Authority in the penal sum of _____ Dollars (\$ _____) lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents for a performance bond. The conditions of this obligation is such that if the said Principal does well and faithfully performs all the conditions and covenants of said Contract, according to the true intent and meaning thereof, upon its part to be kept and performed, then the above obligation is to be null and void, otherwise to remain in full force and effect.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden Principal, its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the said Contract, including the provisions for liquidated damages in the said Contract, any changes, additions or alterations thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the Four Rivers Sanitation Authority, its officers and agents, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect. And the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same and no inadvertent overpayment of progress payments shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications or of any inadvertent overpayment of progress payments. The Four Rivers Sanitation Authority shall be named as beneficiary on this Performance Bond.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their seal this _____ day of _____, 20_____, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

SURETY

Contractor Firm Name

By: _____
Signature

Printed Name

Title

By: _____
Attorney-in-Fact Signature

Printed Name

Resident Agent

ATTEST:

Corporate Secretary (Corporations only)

Section III

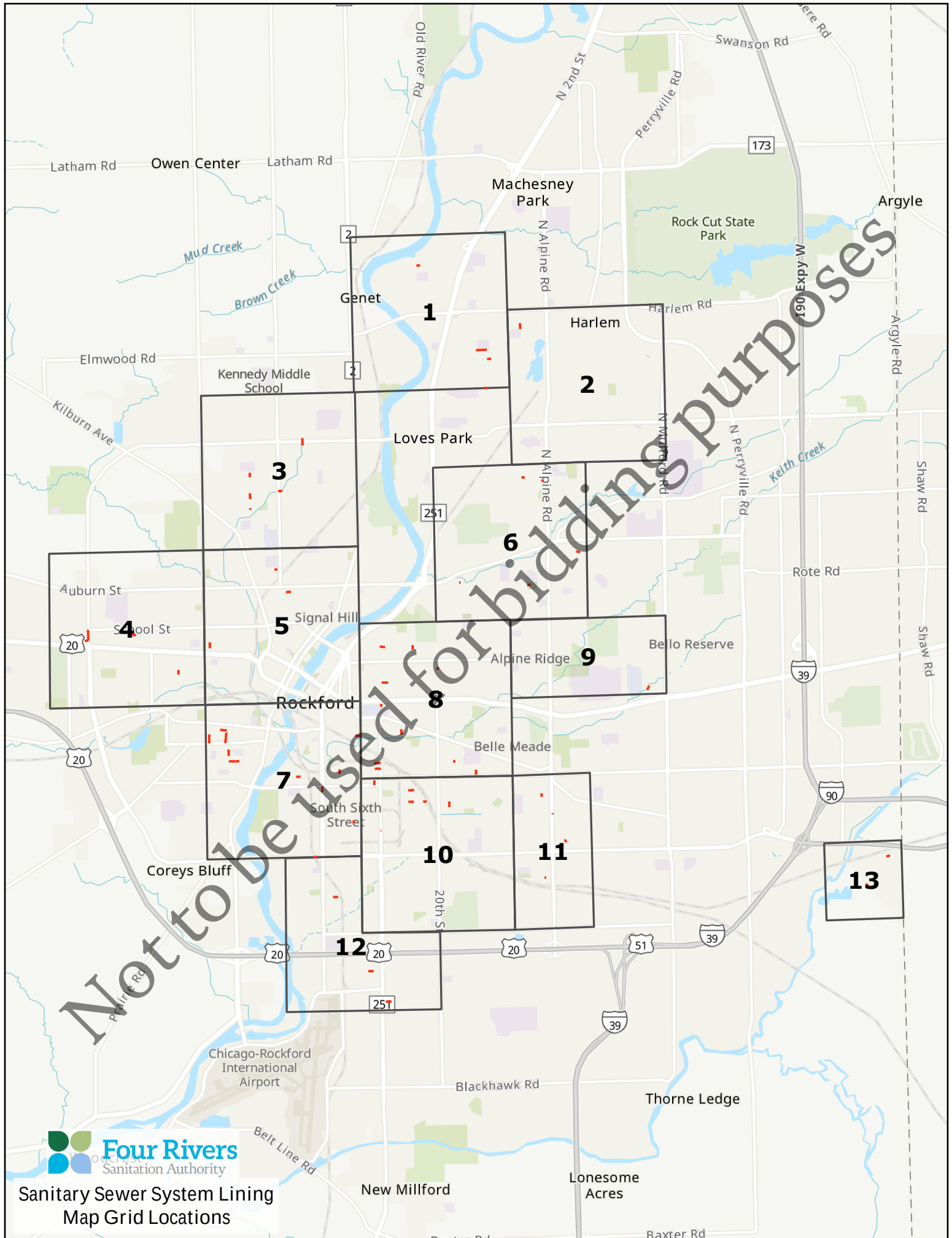
Lining List

Item Number	UP Basin	UP MH	DN Basin	DN MH	Location	Pipe Dia. (INCH)	Length (FT)	Existing Pipe Material	Estimated Main Depth (FT) ¹	Service Reinstatements (EACH)	Protruding Service (EACH)	Roots (R)	Inflow/ Infiltration (I/I)	Broken Pipe or Cracks (BP)	Date Last TV'd	Estimated Peak Flow (MGD)	Roadway Jurisdiction	Traffic Control Plan Required (T/C)	Grouting Required Prior to Lining (G)	Prone to Blown Toilet	Grid Map No.
1	011	069	011	182	2020 22nd Street	8	189.2	VCP	10.5	6	0	R		BP	05/09/23		City of Rockford			No	10
2	011	070	011	069	2004 22nd Street	8	192.7	VCP	9.5	8	0	R		BP	05/09/23		City of Rockford			No	10
3	075	070	075	069	1820 Hawthorne Drive	8	250.6	VCP	10.5	0	0			BP	01/13/21		Rockford Park District / Easement			No	6
4	085	033	085	031	3308 Kimball Road	8	159.6	VCP	10	2	0		I/I	BP	02/04/25		City of Rockford			No	6
5	099	082	099	080	7725 Venus Street	8	403.0	VCP	12.5	14	0	R		BP	01/22/26		City of Loves Park			No	2
6	106	024	106	023	2112 South Alpine Road	8	75.7	VCP	17	2	0			BP	12/05/25		City of Rockford			No	11
7	129	084	129	083	1702 Delroy Avenue	8	397.1	RPP	9.5	7	1	R		BP	03/31/23		City of Rockford / Rockford Township			No	12
8	157	051	157	050	805 Elgin Street	8	267.0	VCP	7	3	0			BP	01/05/24		Village of Cherry Valley			No	13
9	079	094	079	093	3031 Searles Ave	8	402.8	VCP	9.5	8	0	R		BP	03/31/26		Rockford Township	T/C		Yes	3
10	079	170	079	097	3012 Halstead Road	8	301.9	VCP	13	4	0	R			01/08/26		City of Rockford	T/C		No	3
11	079	169	079	091	2816 Searles Avenue	8	112.9	VCP	11	1	0	R			01/05/26		Rockford Township	T/C		No	3
12	103	016	103	055	3430 South Alpine Road	8	57.4	VCP	12	0	0			BP	01/05/26		City of Rockford / IDOT	T/C		No	11
13	115	039	115	038	4894 Braewild Road	8	275.5	VCP	10.5	6	0	R		BP	08/25/20		City of Rockford			No	6
14	070	088	070	087	2402 Benderwirt Avenue	8	343.9	VCP	12.5	11	0	R	I/I	BP	02/22/22		City of Rockford		G	No	5
15	069	060	069	059	2611 Knight Avenue	8	201.1	VCP	10	3	2	R		BP	01/05/26		City of Rockford			No	5
16	063	058	063	057	1424 Brown Hills Road	8	362.5	VCP	8.5	6	2	R	I/I	BP	01/17/25		City of Rockford			No	8
17	094	265	094	263	4109 Lisa Drive	8	230.1	VCP	9	2	1		I/I	BP	10/28/22		City of Rockford			No	6
18	134	008	134	007	2628 Starkweather Road	8	99.1	VCP	11	1	0		I/I		12/30/24		City of Rockford		G	No	6
19	004	067	004	066	817 Brooke Road	8	344.2	VCP	8.5	8	0	R		BP	12/08/22		City of Rockford	T/C		No	12
20	008	082	008	081	4518 Yale Drive	8	121.8	VCP	10	0	0	R			06/22/22		City of Rockford			No	11
21	020	016	020	015	1819 Raismore Road	8	250.2	VCP	10.5	6	0	R		BP	03/30/23		City of Rockford			No	11
22	028	063	028	062	1208 23rd Street	8	177.7	VCP	8.5	7	3	R		BP	01/03/24		City of Rockford			No	8
23	028	099	028	098	1420 27th Street	8	348.2	VCP	10.5	9	0		I/I	BP	03/22/22		City of Rockford			No	8
24	105	020	105	018	2440 Holmes Street	8	206.8	VCP	13	2	0	R		BP	05/14/25		City of Rockford			No	11
25	099	050	099	049	1209 Drexel Boulevard	8	266.5	VCP	9	8	0	R		BP	09/05/24		Village of Machesney Park			No	1
26	010	116	010	115	1601 Kishwaukee Street	9	396.7	VCP	10	3	2	R		BP	10/06/21		City of Rockford	T/C		No	7
27	011	033	011	032	2243 18th Avenue	9	250.4	VCP	9	6	1	R		BP	03/30/21		City of Rockford			No	10
28	024	046	024	045	1500 11th Avenue	9	450.5	VCP	13.5	4	4	R		BP	09/10/20		City of Rockford	T/C		No	8
29	024	088	024	087	1325 South 6th Street	9	303.9	VCP	10	9	2	R		BP	08/27/25		City of Rockford	T/C		No	7
30	049	007	049	006	921 North Chicago Avenue	9	307.6	VCP	8.5	8	5	R	I/I	BP	06/20/22		City of Rockford	T/C		No	8
31	009	047	009	189	348 Buckbee Street	9	309.3	VCP	8.5	6	3	R		BP	06/26/13		City of Rockford			No	7
32	011	191	011	006	2025 18th Avenue	9	375.2	VCP	8.5	11	3	R		BP	04/01/21		City of Rockford	T/C		No	10
33	015	041	015	040	2025 16th Avenue	9	395.6	VCP	9	12	6	R		BP	09/23/19		City of Rockford	T/C		No	10
34	015	095	015	094	1514 Parmele Street	9	330.6	VCP	8.5	10	4	R		BP	10/18/21		City of Rockford	T/C		No	10
35	024	120	024	056	1506 12th Avenue	9	410.4	VCP	10.5	7	2	R		BP	09/11/24		City of Rockford	T/C		No	8
36	025	024	025	120	1212 6th Avenue	9	356.0	VCP	13	8	2	R		BP	02/04/20		City of Rockford			No	7
37	025	060	025	059	Williams Park	9	204.8	VCP	12	1	0	R		BP	12/02/19		City of Rockford			No	8
38	030	035	030	034	1240 Sanford Street	9	399.7	VCP	17.5	9	9	R		BP	10/26/21		City of Rockford	T/C		No	7
39	030	036	030	035	1208 Sanford Street	9	338.6	VCP	9	9	9	R		BP	10/26/21		City of Rockford			No	7
40	030	045	030	044	1257 Clover Avenue	9	321.2	VCP	10	7	2	R		BP	11/15/21		City of Rockford	T/C		No	7
41	030	046	030	045	1232 Clover Avenue	9	307.1	VCP	9	12	8	R		BP	07/23/18		City of Rockford			No	7
42	030	060	030	095	809 Lincoln Avenue	9	267.5	VCP	10	9	5	R		BP	08/01/18		City of Rockford			No	7
43	030	061	030	060	846 Lincoln Avenue	9	446.9	VCP	13.5	16	9	R		BP	08/01/18		City of Rockford	T/C		No	7
44	030	064	030	063	1401 Clifton Avenue	9	434.4	VCP	10.5	5	4	R		BP	03/14/18		City of Rockford	T/C		No	7
45	032	054	032	053	1103 Loomis St	9	441.4	VCP	10.5	14	6	R		BP	06/14/24		City of Rockford			No	7
46	038	024	038	060	1540 Benton Street	9	437.1	VCP	10	13	9	R		BP	07/14/25		City of Rockford			No	8
47	010	007	010	006	2302 11th Street	10	50.7	VCP	11	0	0				5/13/2025		City of Rockford	T/C		No	10
48	010	044A	010	044	2135 8th Street	10	189.3	VCP	10	2	0	R		BP	10/13/17		City of Rockford			No	7
49	099	062	099	061	1107 Evans Avenue	10	375.9	VCP	8	6	0	R			02/18/26		Village of Machesney Park			No	1
50	099	063	099	062	1013 Evans Avenue	10	374.8	VCP	6	5	0	R			02/18/26		Village of Machesney Park	T/C		No	1
51	124	085	124	084	231 Northway Park Road	10	248.5	VCP	5.5	0	0			BP	01/29/25		Village of Machesney Park			No	1
52	157	013	157	012	597 Genoa Road	10	295.6	VCP	6	3	0		I/I		03/27/25		Easement / Village of Cherry Valley		G	No	13
53	127	079	127	075	3115 Andrews Street	10	301.8	VCP	21	2	0	R		BP	09/19/18		City of Rockford			No	4
54	054	027	054	025	227 Oakley Avenue	10	400.6	VCP	12	7	4	R	I/I		05/11/21		City of Rockford		G	No	5
55	050	002	050	001	2315 Greenwood Avenue	10	175.4	VCP	14	0	0	R	I/I	BP	09/16/19		City of Rockford	T/C		No	8
56	044	053	044	052	402 Howard Avenue	10	303.7	VCP	8.5	10	5	R	I/I	BP	06/21/12		City of Rockford			No	4
57	129	043	129	042	3737 11th Street	10	365.5	VCP	9	1	0	R			10/08/21		Easement / City of Rockford			No	12
58	126	032	126	029	302 North Springfield Avenue	10	385.2	VCP	11	1	0	R		BP	05/22/24		Rockford Township / Winnebago County	T/C		No	4
59	126	037	126	036	4105 Lydia Avenue	10	235.0	VCP	11.5	3	0	R			04/09/18		City of Rockford / Winnebago County	T/C		No	4
60	126	036	126	032	202 North Springfield Avenue	10	350.2	VCP	11.5	1	1			BP	04/09/18		Winnebago County	T/C		No	4
61	003	103	003	030	612 Harrison Avenue	12	219.1	VCP	16.5	1	0				04/19/21	0.01	City of Rockford	T/C		No	7
62	026	045	026	044	601 14th Street	12	376.2	VCP	11	5	3	R		BP	08/08/25	0.04	City of Rockford			No	8
63	087	056	087	033	1901 Riverside Boulevard	15	447.0	VCP	15.5	0	0	R	I/I	BP	02/07/23	1.17	City of Rockford / Easement			No	3
64	087	033	087	055	2016 Randolph Drive	15	60.5	VCP	20.5	0	0				02/07/23	1.17	Easement			No	3
65	099	020	099	120	1200 Windsor Road	15	247.5	VCP	13	0	0			BP	09/12/24	0.13	City of Loves Park	T/C		No	1
66	110	012	110	011	280 North Phelps Avenue	18	306.3	VCP	9.5	0	0	R		BP	10/14/25	1.25	Easement			No	9
67	079	145	079	162	2415 Pierce Avenue	24	289.1	RCP	17.5	0	0				03/03/21	1.04	Easement		G	No	3

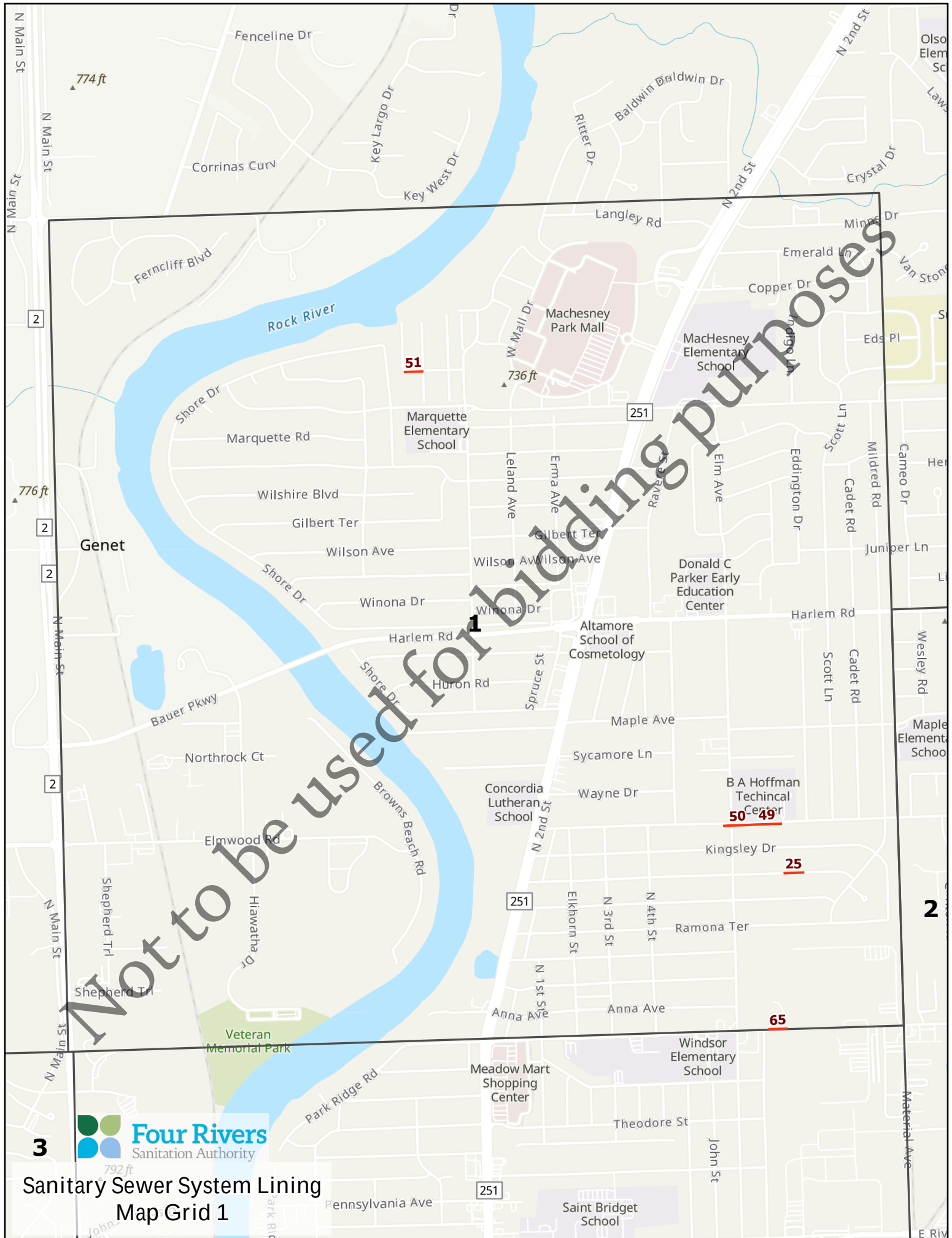
Note 1: Estimated Main Depth is provided for deepest point of sewer

