

**Rock River Water Reclamation District
Rockford, Illinois**

Bidding Requirements and Contract Forms

for

**N. 02nd Street
Sanitary Sewer Extension – 13000 Block
Special Assessment No. 133
2019**

Bidding Requirements and Contract Forms

for

N. 02nd Street Sanitary Sewer Extension – 13000 Block Special Assessment No. 133 2019

Committee of Local Improvements

Donald Massier	President
Elmer Jones	Vice-President
Richard Pollack	Clerk/Treasurer
Ben Bernsten	Trustee
John Sweeney	Trustee

RRWRD Board of Trustees

Donald Massier	President
Elmer Jones	Vice-President
Richard Pollack	Clerk/Treasurer
Ben Bernsten	Trustee
John Sweeney	Trustee

Officials

Timothy S. Hanson	District Director
Christopher T. Baer, PE	Engineering Manager

Table of Contents

I. Bidding Requirements

Article 1 Notice to Bidders

Article 2 Instructions to Bidders

- 1 General
- 2 Legal Requirements
- 3 General Instructions

Article 3 Detailed Specifications

- 1 General
- 2 Notification, Access and Special Considerations
- 3 Permit Requirements
- 4 Erosion and Sediment Control
- 5 Dewatering
- 6 Sanitary Sewer, PVC SDR26, 8" Dia.
- 7 Sanitary Sewer, Carrier Pipe, PVC SDR26, 8" Dia.
- 8 Sanitary Manhole, 4' Dia.
Sanitary Manhole, 5' Dia.
- 9 Sanitary Manhole to be Reconstructed
- 10 Connect to Existing Sanitary Manhole
- 11 Sanitary Sewer Service, PVC SDR26 WMQ, 6" Dia.
- 12 Boring and Jacking Setup, Complete
- 13 Steel Casing, 24" Dia., Bored and Jacking
- 14 Exploratory Excavation
- 15 Driveway Removal
- 16 Pipe Culverts Removal, Variable Diameter
- 17 Aggregate Base Course, Type B, 12"
- 18 Hot-Mix Asphalt Binder Course, N50, IL-19.0
- 19 Hot-Mix Asphalt Surface Course, Mix "C", N50, IL-9.5
- 20 Pipe Culverts, Class C, Type 1 Galvanized Corrugated Steel, 15"
Pipe Culverts, Class C, Type 1 Galvanized Corrugated Steel, 18"
- 21 Metal Flared End Sections, 15"
Metal Flared End Sections, 18"
- 22 Chain Link Fence Removal and Replacement
- 23 Wood Fence Removal and Replacement
- 24 Tree Removal (6 to 15 Units Diameter)
- 25 Grading and Shaping Ditches
- 26 Inlet and Pipe Protection
- 27 Temporary Ditch Checks
- 28 Perimeter Erosion Barrier
- 29 Turf Restoration, Complete (6" Topsoil, Seeding Class 2, and Fertilizer)
- 30 Erosion Control Blanket
- 31 Construction Layout

- 32 Traffic Control and Protection, Complete
- 33 Quality Control Tests and Certification
- 34 Cleanup
- 35 Soil Borings

II. Contract Forms

- Proposal
- Affidavit of Compliance
- Bid Bond
- Agreement
- Labor & Material Payment Bond
- Performance Bond

III. Soil Borings

IV. IDOT Check Sheets

V. IDOT Utility Permit (*To Be Included via Addendum*)

VI. General Provisions and Technical Specifications for Sanitary Sewer Construction (*separate document incorporated by reference*)

Not to be used for bidding purposes

Section I
Bidding Requirements

Not to be used for bidding purposes

Article 1 – Notice to Bidders

N. 02ND Street Sanitary Sewer Extension, 13000 Block Special Assessment No. 133

The Rock River Water Reclamation District (District) will receive signed and sealed bids for the N. 02ND St. Sanitary Sewer Extension, 13000 Block Special Assessment No. 133 at the District offices at 3501 Kishwaukee Street, Rockford, IL, until 9:00 a.m. Wednesday, September 11, 2019; at which time and place responsive / responsible bids will be publicly opened and read aloud in accordance with Ordinance 18/19-S-02, passed on March 25, 2019 providing therefore, a copy of which is on file with the District Director of the Rock River Water Reclamation District. The Contract will be awarded pending District Board approval and Court Confirmation of the Assessment.

The N. 02nd Street Sanitary Sewer Extension 13000 Block Special Assessment No. 133 consists of the construction of approximately 1,003 LF of 8" dia. PVC sanitary sewer, 5-6" dia. PVC sanitary services, 5 manholes, 220 LF of 24" dia. steel casing pipe, bored and jacked in place, removal and replacement of approximately 340 LF of steel pipe culverts (various sizes), grading and shaping of ditches, tree removal, driveway removal, driveway reconstruction with aggregate base course and hot-mix asphalt binder and surface course, turf restoration work, and all other appurtenances as indicted on the plans and in the specifications. This project is located in the public right-of-way of the N. 02nd Street (Illinois Route 251) Service Road in Roscoe Township and the Village of Roscoe, Winnebago County, IL.

Bidder's attention is called to Article 2 – Instructions to Bidders 3.8 requirements for Statement of Qualifications. Bidder must have a permanent business office within forty (40) miles of the District office located at 3501 Kishwaukee Street, Rockford, IL.

All underground construction, paving, testing and restoration shall be completed by November 29, 2019. Liquidated damages shall be \$300 per calendar day. The contractor will be paid in Special Assessment No. 133 vouchers at par with interest at the rate of five percent (5%) per annum.

Bid documents may be obtained at a cost of \$50 per set (non-fundable) by contacting the District Engineering Department at 815.387.7660.

Plans and specifications may also be viewed at the offices of the Northern Illinois Building Contractors Association at 1111 S. Alpine Rd., Rockford, IL. For more information, visit the District website at www.rrwr.dst.il.us.

All construction will be done in accordance with specifications on file at the District, including the *General Provisions and Technical Specifications for Sanitary Sewer Construction* (Current Edition) of the Rock River Water Reclamation District of Rockford.

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

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

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

Dated this 26th day of August, 2019



Chris Black, Business Manager

Not to be used for bidding purposes

Article 2 — Instructions to Bidders

1 General

1.1 Scope and Intent

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

1.2 Contradictions

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

2 Legal Requirements

2.1 Illinois Regulations

1. The undersigned, as Bidder, declares he will comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on public works projects (including Rock River Water Reclamation District) to submit certified payroll records on a monthly basis, along with a statement affirming that such records are true and accurate, that the wages paid to each worker are not less than the required prevailing rate and that the contractor is aware that filing false records is a Class B Misdemeanor.

The certified payroll records must include the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, the number of hours worked each day, and the starting and ending time of work each day, for every worker employed on the project. Any contractor who fails to submit a certified payroll or knowingly files a false certified payroll is guilty of a Class B Misdemeanor. Certified payroll reports shall be submitted on standard IDOT forms.

2. Public Act 83-1030 entitled "Steel Products Procurement Act" requires that steel products used or supplied in performance of this contract or subcontract shall be manufactured or produced in the United States with three exceptions.

The provisions of this Section shall not apply:

- a. Where the contract involves an expenditure of less than \$500.
 - b. Where the executive head of the public agency certifies in writing that
 - i. the specified products are not manufactured or produced in the United States in sufficient quantities to meet the agency's requirements, or
 - ii. obtaining the specified products, manufactured or produced in the United States would increase the cost of the contract by more than 10%.
 - c. When its application is not in the public interest.
3. Public Act 96-929 (30 ILCS 570) provides that Illinois residents be employed on Illinois public works projects, provided there has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and, further, that Illinois workers are available and capable of performing the particular type work involved.

4. Public Act 99-0933 requires that any party to a contract adopt and promulgate written sexual harassment policies that include, as a minimum, the following information:
 - a. the illegality of sexual harassment
 - b. the definition of sexual harassment under Illinois State law
 - c. a description of sexual harassment, utilizing examples
 - d. my (our) organization's internal complaint process including penalties
 - e. the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Illinois Human Rights Commission
 - f. directions on how to contact the Department and the Commission
 - g. protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act

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

5. With regard to nondiscrimination in employment, the Contractor for this project will be required to comply with the Illinois Fair Employment Practices Commission's Rules and Regulations.
6. The Contractor for this project shall comply with the Occupational Safety and Health Act.
7. The Contractor for this project shall comply with the Federal Drug-Free Workplace Act.
8. Public Act 96-1416 requires the Certification of Clean Construction and Demolition Debris (CCDD) and uncontaminated soil prior to disposal at a CCDD fill site. The Contractor for this project shall comply with Public Act 96-1416 and be responsible for the certifications and any fees associated with the disposal at a CCDD fill site.
 - a. In the event that contaminated soil is uncovered on the project, the Contractor shall notify the District immediately. Any extra costs resulting from the presence of contaminated soil shall be evaluated in accordance with District General Provisions & Technical Specs for Sanitary Sewer Construction; General Conditions: Article 5 – Time Provisions and Article 8 – Changes.

2.2 Americans with Disabilities Act

The Contractor for this project will comply with all applicable requirements of the Americans with Disabilities Act of 1990 (ADA). The Contractor will hold harmless and indemnify Rock River Water Reclamation District (District) and their representatives from all:

1. suits, claims, or actions
2. costs, either for defense (including but not limited to reasonable attorney's fees and expert witness fees) or for settlement
3. damages of any kind (including but not limited to actual, punitive, and compensatory damages)

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

3 General Instructions

3.1 Bidder's Responsibility

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

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

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

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

3.2 Addenda and Interpretations

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

3.3 Laws and Regulations

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

3.4 Quantities Estimated Only

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

because of a difference between the quantities of the various classes of work assumed for comparison of bids and quantities of work actually performed.

3.5 Form, Preparation, and Presentation of Proposals

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

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

Bidders may opt to contact the District's Engineering Department at 815.387.7660 to obtain an electronic Proposal form. If used, this form must be attached to the hard copy proposal form and appropriately signed and executed with the bid.

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

3.6 Bid Security

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

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

3.7 Affidavit of Compliance

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

3.8 Statement of Qualifications

Each proposal must be accompanied by a Statement of Qualifications certifying that the bidder is registered to do business in the State of Illinois, has a permanent business office within forty (40) miles of District offices at 3501 Kishwaukee Street in Rockford, IL, and provides documentation that the bidder possesses the appropriate financial, material, equipment, facility and personnel resources and expertise necessary to meet all contractual obligations. The bidder shall document no less than three (3) contracts for sanitary sewer system within the past five (5) years having equal or greater

value to the bid being submitted. The District reserves the right to request additional information as needed to evaluate bids prior to making an award.

3.9 Comparison of Proposals

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

3.10 Acceptance of Bids and Basis of Award

No bidder may withdraw his bid after the scheduled closing time for receipt of bids, for at least sixty (60) days.

The contract will be awarded, if at all, to the lowest responsive, responsible bidder. The Rock River Water Reclamation District also reserves the right to reject any or all bids.

The bidder whose proposal is accepted shall enter into a written contract for the performance of the work and furnish the required bonds and insurance certificate within ten (10) days after written notice by the Engineering Manager of the District has been served on such bidder personally or by mailing a postpaid wrapper to such bidder at the address given in his proposal. If the bidder to whom the contract is awarded refuses or neglects to execute it or fails to furnish the required bond and insurance within five (5) days after receipt by him of the notice, the amount of his deposit shall be forfeited and shall be retained by the District as liquidated damage and not as a penalty. It being now agreed that said sum is a fair estimate of the amount of damages that the District will sustain in case said bidder fails to enter into a contract and furnish the required bond and insurance. No plea of mistake in the bid shall be available to the bidder for the recovery of his deposit or as a defense to any action based upon the neglect or refusal to execute a contract.

3.10.1 Evaluation of Responsiveness

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

3.10.2 Evaluation of Responsibility

To be judged as responsible, the bidder shall:

- a. Have adequate financial resources for performance, the necessary experience, organization, technical qualifications, and facilities, or a firm commitment to obtain such by subcontracts;
- b. Be able to comply with the required completion schedule for the project;
- c. Have a satisfactory record of integrity, judgment, and performance, including, in particular, any prior performance on contracts from the District;
- d. Have an adequate financial management system and audit procedures, that provide efficient and effective accountability and control of all property, funds, and assets;
- e. Conform to the civil rights, equal employment opportunity and labor law requirements of the Bid Documents.
- f. Have satisfactorily completed no less than three (3) sanitary sewer system contracts within the past five (5) years of equal or greater value to the bid being submitted.

3.11 The Rejection of Bids

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

3.12 Insurance and Bonding

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

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

3.12.1 General

The Contractor shall ensure that:

1. All insurance policies shall be specific to the project.
2. The insurance certificate shall state: This certifies that the insurance coverage meets or exceeds that required for N. 02nd Street Sanitary Sewer Extension, 13000 Block, Special Assessment No. 133.
3. The District shall be named as Additional Insured in all policies; this shall include the Owners Contractors Protective Policy option.
4. All completed operations coverages and bonds shall remain in force for a period of two (2) years following acceptance of the project and completed operations shall stay in force for two (2) years following completion of the project.

3.12.2 Insurance

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

1. General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit. The Contractor shall provide "XCU" coverage.
2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage including coverages for owned, hired or non--owned vehicles, as applicable.
3. Workers' Compensation and Employers Liability: Workers' Compensation limits as required by statute and Employers Liability limits of \$500,000 per accident and \$500,000 per disease.
4. Umbrella: \$2,000,000 per occurrence/aggregate for contracts valued at \$500,000 or over, or \$1,000,000 for contracts below \$500,000. \$10,000 is maximum allowable self-retained limit.
5. Errors and Omissions: If the Contractor performs professional services, he shall maintain errors and omissions insurance with a limit no lower than \$1,000,000 for the duration of the contract.

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

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

3.12.3 Best's Ratings

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

1. **Alphabetical Rating**: For purposes of this Request for Bids, "insurer" shall mean any surety, insurance carrier, or other organization which proposes to provide an insurance policy or bond for the Contractor. No insurer or surety rated lower than "A-, Excellent" in the current *Best's Key Rating Guide* shall be acceptable to the District.
2. **Financial Size Rating**: Provided an insurer's alphabetical rating is satisfactory, the District will examine said insurer's financial size rating.
 - a. If Best classifies the insurer XII or larger, said insurer shall be acceptable to the District.
 - b. If Best classifies the insurer as smaller than XII, but larger than VI, said insurer shall be submitted to the District's Business Manager and/or the District's insurance consultant for review.

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

3.12.4 Performance Bond and Labor & Materials Payment Bond Form

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

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

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

3.12.5 Correction of Contractor's Insurance or Bond Deficiencies

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

3.12.6 Indemnification Clause

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

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

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

3.13 Tax Exemption

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

Article 3 – Detailed Specifications

1 General

This article contains detailed specifications relating to Proposal items. The work to be done under each item is discussed along with units for payment and measurement for payment. However, the descriptions given do not necessarily outline all the work to be done under any item. All work shall conform to the *Standard Specifications for Water and Sewer Main Construction in Illinois*, current edition, the *Rock River Water Reclamation District (District) General Provisions and Technical Specifications for Sanitary Sewer Construction*, and applicable sections of the current edition of the *Illinois Department of Transportation's Standard Specifications for Road and Bridge Construction (IDOT Standard Specifications)*.

Throughout these specifications, the term “Owner,” “District,” and “Engineer” shall be synonymous.

In case of apparent contradictions between Article 3 - Detailed Specifications and the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*, these Detailed Specifications shall govern.

