

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

Bidding Requirements and Contract Forms

for

**MULFORD ROAD
SANITARY SEWER EXTENSION
SPECIAL ASSESSMENT NO. 131
2018**

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

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Section I
Bidding Requirements

ARTICLE 1 – NOTICE TO BIDDERS

MULFORD ROAD SANITARY SEWER EXTENSION SPECIAL ASSESSMENT NO. 131 2018

NOTICE is hereby given that the Rock River Water Reclamation District, Rockford, Illinois Board of Trustees that signed and sealed bids will be received for the improvement identified as Mulford Road Sanitary Sewer Extension, Special Assessment No. 131 at the Rock River Water Reclamation District offices, 3501 Kishwaukee Street, Rockford, Illinois, until 10:00 a.m. on Friday, September 21, 2018, at which time the bids will be publicly opened and read aloud in accordance with Ordinance 18/19-S-01, schedule to be passed on September 24, 2018, 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 the Court Confirmation of the Assessment.

The Mulford Road Sanitary Sewer Extension, Special Assessment No. 131 includes the construction of approximately 526 LF of 8" PVC sanitary sewer, 5-6" PVC sanitary services, 3 manholes, 140 LF of 24" steel casing pipe, bored and jacked in place, abandonment of 4 septic systems with public sewer connections complete, tree removal and clearing, driveway removal, driveway reconstruction with aggregate base course and hot-mix asphalt binder and surface course, and turf restoration work, complete in place. This project is located in the public right-of-way of Apawamis Way and within public easements in the City of Rockford, Winnebago County, Illinois.

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

All sewer construction, including abandonment of the septic systems and public sewer connections shall be completed by the interim completion date of November 21, 2018. Final restoration work, including final seeding, installation of erosion control blanket, and driveway reconstruction shall be completed by the project completion date of May 31, 2019. Liquidated damages shall be \$300 per calendar day. The contractor will be paid in SPECIAL ASSESSMENT NO. 131 vouchers at par with interest at the rate of five percent (5%) per annum.

Copies of the specifications may be obtained by depositing Fifty Dollars (\$50.00) with the Rock River Water Reclamation District. The amount of the deposit for each set of specifications will not be refunded.

All construction will be done in accordance with plans and specifications on file with the Rock River Water Reclamation District, including the *GENERAL PROVISIONS AND TECHNICAL SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION*, current edition.

Each proposal must be accompanied by the District Bid Bond form with the acceptable Bid Security attached in an amount of ten percent (10%) of the total bid price. This sum is a guarantee that, if the Proposal is accepted, a contract will be entered into and its performance properly secured.

A Mandatory Pre-Bid Meeting for this project will be held on September 13, 2018 at 2:00 p.m. at the RRWRD Board Room, 3501 Kishwaukee Street, Rockford, Illinois. All contractors that intend to bid on this project must attend the pre-bid meeting.

Bid documents may be obtained by contacting the Engineering Department at the Rock River Water Reclamation District, (815) 387-7660, 3501 Kishwaukee Street, Rockford, Illinois. For more information, visit the District website at www.rrwr.dst.il.us. Plans and specifications are also available for viewing through the Northern Illinois Building Contractors Association, whose office is located at 1111 S. Alpine Road, Rockford, Illinois.

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 60 days after the scheduled time of receiving bids.

The Board of Trustees of the Rock River Water Reclamation District reserves the right to reject any and all bids, or any part thereof, or to accept any bid or part thereof, or to waive any formalities in any bids deemed to be in the best interest of the Rock River Water Reclamation District.

Dated this 6th day of September, 2018.



Chris Black, Business Manager

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.

Should the Contractor desire to have an electronic proposal form e-mailed to him, the Contractor should contact the District's Engineering Department at (815) 387-7660. 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 the District office 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 the Mulford Road Sanitary Sewer Extension, Special Assessment No. 131.

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. In addition, work shall conform to the following Technical Specifications: *Standard Specifications for Water and Sewer Main Construction in Illinois*, current edition, and *Rock River Water Reclamation District (District) General Provisions and Technical Specifications for Sanitary Sewer Construction*. The term “IDOT Standard Specifications” shall mean the *Illinois Department of Transportation’s Standard Specifications for Road and Bridge Construction*, current edition. When referenced in applicable sections, work shall conform to the *IDOT Standard Specifications*.

Throughout these specifications, the term “Owner” and “District” 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 dumping area. The Contractor shall pay all tipping fees. When the work is halted due to rain, the Contractor shall clean up the working areas before leaving the site and ensure that proper surface drainage is provided.

Utility locations shown on the plans are based on record information made 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, field tiles, septic system field lines, etc., shall be determined by the Contractor. The Contractor shall assume full responsibility for location of all utilities. 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 utilities to avoid damage. Any damage done to utilities shall be repaired or replaced at the Contractor’s sole expense. The Contractor shall be solely responsible for the protection, restraint and support of all utilities, as well as the protection of private water wells.

This project extends through the public right-of-way of Apawamis Way and through District easements in the sideyards of the properties at 5941/5943 and 5957/5959 Apawamis Way and the backyards of the properties at 720 N. Mulford Road, 740 N. Mulford Road, 760 N. Mulford Road, and 780 N. Mulford Road.

General location of sewer is governed by existing obstructions in the field. Minor variations in location may be made after approval by District to facilitate construction operations.

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

Any construction not observed by 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 defects in material, design and manufacture. 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 at the direction of these Specifications.

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

The Contractor shall restore all disturbed areas to near original contour and state, 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 pavement, driveways, bituminous surfacing, sod, trees, bushes, fences, landscaping, structures, fixtures, etc., beyond right-of-way limits shall be replaced or repaired, without cost to the District.