Section IV

Lining Maps



Sanitary Sewer System Lining
Map Grid Locations



3

Sanitary Sewer System Lining
Map Grid 1

51

1

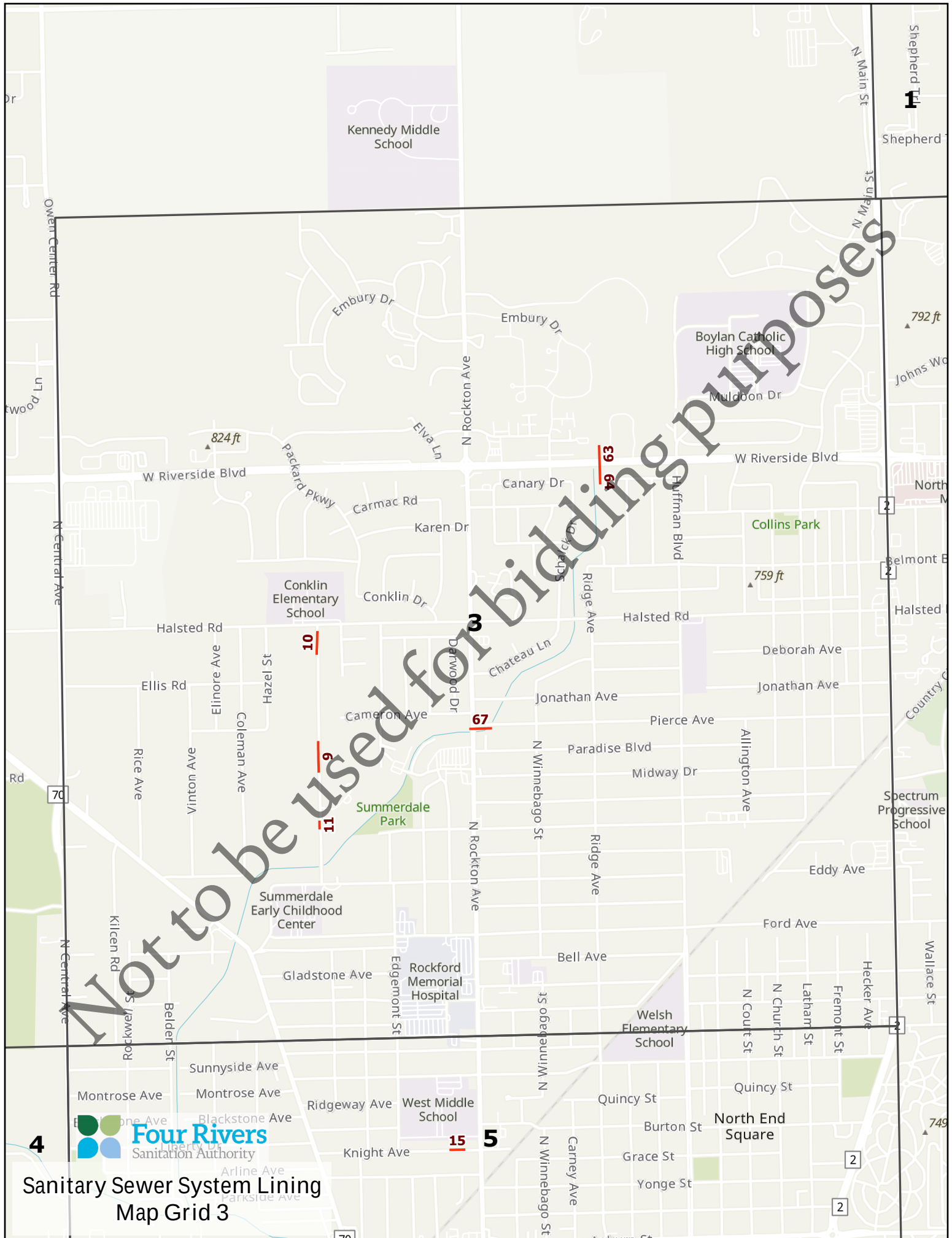
50-49

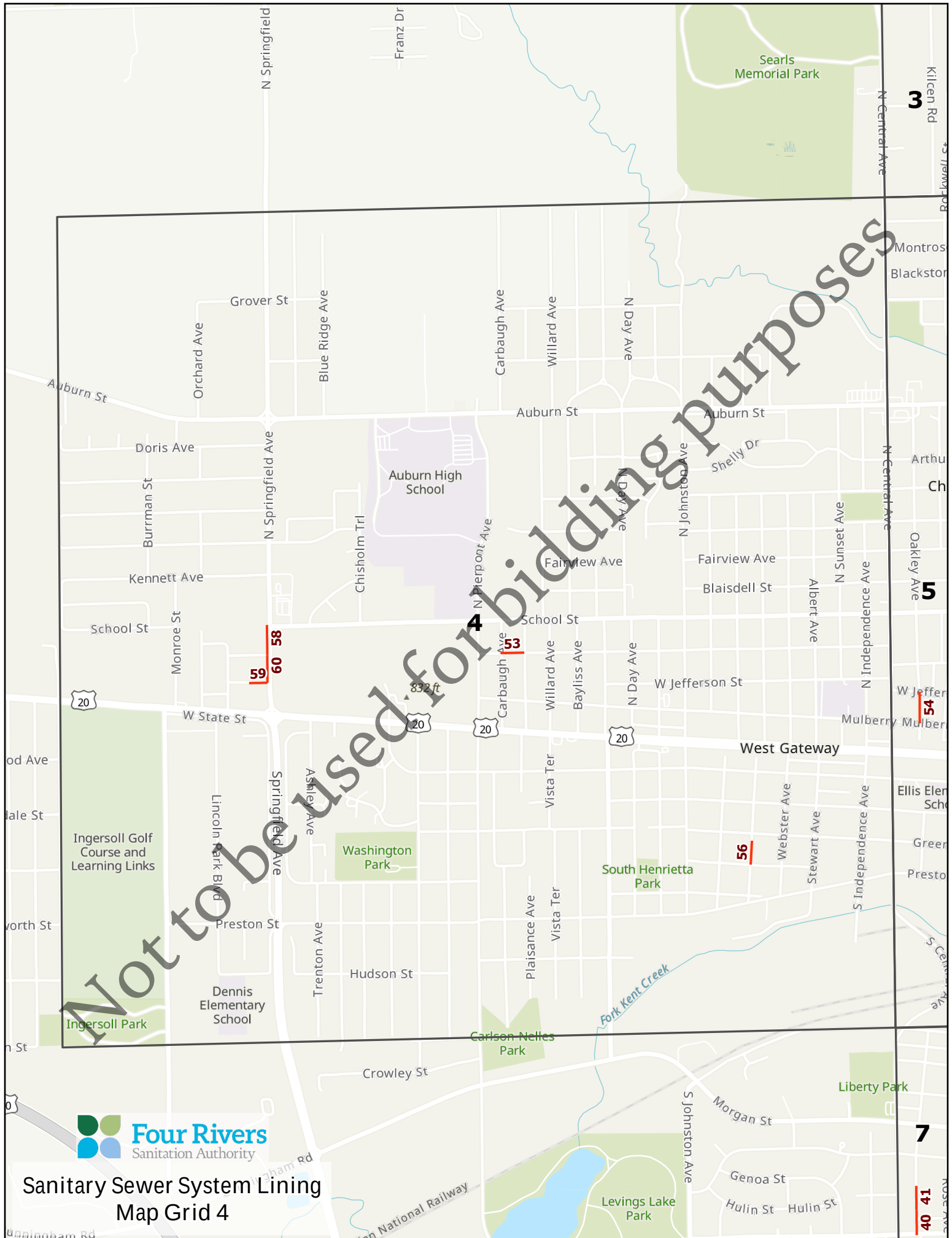
25

65

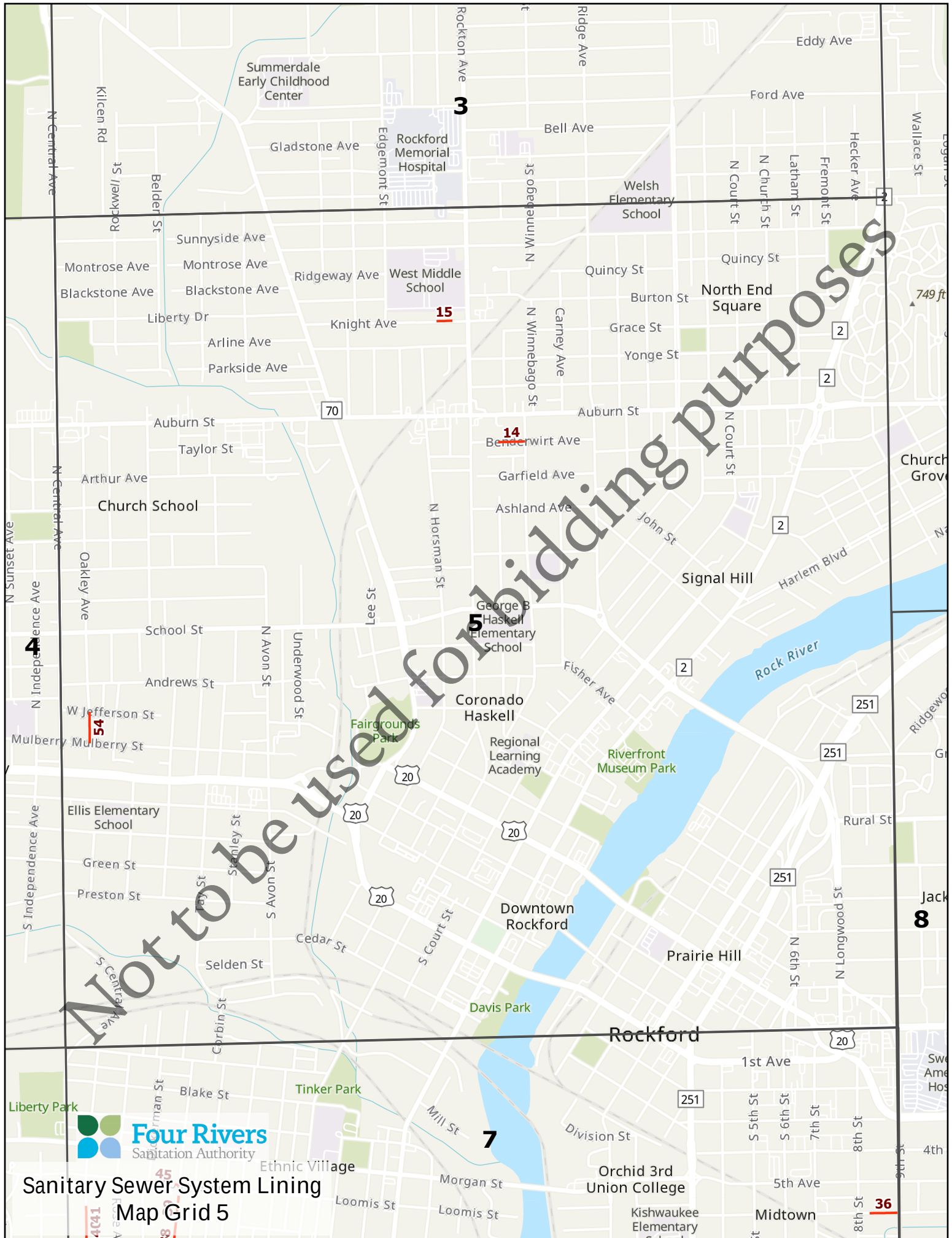
2







Sanitary Sewer System Lining
Map Grid 4

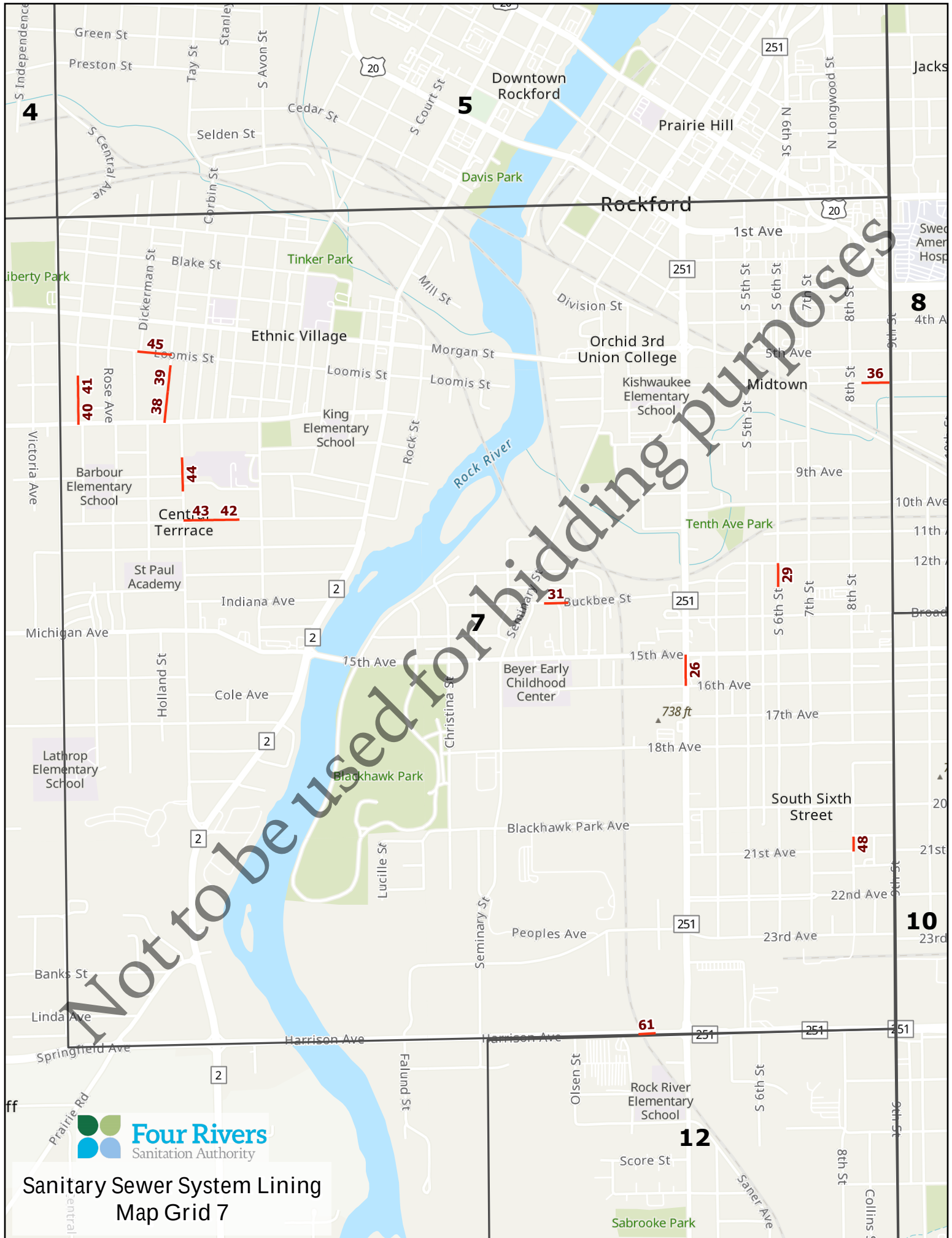


Sanitary Sewer System Lining
Map Grid 5





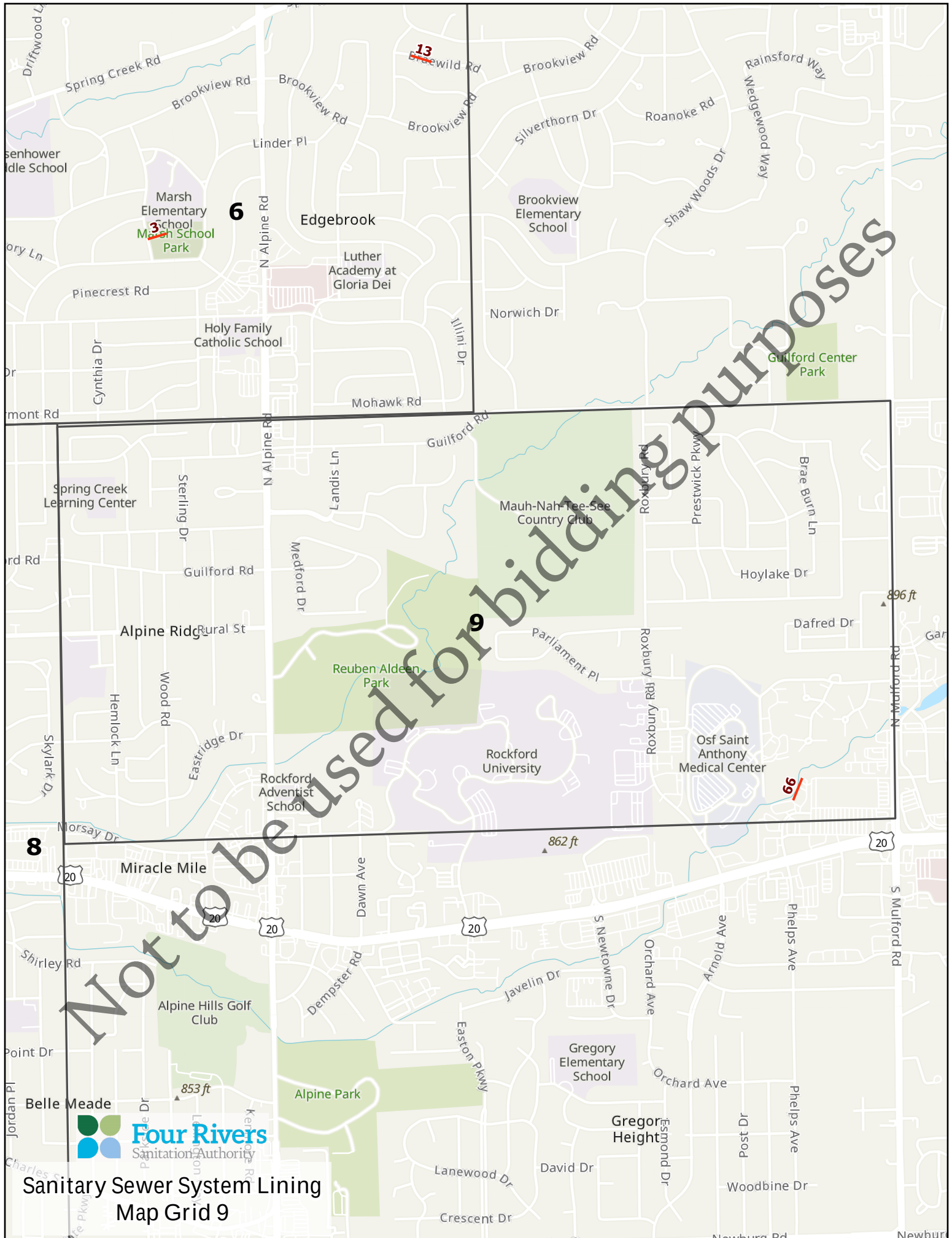
Sanitary Sewer System Lining
Map Grid 6



Sanitary Sewer System Lining
Map Grid 7

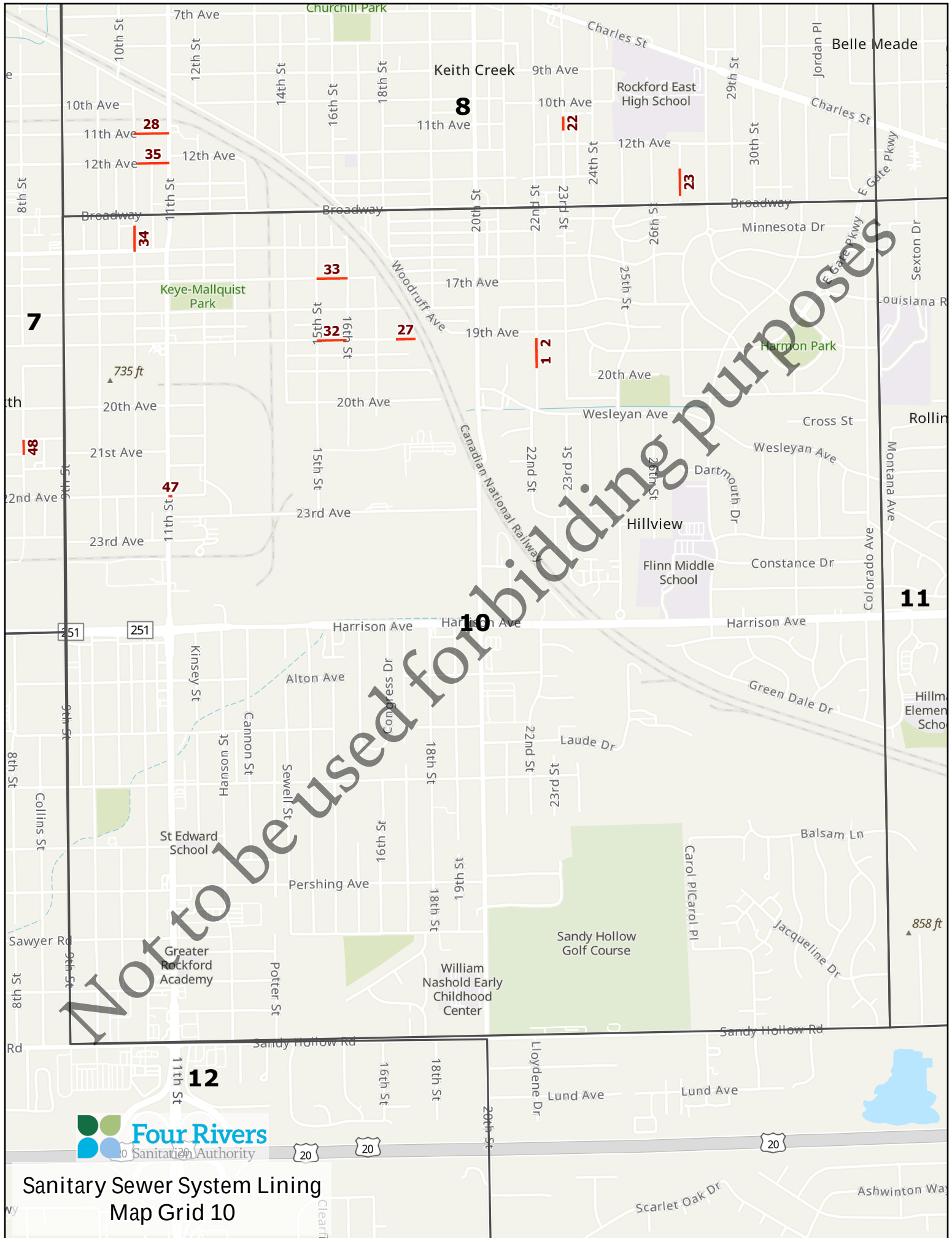


Sanitary Sewer System Lining
Map Grid 8



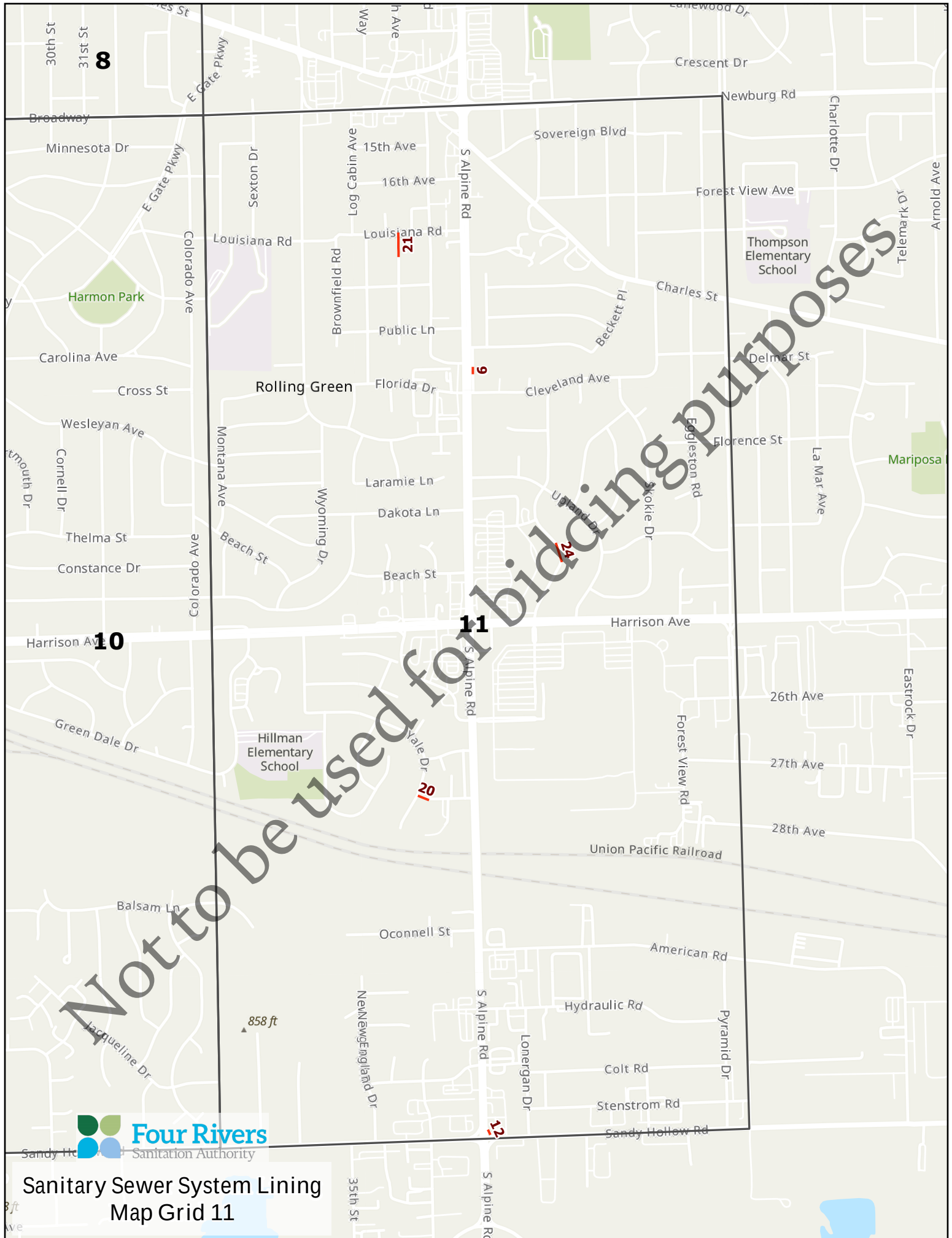
Sanitary Sewer System Lining
Map Grid 9



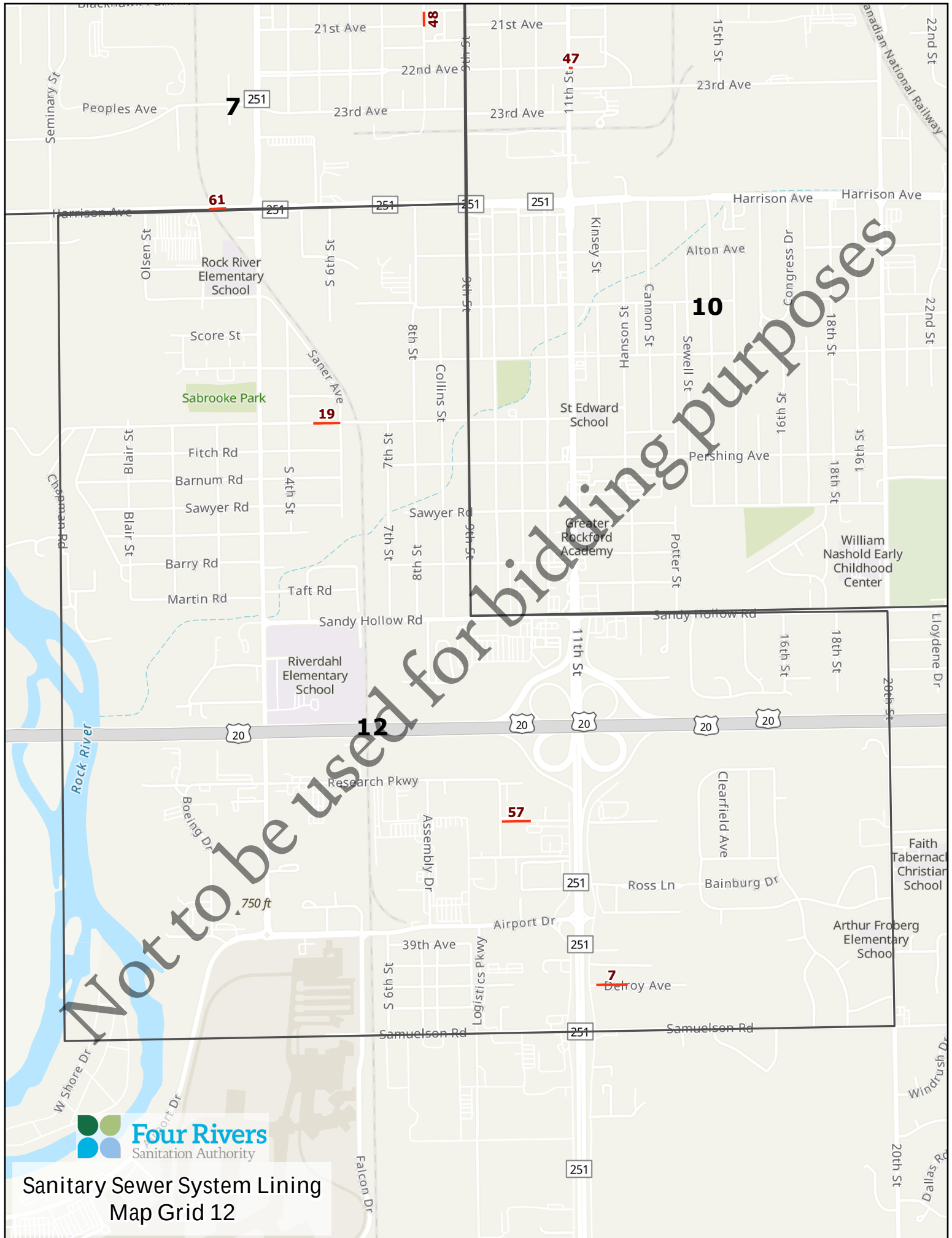


Sanitary Sewer System Lining
Map Grid 10





Sanitary Sewer System Lining
Map Grid 11

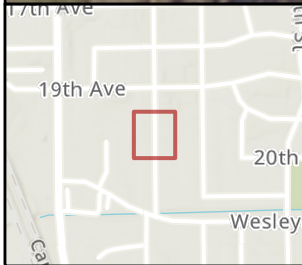
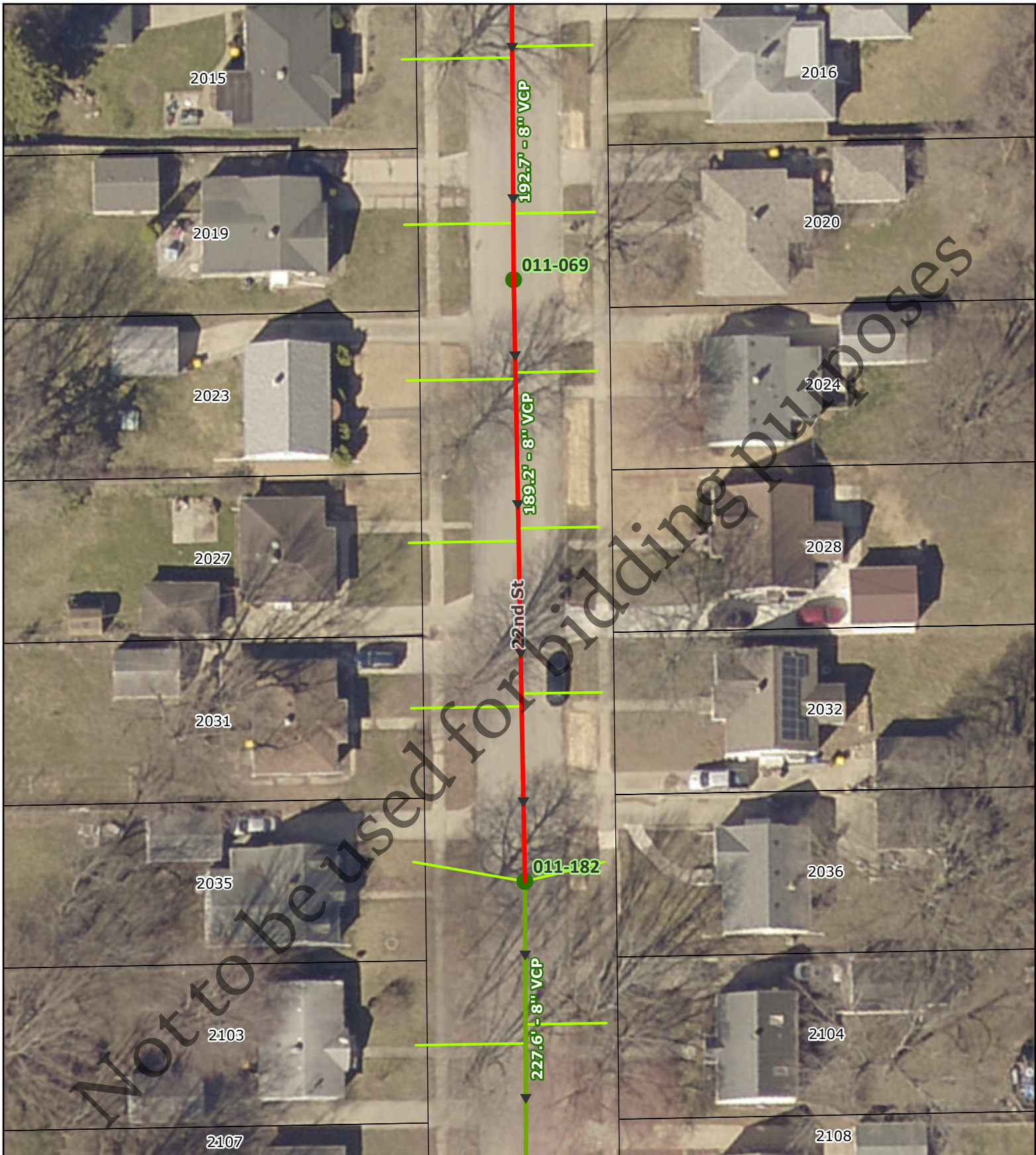


Sanitary Sewer System Lining
Map Grid 12





Sanitary Sewer System Lining
Map Grid 13



Item 1

Main ID 011-069-011-182

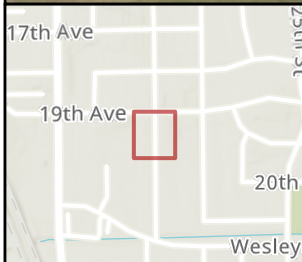
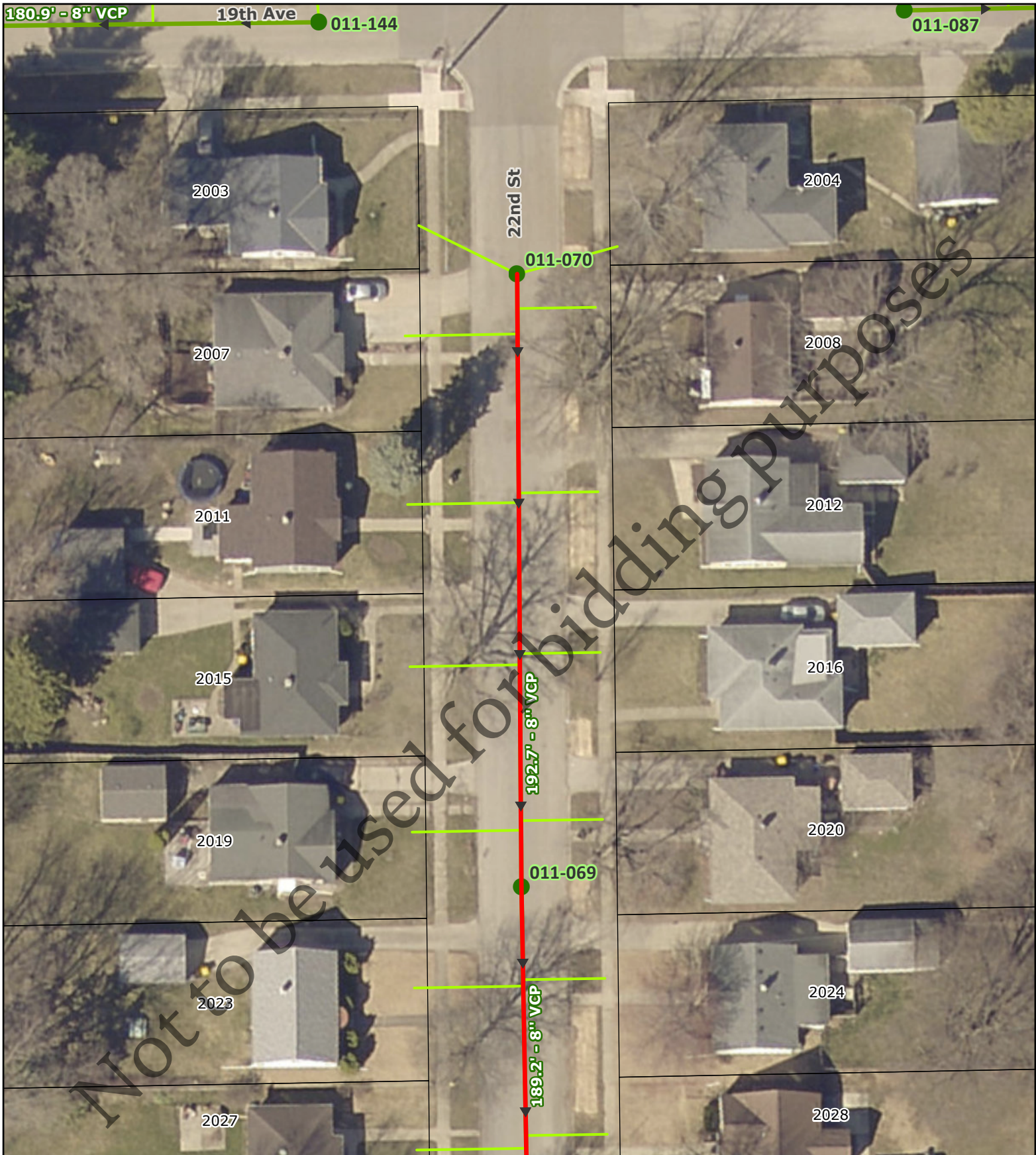


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 2

Main ID 011-070-011-069

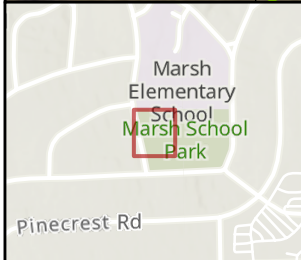
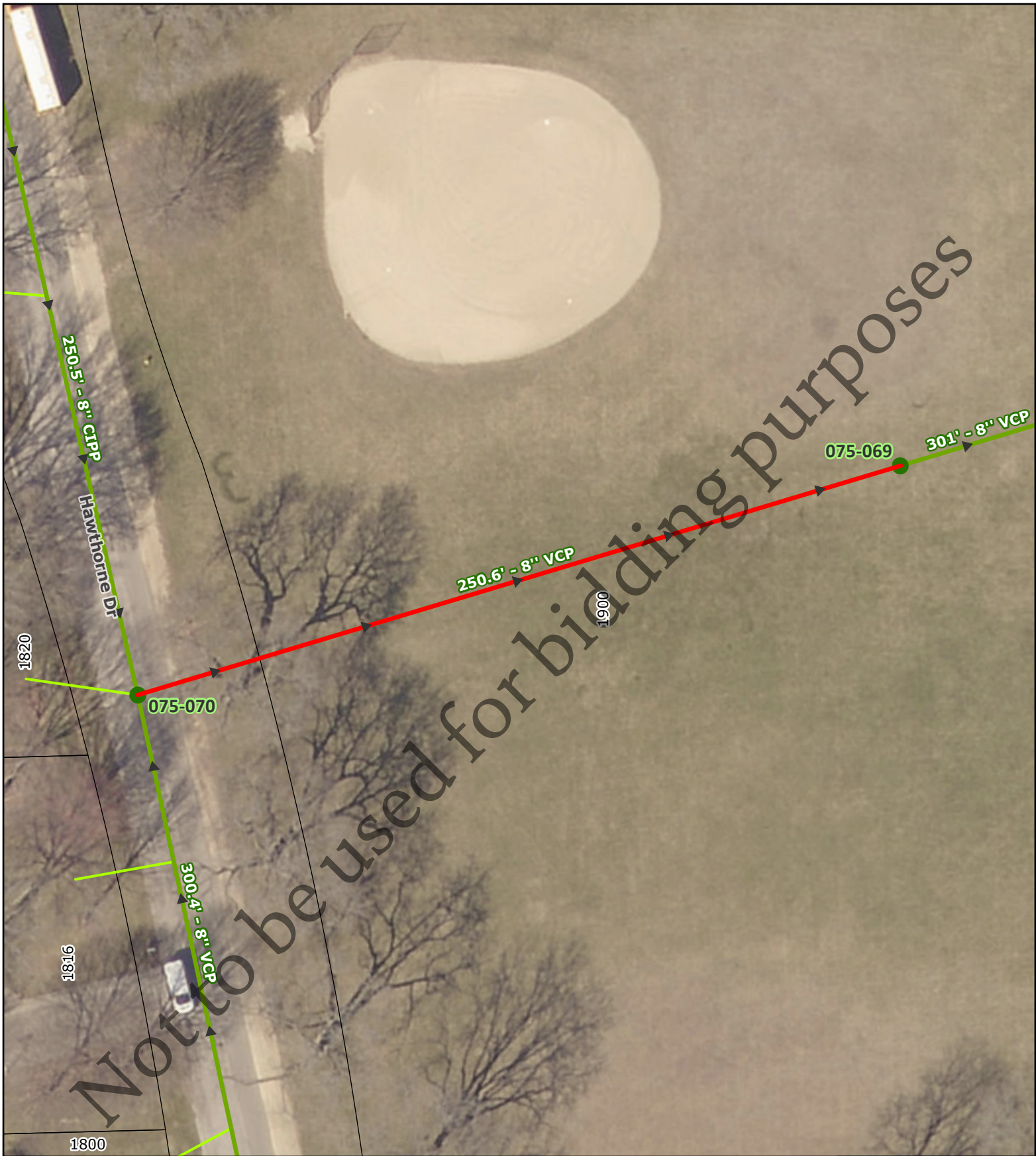
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 3 Main ID 075-070-075-069

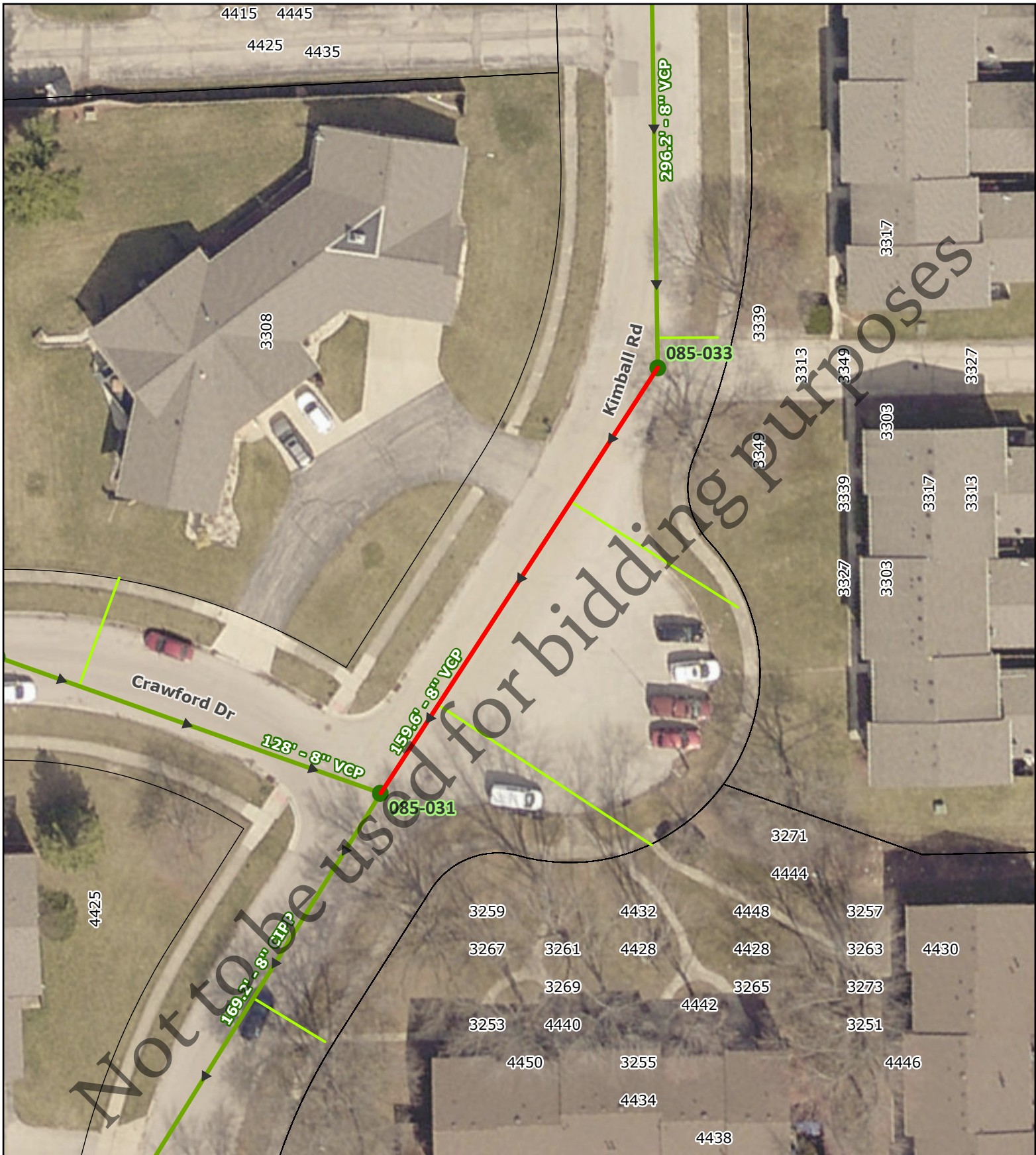
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 4

Main ID 085-033-085-031

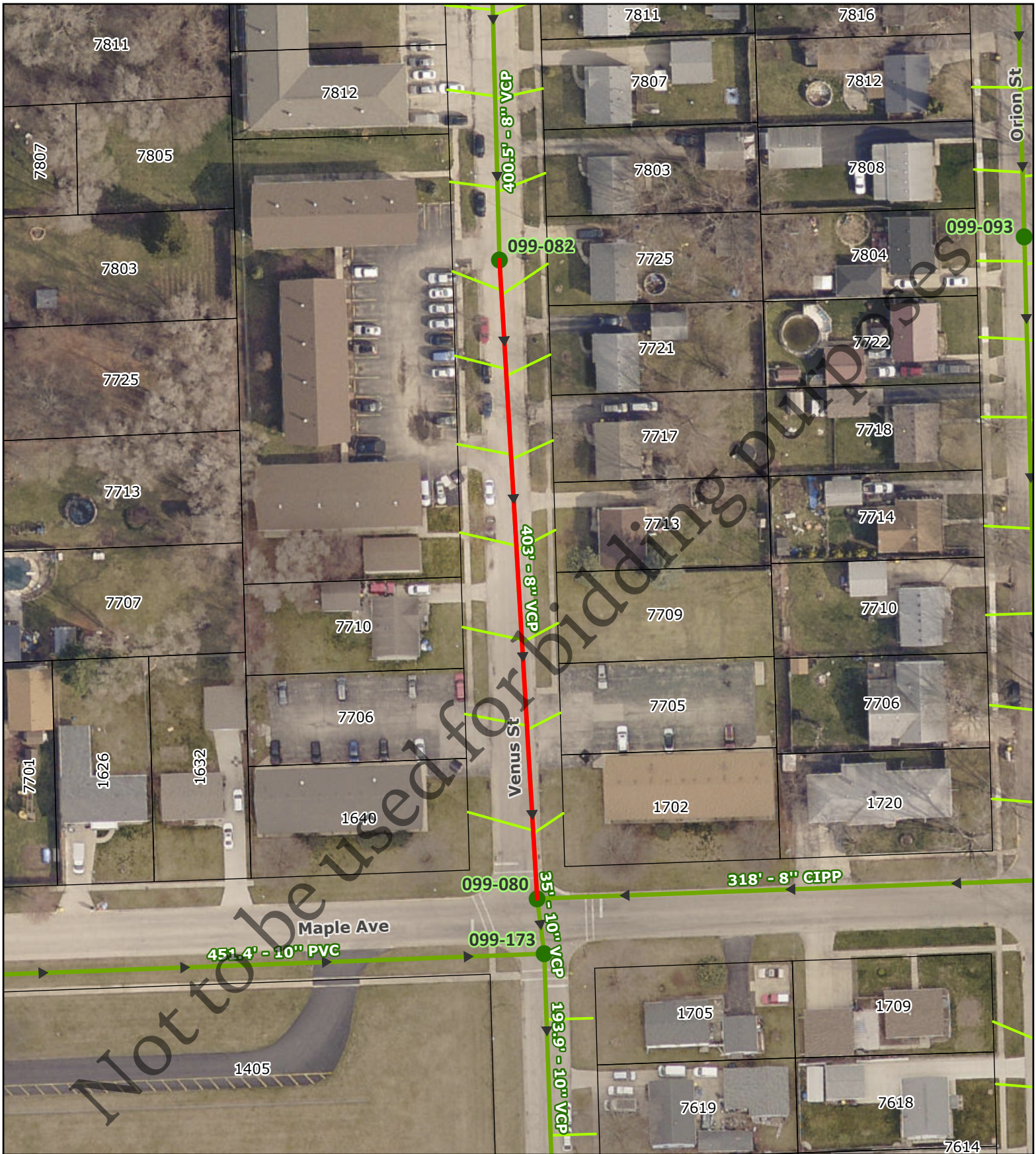


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 5

Main ID 099-082-099-080

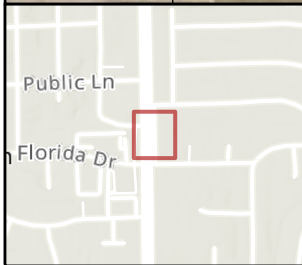


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



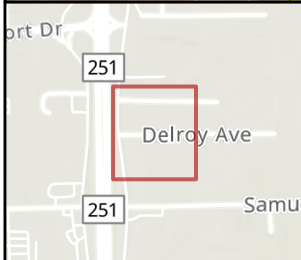
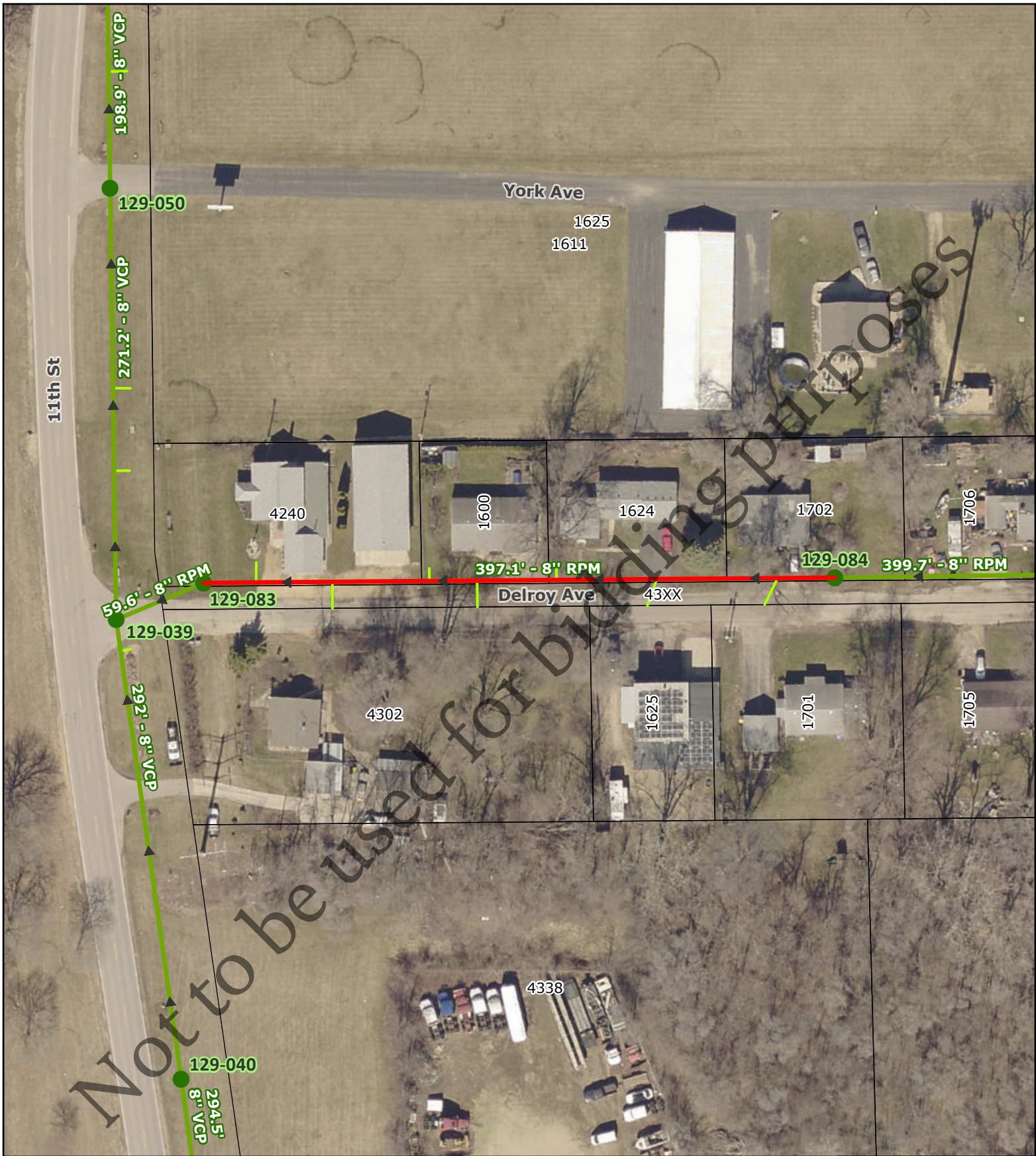


Item 6
Main ID 106-024-106-023

● Manholes
 Sanitary Mains
 Sanitary Service


 1 inch = 40 ft

Produced: 8/25/2026
 By: JK



Item 7

Main ID 129-084-129-083

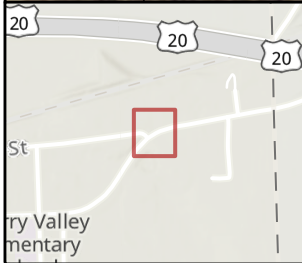
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 8

Main ID 157-051-157-050

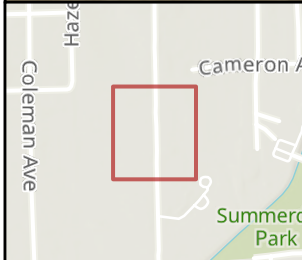
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 9

Main ID 079-094-079-093

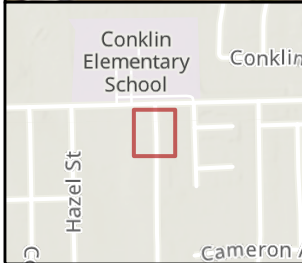
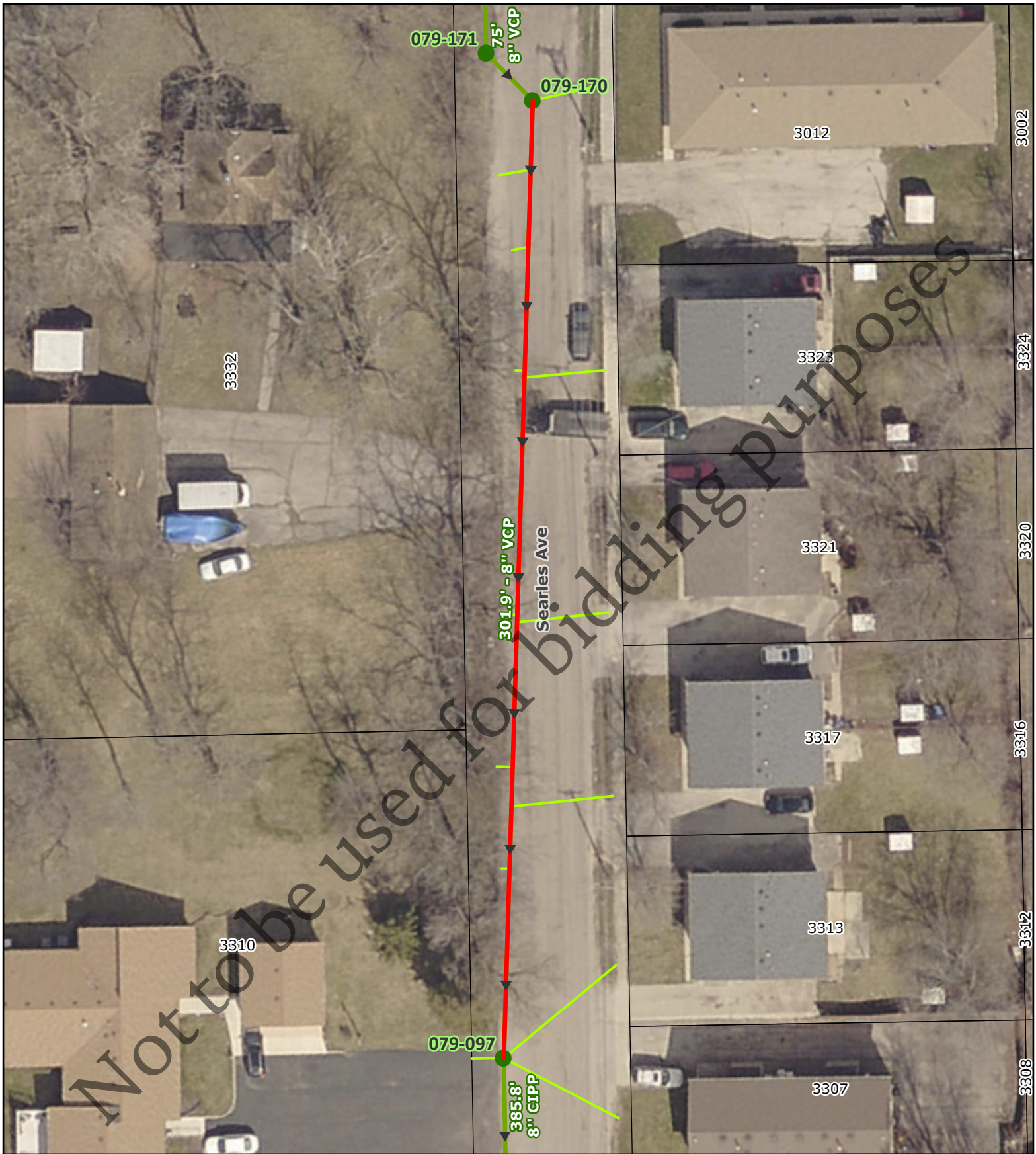
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 10

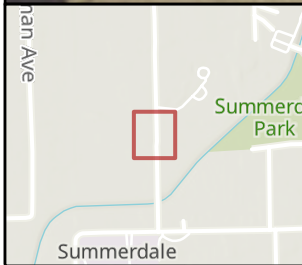
Main ID 079-170-079-097



1 inch = 40 ft

Produced: 8/25/2026

- Manholes
 - ➔ Sanitary Mains
 - Sanitary Service
- By: JK



Item 11

Main ID 079-169-079-091

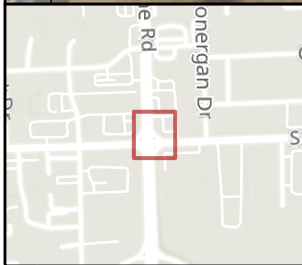
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 12

Main ID 103-016-103-055



● Manholes

➤ Sanitary Mains

— Sanitary Service



1 inch = 40 ft

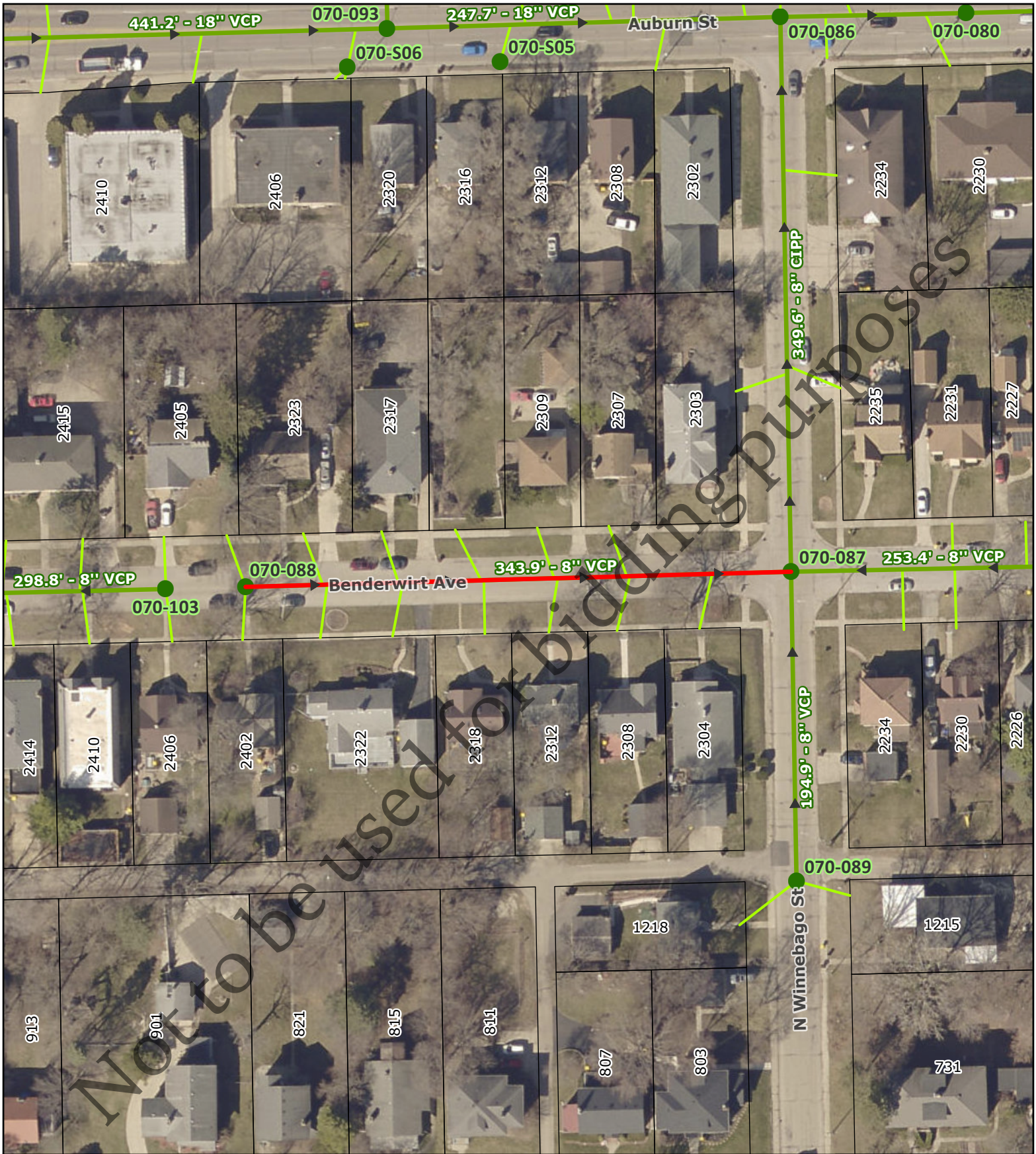


Item 13

Main ID 115-039-115-038

- Manholes
- ➔ Sanitary Mains
- Sanitary Service





Item 14

Main ID 070-088-070-087



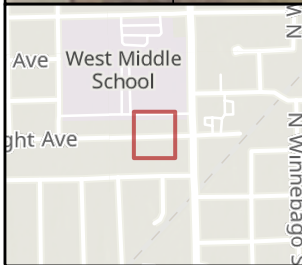
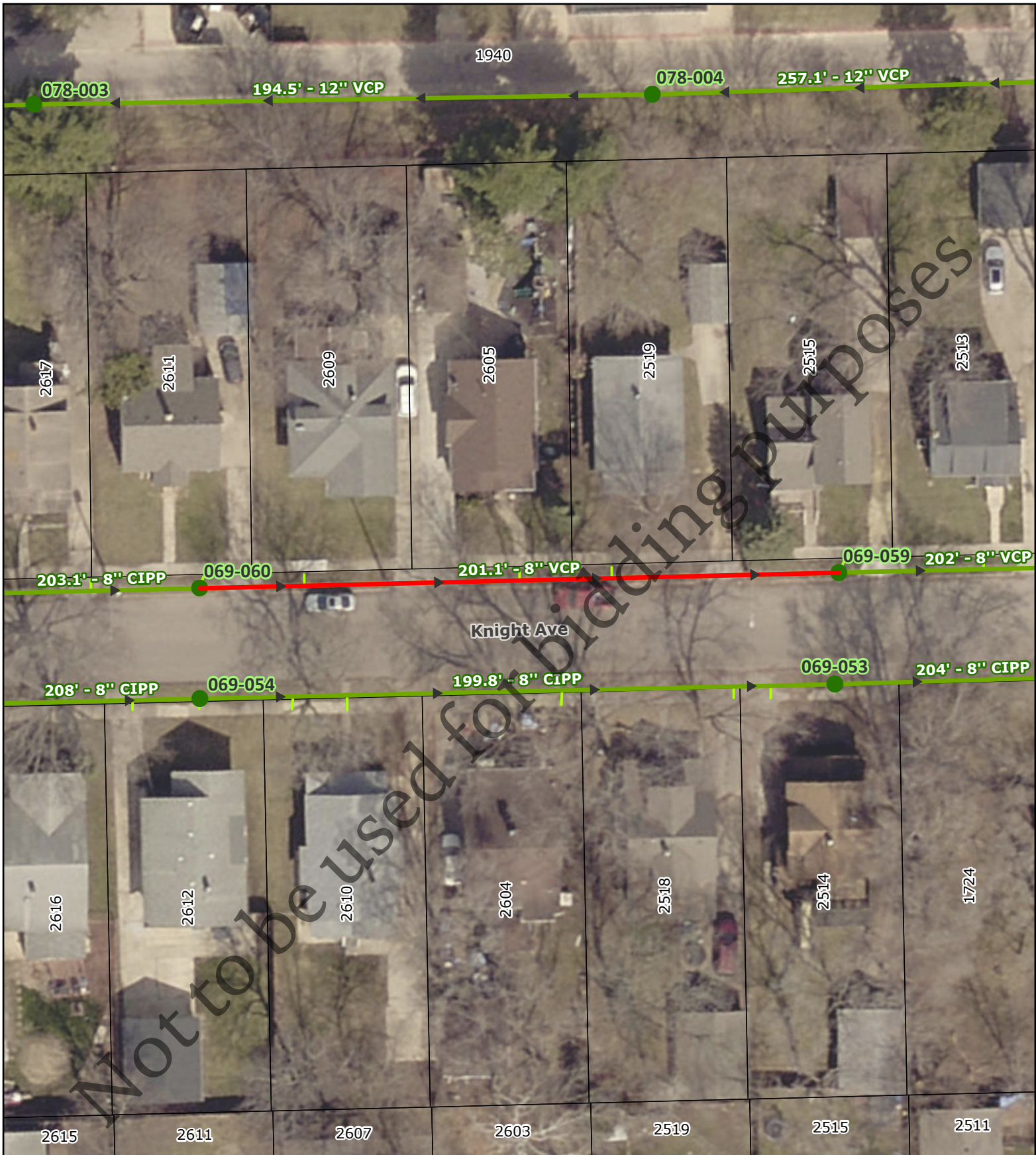
● Manholes