The Contractor shall transport all waste material, pipe, pavement, sewer and debris, etc., removed during construction to an approved offsite dumping area and shall pay all tipping fees. When construction is halted due to rain, the Contractor shall clean up all work areas and ensure that proper surface drainage is provided before leaving the site.

This project extends through the public right-of-way of North 2nd Street (Illinois Route 251), adjacent to the east service road.

The Contractor shall confine all work operations strictly within the limits shown on the plans. Minor adjustments to the proposed sewer alignments due to obstructions in the field may be made with prior District approval to facilitate construction.

All removal limits shown on the plans shall be adhered to by the Contractor. Any damage to appurtenances outside these limits, including but not limited to pavements, curbs, drainage pipes/structures, signs, mailboxes, retaining walls, landscaped/turf areas, and/or trees, shall be repaired, restored and/or repaired to the District's satisfaction at no additional cost to the Contract.

Any construction performed in the absence of a District Inspector shall not be accepted.

No work shall be permitted on Sundays without prior approval by the District Engineering Manager.

Suppliers shall warrant their products and product components as suitable and fit for the intended purpose and that they are free from all material, design, and manufacturing defects. Said warranty shall extend to the benefit of the Owner and District and shall apply to all products and product components whether supplied or fabricated as a result of these Specifications.

The District will not supervise, direct, control, have authority over or be responsible for the Contractor's means, methods, techniques, sequences, procedures of construction, safety precautions and programs incident, thereto, or for any failure of the Contractor to comply with Laws and Regulations applicable to the furnishing or performance of the Work. The District will not be responsible for the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

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

The Contractor shall restore all disturbed areas to near-original contour and state (unless otherwise indicated by the Construction Plans), graded and raked to a neat, well-drained condition. All disturbed turf areas shall be seeded or sodded, as hereinafter noted, after approval of the seed or sod bed by the District. Any damage to pavements, driveways, seeded areas, trees and/or other vegetation, fences, landscaping, structures, fixtures, etc., beyond the right of way limits shall be replaced or repaired by the Contractor at no additional cost to the District.

All work in streets, railroads, highways or flood plains shall be subject to the regulations and requirements of the jurisdictional agencies or as identified in these Detailed Specifications. Should conflicts or contradictions arise between the plans, specifications and the roadway, railroad or waterway permits, the permits shall govern.

Excavated or other materials shall not be stored or cast upon the pavement. Upon completion of work within the street, railroad, or highway (or flood plain), the Contractor shall restore the disturbed areas in accordance with the requirements of the governing agency.

The Contractor shall provide traffic control personnel and/or equipment as required by the agency that owns, maintains, or governs said roadways or railroads.

The Contractor's workforce shall include a person competent in ensuring compliance with OSHA trenching and excavation requirements. This person must be present on-site at all times during construction and must be deputized to take any prompt preventative or corrective actions needed to avoid, prevent or mitigate existing and potential hazardous working conditions.

2 Notification, Access and Special Considerations

2.1 General

Utility locations shown on the plans are based on records available at the time of design and are not guaranteed. The location and/or elevation of existing underground utilities, such as gas mains, water mains, electric lines, storm sewers, field tiles, septic system field lines, etc., shall be determined by the Contractor. The Contractor shall assume full responsibility for all utility locations. The Contractor shall notify all utilities forty-eight (48) hours minimum prior to beginning any work by contacting J.U.L.I.E. at (800)-892-0123 and all other utilities not on the J.U.L.I.E. network. All underground utilities shall be located in the field by the utility or duly

authorized representative. The Contractor shall exercise special care when excavating near underground and overhead utilities to avoid damage. Damaged utilities shall be repaired or replaced to the satisfaction of the Utility owner at the Contractor's sole expense. The Contractor shall be solely responsible for the protection, restraint and support of all utilities.

The Contractor shall notify the Rock River Water Reclamation District (District), all affected property owners and public roadway authorities (Village of Roscoe, IDOT) forty-eight (48) hours, minimum, prior to beginning any work. Said notification shall apply to business days only, not weekends.

Contractor shall notify all affected Property Owners and Lessees of the impending Construction Project as soon as feasible and a minimum of forty-eight (48) hours prior to the Start of Construction. All construction on or near driveways shall be coordinated in advance with the individual property owners to ensure that construction operations will have minimal impact on area businesses. The Contractor shall be responsible for the temporary maintenance of all roadways, driveways, and field entrances over the course of this for the duration of construction (i.e. drives, roadways, ramps, etc., must remain open to vehicular traffic; temporary accesses must be provided, as necessary). All materials, equipment, labor, etc., needed to ensure this shall be included in the various Contract unit prices. Contacts and information for area businesses impacted by this project are as follows:

13019 & 13000 N. 2nd Street: Advantage Chiropractic Wellness

Contact

Brian Arn: 815-389-7911

Business Hours

Monday – Wednesday: 8:00 AM – 6:30 PM

Thursday: 8:00 AM – 5:30 PM

Friday: 12:00 PM – 5:00 PM

Saturday – Sunday: Closed

13075 N. 2nd Street: Busy Beaver Tree Care

Contact

Joe Collins: 815-621-6213

Business Hours

Monday – Friday: Minimal usage of driveway between 7:30 AM and 4:00 PM

13115 & 13125 N. 2nd Street: Advanced Disposal

Contact

Leroy Overturf: 815-742-5230

Business Hours

Monday – Friday: 6:00 AM – 5:00 PM

Special Considerations

The driveway at 13115 N. 2nd Street receives all truck traffic for the facility and contains a scale on the private property. Advanced Disposal will work with the Contractor to arrange for a window of time to excavate and backfill across this driveway during business hours, and again when the driveway is restored. At all other times full width access for this driveway must be maintained.

13227 N. 2nd Street: State Line Foundries

Contact

Jesse Milks: 815-541-4063

Business Hours

Monday – Friday: 8:00 AM – 4:30 PM

The Contractor shall coordinate all traffic control on the frontage road with IDOT. All work shall comply with the executed Utility Permit.

Any damage caused by the Contractor's operations to areas outside of the specified project removal and right of way limits, including but not limited to roadway pavements, driveway pavements, drainage structures, storm sewer, underground utilities, overhead utilities, turf areas, and landscaped areas shall be repaired and/or replaced by the Contractor at no additional cost.

The Contractor shall clean up areas from which spoil has been removed at the end of each day by sweeping, washing or other approved methods. Any open excavations shall be protected by temporary construction fence at the completion of work each day.

The Contractor is responsible for any damages caused by his operations to existing structures above or below the ground as covered in G.C. 12:1 of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*.

The Contractor shall not damage, disturb, remove or otherwise eliminate any survey monument, monument tie, lot pin, right-of-way marker, etc., until the exact locations have been recorded by a Professional Land Surveyor currently licensed in the State of Illinois. The Contractor shall enlist the services of a registered Illinois Professional Land Surveyor to locate, document and restore/reset any and all monuments damaged or disturbed as a result of construction. No separate payment will be made for this work.

The Contractor shall provide, and have available on site at all times, a calibrated level and rod.

Per Article 1 – Notice to Bidders, all work shall be completed by November 29, 2019.

IDOT Highway Standards Included in this Contract:

1. Standard 280001-07: Temporary Erosion Control Systems
2. Standard 542401-03: Metal Flared End Sections for Pipe Culverts

3. Standard 701006-05: Off-Rd Operations, 2L, 2W, 15' to 24" from Pavement Edge
4. Standard 701201-05: Lane Closure, 2L, 2W, Day Only, For Speeds \geq 45 MPH

Notifications

- Minimum forty-eight (48) hour notification to all businesses before beginning work.
- Minimum forty-eight (48) hour notification to Rock River Water Reclamation District prior to beginning any work.
- Minimum forty-eight (48) hour notification to the Village of Roscoe and IDOT prior to beginning any work.

2.2 Required Submittals – Not used.

2.3 Measurement and Payment

No separate payment will be made for costs associated with notification, access, and special considerations.

3 Permit Requirements

3.1 General

All work in streets, highways, railroad right-of-way and utility easements or right-of-way shall be subject to the regulations and requirements of the jurisdictional agencies. Should conflicts or contradictions arise between the plans, specifications and the roadway, railroad, or utility permits, the permits shall govern.

The District has applied for an IDOT Utility Permit for this work. The Utility Permit will be added to this Contract via Addendum upon receipt of the executed Permit.

Unless noted otherwise, the Contractor shall be responsible for securing any necessary permits, and for securing all bonds, insurance, right of entry, etc., and paying all fees required by any and all permits. Copies of all secured permits shall be provided to the District prior to the start of construction. The Contractor shall comply with all provisions of permits secured or required for this project.

It shall be the Contractor's responsibility to secure any additional temporary or permanent access, storage or construction easements deemed necessary from property owners prior to performing the work as shown on the plans and outlined in the specifications.

3.2 Required Submittals

1. Copies of signed permits, as applicable.

3.3 Payment

The cost of procurement of and compliance with any and all permit requirements shall be included in the various Contract unit prices and no additional compensation will be awarded.

4 Erosion and Sediment Control

4.1 General

The total disturbed area for this project is estimated to be less than 1.0 acre. A Notice of Intent (NOI) and a Storm Water Pollution Prevention Plan (SWPPP) has been submitted to the Illinois Environmental Protection Agency (IEPA).

The Contractor shall comply with all the requirements of the IEPA's *Illinois Urban Manual*, current edition and Section 280 of the *IDOT Standard Specification*. All disturbed areas shall be restored to near-original contours and seeded in accordance with the "Seeding, Class 2" and "Seeding of Agricultural Areas" Sections of these Detailed Specifications.

The erosion control devices, materials, and procedures specified in these contract documents are to be considered a minimum. Additional devices or materials may be required based on site conditions encountered, at the direction of the Engineer. Any devices, material, or procedures required by the Engineer due to the Contractor's actions or negligence will be provided at no additional cost to the District.

The Contractor shall take whatever measures the District deems necessary to eliminate excessive erosion or siltation, including, but not limited to, inlet protection, seeding, sodding, erosion control blanket, silt fence, etc.

The Contractor shall keep the road right-of-way free from all dirt and construction debris at all times during construction.

The Contractor shall remove and dispose of all temporary erosion control devices within thirty (30) days of final site stabilization and approval by the District.

4.2 Required Submittals – Not used.

4.3 Payment

This work will be paid for as hereafter outlined below under the following pay items: **Perimeter Erosion Barrier, Inlet and Pipe Protection, Temporary Ditch Checks, and Turf Restoration**, installed and/or complete in place. No separate payment shall be made for erosion control beyond these pay items.

5 Dewatering

5.1 General

Contractor shall use all means at his disposal to maintain dry trenches to the satisfaction of the District.

If dewatering is required, well point permits must be obtained from the Winnebago County Health Department (WCHD). Well point installation, maintenance, operation and removal shall be per WCHD requirements. The WCHD shall be notified prior to well placement and removal.

Groundwater will not be allowed to be pumped on existing ground surfaces or pavements where it may cause a traffic nuisance, or into existing sanitary sewers; it shall be discharged to point acceptable to the District, with all erosion control requirements and specifications taken into consideration.

Any permits required to perform dewatering work on this project shall be secured by the Contractor; it shall be the Contractor's responsibility to provide any bonds, insurance's, guarantees, etc. as required by said permit. Abandonment of dewatering facilities shall be performed in accordance with pertinent State and County requirements.

If generators are required on a twenty-four (24) hour basis, the noise level must be restricted to a level of 90 decibels or less.

5.2 Required Submittals

1. Copy of permits, as applicable.

5.3 Payment

This work shall be considered incidental to construction and no additional compensation will be made.

6 Sanitary Sewer, PVC SDR26, 8" Dia.

6.1 General

The work under this item includes all labor, equipment, materials, permits, mobilization, site preparation, dewatering, trench excavation, utility restraint and protection, pipe bedding, backfilling and compaction, furnishing and installing sanitary sewer pipe, as directed or required, on grade and in line according to the plans and specifications. This item shall also include all required sanitary sewer testing, wye or tee fittings, adapters and risers as required, special embedment, power tamping, dust control, supervision, transportation, and any other item necessary to satisfactorily install and test the new sanitary sewer system.

Sanitary sewer pipe that varies ± 0.02 feet from the proposed grade and/or ± 0.15 feet from the proposed line will not be accepted. More stringent tolerances may be required in the field where directed by the District. The Contractor shall be solely responsible for setting and maintaining proper lines and grades for all work. The District shall not be obligated to establish construction grade or alignment.

The Contractor shall provide at least one (1) laser device for setting lines and grades of sub-grade and pipe inverts during all phases of construction. The device(s) shall be of acceptable design and maintained in good working condition for the duration of the project. The Contractor shall employ workers competent in the setup and operation of said device(s). Said device(s) shall be operated at no extra cost to the District.

Sanitary sewer pipe and pipe-laying methods must conform to the requirements of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction* and as stated elsewhere herein.

6.2 Pipe Bedding and Trench Backfill

Pipe Bedding:

Pipe bedding for PVC pipe shall be Class IA per ASTM Standard D2321. Bedding for Ductile Iron pipe shall be Class B per ASTM C12. The trench bottom shall be bedded with six inches (6") minimum crushed stone foundation. Crushed stone shall be placed a minimum of twelve inches (12") above the top of the pipe.

Bedding shall be graded such that it precludes the migration of trench wall material into the bedding; the District shall approve this bedding material after the characteristics of the trench are determined. In the event that the trench bottom is unstable as determined by the District, the Contractor shall undercut the trench as required and furnish foundation material at no additional cost to the District. The foundation material shall be a coarse aggregate material of a gradation distribution that will inhibit the migration of the bedding material into trench bottoms and walls.

Prior to placement, the trench bottom shall be graded to a firm, level, uniform base for the bedding. Bedding gradation shall be such that it precludes migration of trench wall material into the bedding. In the event the water table is above the bottom of the pipe bedding, or the trench bottom is unstable or unsuitable, a porous granular foundation meeting IDOT gradation CA-3 shall be installed as necessary below the granular bedding material, extending to the limits of the bedding diagram provided on the District *Standard Detail Sheet* at no additional cost to the District.

Trench Backfill:

The Contractor shall use approved select trench backfill to the level of the base under all roads, shoulders, sidewalks, driveways, parking lots or pavements of any kind and beyond such pavements as set forth in the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction* T.S. 2:4-c. Select trench backfill under said structures shall be FA-6, mechanically-compacted in six-inch (6") to eighteen-inch (18") loose lifts to the sub-grade elevation of the road shoulder, sidewalk, driveway, parking lot or other pavement. Materials shall be in accordance with Article 1003.04 and Section 208 of the *I.D.O.T. Standard Specifications*.

The Contractor shall exercise care not to disturb any existing utilities during backfilling and compaction operations.

The Contractor shall furnish a backhoe and operator during the testing of the backfill placed during construction. All select trench backfill shall be compacted to ninety-five percent (95%) of Standard Proctor density; all other backfill shall be compacted to ninety percent (90%) minimum of Standard Proctor density. Compaction shall according to Method 1 of Article 550.07 of the *IDOT Standard Specifications*. All compaction tests shall be performed at the Contractor's expense by an approved, independent geotechnical-testing firm. If the tests do not

meet the compaction requirements specified above, the area shall be both re-compacted and re-tested at the Contractor's expense until the test requirements are met. Use of vibratory rollers will not be permitted on this project.

If initial tests indicate compaction requirements are being met, no further lift testing will be required unless the method, equipment or material changes. The final lift must be tested.

For granular backfill (FA-6), a vibratory plate, or other approved equipment-mounted compaction equipment must be used by the Contractor to compact the backfill in lifts not to exceed eighteen inches (18"). Water-jetting, ponding or flooding will not be permitted as a means of trench compaction on this project.