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

Upon completion of work within the street, railroad, or highway (or flood plain), the Contractor shall restore the right-of-way in accordance with the requirements of the governing agency. The Contractor shall be responsible for the temporary maintenance of all roadways and drives for the duration of the project and shall maintain access at all times. Excavated or other materials shall not be stored or cast upon the pavement.

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

The Contractor shall notify all utility companies prior to beginning any work. All underground utilities shall be located by the utility involved and special care shall be taken when excavating near underground utilities to avoid damage. Forty-eight (48) hours minimum prior to starting construction, the Contractor shall call J.U.L.I.E. at (800)–892–0123 for utility location at site.

The Contractor shall notify the Rock River Water Reclamation District (District), affected private property owners, and the public roadway authorities (Rockford Township and City of Rockford), and ComEd forty-eight (48) hours minimum prior to beginning any work. Said forty-eight (48) hour minimum notification shall only be considered during business days, 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.

Construction access to the easement will only be allowed through the driveway at 780 N. Mulford Road. At no time should construction equipment and/or vehicles traverse the easement between the condominiums located at 5941/5943 and 5957/5959 Apawamis Way, or utilize other driveways to access the easement unless the Contractor makes separate arrangements with property owners beyond the scope of this Contract). The Contractor shall maintain access to the dental office at 780 N. Mulford Road at all times.

The Contractor shall coordinate traffic control with the public roadway authorities. The City of Rockford has jurisdiction of the adjacent portions of Apawamis Way and North Mulford Road.

The Contractor shall be responsible for the temporary maintenance of all roadways, driveways, and field entrances over the course of this project and shall maintain access to residences or businesses at all times (i.e. drives, roadways, ramps, etc. must remain open or must be provided). All materials, equipment, labor, etc. necessary to assure this shall be considered incidental to the contract.

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

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. When the work is halted by rain, the Contractor shall clean up work areas before leaving the site. The Contractor is reminded that this work is occurring in the backyards of businesses and residences and thus any open excavations shall be protected by temporary chain link 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 obliterate any survey monument, monument tie, lot pin, right-of-way marker, etc., until the exact locations have been recorded by a professional Land Surveyor 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.

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

There is an interim and final completion date for this project. The interim completion date is November 21, 2018 and applies to all sanitary sewer work, including abandonment of the existing septic systems and connection to public sewer. The final completion date is May 31, 2019 and applies to final turf restoration work and the removal and replacement of the driveway at 780 N. Mulford Road. The Contractor shall not start removal of the driveway prior to the interim completion date unless there is certainty that the reconstruction can be completed prior to that date and in compliance with all hot-mix asphalt paving specifications. Additionally, final turf restoration shall not be commenced prior to the interim completion date unless there is certainty that the work can be completed in compliance with all specifications and requirements.

Notifications

- Minimum forty-eight (48) hour notification to all residents and/or 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 City of Rockford prior to any work in their right-of-way.

2.2 Required Submittals – Not used.

2.3 Measurement and Payment

No 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 Contractor shall comply with the requirements of any and all permits obtained and required for the construction of this project. Permits will be required from the City of Rockford for work within the Apawamis Way right-of-way, for the reconstruction of the 780 N. Mulford Road driveway, and from the Winnebago County Health Department for the abandonment of the septic tanks. The Contractor shall provide all insurance, bonds, etc. as required by the necessary permits. The Contractor shall also obtain and comply with any additional permits that may be required for the completion of this project.

Unless noted otherwise, the Contractor shall be responsible for securing any necessary permits, and for securing all bonds, insurance, 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.

Permit Contact Information		
Entity	Name	Phone Number
City of Rockford	Patty Williams	(779)-348-7174
Winnebago County Health Department	Todd Marshall	(815)-720-4118

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

3.2 Required Submittals

1. Copies of signed permits as applicable.

3.3 Payment

Obtaining any and all permits required by the Contractor shall be considered incidental to construction and no further compensation will be allowed.

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 (N.O.I.) and a Storm Water Pollution Prevention Plan (SWPPP) will not be submitted to the Illinois Environmental Protection Agency (I.E.P.A).

The Contractor shall comply with all the requirements of the I.E.P.A.'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 Section titled "Turf Restoration" 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 existing site conditions, at the direction of the Engineer. Any devices, materials, or procedures required by the Engineer due to the Contractor's actions or negligence will be at no additional cost to the District.

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

The Contractor shall keep the road rights-of-way free from all dirt and construction debris at all times during construction. Mud and debris shall be removed daily from roadway surfaces at the end of each workday or as necessary.

The Contractor shall remove and dispose of all temporary erosion control devices within 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 outlined below under the following pay items: **Perimeter Erosion Barrier, Erosion Control Blanket, Temporary Seeding and Stabilization Completed with Mulch, and Turf Restoration**, installed and/or complete in place. No separate payment shall be made for erosion control beyond those pay items.

5 Dewatering

5.1 General

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

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

acceptable to the District, with all erosion control requirements and specifications taken into account.

Any permits required to perform dewatering work on this project shall be secured by the Contractor; it shall be his 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 to run on a twenty-four (24) hour basis, equipment supplied shall be equipped to minimize noise to a level of ninety decibels (90 dB) 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 Bypass Pumping Sanitary Sewers

6.1 General

The Contractor shall provide bypass pumping as required and shall be responsible for providing all pumps, conduits, plugs and other equipment to divert the flow of sewage as required to complete the proposed sanitary sewer work. This item is intended to bypass pump the flow existing in the 8" diameter sewer main at the point of connection with MH #1. It is the Contractor's sole responsibility to ensure that construction operations do not negatively affect sanitary sewer service to any resident for the duration of construction.

The Contractor shall furnish all necessary labor, equipment, materials and supervision to set up and operate the pumping system and shall only pump into sanitary manholes approved by the District.

