



**Request for Proposal
Clay Street Sewer – Phase 2
Water and Sewer Plans
City of Troy, IL**

BID RESPONSES MUST BE RECEIVED BY: 10:00am local time on Wednesday, October 12th, 2022.

The City of Troy seeks a qualified contractor for a water main and sanitary sewer replacement project. The Bid Packet may be obtained from our website at www.troyil.us (home page), or picked up at the Troy Municipal Building, 116 E. Market St. (Administration Office), Troy, IL. To bid the project, you must register as a plan-holder with the Assistant to the City Administrator Michele Colligan. Please contact Michele at 618-667-9924 ext.1 to register and/or for assistance in viewing, downloading, and working with this digital project information. All addenda will be posted on www.troyil.us.

Please submit any questions regarding this bid in writing to the City Engineer, Tom Cissell via email to: tom.cissell@oatesassociates.com.

MAILING INSTRUCTION: Print or type Bid Title and Due Date on the lower left hand corner of the envelope or package. Delivered **SEALED BIDS** must be received in the Administration Office prior to **10:00am on October 12th, 2022**. Bids will be opened by the Purchasing Manager at the location listed below.

RETURN BID TO:
City of Troy Public Works
Attn: Tom Cissell
116 E. Market St.
Troy, IL 62294

By signing this cover page, the bidder shall hereby declare understanding, agreement and certification of compliance to provide the items and/or services, at the prices quoted, in accordance with all requirements and specifications contained herein and the Terms and Conditions. In addition, the bidder shall further agree that upon receipt of an authorized purchase order from the City of Troy or when a Contract Resolution is signed and issued by an authorized official of the City of Troy, a binding contract shall exist between the bidder and the City of Troy.

SIGNATURE REQUIRED / RETURN WITH BID

LEGAL NAME OF ENTITY/INDIVIDUAL FILED WITH IRS FOR THIS TAX ID NO.	DOING BUSINESS AS (DBA) NAME
MAILING ADDRESS	
CITY, STATE, ZIP CODE	
CONTACT PERSON	EMAIL ADDRESS
PHONE NUMBER	FAX NUMBER
TAXPAYER ID NUMBER (TIN)	TAXPAYER ID (TIN) TYPE (CHECK ONE) ____ FEIN ____ SSN
VENDOR TAX FILING TYPE WITH IRS (CHECK ONE) ____ Individual/Sole Proprietor ____ C Corporation ____ S Corporation ____ Partnership ____ LLC, Class ____ Other	
AUTHORIZED SIGNATURE	DATE
PRINTED NAME	TITLE

The City of Troy reserves the right to accept or refuse any or all bids.

CITY OF TROY, ILLINOIS
GENERAL TERMS AND CONDITIONS OF BIDDING

1. **Opening Location:** Sealed proposals will be received at City of Troy Municipal Building, 116 E. Market. St., Troy, IL 62294, until the proposal closing date and time indicated above.
2. **Opening of advertised proposals:** The vendor and public are invited, but not required, to attend the opening of proposals. No decision related to an award of a contract or purchase order will be made at the opening.
3. **Submittal of Proposals:** Proposals must be submitted in a sealed envelope identified with the bid title and date of closing on the outside. Facsimile, telephone and email proposals will NOT be considered. Proposals will not be accepted after the due date and time.
4. All proposals shall be submitted FOB Destination Troy, Illinois 62294, freight prepaid (unless otherwise stated).
5. **Prices Bid:** Give unit price, extended total or both if applicable. Price must be stated in units of quantity specified in the bidding specifications. In case of discrepancy in computing the amount of the Bid, the unit price of the Bid will govern. Each item must be bid separately, and no attempt is to be made to tie any item or items in with any other item or items.
6. **Taxes:** Do NOT include Federal Excise Tax or Sales and Use Tax in the bid prices, as the City is exempt from them by law. Tax Exemption Certificate will be furnished if required.
7. **Estimated Quantities:** The estimated quantities indicated in this Request for Proposal represent anticipated requirements only. The right is reserved to exceed or diminish these estimates.
8. **Bid Forms, Variances, and Alternates:** Bids must be submitted on attached City bid forms, although additional information may be attached. Bidders must indicate any variances from the City requested specifications and/or terms and conditions, on the Affidavit of Compliance. Otherwise, bidders must fully comply with the City requested specifications and terms and conditions. Alternate Bids may or may not be considered at the sole discretion of the City of Troy.
9. **"Or Equal" Interpretation:** When a particular manufacturer's name or brand is specified along with the words "or equal", Quotations will be considered on other brands or the product of other manufacturers. On all such Quotations the bidder shall indicate clearly the product (brand and model number) on which he is bidding, and shall supply a sample or sufficient data in detail to enable an intelligent comparison to be made with the particular brand or manufacturer specified. Catalog cuts and technical descriptive data shall be attached to the original copy of the quote where applicable. Failure to submit the above information may be sufficient grounds for the rejection of quote.
10. **Withdrawal of Bids:** Bids or proposals may be revised, modified, or withdrawn by the bidder at any time prior to opening. Any such revision, modification, or withdrawal shall be in writing. After the bids are opened, they shall be irrevocable for the period sixty (60) days. Bids or proposals may not be withdrawn or revised after opening unless specified in the RFP.
11. **Clarification and Addenda:** Each bidder shall examine all Bid documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries or suggestions, concerning interpretation, clarification, or additional information pertaining to the Request for Proposal shall be made through the Administration Office in writing or through email. The Administration Office shall not be responsible for oral interpretations given by any City employee, representative, or others. The issuance of written addenda is the official method whereby interpretation, clarification, or additional information can be given. It shall be the responsibility of each bidder, prior to submitting their Bid, to contact the Administration Office at phone number 618-667-9924 or jkeeven@troyil.us, to determine if addenda were issued and to make such addenda a part of their Bid. Any and all addendums will be posted on the City's web site (www.troyil.us) under Current Bid Opportunities.
12. **Contract Forms:** Any agreement, contract, or purchase order resulting from the acceptance of a Bid shall be on forms either supplied by or approved by the City.

13. **Reserved Rights:** The City reserves the right to make such investigations as it deems necessary to make the determination of the bidder's responsiveness and responsibility. Such information may include, but shall not be limited to: current financial statement, verification of availability of equipment and personnel, and past performance records.
14. **The Right to Audit:** The bidder agrees to furnish supporting detail as may be required by the City to support charges or invoices, to make available for audit purposes all records covering charges pertinent to the purchase, and to make appropriate adjustments in the event discrepancies are found.
15. **Applicable Law:** All applicable laws and regulations of the State of Illinois and the City will apply to any resulting agreement, contract, or purchase order. Further, any and all disputes arising out of and/or related in any way to this RFB process or any contract executed after bid acceptance. and/or the work at issue which is the subject of this RPB, shall be filed exclusively in the Circuit Court for the Third Judicial Circuit, Madison County, Illinois.
16. **Right to Protest:** Protestors shall seek resolution of their complaints initially with the City Administration Office. Any protest must state the basis upon which the solicitation or award is contested and shall be submitted within ten (10) calendar days after such aggrieved person knew or could have reasonably been expected to know of the facts giving rise thereto.
17. **Quality Guaranty:** If any product delivered does not meet applicable specifications or if the product will not produce the effect that the bidder represents to the City, the bidder shall pick up the product from the City at no expense. Also, the Bidder shall refund to the City any money which has been paid for same. The bidder will be responsible for any and all costs and attorney fees in the event the bidder defaults and court action is required.
18. **Quality Terms:** The City reserves the right to reject any or all materials if, in its judgment, the item reflects unsatisfactory workmanship, manufacturing, or shipping damages.
19. **No-Bid:** In the event you are unable to quote on this requirement, please return the "No-bid Response Form", on or before the bid closing date. Please indicate the reason(s) you are unable to participate in this solicitation.
20. **Bid Tabulation:** Bidders may request a copy of the bid tabulation of the Request for Bid through the City's Administration Office.
21. **Expenses:** All expenses for making Proposals to the City of Troy are to be borne by the bidder.
22. **Collusion:** By offering a submission to this Request for Bid, the bidder certifies the bidder has not divulged, discussed, or compared the Bid with other bidders and has not colluded with any other bidder or parties to this RFB whatsoever. Also, the bidder certifies, and in the case of a joint Bid, each party thereto certifies as to their own organization, that in connection with this RFB:
 - a. Any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor.
 - b. Any prices and/or cost data for this Bid have not knowingly been disclosed by the bidder and will not knowingly be disclosed by the bidder prior to the scheduled opening directly or indirectly to any other bidder or to any competitor.
 - c. No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a Bid for the purpose of restricting competition.
 - d. The only person or persons interested in this Bid, principal or principals are named therein and that no person other than therein mentioned has any interest in this Bid or in the contract to be entered into.
 - e. No person or agency has been employed or retained to solicit or secure the contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee exempting bona fide employees or established commercial agencies maintained by the Purchaser for the purpose of doing business.

23. Liability and Indemnity:

- a. *In no event shall the City be liable to the Contractor for special, indirect, or consequential damages, except those caused by the City's gross negligence or willful or wanton misconduct arising out of or in any way connected with The RFB process or any contract executed after bid acceptance. The maximum liability of the City shall be limited to the amount of money to be paid or received by the City under any contract executed after bid acceptance.*
 - b. *The Contractor shall defend, indemnify and save harmless the City, its elected or appointed officials, agents and employees from and against any and all liability, suits, damages, costs (including attorney fees), losses, outlays and expenses from claims in any manner caused by, or allegedly caused by, or arising out of, or connected with the RFB process or any contract executed after bid acceptance, including, but not limited to, claims for personal injuries, death, property damage, or for damages from the award of this contract to Contractor.*
 - c. *The Contractor shall indemnify and hold the City harmless from all wages or overtime compensation due any employees in rendering services pursuant to any contract executed after bid acceptance, including payment of reasonable attorneys' fees and costs in the defense of any claim made under the Fair Labor Standards Act, the Illinois Prevailing Wage Law or any other federal or state law.*
- 24. Bid Information is Public:** *All documents submitted with any bid or proposal shall become public documents and subject to Illinois State Statute 5 ILCS140/, which is otherwise known as the "Illinois Sunshine Law". By submitting any document to the City of Troy in connection with a bid or proposal, the submitting party recognizes this and waives any claim against the City of Troy and any of its officers and employees relating to the release of any document or information submitted. Each submitting party shall hold the City of Troy and its officers and employees harmless from any claims arising from the release of any document or information made available to the City of Troy arising from any bid opportunity.*
- 25. Authorized Product Representation:** *The successful bidder(s) by virtue of submitting the name and specifications of a manufacturer's product will be required to furnish the named manufacturer's product. By virtue of submission of the stated documents, it will be presumed by the City that the bidder(s) is legally authorized to submit and the successful bidder(s) will be legally bound to perform according to the documents.*
- 26. Regulations:** *It shall be the responsibility of each bidder to assure compliance with OSHA, EPA, Federal, State of Illinois, and City rules, regulations, or other requirements, as each may apply.*
- 27. Awards:**
- a. *Unless otherwise stated in the Request for Proposal, cash discounts for prompt payment of invoices will not be considered in the evaluation of prices. However, such discounts are encouraged to motivate prompt payment.*
 - b. *As the best interest of the City may require, the right is reserved to make awards by item, group of items, all or none, or a combination thereof; to reject any and all Bids or waive any minor irregularity or technicality in Bids received.*
 - c. *Awards will be made to the Bidder whose Bid (1) meets the specifications and all other requirements of the Request for Proposal and (2) is the lowest and best Bid, considering price, delivery, responsibility of the bidder, and all other relevant factors.*
- 28. Termination of Award:** *Any failure of the bidder to satisfy the requirements of the City shall be reason for termination of the award. Any Bid may be rejected in whole or in part for good cause when in the best interest of the City.*
- 29. Budgetary Constraints:** *The City reserves the right to reduce or increase the quantity, retract any item from the Bid, or upon notification, terminate entire agreement without any obligations or penalty based upon availability of funds.*
- 30. Insurance:** *The city shall require all contractors performing public works projects or performing work on city property in connection with a contract or purchase order, to maintain insurance of the types and with limits of liability not less than those set out below at the contractor's expense during the term (including the warranty period) of the purchase order from*

insurers reasonably acceptable to the city covering items, risks and operations required to fulfill the contract or purchase order.

- a. Such policies shall name the City of Troy and Oates Associates as an additional named insured with limits of liability.
 - i. **Workers' compensation:** Insurance that the contractor is obliged by law to carry that covers all of contractor's employees performing work under this purchase order ("worker compensation").
 - ii. **Employer's liability insurance:** Employer's liability insurance with a minimum limit of \$1,000,000 per occurrence/\$2,000,000 aggregate. Such insurance shall protect the city as an alternate employer against claims asserted against the contractor by the contractor's workers as "borrowed servants," statutory employees or maritime employees ("employer' liability").
 - iii. **Commercial or comprehensive general liability insurance:** Commercial or comprehensive general liability insurance, including contractual liability coverage, with a minimum limit of \$2,000,000 per occurrence/\$5,000,000 aggregate.
 - iv. **Automobile liability insurance:** Automobile liability insurance with a combined bodily injury and property damage minimum limit of \$1,000,000 per occurrence/\$2,000,000 aggregate, for all owned and leased vehicles.
 - b. Builders Risk Insurance for contracts involving unoccupied structures. The Contractor shall secure All Risk Builder's Risk Insurance. Unless specifically authorized by the City, the amount of such insurance shall not be less than the total contract price. The policy shall name as insured the Contractor and the City of Troy.
 - c. Subcontracts: in case any or all of this work is sublet, the contractor shall require the subcontractor to procure and maintain all insurance required in subparagraphs (a) and (b) hereof and in like amounts. The contractor shall require any and all subcontractors with whom it enters a contract to perform work on this project to protect the City of Troy through insurance against applicable hazards or risks and shall, upon request from the City, provide evidence of such insurance.
31. **Requirement for Bid Security:** Bid Security shall be required for all formal Bids, requiring City Council approval, as set forth in the City of Troy's Purchasing Policy, for the purchase of Capital Improvement items, and City projects entailing engineering or construction. Bid security shall be a bond provided by a surety company authorized to do business in the State of Illinois, or the equivalent in cash, cashier's check or otherwise supplied in a form satisfactory to the City of Troy in an amount equal to 10% of the total amount of the bid. Failure to provide security, as set forth shall result in the City's rejection of bid.
 32. **Withdrawal of Bids:** After the bids are opened, they shall be irrevocable for the period of up to sixty (60) days from bid opening date. If a bidder is permitted to withdraw its bid before the opening of bids, no action shall be taken against the bidder or the bid security.
 33. **Correction or Withdrawal of Bids:** Correction or withdrawal of inadvertently erroneous bids after bid opening, or cancellations of awards or contracts based on such bid mistakes shall not be permitted and shall mandate forfeiture of Bid Performance Security to the City of Troy.
 34. **Return of Bid Security:** The City shall return the security bond to bidders who do not receive the bid. The City shall hold the security bid bond of the awarded bidder until Capital Improvement Project is delivered to the City of Troy or a 100% percent performance bond is issued to the City for awarded contractual services or project construction.
 35. **CONTRACT PERFORMANCE AND BOND PAYMENT:** When a bid is awarded for contractual services or construction, a bond shall be delivered to the City of Troy and shall become binding on the parties upon the execution of the contract; such bond shall be a performance labor and materials bond satisfactory to the City of Troy, executed by a surety company authorized to do business in the State of Illinois or otherwise secured in a manner satisfactory to the City of Troy, in the amount equal to one hundred percent (100%) of the price specified in the contract. The requirement may be modified upon recommendation of the City Administration, City Council and approved by the City Attorney.
 36. **CONTRACT TERM:** The term of this contract shall be for the duration and completion of this project.

37. **COMPLETION TIME:** *The Contractor will be required to commence work under this contract within **Ten (10)** calendar days after the date of receipt by him of the Notice to proceed, to prosecute said work diligently and to complete the work by **March 10, 2023**. The Contractor is required to provide a sufficient work force and construction management so that no time extension will be granted for delay of contract award, weather conditions, utility conflicts, excavation encountering rock, changing excavation quantities, or Contractor scheduling of equipment or construction progress. The Contractor shall have a superintendent or a responsible foreman on the project at all times when construction is in progress. Any claim for extension of time shall be made in accordance with the City of Troy General Conditions and Technical Specifications.*
38. *The project is not considered completed until final acceptance by the City of Troy.*

SPECIAL PROVISIONS

CLAY STREET SEWER – PHASE 2 WATER & SEWER PLANS TROY, ILLINOIS

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SPECIAL PROVISIONS

CLAY STREET SEWER – PHASE 2 WATER & SEWER PLANS TROY, ILLINOIS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction" Adopted January 1, 2022, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways" and the "Manual of Test Procedures of Materials" in effect on the date of the invitation for bids, the applicable Supplemental Specifications and Recurring Special Provisions, and the "Standard Specifications for Water and Sewer Construction in Illinois" Adopted 2020 which apply to and govern the construction of the City of Troy, Clay Street Sewer – Phase 2 Water & Sewer Plans, Troy, Illinois, and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

DESCRIPTION OF WORK

The proposed sanitary sewer and water replacement and rehabilitation project is generally located on Clay Street from the intersection of Powell Street and W Clay Street to the intersection of N Dewey Street and E Clay Street in Troy, Illinois.

The proposed sanitary sewer replacement and rehabilitation project is located on Clay Street in Troy, Illinois, from the intersection of Powell Street and W Clay Street to the intersection of N Dewey Street and E Clay Street. There is a reach of sewer that extends from Byrn Street through the property at 201 Staunton Road to E Clay Street. The proposed water main replacement project is located along E Clay Street from Staunton Road to N Dewey Street. The project length is approximately 1,945 feet (0.37 miles).

The work on this project consists of removals, trench excavation, trench backfill, sidewalk, Cured-In-Place-Pipe (CIPP) lining of existing 8" sanitary sewer, installation of 12" sanitary sewer and manholes, installation of 8" water main and fire hydrant assembly, water service line replacement, and all incidental and collateral work necessary to complete the work in the above-described Section according to the plans, specifications and special provisions.

COORDINATION OF CONTRACT DOCUMENTS

If a conflict exists between the "Standard Specifications for Road and Bridge Construction" and the "Standard Specifications for Water and Sewer Construction in Illinois", the more stringent requirement shall govern.

SHOP DRAWINGS

The Contractor shall submit shop drawings of the following items according to Articles 1042.03(b) and 105.04 of the "Standard Specifications for Road and Bridge Construction":

- Precast Concrete Manholes
- Manhole Frame and Lids
- Sanitary Sewer Pipe and Fittings
- Water Pipe and Fittings
- Steel Casing Pipe and Spacers
- Water Main Valves
- Insert Valve
- Fire Hydrant

Submit shop drawings for review and approval to:

Mr. Tom Cissell, City Engineer
City of Troy
116 East Market Street
Troy, Illinois 62294

A maximum of two reviews by the Engineer will be provided for each shop drawing submittal. If any additional reviews are required, the Contractor shall pay the Engineer for all costs incurred at an hourly rate of \$200. Payment for additional reviews shall be made directly to the City.

SAFETY AND HEALTH

The Contractor shall be responsible for enforcing all O.S.H.A. Safety and Health Standards pertaining to the construction industry as established by the United States Department of Labor, Occupational Safety and Health Administration. Such standards include, but are not limited to, 29 CFR 1910 and 1926.

SAFETY AND PROTECTION

- A. CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety and precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. All employees on the work and other persons and organizations who may be affected thereby;
 - 2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 - 3. Other property at the site adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.
- B. CONTRACTOR shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons and property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of underground facilities and utility owners when prosecution of the Work may affect them and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 2. or 3. caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts either of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or anyone employed by either of them or anyone for acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR). CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR that the Work is acceptable.
- C. CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent, unless otherwise designated in writing by CONTRACTOR to OWNER.

- D. In EMERGENCIES affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instructions or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt, written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variations.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

An independent IEPA National Pollution Discharge Elimination System (NPDES) storm water permit is not required for this project; however, work shall conform to the City of Troy's existing General Storm Water Permit for Small Municipal Separate Storm Sewer Systems (MS4). Erosion control items shall be constructed according to the Standard Specifications for Road and Bridge Construction and the Illinois Urban Manual.

CONSTRUCTION CONTRACTS

The successful bidder, as a condition of this contract, must submit evidence that he has conducted a pre-job conference with his Subcontractors and their employees, or the employees' duly recognized representatives and union officials, to determine employee jurisdiction, job assignment and work schedules. This requirement is to promote industrial harmony and to eliminate work stoppages and jurisdictional disputes. The pre-job conference shall be conducted at least 14 calendar days prior to the commencement of any construction.

MEASUREMENT AND PAYMENT

Delete all Articles regarding "Method of Measurement" and "Basis of Payment." This project is considered a lump sum bid and will be paid as a lump sum at completion unless a change directive is issued.

SEQUENCE OF CONSTRUCTION OPERATIONS

The Contractor shall always conduct work within the approved Sequence of Construction Operations. The work shall be done in a manner that will minimize the inconvenience to local traffic. The Contractor shall make every effort to maintain sewer and water service usage throughout the duration of the project. In the event that a connection will be out of service, with the City's pre-approval, the longest period of no service shall be eight (8) hours.

The Contractor shall conduct operations to insure local access to all properties throughout the project limits according to Article 107.09 and Section 701 and 703 of the "Standard Specifications for Road and Bridge Construction". If required, Type I, Type II or vertical barricades shall be used to channel traffic from the following locations to the adjoining side streets or private entrances. The number required will be determined by the Engineer during construction.

The Contractor will be permitted to close Clay Street to through traffic, as approved by the Engineer, however, the road must be maintained for local traffic. All road closures must be approved in advance by the City of Troy Department of Public Works. The Contractor shall notify the City of Troy Fire and Police Departments at least 48 hours prior to enacting any road closures.

SUGGESTED SEQUENCE

During construction, the Contractor will be required to maintain access to all properties affected by this work. AGGREGATE FOR TEMPORARY ACCESS according to Section 402 of the "Standard Specifications for Road and Bridge Construction" may be used for this purpose.

The Contractor will not be allowed to begin subsequent construction operations until the preceding work is substantially complete. The construction sequence shall be compressed as much as possible to minimize the inconvenience to local traffic.

Unless authorized by the Engineer, the Contractor shall complete the construction in the following suggested sequence:

1. Install appropriate Stage 1 traffic control signage.
2. Pothole all storm sewer, water, fiber optic, and other utilities that cross the proposed water main and sanitary sewer.
3. Submit bypass pumping plan for approval. Notify the City at least 24 hours prior to implementing the approved bypass plan. Also, submit a modified sanitary sewer pipe testing plan for reaches of new sewer with active laterals.
4. Trench/open cut to remove existing and construct new sanitary sewer main, service lateral connections, and manholes for the following reaches: MH 6 to MH 7, MH 5 to MH 6, MH 4 to MH 5, and MH 10 to MH 4.
5. Trench backfill and replace pavement to keep Clay Street open to local traffic. Byrn Street and the intersection of N Charcoal Street and E Clay Street shall not be closed at the same time to allow access to local traffic.
6. Complete testing of manholes and sanitary sewer pipes, according to the approved modifications to the methods of testing.
7. Expose the new water main wet tap location at Staunton Road and install an 8" tapping sleeve and gate valve on the existing main. Leave valve closed and test seal.
8. Trench/open cut new water main in the existing right-of-way on the north side of Clay Street, between Staunton Road and Dewey Street.
9. Install an in-line 8" gate valve just west of the new fire hydrant assembly.
10. Install fire hydrant and 6" gate valve assembly west of N Charcoal Street.
11. Temporarily close N Charcoal Street at E Clay Street to expose the new water main wet tap location at N Charcoal Street. Install a new 6" tapping sleeve and gate valve on the existing main. Leave valve closed and test seal.
12. Install new 6" water main, reducer, new 8" gate valve and tee to new 8" water main at N Charcoal Street.
13. Install sampling point west of N Dewey Street.
14. Expose the new 6" insert valve location on the east side of N Dewey Street in the sidewalk and install insert valve. Leave valve closed and test seal.
15. Expose the location where a new 8" x 6" elbow is to connect the new 8" water main to the existing 6" water main on the west side of N Dewey Street. Adjust the water main depth as necessary to avoid any impact to the existing fiber optic line while maintaining the required separation from the future storm sewer.
16. Trench backfill and replace pavement to keep driveways, sidewalks, and street open to local traffic.
17. Pressure test and chlorinate the new water main.
18. Open valves to pressurize new pipe.
19. Cap and abandon or remove the existing water main, as shown on the plans, between Staunton Road and Dewey Street.
20. Trench/open cut new water service lines and new water meters. Wet tap water service connections to new water main
21. Trench backfill and replace pavement to keep driveways, sidewalks and street open to local traffic.
22. Install appropriate Stage 2 traffic control signage.
23. Perform CIPP lining of sanitary sewer for the following reaches: EX MH 1 to EX MH 2, EX MH 2 to EX MH 3, EX MH 3 to MH 4, MH 6 to EX MH 8, and EX MH 8 to EX MH 9.

24. If approved, complete Alt #1 manhole rehabilitation of EX MH1, EX MH 2, EX MH 3, EX MH 8, and EX MH 9.

The water main and sanitary sewer construction may be completed at the same time during the construction period. To minimize inconvenience to residents living on Clay Street, CA 6 trench backfill shall be placed within the roadway and driveways as construction of the pipe is completed and accepted to maintain access for residents. Seeding operations shall be completed as soon as possible to minimize erosion potential. If Alt #1 is approved, manhole rehabilitation shall occur after the manholes are adjusted as part of the future IDOT roadway project expected to commence construction in the Spring of 2023.

The Contractor may submit an alternate sequence of operations and traffic control plan that would expedite construction and still maintain traffic control. Any and all changes to these plans must be submitted in writing and approved in advance by the Engineer. No additional compensation will be allowed if alternate plans are approved.

TRAFFIC CONTROL PLAN

Traffic control shall be according to the applicable Sections of the "Standard Specifications for Road and Bridge Construction", the applicable guidelines contained in the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", these special provisions, and all special details and Highway Standards contained herein and on the plans.

At the preconstruction meeting, the Contractor shall furnish the name of the individual in his/her direct employ who is responsible for the installation and maintenance of the traffic control for this project. If the actual installation and maintenance are to be accomplished by the Subcontractor, consent shall be requested of the Engineer at the time of the preconstruction meeting according to Article 108.01 of the "Standard Specifications for Road and Bridge Construction". This shall not relieve the Contractor of the foregoing requirement for a responsible individual in his direct employ. The City of Troy will provide the Contractor the name of its representative who will be responsible for the observation of the Traffic Control Plan.

The Contractor shall furnish, erect, maintain and remove all warning signs, flags, barricades and lights according to Article 107.14 and Sections 701 and 703 of the "Standard Specifications for Road and Bridge Construction", the latest edition of the "Manual of Uniform Traffic Control Devices for Construction and Maintenance Operations", the Special Provisions, and/or as directed by the Engineer.

Articles 107.09 and 107.14 and Sections 701 and 703 of the "Standard Specifications for Road and Bridge Construction" and the following Highway Standards relating to traffic control apply to this contract:

701001	701006	701801	701901	BLR 17-4
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Clay Street may be closed to through traffic, but it shall be kept open to local traffic. When work is required in the intersections of E Clay Street and Staunton Road or Dewey Street, the Contractor will be permitted to work between 9:00am and 3:00pm with flaggers, allowing local traffic to navigate through the intersection.

In addition, the following special provision(s) will also govern traffic control for this project:

SEQUENCE OF CONSTRUCTION OPERATIONS
TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

PUBLIC NOTICE

Each Wednesday, the Contractor shall furnish a schedule for the next week's work and shall post signs at least 24 hours in advance of work on each street requiring a lane closure. Handbill notices approved by the Engineer shall be

delivered to each residence located within the work zone, at least 24 hours prior to commencing work. Notices shall explain the proposed work and request the resident's forbearance of the inconvenience.

Handbill notices approved by the Engineer shall be delivered to each residence, and shall, as a minimum, require the Contractor to be responsible for contacting each impacted residence, inform them of the work to be conducted, and request the property owner relinquish using their sewer services during the required period of installation. The Contractor shall be responsible for notifying property owners when the work is complete. The Contractor shall also provide the following:

- A. Written notice to be delivered to each residence at least 24 hours prior to commencing work on the reach of sewer impacting the property, and a local telephone number of the Contractor they can call to discuss the project or any potential problems.
- B. Personal contact with any home or business, which cannot be reconnected within the time stated in the written notice.

All complaints should be directed to the Contractor. Residents may contact the City of Troy if their concerns are not resolved satisfactorily by the Contractor.

TRENCH BACKFILL

This work shall consist of furnishing aggregate for backfilling all trenches made in the subgrade of the proposed improvement, and all trenches where the inner edge of the trench is within two (2) feet of the proposed edge of pavement, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk according to Section 208 of the "Standard Specifications for Road and Bridge Construction", except as modified herein:

Material for trench backfill and bedding for pipe shall be coarse aggregate gradation CA 6 as specified in the Drawings.

Trench backfill material shall be compacted according to Method 1, as specified in Article 550.07(a).

This work also includes the disposal of the surplus excavated material which is replaced by trench backfill. Such disposal shall be made according to Article 202.03.

SEEDING, CLASS 1A

This work shall consist of preparing the seed bed, and furnishing, transporting and placing the seed, and the fertilizer and mulch required to restore all disturbed earth surfaces, unless otherwise noted to be paved on the plans, according to Sections 250 and 251 of the "Standard Specifications for Road and Bridge Construction".

The Contractor shall guarantee a minimum of 95 percent uniform growth over the entire seeded areas with no individual bare spots larger than 6" x 6" in size after one growing season. Areas sustaining less than 95 percent uniform growth and bare spots shall be interseeded or reseeded, as determined by the Engineer, at no additional cost.

INCIDENTAL HOT-MIX ASPHALT SURFACING

This work shall consist of the preparation of the base according to Section 358 of the "Standard Specifications for Road and Bridge Construction," the application of bituminous priming material and aggregate, and the construction of a hot-mix asphalt (HMA) surface on the prepared base at the locations and thickness shown on the plans and according to Section 408 of the "Standard Specifications for Road and Bridge Construction."