The Contractor shall use reasonable care while backfilling over the sewer. No materials such as rocks or boulders shall be allowed to be dropped directly on the sewer pipe. If these materials are present in the backfill, the Contractor shall bring bedding material to a point 24" above the crown of the pipe. The cost of this additional granular material shall be considered incidental to the Contract unit price per Linear Foot of sanitary sewer installed.

Contractor shall properly dispose of all spoil at no additional cost to the District.

The Contractor shall provide a three (3) year guarantee against trench settlement upon completion of the project and shall repair any settlement that occurs during the guarantee period.

6.3 Materials

Pipe:

PVC pipe shall be SDR26 meeting the requirements of ASTM D-3034 with joints conforming to ASTM D-3212.

All material tests shall be in accordance with manufacturer and District requirements and shall comply with all applicable ASTM specifications. Manufacturer material specifications and certifications for all castings, pipes, fittings, connectors, adapters, etc., must be furnished, upon request, for all materials to be used under this contract.

6.4 Required Submittals

1. Pipe and fitting material specifications.
2. Material gradation certifications for proposed bedding material and select trench backfill.

6.5 Measurement and Payment

Measurement for payment shall be horizontal along the centerline of the installed pipe from center-of-manhole to center-of-manhole. Payment will be made at the Contract unit price per Linear Foot of **Sanitary Sewer, PVC SDR26, 8" Dia.**, installed, complete in place.

7 Sanitary Sewer, Carrier Pipe, PVC SDR26, 8" Dia.

7.1 General

Work under this item includes furnishing and installing the 8" diameter PVC SDR26 sanitary sewer carrier pipe within the bored and jacked 24" steel casing pipe as shown on the plans. Carrier pipe shall be installed to the horizontal and vertical tolerances as specified in Section 7.1 of these Detailed Specifications.

This item shall also include the installation of casing spacers as detailed on the District's Standard Detail sheet and in accordance with manufacturer's recommendations. In all cases the following spacing must be met:

1. A minimum of two (2) spacers shall be provided per carrier pipe section.
2. A spacer shall be provided within two (2) feet of each end of a carrier pipe section.
3. The spacers shall have a maximum interval of six (6) feet per carrier pipe section.

7.2 Materials

Carrier pipe shall be PVC SDR26 pipe meeting the requirements of ASTM D-3034 with joints conforming to ASTM D-3212.

Casing spacers shall have HDPE runners as manufactured by Cascade Mfg., or approved equal.

Casing end seals shall be District-approved pull-on flexible rubber seals.

7.3 Required Submittals

1. Pipe and fitting material specifications.
2. Material Certifications for the casing spacers.

7.5 Measurement and Payment

This work will be paid for at the contract unit price per Linear Foot of **Sanitary Sewer, Carrier Pipe, PVC SDR26, 8" Dia.**, installed, complete in place. The cost of all casing spacers and casing pipe end seals shall be included in this item.

8 Sanitary Manhole, 4' Dia. Sanitary Manhole, 5' Dia.

8.1 General

This work shall consist of all labor, equipment, materials, transportation, excavation, accessories, trench backfill, and performance of all operations required to furnish and install precast concrete sanitary manholes as directed by the District, all in accordance with the District's *Standard Detail Sheet* and Article 6:3 and 7 of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*. Work shall also include furnishing and installing a District-approved manhole frame and lid (Neenah R-1670, or East Jordan E-1117) adjusted to grade as indicated on plans. Contractor shall field-verify all proposed rim elevations.

Flat top manholes will not be permitted for this project; eccentric cone sections are required on all manholes unless otherwise noted.

All standard manholes shall be successfully vacuum tested per ASTM C-1244 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test" prior to placing into service.

Manhole shop drawings shall be submitted to the District for approval prior to manufacture and delivery to the site and shall include a specific detail for each manhole showing the number and height of barrel sections, height of cone section, number and size of adjusting rings, location and spacing of steps and elevations of all pipe openings. A plan view shall be provided showing the orientation of pipe openings.

Manhole steps:

District approved manhole steps shall be provided with a maximum spacing of 16". The top of the pre-cast cone section shall be set at an elevation that will allow the frame to be adjusted (12" maximum) without disturbing the cone section.

Manhole Adjustment:

The Contractor shall field verify all proposed rim elevations and shall construct manholes in conformance with manhole adjustment requirements. Manhole frames shall be set at finished grade in paved areas. Concrete adjusting rings shall be standard reinforced concrete pipe type. Minimum ring thickness shall be two inches (2"). Maximum ring thickness shall be twelve inches (12"). Adjustment rings shall conform to ASTM C478 and ASTM C139, latest revision. Concrete for adjusting rings: Class "A" as specified in T.S. 5:3(a) in the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*. Absorption shall comply with ACI Specification P-I-C and ASTM C139, latest revision.

All adjusting ring joints shall be sealed watertight by means of EZ Stik, Kent-Seal, or equal (including cast iron frame to concrete adjusting ring). Minimum adjusting ring height is four inches (4"). Maximum adjusting ring height is twelve inches (12"). No more than thirty inches (30") from the top of casting to the first step will be allowed. A maximum of one (1) 2" adjusting ring will be allowed.

No adjusting rings are required for manholes in turf areas or in roadways with curb and gutter.

In roadways only: metal or plastic shims will be required if the casting in the roadway must be pitched to match the slope of roadway pavement. Shims must be equally spaced with no more than one-inch (1") of total adjustment. If frame is shimmed, no butyl materials seal (E-Z Stik, Kent-Seal, or equal) will be allowed under the casting. The void area between the casting, and masonry shall be grouted from the outside to the inside face of the adjusting ring, filling the entire void. No trench compaction shall take place until the concrete has cured and hardened to the District's satisfaction. Final manhole adjustment shall meet additional requirements of the governing roadway authority.

The Contractor shall install a District-approved external casting seal on all proposed manholes as indicated on the *Standard Detail Sheet* and shall install District-approved external seals on all manhole barrel section joints (Cretex, Mac Wrap or CANUSA Wrapid Seal).

Manhole Connections:

The Contractor shall field verify all materials, sizes, and elevations of all existing pipes to be connected. Pipe connections to new manholes shall be made by means of a watertight flexible pipe to manhole connector meeting the requirements of ASTM C923 entitled “Resilient Connectors between Reinforced Concrete Manhole Structures and Pipes.” Integrally cast and expandable gaskets are acceptable. The design shall be in accordance with the manhole and pipe manufacturer requirements and shall receive prior District approval. All sanitary manholes equal to or greater than twenty-two feet (22’) deep shall use pipe to manhole gaskets rated to a minimum of 15 psi hydrostatic pressure (A-LOK model X-CEL or District approved equivalent).

The Contractor shall construct a paved manhole bench in each manhole per the *Standard Detail Sheet* or per the District’s direction.

8.2 Required Submittals

1. Manhole shop drawings including a specific detail for each manhole showing the number and height of barrel sections, height of cone section, number and size of adjusting rings, location and spacing of steps and elevations and sizes of all pipe openings. A plan view shall be provided showing the orientation of pipe openings.
2. Frame and lid material specifications.
3. Chimney seals material specifications.
4. Barrel joint seals material specifications.
5. Manhole to pipe transition couplings material specifications.
6. Manhole steps material specifications.
7. Sealant material specifications.

8.3 Payment

This work will be paid for at the Contract unit price per Each **Sanitary Manhole, 4’ Dia.** and **Sanitary Manhole, 5’ Dia.** constructed, complete in place. All labor, equipment, and materials associated with the inside drop connection for Plan MH #1 shall be included with the **Sanitary Manhole, 5’ Dia.** pay item.

9 Sanitary Manhole to be Reconstructed

9.1 General

This work shall include removal of the existing cone on Sanitary Manhole #288-003 and installation of a new cone and adjusting rings (all requirements shall be the same per the Section 7 “*Sanitary Manhole, Precast, 4’ Dia.*” unless otherwise noted) in order to adjust the rim elevation of this manhole to the proposed elevation. The existing frame and lid shall be reused. The Contractor shall install a District-approved external casting seal on all proposed manholes as indicated on the *Standard Detail Sheet* and shall install District-approved external seals on all manhole barrel section joints (Cretex, Mac Wrap or CANUSA Wrapid Seal). A new chimney seal shall be installed. MH #288-003 will not be required to be vacuum tested.

The Contractor shall field verify all proposed rim elevations and shall construct the manhole in conformance with District manhole adjustment requirements.

9.2 Required Submittals

1. Chimney seals material specifications.
2. Barrel joint seals material specifications.
3. Manhole steps material specifications.
4. Sealant material specifications.

9.3 Payment

This work will be paid for at the Contract unit price per Each for **Sanitary Manhole to be Reconstructed**, complete in place.

10 Connect to Existing Sanitary Manhole

10.1 General

This work shall consist of connecting the proposed new sanitary sewer pipe to the existing sanitary Manhole #288-003 to the elevation indicated on the plans, and shall include all labor, equipment, and materials as required to establish the new invert.

The opening for the pipe connecting into the manhole shall be core-drilled in the field as specified in the plans. A flexible pipe to manhole connector shall be installed in the field.

Existing manhole inverts/benches shall be modified as necessary, prior to pipe installation and replaced after pipe installation is complete to ensure smooth and unobstructed flow through the manhole. All inverts shall be restored to equal or better than the existing condition. Sanitary sewer bypass pumping must be maintained until newly placed manhole inverts are in place and properly cured, per District requirements.

Any damage done to the existing manhole shall be repaired by the Contractor to the satisfaction of the District, at the Contractor's expense.

All labor, equipment, and materials associated with the inside drop connection shall be included with this pay item.

10.2 Required Submittals – Not used.

10.3 Payment

This work will be paid for at the contract unit price per Each for **Connect to Existing Sanitary Manhole**.

11 Sanitary Sewer Service, PVC SDR26 WMQ, 6" Dia.

11.1 General

Work under this item includes mobilization, site preparation, dewatering, trench excavation, backfilling and compaction, special pipe bedding, furnishing and installing: six-inch (6") diameter PVC (SDR 26) water main quality ("WMQ") sanitary service pipe per ASTM D-2241 with ASTM D-3139 gaskets, from the sewer main to the N. 2nd Street right-of-way limits as shown on the plans (or as directed by the District), service risers as shown or directed, bends and air-tight stoppers in the upper end of each service. Service risers will be required at the main where the depth of the sewer main exceeds 13 feet. The risers must be 11.5 feet vertical, minimum, below the first floor elevation, unless otherwise directed or shown on the plans. Where directed or required, the District's Alternative Service Riser Detail shall be used, as shown on the Standard Detail Sheet. Cleanout risers are required at all service termini.

With prior District approval, the sewer service locations may be changed from those shown on the plans. Where possible, the service shall be installed at the property owner's requested location, unless interferences with utilities, grade concerns or other conflicts prohibit the installation of the service at the desired location. No additional payment will be awarded for changes in service locations.

Trench foundation, bedding and pipe laying requirements for PVC services shall be per Article 7.2 above.

11.2 Materials

Sanitary Sewer service pipe shall be PVC SDR 26 PVC WMQ pipe meeting the requirements of ASTM D-2241 with joints conforming to ASTM D-3139.

11.3 Required Submittals

1. Pipe, fitting, and repair coupling material specifications.
2. Material gradation certifications for proposed bedding material and select trench backfill.

11.4 Measurement and Payment

This work will be paid for at the Contract unit price per Each **Sanitary Sewer Service, PVC SDR26 WMQ, 6" Dia.**, installed, complete in place.

12 Boring and Jacking Setup, Complete

12.1 General

Boring and Jacking Setup, Complete shall refer to all necessary labor, equipment and materials preparatory to the boring and jacking operation, including, but not limited to, excavation of push and receiving pits, dewatering, shoring, sheeting, setting of rails on line to grade, thrust blocking and backfilling of push and receiving pits.

Under this pay item, the Contractor shall:

1. Open suitable jacking and receiving pits adjacent to the area into which the steel sleeve will be jacked in place as shown on the plans. Every effort shall be made to minimize the size of jacking and receiving pits without jeopardizing work area safety and suitability.
2. Set and maintain guide timbers or rails accurately in bottom of jacking pit in order to keep steel sleeve on correct line and grade.
3. Furnish and install heavy backstop supports at rear of jacking pit, sufficient to absorb shock of jacking operation without distortion. Any sheeting or shoring needed to provide a safe working area or to comply with permit requirements shall be considered incidental to the cost of this item.
4. Identify, locate and relocate, as necessary, all existing utilities that could be damaged by setup, boring and jacking or other construction activities. Any damage done to utilities due to construction shall be repaired or replaced by the Contractor, at his own expense, to the satisfaction of the utility.

12.2 Required Submittals

1. Shoring drawings and/or calculations.

12.3 Payment

This work will be paid for at the Contract unit price per Lump Sum for **Boring and Jacking Setup, Complete**. A maximum of fifty percent (50%) of the Contract unit price will be paid for the setup, complete, prior to completion of the boring and jacking operation.

13 Steel Casing, 24” Dia., Bored and Jacked

13.1 General

This work pertains to the boring and jacking operations required to install the proposed steel casing pipe between STA 10+80 and STA 13+00. The Contractor shall provide forty-eight (48) hours minimum advance notice to the District and IDOT prior to beginning this work.

The Contractor shall keep the right-of-way and private drives free from all dirt and construction debris at all times during construction. All traffic must remain free and unobstructed for the duration of construction.

As determined and directed by the State, any appurtenances or property damaged within public rights-of-way, whether through Contractor negligence or as a result of construction, shall be repaired and replaced by the Contractor at his sole expense to the State's satisfaction.

“Boring and Jacking” shall refer to the process by which a steel sleeve is jacked through the ground while soil is simultaneously removed from the face by an auger. Boring and jacking shall include the material cost of the pipe, as well as all labor, equipment and materials associated with the actual boring and jacking operation.

All rails, guides and jacks must be set securely and exactly to ensure that tolerances of boring and jacking operations and final casing positions are maintained within the following acceptable limits:

Horizontal: Centerline of far end of finished sleeve shall be within one inch per twenty (20) lineal feet of plan centerline.

Vertical: Invert of far end of finished sewer pipe shall be within 0.20 feet of plan invert.

The Contractor shall be solely responsible for completing the work within tolerances acceptable to the District.

The Contractor shall jack the steel casing into the earth simultaneously with the boring auger as it drills the earth. Drilling the hole all the way through the earth and pushing the steel casing into the hole after the auger has been removed shall not be allowed.

The operation will be advanced by the use of an earth auger where possible, but if conditions are encountered where the auger will not remove hard material or stay on line and grade, the operation will be advanced by mining.

During the mining operations, the material in front of the pipe shall not be removed for more than six (6") beyond the pipe heading before the casing pipe is pushed forward, unless otherwise approved (in writing) by the District.

If, for any reason, the excavation should extend beyond the outside diameter of the casing pipe, leaving voids outside the casing pipe, holes shall be drilled in the casing pipe and such voids completely filled by pressure grouting with an approved cement grout.

During the course of the work, the line and grade shall be closely monitored to ensure no deviation from plan alignment or grade occurs.

The Contractor shall be solely responsible for any and all damage occurring as a result of his operations above or below ground, including damage to houses, existing utilities, trees, fences, landscaping, etc.

13.2 Materials

The steel casing pipe shall be 24" diameter (minimum) Grade B structural steel with a minimum yield strength of 35,000 psi per ASTM A-53, and a minimum wall thicknesses of 0.375". The Contractor shall determine the actual casing grade and thickness needed based on an evaluation of the jacking forces required, as approved by the roadway authority.