The Contractor shall be responsible for maintaining continual sanitary sewer service to each resident for the duration of construction. The Contractor shall be responsible for the clean up, repair, restoration of damaged property and any costs and claims resulting from sewage backups.

Bypass pumping shall be in place and operable prior to the severance or removal of any part of the sanitary sewer collection system. Bypass pumping operations shall be in place in all directions upstream of the proposed point of severance or removal, regardless of the amount of flow or characteristics of flow of each sewer main.

Calculated average and peak flow rates (in Gallons per Day) in the existing 8" sewer are provided here for the Contractor's use in analyzing bypass pumping options. However, the District does not guarantee the accuracy of these numbers and will not entertain additional compensation if flow rates observed at the time the work is performed differ significantly from the information provided. The Contractor is responsible to evaluate the flow conditions before beginning the work and verify that the bypass pumping system is sized adequately.

The existing sewer conveys the flow from four (4) condominium residences so the flows can be assumed to be:

- Daily Average Flow: 400 GPD
- Daily Maximum Flow: 1,400 GPD

6.2 Materials

The pumping system shall have sufficient capacity to handle the existing flow plus any additional flow that may occur during a rainstorm or peak flow periods. The Contractor shall provide sufficient inspection personnel to ensure that surcharging and backups do not occur on public or private property. If pumping is required on a 24-hour basis, the equipment supplied shall be equipped to minimize noise to a level of ninety decibels (90 dB) or less. The Contractor shall be responsible for providing the current level of service to all properties and liable for any damage caused by sewer back-ups resulting from this project.

All plugs or blocking shall be restrained to ensure that they cannot be washed downstream.

Roadways open to traffic and all driveways will require the use of flow-thru ramps when drive-able hoses cannot be used.

6.3 Required Submittals

1. Specifications including pump curves for all pumping equipment, primary and back-up.
2. Bypass plan indicating location of pump set(s) and discharge.

6.4 Payment

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

7 Sanitary Sewer, PVC SDR26, 8" Dia.

7.1 General

The work under this item includes all labor, equipment, materials, permits, mobilization, site preparation, dewatering, trench excavation, utility protection, pipe bedding, backfilling and compaction, 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, dewatering, 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.

The Contractor shall provide and have available on-site at all times, a calibrated level and level rod. District staff shall be allowed to use the level and rod as deemed necessary.

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.

7.2 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, trench bottoms and walls.

Prior to placement, the trench bottom shall be graded to form a firm, level 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 I.D.O.T. 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. Additionally, trench backfill shall be installed under the Pecatonica Prairie Path. 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 *I.D.O.T. 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.

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.

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.

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 (of various types and sizes).

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

The Contractor shall guarantee against trench settlement for a period of three (3) years after completion of the project and repair any settlement that occurs within the guarantee period.

7.3 Materials

Pipe:

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

Transition Couplings:

Clay to PVC and cast iron or ductile iron to PVC pipe transition couplings shall be Fernco 5000 or LDC series (as required by pipe diameter) or Mission Flex-Seal ARC shear resistant or District approved repair couplings, made of flexible PVC compound with 316 stainless steel clamps and stainless steel rings. Transition couplings shall conform to the applicable parts of ASTM D5926 and C1173.

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.

7.4 Required Submittals

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

7.5 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.

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

8.1 General

Work under this item includes furnishing and installing the eight-inch (8") diameter PVC (SDR 26) WMQ 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.

8.2 Materials

Carrier pipe shall be PVC SDR 26 PVC pipe meeting the requirements of ASTM D-3034 with joints conforming to ASTM D-3212.

Casing spacers shall have HDPE runners and shall be manufactured by Cascade Mfg. or approved equal.

8.3 Required Submittals

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

8.5 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.

9 Sanitary Manhole, Precast, 4' Dia.

9.1 General

This work shall consist of furnishing and installing all labor, equipment, materials, transportation, excavation, accessories, connection to existing sanitary sewers with shear resistant transition couplings, trench backfill, and performance of all operations required to construct pre-cast 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 placing a District-approved manhole frame and lid (Neenah R-1670, R1915J, or EJ E-1117) adjusted to grade as indicated on plans. Contractor shall field-verify all proposed rim elevations.

Flat tops will not be permitted on four foot (4') diameter manholes; eccentric cone sections must be a component of 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.

Shop drawings of all manholes shall be submitted to the District for approval prior to manufacture and delivery to the site. Manhole shop drawings 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 pipes. 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 at an elevation to allow for adjustment of frame (12" maximum) without disturbing the cone section.

Manhole Adjustment:

The Contractor shall field verify all proposed rim elevations and shall construct manholes to be 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 pattern. 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 placement height is four inches (4"). Maximum adjusting ring placement 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. Joint between adjusting rings and casting shall be watertight by means of a butyl material seal (E-Z Stik, Kent-Seal, or equal).

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 applicable 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 titled "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).

New manholes that connect to existing sanitary sewers shall be constructed in the factory with only the opening for the pipe exiting the manhole cast in place. All other proposed openings shall be core-drilled in the field.

All connections between new manholes and existing sanitary sewer shall be made with a minimum of 5.0' of new PVC Pipe. Connection shall be made to sound pipe. Pipe and transition couplings shall conform to the Section titled "Sanitary Sewer" of this document. Pipe used to connect new manholes and existing sanitary sewer shall be considered incidental to this bid item.

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

All new manholes shall be vacuum tested per ASTM C1244-93 Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test prior to placing into service.

9.2 Required Submittals

- a. Manhole shop drawings including a specified 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 pipes. A plan view shall be provided showing the orientation of pipe openings.
- b. Frame and lid material specifications.
- c. Chimney seals material specifications.
- d. Barrel joint seals material specifications.
- e. Manhole to pipe connection seals material specifications.
- f. Manhole steps material specifications.
- g. Sealant material specifications.