➔ Sanitary Mains

— Sanitary Service



1 inch = 80 ft

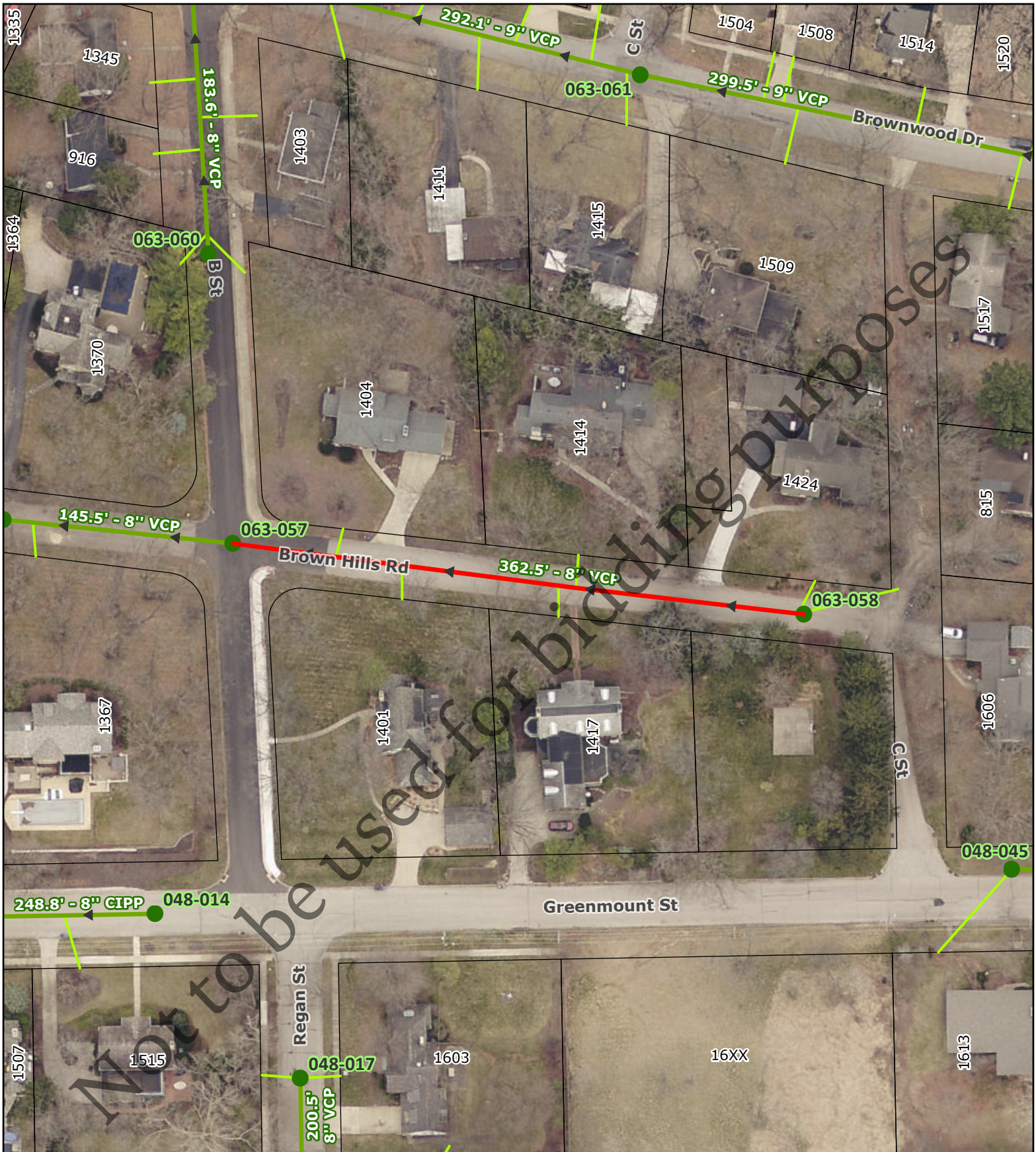


Item 15

Main ID 069-060-069-059

- Manholes
- Sanitary Mains
- Sanitary Service

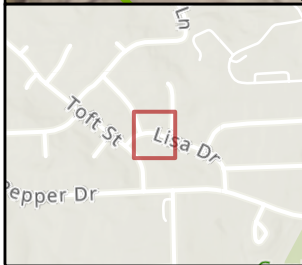
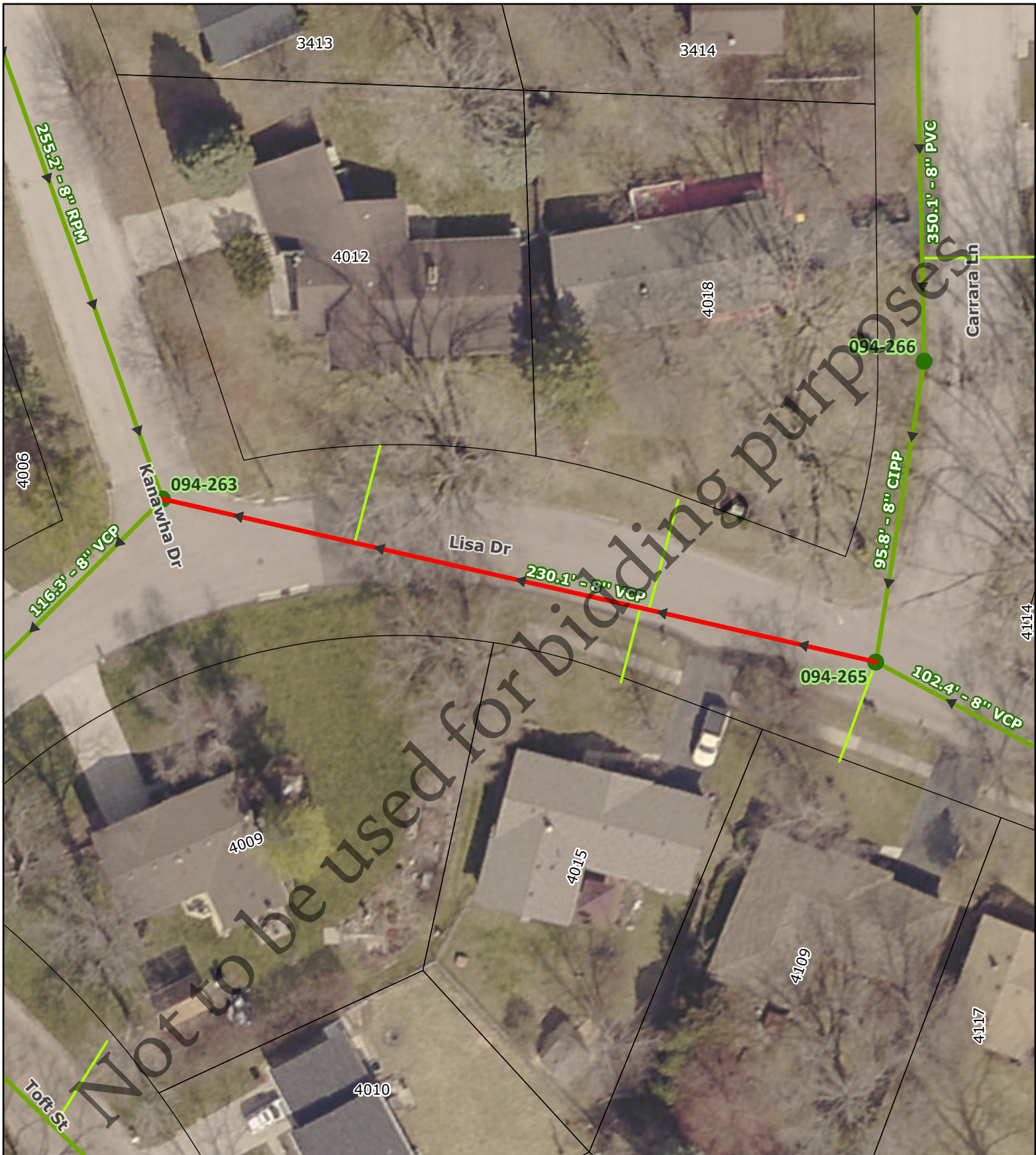




Item 16 Main ID 063-058-063-057

- Manholes
- Sanitary Mains
- Sanitary Service





Item 17

Main ID 094-265-094-263



1 inch = 40 ft

Produced: 8/25/2026

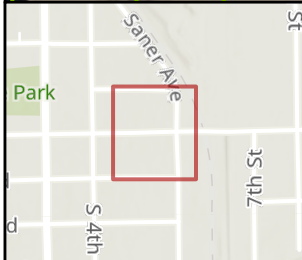
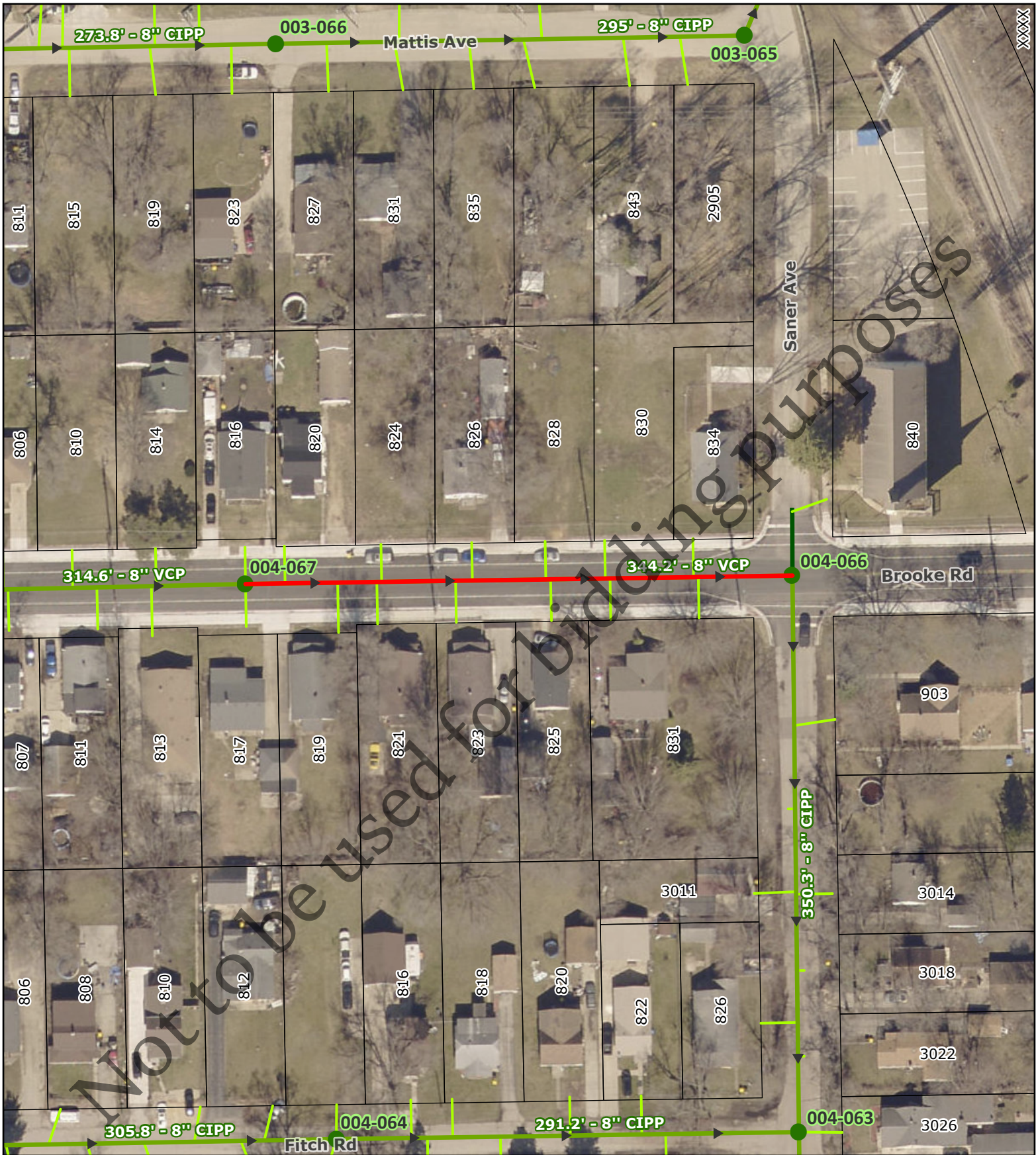
By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 18 Main ID 134-008-134-007

- Manholes
- Sanitary Mains
- Sanitary Service



Item 19

Main ID 004-067-004-066

- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



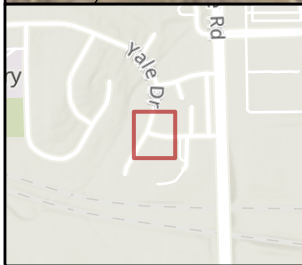
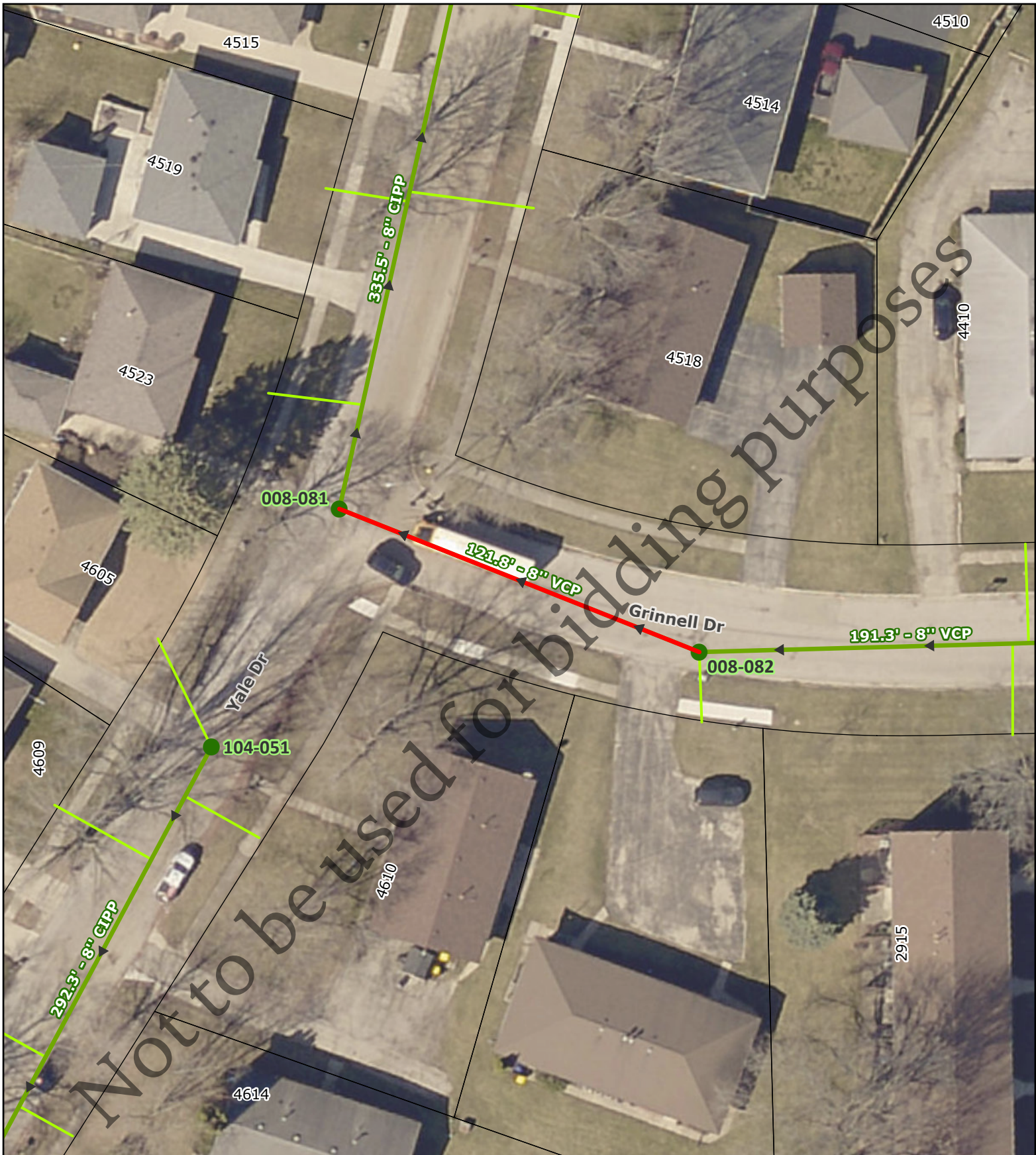
General Notes:

1. The Contractor shall notify Four Rivers, municipal agencies, jurisdictional roadway authorities and all affected property owners 48 hours, minimum, prior to the start of construction.
2. All sanitary sewer construction shall be in accordance with the current edition of *Standard Specifications for Water and Sewer Construction in Illinois* and the requirements of the FRSA.
3. The Contractor shall identify all utility locations in the field by contacting JULIE at 811 or 1.800.892.0123 and all utilities not on the JULIE network 72 hours, minimum, prior to the start of construction.
4. All soil erosion and sediment control measures shall be in conformance with *the Illinois Urban Manual*, current edition.
5. All roadway construction shall be completed in accordance with the requirements of the roadway authority and the FRSA.

Notes regarding traffic control:

- **Signage and barricades for closure of Brooke Road shall conform to IDOT Region 2/ District 2 Standard 40.1.**
- **All temporary traffic control devices shall comply with Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD), current edition.**

CP #2737 Item 19 Traffic Control Map



Item 20

Main ID 008-082-008-081

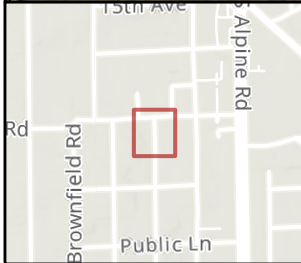
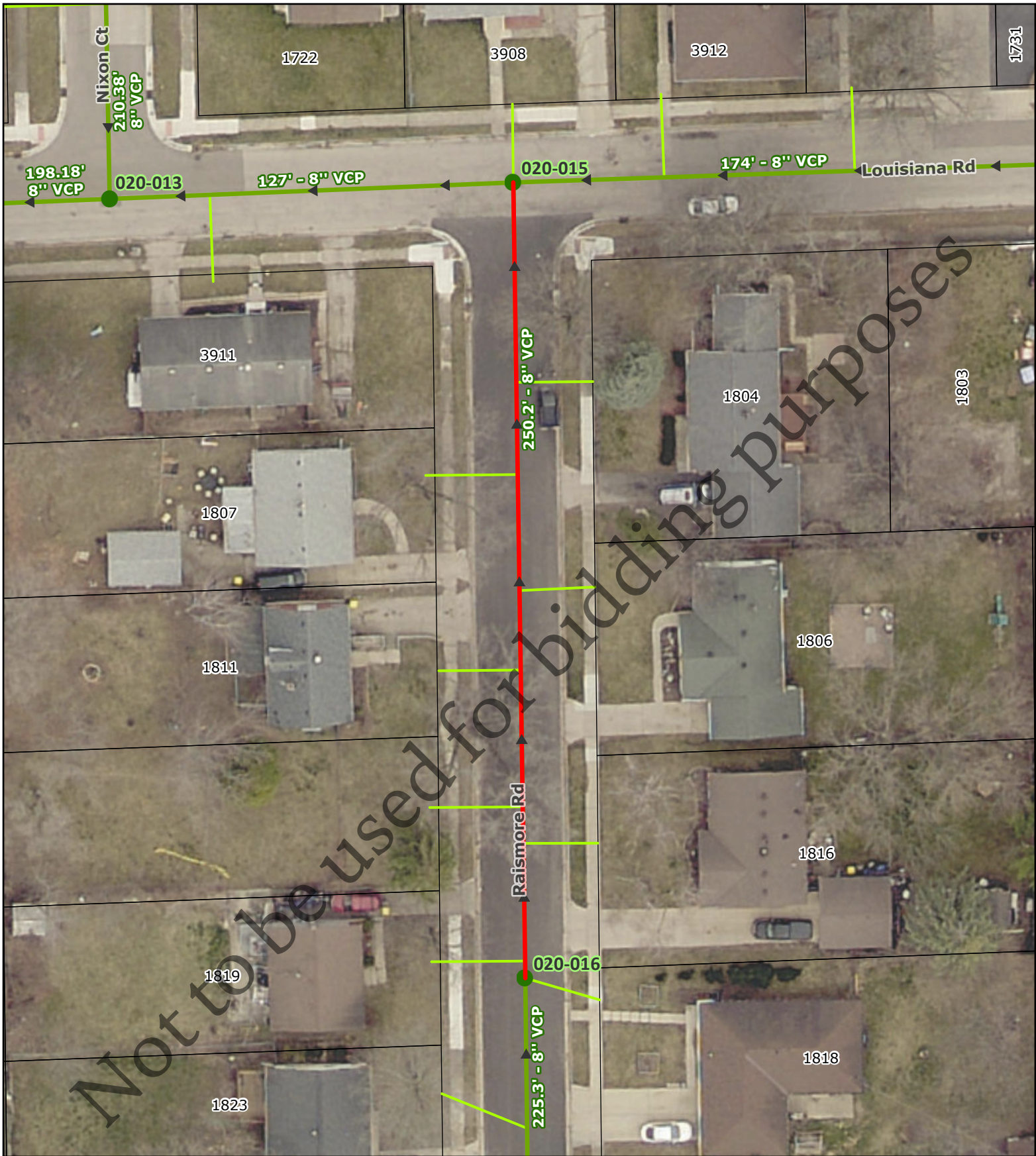
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 21

Main ID 020-016-020-015

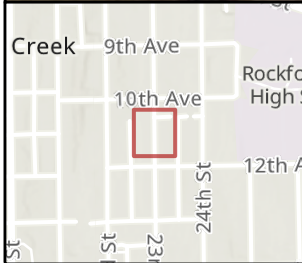
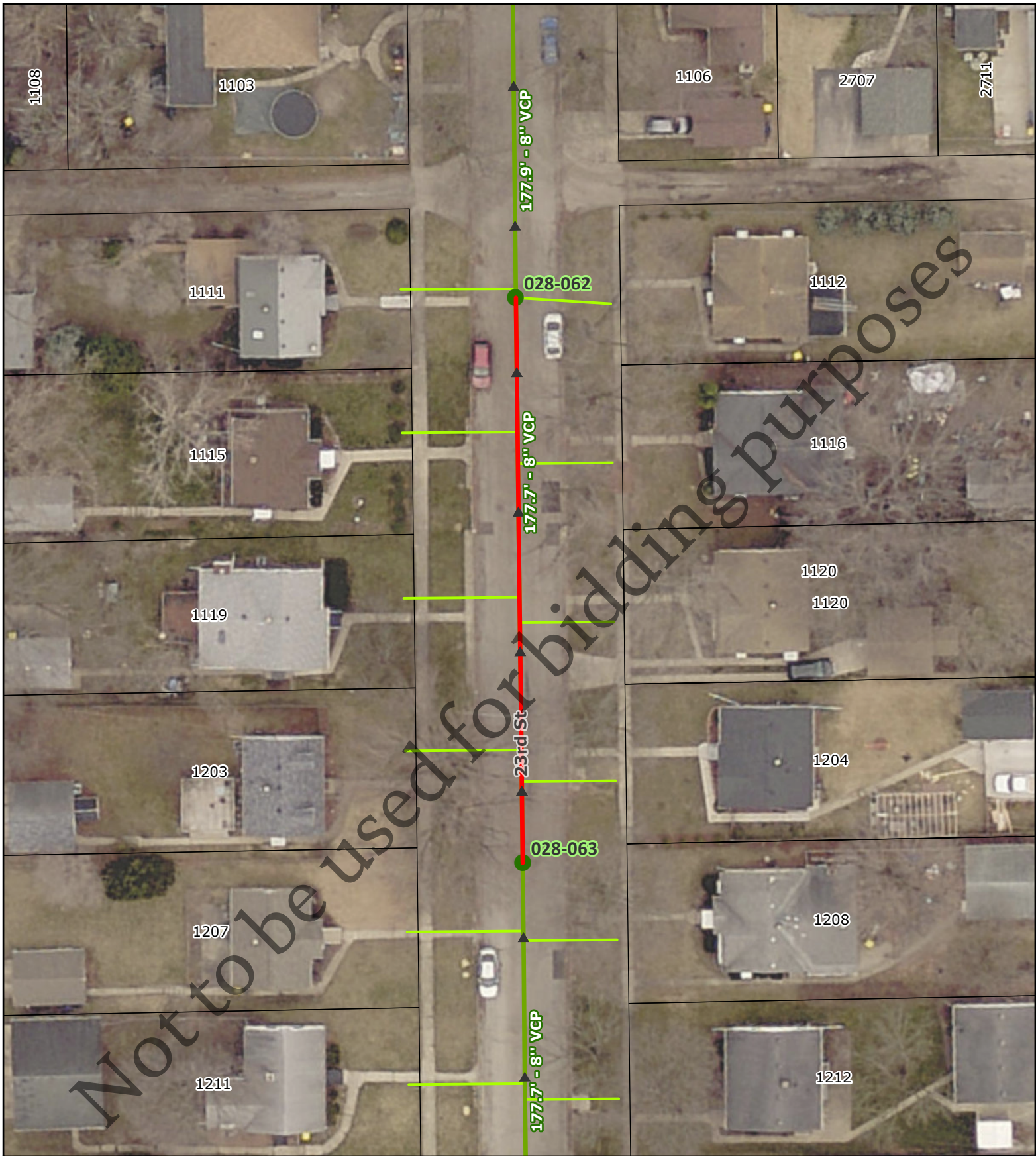
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 22

Main ID 028-063-028-062

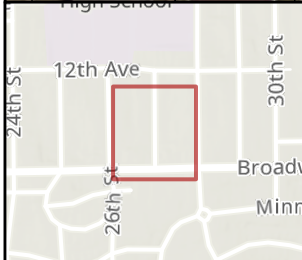
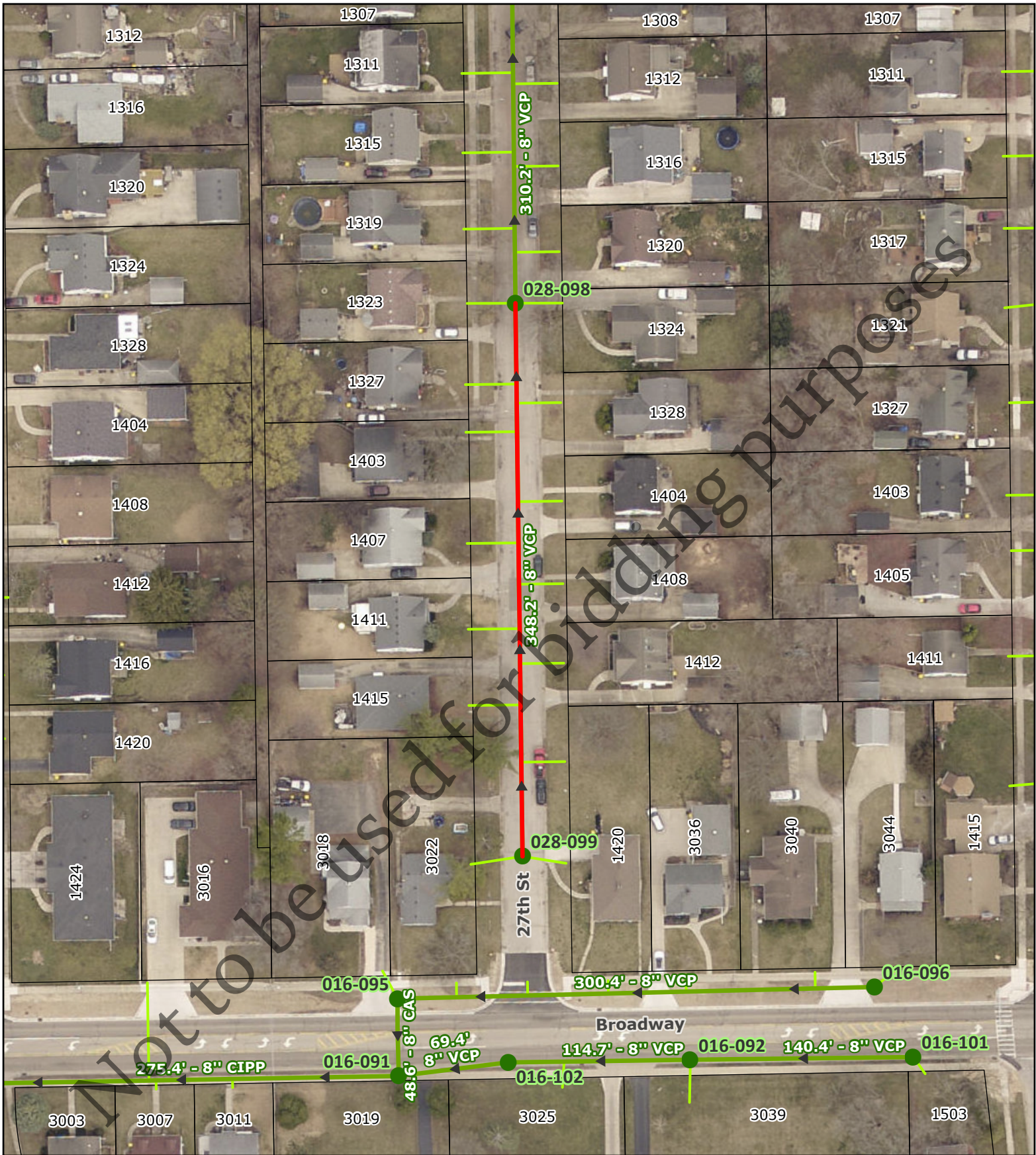
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 23

Main ID 028-099-028-098



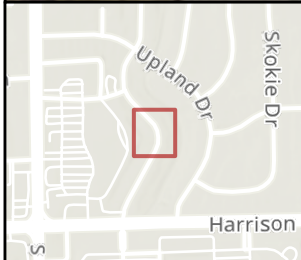
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK

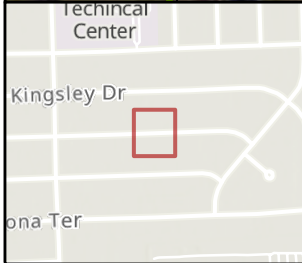
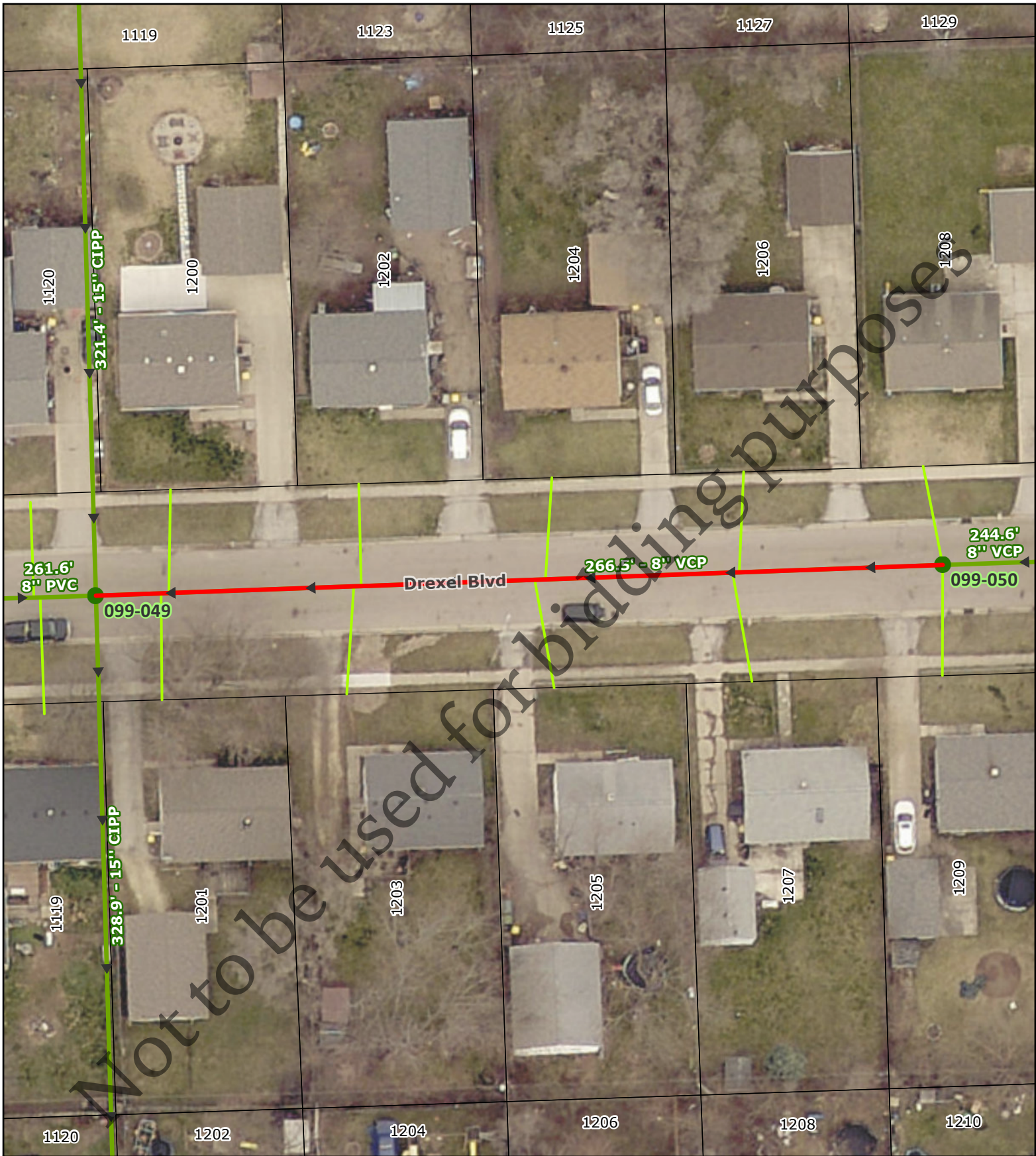


Item 24

Main ID 105-020-105-018

- Manholes
- ➔ Sanitary Mains
- Sanitary Service





Item 25

Main ID 099-050-099-049

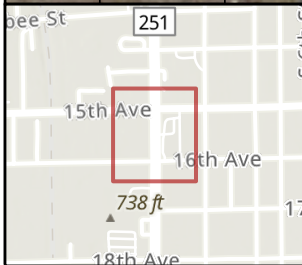
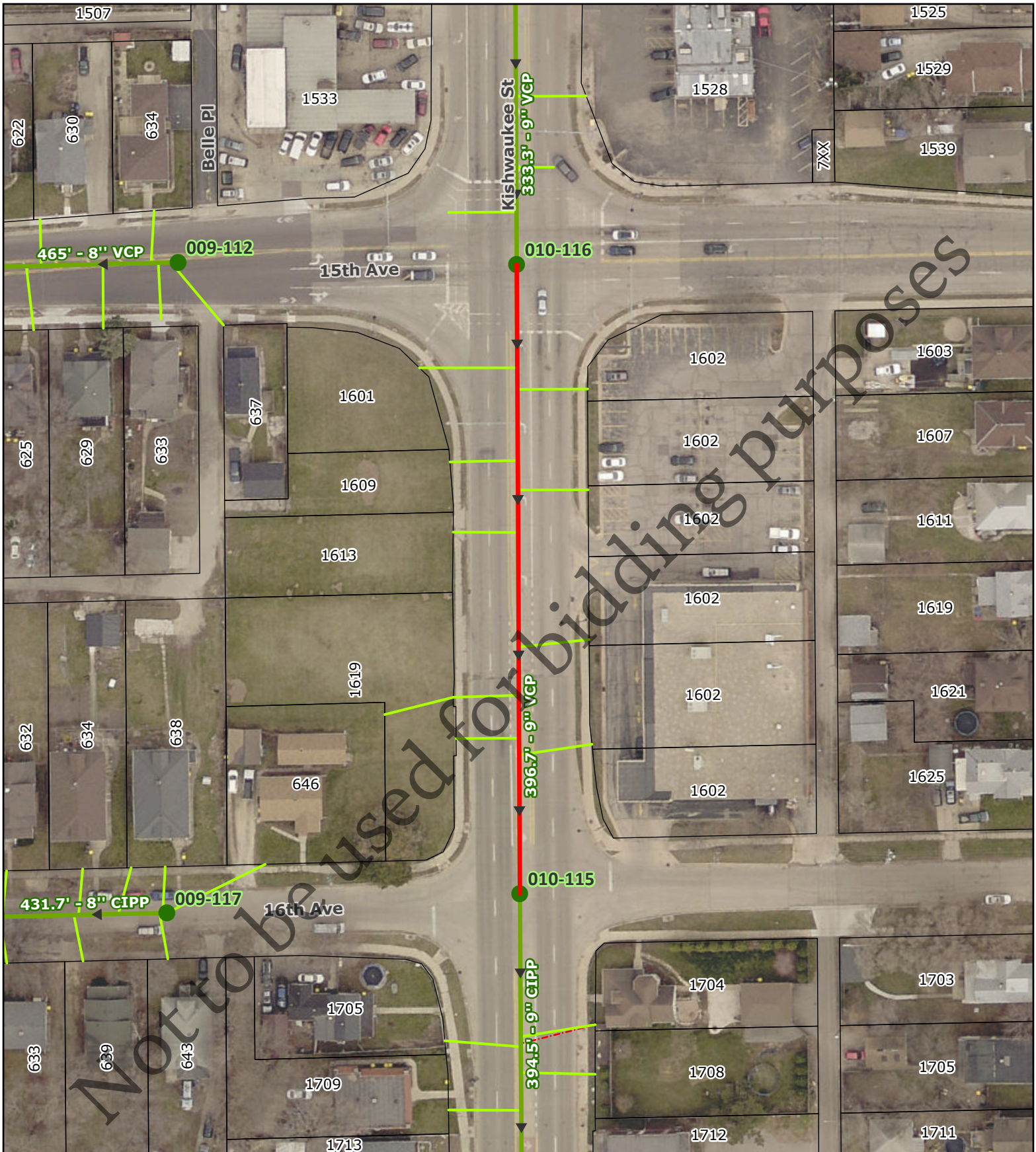


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 26

Main ID 010-116-010-115

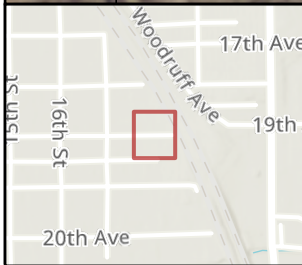


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 27

Main ID 011-033-011-032

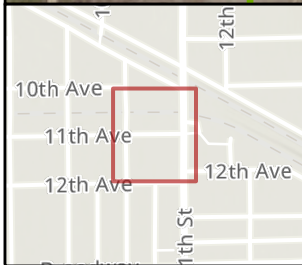
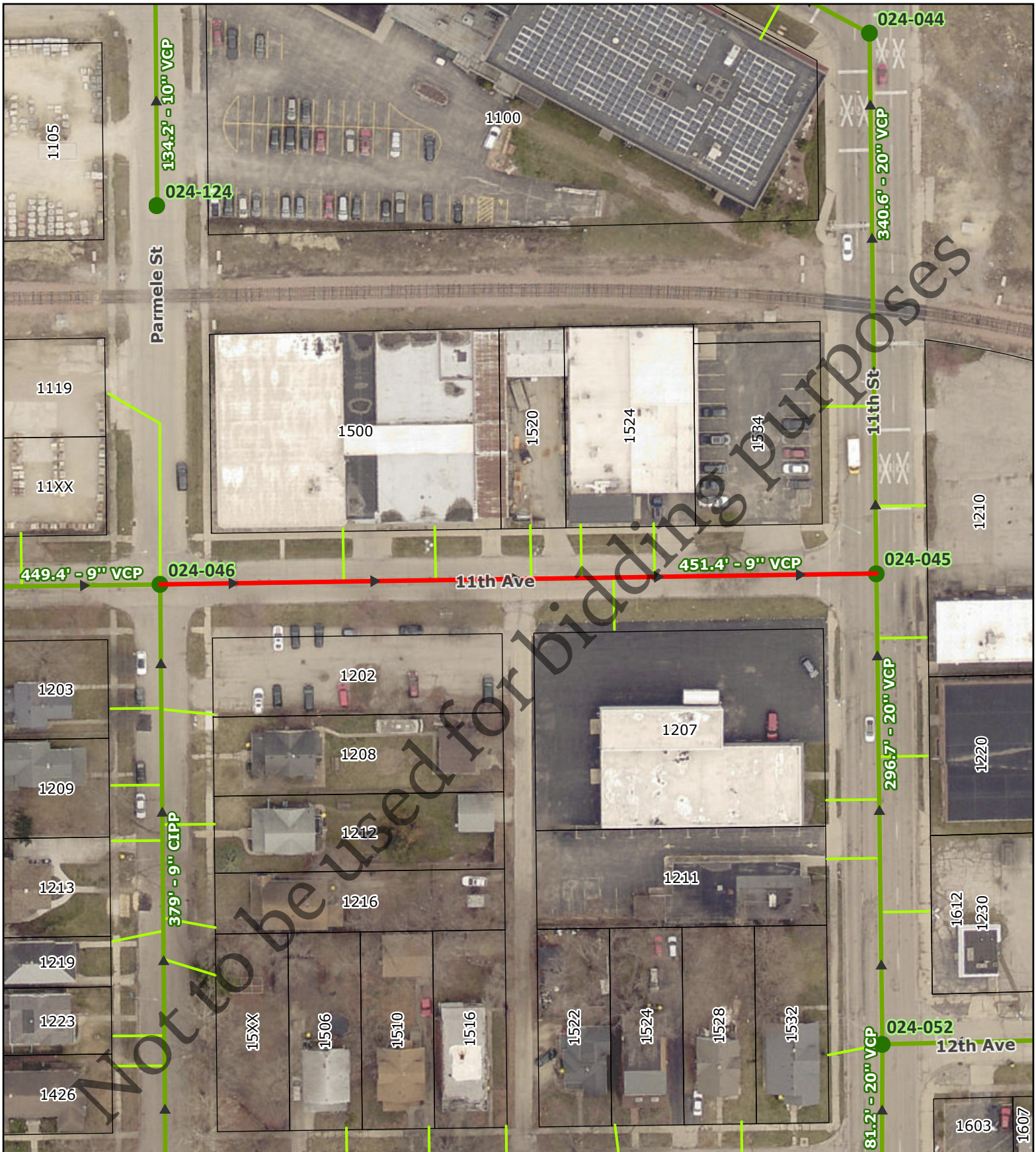
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 28