Steel casing joints shall be made by continuous weld completely around the perimeter of the pipe done in accordance with AWWA C206, shall be watertight and shall provide a strength through the joint equal to that of the pipe shell. Pipe shall have beveled edges for welding and shall be new, straight pipe.

Carrier Pipe will be paid for separately under the **Sanitary Sewer, Carrier Pipe, PVC SDR26, 8" Dia.** pay item. The carrier pipe shall be 8 inch (8") sanitary PVC sewer as shown on the plans. Adequate blocking shall be used to maintain the grade shown on the plans.

The casing pipe diameter shown on the plans and described in these specifications is the minimum acceptable size. At his sole expense, the Contractor may use a larger diameter casing pipe if approved in advance by the District. The Contractor assumes all risks associated with the installation of the casing pipe. No additional compensation will be awarded for the use of a larger diameter casing pipe or for any special methods, equipment or materials needed to install the casing pipe. The lengths of steel casing and carrier pipes provided must be short enough to facilitate proper handling and placement in the jacking pit. No additional compensation will be awarded for partial or incomplete push attempts for any reason.

Any changes to push alignments must receive prior approval from the District before push operations can resume. Open cut installation of the steel casing pipe will not be allowed under any circumstances.

The ends of the casings shall be sealed with approved pull-on flexible rubber seals.

13.3 Required Submittals

1. Material certifications for the steel casing pipe.
2. Material certifications for casing spacers and end seals.
3. Work plan depicting means and methods for the jacking and boring operations.

13.4 Payment

This work will be paid for at the Contract unit price per Linear Foot of **Steel Casing, 24" Dia., Bored and Jacked**, complete, in place. Said unit price shall include the material cost of the casing pipe and the cost of boring and jacking operations needed to place the casing pipe to the line and grade indicated on the plans, including mining of rock, cobbles, boulders or other obstacles, as necessary, all work necessary to install the carrier pipe, pipe spacers and end seals, exterior void grouting, all restoration, cleanup and supervision. No additional payment will be made for partial or incomplete push attempts. The cost of all spacers and casing pipe end seals shall be included in this item.

14 Exploratory Excavation

14.1 General

This work shall include excavation, potholing, or other methods as proposed by the Contractor that are undertaken in order to verify the depths and locations of the following utilities: the existing 1" dia. plastic water service to 12989 N. 2nd Street at STA 11+85, the existing 6" dia. PVC water service to 13115 N. 2nd Street at STA 18+36, and the existing 2" dia. PVC water service to 13115 N. 2nd Street at STA 20+47.

North Park Public Water District shall be notified at least forty-eight (48) hours prior to this work commencing.

Verification of the depths and locations of the all of the above listed utilities shall be completed and provided to the District for review prior to sewer installation work commencing.

14.2 Required Submittals – Not used.

14.3 Payment

Payment shall be made at the contract unit price per Each of **Exploratory Excavation**, performed, complete.

15 Driveway Removal

15.1 General

This work shall be done in accordance with Section 440 of the IDOT *Standard Specifications for Road and Bridge Construction*, Current Edition and shall involve the complete removal and disposal of the existing hot-mix asphalt driveways at 13019 N. 2nd Street, 13075 N. 2nd Street,

13115 N. 2nd Street, and 13125 N. 2nd Street to the limits indicated on the plans. This pay item shall also include removal of the existing subgrade below the driveway pavement to the depths necessary to achieve the full driveway reconstruction (12" of Aggregate Base Course, Type B with 2.5" of hot-mix asphalt binder course and 2" of hot-mix asphalt surface course). Maximum pay limits for the removal are shown on the plans; the Contractor shall not remove any pavement outside of these limits without receiving prior written approval from the District. Unless otherwise approved by the District, any damage done to adjacent pavements during construction shall be replaced (full depth) by the Contractor at no additional cost to the District.

The removal limits shall be sawcut full depth prior to pavement removal. The remaining pavement, including pavement edges shall be protected from all damage. All costs associated with sawcutting and pavement protection shall be included in this work.

Access to driveways must be maintained before the final pavement restoration by utilizing temporary aggregate or similar measures. Drop offs between the existing edges of pavement and the driveway subgrade will not be allowed; temporary aggregate or hot-mix asphalt ramps shall be maintained at all times. All costs associated with these temporary ramps shall be included in this pay item.

15.2 Required Submittals – Not used.

15.3 Payment

Payment shall be made at the Contract unit price per Square Yard of **Driveway Removal**.

16 Pipe Culverts Removal, Variable Diameter

16.1 General

This work shall conform to Section 501 of the *IDOT Standard Specifications* and shall include the full or partial removal and disposal of existing 15" and 18" diameter culvert pipes to the lengths indicated on the plans. The existing culvert pipes are anticipated to be corrugated metal; no additional compensation shall be granted for removal of pipes of differing sizes or materials.

Disposal of the materials shall be done in accordance with Article 202.03 of the *I.D.O.T. Standard Specifications*.

Upon removal of the culvert pipes, positive drainage to the downstream ditch drainage system shall be maintained via grading and/or temporary pipes. Any costs associated with these temporary provisions shall be included in this pay item and no additional costs will be considered.

16.2 Materials – Not Used.

16.3 Required Submittals – Not Used.

16.4 Payment

Payment shall be made at the Contract unit price per Linear Foot of **Pipe Culverts Removal, Variable Diameter**.

17 Aggregate Base Course, Type B, 12”

17.1 General

This work shall consist of placing compacted Aggregate Base Course, Type B, beneath the driveway surfaces to be replaced at 13019 N. 2nd Street, 13075 N. 2nd Street, 13115 N. 2nd Street, and 13125 N. 2nd Street. This work shall include subgrade preparation, removal and disposal of excess material, furnishing, placing, installing and compacting course aggregate, and trimming and prepping aggregate base for subsequent pavement placement. This work shall be in conformance with Section 351 of the IDOT *Standard Specifications for Road and Bridge Construction*, Current Edition.

17.2 Materials

Aggregate base course shall be 12” in total compacted thickness, with 8” of Gradation CA-2 in the bottom layer and 4” of Gradation CA-6 in the upper layer. Course Aggregates shall be in accordance with Article 1004.04 of the IDOT *Standard Specifications for Road and Bridge Construction*, Current Edition.

17.3 Required Submittals

1. Material gradation certifications for aggregates.

17.4 Measurement and Payment

This work will be paid for at the Contract unit price per Square Yard for **Aggregate Base Course, Ty. B, 12”**, complete, in place.

18 Hot-Mix Asphalt Binder Course, N50, IL-19.0

18.1 General

This work shall be in accordance with T.S. 4:3/Pavement Restoration of the *General Provisions and Technical Specifications for Sanitary Sewer Construction in the Sanitary District of Rockford*, and with Section 406 of the IDOT *Standard Specifications for Road and Bridge Construction*, Current Edition.

The work shall be performed to the satisfaction of the District and the property Owners.

Tack coat shall be SS-1 bituminous materials; all costs associated with placement of the tack coat shall be considered incidental to this pay item.

Placement of hot-mix asphalt shall be coordinated with the property owners to minimize obstructions to vehicular access to the greatest extent possible.

18.2 Materials

HMA Binder Course shall be mixture IL-19.0, N50 in accordance with Section 1030 of the IDOT *Standard Specifications for Road and Bridge Construction*, Current Edition.

Tack coat shall be SS-1 in accordance with Section 1032 of the IDOT *Standard Specifications*.

18.3 Required Submittals

1. HMA mix designs.
2. Tack coat material certifications.

18.4 Measurement and Payment

This work will be paid for at the contract unit price per Ton for **Hot-Mix Asphalt Binder Course, N50, IL-19.0**, complete, in place.

19 Hot-Mix Asphalt Surface Course, Mix “C”, N50, IL-9.5

19.1 General

This work shall be in accordance with T.S. 4:3/Pavement Restoration of the *General Provisions and Technical Specifications for Sanitary Sewer Construction in the Sanitary District of Rockford*, and with Section 406 of the *IDOT Standard Specifications for Road and Bridge Construction*, Current Edition.

The work shall be performed to the satisfaction of the District and applicable roadway authority. All roadway authorities shall be notified a minimum of forty-eight (48) hours prior to pavement replacement. At the discretion of the District, maintenance and temporary restoration of roads, drives, fences, etc., will be required; this work shall be done by the Contractor without delay.

Tack coat shall be SS-1 bituminous materials; all costs associated with placement of the tack coat shall be considered incidental to this pay item.

Placement of hot-mix asphalt shall be coordinated with the property owners to minimize obstructions to vehicular access to the greatest extent possible.

19.2 Materials

HMA Surface Course shall be Mix “C”, IL-9.5, N50 in accordance with Section 1030 of the *IDOT Standard Specifications for Road and Bridge Construction*, Current Edition.

Tack coat shall be SS-1 in accordance with Section 1032 of the *IDOT Standard Specifications*.

19.3 Required Submittals

1. HMA mix designs.
2. Tack Coat material certifications.

19.4 Measurement and Payment

This work will be paid for at the contract unit price per Ton for **Hot-Mix Asphalt Surface Course, Mix “C”, N50, IL-9.5**, complete, in place. Surface course mixture in excess of 103% of the adjusted plan quantity will not be measured for payment. The adjusted plan quantity for surface course mixtures shall be calculated in accordance with Article 406.13(b) of the *IDOT Standard Specifications for Road and Bridge Construction*, Current Edition.

20 Pipe Culverts, Class C, Type 1 Galvanized Corrugated Steel, 15” Pipe Culverts, Class C, Type 1 Galvanized Corrugated Steel, 18”

20.1 General

This work shall conform to Section 542 of the *IDOT Standard Specifications* and shall include furnishing and installing pipe culverts to the line and grade as shown on the plans. All pipe shall be galvanized corrugated steel pipe. All pipe culverts to be installed under or within 2’ of pavements, curbs, driveways, and/or sidewalks shall be backfilled with District-approved trench

backfill material. Trench backfill shall be compacted to 95% of the standard laboratory density in accordance with Method 1 in Article 550.07(a) of the *IDOT Standard Specifications*. No additional compensation will be made for trench backfill – the costs shall be included with this pay item.

20.2 Materials

Galvanized corrugated steel pipe shall be in accordance with Article 1006.01 of the *IDOT Standard Specifications*. Trench Backfill shall be in accordance with Article 1003.04 of the *IDOT Standard Specifications*.

20.3 Required Submittals

1. Material certification for the galvanized corrugated steel pipe.
2. Material certification for couplings and/or fittings.
3. Gradation report for the trench backfill material.

20.4 Payment

Payment shall be made at the Contract unit price per Linear Foot of **Pipe Culverts, Class C, Type 1 Galvanized Corrugated Steel, 15"** and **Pipe Culverts, Class C, Type 1 Galvanized Corrugated Steel, 18"** installed, complete in place.

21 Metal Flared End Sections, 15" Metal Flared End Sections, 18"

21.1 General

This work shall be done in accordance with Section 542 of the *IDOT Standard Specifications* and shall consist of furnishing and installing all labor, equipment, materials, transportation, excavation, and accessories required to construct the metal flared end sections at the locations indicated in the plans.

21.2 Materials

Metal flared end sections shall be constructed according to IDOT *Standard 542401-03: Metal Flared End Sections for Pipe Culverts*.

21.3 Required Submittals

1. Material certification and shop drawings for the metal end sections.

21.4 Measurement and Payment

This work will be paid for at the contract unit price per Each for **Metal Flared End Sections, 15"** and **Metal Flared End Sections, 18"** installed, complete in place.

22 Chain Link Fence Removal and Replacement

22.1 General

This work shall involve the full removal (and disposal) of the existing chain link fence located near the right-of-way line at 13227 N. 2nd Street to the limits shown on the plans, and the furnishing and installing of new chain link fence to the removal limits. The removed fence shall be disposed of outside the limits of the project in accordance with Article 202.03 of the IDOT *Standard Specifications for Road and Bridge Construction*. The replacement fence shall be of a District-approved style and material that matches the existing fence, and be constructed in accordance with Section 664 of the IDOT *Standard Specifications* and the manufacturer's recommendations.

Removal limits shall extend to the full section lengths between fence posts.

22.2 Required Submittals

1. Material certifications and shop drawings for the chain link fence.

22.3 Payment

Payment shall be made at the Contract unit price per Linear Foot of **Chain Link Fence Removal and Replacement** installed, complete in place.

23 Wood Fence Removal and Replacement

23.1 General

This work shall involve the full removal (and disposal) of the existing split rail wood fence located near the right-of-way line at 13115 N. 2nd Street to the limits shown on the plans, and the furnishing and installing of new split rail wood fence to the removal limits. The removed fence shall be disposed of outside the limits of the project in accordance with Article 202.03 of the IDOT *Standard Specifications for Road and Bridge Construction*. The replacement fence shall be of a District-approved style and material that matches the existing fence, and be constructed in accordance with the details contained within the plans and the manufacturer's recommendations.

Removal limits shall extend to the full section lengths between fence posts.

23.2 Required Submittals

1. Material certifications for all fence materials.

23.3 Payment

Payment shall be made at the Contract unit price per Linear Foot of **Wood Fence Removal and Replacement** installed, complete in place.

24 Tree Removal (6 to 15 Units Diameter)

24.1 General

This work shall include the full removal and disposal of all trees identified on the plans (including removal of stumps to a depth not less than 12" below the existing grade) to accommodate construction operations. All materials removed shall be disposed of off-site in a legal manner in accordance with Article 202.3 of the *IDOT Standard Specifications*.

All trees to be removed shall be approved by the District in the field prior to removal. All requirements of Article 201.05(a) of the *IDOT Standard Specifications* shall be completed prior to beginning tree removal.

Restoration of the areas disturbed shall be completed under the *Turf Restoration* pay item.

24.2 Required Submittals – Not used.

24.3 Payment

Payment shall be made at the Contract unit price per Unit Diameter of **Tree Removal (6 to 15 Units Diameter)**.

25 Grading and Shaping Ditches

25.1 General

This work shall consist of grading and shaping ditches on the east side of the easterly North 2nd Street service road as shown on the Plans. All surplus, unstable, or excess material shall be disposed of according to Article 202.03 of the *IDOT Standard Specifications*.

Final topsoil placement and seeding of ditches shall be included in the **Turf Restoration, Complete (6" Topsoil, Seeding Class 2, and Fertilizer)** pay item.

25.2 Materials – Not Used.

25.3 Required Submittals – Not Used.

25.4 Measurement and Payment

This work will be paid for at the Contract unit price per Linear Foot for **Grading and Shaping Ditches**.

26 Inlet and Pipe Protection

26.1 General

This work shall be in accordance with Section 280 of the *IDOT Standard Specifications* and consist of furnishing, installing, maintaining, and final removal of drainage inlet and pipe protection devices.

Inlet protections shall consist of filters that are installed under the grate of the drainage structures. Pipe protections shall consist of straw bales or rolled excelsior logs.

All inlet and pipe protections shall be installed prior to any excavation (exploratory or otherwise) beginning. All measures shall be removed upon final turf restoration.

26.2 Materials

All inlet and pipe protections shall be in accordance with Article 1081.15 of the *IDOT Standard Specifications*.

26.3 Required Submittals

1. Material certifications for the inlet and pipe protections.

26.4 Payment

Payment shall be made at the contract unit price per Each of **Inlet and Pipe Protection**, complete in place.

27 Temporary Ditch Checks

27.1 General

This work shall be in accordance with Section 280.04(a) of the *IDOT Standard Specifications* and consist of furnishing, installing, maintaining, and final removal of temporary ditch checks at the locations depicted on the plans or as otherwise directed.