9.3 Payment

This work will be paid for at the contract unit price per Each for **Sanitary Manhole, Precast, 4' Dia.**, constructed, complete in place.

10 Sanitary Sewer Service, PVC SDR26, 6" Dia.

10.1 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) WMQ sanitary service pipe per ASTM D-2241 with ASTM D-3139 gaskets, from the sewer main to the permanent sanitary sewer easement line 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 required elsewhere, 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.

The actual sewer service locations may vary 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.

10.2 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.

10.3 Required Submittals

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

10.4 Measurement and Payment

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

11 Boring and Jacking Setup, Complete

11.1 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.

Due to the close proximity of the watermain to the existing sanitary sewer within the Apawamis Drive right-of-way, the push pit shall be installed at the upstream termination of the proposed casing pipe and the receiving pit shall be installed at the downstream end.

11.2 Required Submittals

1. Shoring drawings and/or calculations.

11.3 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.

12 Steel Casing, 24" Dia., Bored and Jacked

12.1 General

This work pertains to the steel casing pipe boring and jacking operations required on 5941/5943 Apawamis way (PIN 12-21-278-010) and 5957/5959 Apawamis Way (PIN 12-21-280-000). The

Contractor shall provide forty-eight (48) hours minimum advance notice to the District and the City of Rockford prior to performing any work within the Apawamis Way right-of-way.

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 City, 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 City'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.

Prior to beginning construction within public rights-of-way, the Contractor shall obtain all permits required by the City of Rockford. The Contractor shall obtain any other permits required and shall abide by all permit terms and conditions. The Contractor shall provide copies of all permits to the District inspector prior to start of construction. All permit terms and conditions shall be considered a part of these specifications.

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.

Due to the close proximity of the watermain to the existing sanitary sewer within the Apawamis Drive right-of-way, the push pit shall be installed at the upstream termination of the proposed casing pipe and the receiving pit shall be installed at the downstream end. The casing pipe shall be installed upstream-to-downstream, and no construction equipment shall utilize the easement between 5941/5943 Apawamis way (PIN 12-21-278-010) and 5957/5959 Apawamis Way (PIN 12-21-280-000).

Prior to boring and jacking operations beginning, the basement foundations of 5941/5943 Apawamis Way and 5957/5959 Apawamis Way shall be thoroughly inspected internally by the Contractor and the existing conditions documented via date-stamped pictures or video recordings. Upon completion of the boring and jacking operations, the basement foundations shall be inspected internally once more to ensure no damage occurred. Any damage that did occur must be repaired to the property owner's satisfaction at no additional cost to the Contract.

12.2 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.

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. Carrier Pipe will be paid for separately under the *Sanitary Sewer, Carrier Pipe, PVC SDR26, 8" Dia.* Pay item.

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.

12.3 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.

12.4 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.

13 Septic System Abandonment/Public Sewer Connection

13.1 General

This item shall consist of abandoning the septic tanks/systems at 780 N. Mulford Road (PIN 12-21-278-013), 760 N. Mulford Road (PIN 12-21-278-014), 740 N. Mulford Road (PIN 12-21-278-015), and 720 N. Mulford Road (PIN 12-21-278-016), including all excavation, dewatering, bedding, initial and final backfill, select backfill, turf restoration, all pipe, fittings, adapters and cleanouts needed to extend a 6" diameter PVC service lateral at 1.0% minimum slope from the cleanout riser at the permanent sanitary sewer easement line to the nearest viable point of connection on the existing discharge lateral exiting the house, plugging of the discharge lateral upstream of the septic tank/system, as required, directed, or shown on the plans.

The existing discharge lateral shall be exposed prior to extending the new service to ensure a proper slope is maintained. Where practicable, a six-foot (6') minimum, depth of cover shall be maintained over the service to within ten feet (10') of the point of connection on the discharge lateral. In areas of minimal cover the proposed services shall be installed with insulation; such costs shall be considered incidental to this pay item. Connections shall be made to structurally sound pipe and all work shall be in accordance with these *Detailed Specifications* and applicable State and local plumbing codes. An assumed point of connection has been shown on the plans, however this location may be revised based upon the information discovered during the exploratory excavation. Any increase in length of service pipe needed to make a connection to structurally sound pipe will not be paid for separately but shall be considered incidental to this pay item.

Unless otherwise directed by the plumbing agency of jurisdiction, the service extending between the easement line and the discharge laterals shall be Schedule 40 PVC pipe, per ASTM 1785. Cleanouts shall be provided in accordance with the Illinois State Plumbing Code. Right angles (90°) will not be allowed on the service extensions.

The Contractor shall furnish all labor, equipment and materials needed to abandon the septic tanks/systems in accordance with Illinois Department of Public Health, Winnebago County Health Department and all applicable State and local plumbing code requirements by a licensed plumber registered with the District. The Contractor shall clean and remove all septage and debris from the septic tank, cave in the top and one side (minimum) of the tank and fill the tank with clean bank-run gravel, sand or compacted dirt. Septage must be disposed of at the District's

Main Treatment Plant per standard policy and procedure. The Contractor shall plug and seal the inlet and discharge piping with a non-shrink grout or other method approved by the County.

All septic tanks on the identified parcels must be abandoned. The probable septic tank locations and service connection points have been determined based on survey data. Should the actual points of connection to the existing service discharge laterals or the actual septic tank locations differ from plan depictions, the Contractor shall make the necessary adjustments and perform the septic system abandonment(s) and service connection work at no additional cost. No additional compensation will be awarded for multiple septic tank/system abandonments.