Bituminous prime coat and prime coat aggregate are required, but will not be measured separately for payment.

Incidental hot-mix asphalt surfacing shall be limited to the trench width according to Section 550.04 of the "Standard Specifications for Road and Bridge Construction" and the plan details which extends pavement replacement to one foot beyond the trench width. No additional compensation will be allowed for pavement replacement outside of these limits.

TIE BARS & REINFORCEMENT BARS

This work shall consist of furnishing and placing tie bars and reinforcement bars in concrete pavement patch and sidewalk according to Sections 420 and 424 of the "Standard Specifications for Road and Bridge Construction" except as modified herein.

All tie bars and reinforcement bars used in Portland cement concrete pavement and concrete sidewalk shall be epoxy coated.

EXPANSION JOINTS

This work shall consist of constructing expansion joints in concrete sidewalk according to Article 424.07 of the "Standard Specifications for Road and Bridge Construction" except as modified herein.

Expansion joint filler and backer rod materials shall be a non-impregnated type that will not bond with the sealant.

Expansion joints shall be sealed with self-leveling (pour grade), or nonsag (gun) grade urethane sealant. The color of the sealant shall be limestone, unless otherwise approved by the Engineer.

PAVEMENT REMOVAL

This work shall consist of the complete removal of existing pavement, paved shoulders, driveway pavement, curb, gutter, combination curb and gutter, paved ditch, and sidewalk according to Section 440 of the "Standard Specifications for Road and Bridge Construction" except as modified herein.

Oil & chip roadways shall be treated as HMA pavement with respect to the removal of portions of existing pavement. Pavement removal shall be limited to the trench width according to Section 550.04 of the "Standard Specifications for Road and Bridge Construction" and the plan details which extends pavement removal and replacement to one foot beyond the trench width.

This work shall include saw cutting and the removal of oil & chip roadways for utility trenches. No additional compensation will be allowed for pavement removal outside of the limits described above.

WATER MAIN, SIZE SPECIFIED

This work shall consist of the construction of the new water main according to the "Standard Specifications for Water & Sewer Main Construction in Illinois" and Section 561 of the "Standard Specifications for Road and Bridge Construction" except as modified herein.

This work shall include all material and labor necessary to install the sampling point at the location indicated on the drawings.

PIPE DRAINS, SIZE SPECIFIED

This work shall consist of temporarily adjusting existing roof drains during construction of the new water main according to Section 601 of the "Standard Specifications for Road and Bridge Construction" and as directed by the Engineer. Underground roof drains have been located from available surveys and records and are shown on the plans. It is possible there may be others, the existence of which is not presently known or shown.

The Engineer will evaluate each roof drain separately and will determine the appropriate method of adjustment. Ideally, roof drains shall discharge at the top, back of curb of the proposed street. Existing materials may be reused, if possible. However, this work may involve the removal of existing materials and the installation of similar, new materials. Appropriate fittings to connect the proposed materials to the existing materials will also be required. This work is anticipated to be confined to the proposed right-of-way limits.

This work shall include all excavation, pipe removal and replacement, fittings, curb modifications, backfill and all other work necessary to adjust the roof drain. No additional compensation will be allowed for roof drain adjustments within right-of-way.

MANHOLES, SANITARY, DIAMETER SPECIFIED, TYPE 1 FRAME, CLOSED LID

This work shall consist of furnishing and constructing sanitary sewer manholes at the locations shown on the plans, together with the necessary cast iron frames and lids according to Section 32 of the "Standard Specifications for Water and Sewer Construction in Illinois."

Shop drawings for all precast reinforced concrete components shall be submitted according to the requirements of Articles 1042.03(b) and 105.04 of the "Standard Specifications for Road and Bridge Construction."

Manhole covers shall be watertight, self-sealing lids with concealed pick holes as specified in Article 32-6.01 of the "Standard Specifications for Water and Sewer Construction in Illinois". The following table indicates the depth that the new sanitary manholes will need to be lowered, by others, as part of the future IDOT roadway project. These manholes shall be constructed with adjusting rings so that the top of the manhole can be satisfactorily lowered with that future project.

PROPOSED MANHOLE	PROPOSED TOP ELEV	FUTURE TOP ELEV	FUTURE DEPTH TO BE LOWERED (IN)
MH 4	546.86	545.67	14.3
MH 5	547.09	546.79	3.6
MH 6	548.40	548.44	0.5

All pipe connections for inlet and outlet pipes to new manholes shall be made with compression type A-LOK® gaskets, or approved equal. Pipe connections of existing sewer pipe(s) to be connected to new manholes shall include the replacement of ten (10) feet of sanitary sewer pipe using the specified coupling to join new and existing pipe materials.

This work shall include all excavation, pipe connections, adjusting rings, and backfill. The work shall also include furnishing and installing the specified frame and lids. Additional depth, in excess of eight (8) feet, of manhole shall be included with this work at no additional cost.

COUPLINGS

This work shall consist of connecting sanitary sewer pipe of dissimilar material or for the repair of existing sanitary sewer pipes of similar materials made by means of a MAXADAPTOR®, or approved equal.

The coupling shall conform to ASTM C1173 and shall be manufactured of corrosion resistant AISI 304 series stainless steel components, and a high impact polyamide (nylon) securing cage, over an injection molded EPDM rubber gasket.

The coupling shall be installed and tightened around the connecting pipes as recommended and specified by the manufacturer. Each coupling shall bear the manufacturer's name and required markings.

The coupling shall not be backfilled with concrete, flowable fill, or other cement-containing materials in direct contact with the coupling or adapter.

SANITARY SEWER, SIZE SPECIFIED

This work shall consist of furnishing and installing sanitary sewer as shown on the plans and in accordance with Sections 30 & 31 of the "Standard Specifications for Water and Sewer Construction in Illinois".

Where existing 8-inch through 18-inch diameter sanitary sewers with active service laterals are being replaced with new sewers in the same location as the existing sewer, modifications to the methods of testing shall be submitted by the Contractor and testing shall performed as approved and directed by the Engineer.

This work shall include all material and labor necessary to complete sanitary sewer pipe testing.

CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED

This work shall consist of removing existing chain link fencing, maintaining the fence in a temporary location, and permanently resetting the fence, including posts, gates and accessories at the locations shown on the plans according to Section 664 of the "Standard Specifications for Road and Bridge Construction" and Highway Standard 664001.

The Contractor shall verify the limits of fence removal with the Engineer in the field, before any fencing is removed.

Existing materials shall be carefully disassembled, to prevent damage. All material that is not satisfactory for re-use, in the opinion of the Engineer, shall be replaced and payment therefore will be made. All material that is damaged by the Contractor due to his negligence shall be replaced by the Contractor at his expense. Material used for replacement shall be the same kind as, or equal to, the material being replaced. All material removed and not re-used shall become the property of the Contractor.

The time period from removal to re-erection of the existing fence shall not exceed 7 calendar days unless the Engineer grants additional time in writing. The Contractor shall install a temporary barrier to secure the area when work is not ongoing.

The Contractor shall contact each affected property owner prior to re-erecting the fences and shall obtain the property owner's acceptance of the work. Acceptance shall be indicated either in writing or in the presence of the Engineer. If a conflict between the Contractor and the property owner arises, the Engineer will determine if the fence is acceptable.

No additional compensation will be allowed for the removal and replacement of any concrete encased fence posts.

CONSTRUCTION AND MAINTENANCE SIGN SUPPORTS

This work shall be done according to Section 1106 of the "Standard Specifications for Road and Bridge Construction" and Highway Standard 701901 except as modified herein.

All construction signs mounted on permanent support for use in temporary traffic control having an area of 10 square feet or more shall be mounted on two 4 in. x 4 in. or two 4 in. x 6 in. wood posts.

Type A metal posts (two for each sign) conforming to Article 1006.29 of the "Standard Specifications for Road and Bridge Construction" may be used in lieu of wood posts. Type A metal posts used for these signs may be unfinished.

The cost incurred by the Contractor in complying with this requirement shall be considered included in the contract lump sum amount.

TRAFFIC CONTROL AND PROTECTION, (SPECIAL)

This work shall consist of furnishing, installing, maintaining and removing all traffic control devices for traffic control and protection as shown on Highway Standards 701001, 701006, 701801, 701901, and BLR 17-4 according to Section 701 of the "Standard Specifications for Road and Bridge Construction", as directed by the Engineer and as specified herein.

Prior to beginning work on the project, the Contractor shall furnish and install Type III barricades and advance warning signs as shown on the TRAFFIC CONTROL PLAN and as detailed in the applicable Highway Standards. Barricade placement and sign spacing may be adjusted by the Engineer to suit field conditions.

Throughout the construction period, all material piles, equipment, open excavations or other obstructions or hazards to motorists or pedestrians shall be enclosed by fences or protected by barricades and proper lighting. Excavations adjacent to the edge of pavement shall be protected with extended leg barricades with appropriate lights.

Traffic control and protection according to Highway Standard 701801 will be required for sidewalk closures on Clay Street.

Traffic Control and Protection required for the successful completion of this project shall include all work as specified herein and all other provisions required by law for the protection and safety of property and individuals in a construction zone.

CASING PIPE, SIZE SPECIFIED

This work shall consist of constructing casing pipe for water main at locations shown on the plans. The casing pipe shall be furnished and installed according to Sections 40 & 41 of the "Standard Specifications for Water and Sewer Construction in Illinois".

The casing pipe shall be either 16 in. AWWA C905 water main pipe or 16 in. steel casing with a minimum wall thickness of 0.250 in. The water main pipe shall be supported within the casing pipe by "RACI" plastic spacers, or an approved equal. The ends of the casing pipe shall be sealed with a rubber boot to the satisfaction of the City of Troy.

Shop plans for the casing pipe and spacers shall be submitted for approval according to Articles 1042.03(b) and 105.04 of the "Standard Specifications for Road and Bridge Construction".

This work shall include all material and labor necessary to install the casing pipe complete, with pipe support fittings and end sealing plugs.

BYPASS PUMPING

A bypass pumping plan shall be submitted to the Engineer for review before sewer construction, CIPP lining or manhole rehabilitation may begin. The Engineer's review of the bypass pumping plan shall not relieve the Contractor of their responsibility or public liability. The Contractor shall notify the City of Troy at least 24 hours prior to implementing the bypass plan.

The bypass pumping plan shall include precautions by the Contractor for preventing flooding, in the event the temporary bypass facilities fail or their capacities are exceeded. The bypass pumping plan shall include an emergency response plan to be followed in the event of a failure of the bypass pumping system.

The bypassing or discharging of sewage into existing storm sewer or natural channels will not be allowed. Wastewater flow received by the existing sewer shall not be disrupted or spilled while lining or replacing the existing sewer.

Bypass pumping, as required, shall be used throughout construction where flow in the manhole and/or sewer main are required to be blocked. The existing sewer must be kept in a continuous state of readiness for operation and no interruption will be permitted which adversely affects the quality of service provided.

The flow in the sanitary sewers may increase rapidly during periods of rainfall due to inflow and infiltration. For each manhole and/or sewer main that requires the flow to be plugged or blocked, the Contractor shall provide bypass pumping equipment adequate to handle dry weather sewage and peak flows with additional capacity for stormwater flow.

CURED-IN-PLACE PIPE (CIPP)

REFERENCED DOCUMENTS

This specification references standards from the American Society for Testing and Materials, such as: ASTM F1216 (Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube), ASTM F1743 (Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)), ASTM D5813 (Cured-in-Place Thermosetting Resin Sewer Pipe), ASTM D790 (Test Methods for Flexural Properties of Un-reinforced and Reinforced Plastics and Electrical Insulating Materials), and D2990 (Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics) which are made a part hereof by such reference and shall be the latest edition and revision thereof. In case of conflicting requirements between this specification and these referenced documents, this specification will govern.

MATERIALS

Tube - The sewn tube shall consist of one or more layers of flexible non-woven polyester felt fabric and meet the requirements of ASTM F1216, Section 5.1 or ASTM F1743, Section 5.2.1 or ASTM D 5813, Sections 5 and 6. The tube shall be constructed to withstand installation and curing forces, have sufficient strength to bridge missing pipe, and stretch to fit irregular pipe sections.

The wet-out Tube shall have a relatively uniform thickness that when compressed at installation pressures will equal or exceed the calculated minimum design CIPP wall thickness.

The Tube shall be manufactured to a size that when installed will tightly fit the internal circumference and length of the original pipe. Allowance should be made for circumferential stretching during installation. The finished CIPP shall be continuous over the entire length of reach.

The outside layer of the Tube shall be coated with an impermeable, flexible membrane that will contain the resin and allow the resin impregnation (wet-out) procedure to be monitored.

The Tube shall contain no intermediate or encapsulated elastomeric layers. No material shall be included in the Tube that may cause delamination in the cured CIPP. No dry or unsaturated layers shall be evident. The Contractor shall correct defects such as folds, foreign inclusions, dry spots, pinholes, ruptures, and delamination, which reduce the structural strength of water tightness of the CIPP. The Contractor shall correct any protrusions beyond the exposed surface of the CIPP by more than one inch.

The wall color of the interior pipe surface of CIPP after installation shall be a relatively light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.

Seams in the Tube shall be stronger than the non-seamed felt material.

The Tube shall be marked for distance at regular intervals along its entire length, not to exceed 5 ft. Such markings shall include the Manufacturers name or identifying symbol. The tubes must be manufactured in the USA.

Resin - The resin system shall be a corrosion resistant polyester or vinyl ester system including all required catalysts, initiators that when cured within the tube create a composite that satisfies the requirements of ASTM F1216, ASTM D5813 and ASTM F1743, the physical properties herein, and those which are to be utilized in the submitted and approved design of the CIPP for this project. The resin shall produce a CIPP that will comply with the structural and chemical resistance requirements of this specification.

STRUCTURAL REQUIREMENTS

The CIPP shall be designed as per ASTM F1216, Appendix X.1. The CIPP design shall assume no bonding to the original pipe wall.

The Contractor must have performed long-term testing for flexural creep of the CIPP pipe material installed by his Company. Such testing results are to be used to determine the long-term, time dependent flexural modulus to be utilized in the product design. This is a performance test of the materials (Tube and Resin) and general workmanship of the installation and curing as defined within the relevant ASTM standard. A percentage of the instantaneous flexural modulus value (as measured by ASTM D790 testing) will be used in design calculations for external buckling. The percentage, or the long-term creep retention value utilized, will be verified by this testing. Retention values exceeding 50% of the short-term test results shall not be applied unless substantiated by qualified third-party test data to the Owner's satisfaction. The materials utilized for the contracted project shall be of a quality equal to or better than the materials used in the long-term test with respect to the initial flexural modulus used in the CIPP design.

The Enhancement Factor 'K' to be used in 'Partially Deteriorated' Design conditions shall be assigned a value of 7.

The layers of the cured CIPP shall be uniformly bonded. It shall not be possible to separate any two layers with a probe or point of a knife blade so that the layers separate cleanly or the probe or knife blade moves freely between the layers. If the layers separate during field sample testing, new samples will be required to be obtained from the installed pipe. Any reoccurrence may cause rejection of the work.

The cured pipe material (CIPP) shall conform to the structural properties, as listed below.

MINIMUM CIPP PHYSICAL PROPERTIES

<u>Property</u>	<u>Test Method</u>	<u>Cured Polyester Composite</u>	
		<u>min. per ASTM F1216</u>	<u>Enhanced Resin</u>
Modulus of Elasticity	ASTM D790	250,000 psi	400,000 psi
Flexural Strength	ASTM D790	4,500 psi	4,500 psi

The required structural CIPP wall thickness shall be based as a minimum, on the physical properties above greater values if substantiated by independent lab testing and in accordance with the design equations in the Appendix XI, Design Considerations of ASTM F1216, and the following design parameters:

Design Safety Factor	= <u>2.0</u>
Retention Factor for Long-Term Flexural Modulus to be used in Design	= <u>50% -75%</u>
Ovality* (calculated from (X1.1of ASTM F1216)	= <u>2%</u>
Enhancement Factor, K	= <u>7</u>
Groundwater Depth (above invert of existing pipe)*	= <u>3 ft</u>
Soil Depth (above crown of existing pipe)*	= <u>13 ft</u>
Soil Modulus**	= <u>psi</u>
Soil Density**	= <u>120 pcf</u>
Live Load**	= <u>H20</u>
Design Condition (partially or fully deteriorated)***	= <u>Partially</u>

* Denotes information, which can be provided here or in inspection videotapes or project construction plans. Multiple lines segments may require a table of values.

** Denotes information required only for fully deteriorated design conditions.

*** Based on review of video logs, conditions of pipeline can be fully or partially deteriorated. (See ASTM F1216 Appendix) The Owner will be sole judge as to pipe conditions and parameters utilized in design.

Any layers of the tube that are not saturated with resin prior to insertion into the existing pipe shall not be included in the structural CIPP wall thickness computation.

TESTING REQUIREMENTS

Chemical Resistance – The CIPP shall meet the chemical resistance requirements of ASTM F1216, Appendix X2. CIPP samples for testing shall be of tube and resin system similar to that proposed for actual construction. It is required that CIPP samples with and without plastic coating meet these chemical-testing requirements.

Hydraulic Capacity – Overall, the hydraulic cross-section shall be maintained as large as possible. The CIPP shall have a minimum of the full flow capacity of the original pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.

CIPP Field Samples – When requested by the Owner, the Contractor shall submit test results from field installations of the same resin system and tube materials as proposed for the actual installation. These test results must verify that the CIPP physical properties specified in Section 5.5 have been achieved in previous field applications. Samples for this project shall be made and tested as described in Section 10.1.

RESPONSIBILITIES FOR INCIDENTAL ITEMS

It shall be the responsibility of The City of Troy to locate and provide access to all manholes necessary for CIPP lining of the sewer mains as indicated on the Drawings. If a street must be closed to traffic because of the orientation of the sewer, the Contractor shall institute the actions necessary to provide access during this for the mutually agreed time period. If access to water hydrants is necessary for cleaning, installation and other process related work items requiring water, the Contractor shall obtain permission from the City of Troy to use potable water source.

Cleaning and Preparation of the Sewer – The Contractor shall have complete responsibility to prepare the sewer in a manner adequate for the Contractor's operations, including any modifications to existing manholes for access, and the degree of preparation shall be per these specifications, per the manufacturer's specific recommendations for the CIPP to be installed, and per ASTM F1216-09B or F1743-08, as applicable. Interior surfaces of sewer pipes shall be cleaned by conventional sewer cleaning equipment (ie. high-pressure water jetting (minimum 2,000 psi), chains, or sawing) to remove obstructions, deposits of debris, roots, sediment, and grease accumulations. Cleaning of the sewer and manhole walls in the vicinity of lining shall remove grease, scale, encrustation and loose mortar so that no foreign intrusion shall cause imperfections in lining. All debris removed during the cleaning process shall be properly disposed of by the Contractor. Debris shall not be flushed downstream into other sewers. All costs involved with disposal of debris will be the responsibility of the Contractor. The Contractor shall trim all protruding lateral service connections flush with the wall of the sewer before rehabilitation of the sewer with CIPP. Any hazardous waste material encountered during this project will be considered a changed condition.

Pre-Installation Inspection of Sewers – The Contractor shall use a color Radial Eye Camera to inspect, log and video the total length of each reach of sewer pipe to be lined, after the initial cleaning. Inspection of sewers shall be performed, with limited sewage flow, by experienced personnel trained in locating breaks, obstacles and service connections using close circuit television (CCTV) inspection techniques. The pipe interior shall be carefully inspected to determine the location of any conditions that may prevent proper installation of CIPP. These shall be noted and corrected. The Contractor shall verify each service connection to determine whether it is an active service connection. A videotape and suitable written log for each sewer reach to be lined shall be produced for later reference by the Owner. The video shall include a view and record of the condition of the laterals on their incoming axis. The video shall also include voice description with corresponding stationing of service connection, reach location, direction of travel, and length indicated. Manhole designators, as specified in the contract documents, shall also be indicated verbally on video as each manhole is encountered. Visual cues of date and time shall be continuously present on screen except where a significant existing pipe feature is shown. A clear and neatly written log shall accompany each video submittal with an explanation of any abbreviations or conventions. The video shall be submitted in electronic file format along with the project name, date of video inspection, Contractor's name and shall be labeled "Closed Circuit Television Inspection – Pre-Installation. All CCTV videos for this project shall remain the property of the City of Troy. The Contractor shall notify the Engineer as soon as it is aware of any reason that the specified work cannot be performed.

Line Obstructions – If pre-installation inspection reveals an obstruction such as a protruding service connection, dropped joint, or a collapse that will prevent the installation process, that was not evident on the pre-bid video and it cannot be removed by conventional sewer cleaning equipment, then the Contractor shall make a point repair excavation to uncover and remove or repair the obstruction. Such excavation shall be approved in writing by the Owner's representative prior to the commencement of the work and shall be considered as a change order.

Post-Installation Inspection of Sewers – Within thirty (30) days of the completion of all CIPP work associated with each reach of sewer, the Contractor shall CCTV each reach. The videos shall meet the same requirements as the pre-installation CCTV videos. The video shall be submitted in electronic file format along with the project name, date of video inspection, Contractor's name and shall be labeled "Closed Circuit Television Inspection – Post-Installation.

Public Notification – The Contractor shall make every effort to maintain sewer service usage throughout the duration of the project. In the event that a connection will be out of service, the longest period of no service shall be 8 hours. 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 off-line. The Contractor shall also provide the following:

- A. Written notice to be delivered to each home or business the day prior to the beginning of work being conducted on the section, and a local telephone number of the Contractor they can call to discuss the project or any potential problems.
- B. Personal contact with any home or business, which cannot be reconnected within the time stated in the written notice.

INSTALLATION

CIPP installation shall be in accordance with ASTM F1216, Section 7, or ASTM F1743, Section 6, with the following modifications:

Resin Impregnation – The quantity of resin used for tube impregnation shall be sufficient to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and the potential loss of resin during installation through cracks and irregularities in the original pipe wall, as applicable.

Tube Insertion – The wet-out tube shall be positioned in the pipeline using either inversion or a pull-in method as defined within relevant ASTM standards previously stipulated. If pulled into place, a power winch or its equivalent should be utilized and care should be exercised not to damage the tube as a result of pull-in friction. The tube should be pulled-in or inverted through an existing manhole or approved access point and fully extend to the next designated manhole or termination point. Individual CIPP runs can be through one or more manhole sections as determined in the field by the Contractor. Opening, trimming, and sealing the CIPP at manholes shall be included in this work.

Temperature gauges shall be placed between the tube and the host pipe's invert position to monitor the temperatures during the cure cycle.

Curing shall be accomplished by utilizing hot water under hydrostatic pressure or steam pressure in accordance with the manufacturer's recommended cure schedule. A cool-down process shall be conducted that complies with the resin manufacturer's specification.

Waterstops – Prior to the installation of the CIPP, the Contractor shall install gasket waterstops to the interior circumference of the existing sewer at the inlet and outlet of each manhole. The waterstop material shall be "Insignia" hydrophilic end seal by LMK, Perma-Main by Perma-Liner Industries, or an approved equal. One ring or cell of the waterstop material shall be attached to the interior wall of the sewer pipe at the inlet of the manhole and one ring or cell of the waterstop material shall also be installed at the outlet manhole. The rings of the material gasket shall be attached to the interior wall of sewer pipe with a retaining ring supplied by the waterstop manufacturer. Material and installation procedure shall comply with ASTM F3240.

SERVICE CONNECTIONS

The Contractor shall be responsible for confirming the locations of all sanitary service connections prior to installing the CIPP. It is required that the sanitary service laterals be inactive during the time of installation. It is the intent of these specifications that active service connections to homes be re-opened without excavation,

utilizing a remotely controlled cutting device, monitored by CCTV. The machined opening shall be at least ninety (90%) of the service connection opening and the bottom of both openings must match. The opening shall not be more than one hundred (100%) percent of the service connection opening. The edges of the opening shall not have pipe fragments or liner fragments, which may obstruct flow or snag debris. The Contractor shall certify a minimum of two complete functional cutters plus key spare components are on the job site before each installation or are in the immediate area of the jobsite and can be quickly obtained. Unless otherwise directed by the City of Troy, all laterals will be reinstated.

In the event that service reinstatements result in openings that are greater than one hundred (100%) of the service connection opening, the Contractor shall install a CIPP type repair, sufficiently in size to completely cover the over-cut service connection. No additional compensation will be paid for the repair of over-cut service connections. No additional payment will be made for excavations for the purpose of reopening connections and the Contractor will be responsible for all costs and liability associated with such excavation and restoration work.

Coupons of pipe material resulting from service tap cutting shall be collected at the next manhole downstream of the pipe rehabilitation operation prior to leaving the site. Coupons may not be allowed to pass through the system.

MANHOLE DEPTHS AND LENGTH OF PIPE TO BE LINED

Upstream Structure	Downstream Structure	Upstream MH Depth (ft)	Downstream MH Depth (ft)	Address Nearest Upstream Manhole	Length (ft)	Pipe Dia. (in)	Pipe Material	Approx. # of San Service Lateral Connections
EX MH 1	EX MH 2	9.97	12.73	INTERSECTION OF W CLAY ST & POWELL ST TROY, IL 62294	391	8	CLAY	5
EX MH 2	EX MH 3	12.73	9.68	INTERSECTION OF E / W CLAY ST & N KIMBERLIN ST TROY, IL 62294	228	8	CLAY	6
EX MH 3	MH 4	9.68	10.97	INTERSECTION OF E CLAY ST & N HICKORY ST / STAUNTON RD TROY, IL 62294	358	8	CLAY	2
MH 6	EX MH 8	13.82	9.49	E CLAY ST IN FRONT OF 301 E CLAY ST TROY, IL 62294	250	8	CLAY	5
EX MH 8	EX MH 9	9.49	12.62	E CLAY ST IN FRONT OF 310 E CLAY ST TROY, IL 62294	343	8	CLAY	5

ALT #1 - MANHOLE REHABILITATION

This work shall consist of furnishing and installing a corrosion resistant liner to the interior walls of existing sanitary sewer manholes at the locations shown on the plans. The liner shall restore the manhole walls to original surface levels and eliminate water infiltration and exfiltration.

SUBMITTALS

All materials and procedures required to establish compliance with the specifications shall be submitted to the Owner/Engineer for review/approval. Submittals shall include at least the following:

1. Technical Data Sheet on each product used.
2. Material Safety Data Sheet (MSDS) for each product used.
3. ASTM References.
4. CIGMAT Evaluation
5. Descriptive literature, bulletins and/or catalogs of materials.
6. Work procedures including flow diversion/bypass pumping plan, method of repair, etc.
7. Material and method for repair of leaks or cracks in manholes.
8. Final installation report on completed manholes.

10-YEAR LIMITED WARRANTY

The Manufacturer and Applicator warrant the manhole liner against failure for a period of 10 years. Failure will be deemed to have occurred if the protective linings fail to (a) prevent the internal damage or corrosion of the structure (b) protect the substrate and environment from contamination by effluent or (c) prevent groundwater infiltration. If any such failure occurs within 10 years of initial completion of work on a structure, the damage will be repaired to restore the lining at no cost to the Owner with 60 days after written notification of the failure.

QUALITY ASSURANCE

The manufacturer and/or applicator of the total liner system of manholes shall be a company that specializes in the design, manufacture or installation of corrosion protection systems for manholes. Applicator shall be completely trained in leak repair, surface preparation and corrosion materials application on manholes. Corrosion materials/products shall be suitable for installation in a severe hydrogen sulfide environment without any deterioration to the liner.

The applicator shall be trained and certified by the manufacturer for the handling, mixing, application and inspection of the liner system as described herein. To ensure total unit responsibility, all materials and installation thereof shall be furnished and coordinated with/by one supplier/applicator who turnkeys the work and assumes full responsibility for the entire operation.

MATERIALS AND EQUIPMENT

The materials to be utilized in the lining of manholes shall be designed and manufactured to withstand the severe effects of hydrogen sulfide in a wastewater environment. Manufacturer of corrosion protection products shall have long proven experience in the production of the lining products utilized and shall have satisfactory installation record.

Equipment for installation of lining materials shall be high quality grade and be as recommended by the manufacturer.

The lining system to be utilized for manhole structures shall be a multi-component stress skin panel liner system as described below. Modified polymer shall be sprayable, solvent free, two-component polymeric, moisture/chemical barrier specifically developed for the corrosive wastewater environment.

Installation

Moisture barrier
Surfacer
Final corrosion barrier

Liner

Modified Polymer
Polyurethane/Polymeric blend foam
Modified polymer

INSPECTION

The Applicator shall take appropriate action to comply with all local, state and federal regulations including those set forth by OSHA, EPA, the Owner and any other applicable authorities.

Prior to conducting any work, perform inspection of structure to determine need for protection against hazardous gases or oxygen depleted atmosphere and the need for flow control or flow diversion. Submit plan for flow control or bypass to Owner/Engineer for approval prior to conducting the work.

SURFACE PREPARATION

Conduct surface preparation program to include monitoring of atmosphere for hydrogen sulfide, methane, low oxygen or other gases, approved flow control equipment, and surface preparation equipment. Surface preparation methods may include high pressure water cleaning, hydro blasting, abrasive blasting, grinding, detergent water cleaning and shall be suited to provide a surface compatible for installation of the liner system. Surface preparation method shall produce a cleaned, abraded and sound surface with no evidence of laitance, loose concrete, brick or mortar, contaminants or debris, and shall display a surface profile suitable for application of liner system.

After completion of surface preparation, perform the seven point check list, which is the inspection for leaks, cracks, holes, exposed rebar, ring and cover condition, invert condition, and inlet and outlet pipe condition. After the defects in the structure are identified, repair all leaks with a chemical or hydraulic sealant designed for use in field sealing of ground water. Severe cracks shall be repaired with a urethane based chemical sealant. Product to be utilized shall be as approved by Owner/Engineer prior to installation. Repairs to exposed rebar, defective pipe penetrations or inverts, etc. shall be repaired utilizing non-shrink grout or approved alternative method.