Main ID 024-046-024-045

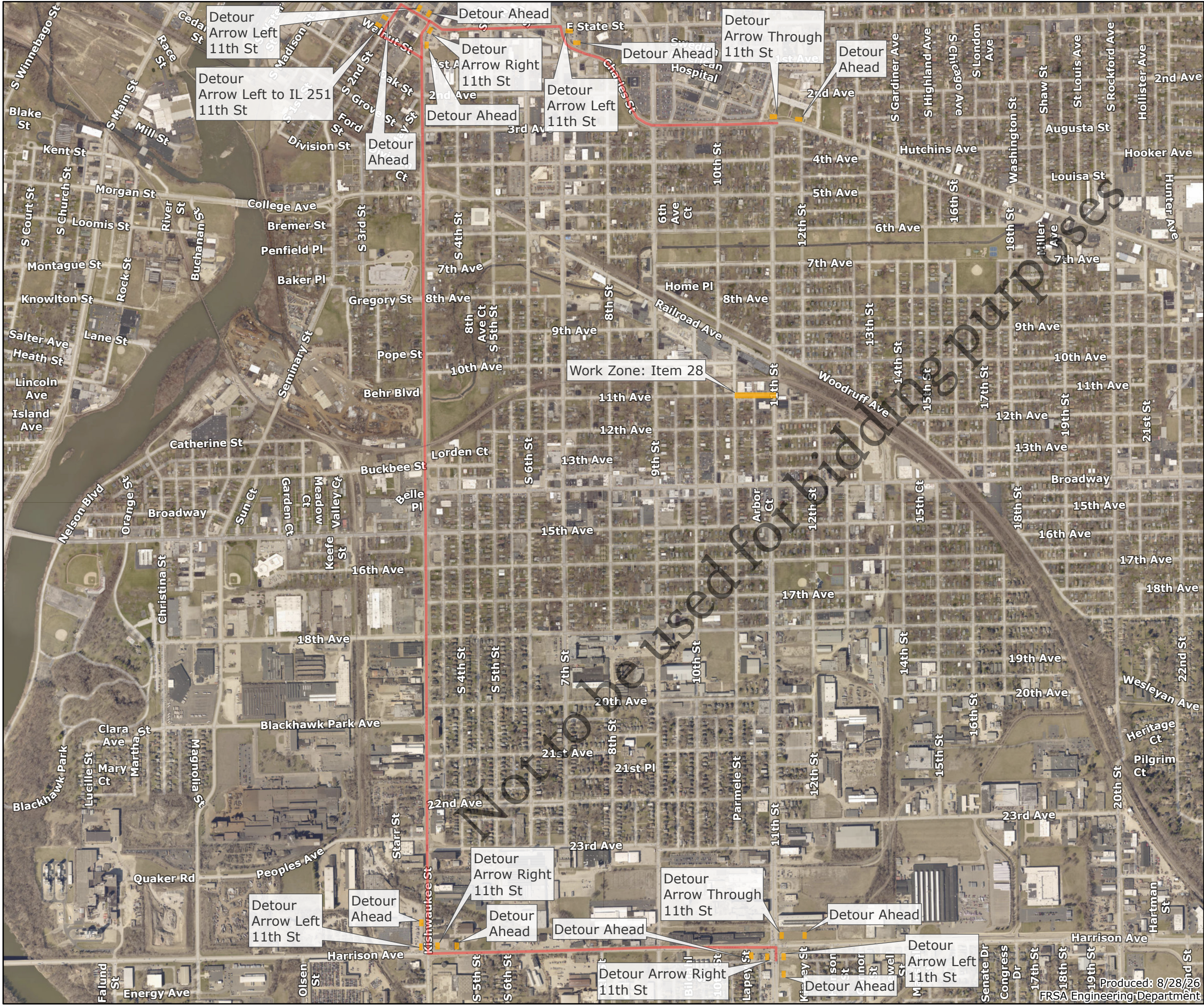


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



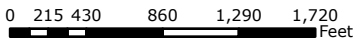
General Notes:

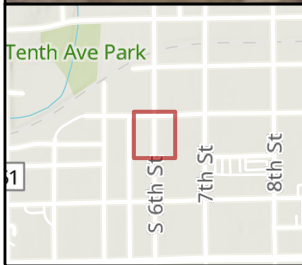
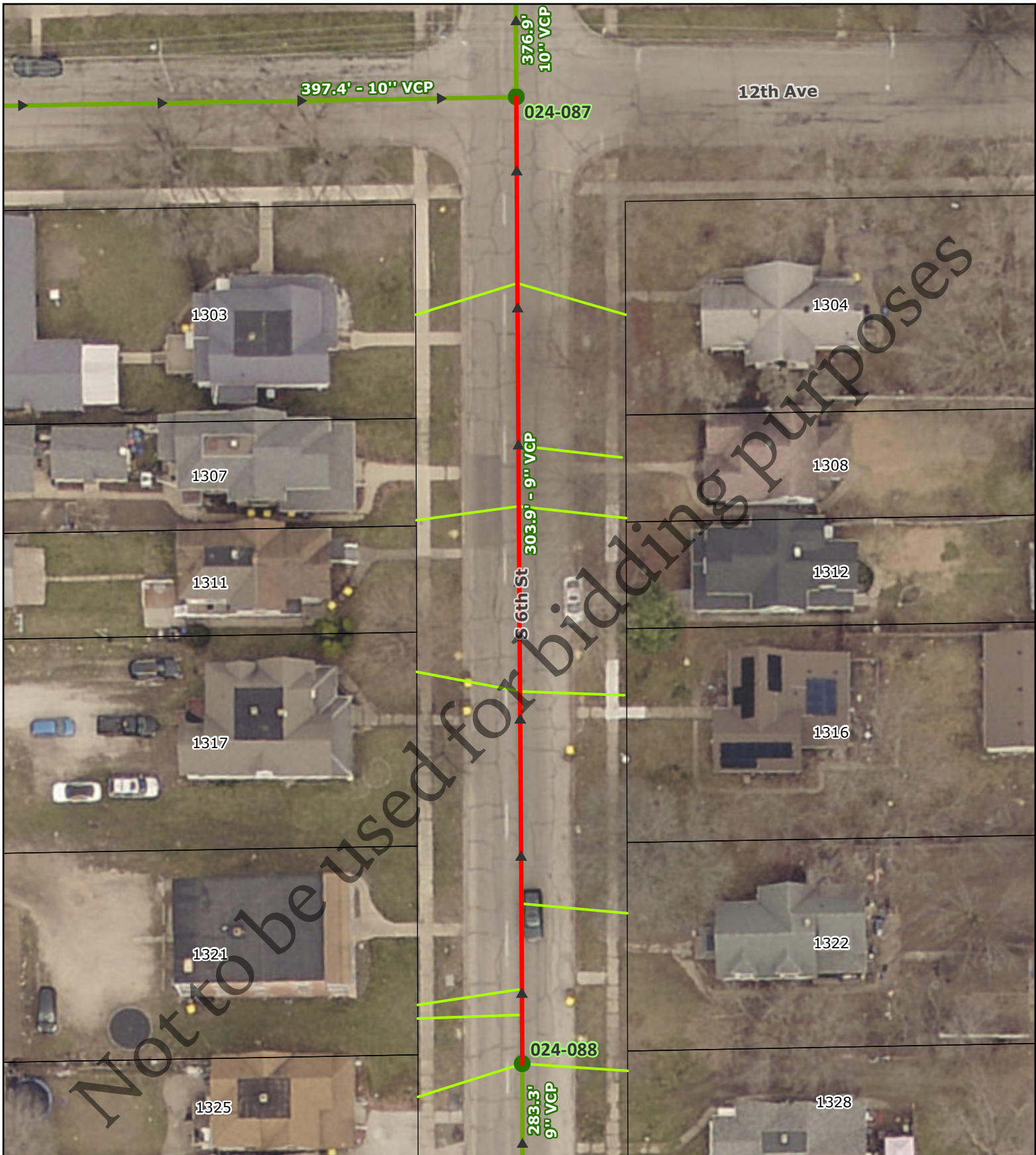
1. The Contractor shall notify Four Rivers, municipal agencies, jurisdictional roadway authorities and all affected property owners 48 hours, minimum, prior to the start of construction.
2. All sanitary sewer construction shall be in accordance with the current edition of *Standard Specifications for Water and Sewer Construction in Illinois* and the requirements of the FRSA.
3. The Contractor shall identify all utility locations in the field by contacting JULIE at 811 or 1.800.892.0123 and all utilities not on the JULIE network 72 hours, minimum, prior to the start of construction.
4. All soil erosion and sediment control measures shall be in conformance with *the Illinois Urban Manual*, current edition.
5. All roadway construction shall be completed in accordance with the requirements of the roadway authority and the FRSA.

Notes regarding traffic control:

- **Signage and barricades for half road closure of 11th Street shall conform to IDOT Standard 701611-02.**
- **All temporary traffic control devices shall comply with Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD), current edition.**

CP #2737 Item 28 Traffic Control Map





Item 29

Main ID 024-088-024-087

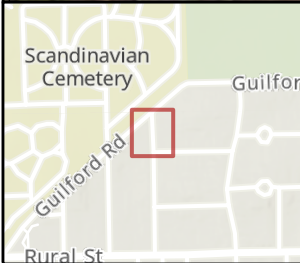
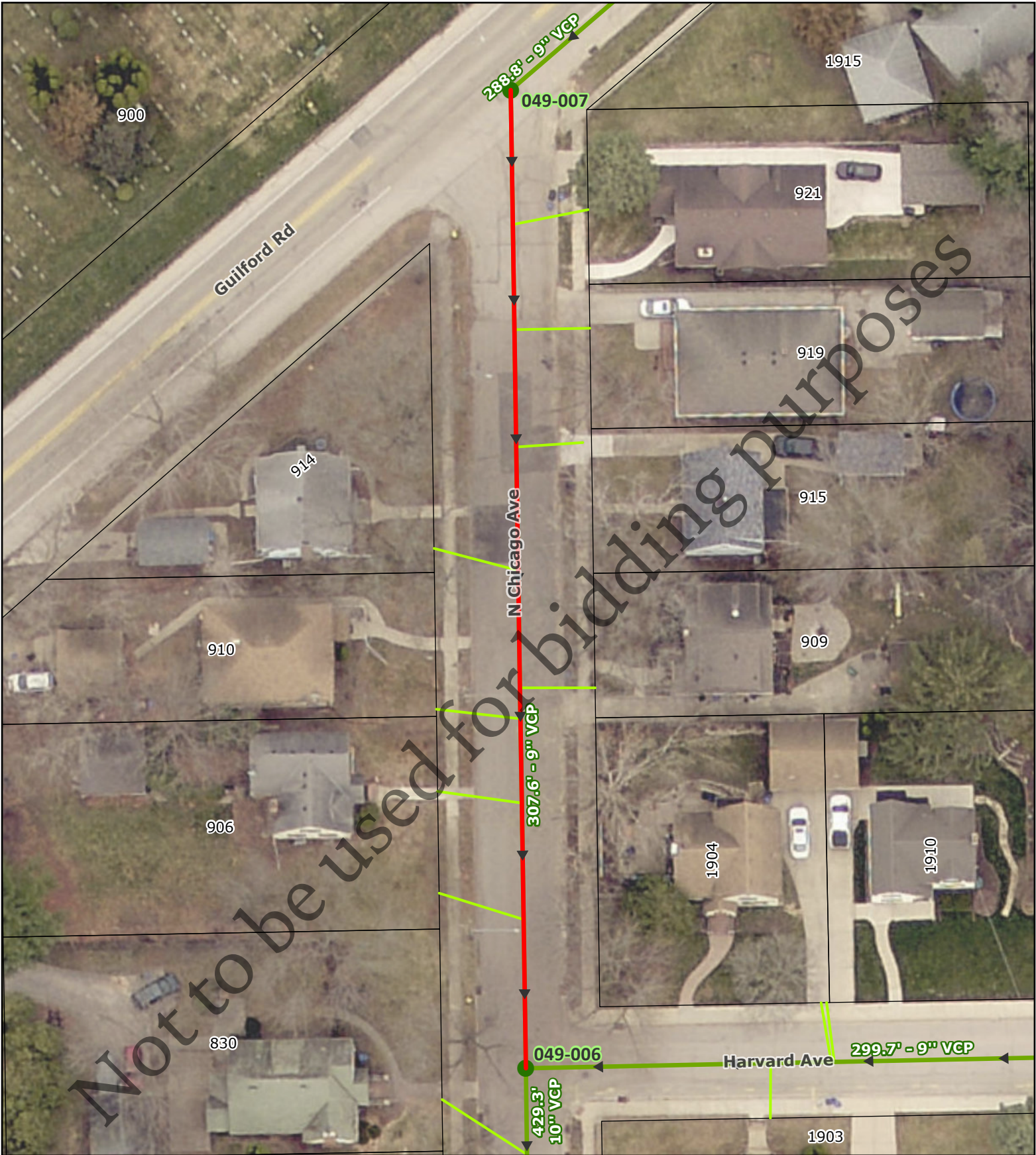


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- ▶ Sanitary Mains
- Sanitary Service



Item 30

Main ID 049-007-049-006

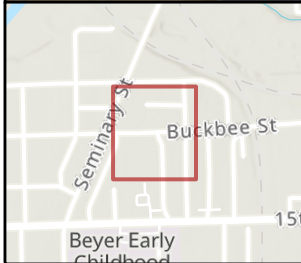
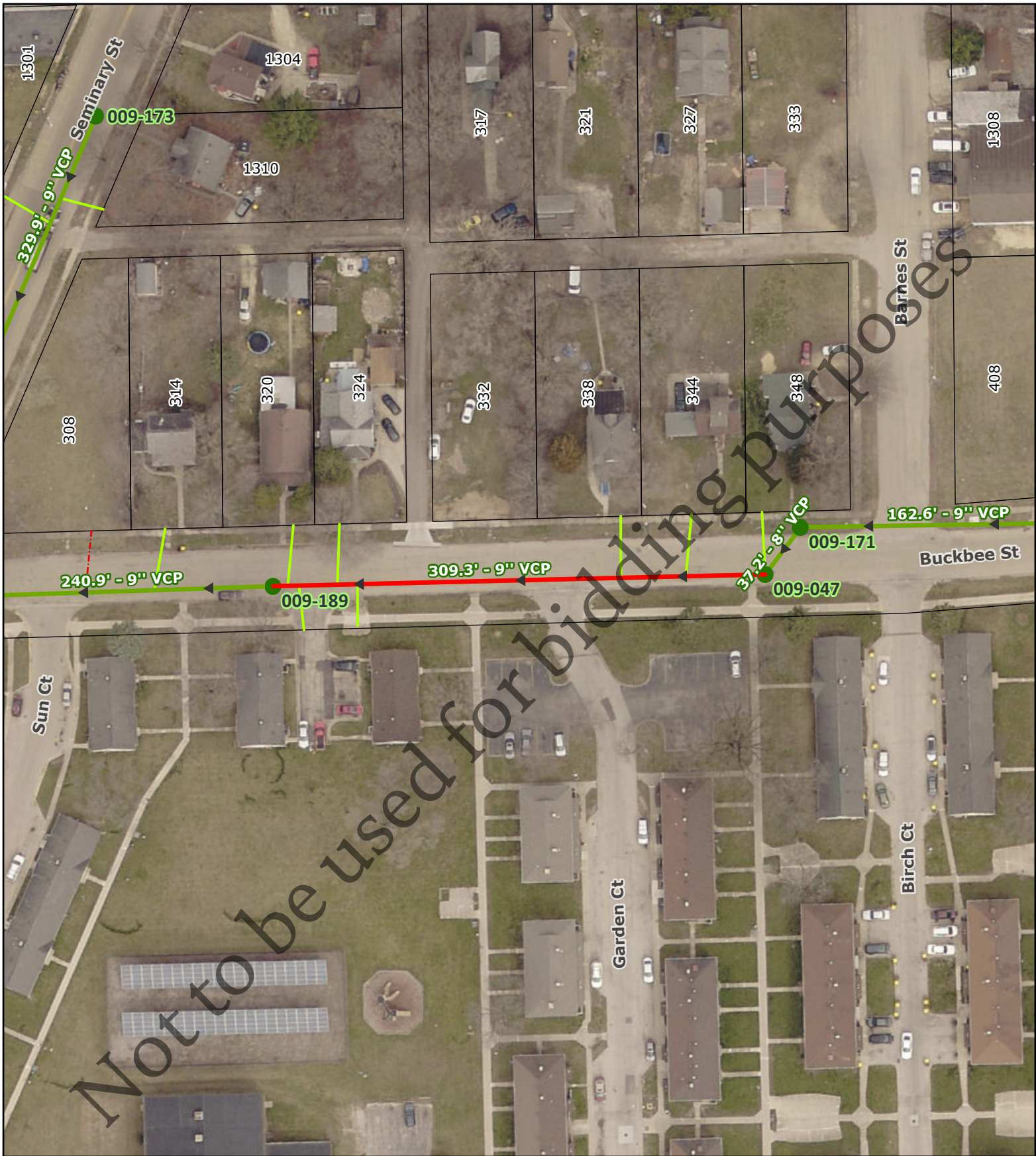
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 31

Main ID 009-047-009-189

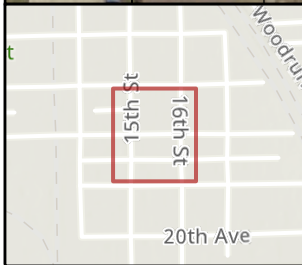
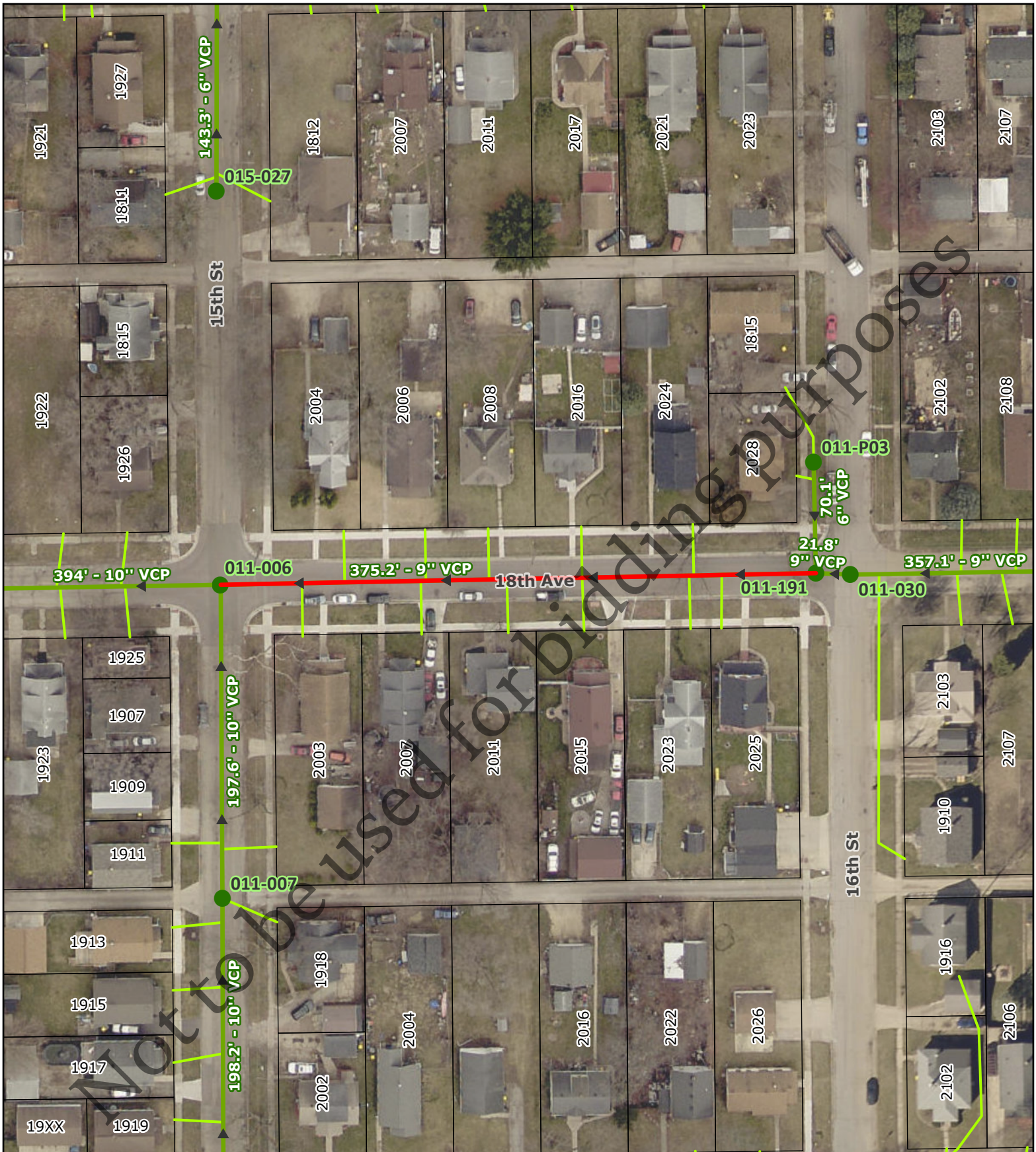
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 32

Main ID 011-191-011-006

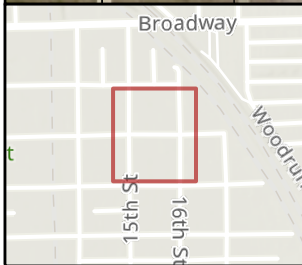
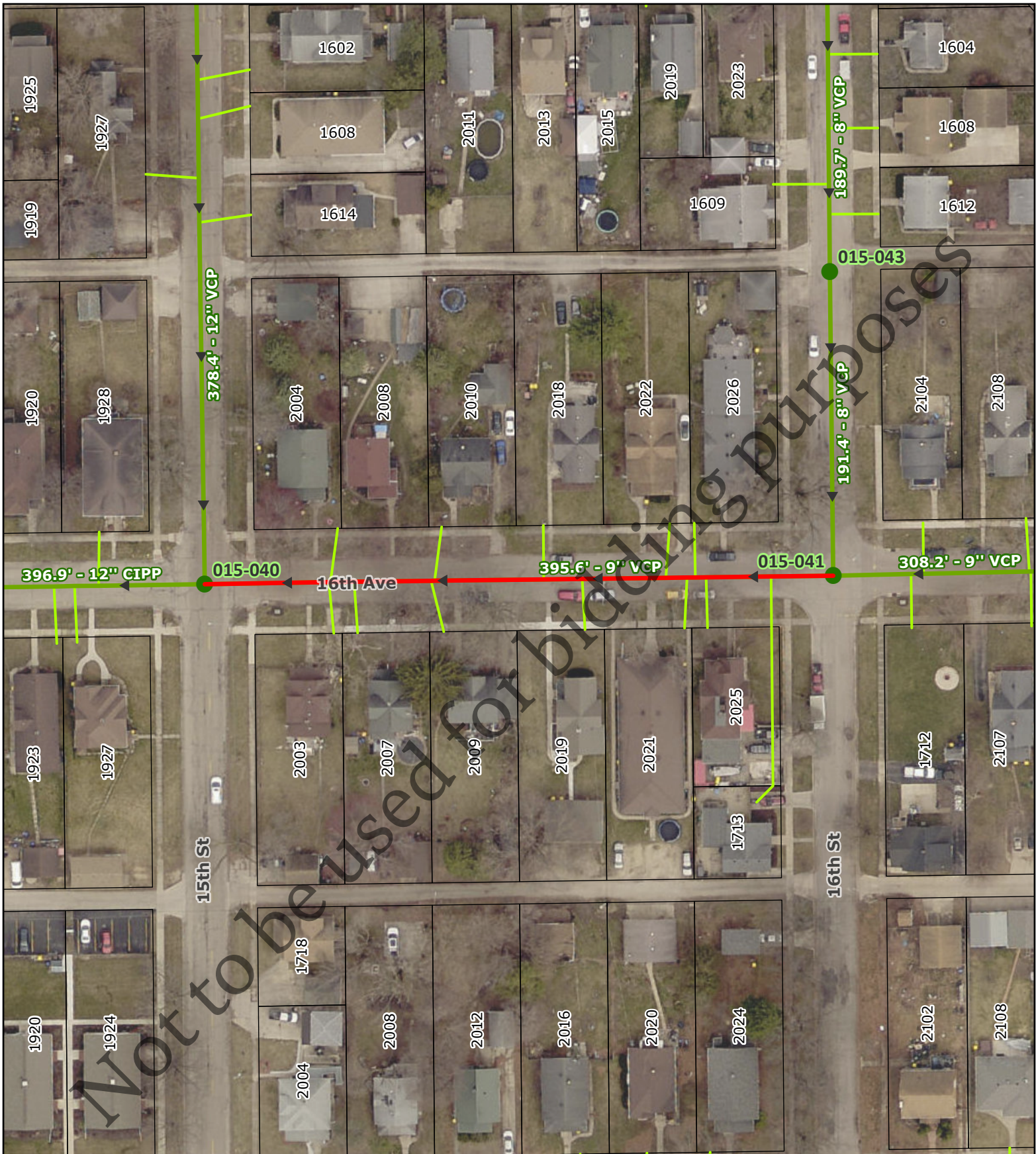


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 33

Main ID 015-041-015-040



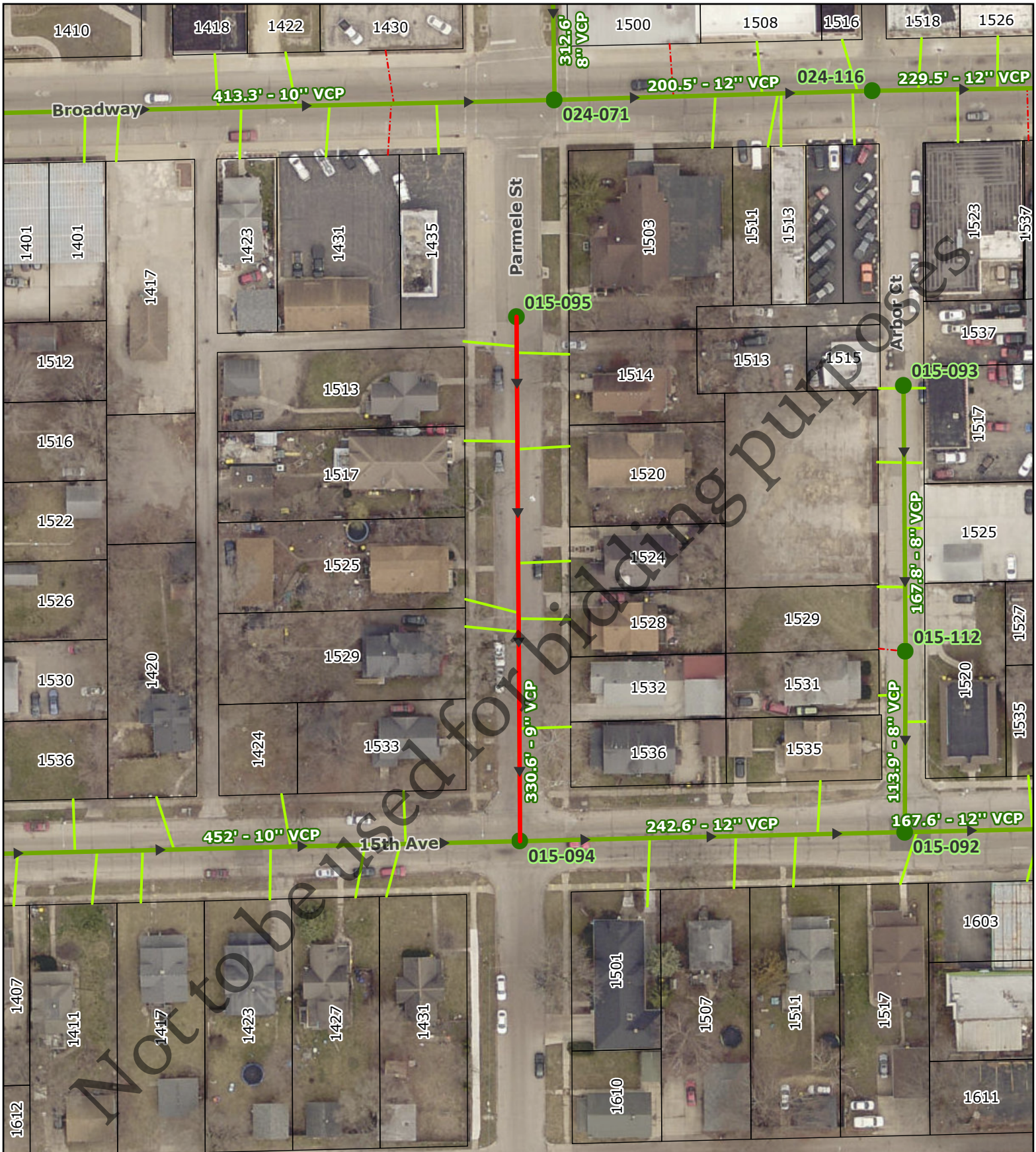
● Manholes

➤ Sanitary Mains

— Sanitary Service



1 inch = 80 ft



Item 34

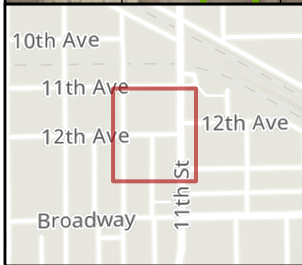
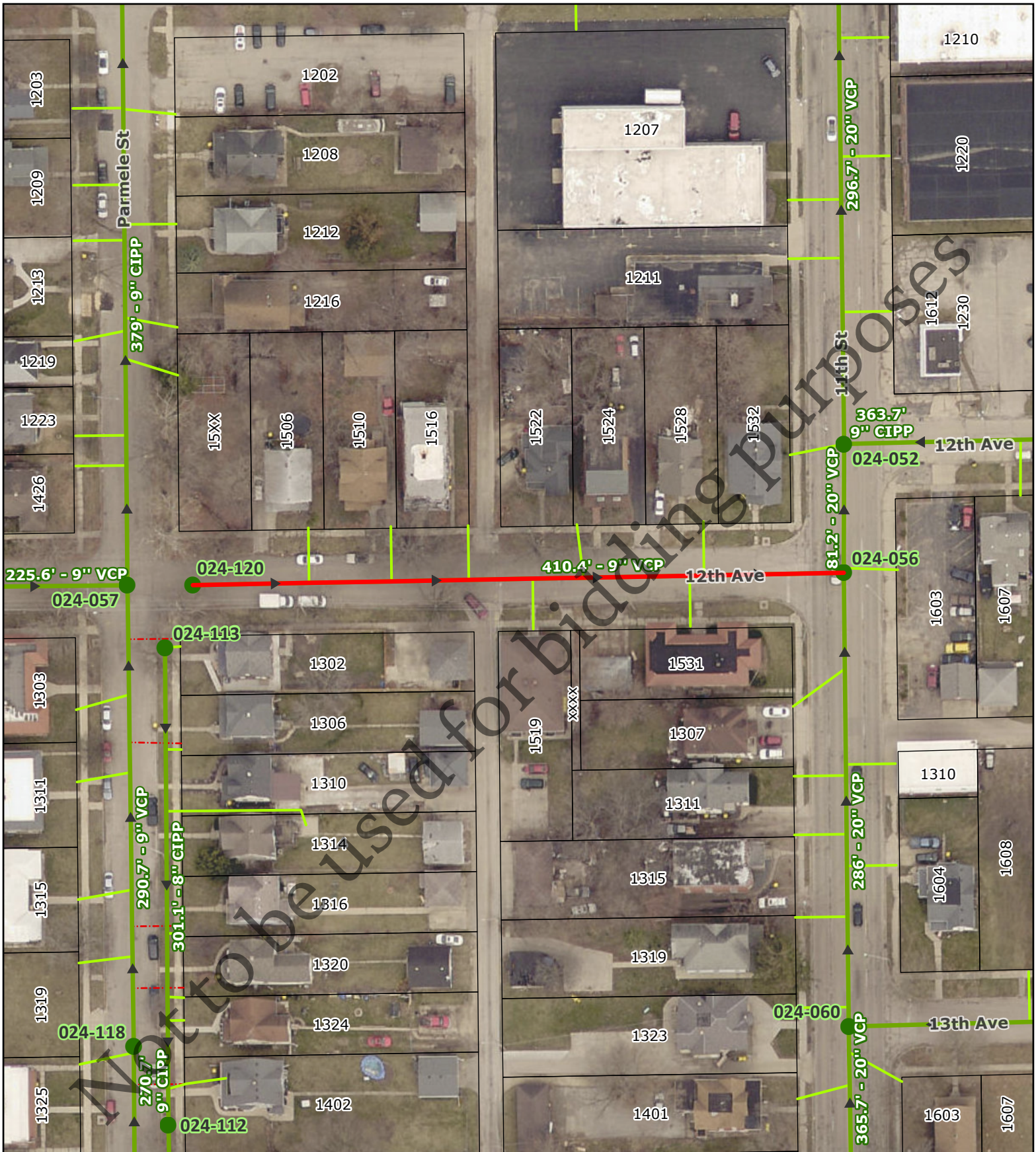
Main ID 015-095-015-094

Four Rivers
Sanitation Authority

1 inch = 80 ft

- Manholes
- ➔ Sanitary Mains
- Sanitary Service

Produced: 8/25/2026 By: JK



Item 35

Main ID 024-120-024-056

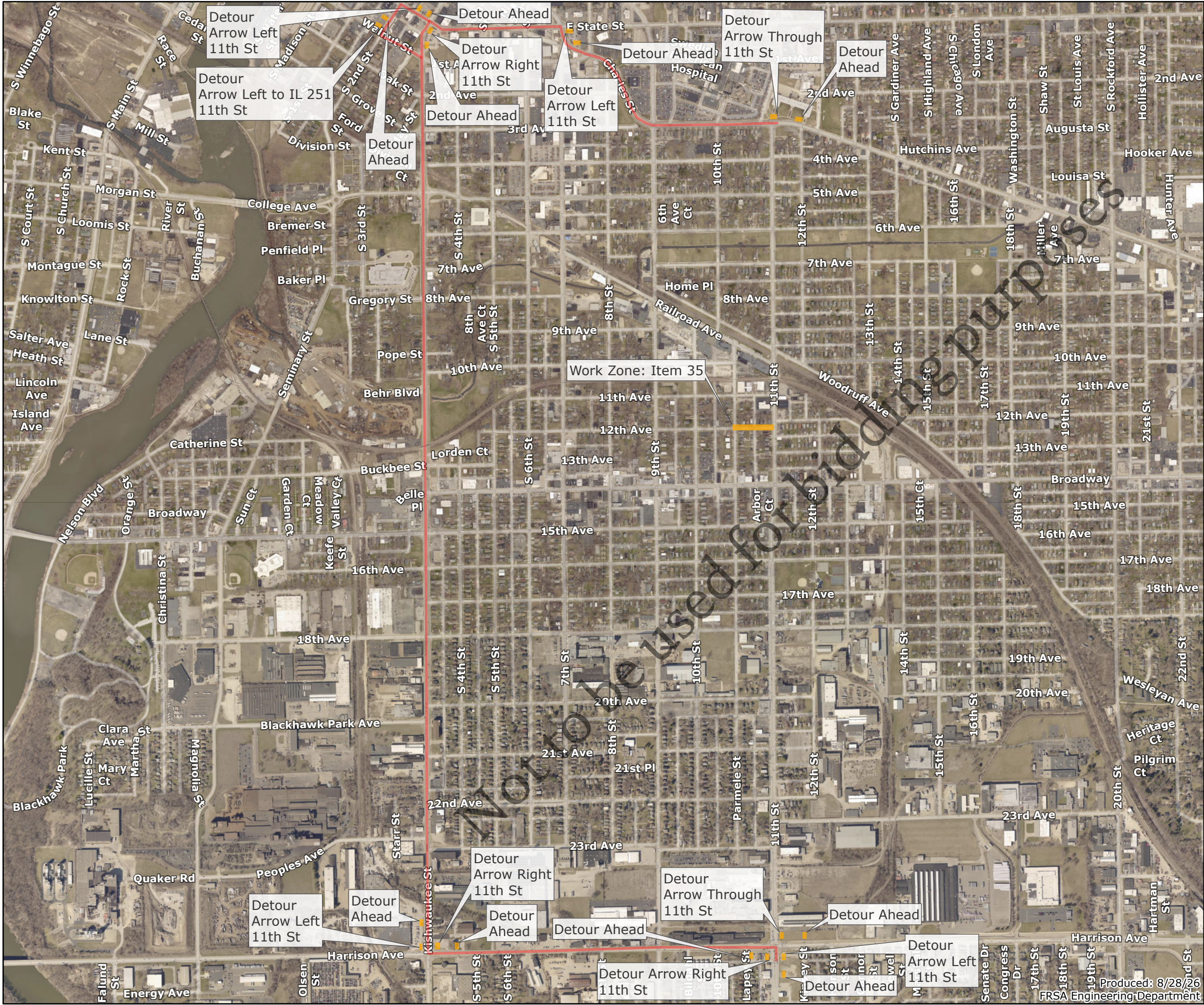


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



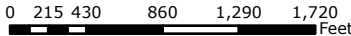
General Notes:

1. The Contractor shall notify Four Rivers, municipal agencies, jurisdictional roadway authorities and all affected property owners 48 hours, minimum, prior to the start of construction.
2. All sanitary sewer construction shall be in accordance with the current edition of *Standard Specifications for Water and Sewer Construction in Illinois* and the requirements of the FRSA.
3. The Contractor shall identify all utility locations in the field by contacting JULIE at 811 or 1.800.892.0123 and all utilities not on the JULIE network 72 hours, minimum, prior to the start of construction.
4. All soil erosion and sediment control measures shall be in conformance with *the Illinois Urban Manual*, current edition.
5. All roadway construction shall be completed in accordance with the requirements of the roadway authority and the FRSA.

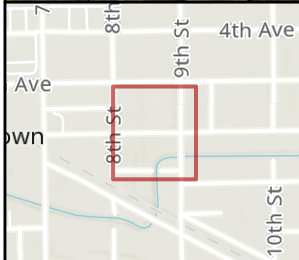
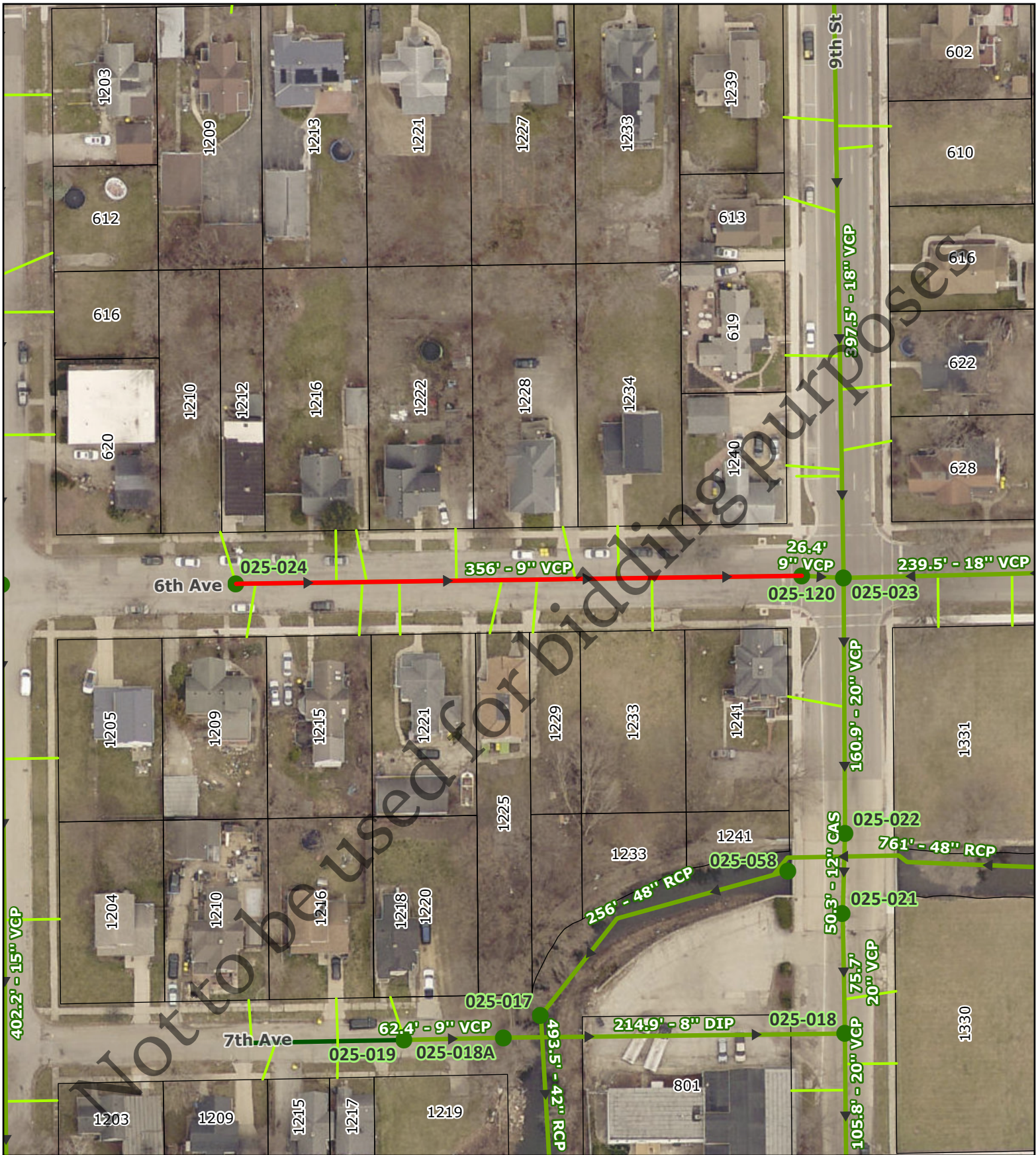
Notes regarding traffic control:

- **Signage and barricades for half road closure of 11th Street shall conform to IDOT Standard 701611-02.**
- **All temporary traffic control devices shall comply with Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD), current edition.**

CP #2737 Item 35 Traffic Control Map



Produced: 8/28/26
FRSA Engineering Department



Item 36

Main ID 025-024-025-120

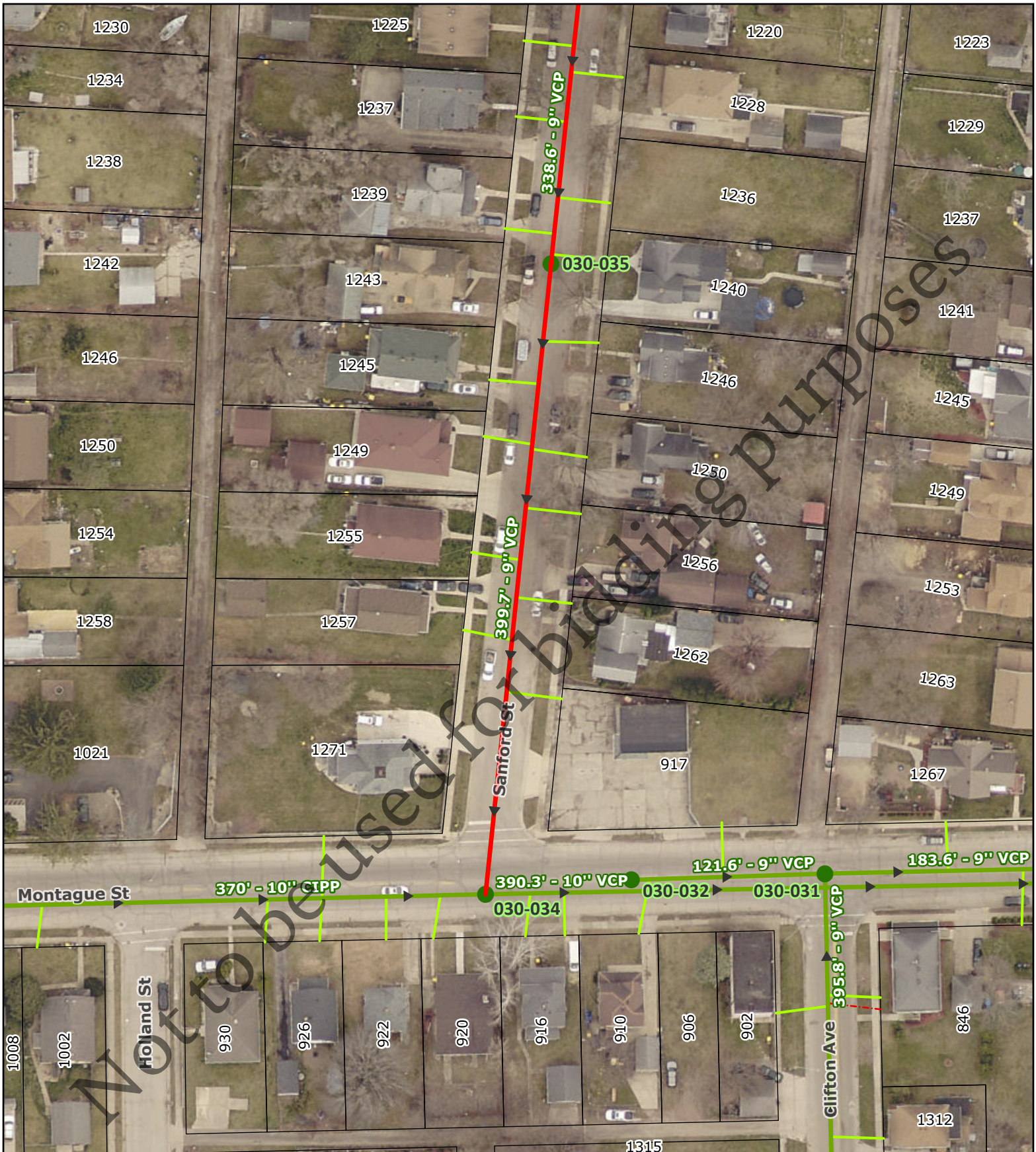
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 38