The Contractor shall obtain all permits and pay for all permit, dumping, connection and inspection fees before the service connection is allowed, including the Winnebago County Health Department, the Winnebago County Plumbing Department, the RRWRD. Current RRWRD dumping fees are \$84.70/ccf – this shall apply only to septage obtained from approved, verified sources within the project area. The septage hauler must have a RRWRD permit. All costs shall be included in the Contract unit price per each Septic System Abandonment/Public Sewer Connection, complete. All fees are subject to change without prior notice.

Note: Since damage to the septic fields on these four (4) parcels will likely be unavoidable, the septic systems must be abandoned and the connection to sanitary sewer must be made as soon as practicable.

All plumbing and abandonment work shall be performed by a plumber registered, bonded and licensed by the Rock River Water Reclamation District for the type of work performed and all work shall be inspected and approved by the appropriate agency of jurisdiction.

13.2 Required Submittals

1. Pipe, fitting, and repair coupling material specifications.
2. Material gradation certifications for proposed bedding material and select trench backfill.
3. Copy of Winnebago County Health Department permits.

13.3 Payment

This work will be paid for at the Contract unit price per Each for **Septic System Abandonment/Public Sewer Connection** for 720 N. Mulford Road, 740 N. Mulford Road, 760 N. Mulford Road, and 780 N. Mulford Road.

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 at these 5 locations: the existing septic tanks and service connections to the tanks at 720 N. Mulford Road, 740 N. Mulford Road, 760 N. Mulford Road, and 780 N. Mulford Road and the existing 8" sewer main within the Apawamis Way right-of-way at the proposed location of MH #1.

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 driveway at 780 N. Mulford Road 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 (10" of Aggregate Base Course, Type B with 2.25" of HMA binder course and 1.75" of HMA 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 written approval from the District. If the Contractor damages any of these adjacent pavements during the course of construction without advanced District approval, it shall be replaced to the full existing depths at no additional cost to the Contract.

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 considered incidental to this pay item.

The driveway pavement strata shall only be removed prior to the interim completion date (November 21, 2018) if there is certainty that the driveway can be reconstructed fully prior to that date and in compliance with all pertinent hot-mix asphalt paving requirements and specifications. In no event will this work be scheduled such that the office at 780 N. Mulford Road is left with an aggregate driveway for greater than 7 calendar days.

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 Aggregate Base Course, TY. B, 10"

16.1 General

This work shall consist of placing a compacted Aggregate Base Course, Type B, beneath the driveway surfaces to be replaced at 780 N. Mulford Road. 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.

16.2 Materials

Aggregate base course shall be 10" in total completed thickness, with 6" 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.

16.3 Required Submittals

1. Material gradation certifications for aggregates.

16.4 Measurement and Payment

This work will be paid for at the Contract unit price per Square Yard for **Aggregate Base Course, Ty. B, 10"**, complete, in place.

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

17.1 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.

17.2 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*.

17.3 Required Submittals

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

17.4 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.

18 Hot-Mix Asphalt Surface Course, Mix "C", N50, IL-9.5

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 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.

18.2 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*.

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. 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.

19 Clearing and Grubbing / Tree Removal

19.1 General

This work shall include the clearing of the areas identified on the plans and disposal of all existing materials encountered, the full removal and disposal of all trees identified on the plans (including removal of the stump to a depth not less than 12" below the existing grade), and the trimming of all trees identified on the plans to accommodate construction operations. Materials encountered to be cleared, removed, and trimmed include, but are not limited to, downed timber, shrubs, brush, vines, roots, stumps, undergrowth, mulch, and trees. All materials removed shall be disposed of off-site in a legal manner.

All trees to be removed shall be approved by the District in the field prior to removal.

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

19.2 Required Submittals – Not used.

19.3 Payment

Payment shall be made at the contract unit price per Lump Sum of **Clearing and Grubbing / Tree Removal**.

20 Perimeter Erosion Barrier

20.1 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 *I.D.O.T.*

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.

20.2 Materials

Filter fabric shall be Gradation 4 or 5 in accordance with Article 1080.03 of the *I.D.O.T. Standard Specifications*. The wood posts shall be in accordance with Article 1081.15 of the *I.D.O.T. Standard Specifications* and be a minimum of 4' long with a nominal size of 2" x 2".

20.3 Required Submittals

1. Material certifications for the silt fence materials.

20.4 Payment

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

21 Erosion Control Blanket

21.1 General

This work shall be in accordance with Article 251.04 of the *I.D.O.T. Standard Specifications*. Erosion control blanket shall be installed on seeded areas within 24 hours of seed placement.

Erosion control blanket shall be used on all turf restoration areas as shown on the plans. All seeded areas completed under "Turf Restoration" shall have erosion control blanket installed.

21.2 Materials

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

21.3 Required Submittals

1. Material certifications for the erosion control blanket.

21.4 Payment

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

22 Chain Link Fence Removal

22.1 General

This work shall involve the full removal and disposal of the existing chain link fence located on the south property line of 740 N. Mulford Road to the limits indicated on the plans. 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*, Current Edition.

Should the removal limits not be located directly on a fence post, then the removal limits shall be revised such that full sections between fence posts are removed.

22.2 Required Submittals – Not used.

22.3 Payment

Payment shall be made at the Contract unit price per Linear Foot of **Chain Link Fence Removal**.

23 Chain Link Fence, 4'

23.1 General

This work shall furnishing and installing a new 4' high chain link fence on the south property line of 740 N. Mulford Road, to replace the fence removed to facilitate construction (under the *Chain Link Fence Removal* pay item).

Chain link fence shall be constructed in accordance with Section 664 of the IDOT *Standard Specifications* and the manufacturer's recommendations. The replacement fence shall be of a District-approved style and material that matches the existing fence.