MATERIAL INSTALLATION

Application procedures shall conform to recommendations of the Manufacturer, including materials handling, mixing, environmental controls during application, safety and spray equipment. Spray equipment shall be specifically designed to accurately ratio and apply the liner system. Application of multi-component liner system shall be in strict accordance with the Manufacturer's recommendation. Final installation shall be a minimum of 500 mils. A permanent identification and date of work performed shall be affixed to the structure in a readily visible location. Provide final written report to owner/engineer detailing the location, date of report, and description of repair.

INSPECTION

The final liner system shall be completely free of pinholes or voids. Liner thickness shall be the minimum value as described herein. Visual inspection shall be made by the Owner/Engineer. Any deficiencies in the finished liner system shall be marked and repaired according to the procedures set forth by Manufacturer. The sewer system may be returned to full operational service as soon as the final inspection has taken place.

STATUS OF UTILITIES

<u>NAME AND ADDRESS OF UTILITY</u>	<u>TYPE</u>	<u>LOCATION</u>
<u>Ameren IP</u> 2600 North Center Maryville, IL 62062 Contact Person: Jerome McDonald Phone: (618) 346-1275	Gas	Existing gas main runs along the north side of Clay Street from North Main and continues to Staunton/ Hickory Road. No adjustments anticipated.
	Electric	Aerial electric lines run east-west along the north side of Clay Street from North Main Street and continues east past N Dewey Street. No adjustments anticipated.
<u>AT&T</u> 203 East Goethe Street Collinsville, IL 62234 Contact Person: Darren Simmons Phone: 618-346-6499	Telephone	Underground telephone line runs east-west along the north side of Clay Street from STA 23+85 to STA 24+57. No adjustments anticipated.
<u>Triad Community Unit School</u> 203 East Throp Street Troy, IL 62294 Contact Person: Mike Wielgus or Jeremy Reuter Phone: 618-667-5400	Fiber Optic	The existing fiber communication cable extends south from 203 E Throp Street, across Byrn St, through the asphalt playground at 201 Stauton Road and then east along the north side of Clay Street ROW to 209 N Dewey Street. This cable may conflict with the new 8" PVC water main where it ties in with the existing 6" water main at N Dewey Street. The water line may need to be adjusted in the field to avoid conflict with the fiber optic during construction.
<u>City of Troy</u> 116 East Market Street Troy, IL 62294 Contact Person: Rob Hancock Phone: 618-667-4629	Storm Sewers	There is an existing 24" storm sewer that crosses E Clay Street at STA 31+40 that will need to be located and protected during the construction of the sanitary sewer. There is an existing 12" CIPP culvert under N Charcoal Street that will require partial removal and replacement with a temporary culvert. Future storm sewers for the upcoming roadway project along Clay Street were taken into account during the design of this project to minimize utility conflict. No relocation or adjustments are anticipated.

The above table represents the best information of the responsible Local Agency and is only included for the convenience of the Contractor. The applicable provisions of Section 102 and Articles 105.07, and 107.20 of the "Standard Specifications for Road and Bridge Construction" shall apply.

Underground facilities, structures and utilities have been plotted from available surveys and records. Their locations must be considered to be approximate only. It is possible there may be others, the existence of which is not presently known or shown. Such information represents only the opinion of the Local Agency and their Engineer as to the location of such utilities and is only included for the convenience of the bidder. The Local Agency and their Engineer assume no responsibility in respect to the sufficiency or the accuracy of the information shown on the plans relative to the location of underground utility facilities.

If any utility adjustment or removal has not been completed when required by the Contractor's operation, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's operations were affected.

AS-BUILT / GIS SURVEY

According to the Troy, IL Code of Ordinance Section 153.164 Requirements for "As-Built" Records is stated as follows "As-built information will be provided to the "Engineer of Record" who will have a professional land surveyor prepare record drawings based on as-built information. Within 30 days after the completion and acceptance of all improvements, the Engineer for the developer shall deliver record drawings ("as-built" plans) in the form of two black line prints and one electronic copy for each of the improvements constructed. As-builts will contain the information on the design drawings, plus the following additional information:

- A. As-builts are to document changes between the design and construction. All information that is incorrect due to changes during construction will be corrected. Incorrect or no longer relevant information will be erased or struck through.
- B. Water and sewer record drawings shall include the location and depth of all service laterals; the size, location and flow line elevations of all mains; the top and flow line elevations of all manholes, valves, hydrants; and any other pertinent information.
 - 1. Any water and sewer facilities constructed in a horizontal or vertical location materially different than the design location will have their design location struck through and will be redrafted at the constructed location.
 - 2. Any dimensions or callouts (e.g., type, location, size, material, etc.) to water and sewer facilities will be corrected as necessary.
- C. GIS Requirements. The city has implemented geographical information systems (GIS) technologies to store, manage, and maintain spatially-related data. As a result, during installation actual point coordinate locations (X,Y, and Z) shall be captured. All developers shall submit digital as-built plans according to the following requirements:
 - 1. Submittal requirements. As-built digital plan drawings shall be submitted showing the location and details of the actual constructed improvements. The as-built shall be submitted with a sealed cover letter from a licensed Illinois Land Surveyor indicated that the location and elevation of the following items shown in the as-built have been verified under the direct supervision of the surveyor with an error of closure of not more than one to 5,000 feet.
 - 2. Water system items. Inventory water system fittings and valves (elevation at top of fitting/valve), fire hydrants (elevation to the bottom of the cap on the steamer fitting). And top of pipes every 200 feet along straight runs. Indicate pipe and valve sizes/materials.
 - 3. Datums. Submissions shall use the following geographic projection and datum:
 - a. *Projection.* State Plane Illinois West
 - b. *Horizontal datum.* NAD83 (North American Datum of 1983)
 - c. *Vertical datum.* NAVD88 (North American Vertical Datum of 1988)
 - d. *Datum conversion.* NADCON
 - e. *Unit of measure.* U.S. survey foot

City of Troy, IL

Bid Form

SUBMITTED BY: _____

(Company Name)

The pricing information is hereby provided in accordance with the Terms and Conditions of this ***Request for Bid*** for the **Sanitary Sewer** construction.

Bid Item	Description	Estimated Quantity	Lump Sum Cost
G1	TRENCH BACKFILL	1,100 CU YD	
G2	SEEDING, CLASS 1A	830 SQ FT	
G3	INCIDENTAL HOT MIX ASPHALT SURFACING, 2" THICK	320 SQ YD	
G4	INCIDENTAL HOT MIX ASPHALT SURFACING, 4" THICK	135 SQ YD	
G5	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	25 SQ FT	
G6	PAVEMENT REMOVAL	460 SQ YD	
G7	MANHOLES, SANITARY, TYPE A, 4' DIA, T1F, CL	5 EACH	
G8	SANITARY SEWER 12" (SDR-35 PVC)	711 FOOT	
G9	CIPP LINING, 8"	1,570 FOOT	
G10	SANITARY SERVICE CONNECTION	7 EACH	
G11	CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED	40 FOOT	
G12	REMOVE AND RE-ERECT BASKETBALL GOAL	1 EACH	
G13	BYPASS PUMPING	1 L SUM	
G14	TRAFFIC CONTROL AND PROTECTION	1 L SUM	
G15	CONSTRUCTION LAYOUT	1 L SUM	
G16	AS-BUILT SURVEY	1 L SUM	
G17	MOBILIZATION	1 L SUM	
		Base Bid 1 (L SUM)	
ALT #1	MANHOLE REHABILITATION	5 EACH	

RETURN WITH BID

The pricing information is hereby provided in accordance with the Terms and Conditions of this ***Request for Bid*** for the **Water Main** construction.

Bid item	Description	Estimated Quantity	Lump Sum Cost
G18	TRENCH BACKFILL	60 CU YD	
G19	SEEDING, CLASS 1A	10,800 SQ FT	
G20	INCIDENTAL HOT MIX ASPHALT SURFACING, 2" THICK	615 SQ YD	
G21	PORTLAND CEMENT CONCRETE PAVEMENT 8"	25 SQ YD	
G22	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	315 SQ FT	
G23	PAVEMENT REMOVAL	675 SQ YD	
G24	WATER MAIN 6" (C900 PVC)	12 FOOT	
G25	WATER MAIN 8" (C900 PVC)	1,336 FOOT	
G26	CASING PIPE, 16 INCH	20 FOOT	
G27	WATER SERVICE LINE (TRENCHED)	20 EACH	
G28	INSERT VALVE 6"	1 EACH	
G29	8" X 6" REDUCER	1 EACH	
G30	6" TAPPING SLEEVE	1 EACH	
G31	8" TAPPING SLEEVE	1 EACH	
G32	6" GATE VALVE	2 EACH	
G33	8" GATE VALVE	3 EACH	
G34	8" X 8" X 8" TEE	1 EACH	
G35	PIPE CULVERTS (TEMPORARY)	16 FOOT	
G36	FIRE HYDRANTS TO BE REMOVED	1 EACH	
G37	FIRE HYDRANT	1 EACH	
G38	PIPE DRAIINS 4"	50 FOOT	
G39	TRAFFIC CONTROL AND PROTECTION	1 L SUM	
G40	CONSTRUCTION LAYOUT	1 L SUM	
G41	AS-BUILT SURVEY	1 L SUM	
G42	MOBILIZATION	1 L SUM	
		Base Bid 2 (L SUM)	

Onsite Visit Made by: NOT REQUIRED	Date	
Upon notice to proceed, contractor will complete the project in (calendar days)		
Bid Security enclosed: (10% of total bid)		

The quantities reported above and on the previous page shall be verified by the contractor before bidding. The City provides no warranty to their accuracy so the bidder shall consider them for information only when preparing the bid. Work is lump sum based on the work shown on the plans and described in the special provisions.

The City of Troy reserves the right to accept or refuse any or all bids.

RETURN WITH BID

VENDOR REFERENCES:

The proposal must include the following information:

1. List at least three (3) references for whom you have performed similar products/services for other public entities, local governments, or private companies.

Company Name: _____

Address: _____

Contact Person: _____

Telephone #: (____) _____

Company Name: _____

Address: _____

Contact Person: _____

Telephone #: (____) _____

Company Name: _____

Address: _____

Contact Person: _____

Telephone #: (____) _____

2. State how long you have been operating under your present company name?

3. Have you ever defaulted on a contract? _____

4. If so, where and why? _____

RETURN WITH BID

Affidavit of Compliance

Clay Street Sewer – Phase 2 Water & Sewer Project

To be submitted with Vendor's proposal.

_____ We DO NOT take exception to the RFP documents/requirements.

_____ We TAKE exception to the RFP Documents/Requirements as follows:

I have carefully examined the Request for Proposal and agree to abide by all submitted pricing, delivery, terms and conditions of this Quotation unless otherwise stipulated herein.

Company Name: _____

By: _____

(Authorized person's signature)

(Print name and title of signer)

Company Address: _____

Telephone Number: _____ Federal Tax ID No.: _____

ADDENDA

Bidder acknowledges receipt of the following addendum:

Addendum No. _____

Addendum No. _____

Addendum No. _____

RETURN WITH BID

City of Troy
“No-Bid Response Form”

Clay Street Sewer – Phase 2 Water & Sewer Project

COMPLETE AND RETURN THIS FORM ONLY IF YOU DO NOT WANT TO SUBMIT A PROPOSAL RESPONSE.

If you do not wish to respond to this proposal request, but would like to remain on the City of Troy vendor list, please fill out this form and return to the City Engineer by email.

RETURN TO: Tom Cissell, City Engineer
Email: tom.cissell@oatesassociates.com

We the undersigned have declined to bid on your proposal for the following reasons:

- ☐ Insufficient time to respond to invitation for bid.
- ☐ We do not offer this product/s or equivalent.
- ☐ Unable to meet specifications.
- ☐ Unable to meet insurance requirements.
- ☐ Our schedule would not allow us to perform.
- ☐ Specifications are too “tight”, i.e. geared towards one brand or manufacturer.
- ☐ Specifications unclear.
- ☐ Other (please specify below).

Comments: _____

VENDOR INFORMATION:

Company Name: _____
Signature and Title: _____
Phone #: _____
Email: _____

RETURN WITH BID

CLAY STREET SEWER - PHASE 2

WATER & SEWER PLANS

CITY OF TROY
116 E. MARKET STREET
TROY, IL 62294

ENGINEERS



OATES ASSOCIATES

100 Lanter Court, Suite 1
Collinsville, IL 62234
618.345.2200
www.oatesassociates.com

Collinsville St. Louis Belleville St. Charles

ILLINOIS DESIGN FIRM LICENSE NO. - 184-001115



PROJECT MANAGEMENT & CIVIL ENGINEER:

OATES ASSOCIATES, INC.
EASTPORT BUSINESS CENTER 1
100 LANTER COURT, SUITE 1
COLLINSVILLE, ILLINOIS 62234

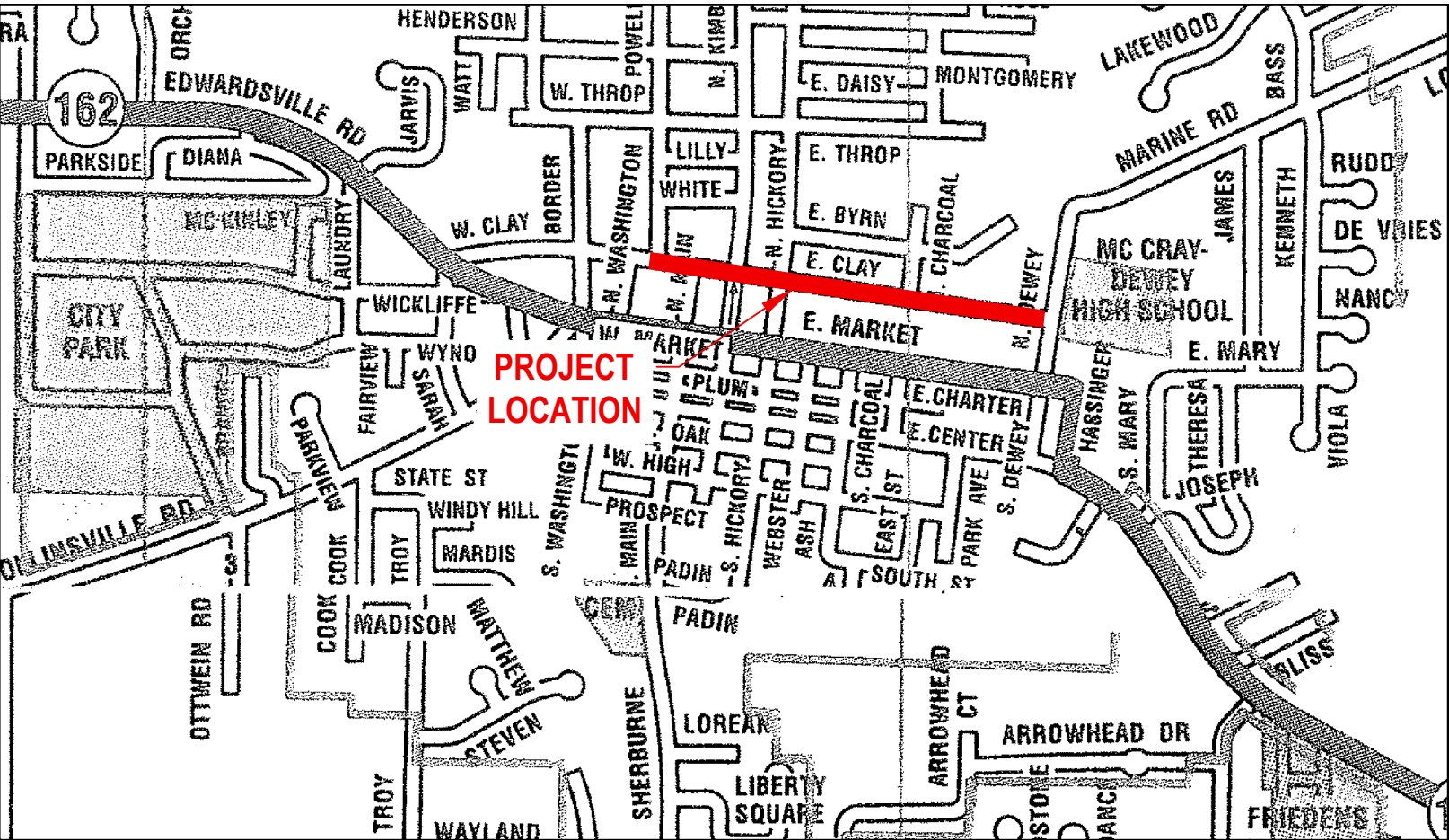
CONTACT: SARITA MELENDEZ, PE
PROJECT MANAGER
618.345.2200
sarita.melendez@oatesassociates.com

OWNER:

THE CITY OF TROY
116 EAST MARKET STREET
TROY, ILLINOIS 62294

CONTACT: JAY KEEVEN
CITY ADMINISTRATOR
618.667.9924
jkeeven@troyl.us

LOCATION MAP



LEGEND

EX	NEW	
		SIGN (TRAFFIC)
		SIGN (ADVERTISEMENT)
		TELEPHONE / POWER POLE
		LIGHT POLE
		ANCHOR POLE
		GUY WIRE
		FIRE HYDRANT
		GAS VALVE
		WATER VALVE
		ELECTRIC METER
		GAS METER
		TELEPHONE BOX
		ELECTRIC BOX
		MAILBOX
		CLEANOUT
EX	NEW	
		AREA INLET
		CATCH BASIN
		CURB INLET
		MANHOLE
		TRAFFIC SIGNAL BOX
		TRAFFIC SIGNAL
		HANDHOLE
		SHRUB
		TREE (DECIDUOUS)
		TREE (EVERGREEN)
		CONTROL POINT
		BENCHMARK

ABBREVIATIONS

AGG	AGGREGATE	IN	INCHES	PVMT	PAVEMENT
APPROX	APPROXIMATE	INV	INVERT	RD	ROAD
ASPH	ASPHALT	LF	LINEAR FEET	RNR	REMOVE AND REPLACE
BL	BASELINE	LAT	LATERAL	ROW	RIGHT OF WAY
CL	CENTERLINE	LT	LEFT	S	SOUTH
CONC	CONCRETE	MH	MANHOLE	SAN	SANITARY
CIPP	CURED-IN-PLACE PIPE	MIN	MINIMUM	SEW	SEWER
DIA	DIAMETER	N	NORTH	ST	STREET
DND	DO NOT DISTURB	NO	NUMBER	STM	STORM
E	EAST	NTS	NOT TO SCALE	STA	STATION
EA	EACH	O/C	OIL AND CHIP	TA	TYPE A
ELEV	ELEVATION	OC	ON CENTER	TB	THRUST BLOCK
EX	EXISTING	OD	OUTSIDE DIAMETER	TBR	TO BE REMOVED
HMA	HOT MIX ASPHALT	PL	PROPERTY LINE	UIP	USE IN PLACE
ID	INSIDE DIAMETER	PVC	POLYVINYL CHLORIDE PIPE	W	WIDTH OR WEST

LINETYPES

EX		NEW
	WATER LINE	
	GAS LINE	
	TELEPHONE LINE	
	OVERHEAD ELECTRIC LINE	
	ELECTRIC LINE	
	FIBER OPTIC LINE	
	STORM SEWER	
	SANITARY SEWER	
	FENCE LINE	
	TREE LINE	

09/27/2022 - ISSUE FOR BID

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	NOTED		
	CHECKED		
NOTE BOOK	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHKD		
NOTE BOOK	NO.		

UTILITIES

1. THE FOLLOWING UTILITY COMPANIES MAY HAVE FACILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION WHICH MAY REQUIRE ADJUSTMENT, RELOCATION OR REMOVAL. ALL ARE MEMBERS OF J.U.L.I.E., UNLESS NOTED OTHERWISE.

AMEREN IP (GAS & ELECTRIC) 2600 NORTH CENTER STREET MARYVILLE, IL 62234 (618) 346-1275	AT&T (TELEPHONE) 203 GOETHE STREET COLLINSVILLE, IL 62234 (618) 346-6499	CHARTER COMMUNICATIONS (FIBER) 815 CHARTER COMMONS TOWN & COUNTRY, MO 63017 (314) 393-5028
TRIAD COMMUNITY UNIT SCHOOL (FIBER OPTIC) 203 E THROP STREET TROY, IL 62294 (618) 667-5400 *NOT A MEMBER OF J.U.L.I.E.	CITY OF TROY (WATER & SANITARY SEWER) 116 EAST MARKET STREET TROY, IL 62294 (618) 667-9924	

THE ABOVE INFORMATION REPRESENTS THE BEST INFORMATION AVAILABLE TO THE OWNER AND IS ONLY INCLUDED FOR THE CONVENIENCE OF THE BIDDER. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR HAS TAKEN THE FOREGOING INTO CONSIDERATION IN PREPARING HIS/HER BID, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY DELAYS OR INCONVENIENCE CAUSED BY SAME.

JOINT UTILITY LOCATING INFORMATION FOR EXCAVATIONS
PHONE: 800-892-0123

2. EXISTING UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEIR LOCATIONS MUST BE CONSIDERED TO BE APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. ILLINOIS LAW REQUIRES A MINIMUM 48-HOUR NOTICE TO ALL UTILITY COMPANIES BEFORE DIGGING. FIELD LOCATIONS OF UNDERGROUND FACILITIES MAY BE OBTAINED BY CALLING THE J.U.L.I.E. SYSTEM AT 800-892-0123 AND PROVIDING 48 HOURS ADVANCE NOTICE. NON-J.U.L.I.E. MEMBERS MAY BE CONTACTED DIRECT. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT LIMITS ARE LISTED ABOVE.
3. ANY FACILITIES OR APPURTENANCES WHICH ARE THE PROPERTY OF ANY PUBLIC UTILITY LOCATED WITHIN THE LIMITS OF CONSTRUCTION SHOULD BE RELOCATED OR ADJUSTED BY THEIR RESPECTIVE OWNERS. THE CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE OWNERS OF ANY SUCH FACILITY IN THEIR REMOVAL AND REARRANGEMENT OPERATIONS IN ORDER THAT THESE OPERATIONS AND THE CONSTRUCTION OF THIS PROJECT MAY PROGRESS IN A REASONABLE MANNER. THE COST OF ANY NECESSARY RELOCATIONS SHALL BE INCURRED BY THE OWNER IF OTHER ARRANGEMENTS CANNOT BE MADE OR PRIOR AGREEMENTS ARE NOT IN PLACE.
4. THE CONTRACTOR SHALL KEEP ALL UTILITIES IN SERVICE DURING CONSTRUCTION OPERATIONS. MEANS & METHODS TO ACCOMPLISH THIS ARE THE CONTRACTOR'S RESPONSIBILITY, BUT SOME EXAMPLES INCLUDE POTHOLING TO AVOID DISRUPTION, SHORING TO LIMIT EXCAVATION, PUMPING TO MAINTAIN FLOW, AND TEMPORARY SUPPORTING TO MAINTAIN STABILITY.
5. SHOULD UNCHARTED OR INCORRECTLY CHARTED UTILITIES BE ENCOUNTERED DURING EXCAVATION, THE CONTRACTOR SHALL CONSULT WITH THE UTILITY OWNER AND ENGINEER IMMEDIATELY FOR DIRECTIONS. THE CONTRACTOR SHALL COOPERATE WITH THE SERVICES AND FACILITIES IN OPERATION AND REPAIR DAMAGED UTILITIES TO THE SATISFACTION OF THE UTILITY OWNER. IF THE UTILITY OWNER IS FOUND NOT RESPONSIBLE, THE COST TO REPAIR DAMAGED UTILITIES UNCHARTED OR INCORRECTLY CHARTED WILL BE CONSIDERED AN UNFORESEEN CONDITION AND WILL BE PAID FOR AT AN AGREED UPON PRICE OR ON A TIME AND MATERIAL BASIS.

GENERAL

1. ALL SITE WORK SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS INCLUDING THE CITY OF TROY'S MUNICIPAL CODE AND WITH THE LATEST EDITION OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S, "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND "HIGHWAY STANDARDS", IN SO FAR AS THEY APPLY, EXCEPT THAT ALL REFERENCES TO MEASUREMENT AND PAYMENT SHALL BE DELETED.
2. ALL WATER AND SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF TROY'S MUNICIPAL CODE AND WITH THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS", UNLESS OTHERWISE PROVIDED HEREIN.
3. IF THERE ARE ANY DISCREPANCIES BETWEEN THESE PLANS, SPECIFICATIONS, OR STANDARDS BY GOVERNING BODIES, THE MOST STRINGENT AND RELEVANT REQUIREMENT SHALL BE BINDING AND APPLICABLE.
4. UNLESS OTHERWISE INDICATED, THE COST OF WORK REQUIRED UNDER ANY GENERAL, PLAN, OR KEYED NOTE WILL NOT BE PAID FOR SEPARATELY, BUT IT SHALL BE CONSIDERED AS INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR THE VARIOUS ITEMS OF WORK INVOLVED.
5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO ACCOMPLISH THE WORK. NO CONSTRUCTION ACTIVITIES SHALL BE PERFORMED UNTIL ALL NECESSARY PERMITS HAVE BEEN SECURED. THE COST OF THE PERMITS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
6. ALL CONSTRUCTION SHALL CONFORM TO THE PLANS AND SPECIFICATIONS. IF THE CONTRACTOR CHOOSES TO MAKE MODIFICATION DURING CONSTRUCTION, EVEN IF THE WORK IS AFFECTED BY OMISSION OR DISCREPANCY, WITHOUT THE APPROVAL OF THE ENGINEER, HE/ SHE IS MAKING SUCH CHANGES AT HIS/ HER OWN RISK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF ANY CHANGES FROM THE APPROVED DOCUMENTS.
7. THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION LAYOUT AND MATERIAL TESTING NECESSARY TO COMPLETE THE PROJECT TO THE PLANS AND SPECIFIED TOLERANCES.
8. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS FOR THE OWNER'S RECORDS.
9. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD, INCLUDING POTHOLING POTENTIAL UTILITY CONFLICTS, PRIOR TO ORDERING MATERIALS AND COMMENCING CONSTRUCTION.
10. THE CONTRACTOR SHALL CONFINE ALL OPERATIONS TO THE TRENCH WIDTH AND PLANNED REMOVAL AREAS SHOWN ON THE PLANS. ANY AREA DISTURBED BEYOND THESE LIMITS SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR SHALL FERTILIZE, SEED, AND MULCH ALL EARTH SURFACES DISTURBED BY CONSTRUCTION, EXCEPT AS NOTED OTHERWISE IN THE PLANS. THE QUANTITY PROVIDED FOR FERTILIZER, SEED, AND MULCH INCLUDES DISTURBANCES WITHIN TEN (10) FEET OF THE CENTERLINE OF PIPE. FERTILIZER, SEEDING, AND MULCH OUTSIDE THESE LIMITS DUE TO CONSTRUCTION ENCROACHMENTS SHALL BE RESTORED TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE CONTRACT.

GENERAL (cont.)

12. THE CONTRACTOR SHALL STAGE ALL WORK IN SUCH A WAY AS TO MAINTAIN INGRESS AND EGRESS TO ALL ABUTTING PROPERTIES AT ALL TIMES DURING CONSTRUCTION. AGGREGATE FOR TEMPORARY ACCESS OR OTHER TEMPORARY ELEMENTS MAY BE REQUIRED TO ACCOMPLISH REQUIREMENT.
13. THE CONTRACTOR SHALL PROVIDE THE NECESSARY SIGNS AND BARRICADES THROUGHOUT THE CONSTRUCTION PERIOD. ALL MATERIAL PILES, EQUIPMENT, OPEN EXCAVATIONS OR THEIR OBSTRUCTIONS, OR HAZARDS TO MOTORISTS OR PEDESTRIANS SHALL BE ENCLOSED BY FENCES OR PROTECTED BY BARRICADES.
14. THE CONTRACTOR SHALL GUARANTEE ALL WORK, MATERIALS, AND LABOR ASSOCIATED WITH THIS WORK FOR A PERIOD OF ONE (1) YEAR.

REMOVALS

1. THE CONTRACTOR SHALL INSPECT AND ACCEPT THE SITE CONDITIONS PRIOR TO MOBILIZATION. DOCUMENTATION FOR ANY CONCERNS SHALL BE PROVIDED TO OWNER IN WRITING AND WITH PHOTOGRAPHS PRIOR TO MOBILIZATION. NO ADDITIONAL PAYMENT WILL BE MADE FOR REPAIR OF DAMAGED EXISTING FEATURES TO REMAIN THAT WERE NOT ADDRESSED BEFORE THE CONTRACTOR MOBILIZED ON SITE.
2. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL EXISTING FEATURES SUCH AS SIGNS, PAVEMENT, CURB, AND TREES FROM DAMAGE. IF ANY FEATURE TO REMAIN IS DAMAGED, IT SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE OWNER OR ENGINEER.
3. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER AND AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. IF ANY PROPERTY MARKER IS TO REMAIN AND IS DAMAGED, IT SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AS DIRECTED BY THE ENGINEER OR OWNER.
4. THE CONTRACTOR SHALL REMOVE ALL EXISTING FEATURES INCLUDING, BUT NOT LIMITED TO PAVEMENT (TO INCLUDE OIL & CHIP SURFACES), CURB, SIDEWALK, DRIVEWAY PAVEMENT, CULVERTS, HEADWALLS, RIPRAP, FENCING, AND RETAINING WALLS WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION AT NO ADDITIONAL COST TO THE CITY UNLESS NOTED OTHERWISE ON THE PLANS. ALL FEATURES WHICH ARE TO BE REMOVED AND FOR WHICH THERE IS NOT A SPECIFIC CALLOUT, WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.
5. THE CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN AND AVOID COMPACTING THE AREA UNDER THE TREE'S DRIPLINE. IF TREE ROOTS ARE ENCOUNTERED, THEY SHALL BE SAWN OFF AT THE EDGE OF THE EXCAVATION RATHER THAN RIPPED WITH EQUIPMENT.
6. ANY EXCESS EARTH EXCAVATION SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED.
7. FULL DEPTH SAW CUTTING ON ALL EDGES FOR REMOVAL ITEMS SHALL BE INCLUDED IN THE REMOVAL ITEMS ACCORDING TO SECTION 440 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. OIL & CHIP ROADWAY REMOVAL SHALL BE TREATED AS HMA PAVEMENT REMOVAL.
8. ALL CONCRETE PAVEMENT AND SIDEWALK REMOVAL SHALL BE REMOVED TO THE NEAREST EXISTING JOINT LOCATION. NO PARTIAL SLAB REMOVALS WILL BE ALLOWED.
9. THE CONTRACTOR SHALL REMOVE, MAINTAIN IN A TEMPORARY LOCATION, AND PERMANENTLY RESET ALL MAILBOXES, TRAFFIC SIGNS, STREET NAME SIGNS, AND ALL PRIVATE AND COMMERCIAL SIGNS WHICH INTERFERE WITH CONSTRUCTION OPERATIONS ACCORDING TO ARTICLES 107.20 AND 107.25 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND AS DIRECTED BY THE ENGINEER.
10. THE CONTRACTOR SHALL REMOVE TRAFFIC SIGNS WHICH INTERFERE WITH CONSTRUCTION OPERATIONS AND RE-ERECT THEM AT TEMPORARY LOCATIONS TO SAFELY MAINTAIN TRAFFIC CONTROL THROUGHOUT THE CONSTRUCTION PERIOD. AS SOON AS CONSTRUCTION OPERATIONS ALLOW, ALL TRAFFIC SIGNS SHALL BE PERMANENTLY LOCATED.
11. WHERE TREE REMOVAL CONFLICTS WITH EXISTING UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CUT THE TREE OFF AT THE GROUND LINE AND GRIND THE STUMP AS DIRECTED BY THE ENGINEER. THIS SHALL INCLUDE COMPLETELY REMOVING TREES AND ROOTS UNDER PAVED SURFACES.
12. ANY UNSUITABLE MATERIAL ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR AND REPLACED WITH SUITABLE MATERIAL AS APPROVED BY THE ENGINEER. UNLESS NOTED OTHERWISE IN THE PLANS, THE COST TO REMOVE AND REPLACE UNSUITABLE MATERIAL WILL BE CONSIDERED AN UNFORESEEN CONDITION AND WILL BE PAID FOR AT AN AGREED UPON PRICE OR ON A TIME AND MATERIAL BASIS.