Main ID 030-035-030-034

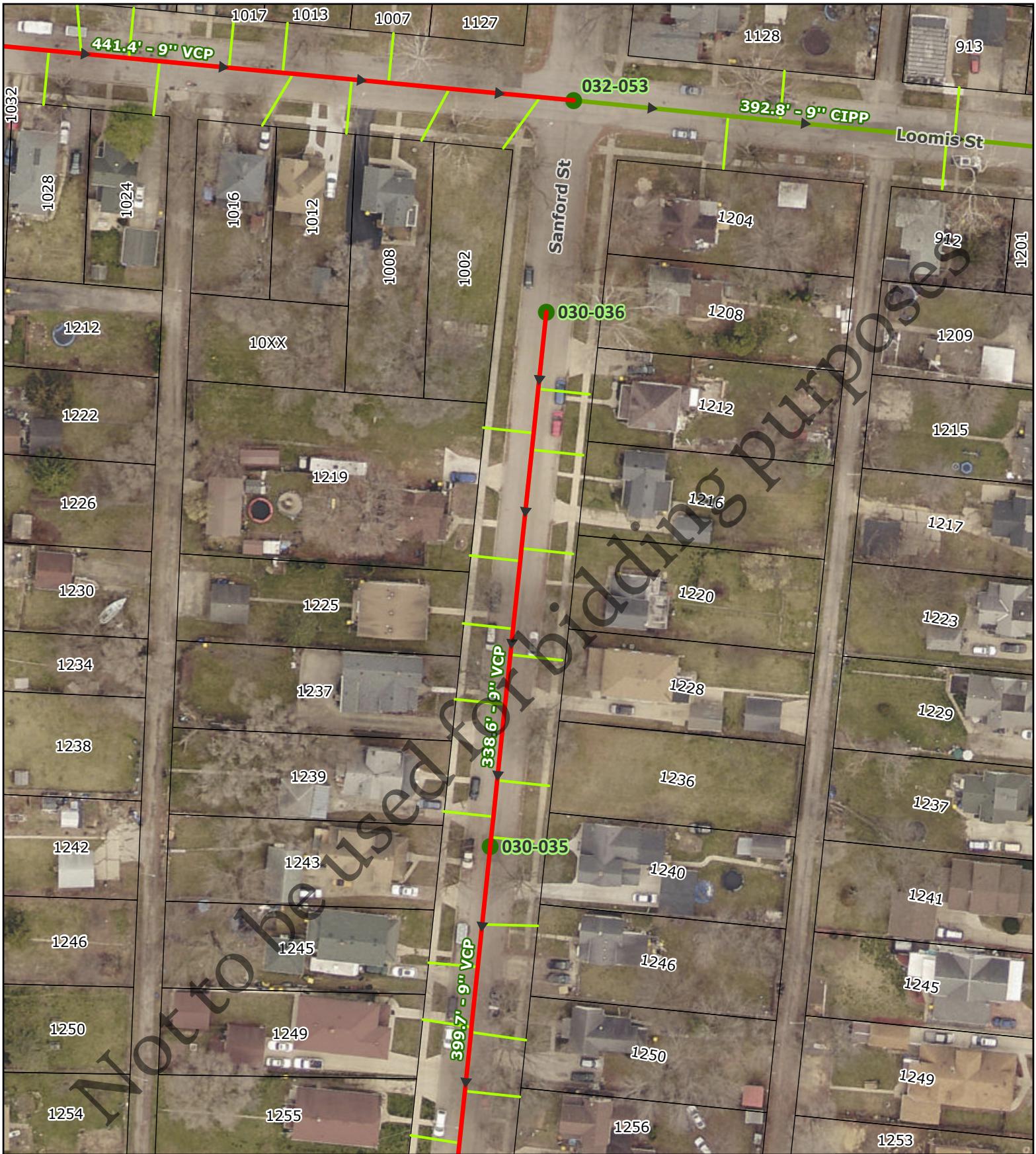


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- ➔ Sanitary Mains
- Sanitary Service



Item 39

Main ID 030-036-030-035

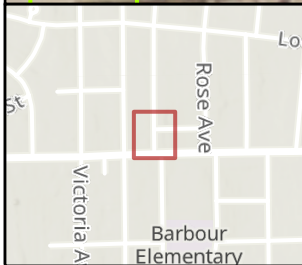
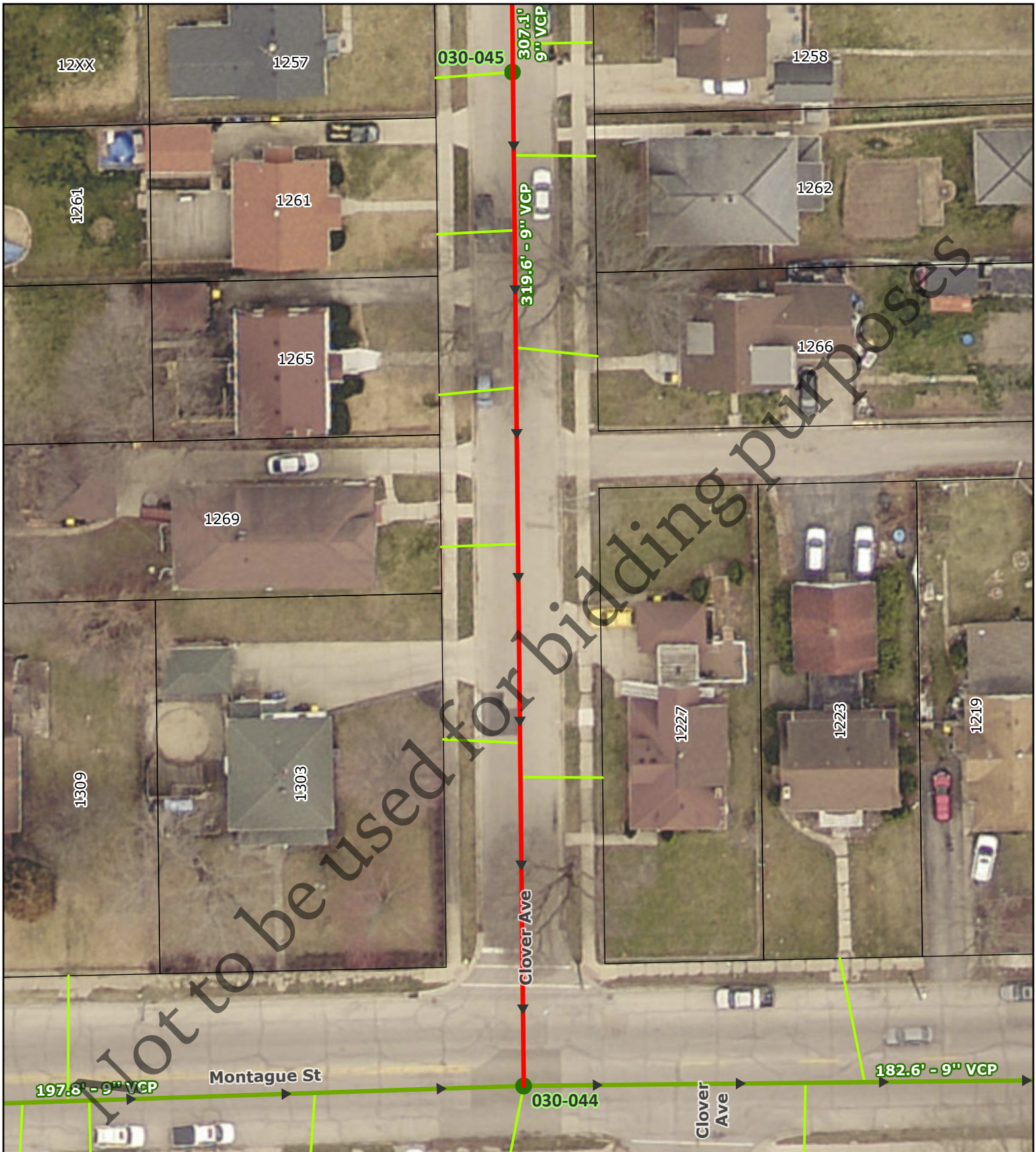
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 40

Main ID 030-045-030-044

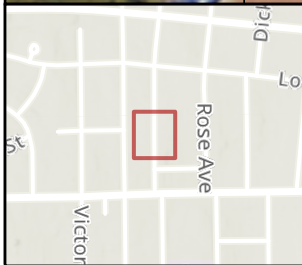
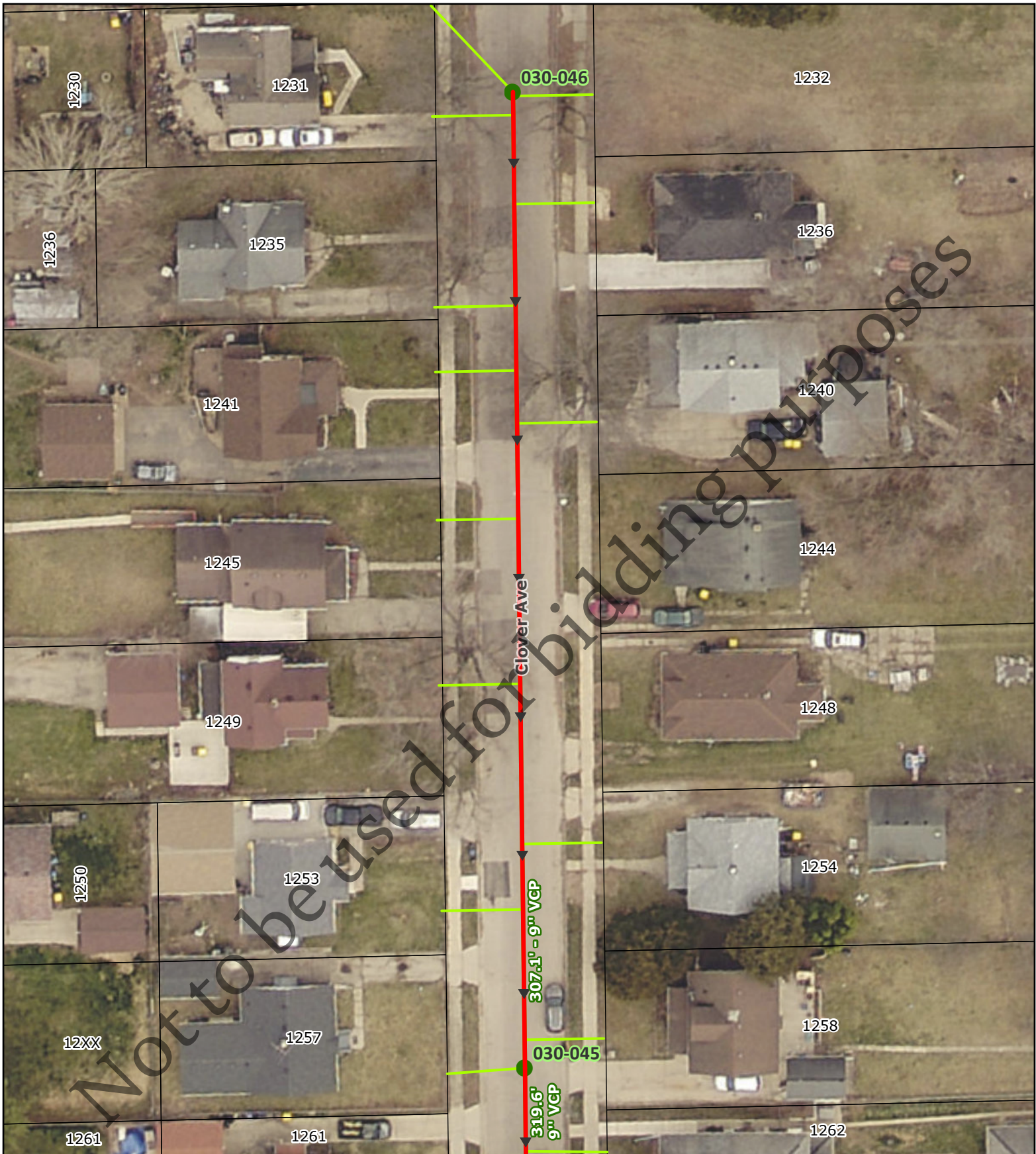


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- ➔ Sanitary Mains
- Sanitary Service



Item 41

Main ID 030-046-030-045

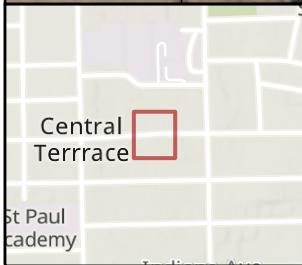


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- ➔ Sanitary Mains
- Sanitary Service



Item 42

Main ID 030-060-030-095

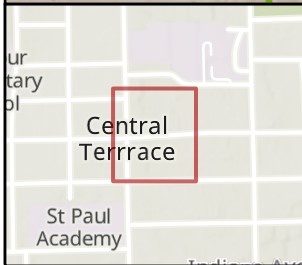
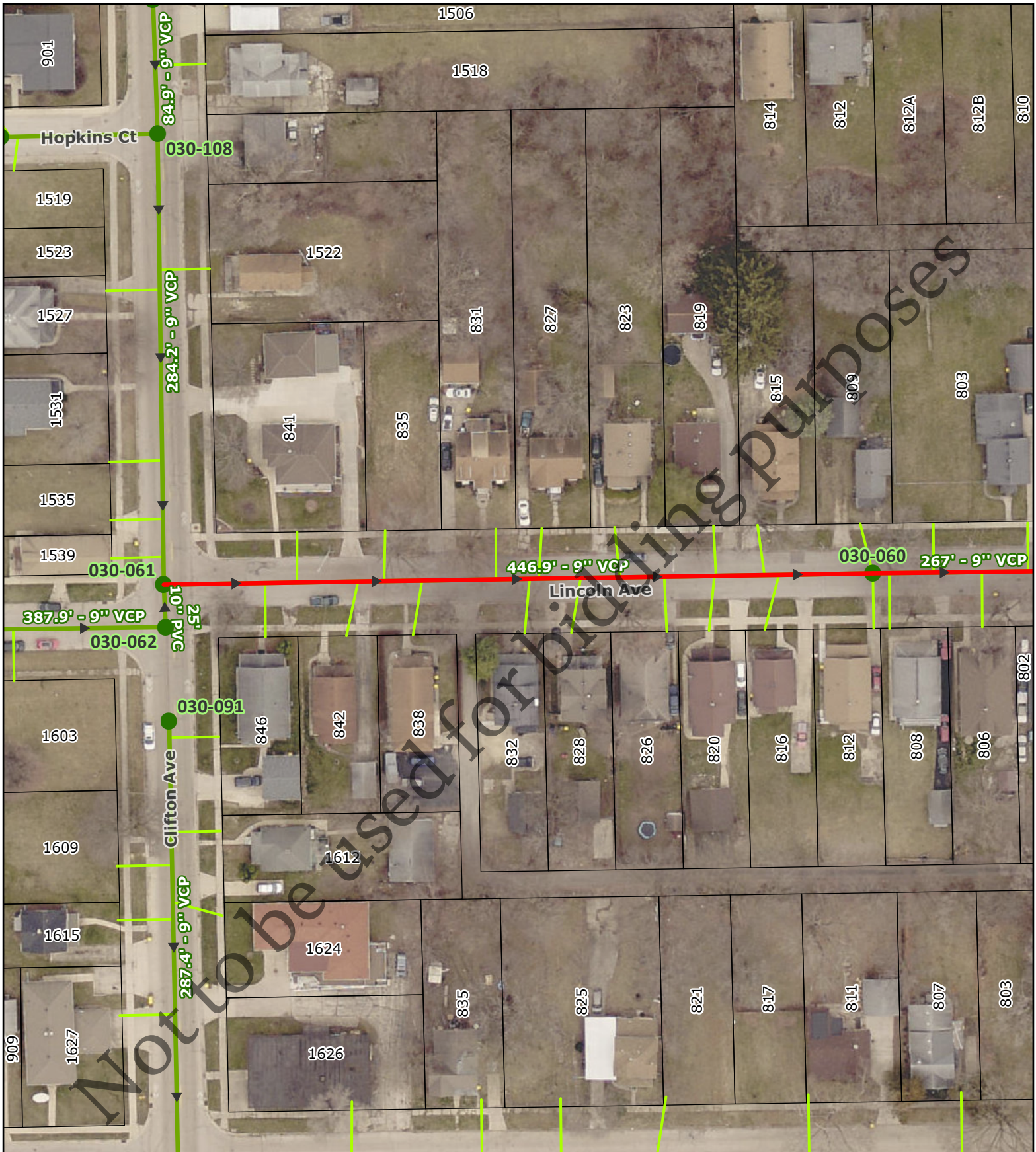
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 43

Main ID 030-061-030-060



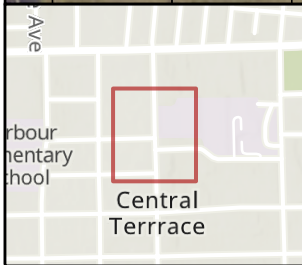
● Manholes

➔ Sanitary Mains

— Sanitary Service



1 inch = 80 ft



Item 44

Main ID 030-064-030-063

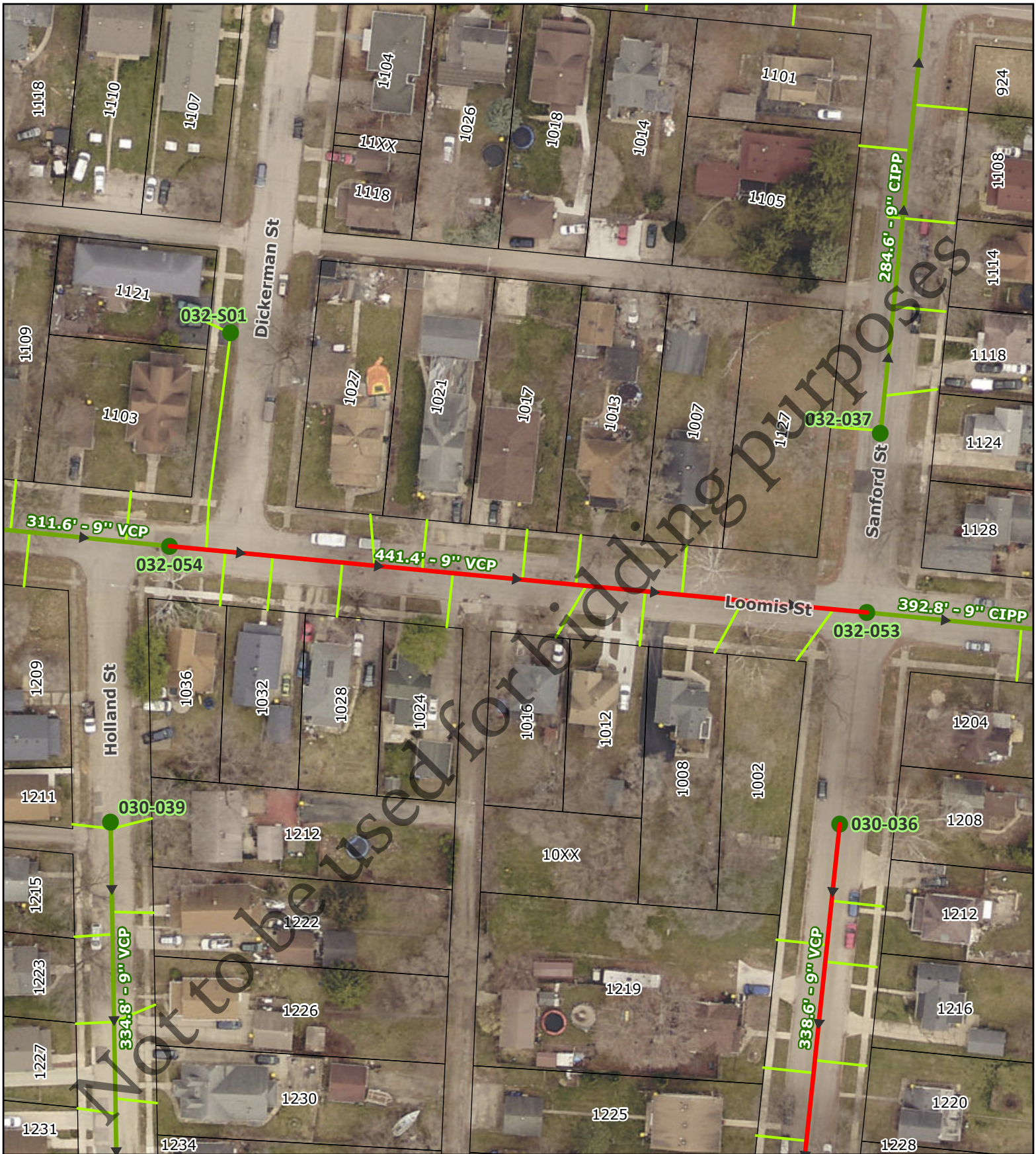


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 45

Main ID 032-054-032-053

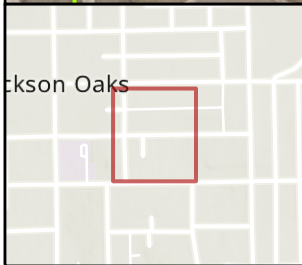
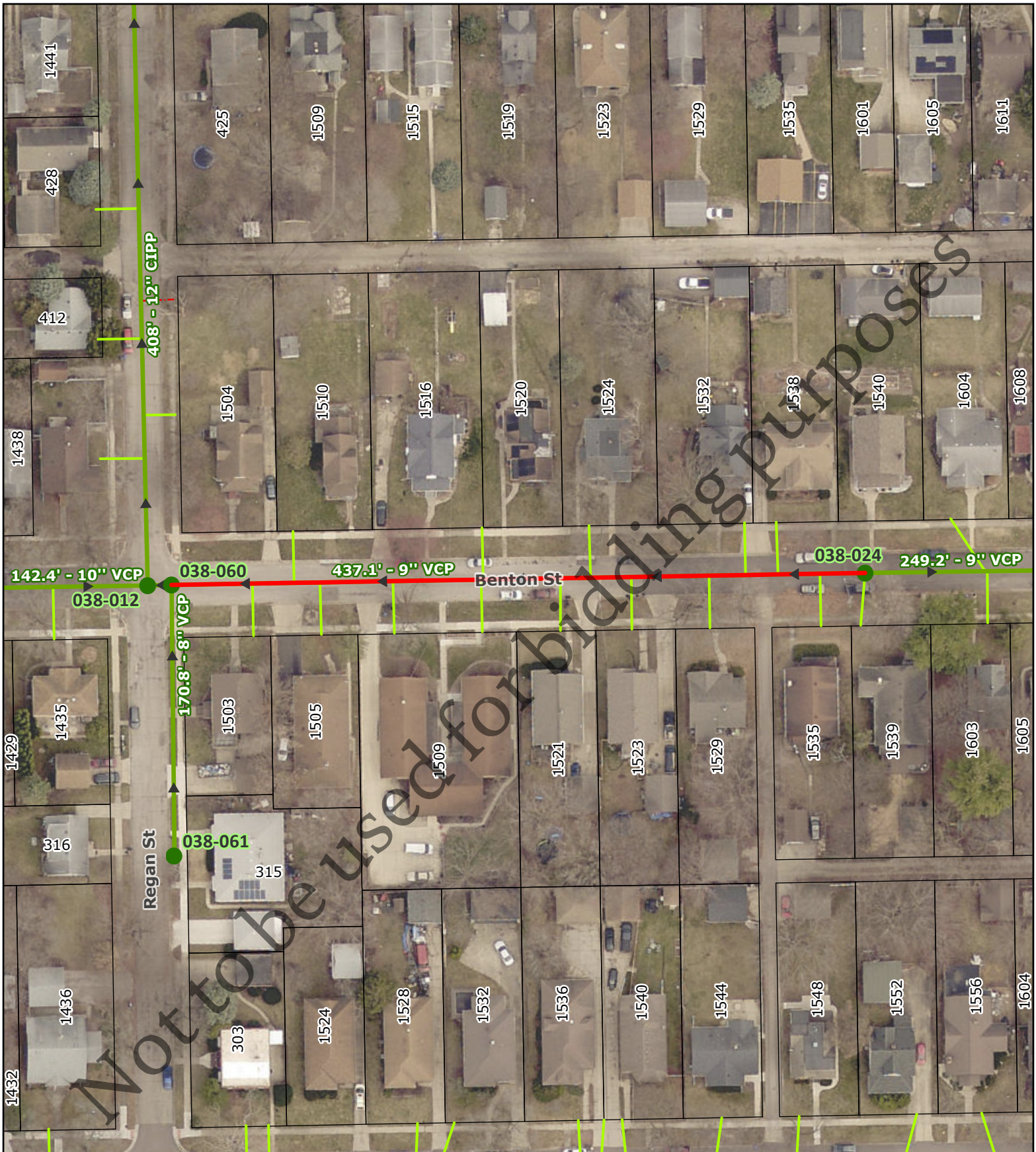


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 46

Main ID 038-024-038-060

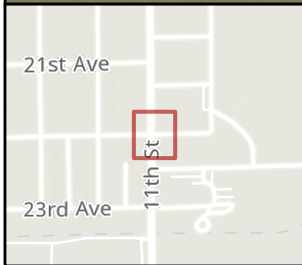


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 47

Main ID 010-007-010-006



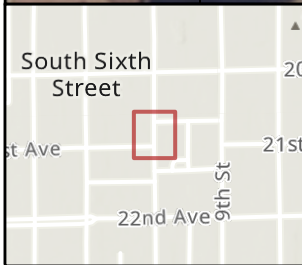
● Manholes

➔ Sanitary Mains

— Sanitary Service



1 inch = 40 ft



Item 48

Main ID 010-044A-010-044

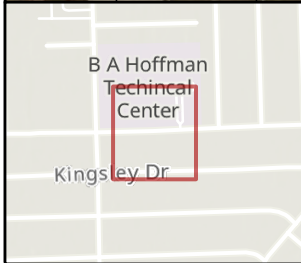
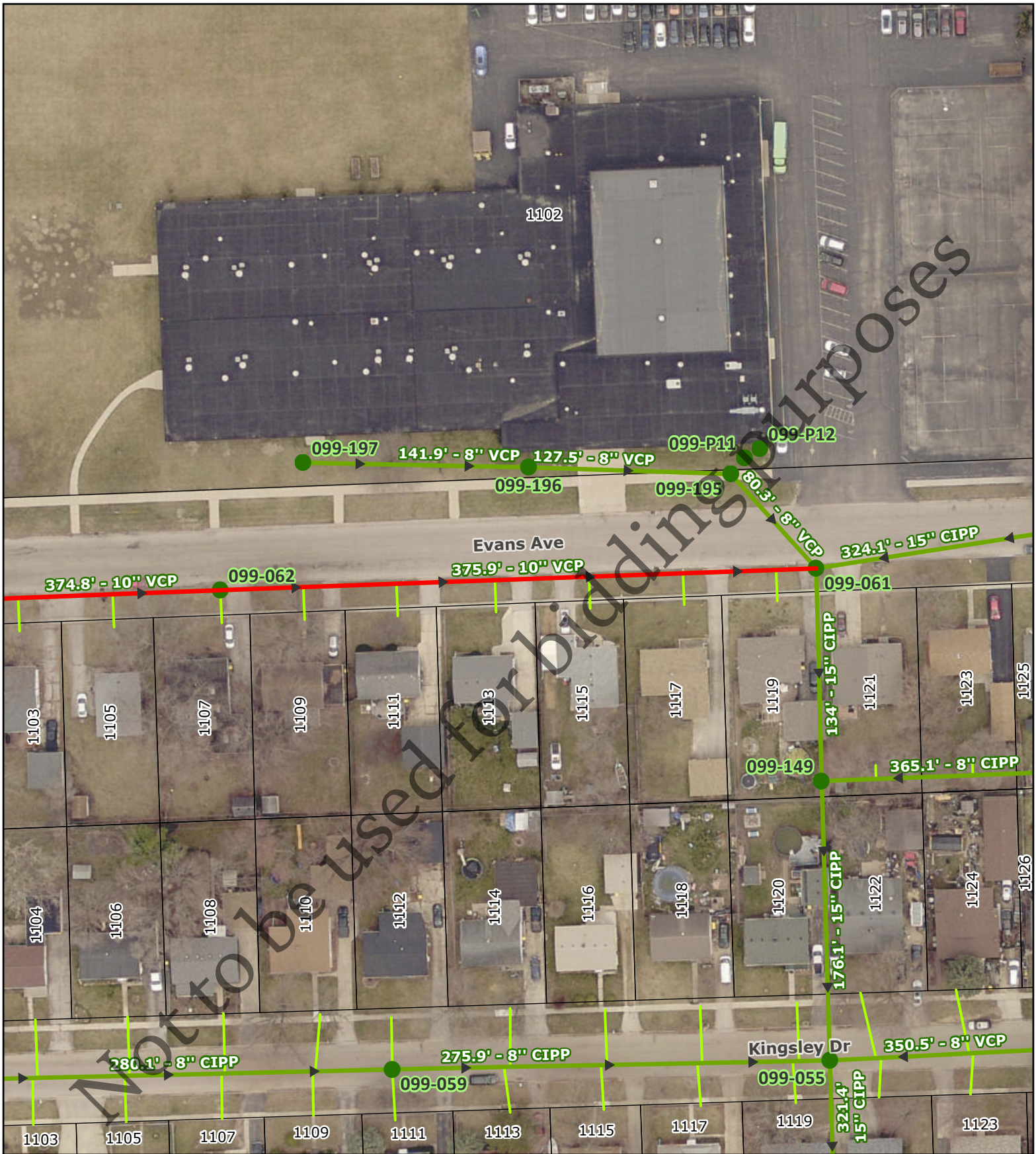


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- ➔ Sanitary Mains
- Sanitary Service



Item 49

Main ID 099-062-099-061

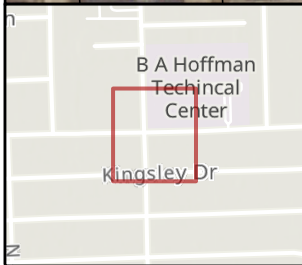
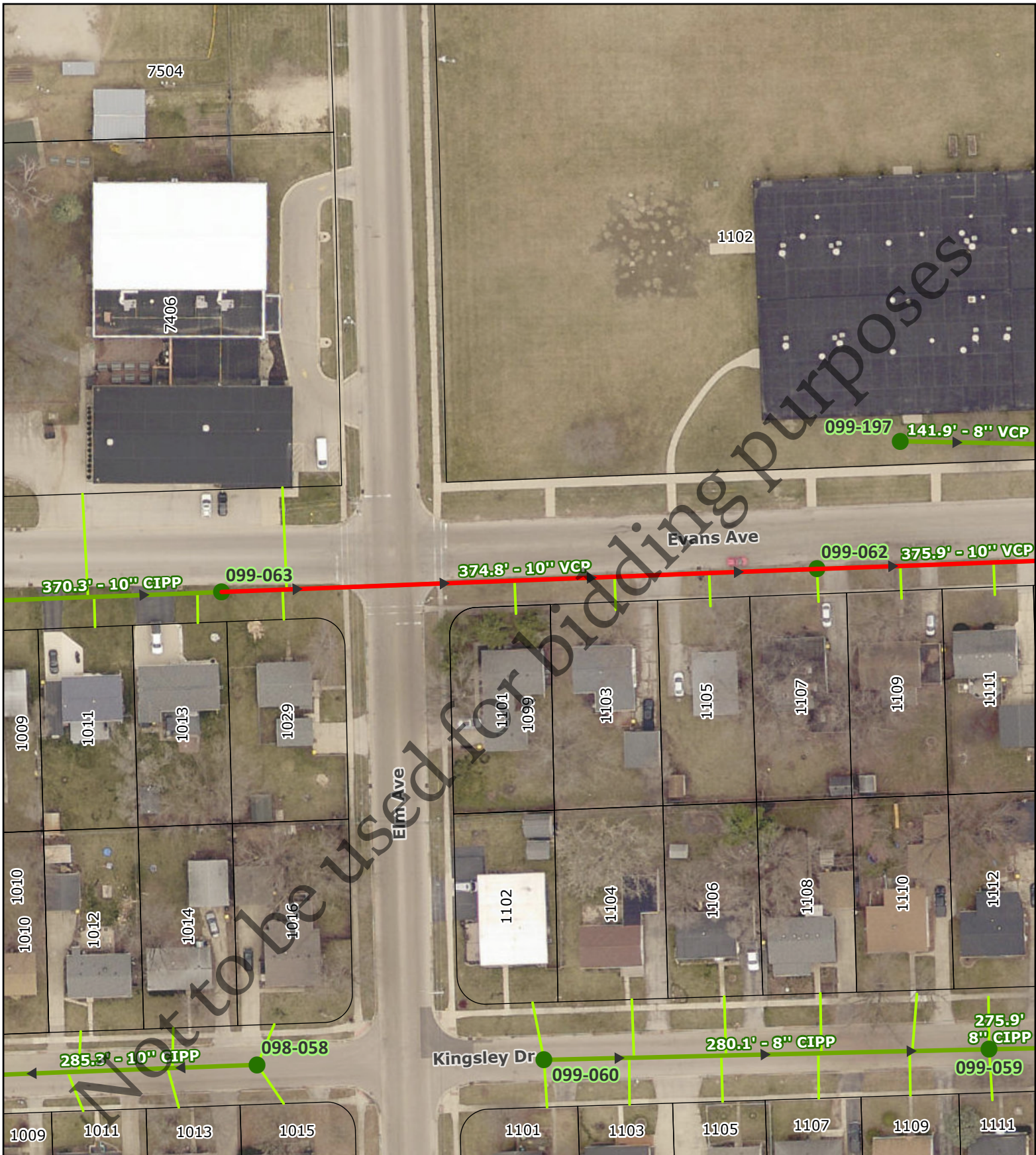


● Manholes

➔ Sanitary Mains

— Sanitary Service


 1 inch = 80 ft



Item 50

Main ID 099-063-099-062



● Manholes

➔ Sanitary Mains

— Sanitary Service


 1 inch = 80 ft



Item 51

Main ID 124-085-124-084

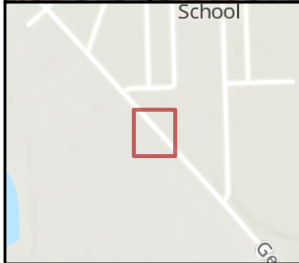
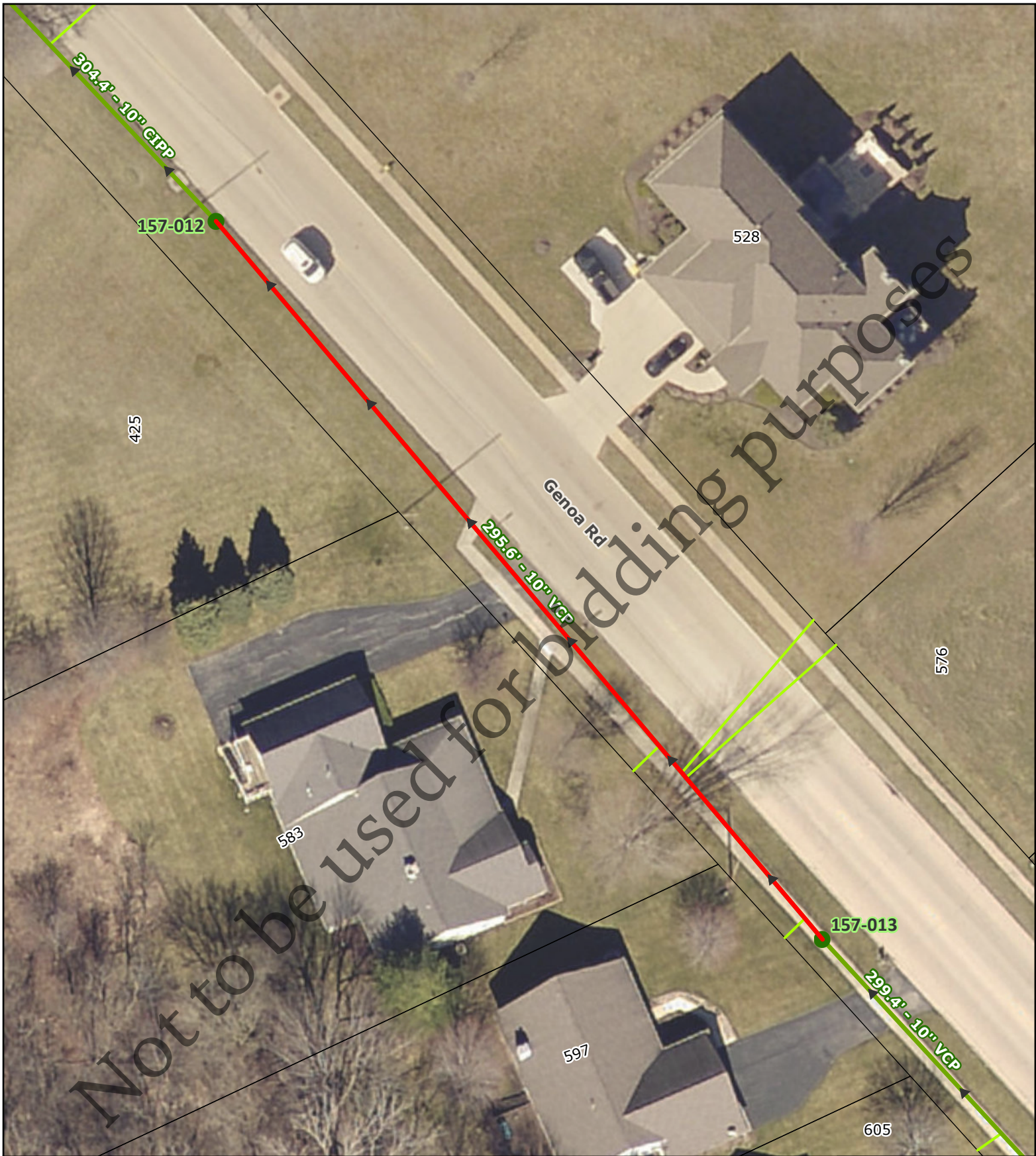
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 52

Main ID 157-013-157-012

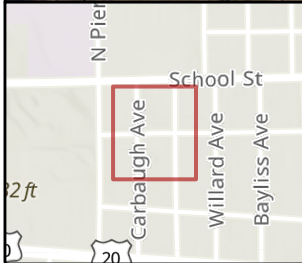
- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 53

Main ID 127-079-127-075

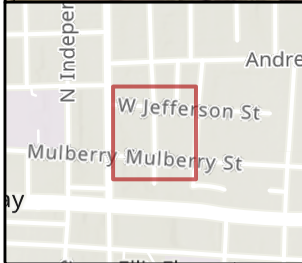
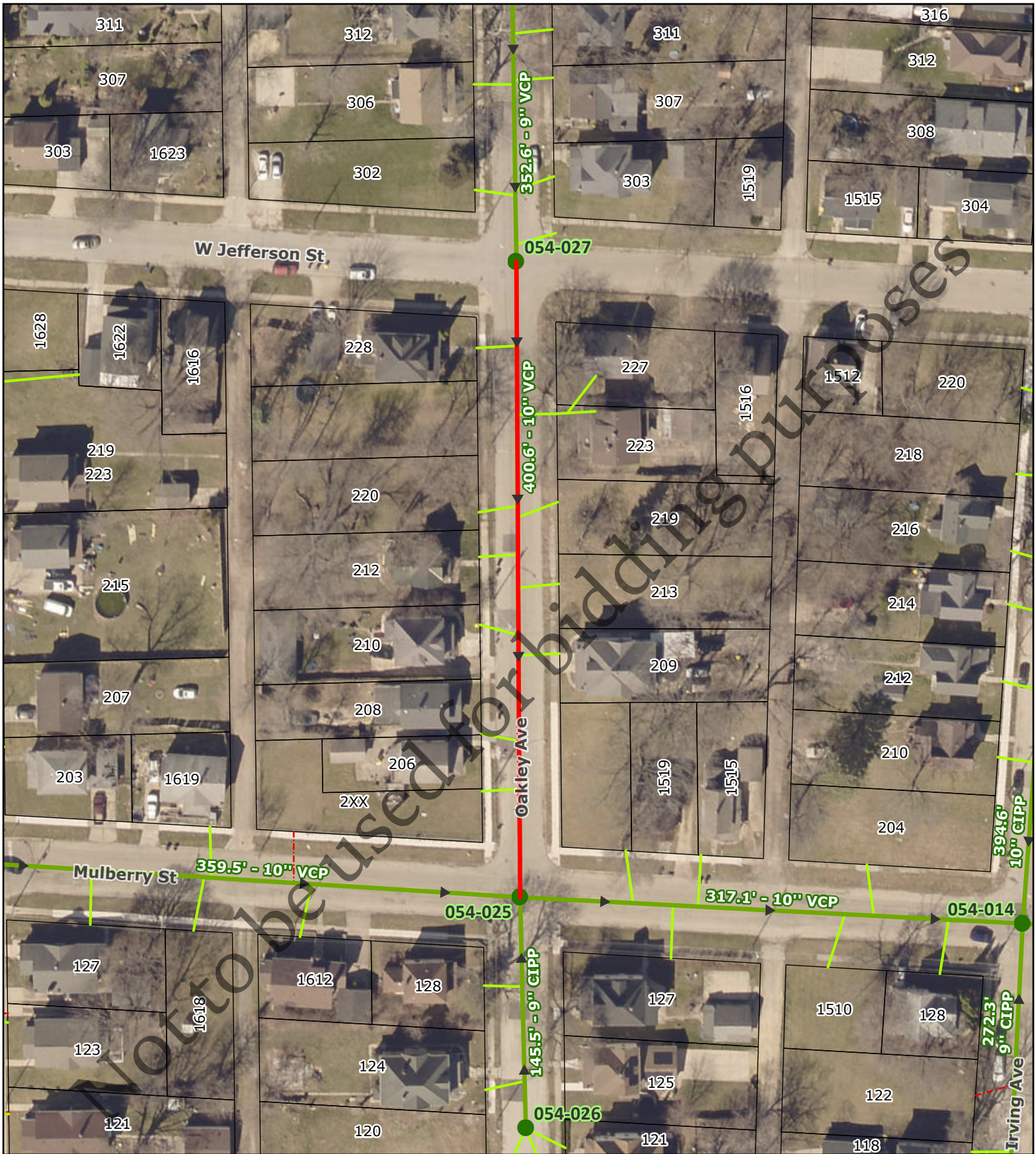