23.2 Required Submittals

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

23.3 Payment

Payment shall be made at the Contract unit price per Linear Foot of **Chain Link Fence, 4'**, installed, complete in place.

24 Temporary Construction Fence

24.1 General

This work involves installation of furnishing and installing temporary construction fence where indicated on the plans for the protection of the work zone within the easements. Maintenance, final removal, and restoration of the areas where the fence was installed shall be considered incidental to this item. All fencing shall be a minimum of 4' high with stakes placed a maximum of 15' apart.

Temporary construction fence protecting the push pit and receiving pit as well as all sewer excavation work between the driveways for 5941/5943 Apawamis Way and 5957/5959 Apawamis Way shall be temporary chain link fence of 4' height.

If the Contractor elects to use temporary construction fence of this type to protect materials, open excavations, or equipment during the construction operations, such fence shall not be paid for under this pay item but shall be considered incidental to the Contract.

24.2 Materials

All temporary fencing shall be either orange plastic snow fence or temporary chain link fence.

24.3 Required Submittals.

1. Material certification for fence.

24.4 Payment

This work will be paid for at the Contract unit price per Linear Foot of **Temporary Construction Fence**, complete, installed in place.

25 Temporary Seeding and Stabilization, Complete with Mulch

25.1 General

This work shall include the construction, maintenance, removal, and disposal of temporary erosion control seeding and mulching. This item shall only apply in the event that final restoration and seeding work in easement areas cannot be completed prior to winter 2018; the intent of this pay item is to stabilize the site in compliance with all pertinent NPDES and IEPA regulations and requirements.

All work shall be in accordance with Section 280 of the IDOT *Standard Specifications*. The removal of the materials used in preparation for final turf restoration shall be included in this pay item.

25.2 Materials

Seed mixtures shall be according to Article 1081.15(g) of the IDOT *Standard Specifications*.

Mulch shall be in accordance with Article 1081.06 of the IDOT *Standard Specifications*.

25.3 Required Submittals

1. Seed mixtures.
2. Mulch specifications and certifications.

25.4 Payment

This work will be paid for at the Contract unit price per Square Yard for **Temporary Seeding and Stabilization, Complete with Mulch**.

26 Turf Restoration

26.1 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 and easements 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 I 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.

26.2 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 I.D.O.T. Class I 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*.

Mulch shall be in accordance with Article 1081.06(a) of the IDOT *Standard Specifications*.

26.3 Required Submittals

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

26.4 Payment

This work will be paid for at the contract unit price per Lump Sum for **Turf Restoration**, which cost shall include furnishing topsoil, placing topsoil, seedbed preparation, seeding, fertilizer application, and mulching as required.

27 Quality Control Tests and Certification

27.1 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.

27.2 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.

27.2.1 Low Pressure Air Test

Low pressure air tests will not be required on this project due to the public sewer connections. In lieu of this test, District personnel will televise the sewer main upon completion of construction for final acceptance.

27.2.2 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.

27.2.3 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.

27.3 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 the various sizes and types of Sanitary Sewer installed, complete in place.

28 Traffic Control and Protection, Complete

28.1 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 methods and means 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.

28.2 Required Submittals

1. Copies of approved traffic control plans.

28.3 Payment

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

29 Removal and Disposal of Unsuitable Material

29.1 General

The work shall be done in accordance with Section 202 of the *IDOT Standard Specifications* and shall involve the removal from the site of any unsuitable materials that are encountered during sewer excavation and construction. If no unsuitable materials are encountered in the opinion of the District then this pay item shall not be used.

29.2 Materials – Not Used.

29.3 Required Submittals – Not Used.

29.4 Measurement and Payment

Payment shall be made at the contract unit price per Cubic Yard of **Removal and Disposal of Unsuitable Material**. Measurement shall be made by Measured Quantities in accordance with Article 202.07 of the *IDOT Standard Specifications*.

30 Cleanup

30.1 General

At the 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 original grade, and any excess materials shall be hauled away to an offsite location acceptable to the District. All roadway surfaces shall be kept free and clear of all mud and construction debris.

30.2 Payment

No separate payment will be made for Cleanup, complete. All costs associated with this work shall be incidental to construction.

31 Soil Borings

31.1 General

The soil borings attached hereto 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. The only compensation related to variation from the soil borings will be for documented quantities of Rock Excavation and/or Contaminated Soil Disposal.

32 Easement Requirements

32.1 General Requirements

The District has secured easements from various property owners. The Contractor shall review and comply with the executed easement documents on file at the Rock River Water Reclamation District, 3501 Kishwaukee St., Rockford, IL. The easement documents are available for review during normal working hours. Restoration work in easements shall include, but is not limited to, the following provisions:

1. Unless specifically noted in the easement documents, the grants include the right to use, during the period of construction, only so much of the premises as is reasonably necessary for the purpose of constructing sewer, for the moving, installation and use of any machinery and equipment, excavation and laying of sewer and appurtenances, backfilling and replacing the soil and material necessarily removed from such excavation. It shall be the Contractor's responsibility to secure any temporary construction or access easements.
2. The materials, machinery and equipment used in the construction of the sewer, shall be transported to the site of the work only along the line where the sewer is being placed, within the limits of the property deeded to the District (with the exception of the driveway for 780 N. Mulford Road), and only for such distances on either side of the centerline of the sewer as may be reasonably necessary for the purposes of construction or as indicated in the easement, and all other portions of the premises shall not be used except by permission of the owner.
3. All soil, brush and debris resulting from construction shall be removed and satisfactorily disposed of off-site. The surface of the ground, all fences and other structures on the premises or adjacent premises touched or in any manner altered by the construction of the sewer shall be restored to a condition equal to pre-existing conditions.
4. All manhole covers shall be set one inch (1") above finished grade in grassy areas or at finish grade in paved areas in the area of construction through the easements, unless shown otherwise in the plans or directed by the District.
5. The Contractor shall be responsible for negotiating agreements with the various property owners if access is required from areas outside of the defined easements to gain temporary construction or access easements.
6. The interest and reversion of the easement grantor in and to said premises shall be wholly free from and not subject to any lien or claim of any Contractor, subcontractor, mechanic, material man or laborer, whether based upon any law or regulation of the State of Illinois, or any other authority, now in force or hereafter to be enacted.