EARTHWORK & GRADING

1. FINAL PAYMENT ON RETAINAGE WILL NOT BE MADE UNTIL TRENCHES HAVE SETTLED AND THE LAWN HAS ESTABLISHED TO A 95% LEVEL WITH NO INDIVIDUAL BARE SPOTS LARGER THAN 6"X6" IN SIZE AFTER ONE GROWING SEASON (APRIL TO MAY OR SEPTEMBER TO OCTOBER).
2. DEWATERING OF EXCAVATION AREAS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION FROM NEW AREAS TO ADJACENT, EXISTING AREAS AS NECESSARY.

EROSION CONTROL

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SILTATION CONTROL, AS NEEDED, TO PREVENT SILTATION OF ADJACENT PROPERTIES, UNTIL THE VEGETATION IN ALL DISTURBED AREAS HAS BEEN ESTABLISHED, AT WHICH TIME HE/SHE SHALL BE RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY SILTATION CONTROL AND REPAIR OF ANY ERODED AREAS. EROSION CONTROL MEASURES SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH APPLICABLE PLAN DETAILS AND THE ILLINOIS URBAN MANUAL. NO CONSTRUCTION ACTIVITIES SHALL BE PERFORMED UNTIL EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED.

FILE NAME = 15062 D06 - GENERAL NOTES.DWG



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ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115

USER NAME = BEN MILLER	DESIGNED - SJM	REVISED -
	DRAWN - BAM	REVISED -
PLOT SCALE = 1" = 1'	CHECKED - TLC	REVISED -
PLOT DATE = 2022-09-27	DATE - 2022-09-27	REVISED -

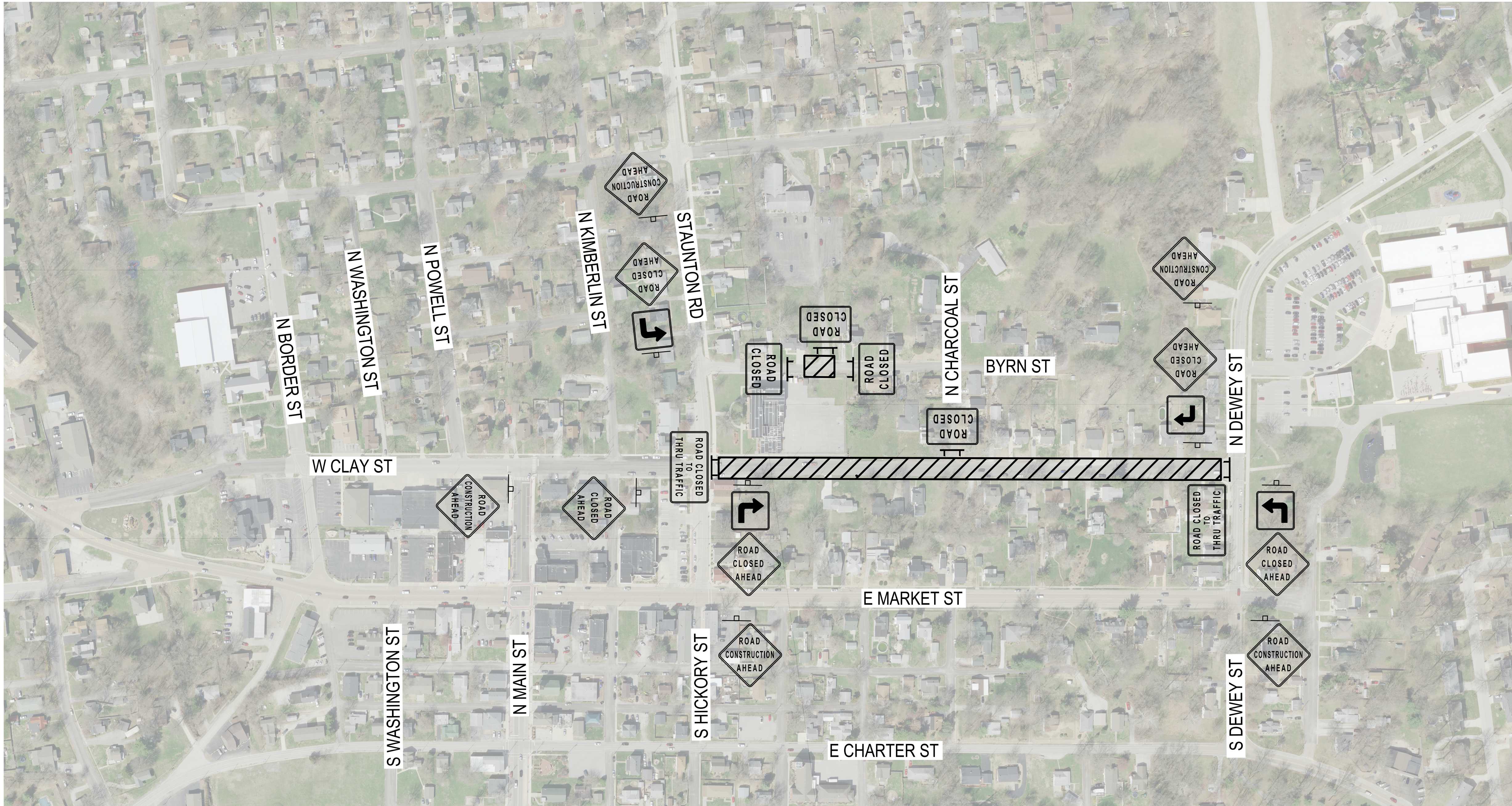
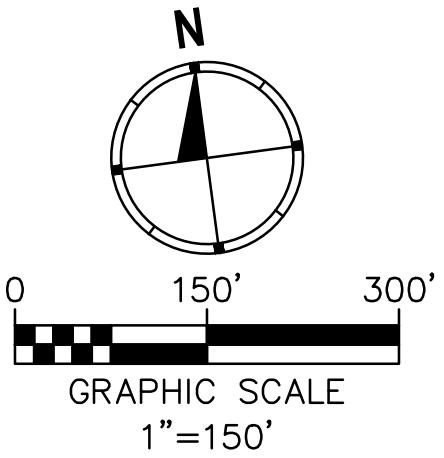
CITY OF TROY
CLAY STREET SEWER - PHASE 2

GENERAL NOTES

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	2
CLAY STREET SEWER - PHASE 2				

PLAN	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
NO.	AT 0.000000	
	FILE NAME	

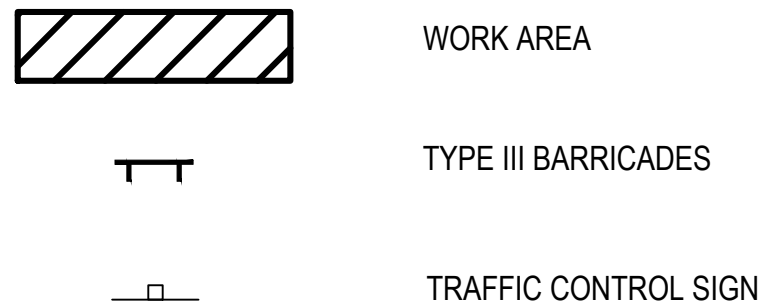
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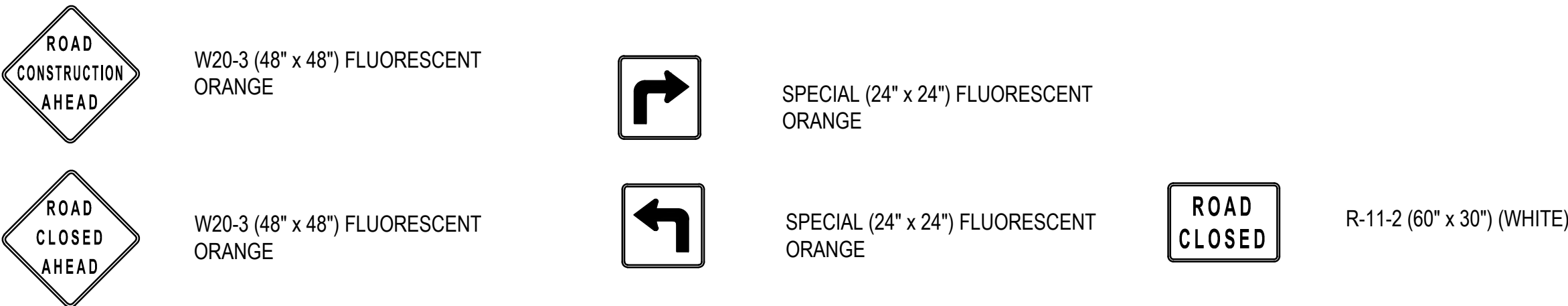
TRAFFIC CONTROL LEGEND

1. TYPE III BARRICADES AND ROAD CLOSURE SIGNS SHALL BE POSITIONED AS SHOWN, IN ACCORDANCE WITH HIGHWAY STANDARD 701901, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND AS DIRECTED BY THE ENGINEER.
2. TYPE A LOW INTENSITY FLASHING LIGHTS SHALL BE USED ON THE FIRST SIGN IN ADVANCE OF THE WORK SITE AND TYPE III BARRICADES DURING HOURS OF DARKNESS.
3. ALL WARNING SIGNS SHALL BE A MINIMUM OR 48" x 48" AND HAVE A BLACK LEGEND AND BORDER ON A FLUORESCENT ORANGE REFLECTORIZED BACKGROUND.
4. EXACT LOCATION OF WARNING SIGNS AND BARRICADES SHALL BE STAKED IN THE FIELD FOR APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AND ENTRANCES AT ALL TIMES.
6. SEE HIGHWAY STANDARDS 701801 AND 701901 FOR ADDITIONAL TRAFFIC CONTROL GUIDELINES.
7. WHEN WORK IS REQUIRED IN THE INTERSECTIONS OF STAUNTON ROAD AND DEWEY STREET, THE CONTRACTOR WILL BE PERMITTED TO WORK BETWEEN 9:00 AM AND 3:00 PM WITH FLAGGERS ALLOWING LOCAL TRAFFIC TO NAVIGATE THROUGH THE INTERSECTION.
8. THE CONTRACTOR SHALL NOT CLOSE BYRN STREET AND THE INTERSECTION OF N CHARCOAL STREET AND CLAY STREET AT THE SAME TIME TO ALLOW ACCESS TO LOCAL TRAFFIC.
9. TRENCH BACKFILL AND REPLACE PAVEMENT TO KEEP CLAY STREET OPEN TO LOCAL TRAFFIC.

TRAFFIC CONTROL LEGEND



TRAFFIC CONTROL SIGNAGE



FILE NAME = 15062 - W046 - DESIGN.DWG



USER NAME	=	BEN MILLER	DESIGNED	-	SJM	REVISED	-
PLOT SCALE	=	1" = 1'	DRAWN	-	BAM	REVISED	-
PLOT DATE	=	2022-09-27	CHECKED	-	TLC	REVISED	-
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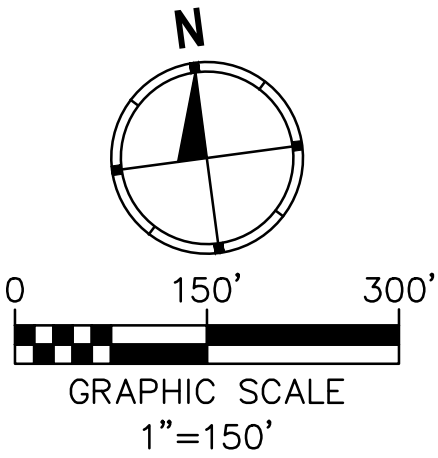
CITY OF TROY
CLAY STREET SEWER - PHASE 2

TRAFFIC CONTROL PLAN - STAGE 1

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CLAY STREET SEWER - PHASE 2				

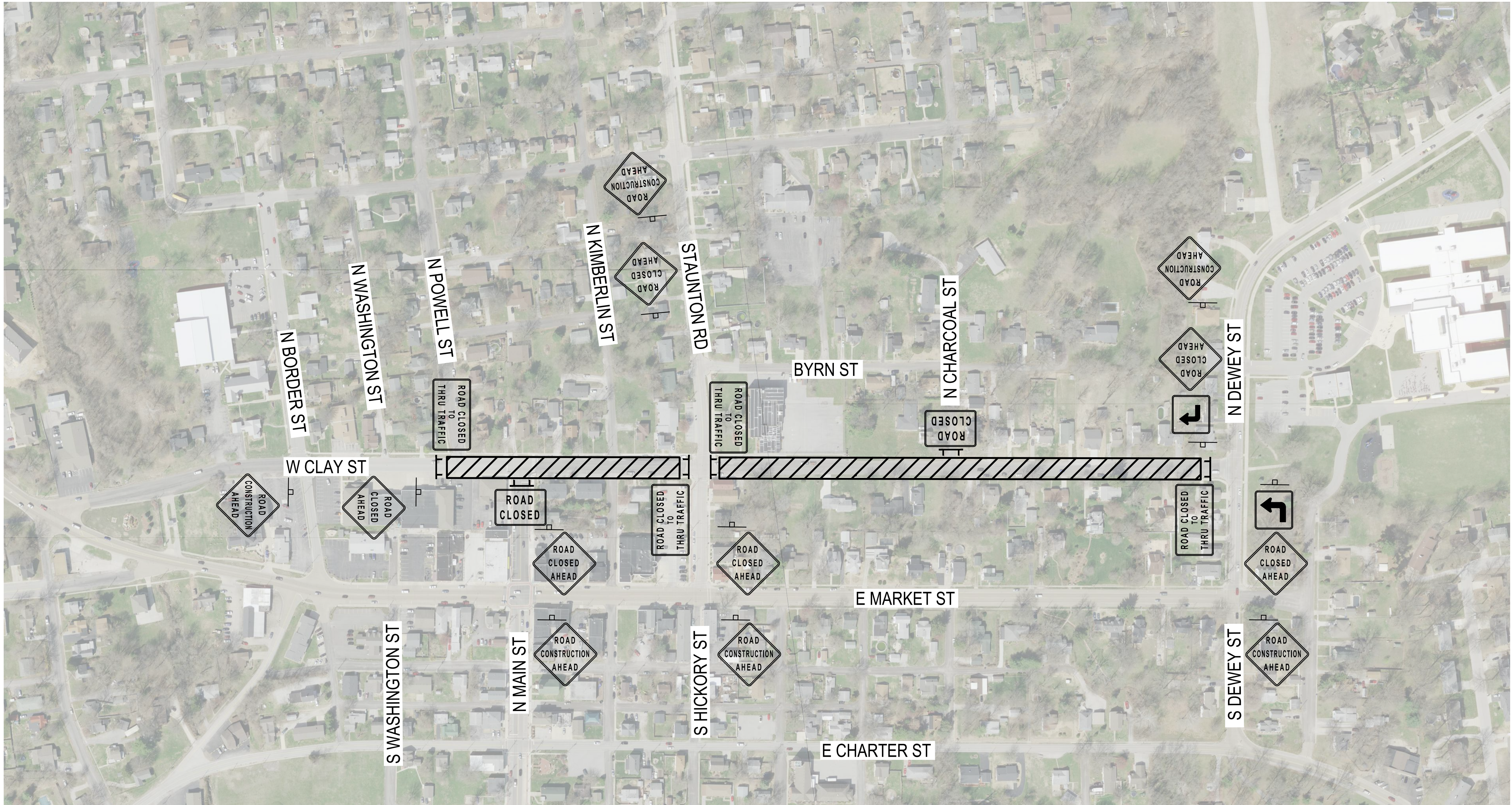
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NOTE BOOK	PLOTTED	BY
NO.	AT	
	FILE	
	NAME	

PROFILE	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
NO.	AT	
	FILE	
	NAME	

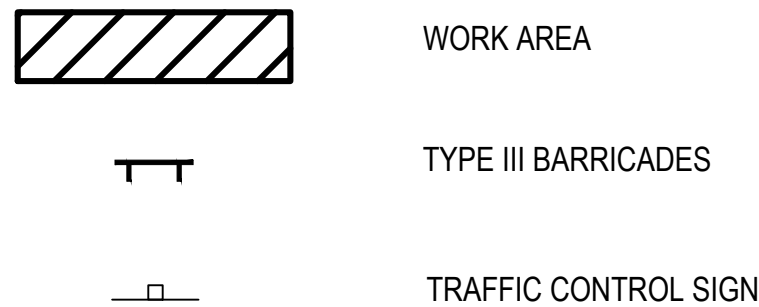


TRAFFIC CONTROL LEGEND

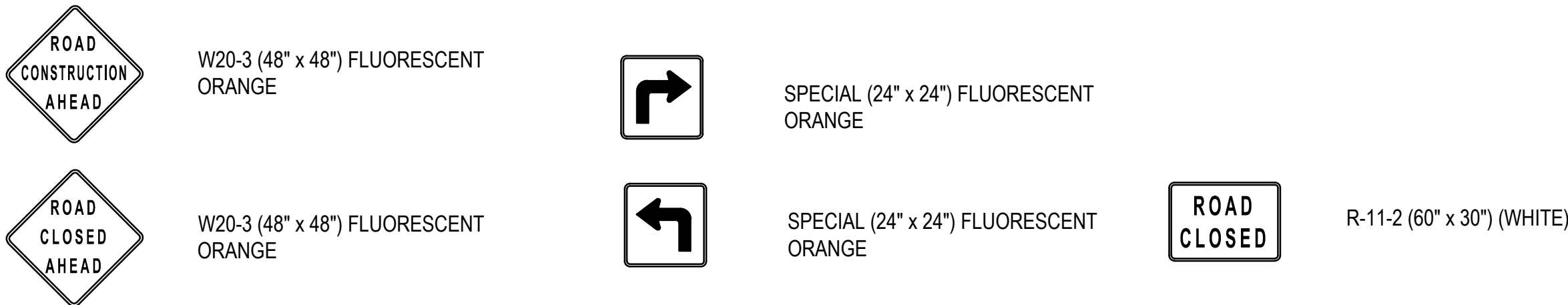
1. TYPE III BARRICADES AND ROAD CLOSURE SIGNS SHALL BE POSITIONED AS SHOWN, IN ACCORDANCE WITH HIGHWAY STANDARD 701901, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND AS DIRECTED BY THE ENGINEER.
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5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AND ENTRANCES AT ALL TIMES.
6. SEE HIGHWAY STANDARDS 701801 AND 701901 FOR ADDITIONAL TRAFFIC CONTROL GUIDELINES.
7. WHEN WORK IS REQUIRED IN THE INTERSECTIONS OF STAUNTON ROAD AND DEWEY STREET, THE CONTRACTOR WILL BE PERMITTED TO WORK BETWEEN 9:00 AM AND 3:00 PM WITH FLAGGERS ALLOWING LOCAL TRAFFIC TO NAVIGATE THROUGH THE INTERSECTION.



TRAFFIC CONTROL LEGEND



TRAFFIC CONTROL SIGNAGE



FILE NAME = 15062 - W046 - DESIGN.DWG



USER NAME	=	BEN MILLER	DESIGNED	-	SJM	REVISED	-
PLOT SCALE	=	1" = 1'	DRAWN	-	BAM	REVISED	-
PLOT DATE	=	2022-09-27	CHECKED	-	TLC	REVISED	-
			DATE	-	2022-09-27	REVISED	-

CITY OF TROY
CLAY STREET SEWER - PHASE 2

TRAFFIC CONTROL PLAN - STAGE 2

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	4
CLAY STREET SEWER - PHASE 2				

PLAN	NO.	NOTE BOOK	SURVEYED	PLOTTED	BY	DATE

PROFILE	NO.	NOTE BOOK	SURVEYED	PLOTTED	BY	DATE

FILE NAME = 15062 - W06 - DESIGN.DWG



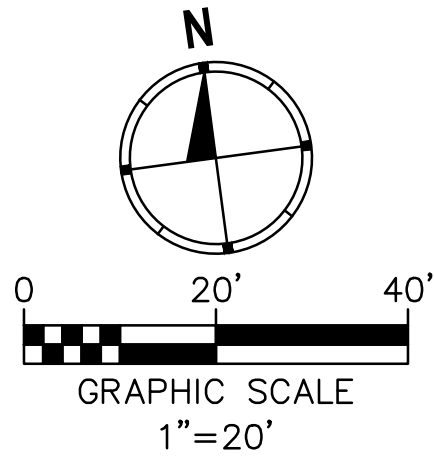
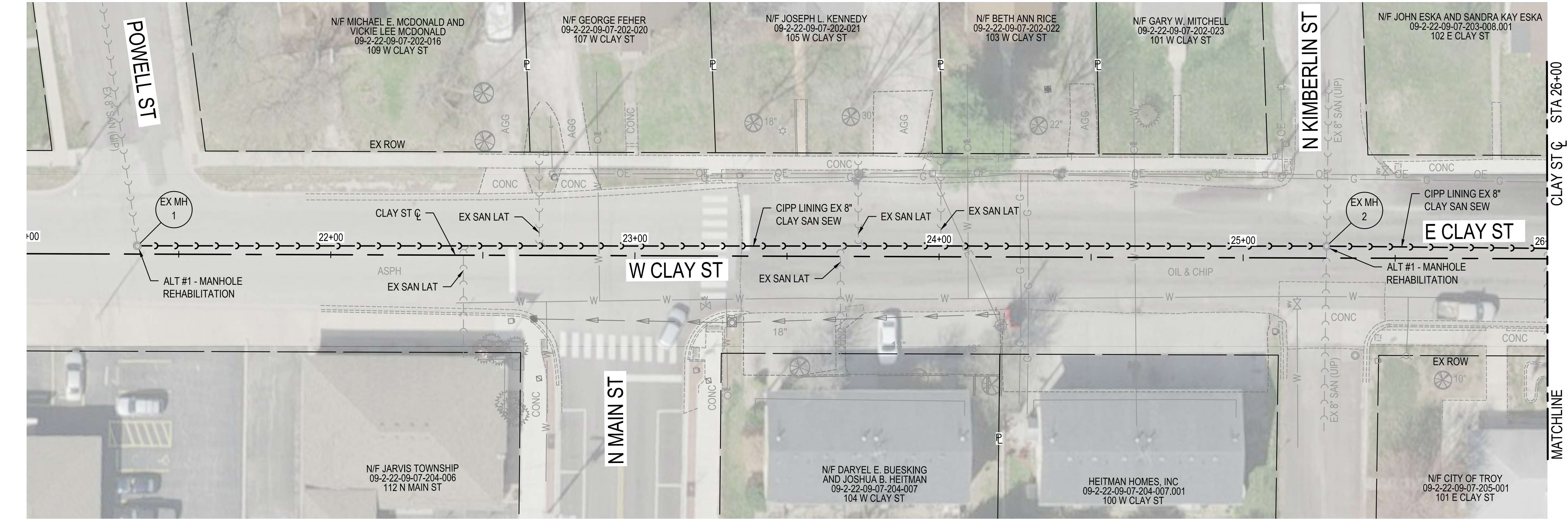
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ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115

USER NAME =	BEN MILLER	DESIGNED -	SJM	REVISED -	
PLOT SCALE =	1" = 1'	DRAWN -	BAM	REVISED -	
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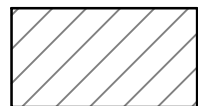
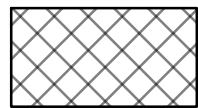
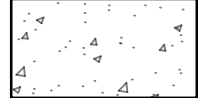
CITY OF TROY
CLAY STREET SEWER - PHASE 2

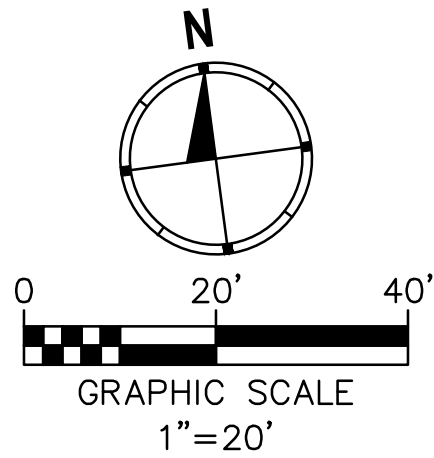
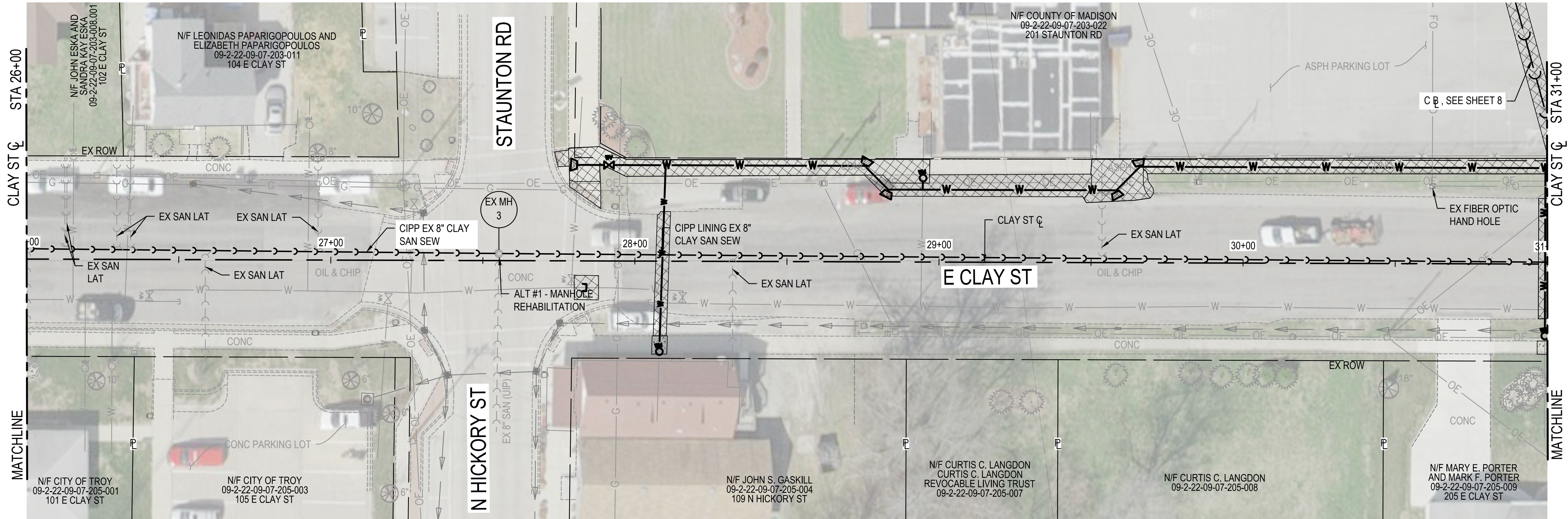
SANITARY SEWER - PLAN & PROFILE

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	5
CLAY STREET SEWER - PHASE 2				



MATERIAL SYMBOLS

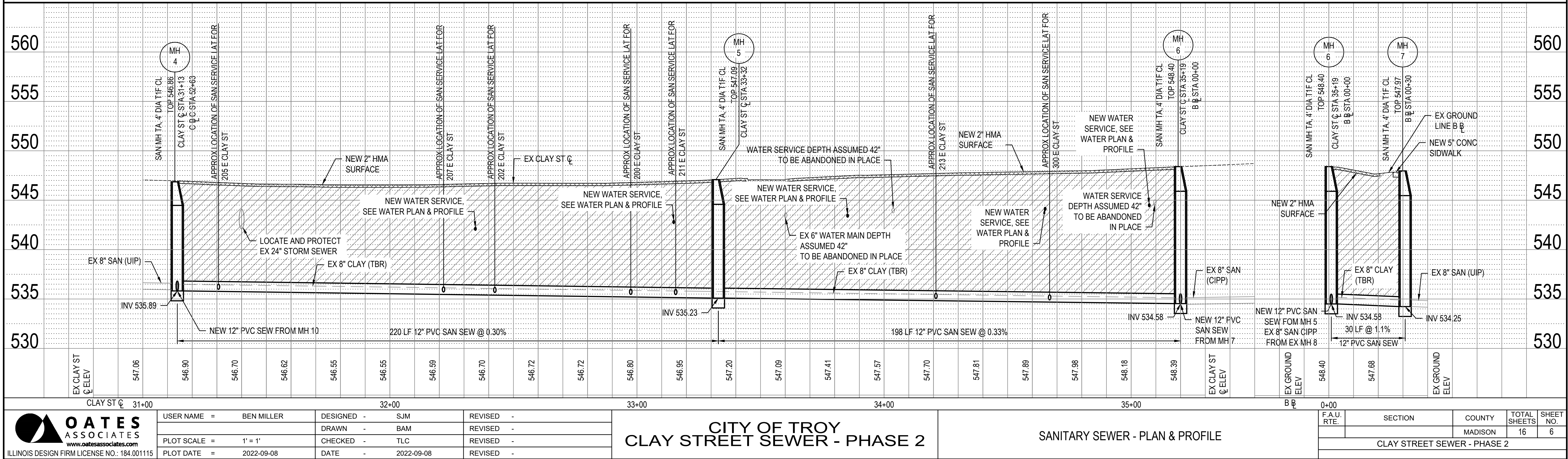
-  TRENCH BACKFILL
-  NEW HOT-MIX ASPHALT
-  NEW CONCRETE



PLAN	SURVEYED PLOTTED ALIGNMENT CHECKED BY DATE	NOTE BOOK NO.