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 54

Main ID 054-027-054-025

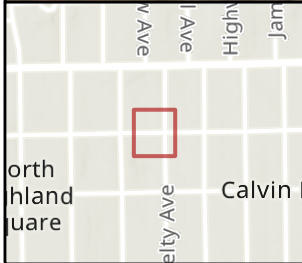
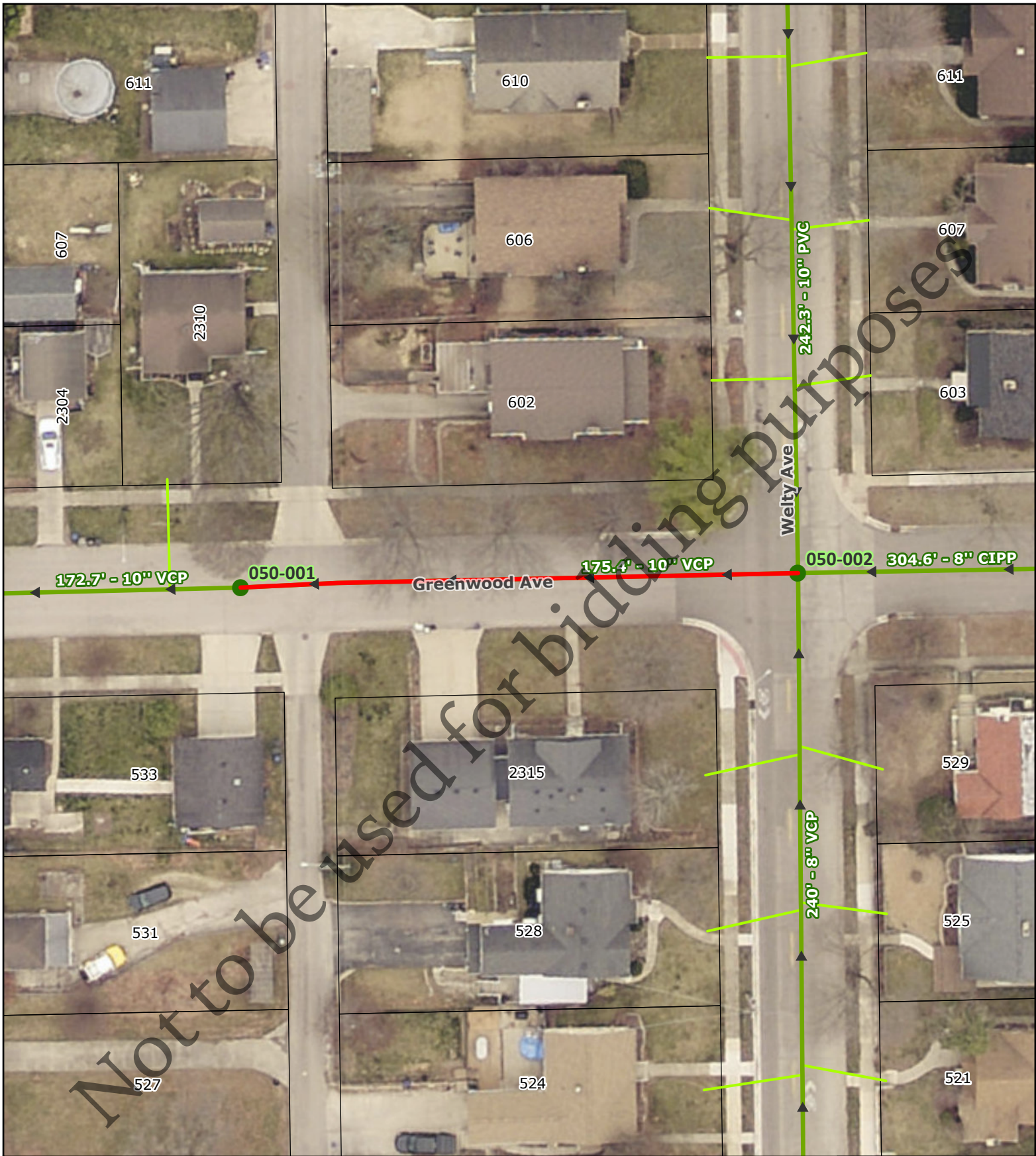


1 inch = 80 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 55

Main ID 050-002-050-001

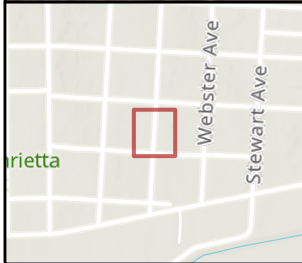
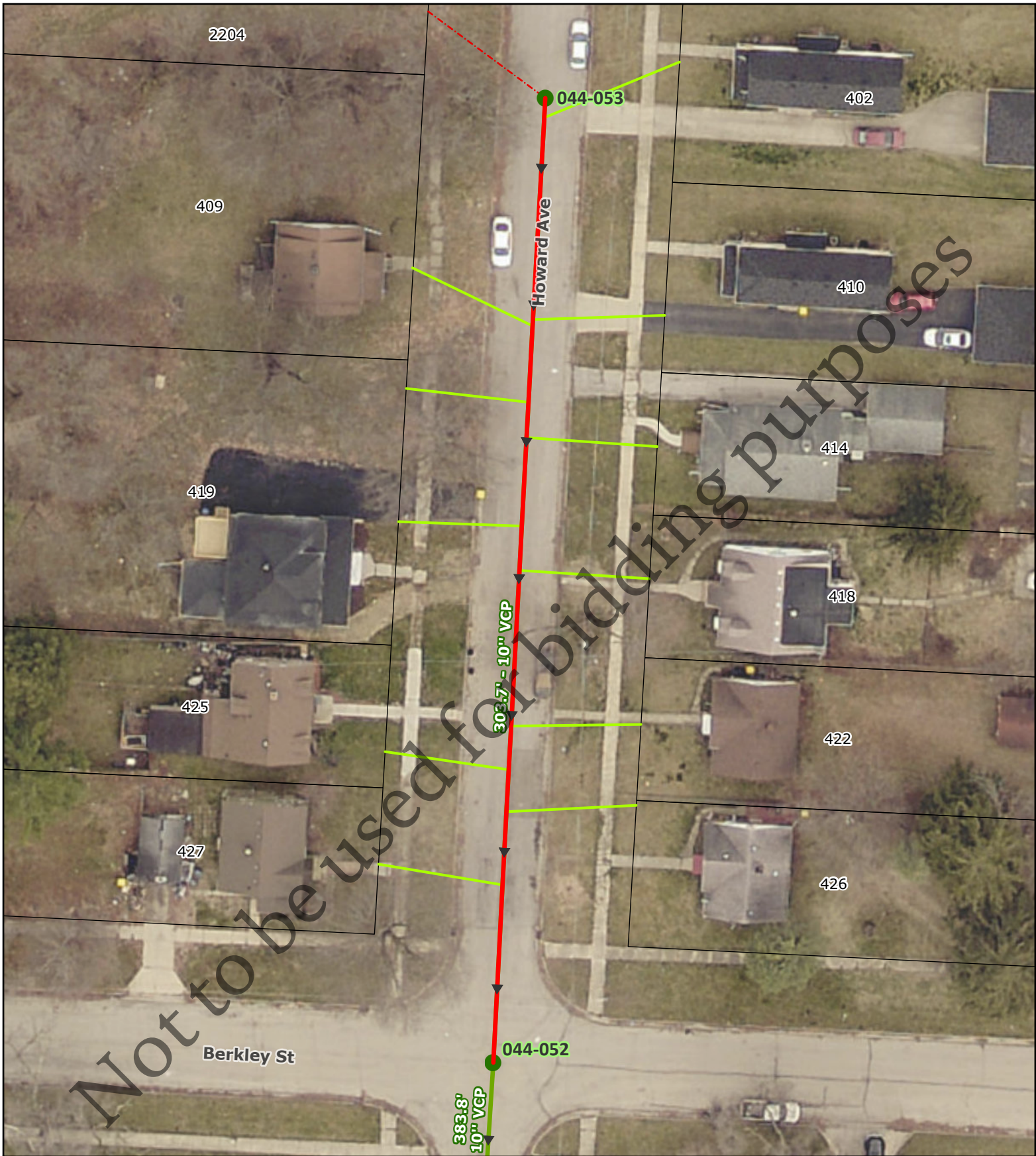
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 56

Main ID 044-053-044-052

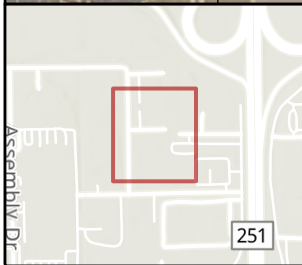
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 57

Main ID 129-043-129-042



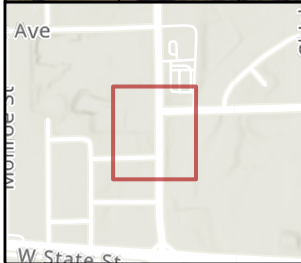
● Manholes

➤ Sanitary Mains

➤ Sanitary Service



1 inch = 80 ft



Item 58

Main ID 126-032-126-029

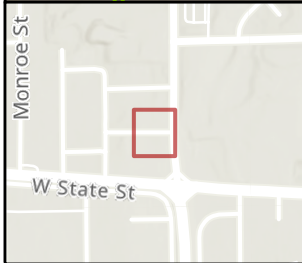
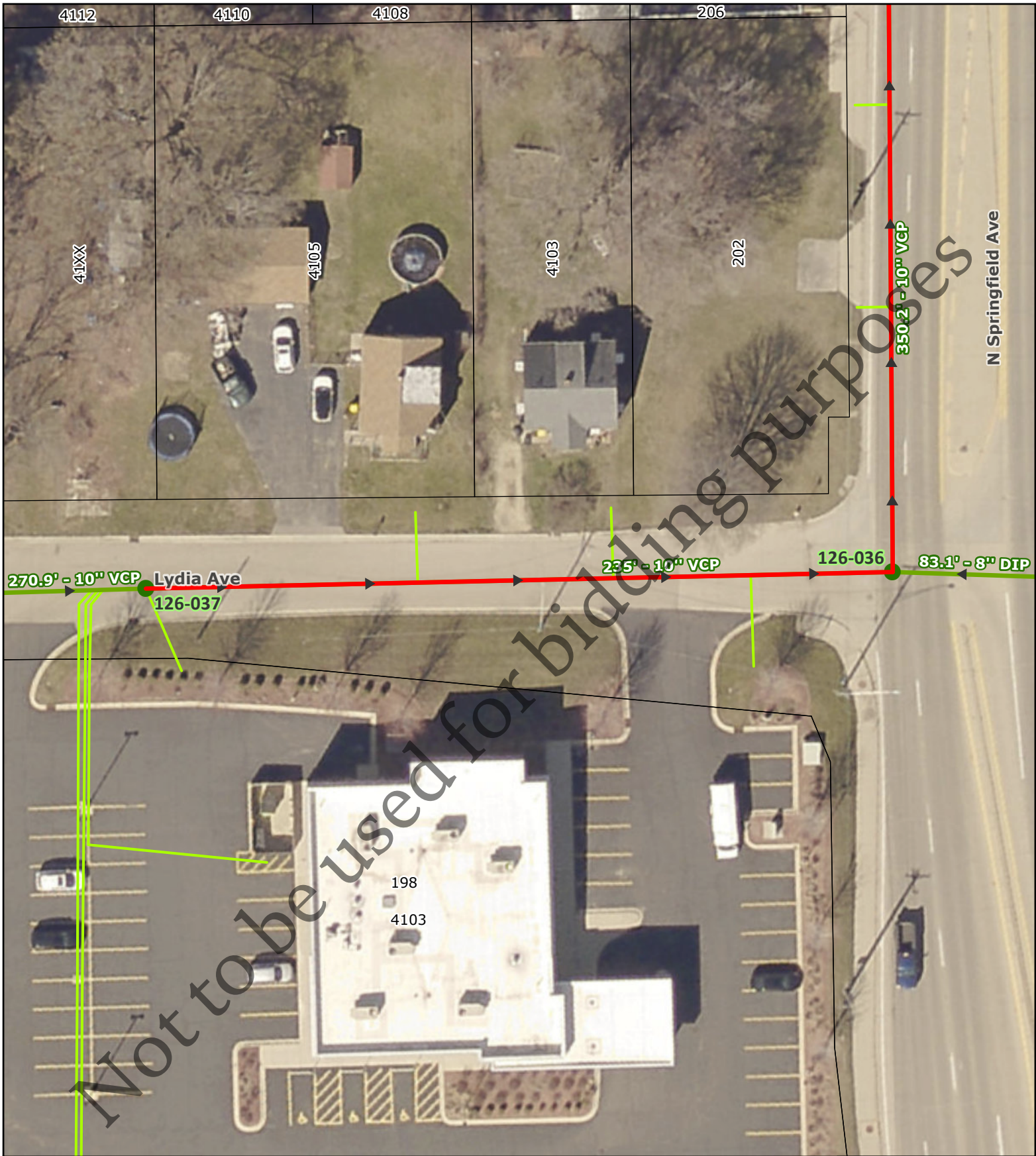
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 59

Main ID 126-037-126-036

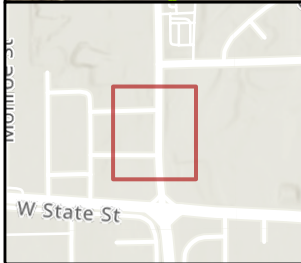
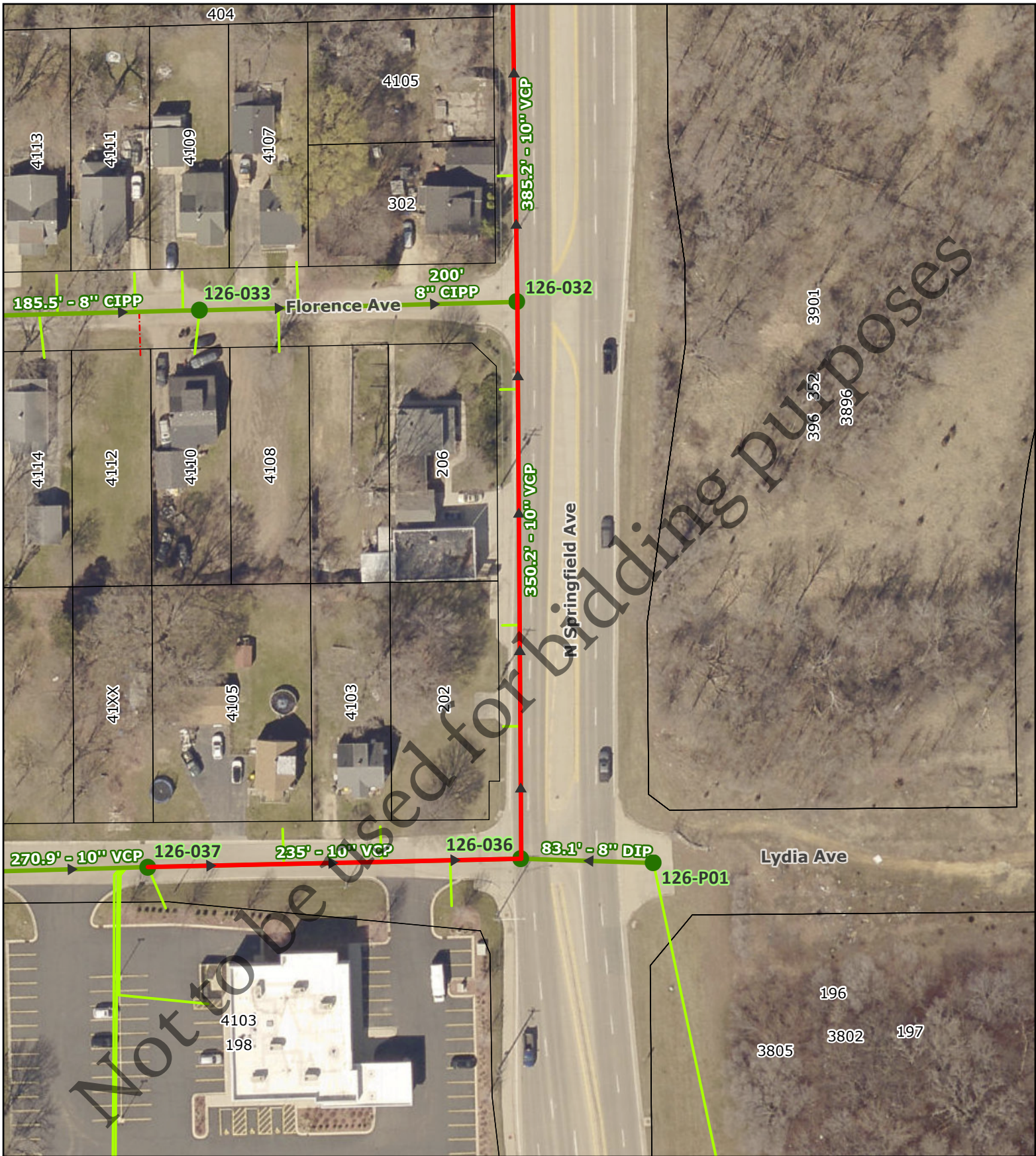


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- ➔ Sanitary Mains
- Sanitary Service

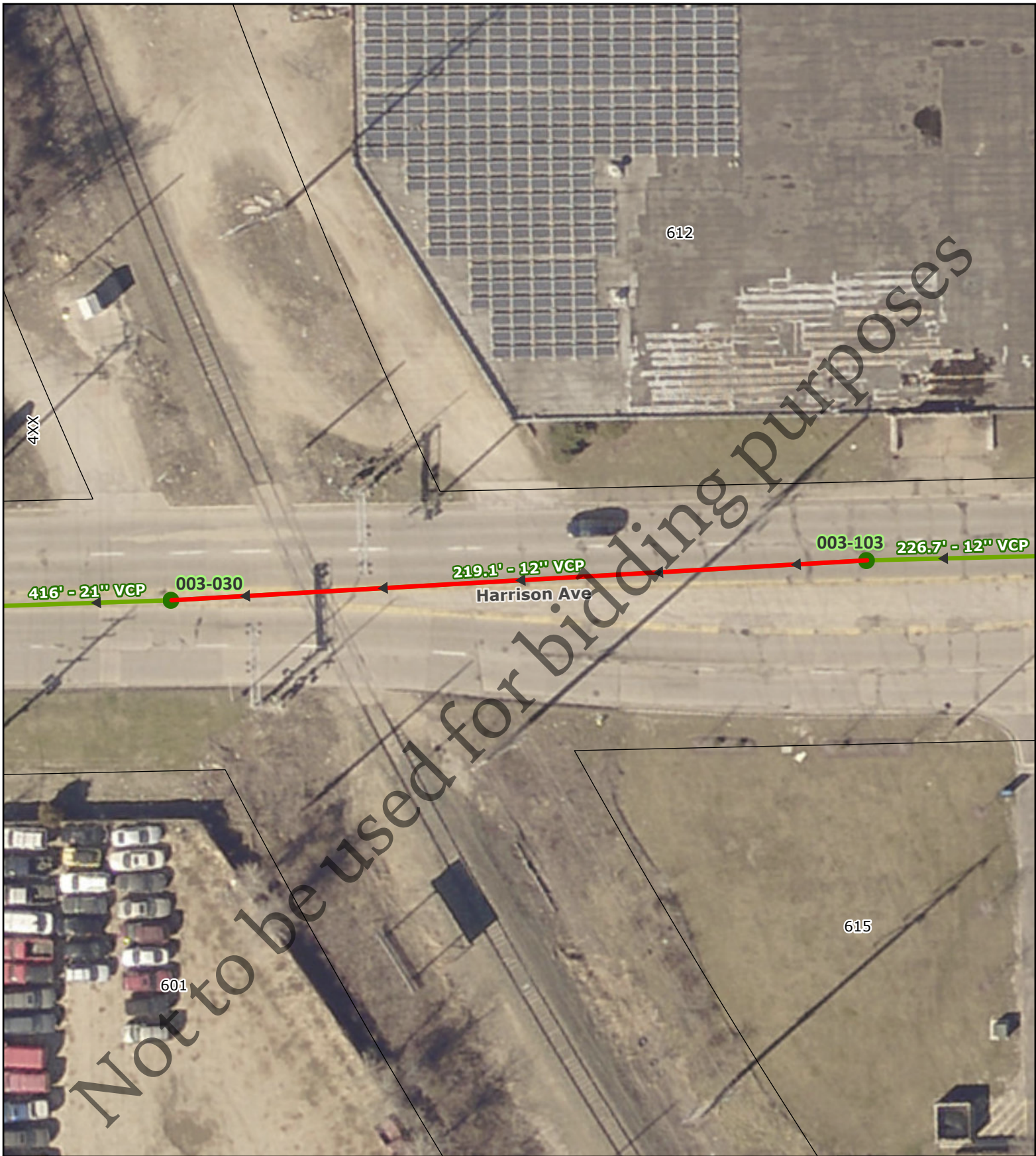


Item 60

Main ID 126-036-126-032

- Manholes
- Sanitary Mains
- Sanitary Service





Item 61

Main ID 003-103-003-030

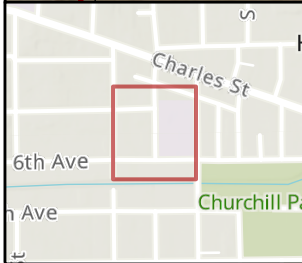
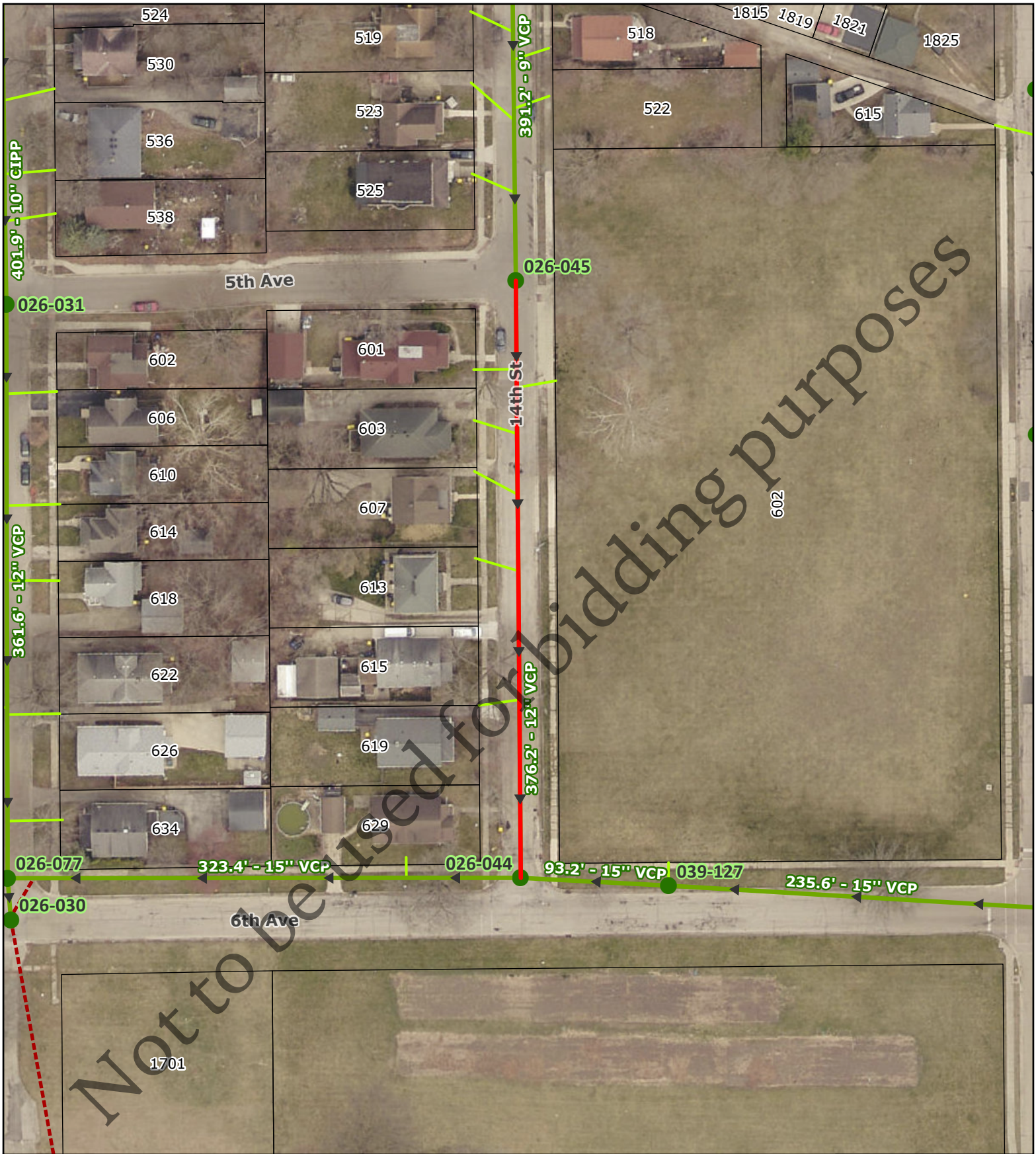
Four Rivers
Sanitation Authority

- Manholes
- Sanitary Mains
- Sanitary Service

1 inch = 40 ft

Produced: 8/25/2026

By: JK



Item 62

Main ID 026-045-026-044

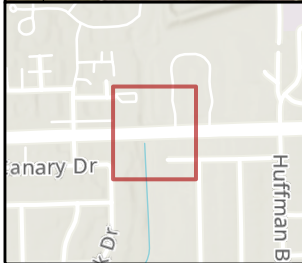
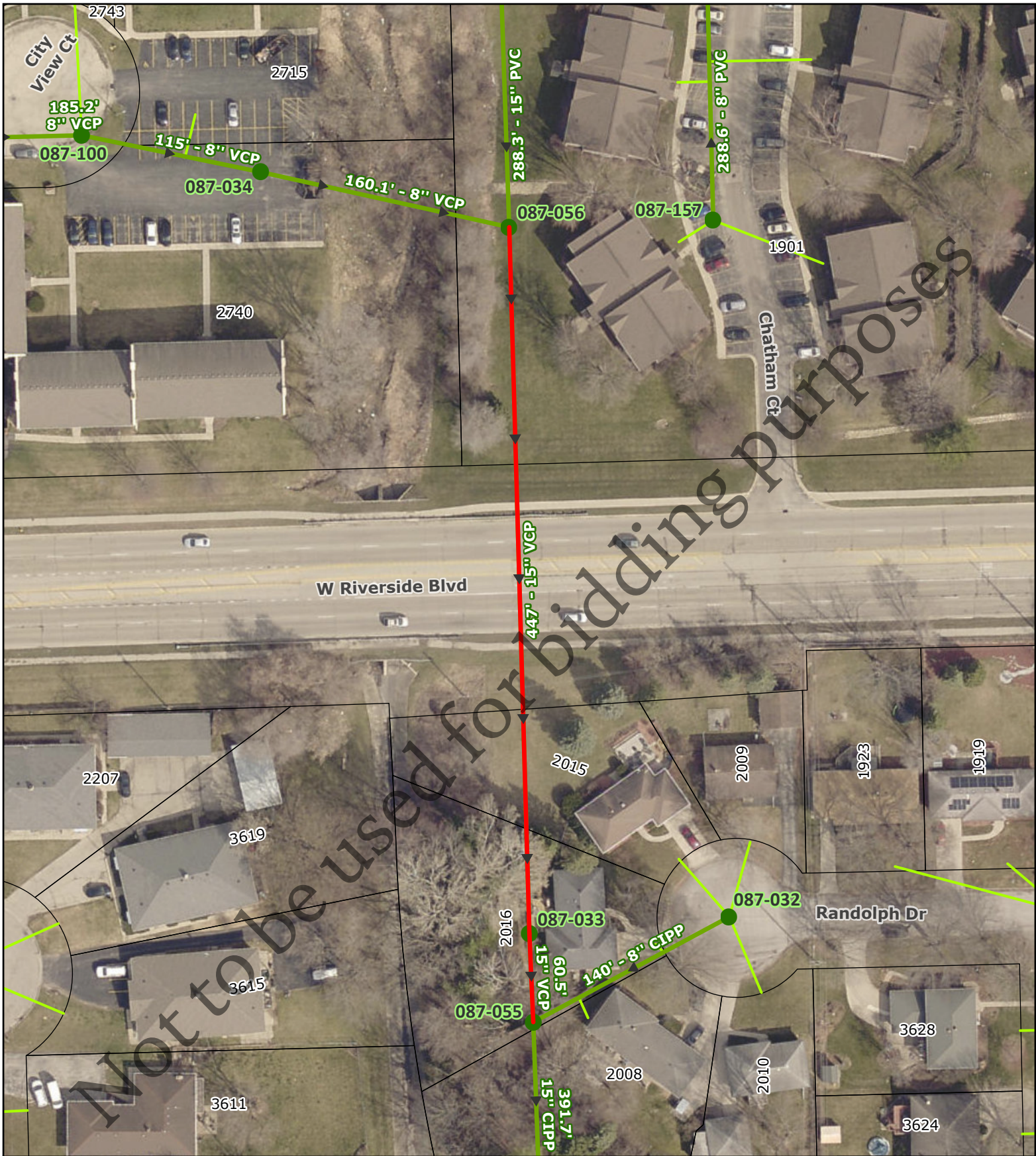
- Manholes
- ➔ Sanitary Mains
- ➔ Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 63

Main ID 087-056-087-033

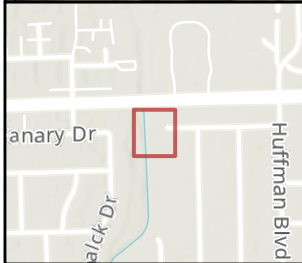
- Manholes
- ➔ Sanitary Mains
- Sanitary Service



1 inch = 80 ft

Produced: 8/25/2026

By: JK



Item 64

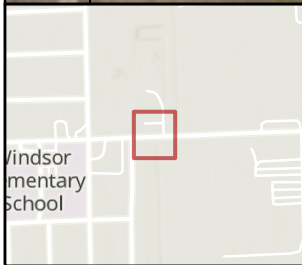
Main ID 087-033-087-055

- Manholes
- Sanitary Mains
- Sanitary Service



Produced: 8/25/2026

By: JK



Item 65

Main ID 099-020-099-120

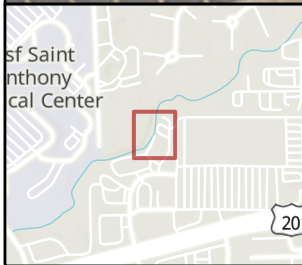


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 66

Main ID 110-012-110-011

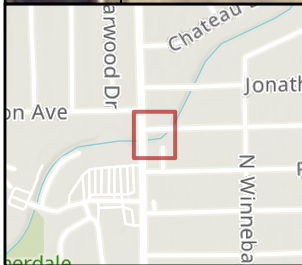
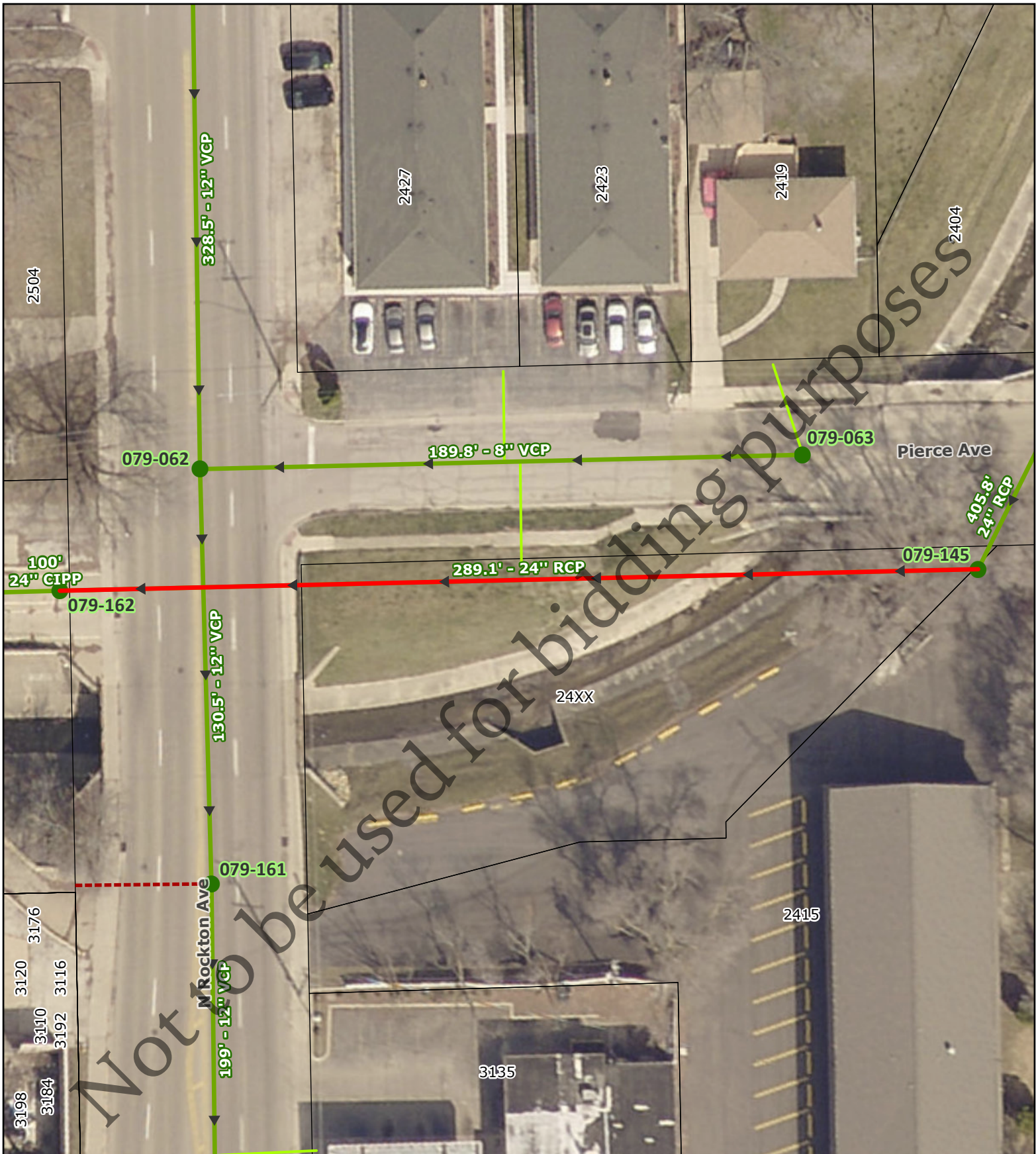


1 inch = 40 ft

Produced: 8/25/2026

By: JK

- Manholes
- Sanitary Mains
- Sanitary Service



Item 67

Main ID 079-145-079-162

- Manholes
- Sanitary Mains
- Sanitary Service



1 inch = 40 ft

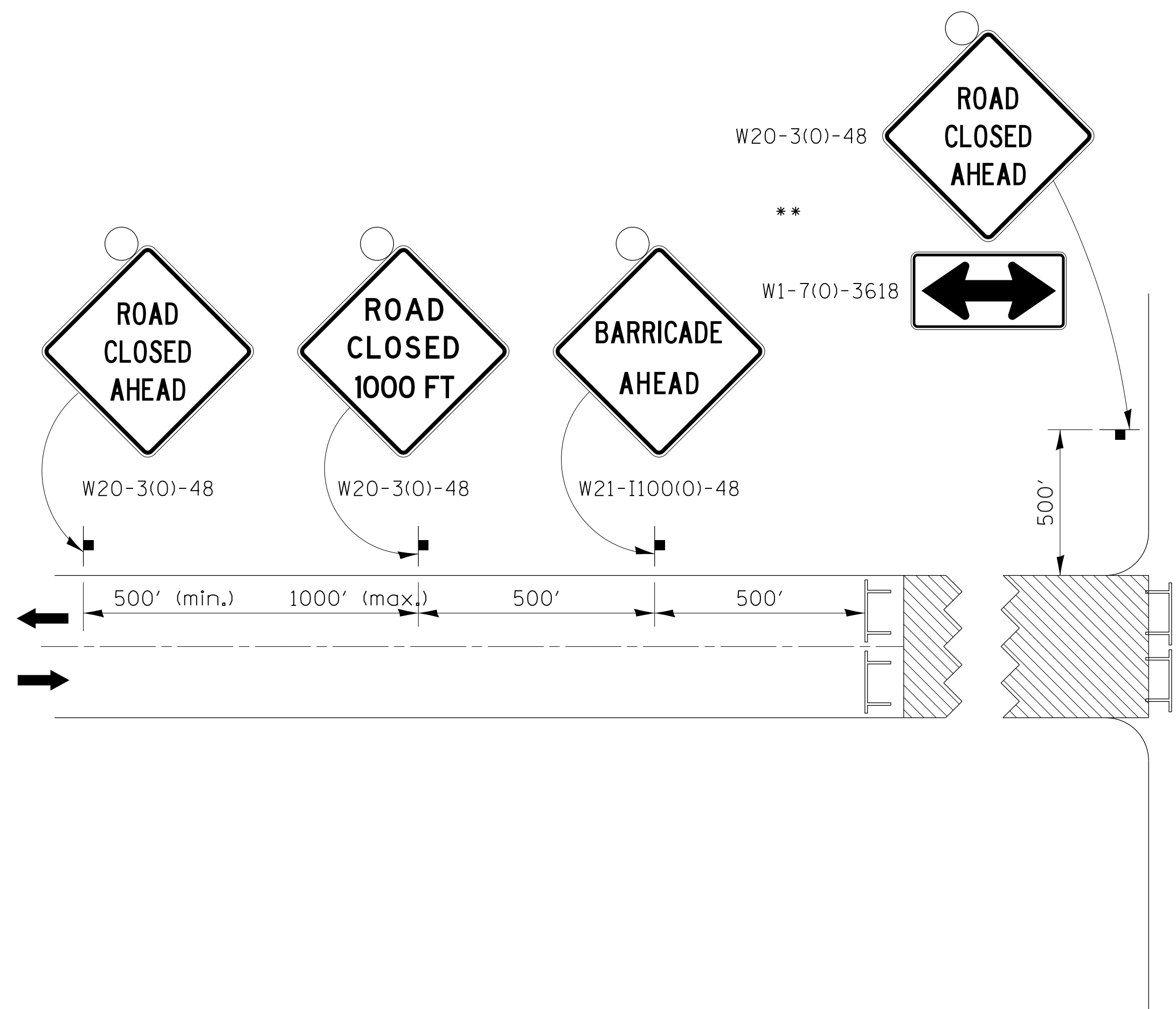
Produced: 8/25/2026

By: JK

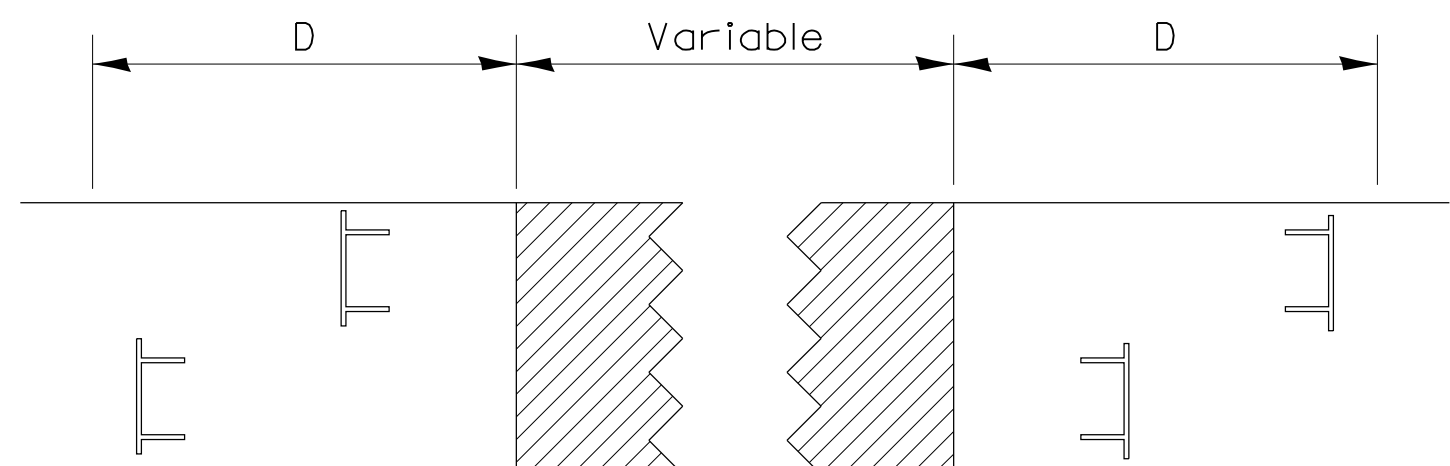
Section V

Standard Details

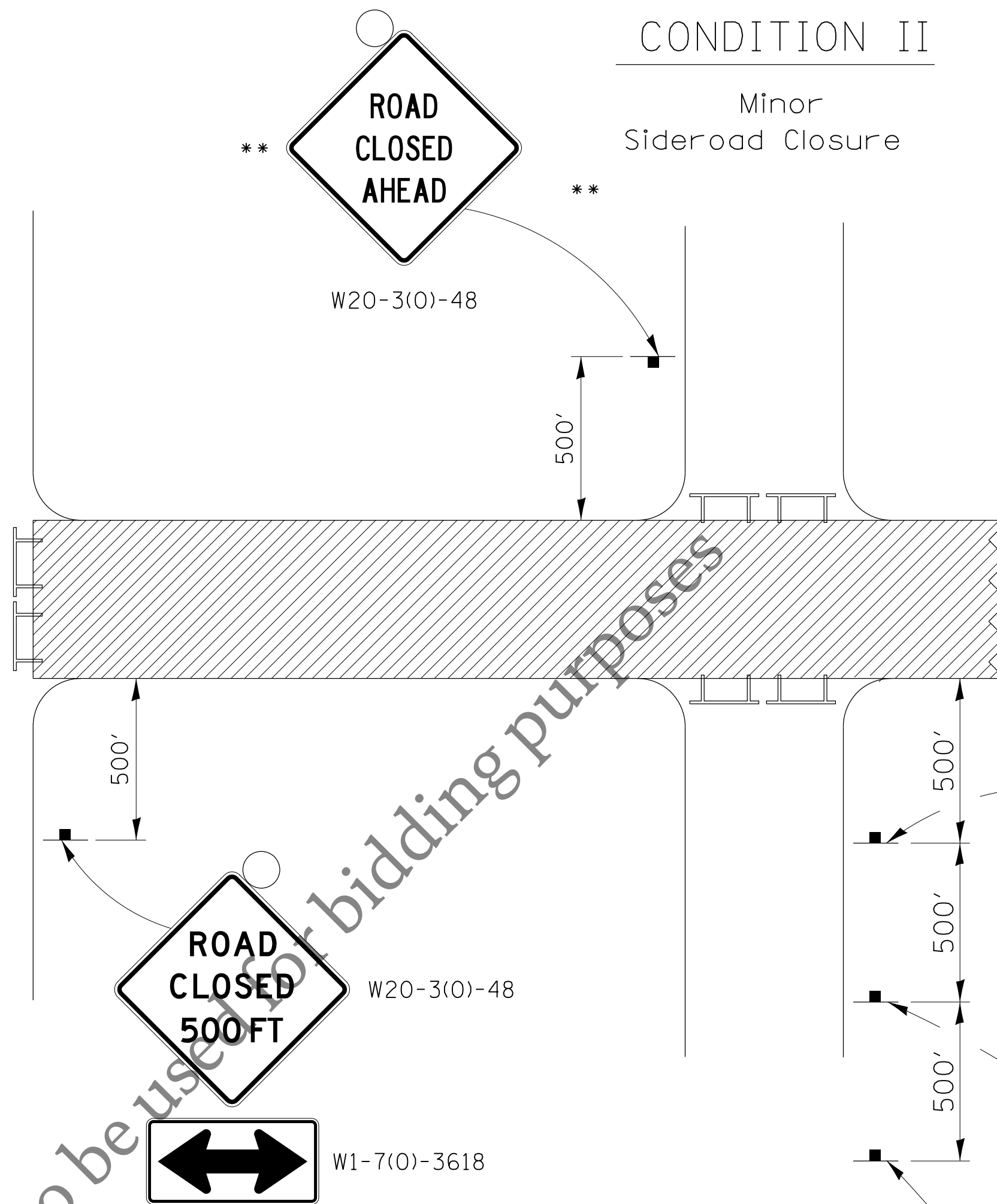
TRAFFIC CONTROL FOR ROAD CLOSURE



ROAD CLOSED TO THRU TRAFFIC
BARRICADE SET UP

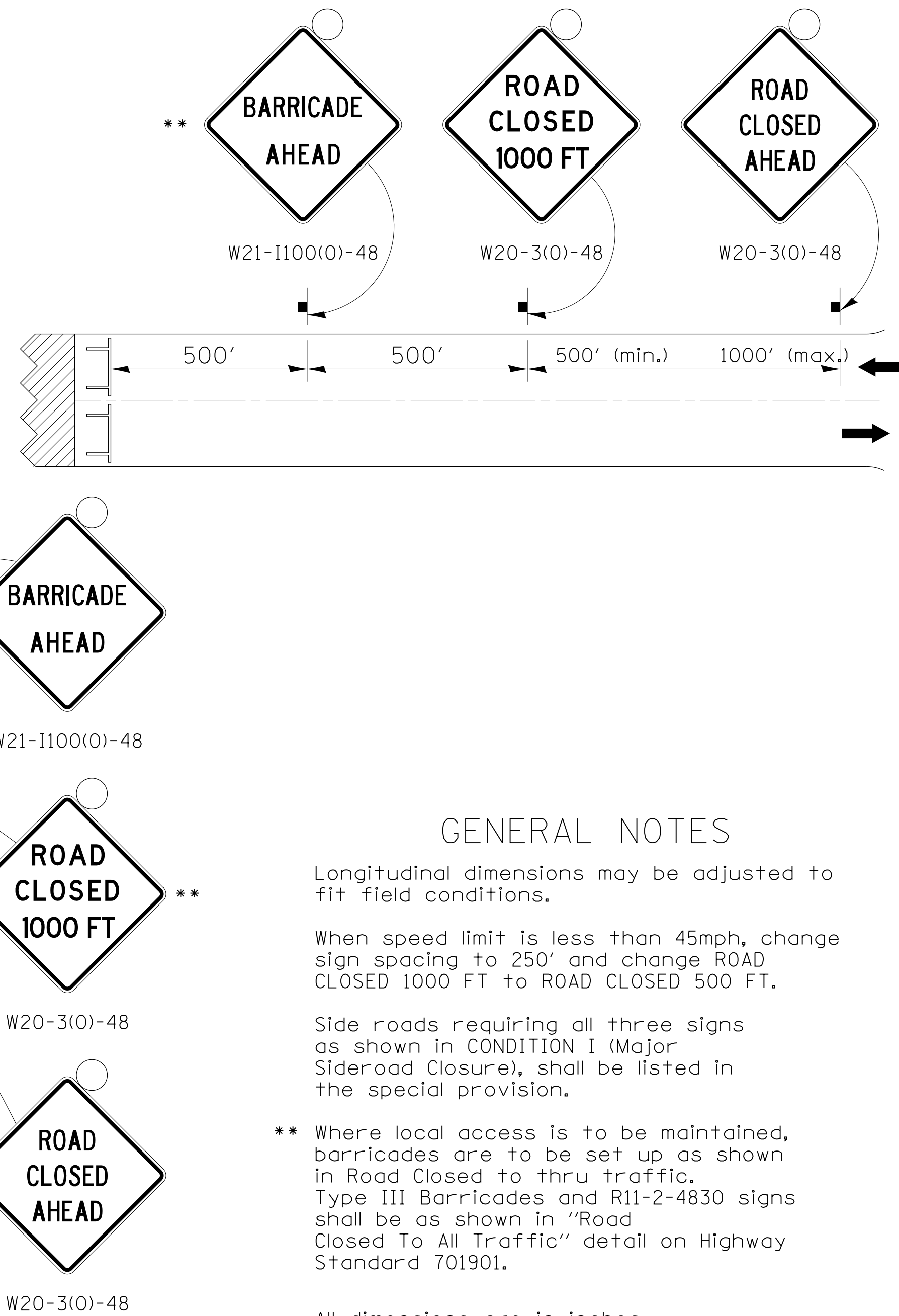


Type III Barricades and R11-4-4830 signs shall be as shown in "Road Closed To Thru Traffic" detail on Highway Standard 701901. If the distance "D" exceeds 2000' an additional set of barricades and R11-4-4830 shall be placed at each end of the work area.