32.2 Particular Requirements

The particular requirements for each property are detailed throughout the plan set and Detailed Specifications.

32.3 Payment

Payment for easement considerations are detailed above in the various pay items contained within the Detailed Specifications. Any area disturbed beyond the approved temporary construction and permanent easement limits shall be restored by the Contractor at his sole expense.

Section II

Contract Documents

PROPOSAL

PROJECT: Mulford Rd. Sanitary Sewer Extension, Special Assessment No. 131

LOCATION: This project is located in the public right-of-way of Apawamis Way and within public easements in the City of Rockford, Winnebago County, Illinois.

BID OPENING: 10:00 a.m., September 21, 2018, at the Rock River Water Reclamation Offices at 3501 Kishwaukee Street, Rockford, IL

COMPLETION DATE: Interim November 21, 2018 (all sanitary sewer work)
Final May 31, 2019 (all restoration and pavement work)

LIQUIDATED DAMAGES: \$300/calendar day

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 representatives of the District.

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 <http://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 FOR BIDDING PURPOSES

Item No.	Quantity	Unit	Description	Unit Price (In Writing)	Unit Price (In Figures)	Total Price (In Figures)
1	386.0	LF	Sanitary Sewer, PVC SDR26, 8" Dia.			\$0.00
2	140.0	LF	Sanitary Sewer, Carrier Pipe, PVC SDR26, 8" Dia.			\$0.00
3	3.0	EA	Sanitary Manhole, 4' Dia.			\$0.00
4	5.0	EA	Sanitary Sewer Service, PVC SDR26, 6" Dia.			\$0.00
5	1.0	LS	Boring & Jacking Setup, Complete			\$0.00
6	140.0	LF	Steel Casing, 24" Dia., Bored & Jacked			\$0.00
7	4.0	EA	Septic System Abandonment/Public Sewer Connection			\$0.00
8	5.0	EA	Exploratory Excavation			\$0.00
9	520.0	SY	Driveway Removal			\$0.00
10	520.0	SY	Aggregate Base Course, TY. B, 10"			\$0.00
11	67.0	TON	HMA Binder Course, N50, IL-19.0			\$0.00
12	53.0	TON	HMA Surface Course, N50, IL-9.5, Mix "C"			\$0.00
13	1.0	LS	Clearing & Grubbing / Tree Removal			\$0.00
14	400.0	LF	Perimeter Erosion Barrier			\$0.00
15	2,830.0	SY	Erosion Control Blanket			\$0.00
16	50.0	LF	Chain Link Fence Removal			\$0.00
17	50.0	LF	Chain Link Fence, 4'			\$0.00
18	200.0	LF	Temporary Construction Fence			\$0.00
19	2,830.0	SY	Temporary Seeding and Stabilization, Complete with Mulch			\$0.00
20	1.0	LS	Turf Restoration			\$0.00
21	1.0	LS	Traffic Control & Protection, Complete			\$0.00
22	10.0	CY	Removal and Disposal of Unsuitable Material			\$0.00
TOTAL BID PRICE:						\$0.00
				(In Writing)	(In Figures)	

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

Firm Name

By: _____

Name: _____ Title: _____ Date: _____

NOT FOR BIDDING PURPOSES

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: **TEN PERCENT (10%) 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 _____, 2018.

Principal

(Seal)

By _____

Name: _____

Title: _____

Date: _____

ATTEST:

Secretary

Surety

(Seal)

By _____

Name: _____

Title: _____

Date: _____

FAIR EMPLOYMENT PRACTICES AFFIDAVIT OF COMPLIANCE

PROJECT: MULFORD RD. SANITARY SEWER EXTENSION SPECIAL ASSESSMENT NO. 131

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 Department's Rules and Regulations.
6. That he or she will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.
7. That he or she will include verbatim or by reference the provisions of this clause in every subcontract awarded under which any portion of the contract obligations are undertaken or assumed, so that the provisions will be binding upon the subcontractor. In the same manner as with other provisions of this contract, the contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply with the provisions. In addition, the contractor will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

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

Ill. Dept of Human Rights Registration No.: _____

Expiration Date: _____

Signature

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

Notary Public

AGREEMENT

MULFORD ROAD SSE SPECIAL ASSESSMENT NO. 131

1. General

THIS AGREEMENT, made and concluded this ____ day of _____, 2018, 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 6 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 years from the date of final acceptance of the Contract for trench settlement and for a period of two years all other work, except where periods of maintenance and guarantee are provided for. The Contractor shall, for this period, indemnify and save harmless the 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.

Mulford Road SSE Special Assessment No. 131 cash payments shall be determined as follows:

1. Construction Cost (CC) = Contractor's Bid
2. Engineering (E) = $CC \times .15$
3. Reserve for Deficit (RD) = $.045 \times (CC+E)$
4. Cost of Making (CM) = $.045 \times (CC+E)$
5. Total Project Cost (TPC) = $CC+E+RD+CM$
6. Property Benefit Amount (PBA) = \$20,334.00
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. The Contractor shall be responsible for verifying the prevailing wages each month and notifying all subcontractors of the appropriate monthly rates. Certified payroll reports shall be submitted on industry standard forms such as IDOT Statement of Compliance (Form SBE 348).