All temporary ditch checks shall be installed prior to any excavation beginning and shall be removed upon completion of final turf restoration. Ditch checks shall be installed such that they extend fully across the ditch cross sections and terminate at the top of the banks.

Removal of the temporary ditch checks upon completion of construction will not be paid for separately but shall be considered included in this pay item.

27.2 Materials

Temporary ditch checks shall be constructed with products from the IDOT qualified product list or excelsior logs. Excelsior logs shall be in accordance with Article 1081.15(f) of the *IDOT Standard Specifications*.

27.3 Required Submittals

1. Material certifications for the temporary ditch checks.

27.4 Payment

Payment shall be made at the Contract unit price per Each of **Temporary Ditch Checks**.

28 Perimeter Erosion Barrier

28.1 General

This work shall include the installation, maintenance, and eventual removal of silt fence where indicated on the plans. All work shall be in conformance with Section 280 of the *IDOT Standard Specifications*. Silt fence shall be installed prior to excavation or stockpiling of materials. Posts shall be spaced a minimum of 5' on center.

Silt fence shall remain in place until the disturbed areas have been seeded and erosion control blanket is installed, unless otherwise directed by the District.

28.2 Materials

Filter fabric shall be Gradation 4 or 5 in accordance with Article 1080.03 of the *IDOT Standard Specifications*. The wood posts shall be in accordance with Article 1081.15 of the *IDOT Standard Specifications* and be a minimum of 4' long with a nominal size of 2" x 2".

28.3 Required Submittals

1. Material certifications for the silt fence materials.

28.4 Payment

Payment shall be made at the Contract unit price per Linear Foot of **Perimeter Erosion Barrier**, installed, complete in place.

29 Turf Restoration, Complete (6" Topsoil, Seeding Class 2, and Fertilizer)

29.1 General

This work shall include preparing areas to be seeded, furnishing and placing topsoil as required, removal and disposal of unsuitable materials, seeding, fertilizing, and maintenance until final acceptance.

All restoration shall be completed in accordance with public agency requirements, or on private property, equal to or better than the pre-construction conditions unless otherwise indicated in the easement requirements. All restoration of public or private property including, but not limited to, fences, sidewalks, driveways, all other slab work, (concrete and asphalt), drainage channels, riprap, fences, turf areas and dry wells, etc., disturbed or damaged as a result of this construction project shall be promptly completed, equal to or better than the pre-construction conditions, as directed by the District. All restoration shall be guaranteed by the Contractor for a period of one (1) year following satisfactory completion and final acceptance of the work. Topsoil shall be as specified in T.S. 4:2c of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*.

All drainage devices shall be cleaned of debris and replaced at original elevations. Pipes, which in the estimation of the District, have been significantly damaged by the Contractor, shall be replaced with new pipe or structures of the same diameter, length and/or type, at no added expense to the Owner. All work shall be to the satisfaction of the District. When necessary, temporary restoration of roads, drives, fences, etc. will be required, all costs incidental to the Contract.

Suppliers shall be prepared to certify that their product has been satisfactorily laboratory and field tested, and that it meets all of the foregoing requirements based upon such testing.

Guarantee: All seeded areas shall be maintained for at least thirty (30) days after application. Scattered bare spots no larger than two square feet will be allowed up to a maximum of five percent (5%) of any seeded area.

Seeding

This work shall be in accordance with Section 250 of the IDOT *Standard Specifications*. Ground surfaces including right-of-ways that were covered with grass prior to construction shall be seeded according to all applicable specifications and as directed by the District. The Contractor shall make certain that all disturbed areas have the same depth (6" minimum) and quality of approved topsoil at the surface as existed prior to construction.

Seedbed preparation shall be done according to Article 250.05 of the IDOT *Standard Specifications*.

The seeding mixture used shall be IDOT Class 2 in all turf restoration areas.

Reference is made to the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*, T.S. 4:2, for specifications on seeding and sodding and fertilizer, and to Sections 250 and 251 of the IDOT *Standard Specifications*.

Seeding shall be placed on six-inch (6"), minimum, topsoil bed. The District shall approve the locations from which the topsoil is to be obtained. When requested by the District, a sample of the proposed topsoil shall be submitted to the District in a one-quart glass container, completely filled, with a chemical and mechanical analysis of the topsoil by an approved testing laboratory.

Seeding methods shall follow those mentioned in Article 250.06 of the IDOT *Standard Specifications*. Mowing to discourage weed growth will be completed by the Contractor until the project is accepted by the District.

Fertilizing

Fertilizer work shall be done in accordance with Article 250.04 of the IDOT *Standard Specifications* and be applied at the rate of 400 lbs./acre.

Mulch

Straw mulch shall not be installed on seeded areas, instead all seeded areas shall be completed with erosion control blanket. Said erosion control blanket shall be paid for under the **Erosion Control Blanket** pay item.

29.2 Materials

Topsoil utilized from off-site sources shall be in accordance with Article 1081.05(a) of the IDOT *Standard Specifications*.

Seed mixtures shall be IDOT Class 2 seed mixtures in accordance with Article 1081.04 of the IDOT *Standard Specifications*.

Fertilizer shall have 270 lbs. of nutrients per acre with an analysis of 10-10-10 and be in accordance with Article 1081.08 of the IDOT *Standard Specifications*.

29.3 Required Submittals

1. Topsoil certifications (if being delivered from off-site).
2. Seed mixtures.
3. Fertilizer specifications and certifications.

29.4 Payment

This work will be paid for at the contract unit price per Square Yard for **Turf Restoration, Complete (6" Topsoil, Seeding Class 2, and Fertilizer)**, which cost shall include furnishing topsoil, placing topsoil, seedbed preparation, seeding, and fertilizer application.

30 Erosion Control Blanket

30.1 General

This work shall be in accordance with Article 251.04 of the *IDOT Standard Specifications*. Erosion control blanket shall be installed on seeded areas within twenty-four (24) hours of seed placement.

Erosion control blanket shall be installed on all seeded areas throughout the project limits.

30.2 Materials

All erosion control blanket shall be in accordance with Article 1081.10(a) and/or Article 1081.10(c) of the *IDOT Standard Specifications*.

30.3 Required Submittals

1. Material certifications for the erosion control blanket.

30.4 Payment

Payment shall be made at the Contract unit price per Square Yard of **Erosion Control Blanket, complete, in place.**

31 Construction Layout

31.1 General

This work shall be in accordance with IDOT *Recurring Special Provision #10: Construction Layout Stakes* as included in Section V of this Contract, and shall consist of the Contractor providing all layout for the construction of this project to the lines and grades contained within the plans.

The District will layout the right of way limits and the control points within the plans prior to construction commencing.

31.2 Materials – Not used.

31.3 Required Submittals – Not used.

31.4 Payment

Payment shall be made at the Contract unit price per Lump Sum for **Construction Layout**.

32 Traffic Control and Protection, Complete

32.1 General

Contractor shall be solely responsible for the safety of the operations, and shall comply with all state, local and OSHA regulations. Contractor shall retain a person competent in complying with OSHA trenching and excavation requirements on site at all times. The person shall be capable of identifying existing and probable hazards in the surroundings, or working conditions which are unsanitary, hazardous or dangerous to employees, and shall be authorized to take prompt corrective measures to eliminate them. The means and methods to comply with construction site safety are the sole responsibility of the Contractor. District staff is not responsible for the Contractor's compliance procedures.

The Contractor shall obtain all permits required by the governing roadway agencies and shall provide detailed traffic control plans as required and implement and maintain approved traffic control measures, including detour routes, as required. Traffic control and protection shall be in accordance with the *IDOT Standards Specifications* and *IDOT Highway Standards*, current edition.

All work zone traffic control and protection shall be in compliance with the *Manual on Uniform Traffic Control Devices*, current edition.

32.2 Required Submittals

1. Copies of approved traffic control plans.

32.3 Payment

This work will be paid for at the Contract Lump Sum price for **Traffic Control and Protection, Complete**.

33 Quality Control Tests and Certification

33.1 General

All costs of testing, installing, re-installing, backfilling, compaction, and re-testing of sanitary sewers and services shall be borne by the Contractor. All pipe shall be tested in accordance with ASTM and manufacturer's standards. The manufacturer shall furnish certified test reports with each shipment of pipe, run or unit of pipe extrusion.

Final, satisfactory low-pressure air tests, deflection tests and manhole vacuum tests shall be performed no later than sixty (60) days after the installation of each sewer main section (manhole-to-manhole). The 60-day period starts with the completion of the sewer main, not the completion of the sewer services. The District reserves the right to suspend any or all work until the Contractor fully complies with this requirement.

33.2 Tests

The Contractor shall perform pipe deflection testing and pipe low pressure air testing (T.S. 9.1 of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*.) upon completion of installation, bedding, backfilling and compaction of each sanitary sewer main section. The Contractor shall arrange at his expense mandrel (deflection) and low-pressure air tests of the pipe.

Low pressure line testing will be required on the new sanitary sewer mains. All sewer mains from existing manhole to new manhole or new manhole to new manhole shall be mandrel (deflection) tested.

After the final installation, backfilling and compaction have been completed and prior to starting the roadway replacement, low-pressure air tests and deflection tests shall pass on all sewer pipes as stated below.

33.2.1 Low Pressure Air Test

Low-pressure air testing of sanitary sewers shall use an allowable timed pressure drop of 0.5 psig. The allowable air loss rate shall be 0.0015 cu.ft./min. All test times shall be calculated using Ramseier's equation $T = 0.85 DK/Q$, where:

- T = Shortest time, in seconds, allowed for the pressure to drop 0.5 psig
- K = 0.000419 DL, but not less than 1.0
- Q = 0.0015 cu.ft./minute/sq.ft. of internal surface
- D = Nominal pipe diameter, in inches
- L = Length of pipe being tested, in feet

This modifies T.S. 9.4 of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*. The following table may be used to determine the minimum test time required:

Minimum Specified Time Required for a 0.5 psig Pressure Drop for Size and Length of Pipe Indicated for Q=0.0015

1 Pipe Diameter (inches)	2 Minimum Tim (min:sec)	3 Length for Minimum Time (ft.)	4 Time for Longer Length (sec.)	Specification Time for Length (L) Shown (min:sec)							
				100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.
4	1:53	597	.190 L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53
6	2:50	398	.427 L	2:50	2:50	2:50	2:50	2:50	2:50	2:51	3:12
8	3:37	298	.760 L	3:37	3:37	3:37	3:37	3:38	4:26	5:04	5:42
10	4:43	239	1.187 L	4:43	4:43	4:43	4:57	5:56	6:55	7:54	8:54
12	5:40	199	1.709 L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	12:50
15	7:05	159	2.671 L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02
18	8:30	133	3.846 L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51
21	9:55	114	5.235 L	9:55	13:05	17:27	21:49	26:11	30:32	34:54	39:16
24	11:20	99	6.837 L	11:24	17:57	22:48	28:30	34:11	39:53	45:35	51:17
27	12:45	88	8.653 L	14:25	21:38	28:51	36:04	43:13	50:30	57:42	46:54
30	14:10	80	10.683 L	17:48	26:43	35:37	44:31	53:25	62:19	71:13	80:07
33	15:35	72	12.946 L	21:33	32:19	43:46	53:42	64:38	75:24	86:10	96:57
36	17:00	66	15.384 L	25:39	38:28	51:17	64:06	76:55	89:44	102:34	115:23

33.2.2 Pipe Deflection Test

After sewer installation, backfilling and compaction, all flexible sewer pipe shall be thoroughly cleaned and flushed with water and then, if not previously tested as elsewhere specified herein, the pipe shall be deflection tested by the Contractor at his own expense, in a manner acceptable to the District. Deflection testing shall be performed at least thirty (30) days after the trench has been backfilled.

If the vertical deflection exceeds five percent (5%) of the diameter, the Contractor shall replace the pipe. In the event that this pipe is used for replacement, it will be subject to the same vertical deflection test.

The District reserves the right to make a vertical deflection test within a year of the construction.

If deflection exceeds five percent (5%), the Contractor is responsible for replacing the pipe, as per G.C. 7:4 of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*.

In addition to the above and T.S. 8:2(c) of the District's *General Provisions and Technical Specifications for Sanitary Sewer Construction*, use the following deflection test:

Testing of all lines shall be done with a mandrel, pulled through all lines except the house leads. The diameter of the gauge shall be set at ninety-five percent (95%) of the un-deflected inside diameter of the flexible pipe. The Pin-Type Go/No-Go Gauge will stop at any area in a flexible underground pipeline having vertical ring deflection greater than five percent (5%).

All pipe exceeding this deflection shall be considered to have reached the limit of serviceability and shall be re-laid or replaced by the Contractor at no additional cost to the owner, (WPCF Manual of Practice No. 9, page 222).

If possible and practical, the testing shall initiate at the downstream lines and proceed towards the upstream lines. Where deflection is found to be in excess of five percent (5%) of the original pipe diameter, the Contractor shall excavate to the point of excess deflection and carefully compact around the point where excess deflection was found. The line shall then be retested for deflection. However, after the initial testing, should the deflected pipe fail to return to the original site (inside diameter) the line shall be replaced.

33.2.3 Vacuum Testing

All new manholes shall be vacuum tested per ASTM C-1244 *Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test* prior to placing into service.

33.3 Measurement and Payment

No separate measurement or payment will be made for this work. All costs shall be included in the Contract unit price per Linear Foot of **Sanitary Sewer, PVC SDR26, 8" Dia.** installed, complete in place.

34 Cleanup

34.1 General

Upon completion of work, the Contractor shall clean up and remove all construction debris, materials, equipment, machines, etc., from the entire project area. All excavations shall be backfilled neatly to near original grade, and any excess materials shall be hauled away to an offsite location acceptable to the District. All roadway surfaces shall be made free and cleaned of all mud and construction debris.

34.2 Payment

No separate payment will be made for Cleanup, complete. All costs associated with this work shall be included in the various Contract pay items.

35 Soil Borings

35.1 General

The soil borings attached in Section III of this Contract are for informational purposes only. The Contractor shall verify the actual soil conditions prior to submitting a bid. No additional compensation will be allowed for subsurface conditions at variance with the borings taken.

Section II
Contract Documents

Not to be used for bidding purposes

Proposal

Project: N. 02nd Street Sanitary Sewer Extension, 13000 Block
Special Assessment No. 133

Location: Public right-of-way of N. 02nd Street (Illinois Route 251) Service Road
in Roscoe Township, Winnebago County, IL

Completion Date: November 29, 2019

Liquidated Damages: \$300/calendar day per each completion date deadline

To: Board of Trustees
Rock River Water Reclamation District
3501 Kishwaukee Street
Rockford, IL 61109

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

(Address of Individual, Partnership or Corporation)

Gentlemen:

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

1. That I (we), have, examined and am (are) familiar with all the related contract documents and found that they are accurate and complete and are approved by the undersigned.
2. That I (we), have carefully examined the site of the work, and that, from my (our) investigation, has satisfied myself (ourselves) as to the nature and location of the work, the character, quality, and quantity of materials and the kind and extent of equipment and other facilities needed for the performance of the work, the general and local conditions and all difficulties to be encountered, and all other items which may, in any way, effect the work or its performance.
3. That this bid is made without any understanding, agreement or connection with any other person, firm, or corporation making a bid for the same purposes, and is in all respects fair and without collusion or fraud; and that I (we) are not barred from bidding as a result of a bid-rigging or bid-rotating conviction.