PROFILE	SURVEYED PLOTTED GRADES CHECKED BY DATE	NOTE BOOK NO.

FILE NAME = 15062 - W046 - DESIGN.DWG



PLAN	NOTE BOOK NO.	SURVEYED PLOTTED ALIGNMENT CHECKED BY CADD FILE NAME	BY	DATE

PROFILE	NOTE BOOK NO.	SURVEYED PLOTTED GRADES CHECKED STRUCTURE NOTATIONS CHKD	BY	DATE

FILE NAME = 15062 - W046 - DESIGN.DWG

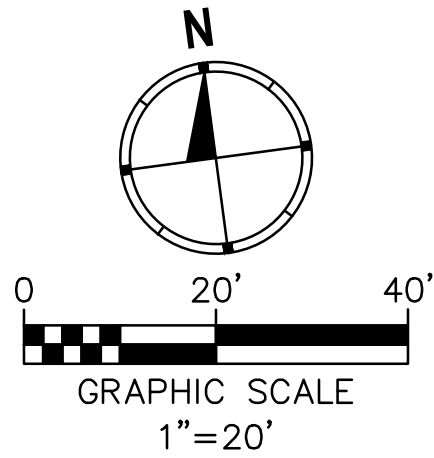
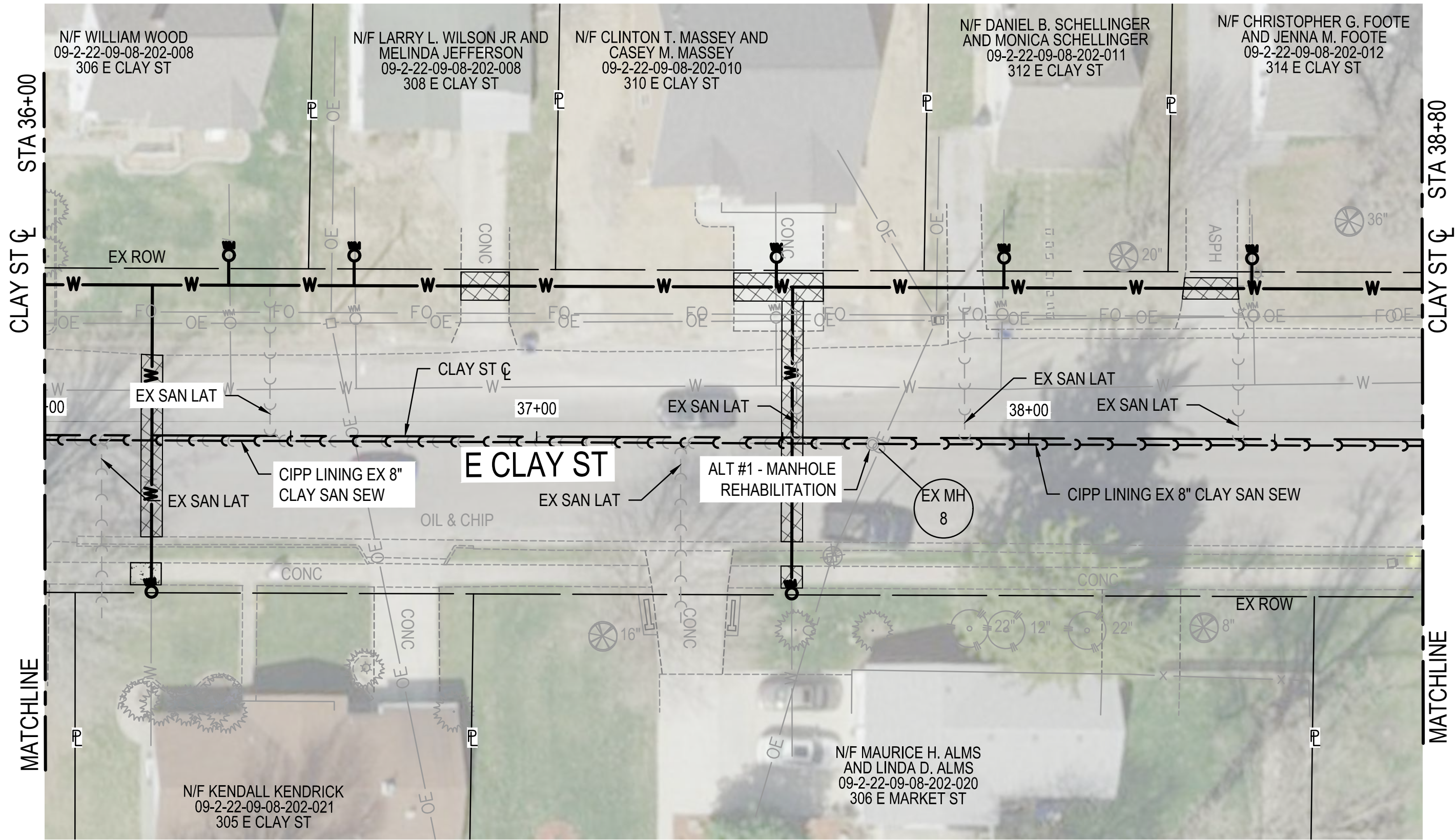


USER NAME	=	BEN MILLER	DESIGNED	-	SJM	REVISED	-
PLOT SCALE	=	1" = 1'	DRAWN	-	BAM	REVISED	-
PLOT DATE	=	2022-09-27	CHECKED	-	TLC	REVISED	-
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CITY OF TROY
CLAY STREET SEWER - PHASE 2

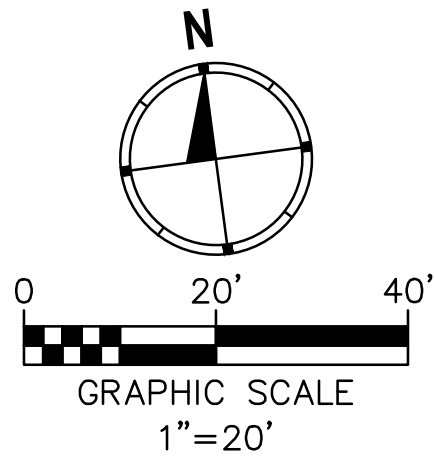
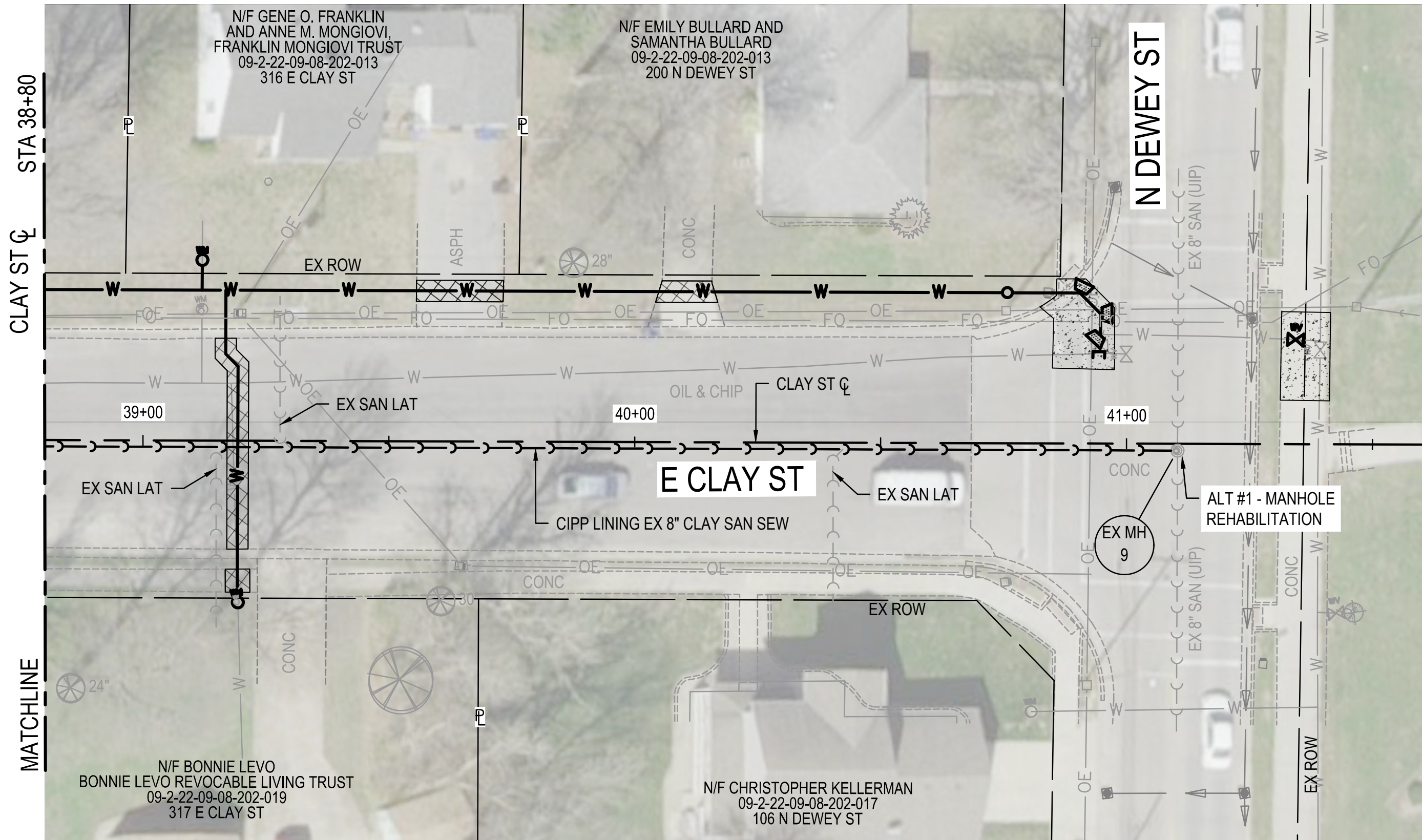
SANITARY SEWER - PLAN & PROFILE

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	7
CLAY STREET SEWER - PHASE 2				



MATERIAL SYMBOLS

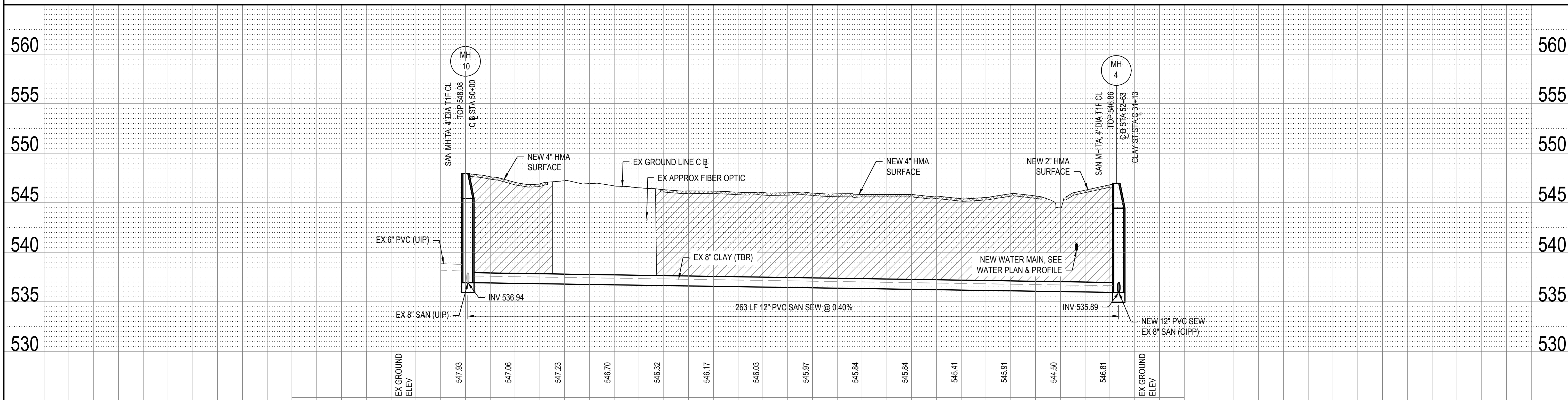
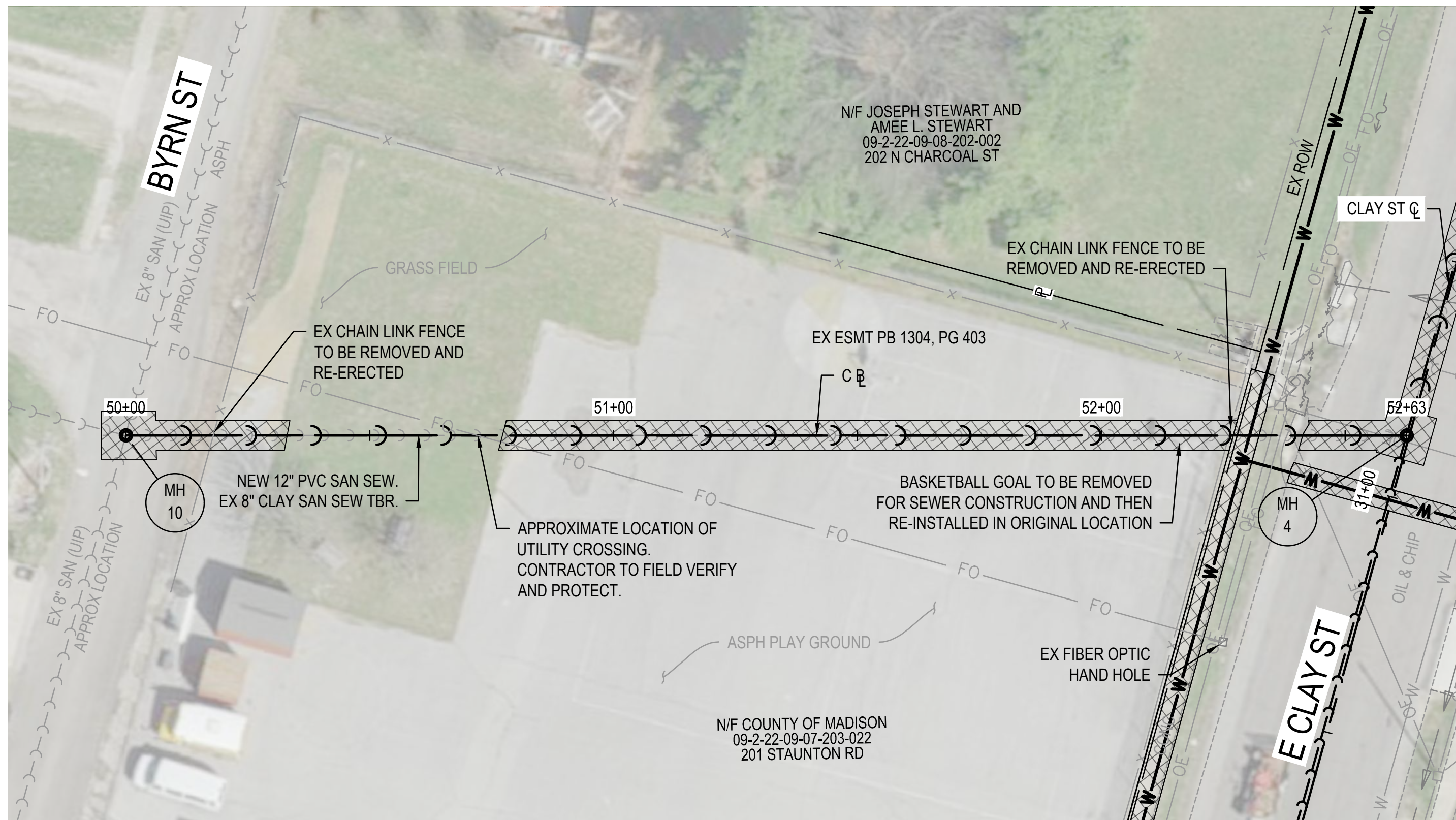
	TRENCH BACKFILL
	NEW HOT-MIX ASPHALT
	NEW CONCRETE



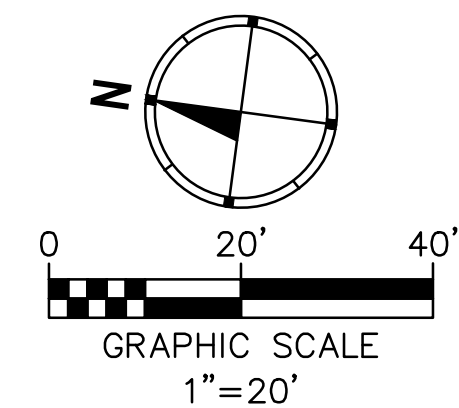
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	PLOTTED _____		
	ALIGNMENT CHECKED _____		
	RT. OF WAY CHECKED _____		
	CADD FILE NAME _____		

PROFILE		BY	DATE
SURVEYED			
PLOTTED			
GRADES CHECKED			
B.M. NOTED			
STRUCTURE NOTATIONS CHK'D			
NO. _____			

FILE NAME = 15062 - WO#6 - DESIGN.DWG



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		DRAWN - BAM	REVISED -					MADISON	16	8	
	PLOT SCALE = 1' = 1'	CHECKED - TLC	REVISED -			CLAY STREET SEWER - PHASE 2					
	PLOT DATE = 2022-09-08	DATE - 2022-09-08	REVISED -								



GENERAL NOTES

1. RECONNECT EXISTING SANITARY SERVICE LATERALS TO NEW 12" PVC SANITARY SEWER AS SHOWN IN DETAIL 2 ON SHEET 9.

MATERIAL SYMBOLS

TRENCH BACKFILL

NEW HOT-MIX ASPHALT

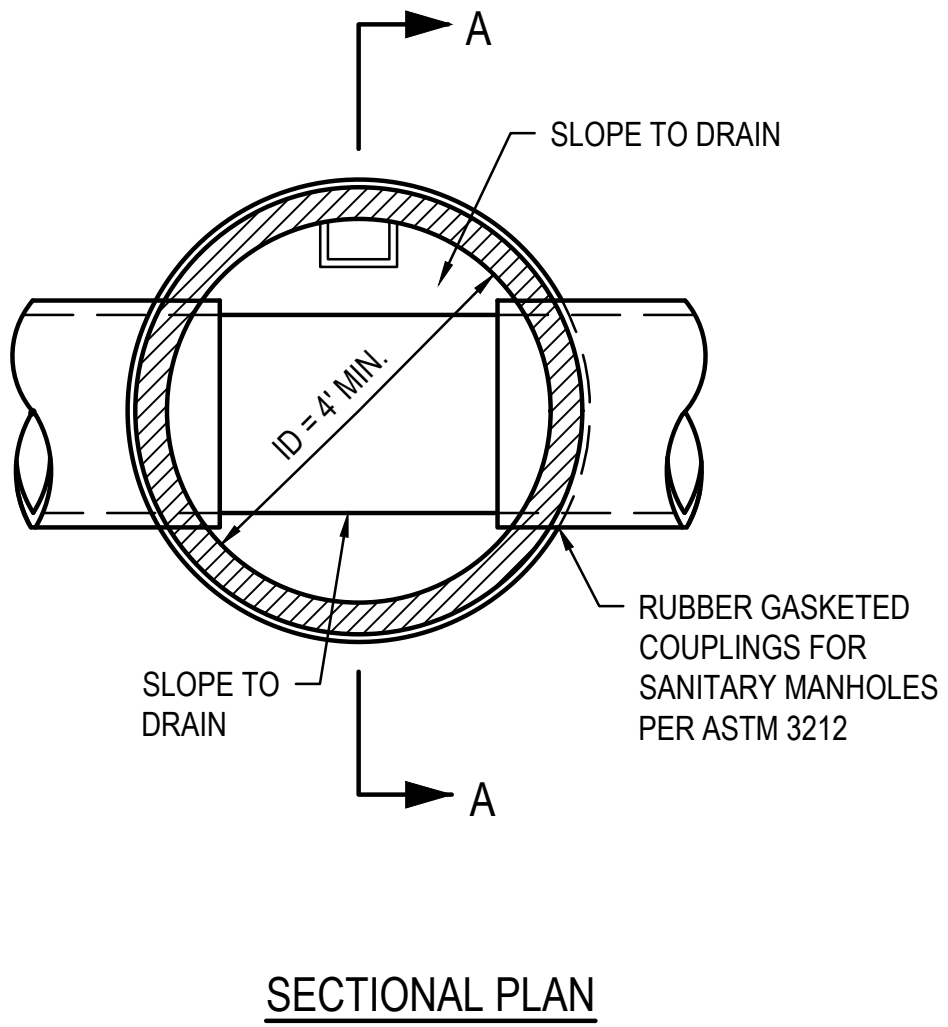
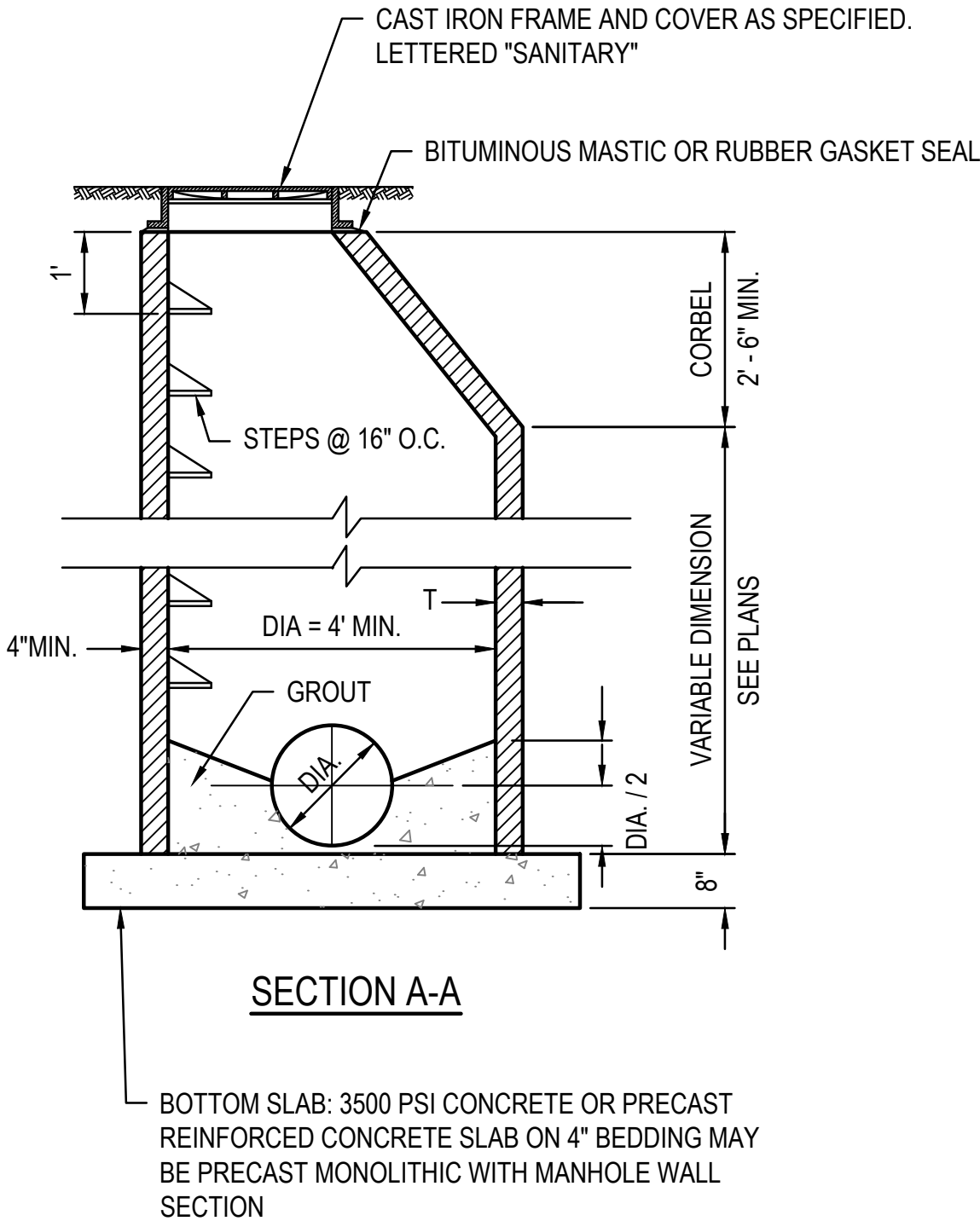
NEW CONCRETE

PLAN	SURVEYED	BY	DATE
NOTE BOOK NO. _____	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHKD		

PROFILE	SURVEYED	BY	DATE
NOTE BOOK NO. _____	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHKD		

GRAVITY SANITARY SEWER SPECIFICATIONS

- ALL MATERIALS, INSTALLATION, AND TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS", THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH, THE ILLINOIS PLUMBING CODE, AND THE REQUIREMENTS OF THE CITY OF TROY.
- PRIOR TO COMMENCEMENT OF ANY WORK, THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE PLANS WITH THE ACTUAL DIMENSIONS AND CONDITIONS OF THE SITE. THE GENERAL CONTRACTOR MUST VERIFY THE ENGINEER'S LINES AND GRADES, INCLUDING VERIFYING THE INVERTS OR EXISTING MANHOLES PRIOR TO ORDERING STRUCTURES. IF A DISCREPANCY OCCURS FROM WHAT IS SHOWN ON THE PLANS, STANDARD SPECIFICATIONS, AND/OR DETAILS, THE GENERAL CONTRACTOR SHALL NOTIFY THE ENGINEER AND SECURE WRITTEN INSTRUCTION FROM THE ENGINEER PRIOR TO PROCEEDING WITH ANY PART OF THE AFFECTED WORK. FAILING TO DO SO WILL BE CONSIDERED AS THE GENERAL CONTRACTOR HAVING PROCEEDED AT HIS OWN RISK AND EXPENSE.
- ALL SANITARY SEWER PIPES SHALL BE PVC SDR-35 (OR SDR-26 IF GREATER THAN 14 FEET DEEP) MEETING THE REQUIREMENTS OF ASTM D3034 WITH PIPE AND FITTINGS CONFORMING TO ASTM D3034 AND HAVING AN INTEGRAL BELL, GASKETED JOINT CONFORMING TO ASTM D3212.
- SANITARY SEWER INVERTS SHOWN ON THE PLANS HAVE BEEN CALCULATED TO THE CENTER OF THE STRUCTURE. THE SANITARY SEWER SLOPES SHOWN ON THE PLANS IS THE PERCENT GRADE FROM CENTER TO CENTER OF STRUCTURE. THE LENGTH OF SANITARY SEWERS SHOWN ON THE PLANS IS THE DISTANCE FROM CENTER TO CENTER OF STRUCTURE.
- BEDDING OF THE PIPE AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH ASTM D2321 CLASS 1B, THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS" AND AS SHOWN IN THE PLANS. GRANULAR TRENCH BACKFILL SHALL BE USED AS INDICATED ON THE PLANS AND WHEN THE EDGE OF ANY TRENCH IS WITHIN 2 FT. OF ANY PAVEMENT, CURB, SIDEWALK, OR OTHER STRUCTURE. TRENCH BACKFILL SHALL BE COMPACTED WITH A ROLLER, VIBRATORY PLATE, OR OTHER COMPACTING DEVICE IN 8-INCH LIFTS.
- ALL GRAVITY SANITARY SEWER PIPES AND STRUCTURES SHALL BE TESTED IN ACCORDANCE WITH ARTICLE 31-1.13 METHOD A, EXFILTRATION OF AIR UNDER PRESSURE, AND METHOD D, DEFLECTION FOR FLEXIBLE THERMOPLASTIC PIPE, OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS". GRAVITY SEWER PIPES SHALL BE TELEVISION INSPECTED BY THE CITY OF TROY PRIOR TO THE WORK BEING ACCEPTED. CONTRACTOR SHALL REPAIR OR REPLACE ANY LINE OR STRUCTURE WHICH FAILS ANY OF THE REQUIRED TESTS, AND RETEST. ALL TESTS SHALL BE WITNESSED BY THE ENGINEER AND THE CITY OF TROY. CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE CITY OF TROY 48 HOURS IN ADVANCE OF ANY TESTING TO BE PERFORMED.
- A MINIMUM 10-FOOT HORIZONTAL AND 18-INCH VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN ALL WATER AND SEWER MAINS IN ACCORDANCE WITH ARTICLE 41-2.01A AND 41-2.01B OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS. WHERE PHYSICAL CONSTRAINTS PREVENT THIS REQUIREMENT FROM BEING MET, ALTERNATIVE METHODS FOR PREVENTING CROSS-CONTAMINATION BETWEEN THE SEWER AND WATER MAIN SHALL BE PROVIDED IN ACCORDANCE WITH STANDARD DRAWINGS 18-24 OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS", 8TH EDITION.
- PVC PIPE SHALL BE STORED UNDER COVER TO PROTECT FROM ULTRAVIOLET LIGHT.
- WHENEVER PIPE LAYING IS NOT ACTIVELY IN PROGRESS, OPEN ENDS OF ALL INSTALLED PIPE AND FITTINGS SHALL BE FITTED WITH A WATERTIGHT PLUG.
- PENETRATIONS ON ALL EXISTING MANHOLES SHALL BE CORE DRILLED. NO IMPACT DEVICES WILL BE ALLOWED FOR THE PURPOSE OF CONNECTING NEW SEWER MAINS TO EXISTING MANHOLES.
- ALL PIPE PENETRATIONS SHALL BE MADE WATERTIGHT BY THE USE OF A-LOK® GASKETS, OR APPROVED EQUAL.
- ALL MANHOLES SHALL BE INSPECTED AND LEAKAGE TESTED FOR WATER TIGHTNESS IN ACCORDANCE WITH ASTM C 969-19 OR ASTM C 1244-20, PRIOR TO BEING PLACED INTO SERVICE.
- MAXADAPTER® COUPLINGS, OR APPROVED EQUAL, SHALL BE USED TO JOIN DISSIMILAR SANITARY SEWER PIPE MATERIALS OR FOR THE REPAIR OF EXISTING PIPES OF SIMILAR MATERIALS.