CONDITION II

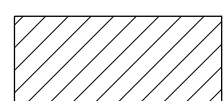
Minor
Sideroad Closure



CONDITION I

Major
Sideroad Closure

SYMBOLS



Work area



Type III Barricade with Flashers



Sign with flashing light

GENERAL NOTES

Longitudinal dimensions may be adjusted to fit field conditions.

When speed limit is less than 45mph, change sign spacing to 250' and change ROAD CLOSED 1000 FT to ROAD CLOSED 500 FT.

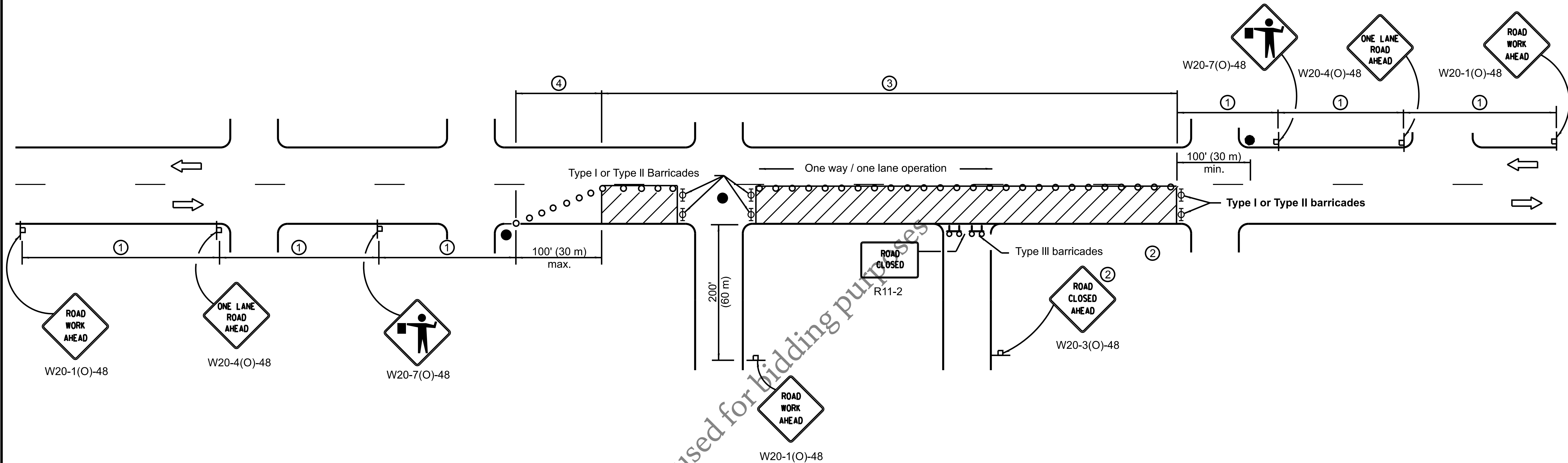
Side roads requiring all three signs as shown in CONDITION I (Major Sideroad Closure), shall be listed in the special provision.

** Where local access is to be maintained, barricades are to be set up as shown in Road Closed to thru traffic. Type III Barricades and R11-2-4830 signs shall be as shown in "Road Closed To All Traffic" detail on Highway Standard 701901.

All dimensions are in inches unless otherwise shown.

TYPICAL APPLICATION
FOR ROAD CLOSURE

FILE NAME = District 2 Standard	USER NAME = IDOT/District 2	DESIGNED -	REVISED - 8-27-13	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REGION 2 / DISTRICT 2 STANDARD					F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - 10-17-11											
	PLOT SCALE = 1.0000 ' / in.	CHECKED -	REVISED -		CONTRACT NO.									
	PLOT DATE = Tue Jul 22 09:28:10 2014	DATE -	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

-  Work area
-  Cone, drum or barricade (not required for moving operations)
-  Sign on portable or permanent support
-  Flagger with traffic control sign
-  Barricade or drum with flashing light
-  Type III barricade with flashing lights

- ① Refer to SIGN SPACING TABLE for distances.
- ② For approved sideroad closures.
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Cones, drums or barricades at 20' (6 m) centers.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-27	Replaced RCA with RWA sign.
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED

STANDARD 701501-07

 Illinois Department of Transportation

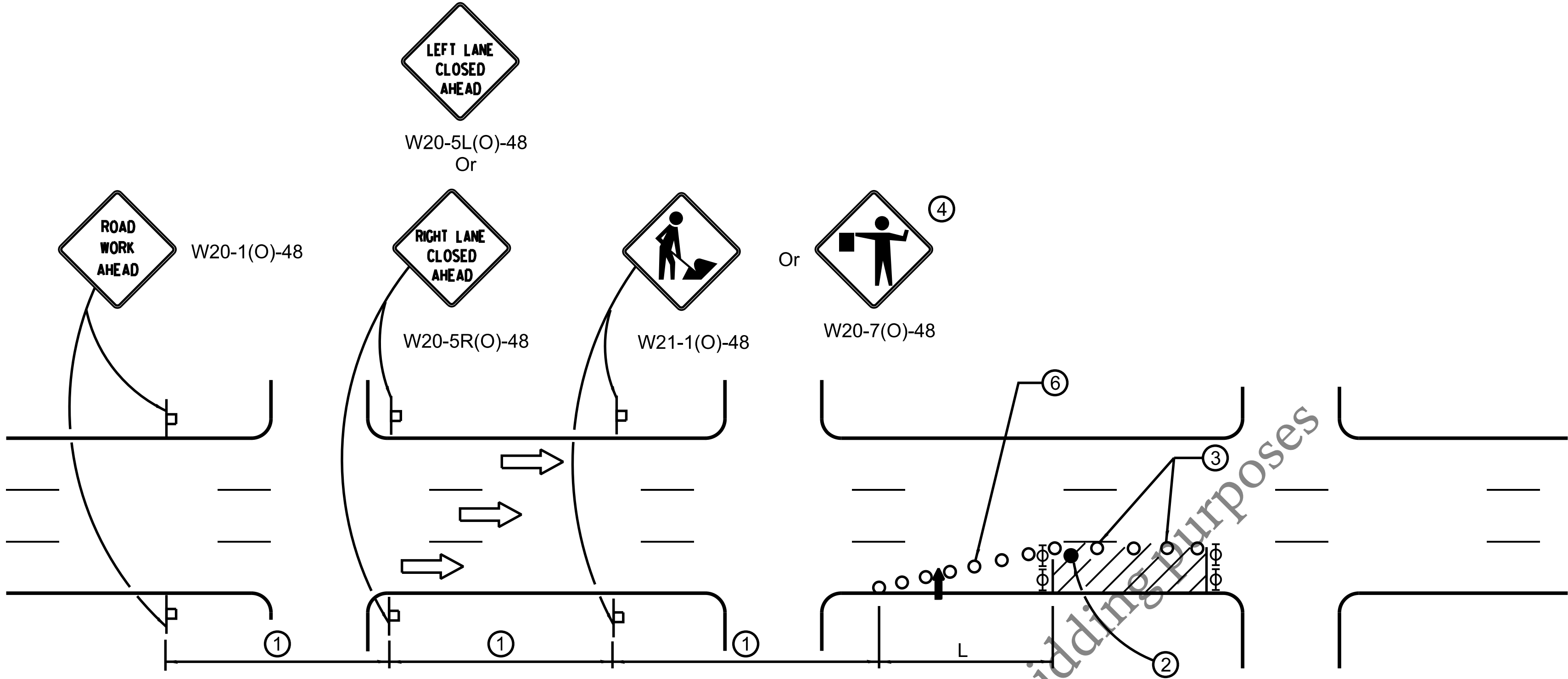
APPROVED January 1, 2027

ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2027

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

- ↑ Arrow board
- Cone, drum or barricade
- ▮ Sign on portable or permanent support
- ▨ Work area
- ⦿ Barricade or drum with flashing light
- ⦿ Type III barricade with flashing lights
- Flagger with traffic control sign.

- ① Refer to SIGN SPACING TABLE for distances.
- ② Required for speeds > 40 MPH
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Use flagger sign only when flagger is present.
- ⑤ For approved sideroad closures.
- ⑥ Cones, drums or barricades at 20' (6 m) in taper.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in urban areas.

Calculate L as follows:

SPEED LIMIT

FORMULAS

	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$	$L = 0.65(W)(S)$
W =	Width of offset in feet (meters).	
S =	Normal posted speed mph (km/h).	

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-27	Replaced RCA with RWA sign and revised 2 Right Lanes Closed Ahead sign.
1-1-14	Revised workers sign number to agree with current MUTCD.

URBAN LANE CLOSURE, MULTILANE, 1W OR 2W WITH NONTRAVERSABLE MEDIAN
(Sheet 1 of 2)

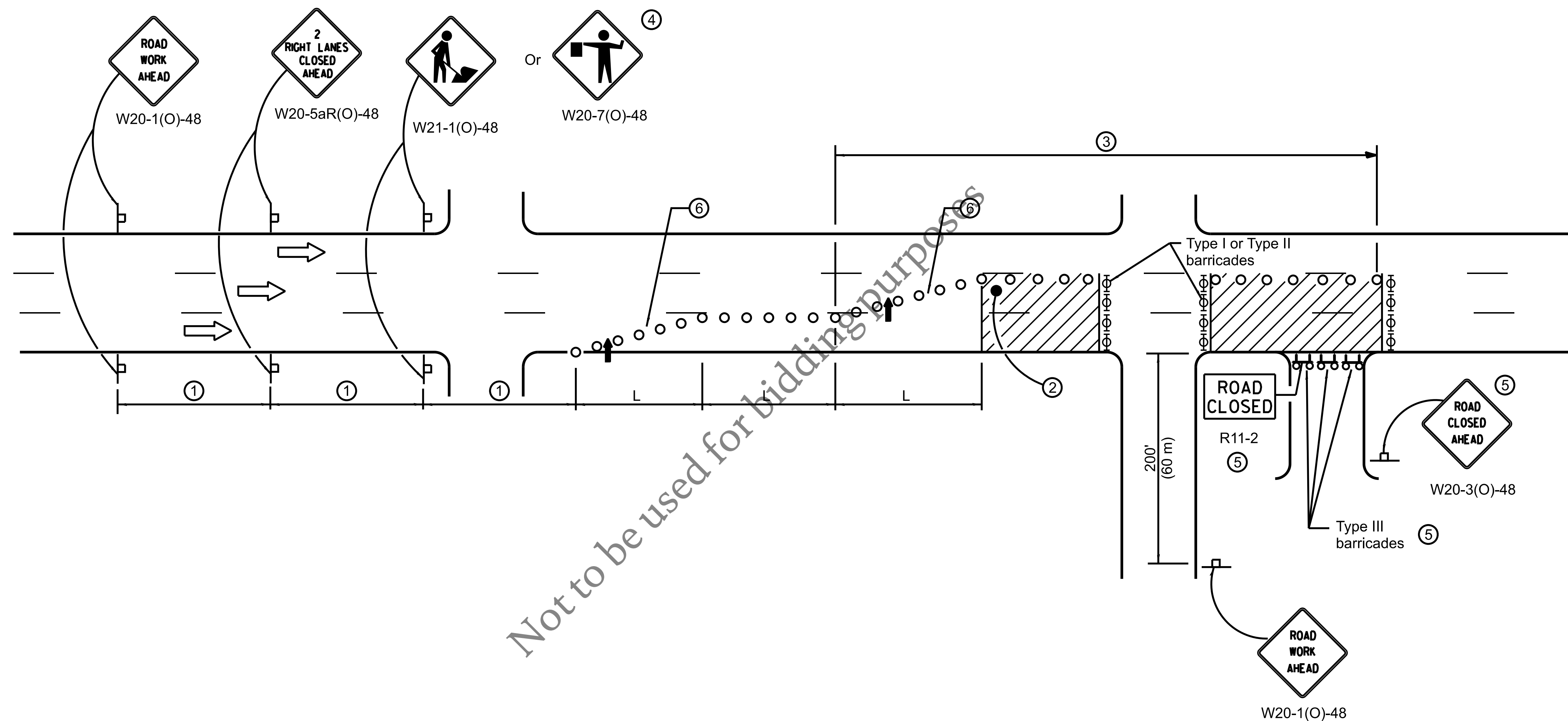
STANDARD 701601-10

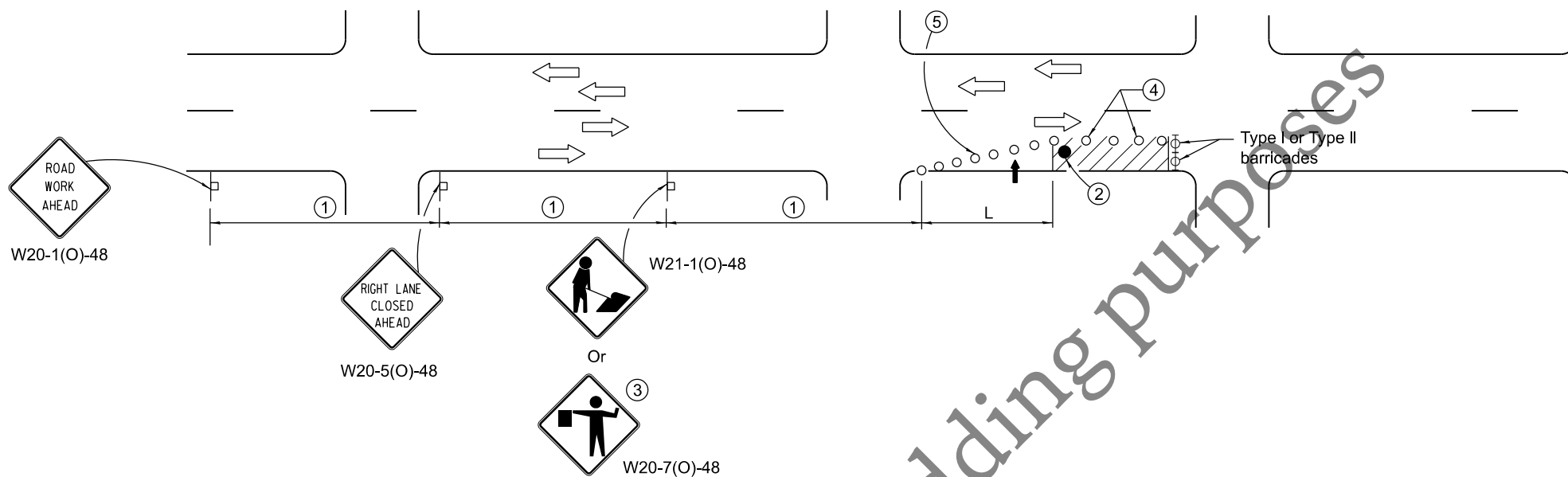
Illinois Department of Transportation

APPROVED January 1, 2027
ENGINEER OF SAFETY, PROG. AND ENGINEERING

APPROVED January 1, 2027
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97





SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

- ① Refer to SIGN SPACING TABLE for distances.
- ② Required for speeds > 40 mph.
- ③ Use flagger sign only when flagger is present.
- ④ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ⑤ Cones, drums or barricades at 20' (6 m) centers in taper.

SYMBOLS

- ↑ Arrow board
- Cone, drum or barricade
- ⌊ Sign on portable or permanent support
- ▨ Work area
- ⊕ Barricade or drum with flashing light
- Flagger with traffic control sign.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.

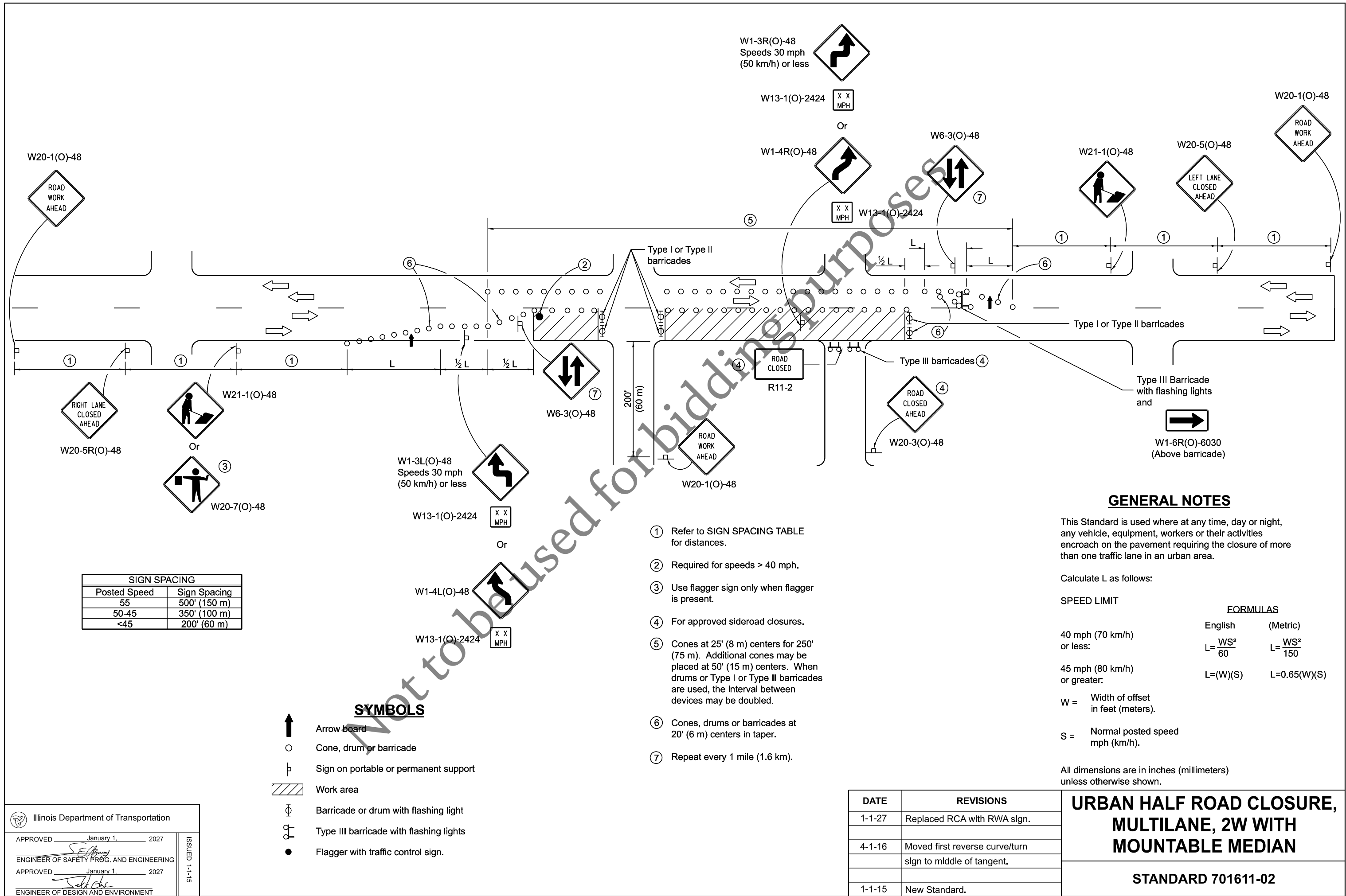
Calculate L as follows:

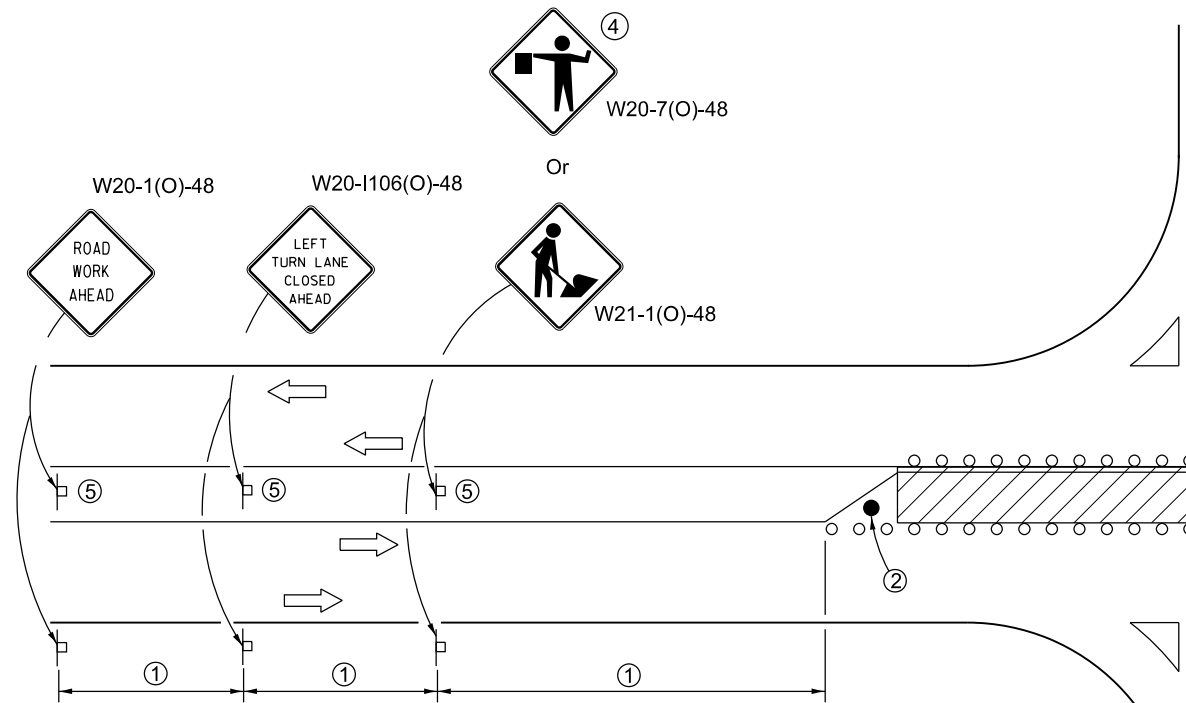
SPEED LIMIT	FORMULAS	
	English	(Metric)
40 mph (70 km/h) or less:	$L = \frac{WS^2}{60}$	$L = \frac{WS^2}{150}$
45 mph (80 km/h) or greater:	$L = (W)(S)$	$L = 0.65(W)(S)$
W = Width of offset in feet (meters).		
S = Normal posted speed mph (km/h).		

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-27	Replaced RCA with RWA sign.
1-1-15	Renamed standard. Moved case on Sheet 2 to new Highway Standard.

URBAN SINGLE LANE CLOSURE, MULTILANE, 2W WITH MOUNTABLE MEDIAN
STANDARD 701606-11





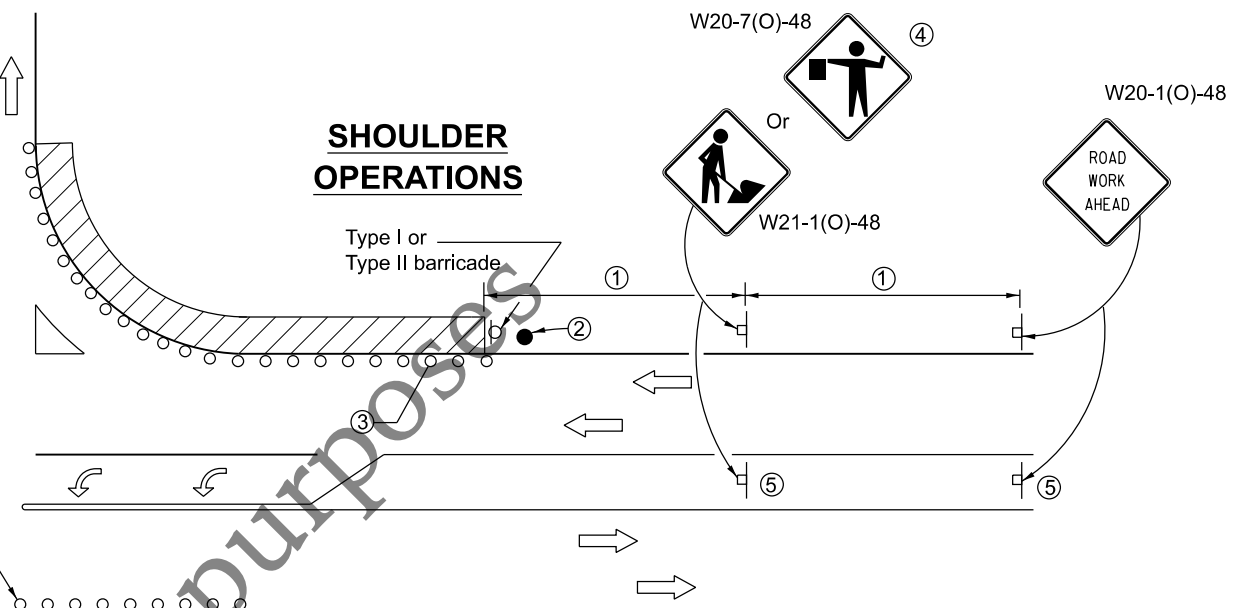
LEFT TURN LANE OR CENTER MEDIAN OPERATIONS

- ① Refer to SIGN SPACING TABLE for distance.
- ② Required for speed > 40 mph.
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Use flagger sign only when flagger is present.
- ⑤ Omit this sign when median is less than 10' (3 m) or for bi-directional turn lanes.
- ⑥ Cones, drums or barricades at 20' (6 m) centers in taper.
- ⑦ Advanced arrow board required for speeds >45 mph.
- ⑧ Three Type II barricades, drums or vertical barricades at 50' (15 m) centers.

SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

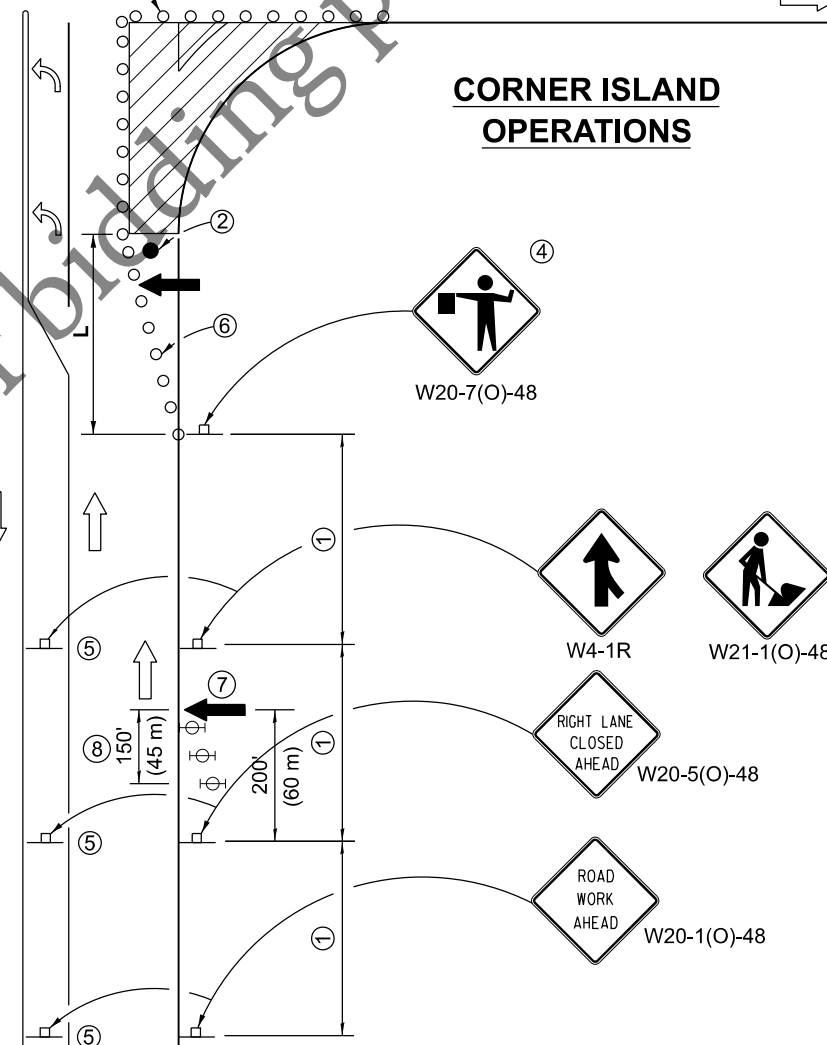
SYMBOLS

- Work area
- Cone, drum or barricade
- Sign on portable or permanent support
- Arrow board
- Barricade or drum with flashing light
- Flagger with traffic control sign



SHOULDER OPERATIONS

CORNER ISLAND OPERATIONS



GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in an urban area.

Calculate L as follows:

SPEED LIMIT

FORMULAS

40 mph (70 km/h) or less:

English (Metric)

$$L = \frac{WS^2}{60} \quad L = \frac{WS^2}{150}$$

45 mph (80 km/h) or greater:

$$L = (W)(S) \quad L = 0.65(W)(S)$$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2027

ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2027

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-27	Replaced RCA with RWA sign.
4-1-16	Corrected sign number for LEFT TURN LANE CLOSED AHEAD.

URBAN LANE CLOSURE, MULTILANE INTERSECTION

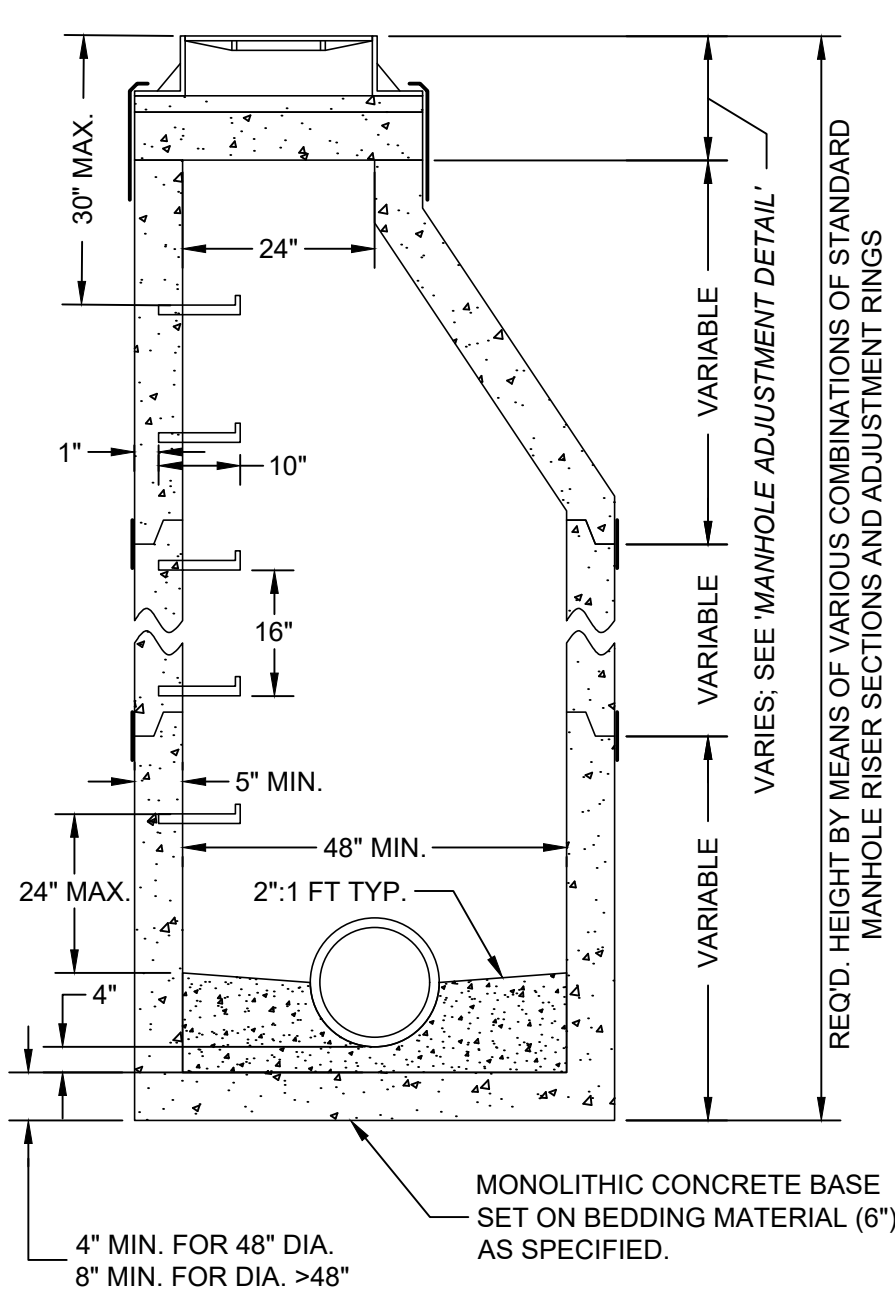
STANDARD 701701-11

01/01/2021 Revisions:
Manhole Adjustment Detail: Revised notes 1 & 2 with acceptable frames & lids. Modified notes 3, 5, & 7. Added note 8.
Revised Rock River Reclamation District to 'Four Rivers Sanitation Authority'.
Revised Drop Connection Detail: Revised note 6 & 7. Added note 8.
Service Cleanout Casting Detail: Revised note 8.

- NOTES:
1. THE MAX. DROP FROM THE INVERT OF ANY PIPE TO THE CONCRETE CHANNEL UNDER THAT PIPE SHALL BE 8".
 2. MANHOLES LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE MARKED WITH A STEEL FENCE POST AS DIRECTED.
 3. ALL NEW MANHOLES SHALL BE VACUUM TESTED PER A.S.T.M. C-1244 PRIOR TO ACCEPTANCE.
 4. ALL BARREL JOINTS SHALL BE SEALED WITH 3 1/2" x 3/8" PRE-FORMED RUBBER BUTYL JOINT SEALANT ON THE LOWER SHIPLAP.
 5. ALL BARREL JOINTS SHALL BE SEALED WITH AN EXTERNAL BARREL SEAL CENTERED ON THE JOINT (MAR MAC MACWRAP, OR APPROVED EQUAL).
 6. MANHOLE STRUCTURE SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE MANHOLE RISER SECTIONS IN ACCORDANCE WITH A.S.T.M. C478-90 OR THE LATEST DESIGNATION.
 7. PRECAST FLAT TOPS ARE NOT APPROVED FOR USE.
 8. SEE 'MANHOLE ADJUSTMENT DETAIL' FOR ADJUSTMENT REQUIREMENTS.
 9. PIPE CONNECTIONS TO NEW MANHOLES SHALL BE MADE BY MEANS OF EITHER RUBBER GASKET SEAL (A-LOK OR APPROVED EQUAL) CONFORMING TO ASTM C-923 CAST INTEGRALLY IN MANHOLE WALL, OR RUBBER GASKET SEAL AND STAINLESS STEEL CLAMP (PSX SERIES SIX OR APPROVED EQUAL) CONFORMING TO ASTM C-923. FOR PIPE CONNECTIONS WITH A DEPTH OF >20 FT., A RUBBER GASKET SEAL (A-LOK OR APPROVED EQUAL) CONFORMING TO ASTM C-923 CAST INTEGRALLY IN MANHOLE WALL SHALL BE USED.
 10. PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE BY MEANS OF CORE DRILLING MANHOLE WALL AND INSTALLING RUBBER GASKET SEAL AND STAINLESS STEEL CLAMP (PSX SERIES SIX OR APPROVED EQUAL) CONFORMING TO ASTM C-923.
 11. THE MAXIMUM DISTANCE FROM ANY INLET PIPE INVERT TO THE OUTLET PIPE INVERT SHALL BE 2'. DISTANCES GREATER THAN 2' WILL REQUIRE AN INSIDE DROP CONNECTION PER 'INSIDE DROP CONNECTION DETAIL'.
 12. MANHOLE STEPS SHALL BE NEENAH R-1982-F OR M.A. IND. PS-1 OR APPROVED EQUAL INSTALLED AT 16" CENTERS, ORIENTED ABOVE THE OUTLET PIPE UNLESS OTHERWISE SPECIFIED. FOR MANHOLES WITH INSIDE DROP ASSEMBLIES, STEPS IN THE MANHOLE BASE SECTION SHALL BE INSTALLED IN THE FIELD AND NOT CAST IN PLACE. IN THIS CASE, THE ORIENTATION OF THE CONE SHALL BE AS DIRECTED BY FRSA.

STANDARD MANHOLE DETAIL

('MANHOLE ADJUSTMENT DETAIL' SHALL APPLY)

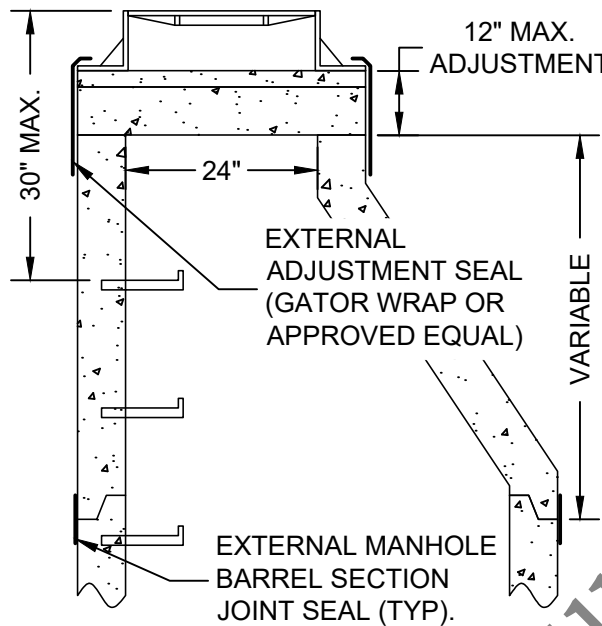


13. THE TOP HALF OF INLET & OUTLET PIPES ≤12" DIA. SHALL BE CUT FLUSH WITH THE MANHOLE WALL. HYDRAULIC CEMENT (XYPEX PATCH N PLUG OR APPROVED EQUAL) SHALL BE PLACED IN THE ENTIRE VOID BETWEEN ALL PIPES AND MANHOLE OPENINGS.

rev. 4/1/26

- NOTES:
1. MANHOLE FRAMES & LIDS SHALL BE PER THE TABLE BELOW.
 2. FOR MANHOLES CONNECTED TO MAINS 18" DIAMETER OR LARGER, OR FOR MANHOLES LOCATED IN FLOOD PRONE AREAS, FRAMES & LIDS SHALL BE THE BOLT DOWN TYPE.
 3. ALLOWABLE TYPES OF ADJUSTING RINGS INCLUDE PRECAST CONCRETE (4" HEIGHT MIN.), & EXPANDED POLYPROPYLENE (EPP). THESE CAN BE USED IN CONJUNCTION WITH EACH OTHER, EXCEPT THAT A PRECAST RING SHALL NOT BE PLACED OVER AN EPP RING.
 4. FOR PRECAST ADJUSTING RINGS, ALL ADJUSTING RING JOINTS AS WELL AS THE FRAME TO ADJUSTING RING JOINT SHALL BE SEALED WITH TWO 1" BEADS OF PRE-FORMED RUBBER BUTYL JOINT SEALANT. WHEN A FRAME REQUIRES PITCHING, EPP TAPER RINGS SHALL BE USED PER NOTE 5.
 5. FOR EPP ADJUSTING RINGS, RINGS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. WHEN A FRAME REQUIRES PITCHING, THE TOP RING SHALL BE A TAPERED ADJUSTMENT RING PER MANUFACTURER'S INSTRUCTIONS.
 6. NO TARRING OR GROUTING IS ALLOWED ON THE INSIDE OF MANHOLE OR ADJUSTMENT JOINTS.
 7. MAXIMUM MANHOLE ADJUSTMENT IS 12". MINIMUM ADJUSTMENT IS 4" UNLESS OFF-ROAD OR IN CURB & GUTTER ROADWAY.
 8. MANHOLE FRAMES SHALL BE SET 1/4" MIN. TO 3/8" MAX. BELOW PAVED SURFACES, AND AT FINAL GRADE IN TURF AREAS.
 9. WHEN ADJUSTING EXISTING MANHOLES, THE ENTIRE EXISTING ADJUSTMENT SHALL BE REMOVED AND REPLACED.