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

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

9. The undersigned, as Bidder, declares that he has adopted and promulgated written sexual harassment policies in accordance with Public Act 99-093 and will make this information available upon request.
10. The undersigned, as Bidder, declares he will comply with prevailing wages in accordance with the Illinois Department of Labor Standards. The State of Illinois requires contractors and subcontractors on public works projects (including the Rock River Water Reclamation District) to submit certified payroll records on a monthly basis, along with a statement affirming that such records are true and accurate, that the wages paid to each worker are not less than the required prevailing rate and that the contractor is aware that filing false records is a Class B Misdemeanor. The successful Bidder shall be responsible for verifying the prevailing wages each month and notifying all subcontractors of the appropriate monthly rates. Prevailing wage rates may be found on the Illinois Department of Labor website at www.illinois.gov/idol/Laws-Rules/CONMED/Pages/Rates.aspx .

The certified payroll records must include the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, the number of hours worked each day, and the starting and ending time of work each day, for every worker employed on the project. Any contractor who fails to submit a certified payroll or knowingly files a false certified payroll is guilty of a Class B Misdemeanor. Certified payroll reports shall be submitted on industry standard forms such as IDOT Statement of Compliance (SBE 348) or other approved equal.

11. The undersigned, as Bidder, declares he will comply with the Federal Drug Free Workplace Act.
12. The undersigned, as Bidder, declares he will comply with Public Act 83-1030 entitled "Steel Products Procurement Act".
13. The undersigned, as Bidder, declares he will comply with Public Act 96-929 (30 ILCS 570) regarding Illinois residents' employment.
14. The undersigned, as Bidder, declares he will comply with non-discrimination in employment in accordance with the Illinois Fair Employment Practices Commissions Rules & Regulations.
15. The undersigned, as Bidder, declares that he currently participates in an apprenticeship or training program that is registered with the United States Department of Labor's Bureau of Apprenticeship and Training or other acceptable State of Illinois Department of Labor monitored program.

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

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

Not to be used for bidding purposes

Item No.	Quantity	Unit	Description	Unit Price (In Writing)	Unit Price (In Figures)	Total Price (In Figures)
1	1,003	LF	Sanitary Sewer, PVC SDR26, 8" Dia.			
2	220	LF	Sanitary Sewer, Carrier Pipe, PVC SDR26, 8" Dia.			
3	1	Each	Sanitary Manhole, 5' Dia.			
4	4	Each	Sanitary Manhole, 4' Dia.			
5	1	Each	Sanitary Manhole To Be Reconstructed			
6	1	Each	Connect to Exist. Sanitary Manhole			
7	5	Each	Sanitary Sewer Service, 6" Dia.			
8	1	LS	Boring & Jacking Setup, Complete			
9	220	LF	Steel Casing, 24" Dia., Bored & Jacked			
10	3	Each	Exploratory Excavation			
11	757	SY	Driveway Pavement Removal			
12	339	LF	Pipe Culverts Removal, Variable Dia.			
13	930	SY	Aggregate Base Course, Ty B, 12"			
14	160	Ton	Hot Mix Asphalt Binder Course, N50, IL19.0			
15	120	Ton	Hot Mix Asphalt Surface Course, Mix C N50, IL9.5			
16	312	LF	Pipe Culverts, Class C, Ty 1 Galvanized Corrugated Steel, 15"			
17	27	LF	Pipe Culverts, Class C, Ty 1 Galvanized Corrugated Steel, 18"			
18	14	Each	Metal Flared End Section, 15"			
19	2	Each	Metal Flared End Section, 18"			
20	40	LF	Chainlink Fence Removal & Replacement			

Item No.	Quantity	Unit	Description	Unit Price (In Writing)	Unit Price (In Figures)	Total Price (In Figures)
21	180	LF	Wood Fence Removal & Replacement			
22	8	Unit	Tree Removal (6 to 15 Units Diameter)			
23	955	LF	Grading and Shaping Ditches			
24	17	Each	Inlet and Pipe Protection			
25	10	LF	Temporary Ditch Checks			
26	260	LF	Perimeter Erosion Barrier			
27	3,281	SY	Turf Restoration, Complete (6" Topsoil, Seeding Class 1, Fertilizer)			
28	3,281	SY	Erosion Control Blanket			
29	1	LS	Construction Layout			
30	1	LS	Traffic Control & Protection			
TOTAL BID PRICE:						
				(In Writing)		(In Figures)

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

By: _____

Name: _____ Title: _____ Date: _____

Fair Employment Practices Affidavit of Compliance

Project: N. 02nd Special Sanitary Sewer Extension, 13000 Block, Special Assessment No. 133

NOTE: THE BIDDER MUST EXECUTE THIS AFFIDAVIT AND SUBMIT IT WITH ITS SIGNED BID. THE ROCK RIVER WATER RECLAMATION DISTRICT CANNOT ACCEPT ANY BID WHICH DOES NOT CONTAIN THIS AFFIDAVIT

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

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

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

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

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

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

(Source: Amended at 32 I11. Reg. 16484, effective September 23, 2008)"

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

Signature

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

Notary Public

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we:

_____ (hereinafter called the Principal) and

_____ (hereinafter called the Surety)

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

WHEREAS, the Principal is about to submit, or has submitted to the District, a proposal for constructing Sanitary Sewers and Appurtenances.

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

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

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

Principal

(Seal)

By _____
Name: _____
Title: _____
Date: _____

Attest:

Secretary

Surety

(Seal)

By _____
Name: _____
Title: _____
Date: _____

Not to be used for bidding purposes

Agreement

N. 02ND Street Sanitary Sewer Extension, 13000 Block Special Assessment No. 133

1. General

THIS AGREEMENT, made and concluded this ____ day of _____, 2019, between the Rock River Water Reclamation District, Rockford, Illinois (District), acting by and through the Board of Trustees and _____, his/their executors, administrators, successors or assigns:

2. Scope of Work

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

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

3. Contract Price

The District shall pay to the Contractor, and the Contractor shall accept, in full payment for the performance of this Contract, subject to any additions or deductions provided for hereby, in current funds, the Total Contract Price of _____ dollars and ___/100 (\$00000.00).

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

4. Bond

The Contractor has entered into and herewith tenders a bond of even date herewith, in the penal sum of _____ dollars and ___/100 (\$00.00) to insure the faithful performance of this Contract, which said bond is hereby made a part of this Contract by reference.

5. Maintenance and Guarantee

The Contractor shall promptly repair, replace, restore or rebuild any imperfections that may arise and shall maintain satisfactory to the District all work for a period three (3) years from the date of final acceptance of the Contract for trench settlement and for a period of two (2) years all other work, except where periods of maintenance and guarantee are provided for. The Contractor shall, for this

period, indemnify and save harmless the District, its officers and agents from any injury done to property or persons as a direct or alleged result of imperfections in the Contractors' work, and shall immediately assume and take charge of the defense of such action or suits in like manner and to all intents and purposes as if said actions and suits had been brought directly against the Contractor.

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

6. Contract Execution

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

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

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

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

7. Payments to Contractor

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

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

The Contractor will be paid for the sanitary sewer of this project in part in Special Assessment vouchers at par with interest at 5% per annum. Cash shall be drawn from the District Public Benefit Fund to pay a portion of the project.

N. 02nd Street SSE Special Assessment No. 133 cash payments shall be determined as follows:

1. Construction Cost (CC) = Contractor's Bid
2. Engineering (E) = CC x .15
3. Reserve for Deficit (RD) = .045 x (CC+E)
4. Cost of Making (CM) = .045 x (CC+E)
5. Total Project Cost (TPC) = CC+E+RD+CM
6. Property Benefit Amount (PBA) = \$75,300.00
7. Public Benefit (PB) = TPC – PBA
8. Minimum Cash to Contractor = PB – (E+RD+CM)

Payments to be made in accordance with these bidding requirements and those additional provisions contained in the attached contract forms.

8. Subcontracts

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

9. Contractor's Responsibility

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

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

The Contractor shall pay not less than the prevailing wage rate as determined by the Department of Labor, to all laborers, workmen and mechanics performing work under this Contract. Contractor shall comply with current revisions of the wage standards; as required by law. Certified payroll reports shall be submitted on standard IDOT forms.

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

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

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

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

Contractor shall also comply with Public Act 99-0933, which requires any party to a contract to adopt and enforce a written policy regarding sexual harassment that includes, as a minimum, the following information:

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

Upon request this information will be provided to the Illinois Department of Human Rights. Upon District award of a contract, the District will be provided this information described no more than ten (10) working days after the District issues its award notification.

The Contractor shall comply with Article 2 of Public Act 96-929 (30 ILCS 570) which provides that Illinois residents be employed on Illinois public works projects, provided there has been a period of excessive unemployment (5%) in the State of Illinois as defined in the Act; and further, that Illinois workers are available and capable of performing the particular type work involved.

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

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

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

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

10. Time

The completion date for this project shall be November 29, 2019. Failure to complete the project by the contract completion date will result in liquidated damages. Any request to extend the contract completion date must be presented to the Board of Trustees at the Board meeting prior to the current contract completion date.

11 Liquidated Damages

The amount of liquidated damages shall be \$300.00 per calendar day.

12. Counterparts

This Agreement may be executed and recorded in counterparts, each of which shall be deemed an original and all of which, when taken together, shall constitute one and the same

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

13. Seals

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

**Rock River Water Reclamation District
Winnebago County, Illinois**

(Seal)

By _____
President, Board of Trustees

ATTEST: _____
Clerk of the Board

Contractor

By _____
Contractor's Officer

(Corporate Seal)

Name: _____

Title: _____

Date: _____

ATTEST: _____

Labor & Material Payment Bond

TO: _____ Contractor Name

_____ Contractor City, State

KNOW ALL MEN BY THESE PRESENTS

That _____ (Contractor)

as Principal, and _____

a corporation of the State of _____ as Surety, are held and firmly bound unto the Rock River Water Reclamation District, as Obligee, for the use and benefit of claimants as hereinafter defined in the amount of

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

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

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

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

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

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

Signed and Sealed this _____ day of _____, 2019.

CONTRACTOR
Contractor Firm Name

SURETY

By: _____
Signature

By: _____
Attorney-in-Fact

Title

Resident Agent

ATTEST:

Corporate Secretary (Corporations only)

Performance Bond

KNOW ALL MEN BY THESE PRESENTS, that WHEREAS, the Rock River Water Reclamation District has awarded to: _____ hereinafter designated as the “Principal”, a contract, dated, _____, for the Rock River Water Reclamation District.

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

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

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

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

CONTRACTOR

SURETY

Contractor Firm Name:

By: _____

By: _____ Signature
Attorney-in-Fact

Title

Resident Agent

ATTEST:

Corporate Secretary (Corporations only)

Not to be used for bidding purposes

Not to be used for bidding purposes

Section III
Soil Borings

Geotechnical Engineering Report

North 2nd Street Sanitary Sewer Extension

Special Assessment No. 133

Roscoe, Illinois

August 20, 2019

Terracon Project No. 19195027

Prepared for:

Rock River Water Reclamation District
Rockford, Illinois

Prepared by:

Terracon Consultants, Inc.
Rockford, Illinois

Not to be used for bidding purposes

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon



August 20, 2019

Rock River Water Reclamation District
3501 Kishwaukee Street
P.O. Box 7480
Rockford, Illinois 61126

Attn: Mr. Tyler V. Nelson, P.E.

Re: Geotechnical Engineering Report
North 2nd Street Sanitary Sewer Extension
Special Assessment No. 133
Roscoe, Illinois
Terracon Project No. 19195027

Dear Mr. Nelson:

Terracon Consultants, Inc. (Terracon) has completed a subsurface exploration and geotechnical engineering evaluation for the referenced project. These services were performed in general accordance with our Proposal No. P19195027 dated July 16, 2019 and RRWRD Purchase Order No. 80899 dated July 18, 2019. This report presents the results of the subsurface exploration and provides recommendations regarding excavation and backfilling for the proposed sanitary sewer extension.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service to you, please contact us.

Sincerely,
TERRACON CONSULTANTS, INC.


Doug Waldeier, P.E.
Illinois No. 062-064326
Renews 11/30/2019





Kole C. Berg, P.E.
Illinois No. 062-060554
Renews 11/30/2019

Terracon Consultants, Inc. 4836 Colt Road Rockford, Illinois 61109
P [815] 873 0990 F [815] 873 0991 terracon.com



Geotechnical



Environmental



Construction Materials



Facilities

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 PROJECT INFORMATION	1
2.1 Project Description	1
2.2 Site Location and Description.....	1
3.0 SUBSURFACE CONDITIONS	2
3.1 Typical Profile	2
3.1.1 Pavement Cores.....	2
3.2 Water Level Observations	3
4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION	3
4.1 Geotechnical Considerations	3
4.2 Sanitary Sewer Construction.....	3
4.2.1 Sanitary Sewer Trench Excavation Recommendations	3
4.2.2 Pipe and Structure Support Recommendations.....	5
4.2.3 Trench Backfill Recommendations	5
4.2.4 Compaction Requirements	6
4.2.5 Horizontal Directional Drilling.....	6
5.0 GENERAL COMMENTS	8
 APPENDIX A – FIELD EXPLORATION	
Exhibit A-1	Field Exploration Description
Exhibit A-2	Boring Location Diagram
Exhibits A-3 to A-7	Boring Logs
 APPENDIX B – LABORATORY TESTING	
Exhibit B-1	Laboratory Testing
 APPENDIX C – SUPPORTING DOCUMENTS	
Exhibit C-1	General Notes
Exhibit C-2	Unified Soil Classification

**GEOTECHNICAL ENGINEERING REPORT
 NORTH 2nd STREET SANITARY SEWER EXTENSION
 SPECIAL ASSESSMENT NO. 133
 ROSCOE, ILLINOIS
 Terracon Project No. 19195027
 August 20, 2019**

1.0 INTRODUCTION

Terracon has completed a subsurface exploration for the proposed North 2nd Street sanitary sewer extension project (Special Assessment No. 133) in Roscoe, Illinois. Five (5) borings extending to depth ranging from about 15 to 20 feet below existing grade and four (4) pavement cores were performed along the proposed project alignment. Boring logs and a boring location diagram are included in Appendix A of the report. This report describes the subsurface conditions encountered at the boring locations, presents the test data, and provides recommendations regarding excavation and backfilling for the proposed sanitary sewer extension.

2.0 PROJECT INFORMATION

2.1 Project Description

ITEM	DESCRIPTION
Site layout	See Boring Location Diagram (Exhibit A-2)
Proposed Improvements	Sanitary sewer extension
Grading	No changes to existing surface grades are planned.
General Construction	We anticipate that the sanitary sewer will be constructed by a combination of both open cut excavations and jack and bore methods.

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	1300 Block of North 2 nd Street in Roscoe, Illinois.
Existing Improvements	The alignment is located along an existing commercial roadway with access drives.
Existing topography	Based upon the information provided, the ground surface elevations range from about 755 feet 769 along the proposed alignment.

3.0 SUBSURFACE CONDITIONS

3.1 Typical Profile

Subsurface conditions encountered at the boring locations are described on the boring logs. The stratification boundaries shown on the boring logs represent the approximate depth where changes in material types occur. In-situ, transitions between native materials may be gradual. Based on the conditions observed at the boring locations, the stratigraphy can generally be described as follows. Please refer to the attached boring logs for further information.

Description	Approximate Depth to Bottom of Stratum	Material Encountered	Consistency/Density
Surface	4 to 6 inches	Topsoil	N/A
Stratum 1	3 to 11 feet	Fill: Lean clay, with variable amounts of sand and gravel	N/A
Stratum 2	Termination depth of about 15 to 20 feet	Native granular soils: Sand with variable amounts of gravel	Medium dense to dense

Select soil samples were screened with a photo-ionization detector (PID) to estimate the presence of volatile organic compounds (VOCs). These test results are summarized on the boring logs in Appendix A. VOC levels ranging from "non-detect" (below the detection level of the equipment) to 26 parts per million (ppm) were measured.