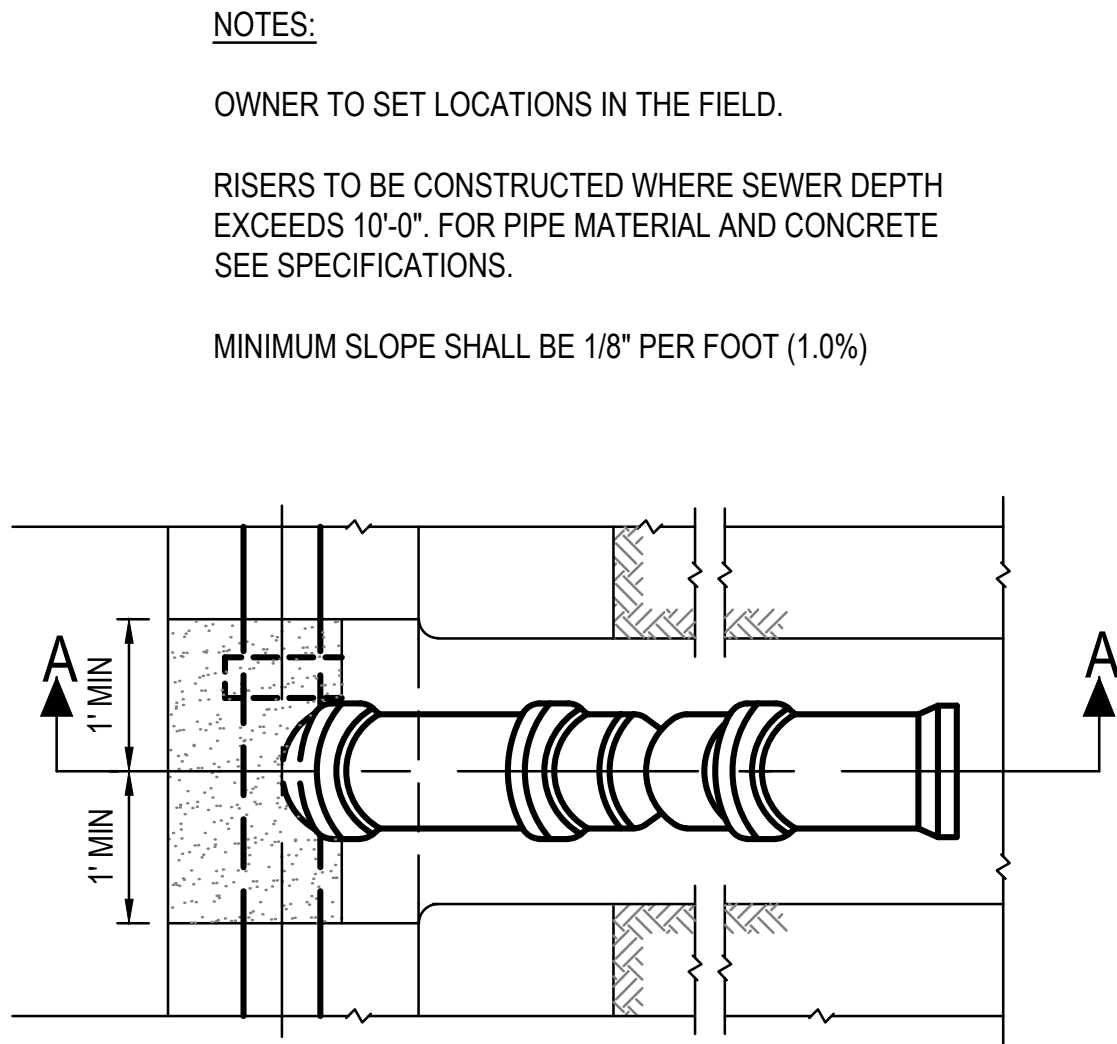
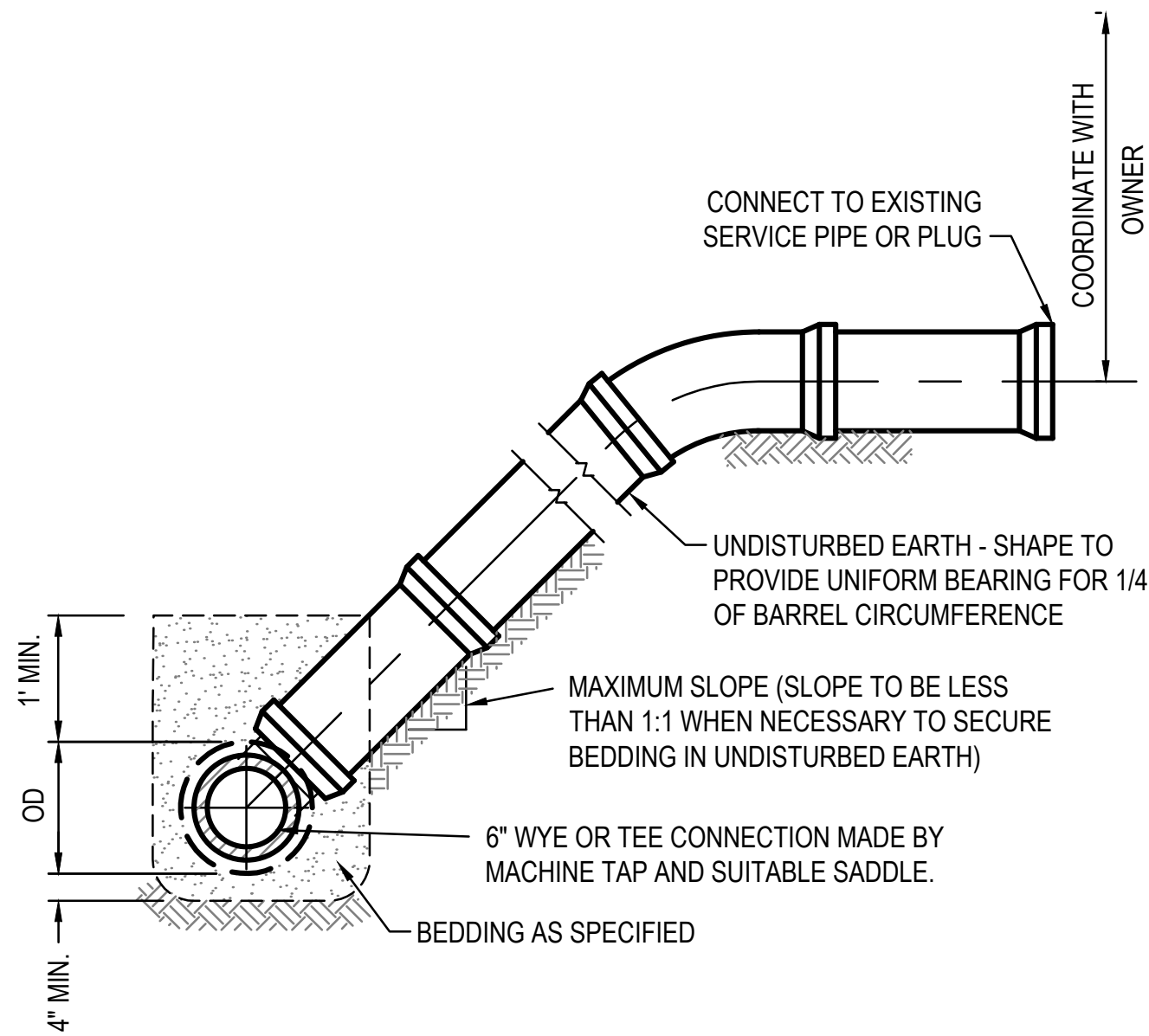


NOTE:
STEPS REQUIRED, UNLESS DELETED BY SPECIAL PROVISIONS.

NOTE: SEPARATE SANITARY SEWER MANHOLES SUBJECT TO SATURATED SOIL CONDITIONS OR SURFACE SUBMERGENCE SHALL BE EQUIPPED WITH CHIMNEY SEALS AND WATER TIGHT MANHOLE COVERS.

1 SANITARY SEWER MANHOLE

SCALE: NO SCALE



NOTES:

OWNER TO SET LOCATIONS IN THE FIELD.

RISERS TO BE CONSTRUCTED WHERE SEWER DEPTH EXCEEDS 10'-0". FOR PIPE MATERIAL AND CONCRETE SEE SPECIFICATIONS.

MINIMUM SLOPE SHALL BE 1/8" PER FOOT (1.0%)

SECTION A-A

PLAN

2 TYPICAL RISER FOR SERVICE LATERAL

SCALE: NO SCALE

FILE NAME = 15062 D06 - DETAILS.DWG



USER NAME	=	BEN MILLER	DESIGNED	-	SJM	REVISED	-
PLOT SCALE	=	1' = 1'	DRAWN	-	BAM	REVISED	-
PLOT DATE	=	2022-09-27	CHECKED	-	TLC	REVISED	-
			DATE	-	2022-09-27	REVISED	-

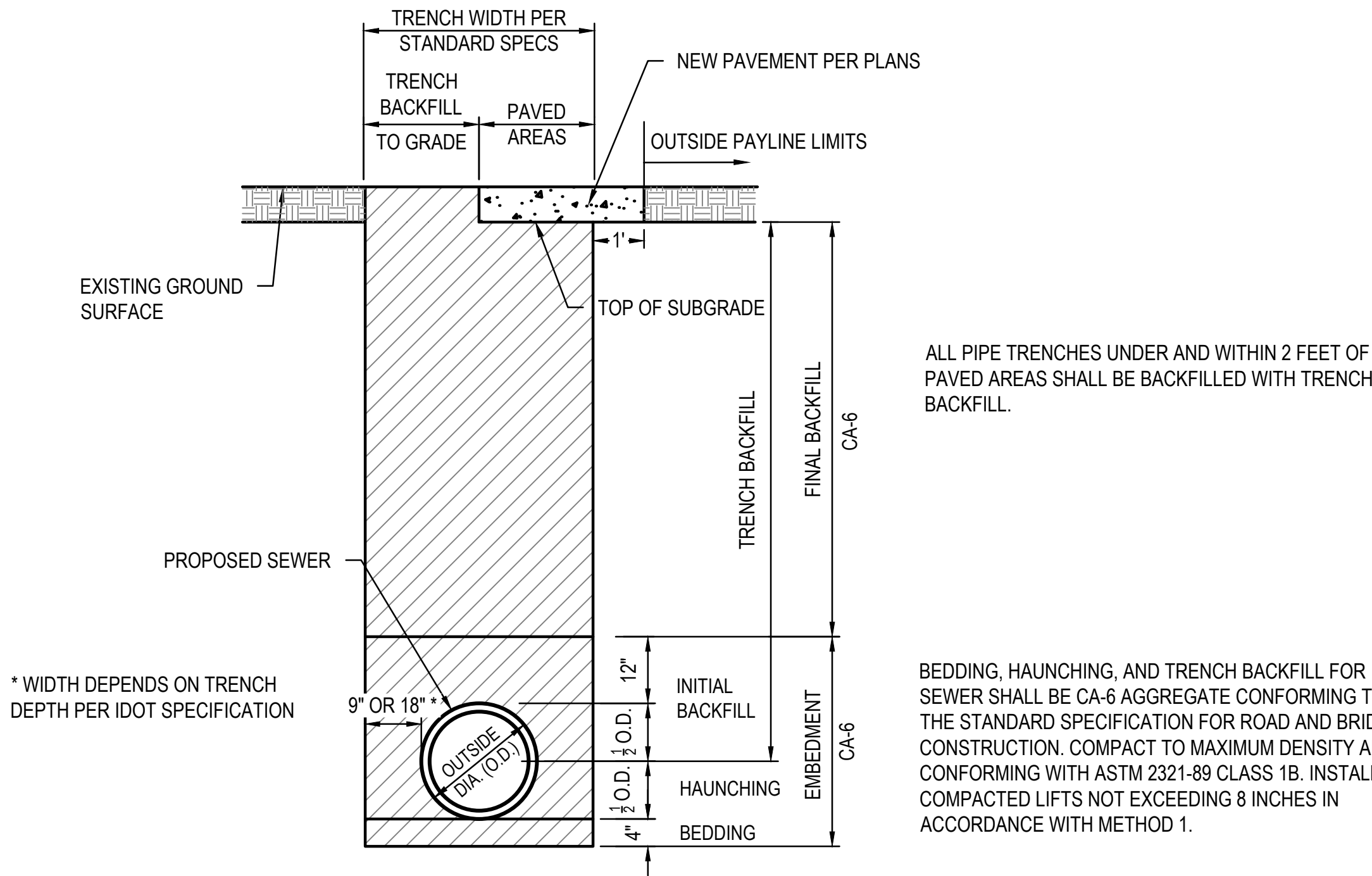
CITY OF TROY CLAY STREET SEWER - PHASE 2

SANITARY SEWER DETAILS

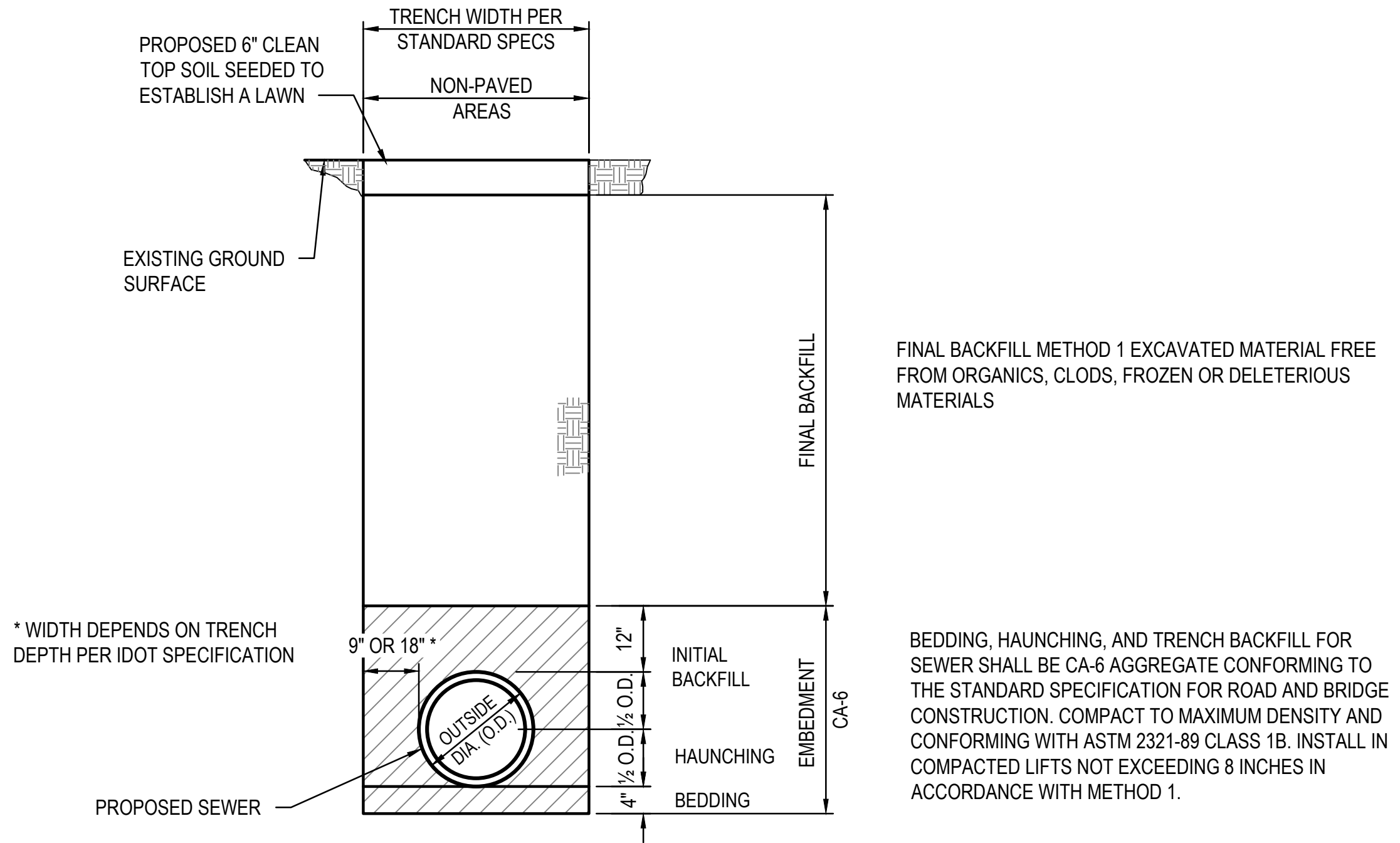
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	9
CLAY STREET SEWER - PHASE 2				

PLAN	SURVEYED	PLOTTED	BY	DATE
NOTE BOOK NO.	GRADES CHECKED	STRUCTURE NOTATIONS CHKD	TRENCH BACKFILL TO GRADE	PAVED AREAS

PROFILE	SURVEYED	PLOTTED	BY	DATE
NOTE BOOK NO.	GRADES CHECKED	STRUCTURE NOTATIONS CHKD	TRENCH BACKFILL TO GRADE	PAVED AREAS



1 SANITARY SEWER DETAIL IN PAVED AREAS
SCALE: NO SCALE



2 SANITARY SEWER DETAIL IN NON-PAVED AREAS
SCALE: NO SCALE

HMA MIXTURE REQUIREMENTS TABLE	
LOCATION:	C B - STA 52+42 TO 52+63 (CLAY ST) & CLAY ST @ STA 31+08 TO STA 35+24
MIXTURE USE:	INCIDENTAL SURFACING
THICKNESS:	2"
AC/PG:	PG 64-22
DESIGN AIR VOIDS:	4.0% @ Ndes = 70
MIX COMPOSITION:	IL-9.5
FRICTION AGG:	MIXTURE "C"
MATERIAL TRANSFER DEVICE (REQUIRED?):	NO

HMA MIXTURE REQUIREMENTS TABLE	
LOCATION:	C B - STA 50+00 TO 50+33 (BRYN ST) & STA 50+79 TO 52+32 (PLAYGROUND)
MIXTURE USE:	INCIDENTAL SURFACING
THICKNESS:	4"
AC/PG:	PG 64-22
DESIGN AIR VOIDS:	4.0% @ Ndes = 70
MIX COMPOSITION:	IL-9.5
FRICTION AGG:	MIXTURE "C"
MATERIAL TRANSFER DEVICE (REQUIRED?):	NO

FILE NAME = 15062.D06 - DETAILS.DWG

PROFILE	SURVEYED _____	BY _____	DATE _____
	PLOTTED _____		
	GRADES CHECKED _____		
	B.M. NOTED _____		
NOTE BOOK _____	STRUCTURE NOTATNS CHKD _____		
NO. _____			



1. CONTRACTOR TO REPLACE METER PITS, METERS, AND METER YOKES FOR ALL NEW WATER SERVICE LINES. OWNER TO FURNISH MATERIALS.
2. NEW WATER SERVICE LINES TO MATCH EXISTING SIZE.
3. FUTURE ROADWAY RECONSTRUCTION DICTATES NEW WATER MAIN DEPTH. TYPICAL WATER MAIN DEPTH SHALL BE 48" MINIMUM BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.

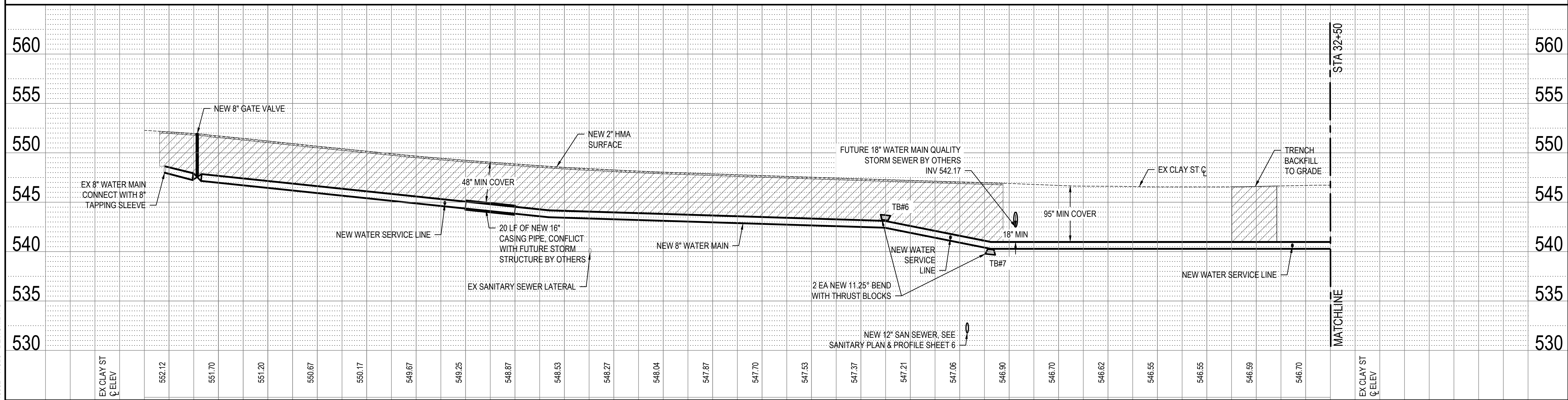
MATERIAL SYMBOLS

TRENCH BACKFILL

NEW HOT-MIX ASPHALT

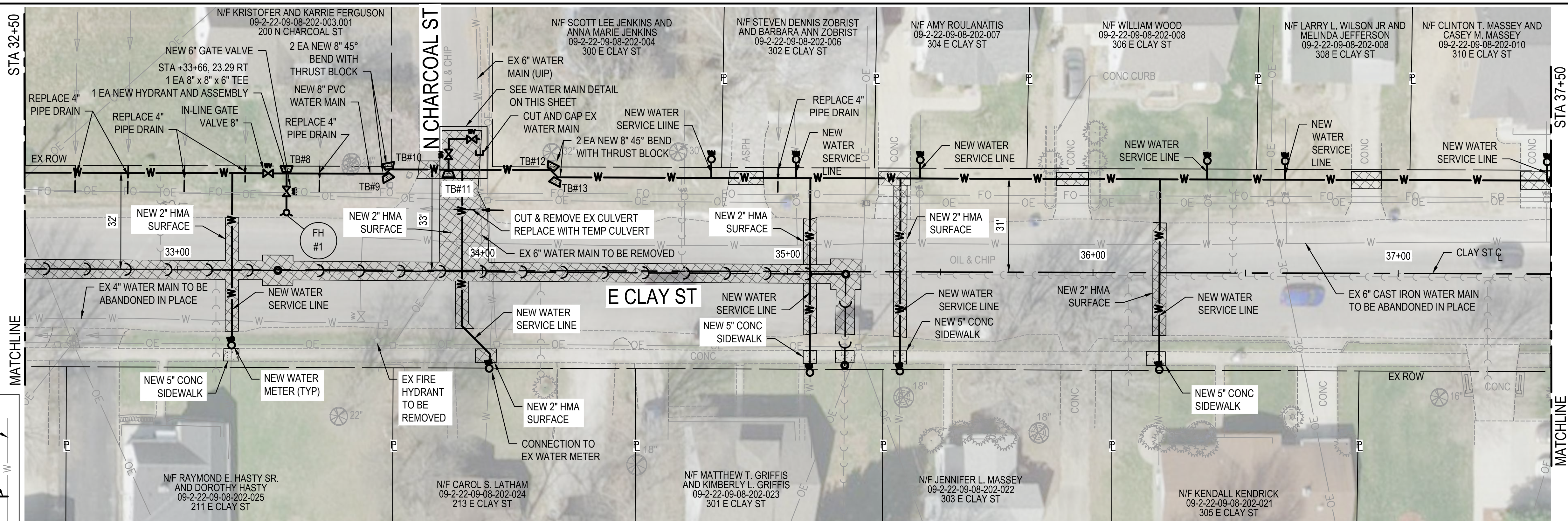
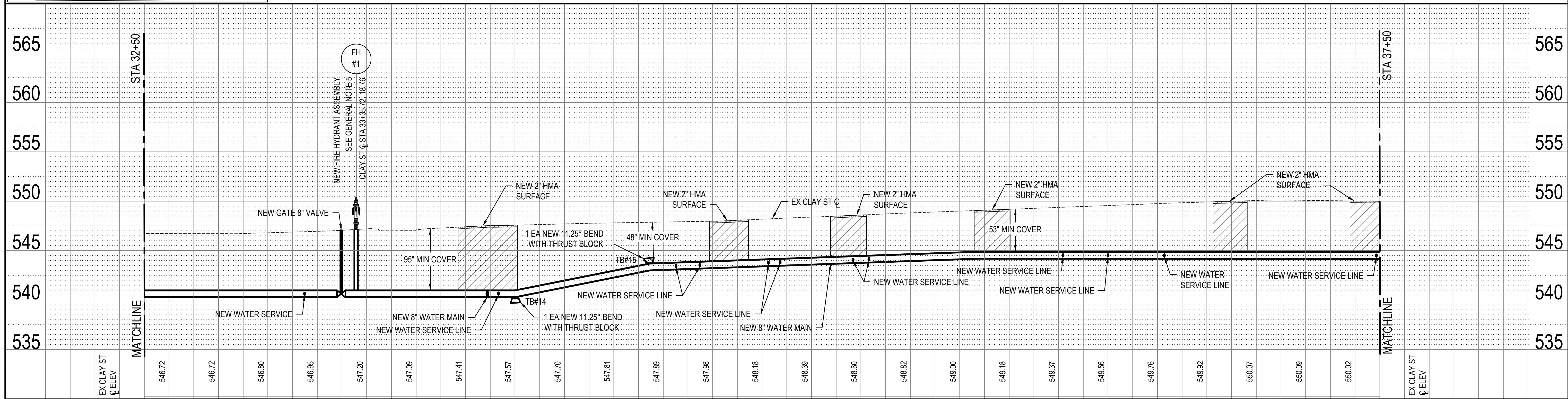
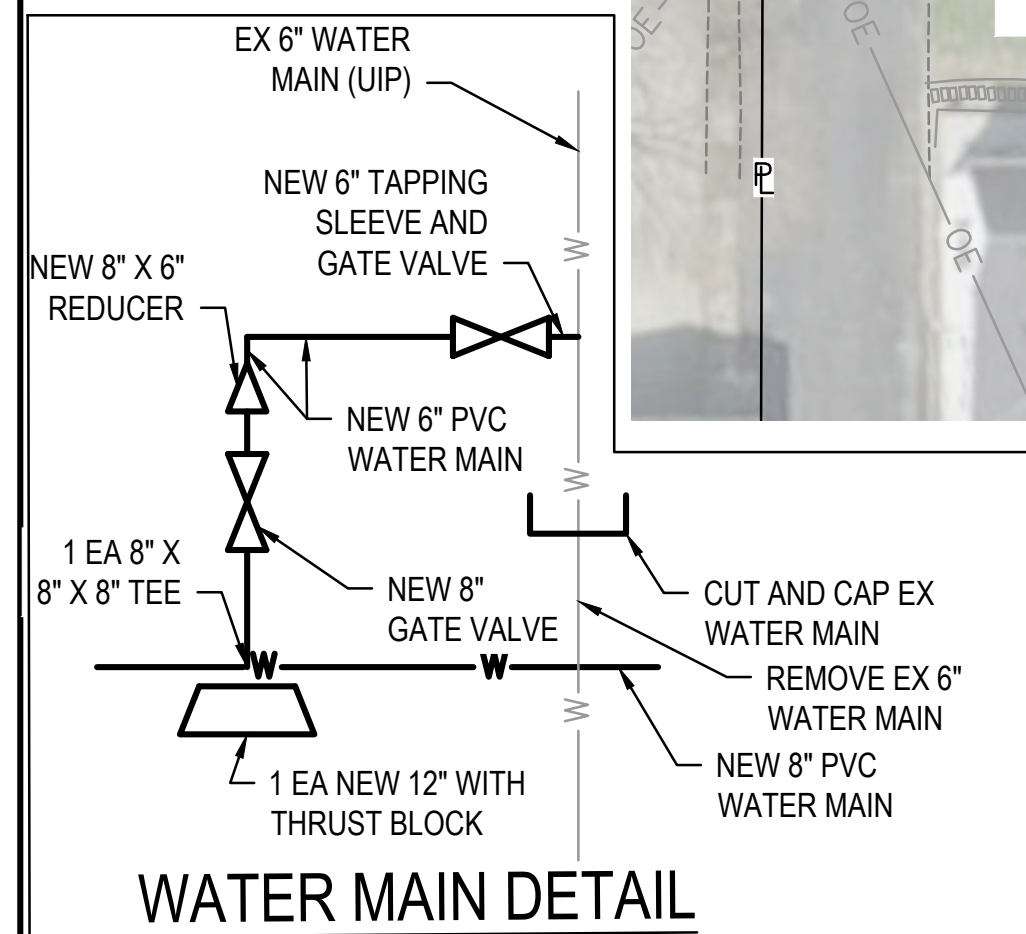
NEW CONCRETE

THRUST BLOCK SCHEDULE		
TB#	"A" (IN)	"B" (IN)
1	55	24
2	30	24
3	30	24
4	30	24
5	30	24
6	8	24
7	8	24



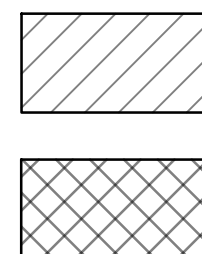
 OATES ASSOCIATES www.oatesassociates.com ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115	USER NAME = BEN MILLER	DESIGNED - SJM	REVISED -	CITY OF TROY CLAY STREET SEWER - PHASE 2	WATER MAIN - PLAN & PROFILE	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		DRAWN - BAM	REVISED -					MADISON	16	11	
	PLOT SCALE = 1" = 1'	CHECKED - TLC	REVISED -			CLAY STREET SEWER - PHASE 2					
	PLOT DATE = 2022-09-08	DATE - 2022-09-08	REVISED -								

PROFILE NOTE BOOK NO. _____	SURVEYED _____	BY _____ DATE _____
	PLOTTED _____	
	GRADES CHECKED _____	
	B.M. NOTED _____	
	STRUCTURE NOTATIONS CHK'D _____	

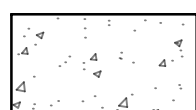


THRUST BLOCK SCHEDULE		
TB#	"A" (IN)	"B" (IN)
8	39	24
9	30	24
10	30	24
11	55	24
12	30	24
13	30	24
14	8	24
15	8	24

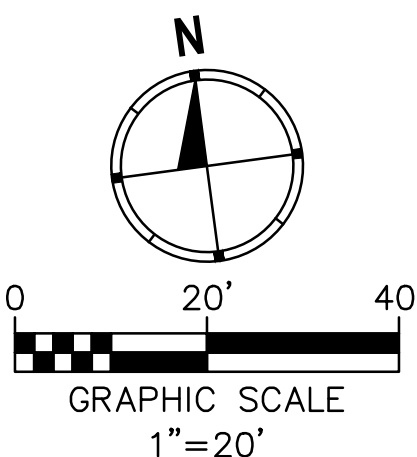
MATERIAL SYMBOLS



TRENCH BACKFILL



NEW CONCRETE



GENERAL NOTES

1. CONTRACTOR TO REPLACE METER PITS, METERS, AND METER YOKES FOR ALL NEW WATER SERVICE LINES. OWNER TO FURNISH MATERIALS.
2. NEW WATER SERVICE LINES TO MATCH EXISTING SIZE.
3. FUTURE ROADWAY RECONSTRUCTION DICTATES NEW WATER MAIN DEPTH. TYPICAL WATER MAIN DEPTH SHALL BE 48" MINIMUM BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.
4. CONTRACTOR TO MAINTAIN DRAINAGE FROM EX DOWNSPOUTS.
5. FIRE HYDRANT TO BE INSTALLED FOR FUTURE GROUND ELEVATION OF 547.08.