APPROVED FRAME & LID TABLE				
TYPE	NEENAH FRAME	NEENAH LID	EAST JORDAN FRAME	EAST JORDAN LID
REGULAR	1670-2004	R-1670-0358	00111711	00111732
LOW PROFILE	1670-2008	R-1670-0358	---	---
BOLT DOWN	1915JT08		---	---



rev. 4/1/26

MANHOLE ADJUSTMENT DETAIL

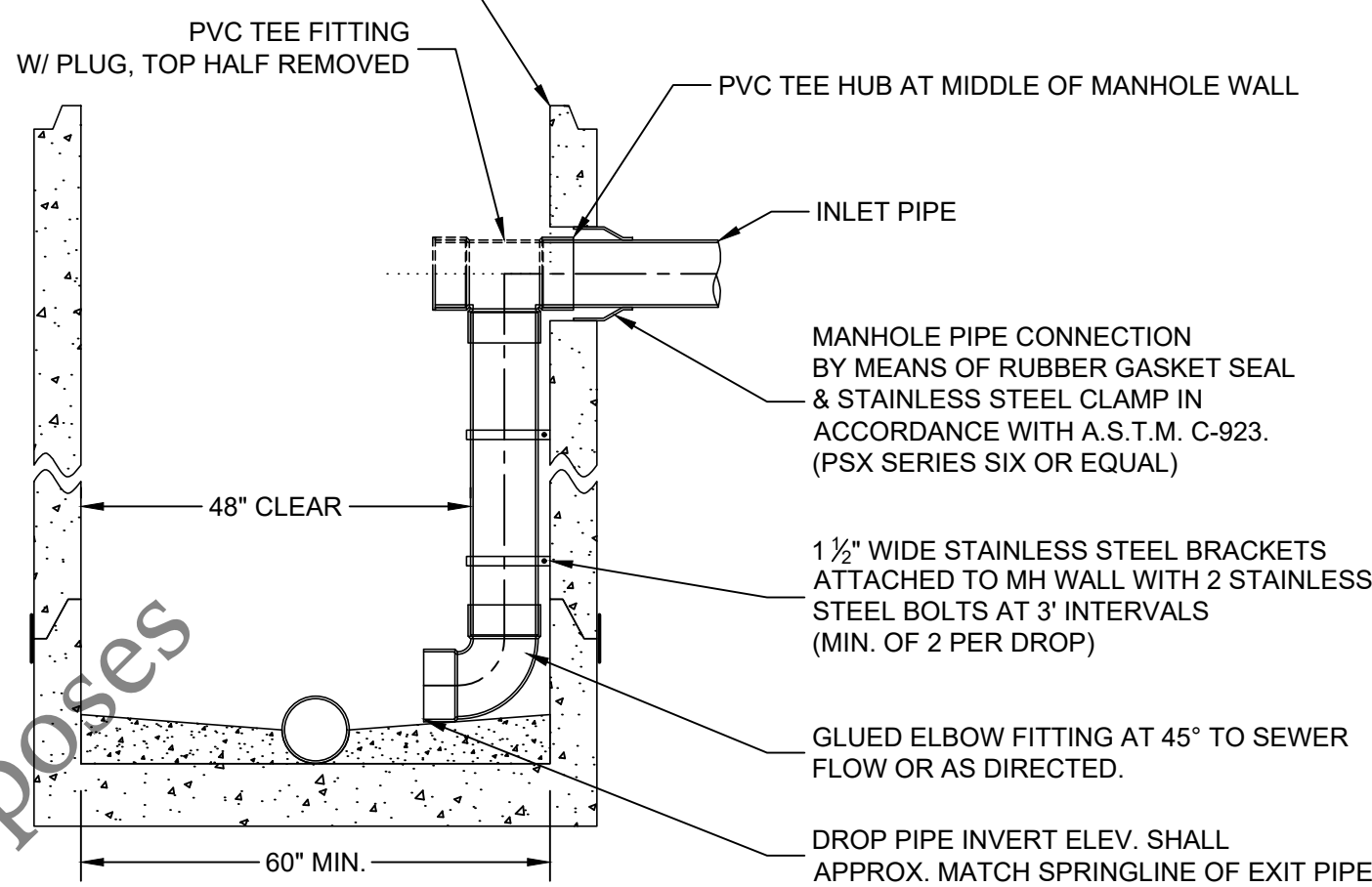
(FOR ADJUSTMENT OF BOTH NEW & EXISTING MANHOLES)

10. THE COMBINATION OF NEW ADJUSTING RINGS SHALL BE SUCH THAT THE MINIMUM NUMBER OF RINGS POSSIBLE ARE USED.
11. FLAT-TOPS ARE NOT PERMITTED ON 4' OR 5' DIA. MANHOLES.
12. REPLACEMENT OF EXISTING BARREL SECTIONS MAY BE REQUIRED TO MEET THE ABOVE REQUIREMENTS.
13. MANHOLE ADJUSTMENT INSERT RISER RINGS ARE NOT APPROVED FOR USE.

MANHOLE & DROP PIPE SIZING TABLE

INLET PIPE DIA.	MANHOLE I.D.	DROP PIPE DIA.
4-6 INCH	60 INCH	4 INCH
8 INCH	60 INCH	8 INCH
10 INCH	60 INCH	8 INCH
12 INCH	60 INCH	8 INCH
> 12 INCH	AS DIRECTED BY FRSA	

SEE 'STANDARD MANHOLE DETAIL' FOR MANHOLE REQUIREMENTS



INSIDE DROP CONNECTION DETAIL

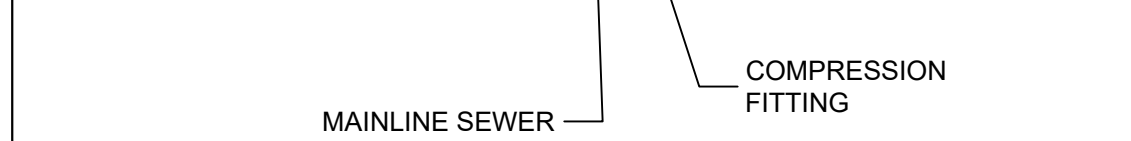
('STANDARD MANHOLE DETAIL' SHALL APPLY)

rev. 4/1/26

- NOTES:
1. INSIDE DROP TYPE MANHOLES SHALL BE 5' MIN. INSIDE DIA.
 2. ALL INSIDE DROP PIPING & FITTINGS SHALL BE PVC SCH 40 ASTM D1785 FOR ASTM D2241 INCOMING PIPE, OR SDR 35 ASTM D3034 FOR ASTM D3034 INCOMING PIPE, WITH GLUED JOINTS.
 3. ATTACH EACH CLAMPING BRACKET TO THE MANHOLE WALL WITH 3/8" x 1" MIN. STAINLESS STEEL BOLTS AND EPOXY IMPREGNATED LUGS PER MFR.'S RECOMMENDATIONS.
 4. THE UPSTREAM END OF THE PVC TEE FITTING SHALL BE POSITIONED AT THE MIDDLE OF THE MANHOLE WALL.
 5. PVC TEE FITTING SHALL INCLUDE A PLUG. THE TOP HALF OF THE FITTING AND PLUG SHALL BE REMOVED TO THE INSIDE MANHOLE WALL.

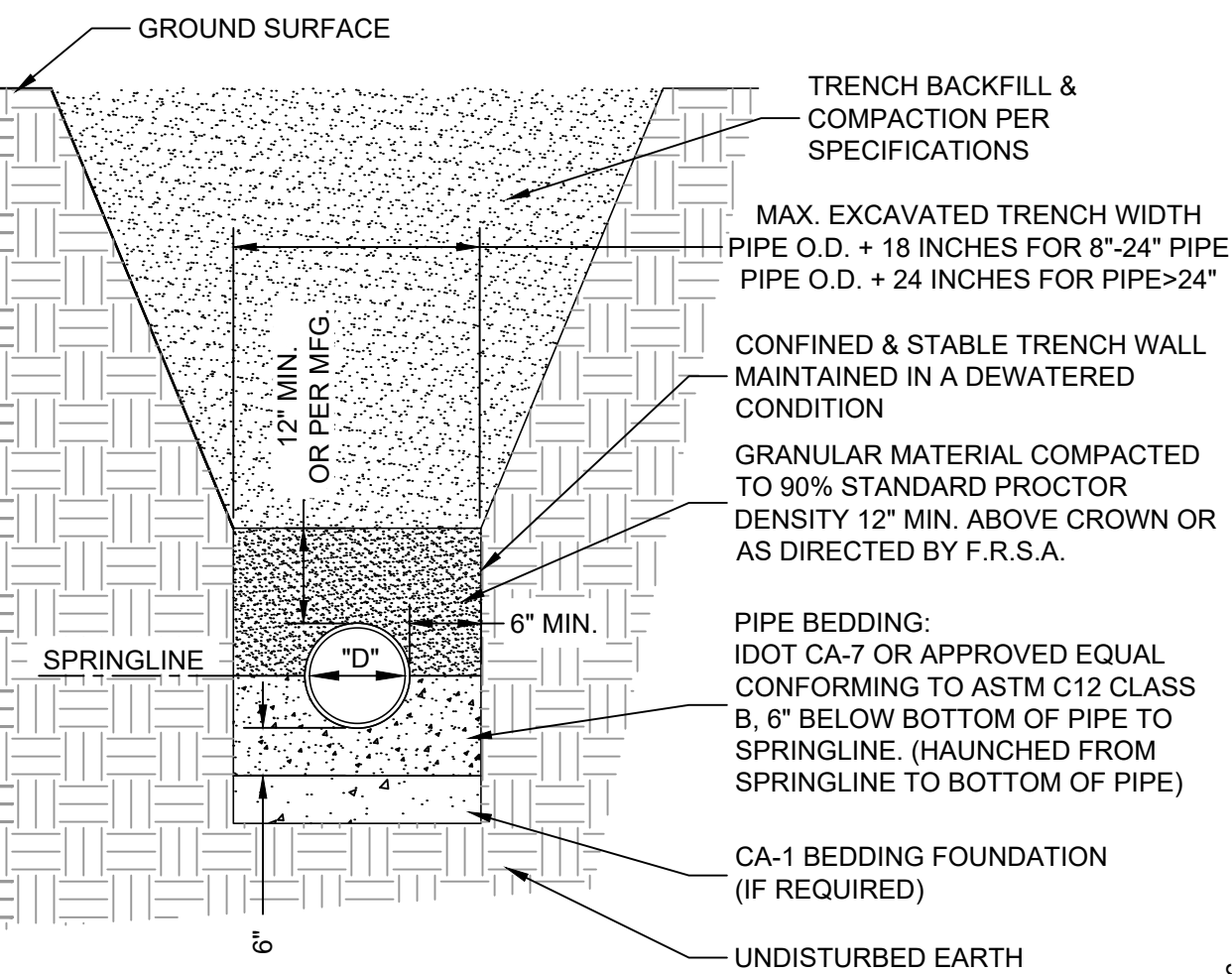
VERTICAL SERVICE RISER DETAIL

- NOTES:
1. FOR NEW MAINLINE, FACTORY PVC WYE FITTING SHALL BE USED.
 2. FOR EX. MAINLINE, HOLE SHALL BE CORE DRILLED IN THE MAINLINE PIPE PER MFR.'S REQUIREMENTS. LOCATION OF CORE SHALL BE APPROVED BY THE ENGINEER.
 3. PIPE BEDDING FOR SANITARY SERVICE PIPING SHALL BE PER 'FLEXIBLE PIPE BEDDING DETAIL', 6" BELOW AND 12" ABOVE PIPING.
 4. THE REMAINDER OF SERVICE TO PROPERTY/EASEMENT LINE SHALL BE INSTALLED PER STANDARD SERVICE & ALTERNATE SERVICE DETAIL.
 5. THE COMPRESSION FITTING SHALL BE A WATER-TIGHT FLEXIBLE TEE CONNECTOR OF SPECIFIED SIZE. (INSERT-A-TEE OR APPROVED EQUAL).
 6. UNDERGROUND MAGNETIC MARKERS SHALL BE BERNSTEN INTERNATIONAL DEEP-1UG OR FRSA APPROVED EQUAL.



rev. 5/1/23

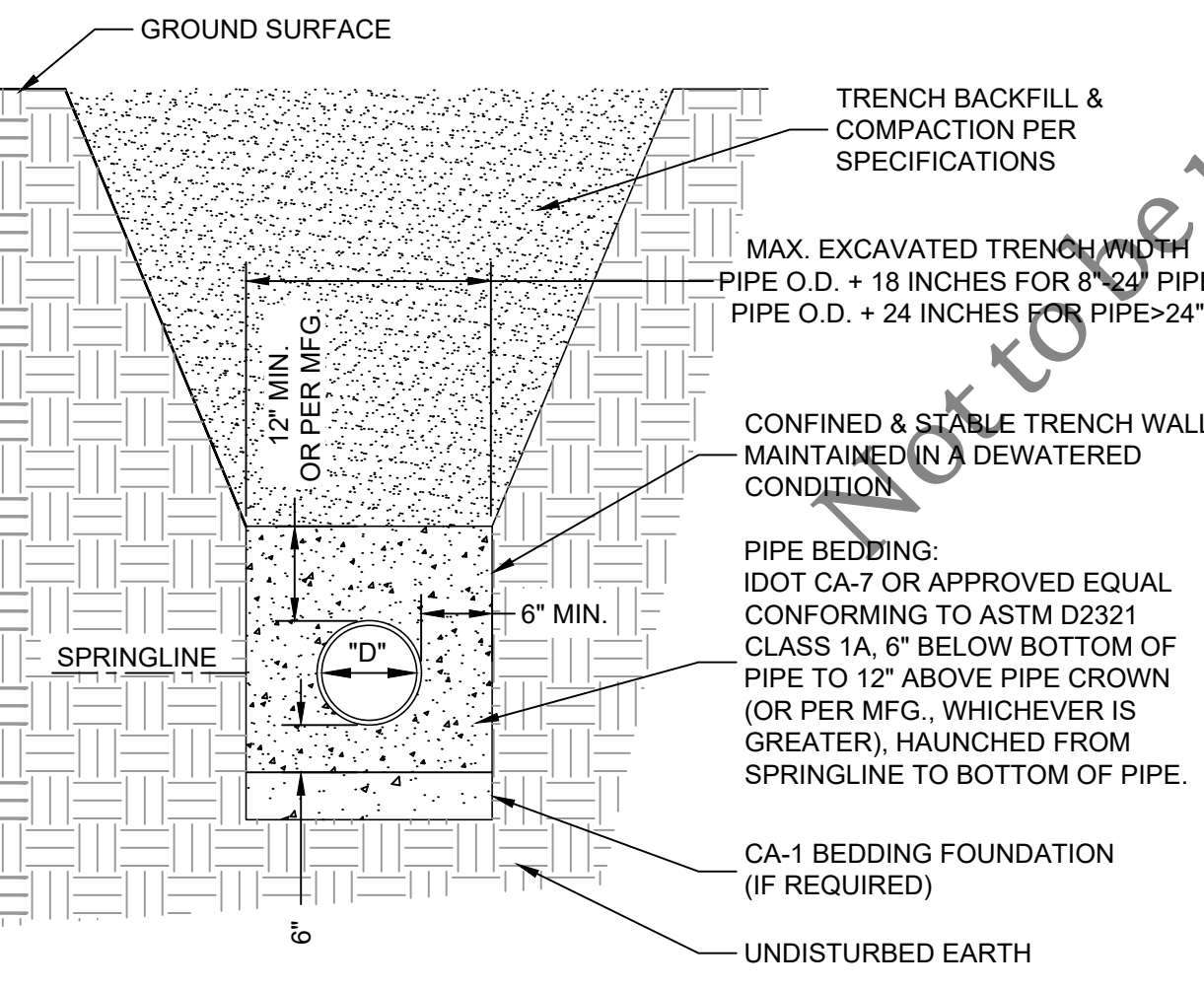
- NOTES:
1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
 2. LOOSE MATERIAL SHALL BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.
 3. BEDDING SHALL BE WELL HAUNCHED ALONG PIPE TO ENSURE VOIDS ARE ELIMINATED.



RIGID PIPE BEDDING DETAIL

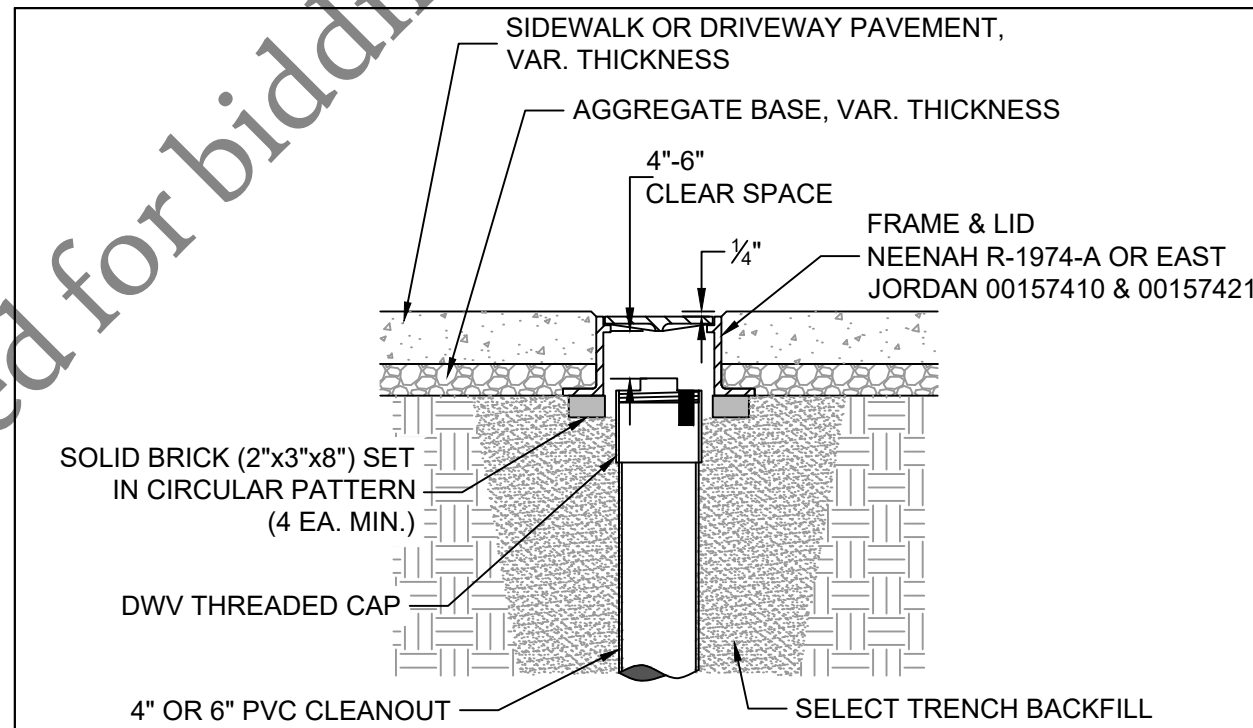
rev. 4/1/26

- NOTES:
1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
 2. LOOSE MATERIAL TO BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.
 3. BEDDING SHALL BE WELL HAUNCHED ALONG PIPE TO ENSURE VOIDS ARE ELIMINATED.



FLEXIBLE PIPE BEDDING DETAIL

rev. 4/1/26

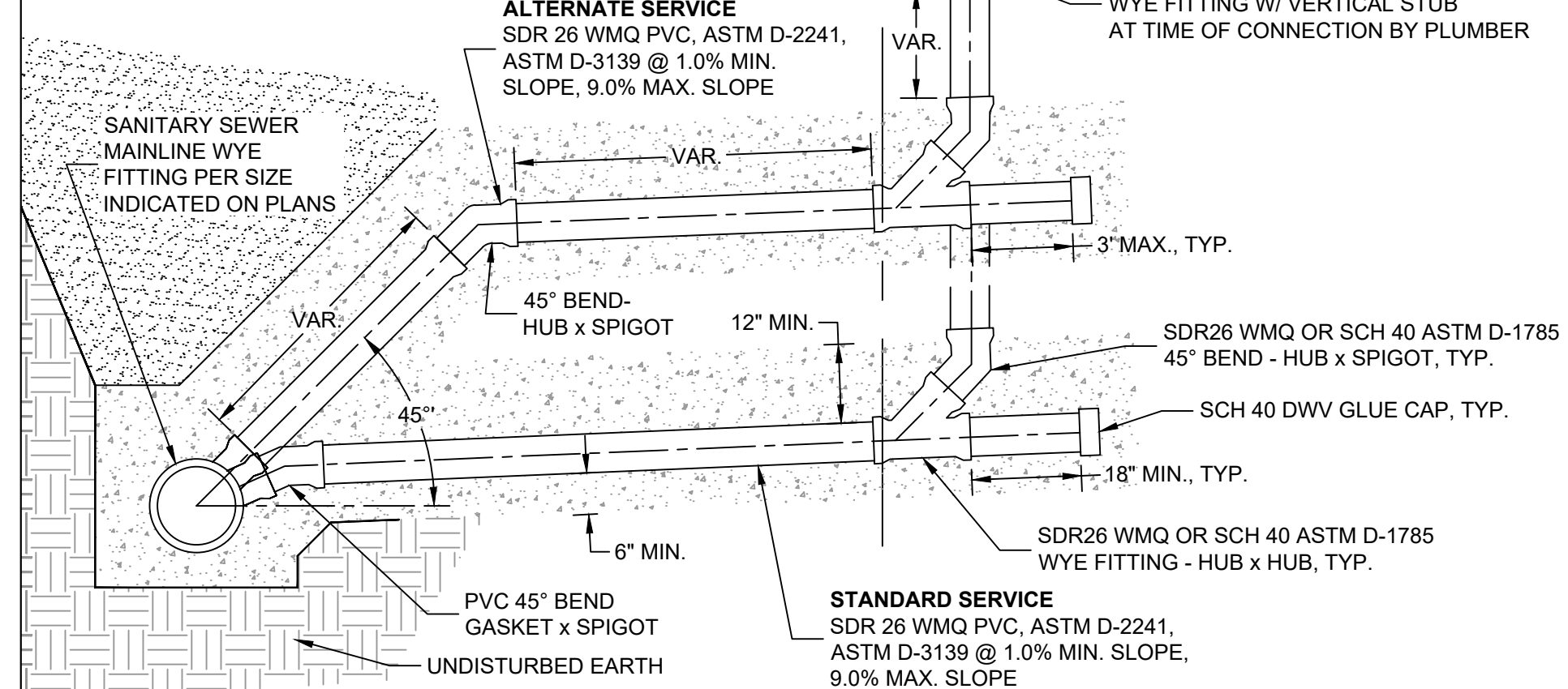


- NOTES:
1. SERVICE CLEANOUT CASTINGS ARE REQUIRED FOR ALL CLEANOUTS LOCATED IN PAVED AREAS, DRIVEWAYS, OR SIDEWALKS.
 2. THE LOCATION OF THE CLEANOUT SHALL BE APPROVED BY FOUR RIVERS SANITATION AUTHORITY (FRSA).
 3. THE FRAME SHALL BE SET ON BRICKS THAT ARE PLACED IN A CIRCULAR PATTERN THE ENTIRE CIRCUMFERENCE OF THE FRAME. THE BRICKS SHALL BE SET ON COMPACTED TRENCH BACKFILL.
 4. THE FRAME SHALL BE SET TO AN ELEVATION THAT PROVIDES 4"-6" CLEAR SPACE BETWEEN THE TOP OF THE CLEANOUT CAP AND THE BOTTOM OF THE CASTING LID.
 5. THE CONTRACTOR SHALL ENSURE THAT THE CLEANOUT CAP CAN BE UNSCREWED AND REMOVED AND REPLACED WITHOUT HINDRANCE.
 6. THE FRAME SHALL BE SET 1/4" MIN. TO 3/8" MAX. BELOW FINAL PAVEMENT ELEVATION.

SERVICE CLEANOUT CASTING DETAIL

rev. 6/1/22

- NOTES:
1. SANITARY SEWER MAINLINE SHALL BE INSTALLED PER 'FLEXIBLE PIPE BEDDING DETAIL' OR 'RIGID PIPE BEDDING DETAIL'.
 2. PIPE BEDDING FOR SANITARY SERVICE PIPING SHALL BE PER 'FLEXIBLE PIPE BEDDING DETAIL', 6" BELOW AND 12" ABOVE PIPING.
 3. ALL SCH 40 PVC PIPE & FITTINGS SHALL BE PER ASTM D-1785/D-2665.
 4. ALL SDR26 WMQ PVC PIPE & FITTINGS SHALL BE PER ASTM D-2241/D-3139.
 5. ALL DWV FITTINGS SHALL BE CLEANED, PRIMED, & GLUED.
 6. MIN. DEPTH OF COVER SHALL BE 5'.
 7. CLEANOUT CAP SHALL BE SCH 40 DWV GLUED CAP FOR NEW DEVELOPMENT OR SCH 40 GLUED SCREW CAP FOR EX. DEVELOPMENT.
 8. CLEANOUT RISERS LOCATED IN PAVED AREAS, DRIVEWAYS, OR SIDEWALKS SHALL WILL REQUIRE A CLEANOUT FRAME & LID PER THE FRSA 'SERVICE CLEANOUT CASTING DETAIL'.



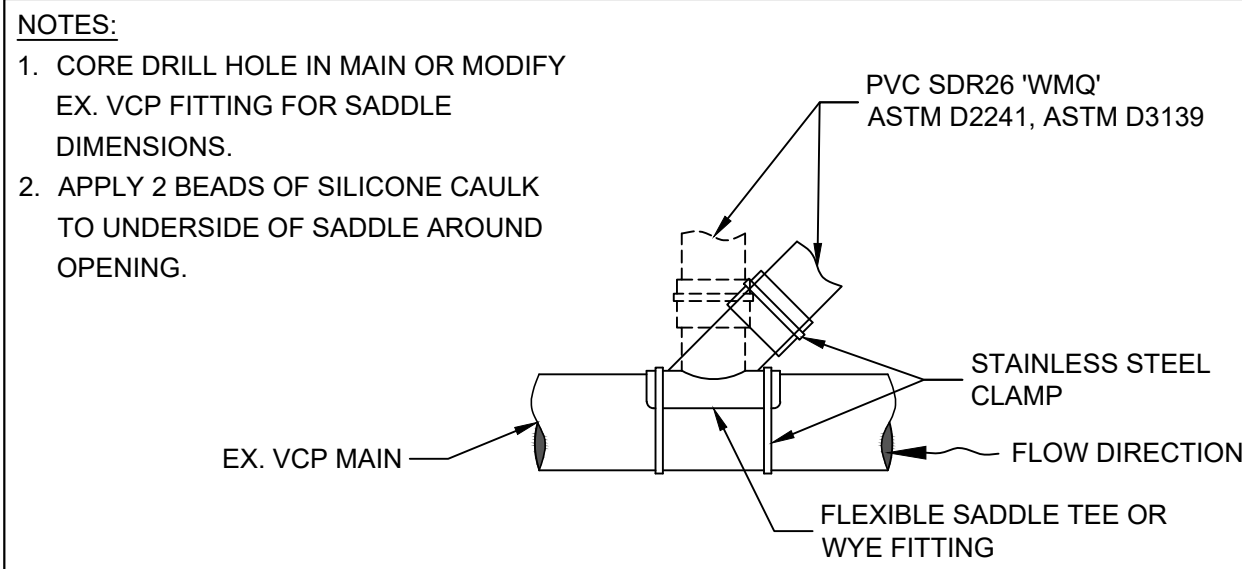
STANDARD SERVICE & ALTERNATE SERVICE DETAIL

rev. 5/1/23

ACCEPTABLE SERVICE / MAIN CONNECTION TABLE

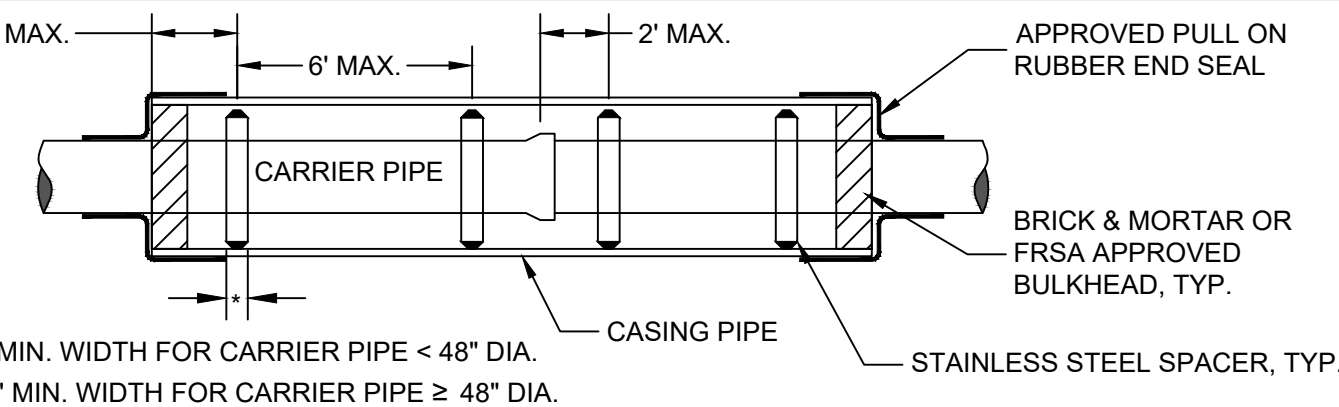
TYPE OF MAIN	TYPE OF CONNECTION	DETAIL
NEW, <18" DIA	FACTORY PVC WYE	STANDARD SERVICE DETAIL *
NEW, ≥18" DIA	FACTORY PVC WYE COMPRESSION FITTING	VERTICAL SERVICE RISER DETAIL
EXIST, <18" DIA	VCP	STANDARD SERVICE DETAIL *
	NON-VCP	
	ALL	
EXIST, ≥18" DIA	ALL	VERTICAL SERVICE RISER DETAIL OR ALTERNATE SERVICE DETAIL**

* ALL MAINS ≥13' DEEP SHALL HAVE AN ALTERNATE OR VERTICAL SERVICE RISER.
** REQUIRES FRSA APPROVAL.



FLEXIBLE SADDLE CONNECTION DETAIL

rev. 4/1/26



* 8" MIN. WIDTH FOR CARRIER PIPE < 48" DIA.
12" MIN. WIDTH FOR CARRIER PIPE ≥ 48" DIA.

- NOTES:
1. CASING END SEALS & SPACERS SHALL BE AS MFD. BY CASCADE MFG., OR APPROVED EQUAL.
 2. FOR FLEXIBLE CARRIER PIPE, SPACING OF SPACERS TO BE AS SHOWN, OR PER MFR.'S RECOMMENDATION.
 3. FOR RIGID CARRIER PIPE, SPACING SHALL BE PER MFR.'S RECOMMENDATION.

CASING & SPACER DETAIL

rev. 4/1/26

FOUR RIVERS SANITATION AUTHORITY (FRSA) STANDARD DETAILS

(NOT TO SCALE)

3501 KISHWAUKEE ST.
ROCKFORD, ILLINOIS 61109 PH. (815) 387-7660



Sheet No.

of

ISSUE
04/01/2026

Section VI

FRSA Plumbing Contractor Registration



Annual Registration for Plumbing and Sewer Contractors

The Four Rivers Sanitation Authority (Four Rivers) current registration period for all Plumbing and Sewer Contractors will expire on May 31, 2026.

This registration packet includes Four Rivers Registration Application Form for the 2026-2027 period, a copy of the current combined fee Ordinance, Title 4 of FRSA's Code of Ordinances which contains policies and procedures for plumbing and sewer contractors, and a list of holidays observed by Four Rivers.

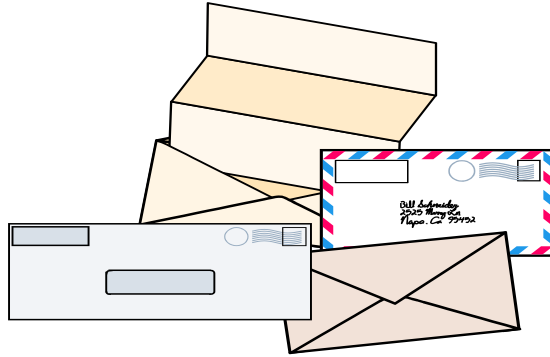
Four Rivers Code of Ordinances can be found online in its entirety at [FRSA-Code-of-Ordinances-Amended-September-23-2024.pdf](https://fourrivers.illinois.gov/wp-content/uploads/2022/03/General-Techs-Specs-1.pdf), along with a General Provisions and Technical Specifications for Sanitary Sewer Construction at <https://fourrivers.illinois.gov/wp-content/uploads/2022/03/General-Techs-Specs-1.pdf>.

To register with the Four Rivers Sanitation Authority for 2026-2027, Plumbing and Sewer Contractors must complete and submit the following items:

1. **2026-2027 Registration Form:** Please update all required information. This information will be used to update the Four Rivers published lists of approved Plumbing and Sewer Contractors. Be sure to select the appropriate registration category(s). The terms and conditions for each of the three registration categories are defined on the back of the registration form. Your required signature on the 2026-2027 Registration Form will serve to acknowledge your understanding of the terms and conditions of the selected category(s).
2. **Current Bonds on Four Rivers Bond Forms:** You must provide a completed and signed bond for each category of registration you select. The bond(s) must be submitted on the provided Four Rivers bond forms, having a start date of June 1, with an expiration date of May 31, 2027. The Engineering Department can provide blank copies of the bond forms upon request. If you are currently registered with Four Rivers for the 2025-2026 registration period, you may submit a continuation certificate that extends your existing bond until May 31, 2027.
3. **Registration Fee:** The current fee is \$50.00 per registration category.
4. **Illinois State Plumbing Contractor License:** If registering as a Private or Public Property Plumbing Contractor, you must provide a copy of your current Illinois State Plumbing Contractor's License.

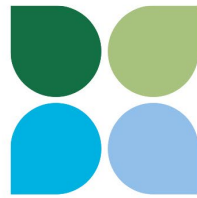
Beginning June 1, 2026, permits will only be issued to Plumbing and Sewer Contractors who have satisfied all requirements for their 2026-2027 registration. Any Plumbing or Sewer Contractor who has been issued a permit, but has not completed their required registration, will be unable to schedule the inspection until their 2026-2027 registration has been satisfied. Should the issued permit expire before the registration has been satisfied, the permit costs will not be refunded.

Please return all annual registration documents to Michael Montana, Engineering Permit Technician: at 3501 Kishwaukee Street, Rockford, IL 61109. If you have additional questions, please contact Four Rivers Engineering Department by phone at 815-387-7660 or by email at mmontana@fourrivers.illinois.gov.



If you are mailing your 2026-2027 Plumbing Contractor Registration, you must include the following items:

1. A completed registration form, signed and dated by an authorized representative of the company.
2. Registration fee payment - The current cost is \$50.00 per registration category.
3. A surety bond for each category of registration. The bond(s) must be written on the appropriate Four Rivers bond form (Private, Public & Contractor), and have an expiration date of May 31. *If you are currently registered with Four Rivers, you may submit a continuation certificate that extends your existing surety bond until May 31.*
4. If you are registering for the categories of Public or Private, you must provide a copy of your valid State of Illinois Plumbing Contractor License (055).



Four Rivers

Sanitation Authority

Application for Registration to Perform Sewer Construction or Service Connections From **June 1, 2026 to May 31, 2027**

Company Name: _____ Phone: _____
Company Address: _____ Cell: _____
City, State, Zip: _____ Email: _____
Contact Person: _____ Fax: _____

For registration with the Four Rivers Sanitation Authority (please check all that apply):

- ☐ Private Property (\$50.00)
☐ Public Property (\$50.00)
☐ Sewer Contractor (\$50.00)

Note: If you are registering for the categories of Private or Public Property Plumber, you must include a copy of your valid Illinois State Plumbing Contractor License (055) with this registration form.

By signing below, I/We acknowledge and understand that registering with the Four Rivers Sanitation Authority does not eliminate requirements for bonding or permit applications as required under Ordinance, Policy, and Procedure; nor relieve the plumbing contractor from meeting all State and Local Plumbing Code requirements. All work is subject to the terms and conditions outlined within this registration. I/We, further understand this registration will expire on May 31, 2027, and must be renewed appropriately to continue Four Rivers-related sanitary sewer work.

Name: _____ Date: _____

----- TO BE COMPLETED BY FOUR RIVERS STAFF -----

☐ Contractor ☐ Public ☐ Private

Fee Paid: \$ Date: Receipt #:

Permission is hereby granted by the Four Rivers Sanitation Authority (Four Rivers) to Applicant to perform the work described in its application subject to all Four Rivers policies, procedures, specifications and the provisions of Four Rivers Code of Ordinances. **Applicant hereby covenants and agrees with Four Rivers to be bound by the following terms and conditions:**

- (a) All of the work to be done pursuant to the registration herein applied for shall be strictly in conformity with all ordinances and regulations of Four Rivers now in force and as amended during this registration period.
- (b) Applicant shall restore all sewers, appurtenances, streets, alleys, sidewalks, pavements, and other structures disturbed by the work to as good condition as existed at the time of commencement of said work and in accordance with the ordinances, regulations, and easements of Four Rivers and of any other jurisdictional municipal township or county agency for damage to any sewer, appurtenances, street, alley, sidewalk, pavement, or other structure caused by or resulting from said work occurring after its completion. Applicant agrees, on demand of Four Rivers and at its sole expense, to immediately make such repairs or restoration as required.
- (c) Applicant shall indemnify and save harmless Four Rivers from any and all loss, cost, damage, and expense which may come to Four Rivers by reason of or connected with said work, including any and all liability for and on account of any accident or accidents, injury, death, or damages caused or in any manner arising from or connected with said work; provided however that the liability of Applicant to Four Rivers shall not be limited to the amount of bond given, nor to the specific liabilities mentioned and set forth therein, but Applicant shall in any event be liable to Four Rivers for any and all loss, cost, damage, and expense of every kind and character arising from, growing out of, or connected with such work.

In case of any suit, action, or proceeding against Four Rivers for damages or on account of any liability or claim arising from or in any way connected with said work, Applicant shall, on demand of Four Rivers, enter his/her appearance therein, defend the same and pay all the costs, attorney's fees, and expense thereof and the amount of any and all final judgments, decrees, or awards against Four Rivers entered therein.

Registration and Bonding as a Private Property Plumbing Contractor allows the contractor to perform permitted sewer service connections and service extension work, including special service features such as grease traps, sand filters, sampling, monitoring, and private service manholes, private pump, and lift stations with their associated service force mains and permitted service disconnections. All work must be on private property and not within public right-of-way or public sanitary sewer easements.

Registration and Bonding as a Public Property Plumbing Contractor allows the contractor to perform permitted street connections and service extension work, including special service features such as private service manholes, and to perform public manhole core-ins and public sewer main service cut-ins and permitted service disconnections. All work must be within public right-of-way and public sanitary sewer easements.

Registration and Bonding as a Sewer Contractor allows the contractor to perform permitted street connections and service extension work, public manhole core-ins and public sewer main cut-ins, install public manholes, install new private and public sewer mains and associated services and install public pump and lift stations with associated force mains and permitted service disconnections. All work must be within public right-of-way and public sewer easements. In the case of new sewer system construction, the right-of-way or easements must be dedicated to the public as a condition of and upon completion of the permitted work.

SEWER BOND
CONSTRUCTION OF SEWER

CONTRACTOR

BOND NO. _____

Know all men by these presents that the undersigned Applicant,

(NAME OF INDIVIDUAL)

(NAME OF FIRM)

(ADDRESS)

as principal and _____

(NAME OF FIRM)

(ADDRESS)

as surety or sureties, are held and firmly bound unto the Four Rivers Sanitation Authority in the penal sum of **\$20,000 Twenty Thousand Dollars** lawful money of the United States of America be paid to the Four Rivers Sanitation Authority, for which payment (well and truly to be made) we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above named Applicant intends to construct within said Four Rivers Sanitation Authority's jurisdiction certain sewer mains and service extensions, the location and description thereof and description of the work to be done being specifically set forth in prior approved Illinois Environmental Protection Agency permits for construction and operation of sewer extensions; and

WHEREAS, permits will , from time to time, be approved by the Four Rivers Sanitation Authority and issued by the IEPA for construction of said sewer main and service extensions and the doing of said work, and said Applicant being now about to enter upon said work;

NOW THEREFORE, the condition of this obligation is such that if said applicant shall cause said sewer extensions be made and said work to be done in the manner described in said permits and if the same shall be done and performed in such manner as shall be approved by the Director of Engineering of the Four Rivers Sanitation Authority (Four Rivers) and in accordance with any and all ordinances and regulations of Four Rivers and of any other municipality within the corporate limits of which said work is done, and also in accordance with the requirements of any and all easements and or contractual obligations of Four Rivers now in force and effect and in such manner as to leave all sewers, appurtenances, streets, alleys, sidewalks and pavements and other structures undisturbed, in as good condition as the same as each of them were or are prior to the commencement of said work, and shall pay, indemnify, defend, and save harmless said Four Rivers from any and all loss, cost, damage and/or expense which may come to Four Rivers by reason of or in any manner growing out of or connected with said work including any and all liability for an on account of any accident or accidents, injury or, death, damage or damages to any person or property, caused or in any manner arising from, growing out of or connected with said work and if said applicant shall in all particulars and respects carry out and fully perform each and all of the covenants and agreements in said applications set forth and contained, then this obligation shall be void; otherwise it shall remain in full force and effect, until **May 31, 20** _____ unless renewed by a continuation certificate.

IN WITNESS WHEREOF we have hereunto set our hands and seals this _____ day of _____ A.D. 20 _____

SURETY

PRINCIPAL

(SEAL)

By: _____

Firm: _____

Address: _____

City, State: _____

STATE OF _____, COUNTY OF _____

I _____, a Notary Public in and for and residing in said County, in the State aforesaid, do hereby certify that, _____ who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that they signed, sealed and delivered the said instrument as their free and voluntary act for the uses and purposes therein set forth. Given under my hand and notarial seal this _____ day of _____ A.D. 20 _____.

Notary Public

Section VII.

General Provisions & Technical Specifications for Sanitary Sewer Construction

(Separate document incorporated by reference)