3.1.1 Pavement Cores

Four (4) cores of the existing access drive pavements were performed at locations marked by the client. Approximate locations of these cores are noted on the boring location diagram included in Appendix A of this report. The cores were performed with a diamond-tipped drill bit through the existing asphalt pavement. The conditions encountered in the pavement cores auger probes are presented in the following table:

Core Location	Surface Elevation (ft)	Pavement Thickness (inches)	Subbase Thickness (inches)	Subgrade Material
PC-1	767.93	4	11	Fill: Lean clay with sand and gravel
PC-2	767.92	6	10	Fine to coarse Sand, trace gravel
PC-3	768.34	2	4	Fill: Lean clay with sand and gravel
PC-4	768.77	3	15	Fill: Lean clay with sand and gravel

3.2 Water Level Observations

The borings were observed during and after the completion of drilling for the presence and level of water. Water was not observed in the borings at these times. The absence of water in a borehole does not necessarily mean that the boring terminated above the subsurface water level. Longer term observations in cased holes or piezometers, sealed from the influence of surface water, would be required for a better evaluation of the groundwater conditions on this site.

Water levels may fluctuate due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Trapped or “perched” water could occur above lower permeability soil layers. The potential for water level fluctuations and perched water should be considered when developing design and construction plans and specifications for the project.

4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

4.1 Geotechnical Considerations

The soil boring data and laboratory test results were evaluated to develop recommendations for the sanitary sewer excavations. Based on the subsurface conditions encountered in the borings and the anticipated excavation depths, the soils encountered at the boring locations appear to be suitable for the proposed sewer construction. Since sands are present along most of the alignment and sufficient lateral distance may not exist to properly slope open cuts, the use of trench boxes, temporary sheeting or other means of shoring will likely be required to support the sides of the excavations.

4.2 Sanitary Sewer Construction

4.2.1 Sanitary Sewer Trench Excavation Recommendations

The use of temporary sheeting/shoring or trench boxes will likely be needed where loose sands are present or where space or cost limitations will not permit safe slopes for an open cut excavation. Careful planning and execution of the trench excavations, dewatering (if needed) and sheeting/shoring installation (if required) will be important to reduce the potential for subgrade instability and ground loss due to granular soils flowing into the excavations.

All excavations for the proposed sanitary sewer should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, “Excavations” and its appendices, as well as other applicable codes, and in accordance with any applicable local, state, and federal safety regulations. The contractor should be aware that excavation depths and slope inclination should in no instance exceed those specified by these regulations. Flatter slopes than those indicated by these

Geotechnical Engineering Report

North 2nd Street Sanitary Sewer Extension ■ Roscoe, Illinois
August 20, 2019 ■ Terracon Project No. 19195027



regulations may be required depending upon the soil conditions encountered and other external factors. These regulations are strictly enforced and, if not followed, the owner, and contractor could be liable and subjected to substantial penalties. Under no circumstances should the information provided below be interpreted to mean that Terracon is assuming responsibility for construction site safety or the contractor's activities. Construction site safety is the sole responsibility of the contractor, who should also be solely responsible for the means, methods, and sequencing of construction operations.

The OSHA Occupational Safety and Health Standards-Excavations classify soils into three basic types (e.g., Type A, B, and C). Depending upon the soil type, OSHA requirements for excavation slopes range from $\frac{3}{4}H$ to 1V (horizontal to vertical) for Type A soils, 1H to 1V for Type B soils, and $1\frac{1}{2}H$ to 1V for Type C soils. OSHA dictates that any excavation extending to a depth of more than 20 feet shall be designed by a licensed professional engineer. Based upon the subsurface conditions encountered at the boring locations, it appears that the majority excavations will extend into granular soils. Granular soils classify as Type C soil according to the OSHA regulations. OSHA recommends a maximum slope inclination of $1\frac{1}{2}$ horizontal to 1 vertical above the water table for excavations in granular soils. It should be noted that whenever a lower strength material underlies a higher strength material, the lower strength material must be utilized for trench design. Consideration should be given to the allowable construction easement when developing the excavation plan.

In lieu of trench slopes as defined by OSHA, trench shoring or a shield (trench boxes) may be utilized to reduce overall excavation widths. The contractor or the specialty subcontractor should be responsible for the design, installation, and maintenance of the temporary shoring. These designs should be performed in accordance with applicable regulatory requirements.

Based on subsurface conditions encountered at the time the exploratory borings were drilled, significant groundwater seepage into the excavations is generally not expected. However, if groundwater is encountered, the contractor should select and implement methods to control seepage into the excavations. Low volumes of seepage into excavations could probably be controlled using sump pits and pumps from within the excavations. However, for higher volumes of seepage, more extensive dewatering measures, such as well points, may be necessary. In this case, temporary sheeting may be necessary, particularly in granular soils, to provide a horizontal cut off to the migration of water into the excavations. Shheeting, if driven to sufficient depths, could also help reduce the inflow of groundwater into the excavation. However, groundwater inflows through the sheeting interlocks and underlying sands should still be anticipated.

Care should be taken during excavation to protect the structural integrity of any existing structures, pavements, or adjacent underground utilities that are to remain in-place. The settlement tolerances of adjacent structures or improvements should be considered when determining the excavation methods. Depending upon factors such as the depth of excavation,

Geotechnical Engineering Report

North 2nd Street Sanitary Sewer Extension ■ Roscoe, Illinois
August 20, 2019 ■ Terracon Project No. 19195027



the location of the existing improvements, groundwater and soil conditions, temporary sheeting, shoring, and underpinning may be required. Particular caution should be exercised if excavations are performed near existing utility lines. Existing backfill for utility lines is often poorly compacted and the limits of the old excavation form a ready failure surface. The OSHA trench safety guidelines for adequate side slopes based on soil types may not apply in these situations. Existing underground utilities should be shored and braced as required to maintain their integrity and appropriately designed trench boxes or sheeting and bracing should be used to provide for worker safety.

All vehicles, equipment and soil piles should be kept a sufficient lateral distance from the crest of the trench slope to maintain safe working conditions. Vehicles, equipment and soil piles located adjacent to trenches could significantly reduce the stability of the slopes as outlined by the OSHA regulations. A more detailed stability analysis would be required to better evaluate these conditions. Additionally, vibrations from heavy traffic or similar sources can negatively influence slope stability. The exposed slope faces should be protected from the elements. Surface water should be diverted away from all excavations. The length of open trench should be held to a minimum. Where possible, construction of sanitary sewer lines should start at the lowest point along the proposed line and proceed upgradient. Trench excavation, pipe installation, and backfilling should be completed as quickly as possible.

The generalized discussion provided above is based solely upon the materials encountered in the exploratory borings. The materials encountered in the excavations along the proposed alignment may vary significantly. The boring logs represent soil conditions at a discrete location and are not necessarily representative of conditions along the entire alignment. Thus, the stability of the excavation slope should be reviewed continuously by qualified personnel during construction.

4.2.2 Pipe and Structure Support Recommendations

Settlement of any manhole structures supported on undisturbed native soils is generally not a major concern due to the small increase of net load at the bearing elevation. However, settlement can occur due to recompression of soils beneath structures or pipelines that were disturbed or loosened in the construction process. If loosening or disturbance of foundation soils occurs, the affected soils should be recompacted in-place or overexcavated and replaced. A clean and well-graded granular material, such as crushed stone meeting the criteria of IDOT gradation CA-8, CA-11, or other similar material, could be used as replacement material. An appropriately selected engineering geotextile could also be considered below the stone to provide filtering characteristics and increase the stability of the excavation base.

4.2.3 Trench Backfill Recommendations

Trench backfill materials should be free of organic matter and debris and consist of material meeting the requirements of the Agency with jurisdiction. If no jurisdictional specific requirements exist, we recommend that trench backfill consist of approved materials free of

organic matter and debris. Well-graded granular materials (i.e., sands and gravels) should be used as backfill for portions of the sanitary sewer trenches below or adjacent to streets or other structures. Compaction of the granular backfill materials is typically less sensitive to moisture variations and is usually more readily accomplished in confined excavations where granular soils are used.

Due to clay in the surficial fill soils, the existing fill soils would not be considered suitable for use as trench backfill. However, the native sand soils encountered would be considered suitable for use as trench backfill.

4.2.4 Compaction Requirements

Item	Description
Fill Lift Thickness	9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used. 4 to 6 inches in loose thickness when hand-guided equipment (i.e., a jumping jack or plate compactor) is used.
Compaction of Granular Material and Cohesive Soil ^{1, 2}	Fill placed in the upper 12 inches of design subgrade below pavements should be compacted to at least 98 percent of the standard Proctor maximum dry density (ASTM D 698). Fill placed more than 12 inches below final grade for support of pavements should be compacted to at least 95 percent of the above specified density.
Moisture Content of Granular Material ³	Workable moisture levels
Moisture Content of Cohesive Soil	Within 2% below to 3% above the standard Proctor optimum moisture content at the time of placement and compaction

1. We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.
2. If the granular material is a coarse sand or gravel, is of a uniform size, or has a low fines content, compaction comparison to relative density (ASTM D 4253 and D 4254) may be more appropriate. In this case, granular materials should be compacted to at least 60% of the material's maximum relative density.
3. Specifically, moisture levels should be maintained to achieve compaction without the subgrade pumping when proofrolled.

4.2.5 Horizontal Directional Drilling

We understand that consideration is being given to using horizontal directional drilling and pipe jacking methods to install the pipeline at select locations along the alignment in which open cut excavations are not feasible or allowed, such as under existing utilities, pavements, and roadways. Horizontal directional drilling is a trenchless excavation method which is

Geotechnical Engineering Report

North 2nd Street Sanitary Sewer Extension ■ Roscoe, Illinois
August 20, 2019 ■ Terracon Project No. 19195027



accomplished in two phases. The first phase consists of drilling a pilot hole along a design directional path. The second phase consists of pulling the pipe through the pilot hole.

Horizontal directional drilling is accomplished using a specialized horizontal drilling rig with ancillary tools and equipment. Based on the soils encountered in the soil borings, we anticipate the directional drilling will likely encounter native sand. Furthermore, it is unlikely that the horizontal directional drilling will encounter groundwater.

The steel casing used to advance the directional drill should be designed to withstand all jacking loads plus soil loads. The steel casing should be installed with the use of a jacking shield attached to the leading edge of the casing pipe. The shield should be constructed of steel designed to support the required soil loading and jacking stresses. The shield should be adequately braced and provided with necessary appurtenances for completely bulkheading the face with horizontal or vertical breast boards. The shield shall be capable of being maneuvered by steering jacks located in the shield or other suitable materials. Voids should be prevented from forming outside of the pipe as the shield is advanced. Where unavoidable voids are created outside the casing during advance, or due to the removal of material at the front of the casing, such voids should be immediately filled with sand, clay, bentonite, or other non-decomposable material and rammed into place. When the casing has been completely installed, all voids filled with temporary material should be finally filled with Portland cement grout pumped through the grout holes in the casing by starting at the low end.

Horizontal and vertical modulus of subgrade reaction values for buried piping in different soil types are given in the following table:

DESCRIPTION	Lateral modulus of subgrade reaction (pci) ¹	Vertical modulus of subgrade reaction (pci)
Loose Sand/Silt	20	100
Medium Dense Sand/Silt	60	150
Dense Sand/Silt	100	250
Soft Clay	30	25
Medium Stiff Clay	100	50
Stiff Clay	500	150
Very Stiff to Hard Clay	1000	150

1. For static load conditions. Parameters based on default design values provided in the Ensoft LPILE User Manual.

5.0 GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during excavation, sanitary sewer construction, backfilling, and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated location and from other information discussed in this report. This report does not reflect variations that may occur across the site or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

With the exception of the photo-ionization detector screening discussed above, the scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either expressed or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX A

FIELD EXPLORATION

Not to be used for bidding purposes

Geotechnical Engineering Report

North 2nd Street Sanitary Sewer Extension ■ Roscoe, Illinois
August 20, 2019 ■ Terracon Project No. 19195027



Field Exploration Description

The borings were performed near the locations shown on the attached Boring Location Diagram (Exhibit A-2). The boring locations were marked in the field and elevations at the boring locations were provided by the client.

The borings were drilled with a truck-mounted, rotary drill rig using continuous flight, hollow-stemmed augers to advance the borehole. Soil samples were obtained using split-barrel sampling procedures, in which a standard 2-inch (outside diameter) split-barrel sampling spoon is driven into the ground with a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. These values, also referred to as SPT N-values, are an indication of soil strength/relative density and are provided on the boring logs at the depths of occurrence. The samples were sealed and transported to the laboratory for testing and classification.

The drill crew prepared field logs of the borings. The logs included visual classifications of the materials encountered during drilling and the driller's interpretation of the subsurface conditions between samples. The boring logs included with this report represent the engineer's interpretation of the field logs and include modifications based on laboratory observation and tests of the samples.

Not to be used for bidding purposes



Not to be used for bidding purposes



bing

© 2019 Microsoft Corporation © CNES (2019) Distribution Airbus DS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

Project Manager:	DAW
Drawn by:	DAW
Checked by:	KCB
Approved by:	KCB

Project No.	19195027
Scale:	AS SHOWN
File Name:	19195027_BLD
Date:	Aug 2019

Terracon
 4836 Colt Rd
 Rockford, IL 61109-2612

EXPLORATION PLAN
 North 2nd Street Sanitary Sewer Extension,
 Special Assessment No. 133 project
 13000 N 2nd Street
 Roscoe, IL

Exhibit	A-2
---------	-----

BORING LOG NO. B-1

PROJECT: North 2nd Street Sanitary Sewer Extension,
Special Assessment No. 133 project

CLIENT: Rock River Water Reclamation District
Rockford, IL

SITE: 13000 N 2nd Street
Roscoe, IL

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 42.4489° Longitude: -89.0187° Surface Elev.: 760.10 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.3	TOPSOIL , Approximately 4" FILL - LEAN CLAY , with sand and gravel, brown	760							
5.0	FINE TO COARSE SAND (SW) , trace gravel, light brown, medium dense	755							
12.0	FINE TO MEDIUM SAND (SP) , light brown, medium dense	748							
17.0	FINE TO COARSE SAND (SW) , trace gravel, light brown, medium dense	743							
20.0	FINE TO COARSE SAND (SW) , trace gravel, light brown, medium dense	740							
	BOTTOM OF BORING <i>Boring Terminated at 20 Feet</i>	740							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

See Exhibit A-1 for description of field procedures
See Appendix B for description of Laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring



Boring Started: 07-25-2019

Boring Completed: 07-25-2019

Drill Rig: D-120

Driller: TDH

Project No.: 19195027

Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 19195027 NORTH 2ND STREET. GPU TERRACON DATATEMPLATE.GDT 8/20/19

BORING LOG NO. B-2

PROJECT: North 2nd Street Sanitary Sewer Extension,
Special Assessment No. 133 project

CLIENT: Rock River Water Reclamation District
Rockford, IL

SITE: 13000 N 2nd Street
Roscoe, IL

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 42.4498° Longitude: -89.0188° Surface Elev.: 766.96 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	0.5 TOPSOIL , Approximately 6"	766.5							
	FILL - SANDY LEAN CLAY , brown								
	3.0 FINE TO COARSE SAND (SW) , light brown, medium dense	764				4-5-7 N=12	0	7000 (HP)	11
	5.0 FINE TO MEDIUM SAND (SP) , light brown, medium dense to dense	762				8-11-11 N=22	0		3
						5-7-12 N=19	0		3
						10-19-17 N=36	26		3
	12.0 FINE TO COARSE SAND (SW) , light brown, medium dense	755							
						6-9-9 N=18	0		4
	15.0 BOTTOM OF BORING <i>Boring Terminated at 15 Feet</i>	752							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