PLAN	DATE	BY
SURVEYED		
PLOTTED		
ALIGNED		
CHECKED		
NO.		

PROFILE	DATE	BY
SURVEYED		
PLOTTED		
GRADES CHECKED		
NO.		

FILE NAME = 15062 - W046 - DESIGN.DWG

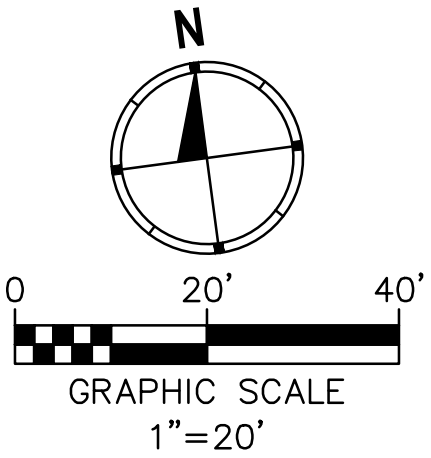
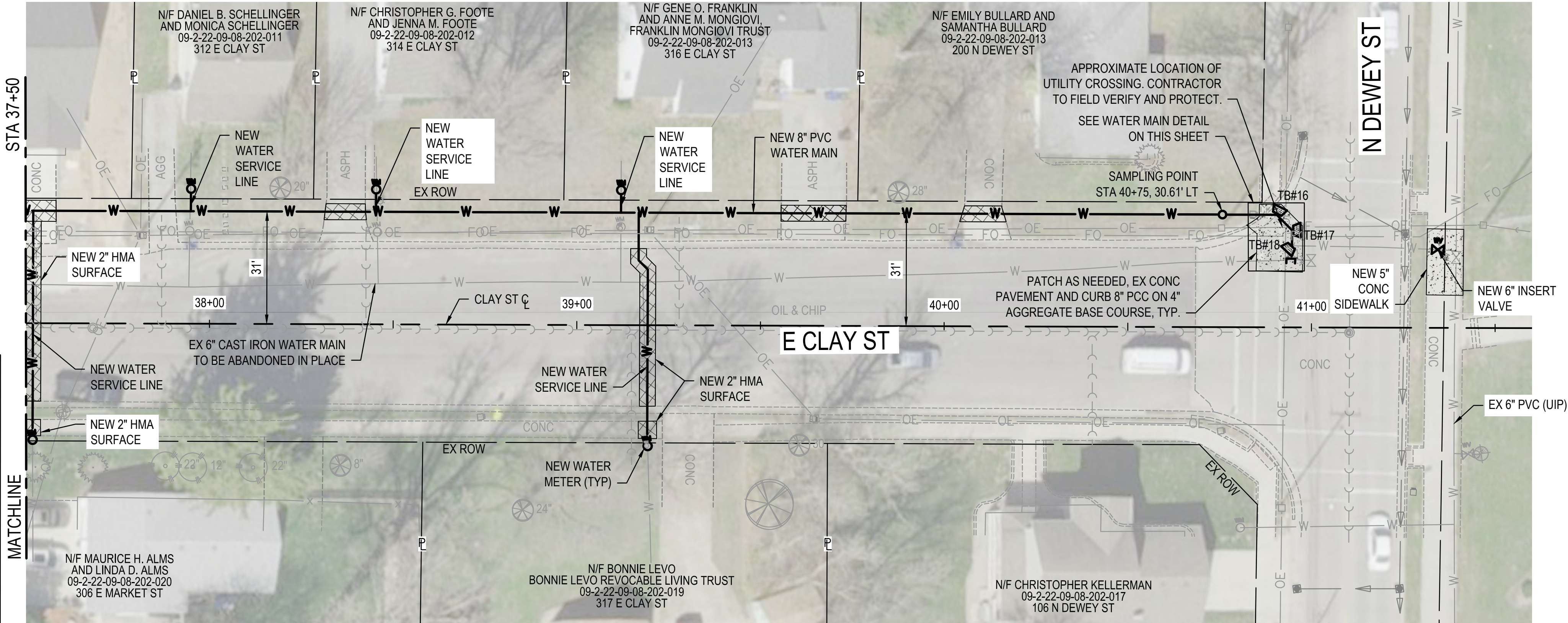
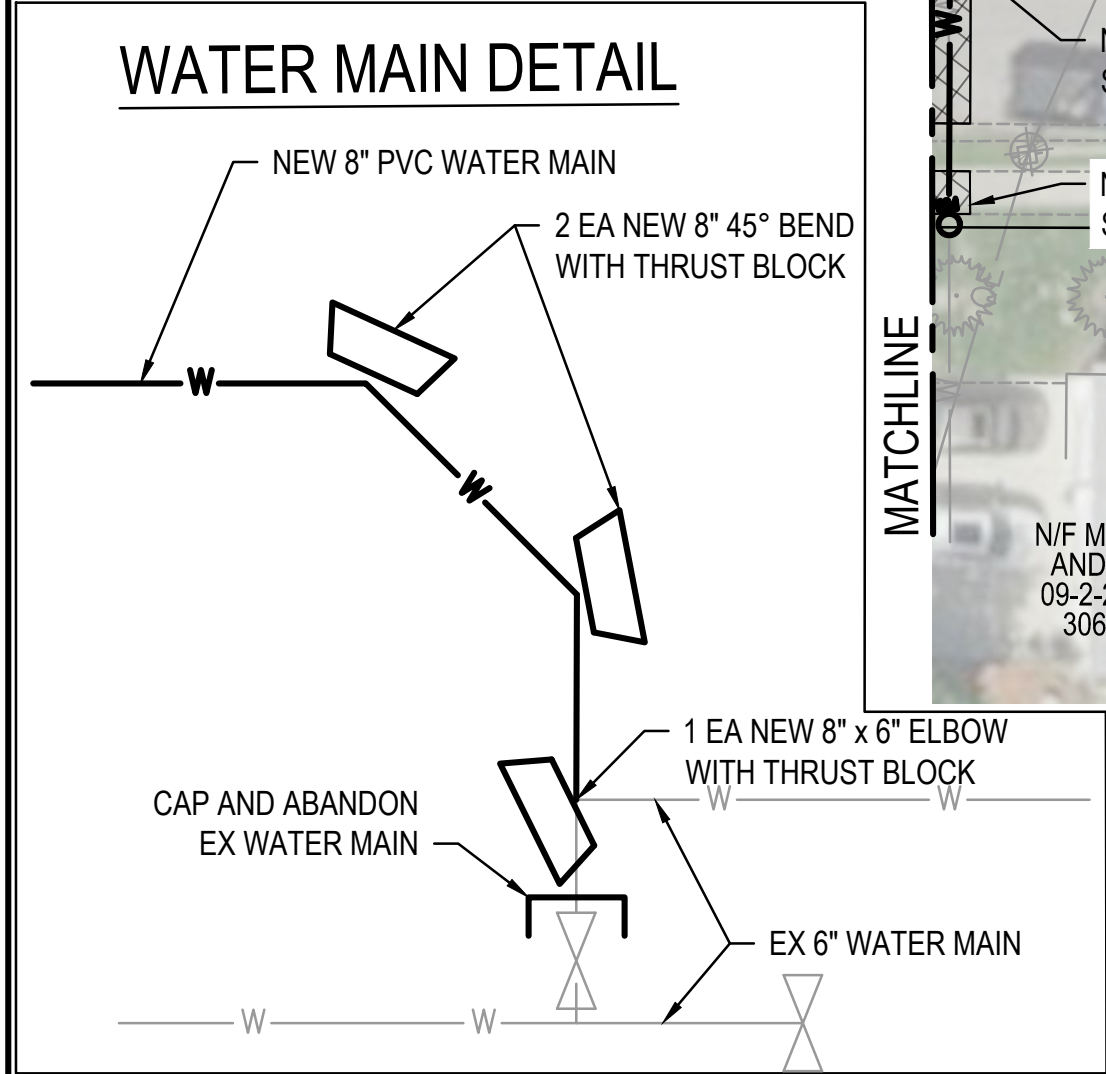
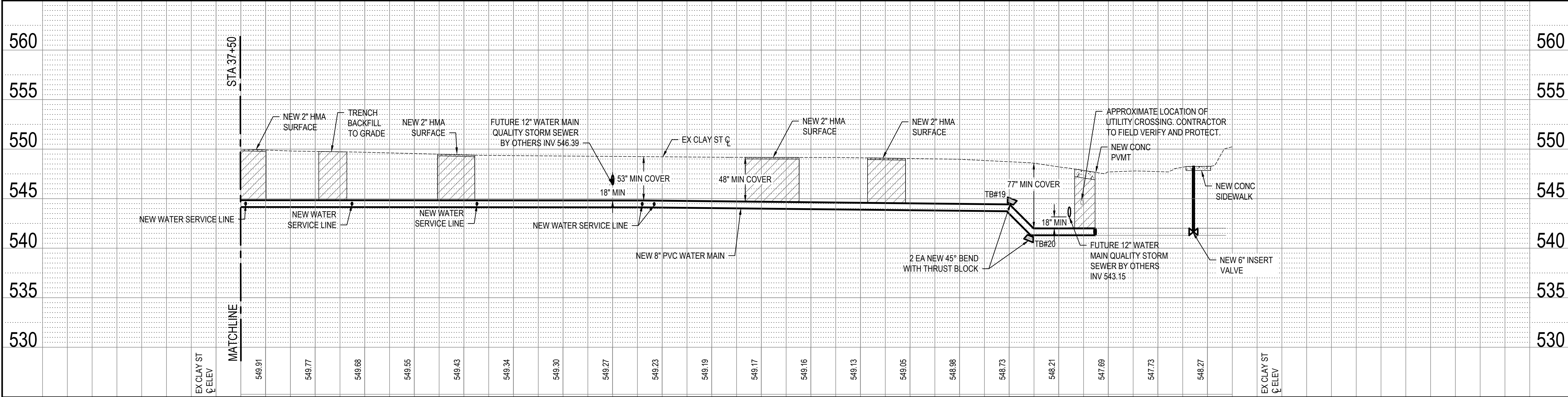


USER NAME =	BEN MILLER	DESIGNED -	SJM	REVISED -	
PLOT SCALE =	1" = 1'	DRAWN -	BAM	REVISED -	
PLOT DATE =	2022-09-08	CHECKED -	TLC	REVISED -	
		DATE -	2022-09-08	REVISED -	

CITY OF TROY
CLAY STREET SEWER - PHASE 2

WATER MAIN - PLAN & PROFILE

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	13
CLAY STREET SEWER - PHASE 2				



GENERAL NOTES

- CONTRACTOR TO REPLACE METER PITS, METERS, AND METER YOKES FOR ALL NEW WATER SERVICE LINES. OWNER TO FURNISH MATERIALS.
- NEW WATER SERVICE LINES TO MATCH EXISTING SIZE.
- FUTURE ROADWAY RECONSTRUCTION DICTATES NEW WATER MAIN DEPTH. TYPICAL WATER MAIN DEPTH SHALL BE 48" MINIMUM BELOW EXISTING GRADE UNLESS OTHERWISE NOTED.

MATERIAL SYMBOLS

	TRENCH BACKFILL
	NEW HOT-MIX ASPHALT
	NEW CONCRETE

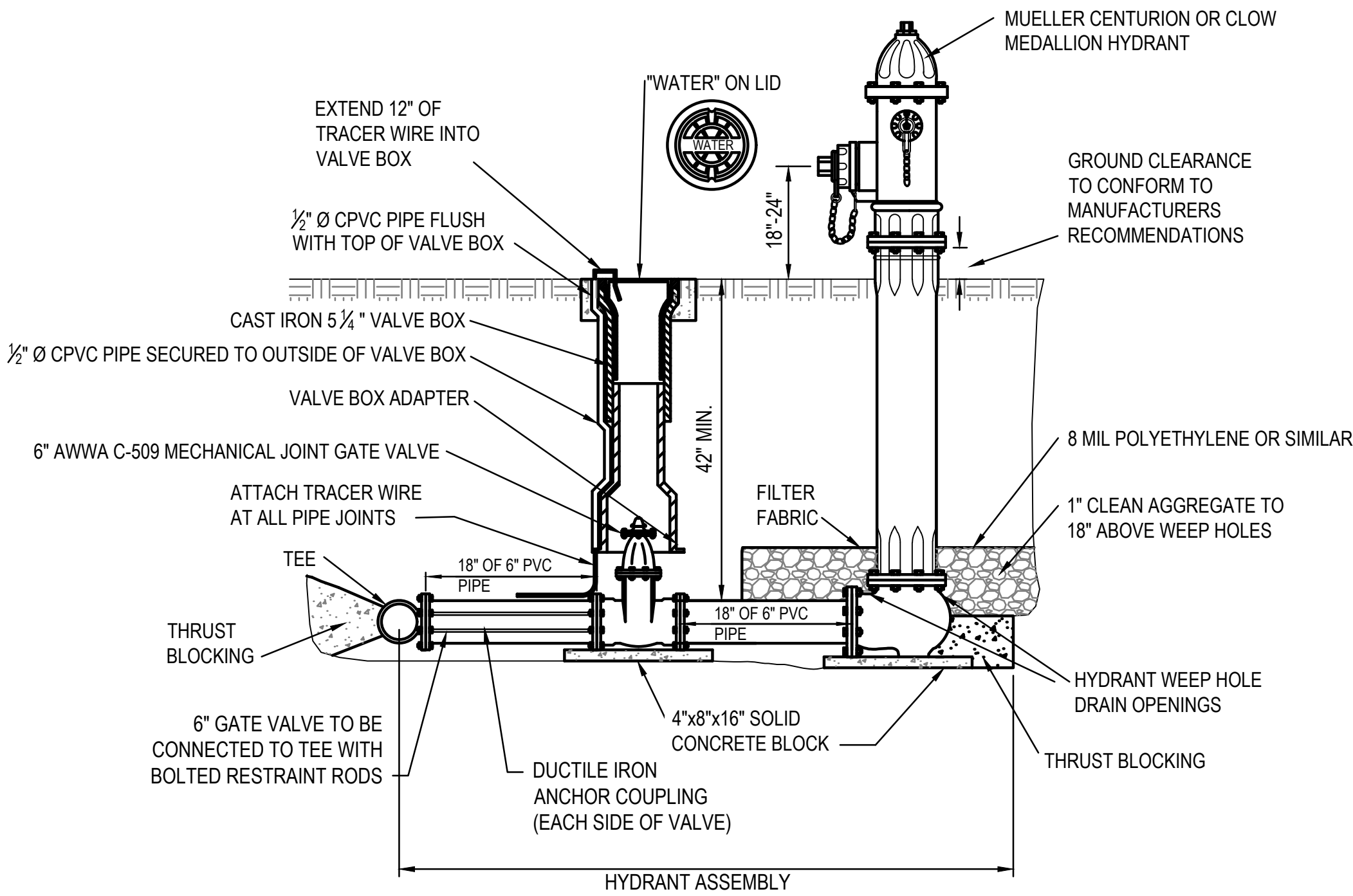
THRUST BLOCK SCHEDULE		
TB#	"A" (IN)	"B" (IN)
16	30	24
17	30	24
18	30	24
19	30	24
20	30	24

PLAN	SURVEYED PLOTTED AT NOTE BOOK NO.	BY	DATE

PROFILE	SURVEYED PLOTTED AT NOTE BOOK NO.	BY	DATE

WATER MAIN SPECIFICATIONS

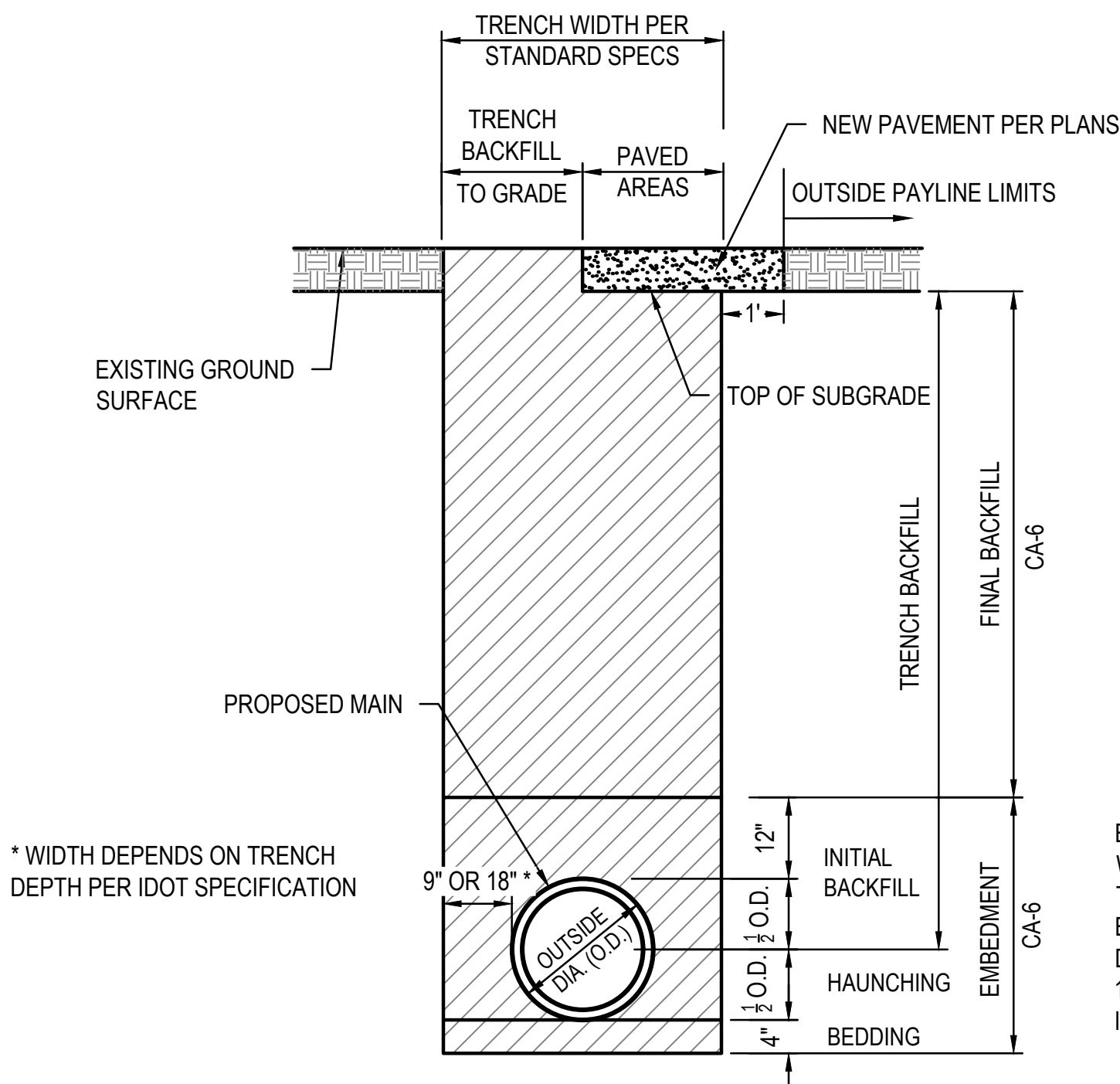
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS" 8TH EDITION, THESE PLANS, THE SPECIAL PROVISIONS, THE CONDITIONS OF THE I.E.P.A. PERMIT, AND THE REQUIREMENTS OF THE CITY OF TROY.
- ALL WATER MAIN SHALL COMPLY WITH THE SPECIFICATIONS AS OUTLINED IN SECTION 40 OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS" 8TH EDITION OR MOST CURRENT.
- PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE PLANS WITH THE ACTUAL DIMENSIONS AND CONDITIONS OF THE SITE. THE CONTRACTOR MUST VERIFY THE ENGINEER'S LINES AND GRADES. IF A DISCREPANCY OCCURS FROM WHAT IS SHOWN ON THE PLANS, STANDARD SPECIFICATIONS, AND/OR DETAILS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SECURE WRITTEN INSTRUCTION FROM THE ENGINEER PRIOR TO PROCEEDING WITH ANY PART OF THE AFFECTED WORK. FAILING TO DO SO WILL BE CONSIDERED AS THE CONTRACTOR HAVING PROCEEDED AT HIS OWN RISK AND EXPENSE.
- ALL WATER MAIN AND WATER SERVICE WORK SHALL BE COORDINATED WITH THE PUBLIC WORKS DIRECTOR OF THE CITY OF TROY.
- ALL WATER MAIN FITTINGS AND VALVES TO BE SECURED BY USE OF RESTRAINT JOIN GLANDS, EBBA, MODEL 2000 OR EQUAL.
- ALL HYDRANTS SHALL BE 5-1/4" BARREL, 3-WAY MUELLER CENTURION MODEL A-423 OR CLOW MEDALLION MODEL F-2545. A HYDRANT ASSEMBLY SHALL CONSIST OF A 6" RESILIENT WEDGE GATE VALVE ANCHORED TO THE HYDRANT BY USE OF AN ANCHORING COUPLING OR RESTRAINT JOINT GLANDS IN ACCORDANCE WITH AWWA AND IEPA GUIDELINES. USE OF RODS IS PROHIBITED. ASSEMBLY SHALL INCLUDE VALVE BOX.
- ALL HYDRANTS TO BE INSTALLED/ADJUSTED STRAIGHT (PLUMB) AND AT THE PROPER FINISHED GRADE PER MANUFACTURER'S SPECIFICATIONS.
- ALL VALVES SHALL BE LEFT OPEN, RESILIENT WEDGE GATE VALVES WITH INTEGRAL STAINLESS STEEL NUTS AND BOLTS (BONNET AND PACKING BOLTS).
- ALL TAPPING SLEEVES SHALL BE STAINLESS STEEL SLEEVES WITH DUCTILE IRON FLANGES, ROMAC INDUSTRIES MODEL SST OR EQUAL. FLANGE BOLTS AND NUTS TO BE 316 STAINLESS STEEL.
- ALL WATER MAINS SHALL BE INSTALLED WITH TRACER WIRE PLACED ADJACENT TO THE PIPE.
- ALL WATER MAIN FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT AWWA C153 COMPACT DUCTILE IRON.
- TRACER WIRE TO BE COPPERHEAD #12 CCS HIGH STRENGTH, SOFT DRAWN 380# OR EQUAL, SHALL BE INSTALLED ADJACENT TO ALL WATERLINES AND CONNECTED TO HYDRANTS AND VALVES. WIRE TO BE PLACED OUTSIDE OF VALVE BOX AND THREADED THRU A PENETRATION AT 8" BELOW TOP OF BOX. ALL SPLICES SHALL BE SOLDERED AND MADE WATERTIGHT BY USE OF SILICONE FILLED WIRE NUTS.
- ALL THRUST BLOCKS SHALL BE POURED CONCRETE AS SPECIFIED ON SHEET 15.
- DETAILED "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE CITY UPON COMPLETION OF THE PROJECT.
- ALL EXISTING FIRE HYDRANTS, METER LIDS, AND FRAMES SHALL REMAIN THE PROPERTY OF THE CITY.
- ALL WATER MAINS AND SERVICES SHALL BE INSTALLED BY A STATE OF ILLINOIS LICENSED PLUMBER.
- CONTRACTOR SHALL NOTIFY THE TROY WATER DEPARTMENT 48 HOURS PRIOR TO STARTING WORK.
- ALL WORK SHALL BE INSPECTED BY WATER DEPARTMENT STAFF PRIOR TO BACKFILLING.
- ALL WATER METER LIDS AND VALVE BOXES SHALL BE ADJUSTED TO THE PROPER FINISHED GRADE.
- CONTRACTOR SHALL WARRANT ALL WORK FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE CITY OF TROY.



1 FIRE HYDRANT & GATE VALVE INSTALLATION DETAIL
SCALE: NO SCALE

WATER SERVICE SPECIFICATIONS

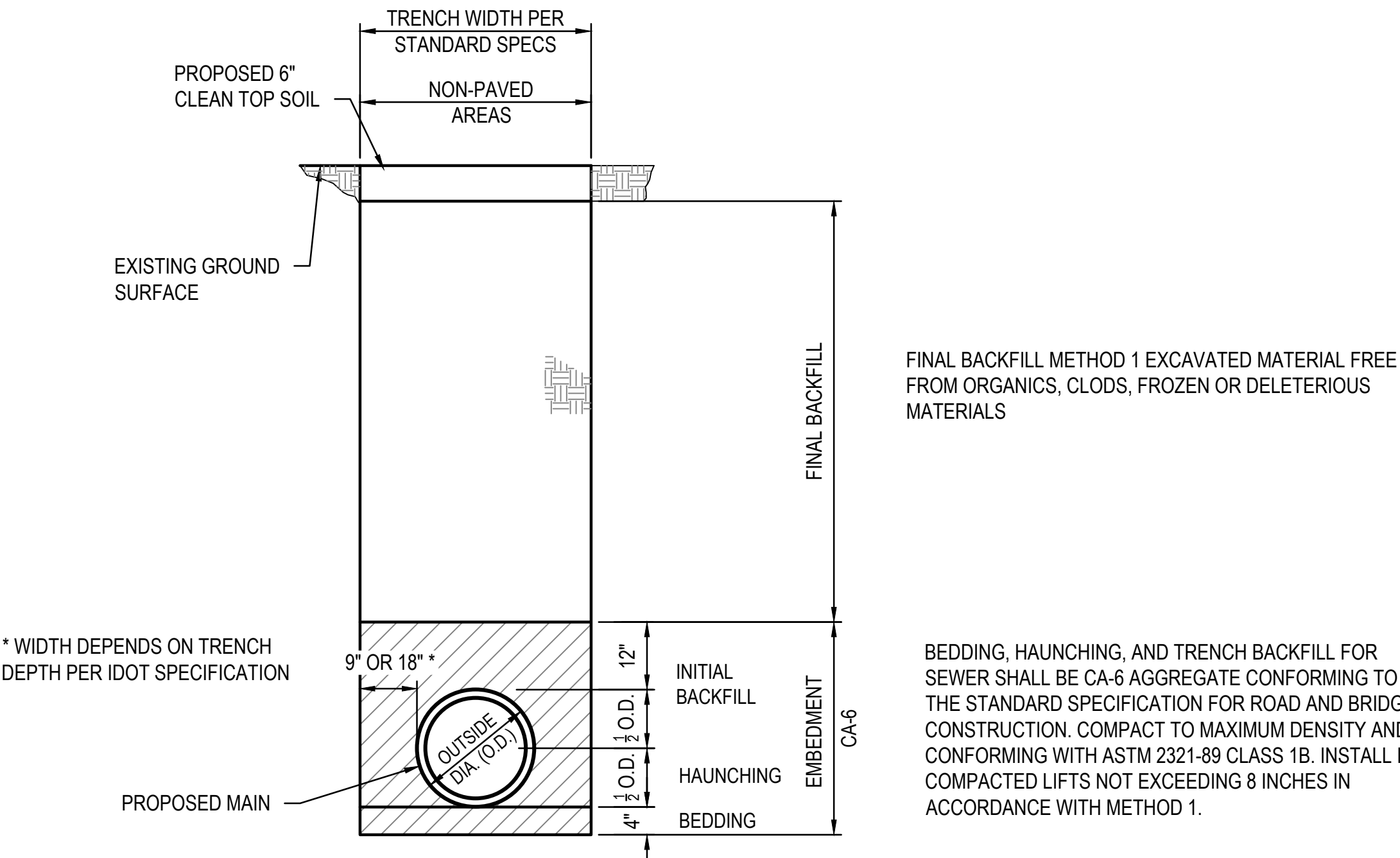
- WATER SERVICE LINES SHALL BE A MINIMUM 3/4-INCH INSIDE DIAMETER TYPE K COPPER OR ONE-INCH CTS SDR 9 250 PSI POLYETHYLENE TUBING, UNLESS OTHERWISE NOTED.



2 WATER MAIN INSTALLATION DETAIL IN PAVED AREAS
SCALE: NO SCALE

ALL PIPE TRENCHES UNDER AND WITHIN 2 FEET OF PAVED AREAS SHALL BE BACKFILLED WITH TRENCH BACKFILL.

BEDDING, HAUNCHING, AND TRENCH BACKFILL FOR WATER MAIN SHALL BE CA-6 AGGREGATE CONFORMING TO THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION. COMPACT TO MAXIMUM DENSITY AND CONFORMING WITH ASTM 2321-89 CLASS 1B. INSTALL IN COMPACTED LIFTS NOT EXCEEDING 8 INCHES IN ACCORDANCE WITH METHOD 1.