See Exhibit A-1 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring



Boring Started: 07-25-2019

Boring Completed: 07-25-2019

Drill Rig: D-120

Driller: TDH

Project No.: 19195027

Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 19195027 NORTH 2ND STREET GPU TERRACON_DATATEMPLATE.GDT 8/20/19

BORING LOG NO. B-3

PROJECT: North 2nd Street Sanitary Sewer Extension,
Special Assessment No. 133 project

CLIENT: Rock River Water Reclamation District
Rockford, IL

SITE: 13000 N 2nd Street
Roscoe, IL

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 42.4507° Longitude: -89.0189° Surface Elev.: 766.95 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.3	TOPSOIL , Approximately 4"	766.5							
3.0	FILL - SANDY LEAN CLAY , trace gravel, dark brown	764		X	10	4-4-8 N=12	0	6000 (HP)	9
5.0	FINE TO MEDIUM SAND (SP) , trace gravel, light brown, medium dense	762		X	14	6-6-8 N=14	0		4
8.0	FINE TO COARSE SAND (SW) , trace gravel, light brown, medium dense	759		X	18	14-20-28 N=48	0		3
11.0	FINE SAND (SP) , trace gravel, light brown, medium dense	756		X	14	6-9-10 N=19	0		3
15.0	FINE TO MEDIUM SAND (SP) , trace gravel, light brown, medium dense	752		X	16	10-13-15 N=28	0		3
BOTTOM OF BORING <i>Boring Terminated at 15 Feet</i>									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

See Exhibit A-1 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring



Boring Started: 07-25-2019

Boring Completed: 07-25-2019

Drill Rig: D-120

Driller: TDH

Project No.: 19195027

Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 19195027 NORTH 2ND STREET GPU TERRACON DATATEMPLATE.GDT 8/20/19

BORING LOG NO. B-4

PROJECT: North 2nd Street Sanitary Sewer Extension,
Special Assessment No. 133 project

CLIENT: Rock River Water Reclamation District
Rockford, IL

SITE: 13000 N 2nd Street
Roscoe, IL

GRAPHIC LOG	LOCATION See Exhibit A-2 Latitude: 42.452° Longitude: -89.0189° Surface Elev.: 768.83 (Ft.) ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	0.5 TOPSOIL , Approximately 6"	768.5							
	FILL - SANDY LEAN CLAY , trace gravel, dark brown								
		3.0							
	FINE TO COARSE SAND (SW) , trace gravel, light brown, medium dense to dense	766							
		5							
		10							
		15							
	15.0 BOTTOM OF BORING <i>Boring Terminated at 15 Feet</i>	754							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

See Exhibit A-1 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring



Boring Started: 07-25-2019

Boring Completed: 07-25-2019

Drill Rig: D-120

Driller: TDH

Project No.: 19195027

Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 19195027 NORTH 2ND STREET GPU TERRACON DATATEMPLATE.GDT 8/20/19

Not to be used for bidding purposes

BORING LOG NO. B-5

PROJECT: North 2nd Street Sanitary Sewer Extension,
Special Assessment No. 133 project

CLIENT: Rock River Water Reclamation District
Rockford, IL

SITE: 13000 N 2nd Street
Roscoe, IL

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.3	754.5								
TOPSOIL , Approximately 4" FILL - SANDY LEAN CLAY , trace gravel, brown									
3.0	752			X	6	5-5-4 N=9	0	5000 (HP)	8
FILL - SILTY CLAY , with sand, trace gravel, dark brown									
		5		X	16	3-4-7 N=11	0	2500 (HP)	14
				X	16	3-3-3 N=6	0		14
8.0	747			X	14	2-2-4 N=6	0		13
FILL - SANDY LEAN CLAY , with gravel, brown									
		10		X	14	8-11-14 N=25	0		3
11.0	744								
FINE TO COARSE SAND (SW) , trace gravel, light brown, medium dense									
15.0	740	15		X	14	8-11-14 N=25	0		3
BOTTOM OF BORING Boring Terminated at 15 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

See Exhibit A-1 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with Auger Cuttings and/or Bentonite

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring



Boring Started: 07-25-2019

Boring Completed: 07-25-2019

Drill Rig: D-120

Driller: TDH

Project No.: 19195027

Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 19195027 NORTH 2ND STREET GPU TERRACON DATATEMPLATE.GDT 8/20/19

APPENDIX B

LABORATORY TESTING

Not to be used for bidding purposes

Geotechnical Engineering Report

North 2nd Street Sanitary Sewer Extension ■ Roscoe, Illinois
August 20, 2019 ■ Terracon Project No. 19195027



Laboratory Testing

The soil samples obtained from the borings were tested in the laboratory to measure their natural water contents. A pocket penetrometer was used to help estimate the approximate unconfined compressive strength of cohesive fill samples. The test results are provided on the boring logs in Appendix A.

The soil samples were classified in the laboratory based on visual observation, texture, plasticity, and the limited laboratory testing described above. The soil descriptions presented on the boring logs for native soils are in accordance with the enclosed General Notes (Exhibit C-1) and Unified Soil Classification System (USCS). The estimated USCS group symbols for native soils are shown on the boring logs, and a brief description of the USCS is included in this report (Exhibit C-2).

Not to be used for bidding purposes

APPENDIX C

SUPPORTING DOCUMENTS

Not to be used for bidding purposes

APPENDIX C

SUPPORTING DOCUMENTS

Not to be used for bidding purposes

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING			WATER LEVEL		Water Initially Encountered	FIELD TESTS	(HP) Hand Penetrometer	
	Auger	Split Spoon			Water Level After a Specified Period of Time		(T) Torvane	
					Water Level After a Specified Period of Time		(b/f) Standard Penetration Test (blows per foot)	
	Shelby Tube	Macro Core		Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.			(PID) Photo-Ionization Detector	
							(OVA) Organic Vapor Analyzer	
Ring Sampler	Rock Core							
								
Grab Sample	No Recovery							

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS	RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
	Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength, q_u , psf	Standard Penetration or N-Value Blows/Ft.
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 15
With	15 - 29
Modifier	> 30

RELATIVE PROPORTIONS OF FINES

<u>Descriptive Term(s) of other constituents</u>	<u>Percent of Dry Weight</u>
Trace	< 5
With	5 - 12
Modifier	> 12

GRAIN SIZE TERMINOLOGY

<u>Major Component of Sample</u>	<u>Particle Size</u>
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

PLASTICITY DESCRIPTION

<u>Term</u>	<u>Plasticity Index</u>
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification		
				Group Symbol	Group Name ^B	
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GP	Poorly graded gravel ^F	
			Fines classify as CL or CH	GM	Silty gravel ^{F,G,H}	
		Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	GC	Clayey gravel ^{F,G,H}
	Sands with Fines: More than 12% fines ^D		Fines classify as ML or MH	SW	Well-graded sand ^I	
			Fines classify as CL or CH	SP	Poorly graded sand ^I	
	Silts and Clays: Liquid limit less than 50		Inorganic:	PI > 7 and plots on or above "A" line ^J	SM	Silty sand ^{G,H,I}
		Organic:	Liquid limit - oven dried < 0.75	SC	Clayey sand ^{G,H,I}	
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI < 4 or plots below "A" line ^J	CL	Lean clay ^{K,L,M}	
		Organic:	Liquid limit - not dried < 0.75	ML	Silt ^{K,L,M}	
			PI plots on or above "A" line	OL	Organic clay ^{K,L,M,N}	
		Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots below "A" line	OH	Organic silt ^{K,L,M,O}
	Organic:		Liquid limit - oven dried < 0.75	CH	Fat clay ^{K,L,M}	
			Liquid limit - not dried < 0.75	MH	Elastic Silt ^{K,L,M}	
	Highly organic soils: Primarily organic matter, dark in color, and organic odor				OH	Organic clay ^{K,L,M,P}
					PT	Organic silt ^{K,L,M,Q}
				PT	Peat	

^A Based on the material passing the 3-inch (75-mm) sieve

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$E \quad Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

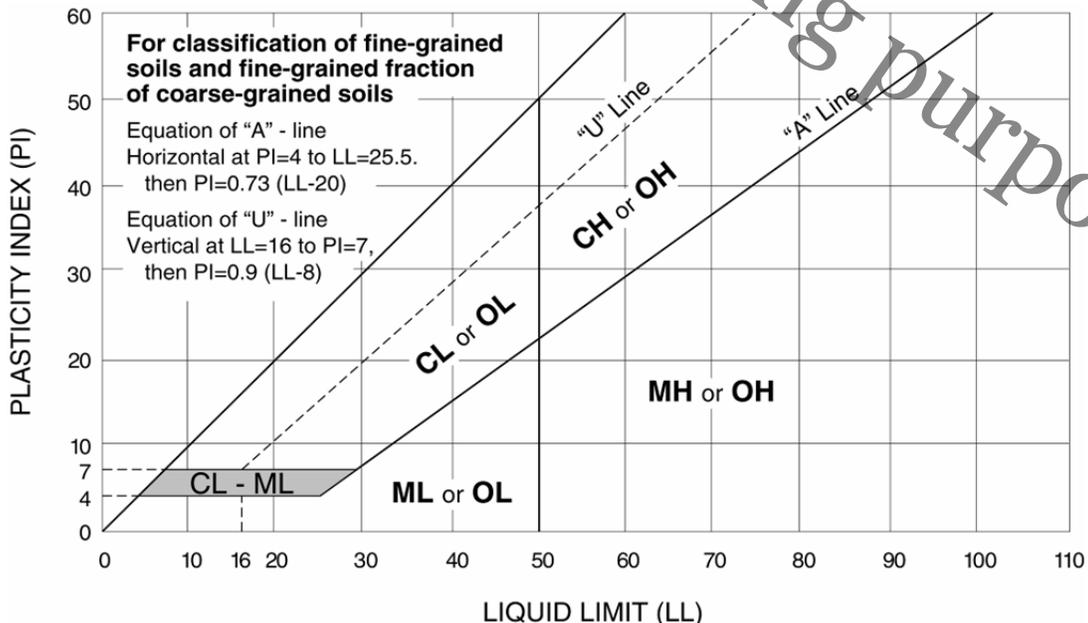
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N PI ≥ 4 and plots on or above "A" line.

^O PI < 4 or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



Section IV
IDOT Check Sheets

Not to be used for bidding purposes

CHECK SHEET #10

State of Illinois
Department of Transportation

SPECIAL PROVISION
FOR
CONSTRUCTION LAYOUT STAKES

Effective: May 1, 1993
Revised: January 1, 2007

Description. The Contractor shall furnish and place construction layout stakes for this project. The Department will provide adequate reference points to the centerline of survey and bench marks as shown in the plans and listed herein. Any additional control points set by the Department will be identified in the field to the Contractor and all field notes will be kept in the office of the Resident Engineer.

The Contractor shall provide field forces, equipment, and material to set all additional stakes for this project, which are needed to establish offset stakes, reference points, and any other horizontal or vertical controls, including supplementary bench marks, necessary to secure a correct layout of the work. Stakes for line and grade of pavement and/or curb shall be set at sufficient station intervals (not to exceed 50 ft (15 m)) to assure substantial conformance to plan line and grade. The Contractor will not be required to set additional stakes to locate a utility line which is not included as a pay item in the contract nor to determine property lines between private properties.

The Contractor shall be responsible for having the finished work conform to the lines, grades, elevations, and dimensions called for in the plans. Any inspection or checking of the Contractor's layout by the Department Engineer and the acceptance of all or any part of it shall not relieve the Contractor of his/her responsibility to secure the proper dimensions, grades and elevations of the several parts of the work. The Contractor shall exercise care in the preservation of stakes and bench marks and shall have them reset when any are damaged, lost, displaced, removed, or otherwise obliterated.

Responsibility of the Department.

- (a) The Department will locate and reference the centerline of all roads and streets, except interchange ramps. The centerline of private entrances and short street intersection returns may not be located or referenced by the Department.

Locating and referencing the centerline of survey will consist of establishing and referencing the control points of the centerline of surveys such as PC's, PT's and as many POT's as are necessary to provide a line of sight.

- (b) Bench marks will be established along the project outside of construction lines not exceeding 1000 ft (300 m) intervals horizontally and 20 ft (6 m) vertically.

CHECK SHEET #10

- (c) Stakes set for (a) and (b) above will be identified in the field to the Contractor.
- (d) The Department will make random checks of the Contractor's staking to determine if the work is in conformance with the plans. Where the Contractor's work will tie into work that is being or will be done by others, checks will be made to determine if the work is in conformance with the proposed overall grade and horizontal alignment.
- (e) The Department will set all stakes for utility adjustments and for building fences along the right-of-way line by parties other than the Contractor.
- (f) The Department will make all measurements and take all cross sections from which the various pay items will be measured.
- (g) Where the Contractor, in setting construction stakes, discovers discrepancies, the Department will check to determine their nature and make whatever revisions are necessary in the plans, including the recross sectioning of the area involved. Any additional restaking required by the Engineer will be the responsibility of the Contractor. The additional restaking done by the Contractor will be paid for according to Article 109.04 of the Standard Specifications.
- (h) The Department will accept responsibility for the accuracy of the initial control points as provided herein.
- (i) It is not the responsibility of the Department, except as provided herein, to check the correctness of the Contractor's stakes; any errors apparent will be immediately called to the Contractor's attention and s(he) shall make the necessary correction before the stakes are used for construction purposes.
- (j) Where the plan quantities for excavation are to be used as the final pay quantities, the Department will make sufficient checks to determine if the work has been completed in conformance with the plan cross sections.

Responsibility of the Contractor.

- (a) The Contractor shall establish from the given survey points and bench marks all the control points necessary to construct the individual project elements. S(he) shall provide the Engineer adequate control in close proximity to each individual element to allow adequate checking of construction operations. This includes, but is not limited to, line and grade stakes, line and grade nails in form work, and/or filed or etched marks in substantially completed construction work. It is the Contractor's responsibility to tie in centerline control points in order to preserve them during construction operations.
- (b) At the completion of the grading operations, the Contractor shall set stakes at 100 ft (25 m) Station intervals along each profile grade line. These stakes will be used for final cross sectioning by the Department.

CHECK SHEET #10

- (c) The Contractor shall locate the right-of-way points for the installation of right-of-way markers. The Contractor shall set all line stakes for the construction of fences by the Contractor.
- (d) All work shall be according to normally accepted self-checking surveying practices. Field notes shall be kept in standard survey field notebooks and those books shall become the property of the Department at the completion of the project. All notes shall be neat, orderly and in accepted form.
- (e) For highway structure staking, the Contractor shall use diligent care and appropriate accuracy. Points shall be positioned to allow reuse throughout the construction process. Prior to the beginning of construction activities, all structure centerlines and pier lines are to be established by the Contractor and checked by the Engineer. The Contractor shall provide a detailed structure layout drawing showing span dimensions, staking lines and offset distances.

Measurement and Payment. This work will be paid for at the contract lump sum price for CONSTRUCTION LAYOUT.

Not to be used for bidding purposes

Section V
IDOT Utility Permit
(To Be Included via Addendum)

Not to be used for bidding purposes

Section VI
General Provisions &
Technical Specifications
for Sanitary Sewer Construction
(Incorporated by Reference)