3 WATER MAIN INSTALLATION DETAIL IN NON-PAVED AREAS
SCALE: NO SCALE

FINAL BACKFILL METHOD 1 EXCAVATED MATERIAL FREE FROM ORGANICS, CLOUDS, FROZEN OR DELETERIOUS MATERIALS

BEDDING, HAUNCHING, AND TRENCH BACKFILL FOR SEWER SHALL BE CA-6 AGGREGATE CONFORMING TO THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION. COMPACT TO MAXIMUM DENSITY AND CONFORMING WITH ASTM 2321-89 CLASS 1B. INSTALL IN COMPACTED LIFTS NOT EXCEEDING 8 INCHES IN ACCORDANCE WITH METHOD 1.

FILE NAME = 15062 D06 - DETAILS.DWG

USER NAME = BEN MILLER	DESIGNED - SJM	REVISED -
PLOT SCALE = 1" = 1'	DRAWN - BAM	REVISED -
PLOT DATE = 2022-09-27	CHECKED - TLC	REVISED -
	DATE - 2022-09-27	REVISED -

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	14
CLAY STREET SEWER - PHASE 2				

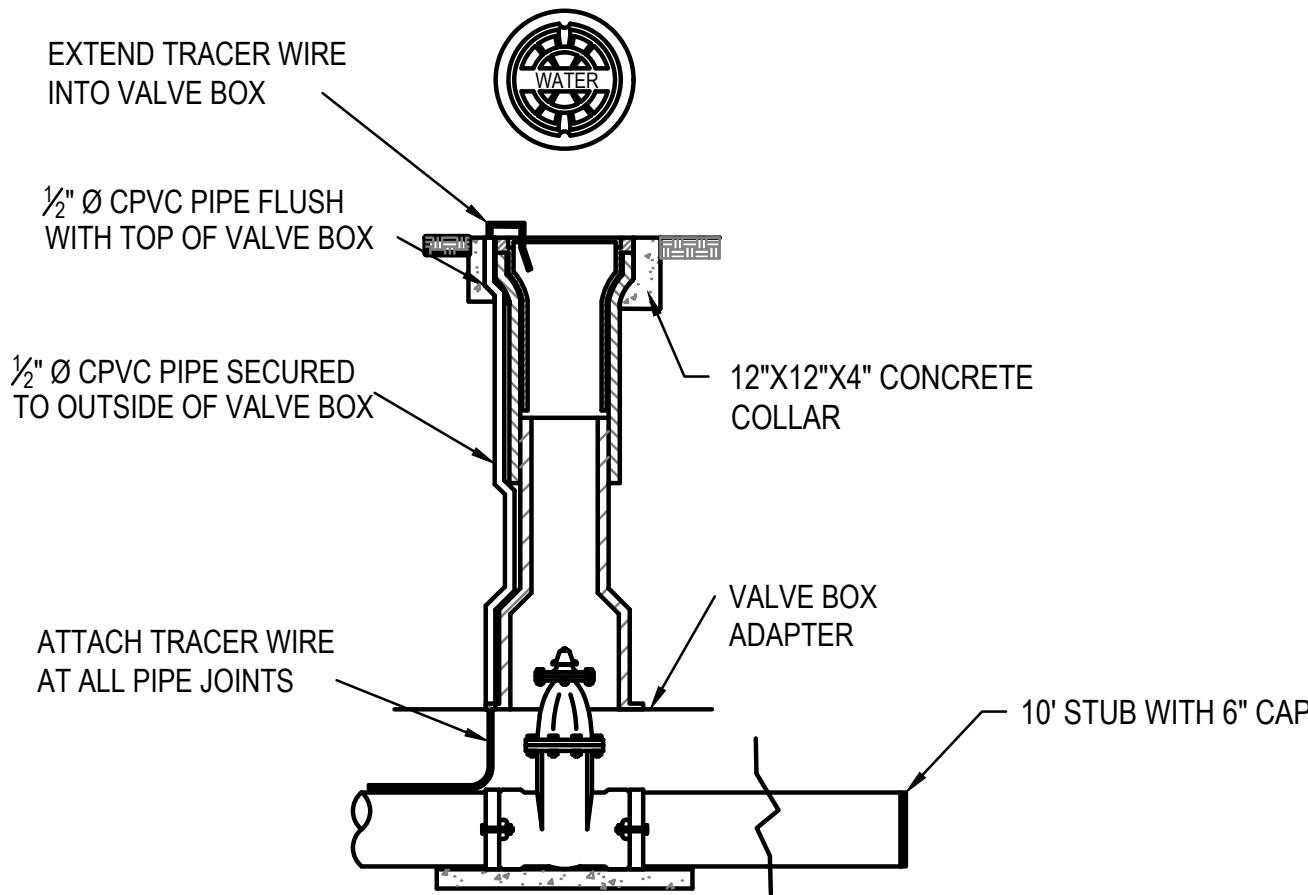
PLAN	NOTE BOOK NO. _____	SURVEYED PLOTTED ALIGNED CHECKED DATE CADD FILE NAME	BY	DATE

THRUST BLOCK SIZING TABLE & NOTES:

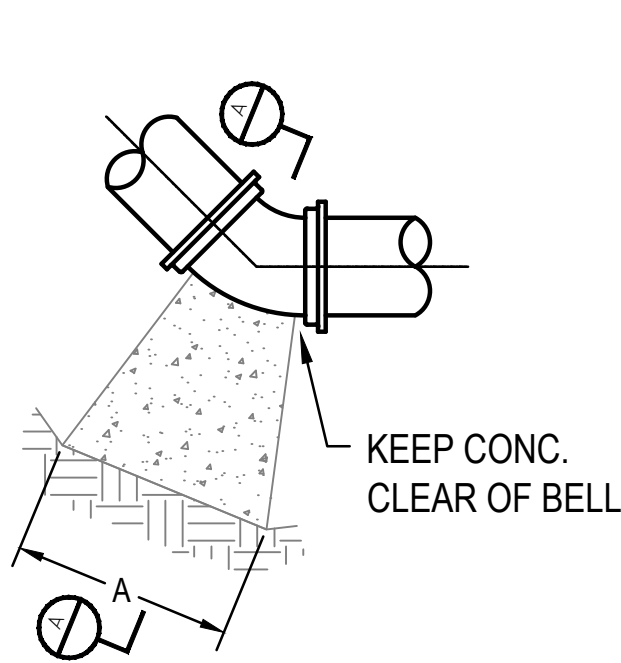
- COVER OVER TOP OF PIPE SHALL BE BELOW FROST LINE OR 30" MINIMUM, 72" MAXIMUM ACCORDING TO REGULATORY REQUIREMENTS. IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT, INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON SAID PLANS.
- THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF FITTING.
- NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES.
- THRUST BLOCKING MUST FIT IN EASEMENT, IN SOME CASES ADDITIONAL RESTRAINT MAY BE REQUIRED.
- BASED ON 200 PSI (150 PSI STATIC PRESSURE PLUS 50 PSI WATER HAMMER) AND 2000 PSF SOIL BEARING.
- POLYETHYLENE ENCASEMENT ON ALL D.I. PIPE AND FITTINGS.
- PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE.
- ALLOW SUFFICIENT CLEARANCE BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
- ALL ANCHOR BOLTS SHALL BE COR-BLUE, MINIMUM 1/2" DIAMETER. COAT EXPOSED ROD WITH ASPHALT CEMENT AFTER CONCRETE HAS SET.
- ALL M.J. AND FLG. FITTINGS TO RECEIVE THRUST BLOCKS SHALL HAVE THE FASTENER AREAS FELT WRAPPED AND TAPED PRIOR TO THE CONCRETE POUR TO ALLOW FUTURE ACCESS TO THE FASTENERS AT THE JOINTS.
- THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
- PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
- FOR UNSTABLE SOIL CONDITIONS, CHECK WITH ENGINEER FOR THRUST BLOCK DIMENSIONS.
- FOR MAIN SIZES GREATER THAN 16", SEE ENGINEER FOR THRUST BLOCK DIMENSIONS.

REQUIRED BEARING AREA ON UNDISTURBED SOIL AND TYPICAL DIMENSIONS															
PIPE SIZE	90 DEGREE BENDS			45 DEGREE BENDS			11.25 DEGREE BENDS			22.5 DEGREE BENDS			TEES/PLUGS		
	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"	AREA (sq ft)	"A"	"B"
4-6	5.3	43"	18"	2.9	23"	18"	0.7	6"	18"	1.5	12"	18"	3.7	30"	18"
8	9.2	55"	24"	5.0	30"	24"	1.3	8"	24"	2.5	15"	24"	6.4	39"	24"
10	13.8	66"	30"	7.5	36"	30"	1.9	9"	30"	3.8	18"	30"	9.7	46"	30"
12	19.4	78"	36"	10.6	42"	36"	2.7	11"	36"	5.3	21"	36"	13.8	55"	36"
14	26.0	89"	42"	14.0	48"	42"	3.6	12"	42"	7.2	25"	42"	18.5	63"	42"
16	33.7	101"	48"	18.3	55"	48"	4.7	14"	48"	9.4	28"	48"	23.9	72"	48"

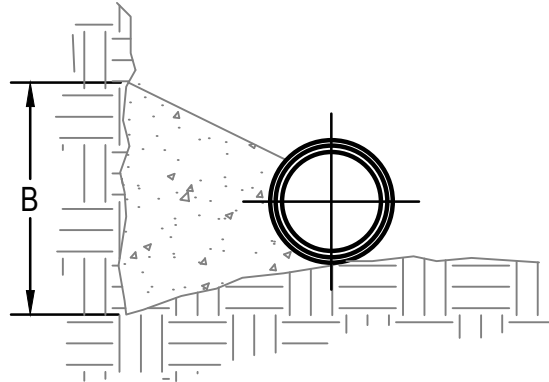
Area in square feet "A" and "B" in inches
Bearing table area is based on 200 psi maximum with soil bearing capacity of 2000 lbs/square foot.
For higher water pressures or lower soil pressures, consult Engineer for adjustments.
Bearing table area does not include a safety factor.
A safety factor and additional bearing area may be required as directed by the Engineer.



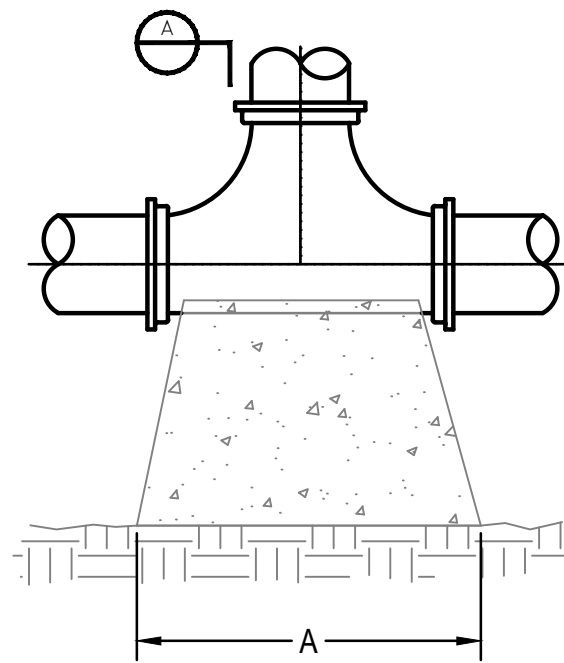
2 GATE VALVE INSTALLATION DETAIL
SCALE: NO SCALE



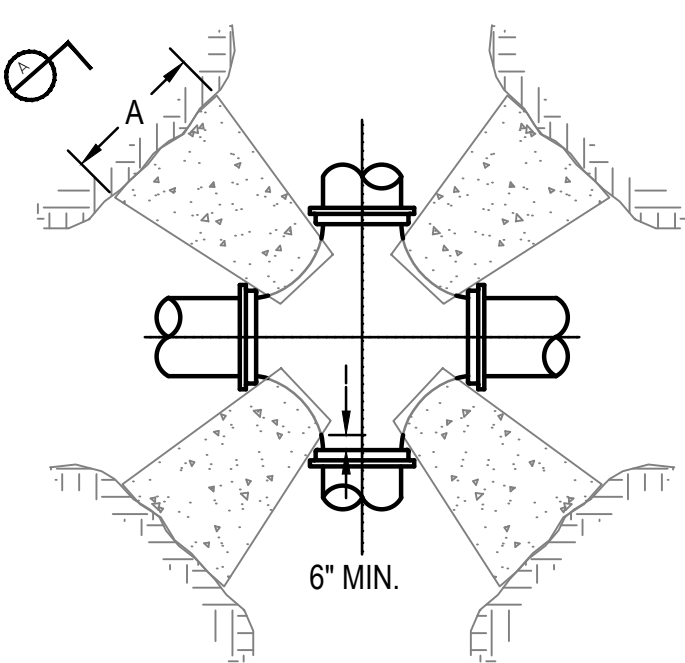
BENDS



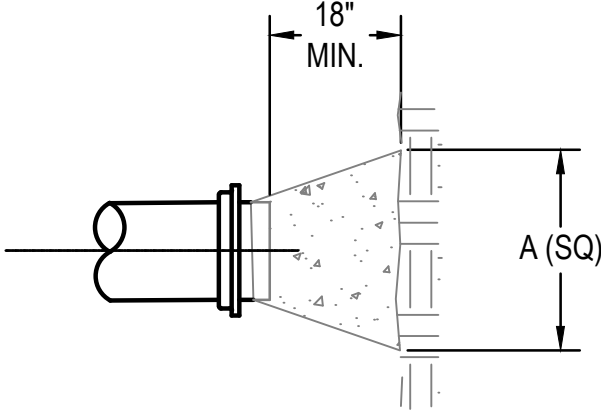
SECTION - A



TEES



CROSSES



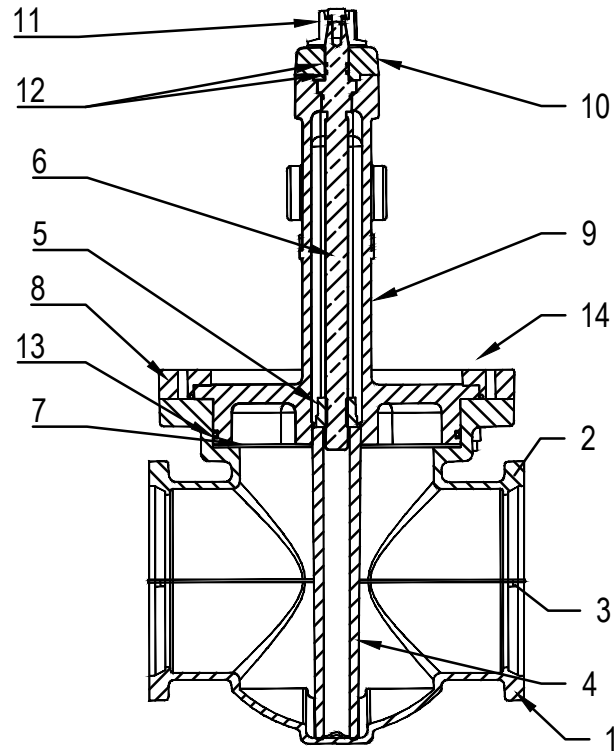
PLUGS

1 BENDS, TEES & CROSSES
SCALE: NO SCALE

FILE NAME = 15062.D06 - DETAILS.DWG

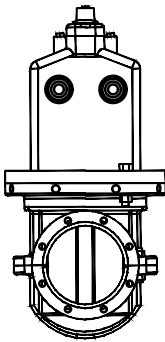
PLAN	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATING CHKD		
NOTE BOOK	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATING CHKD		
NOTE BOOK	NO.		



NO.	PART	MATERIAL
1.	VALVE BODY BOTTOM	DUCTILE IRON ASTM A536 65-45-12
2.	VALVE BODY TOP	DUCTILE IRON ASTM A536 65-45-12
3.	VALVE BODY GASKET	EPDM RUBBER
4.	RESILIENT WEDGE GATE	DUCTILE IRON ASTM A536 65-45-12
5.	STEM NUT	BRONZE ASTM B584
6.	VALVE STEM	BRONZE ASTM B584
7.	BONNET GASKET	EPDM RUBBER
8.	BONNET RETAINER RING	DUCTILE IRON ASTM A536 65-45-12
9.	BONNET	DUCTILE IRON ASTM A536 65-45-12
10.	STEM GLAND	DUCTILE IRON ASTM A536 65-45-12
11.	2" OPERATOR NUT	DUCTILE IRON ASTM A536 65-45-12
12.	STEM O-RINGS	EPDM RUBBER
13.	BONNET O-RING	EPDM RUBBER
14.	BONNET BOLTS/NUTS/WASHERS	ZINC PLATED STEEL 304SS (OPTIONAL)
	VALVE BODY BOLTS/NUTS/WASHERS	ZINC PLATED STEEL 304SS (OPTIONAL)
	STEM GLAND BOLTS	ZINC PLATED STEEL 304SS (OPTIONAL)
		*EPDM ENCAPSULATED ASTM D429

NOTE: DIMENSIONS FOR INSERT VALVES ON ALL A/C PIPES SHALL BE CONSIDERED "OVERSIZED" IN THE BASE BID. ALL NON-A/C PIPES SHALL BE CONSIDERED DUCTILE IRON IN THE BASE BID.



1 INSERT VALVE DETAIL
SCALE: NO SCALE

THE INSERT VALVE SHALL CONFORM TO THE FOLLOWING:

THE DUCTILE IRON 250 P.S.I.G. INSERT VALVE SHALL BE A RESILIENT WEDGE DESIGNED FOR USE IN POTABLE WATER, RAW WATER, RECLAIMED WATER, SEWAGE, IRRIGATION AND BACKFLOW CONTROL SYSTEMS. THE DESIGN WILL ALLOW THE VALVE TO BE INSTALLED INTO AN EXISTING PRESSURIZED PIPELINE WHILE MAINTAINING CONSTANT PRESSURE AND SERVICE AS USUAL. AFTER CLOSING THE WEDGE AND ADEQUATELY RESTRAINING THE VALVE BODY THE DOWNSTREAM PIPE CAN BE COMPLETELY REMOVED AND REPLACED (ALLOWING FOR UPSIZING OF THE PIPE IF NECESSARY). THE HOST PIPE SHALL NOT BE A PERMANENT COMPONENT OF THE INSERT VALVE.

CERTIFIED INSTALLER:

- INSERT VALVE MUST BE INSTALLED BY AUTHORIZED AND TRAINED COMPANIES. ALL SUCH INSTALLERS HAVE RECEIVED WRITTEN CERTIFICATES AND SHALL PROVIDE DOCUMENTATION VALIDATING THEIR CERTIFICATION. THIS WILL ENSURE HIGH QUALITY INSTALLATION AND GUARANTEE THE WARRANTY OF THE PRODUCT.

DUCTILE IRON CONSTRUCTION:

- THE DUCTILE IRON BODY, BONNET AND WEDGE PROVIDE STRENGTH AND A PRESSURE RATING THAT MEETS OR EXCEEDS THE REQUIREMENTS OF AWWA C515. INSERT VALVE SHALL BE DUCTILE IRON CONSTRUCTION MEETING ASTM A536 GRADE 65-45-12. HEAVY-DUTY DUCTILE IRON CONSTRUCTION FOR MAXIMUM TOUGHNESS AND STRENGTH.
- CHEMICAL AND MODULARITY TESTS SHALL BE PERFORMED AS RECOMMENDED BY THE DUCTILE IRON SOCIETY, ON A PER LADLE BASIS. TESTING FOR TENSILE, YIELD AND ELONGATION SHALL BE DONE IN ACCORDANCE WITH ASTM E8.
- SIZES 12" AND SMALLER MUST BE CAPABLE OF WORKING ON CAST/GREY IRON OR DUCTILE IRON CLASS A, B, C AND D, IPS PVC, C900 AND C909 PVC, STEEL, AC PIPE DIAMETERS WITHOUT CHANGING EITHER TOP OR BOTTOM PORTION OF SPLIT VALVE BODY.
- 250 PSIG MAXIMUM WORKING PRESSURE. THE PRESSURE RATING MARKINGS MUST BE CAST INTO THE BODY OF THE INSERT VALVE.
- AFTER THE INSTALLATION OF THE INSERT VALVE BODY ON TO THE EXISTING PIPE A PRESSURE TEST OF 1.1 TIMES THAT OF THE CONTENTS SHALL SUSTAINED FOR 15 MINUTES. ONCE THE PRESSURE TEST IS AFFECTIVELY ACHIEVED THE INSERT VALVE BODY MUST NOT BE MOVED IN ACCORDANCE WITH AWWA STANDARDS. IF THE INSERT VALVE IS MOVED THE PRESSURE TEST MUST BE COMPLETED AGAIN. THE INSERT VALVE MUST NOT BE MOVED OR REPOSITIONED ONCE THE PRESSURE TEST IS ACHIEVED.

RESILIENT WEDGE GATE ASSEMBLY:

- THE CONSTRUCTION OF THE RESILIENT WEDGE SHALL COMPLY WITH AWWA C509 REQUIREMENTS.
- THE DUCTILE IRON WEDGE SHALL BE FULLY ENCAPSULATED WITH EPDM RUBBER BY A HIGH PRESSURE AND HIGH TEMPERATURE COMPRESSION OR INJECTION MOLD PROCESS. THIS WILL ASSURE THE DUCTILE GATE IS FULLY COATED WITH MOLDED RUBBER - NO EXPOSED IRON.
- THE RESILIENT WEDGE SHALL SEAT ON THE VALVE BODY AND NOT THE PIPE TO OBTAIN THE OPTIMUM SEATING AND FLOW CONTROL RESULTS. THE RESILIENT WEDGE SHALL BE TOTALLY INDEPENDENT OF THE CARRIER PIPE.
- THE RESILIENT WEDGE SHALL NOT COME INTO CONTACT WITH THE CARRIER PIPE OR DEPEND ON THE CARRIER PIPE TO CREATE A SEAL. ABRASION RESULTS THUS SHORTING THE LIFE AND QUALITY OF THE SHUT DOWN IF THE WEDGE CONTACTS THE PIPE.
- PRESSURE EQUALIZATION ON THE DOWN OR UPSTREAM SIDE OF THE CLOSED WEDGE SHALL NOT BE NECESSARY TO OPEN THE VALVE.
- THE WEDGE SHALL BE SYMMETRICAL AND SEAL EQUALLY WELL WITH FLOW IN EITHER DIRECTION.
- THE RESILIENT WEDGE MUST RIDE INSIDE THE BODY CHANNELS TO MAINTAIN WEDGE ALIGNMENT THROUGHOUT ITS TRAVEL TO ACHIEVE MAXIMUM FLUID CONTROL REGARDLESS OF HIGH OR LOW FLOW PRESSURE OR VELOCITY.
- OVERSIZED FLOW WAY. UNOBSTRUCTED TO PROVIDE OPTIMUM FLOW.

FUSION-BONDED EPOXY:

- THE INSERT VALVE IS FULLY EPOXY COATED ON THE INTERIOR AND THE EXTERIOR. THE FUSION-BONDED COATING IS APPLIED PRIOR TO ASSEMBLY SO THAT EVEN THE BOLT HOLES AND BODY-TO-BONNET FLANGE SURFACES ARE FULLY EPOXY COATED.
- VALVE SHALL BE COATED WITH A MINIMUM OF 10 MILS EPOXY IN COMPLIANCE WITH AWWA C550 AND CERTIFIED TO ANSI/NSF-61.

GASKETS AND TRIPLE O-RING STEM SEALS:

- THIS INSERT VALVE FEATURES TRIPLE O-RING STEM SEALS. TWO O-RINGS ARE LOCATED ABOVE, AND ONE O-RING IS LOCATED BELOW THE THRUST COLLAR.
- THE LOWER TWO O-RINGS PROVIDE A PERMANENTLY SEALED LUBRICATION CHAMBER THAT WILL MAKE THE VALVE EASIER TO OPERATE OVER A LONGER PERIOD OF TIME. THE UPPER O-RING ENSURES THAT SAND, DIRT OR GRIT CANNOT ENTER THE VALVE TO CAUSE DAMAGE TO THE LOWER O-RINGS. THIS IS ESPECIALLY IMPORTANT FOR BURIED AND SEWAGE SERVICE APPLICATIONS.
- SIDE FLANGE SEALS SHALL BE OF THE O-RING TYPE OF EITHER ROUND, OVAL, OR RECTANGULAR CROSS- SECTIONAL SHAPE.

VALVE STEM & THRUST WASHERS:

- THE GATE VALVE STEM AND WEDGE NUT SHALL BE COPPER ALLOY IN ACCORDANCE WITH SECTION 4.4.5.1 OF THE AWWA C515 STANDARD.
- THE NRS STEM MUST HAVE AN INTEGRAL THRUST COLLAR IN ACCORDANCE WITH SECTION 4.4.5.3 OF AWWA C515 STANDARD. TWO-PIECE STEM COLLARS ARE NOT ACCEPTABLE. THE WEDGE NUT SHALL BE INDEPENDENT OF THE WEDGE AND HELD IN PLACE ON THREE SIDES BY THE WEDGE TO PREVENT POSSIBLE MISALIGNMENT.
- TWO THRUST WASHERS ARE USED. ONE IS LOCATED ABOVE, AND ONE IS LOCATED BELOW THE STEM THRUST COLLAR. TWO THRUST WASHERS ENSURE EASY OPERATION AT ALL TIMES.
- NRS WITH AWWA STANDARD TURNS.
- OPERATED BY 2" SQUARE WRENCH NUT ACCORDING TO ASTM A126 CL.B - OPEN LEFT OR OPEN RIGHT

AMERICAN MADE QUALITY:

- ALL PARTS AND COMPONENTS TO BE EXCLUSIVELY AND COMPLETELY ASSEMBLED, MANUFACTURED, MACHINED AND COATED IN THE USA.
- ALL PHYSICAL AND CHEMICAL TEST RESULTS SHALL BE RECORDED SUCH THAT THEY CAN BE ACCESSED VIA THE IDENTIFICATION NUMBER ON THE CASTING. THESE MATERIAL TRACEABILITY RECORDS (MTR'S) ARE TO BE MADE AVAILABLE, IN HARD COPY, TO THE PURCHASER THAT REQUESTS SUCH DOCUMENTATION..
- ALL COMPONENTS SHALL BE MANUFACTURED AND ASSEMBLED IN THE UNITED STATES. THE PURCHASER SHALL, WITH REASONABLE NOTICE, HAVE THE RIGHT TO PLANT VISITATION AT HIS/HER EXPENSE.

HARDWARE:

- BOLTING MATERIALS SHALL DEVELOP THE PHYSICAL STRENGTH REQUIREMENTS OF ASTM A307 WITH DIMENSIONS CONFORMING TO ANSI B18.2.1.

EXTENDED LIFE VALUE:

- THE STUFFING BOX, OPERATING STEM AND RESILIENT WEDGE (COMPLETE BONNET AND ALL MOVING PARTS) SHALL BE REMOVABLE, REPAIRABLE AND OR REPLACEABLE UNDER PRESSURE. IN OTHER WORDS, EVEN WHILE THE VALVE IS FULLY PRESSURIZED IN THE SYSTEM ALL MOVING COMPONENTS CAN BE REMOVED UNDER PRESSURE. IN THE EVENT THE VALVE STEM IS BROKEN OR DAMAGED THE BONNET CAN BE REMOVED UNDER PRESSURE.
- INTERNAL PRESSURE EQUALIZATION SYSTEM ASSURES THE SAFE ENTRY AND REMOVAL OF THE VALVE BONNET DURING INITIAL INSTALLATION AS WELL AS FUTURE MAINTENANCE. THIS ALLEVIATES THE NEED FOR ADDITIONAL PIPE PENETRATION TAPS OR FOREIGN METHODS (I.E. COMPRESSED AIR OR AUXILIARY WATER SOURCE) TO EQUALIZE PRESSURE.

SPLIT RESTRAINT DEVICES:

- SHALL CONSIST OF MULTIPLE GRIPPING WEDGES INCORPORATED INTO A FOLLOWER GLAND MEETING THE APPLICABLE REQUIREMENTS OF ANSI/AWWA C110/A21.10.
- THE DEVICES SHALL HAVE A WORKING PRESSURE RATING OF 350 PSI FOR 4-12 INCH. RATINGS ARE FOR WATER PRESSURE AND MUST INCLUDE A MINIMUM SAFETY FACTOR OF 2 TO 1 IN ALL SIZES.
- CHEMICAL AND MODULARITY TESTS SHALL BE PERFORMED AS RECOMMENDED BY THE DUCTILE IRON SOCIETY, ON A PER LADLE BASIS. THREE TEST BARS SHALL BE INCREMENTALLY POURED PER PRODUCTION SHIFT AS PER U.L. SPECIFICATIONS AND ASTM A536. TESTING FOR TENSILE, YIELD AND ELONGATION SHALL BE DONE IN ACCORDANCE WITH ASTM E8.
- GLAND BODY WEDGES AND WEDGE ACTUATING COMPONENTS SHALL BE CAST FROM GRADE 65-45-12 DUCTILE IRON MATERIAL IN ACCORDANCE WITH ASTM A536.
- MECHANICAL JOINT RESTRAINT SHALL REQUIRE CONVENTIONAL TOOLS AND INSTALLATION PROCEDURES PER AWWA C600, WHILE RETAINING FULL MECHANICAL JOINT DEFLECTION DURING ASSEMBLY AS WELL AS ALLOWING JOINT DEFLECTION AFTER ASSEMBLY.
- PROPER ACTUATION OF THE GRIPPING WEDGES SHALL BE ENSURED WITH TORQUE LIMITING TWIST OFF NUTS. SET SCREW PRESSURE POINT TYPE HARDWARE SHALL NOT BE USED.

FILE NAME = 15062 D06 - DETAILS.DWG

USER NAME = BEN MILLER	DESIGNED - SJM	REVISED -
	DRAWN - BAM	REVISED -
PLOT SCALE = 1" = 1'	CHECKED - TLC	REVISED -
PLOT DATE = 2022-09-27	DATE - 2022-09-27	REVISED -

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		MADISON	16	16
CLAY STREET SEWER - PHASE 2				