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 working days after the District issues its award notification.

The Contractor shall comply with Article 2 of Public Act 83-1472 (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

All sewer construction, including abandonment of the septic systems and public sewer connections shall be completed by the interim completion date of November 21, 2018. Final restoration work, including final seeding, installation of erosion control blanket, and reconstruction of the driveway shall be completed by the project completion date of May 31, 2019.

11 Liquidated Damages

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

12. **Seals**

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

(Seal)

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

By _____
President, Board of Trustees

ATTEST: _____
Clerk of the Board

_____, **Contractor**

(Corporate Seal)

By _____
Contractor's Officer

Name: _____
Title: _____
Date: _____

ATTEST: _____

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

Contractor Firm Name: _____

SURETY

By: _____

By: _____ Signature

Attorney-in-Fact

Title

Resident Agent

ATTEST:

Corporate Secretary (Corporations only)

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 Oblige, 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 Oblige 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 Oblige 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 Oblige relative to claims made against this Bond.

Signed and Sealed this _____ day of _____, 2018.

CONTRACTOR

Contractor Firm Name

SURETY

By: _____
Signature

By: _____
Attorney-in-Fact

Title Resident Agent

ATTEST:

Corporate Secretary (Corporations only)

Section III
Soil Borings

Geotechnical Engineering Report

North Mulford Road Special Assessment No. 131

Rockford, Illinois

September 6, 2018

Terracon Project No. 19185049

Prepared for:

Rock River Water Reclamation District
Rockford, Illinois

Prepared by:

Terracon Consultants, Inc.
Rockford, Illinois

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities



September 6, 2018

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 Mulford Road Special Assessment #131
690 to 780 North Mulford Road
Rockford, Illinois
Terracon Project No. 19185049


Dear Mr. Nelson:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. These services were performed in general accordance with our Proposal No. P19185049 dated August 24, 2018 and RRWRD Purchase Order No. 80292 dated August 8, 2018. 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




Paul A. Tarvin, P.E.
Illinois No. 062-068341
Renews 11/30/2019

Distribution: Addressee (2), hard copy, PDF document

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**GEOTECHNICAL ENGINEERING REPORT
NORTH MULFORD ROAD SPECIAL ASSESSMENT #131
ROCKFORD, ILLINOIS**

Terracon Project No. 19185049

September 6, 2018

1.0 INTRODUCTION

Terracon has completed a subsurface exploration for the proposed North Mulford Road sanitary sewer extension project (Special Assessment No. 131) in Rockford, Illinois. Three (3) borings extending to a depth of about 15 feet below existing grade were performed along the proposed project alignment. Boring logs and 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	It is anticipated that the sanitary sewer will be constructed by open cut excavations. The pipe invert will be about 9 feet below current ground surface.

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	Along the west side of existing residences from 690 to 780 N. Mulford Road in Rockford, Illinois.
Existing Improvements	The site is occupied existing residential structures. The sanitary sewer will be installed in the backyards of these residences.
Existing topography	Based upon the surface elevations provided, the ground surface ranges from about 869 feet on the north end to 871 feet at the south end of 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	3 to 6 inches	Topsoil	N/A
Stratum 1	3 to 8 feet	Native cohesive soils: Lean clay with variable amounts of silt and sand	Medium stiff to stiff
Stratum 2	Termination depth of about 15 feet	Native granular soils: Sand with variable amounts of clay, silt, and gravel	Loose 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 5.2 parts per million (ppm) were measured.

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 and/or near the soil/rock interface. 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. Where loose sands are present or where sufficient lateral distance does 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 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 in the exploratory borings, significant groundwater seepage into the excavations is 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 high 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. Shoring, 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, 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 silt and clay mixed with the granular materials, the on-site materials would not 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.

Item	Description
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.

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

Geotechnical Engineering Report

North Mulford Road Special Assessment No. 131 ■ Rockford, Illinois
September 6, 2018 ■ Terracon Project No. 19185049



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.

NOT FOR BIDDING PURPOSES

APPENDIX A
FIELD EXPLORATION

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September 6, 2018 ■ Terracon Project No. 19185049



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.



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

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

Project Manager: DAW	Project No. 19185049	 4836 Colt Rd Rockford, IL 61109-2612	BORING LOCATION DIAGRAM North Mulford Road Special Assessment No. 131 690 to 780 North Mulford Road Rockford, IL	Exhibit A-2
Drawn by: DAW	Scale: AS SHOWN			
Checked by: PLT	File Name: 19185049_BLD			
Approved by: PLT	Date: Sept 2018			

BORING LOG NO. B-1

Page 1 of 1

PROJECT: North Mulford Road Special Assessment No. 131

CLIENT: Rock River Water Reclamation District
Rockford, IL

SITE: 690 to 780 North Mulford Road
Rockford, IL

GRAPHIC LOG	LOCATION 780 N Mulford, North Latitude: 42.276927° Longitude: -89.000589° Surface Elev.: 868.797 (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"	868.5							
	LEAN CLAY (CL) , trace silt, brown, medium stiff to stiff								
3.0		866			8	2-3-3 N=6	ND	3000 (HP)	25
	LEAN CLAY (CL) , with sand, reddish brown, stiff								
5.0		864			12	4-6-6 N=12	0.6	3000 (HP)	17
	CLAYEY FINE TO MEDIUM SAND (SC) , reddish brown, medium dense								
8.0		861			10	5-7-7 N=14	ND		12
	FINE TO MEDIUM SAND (SP) , with clay, reddish brown, medium dense								
12.0		857			12	7-8-8 N=16	ND		12
	FINE TO MEDIUM SAND (SP) , trace clay and gravel, light brown, dense								
15.0		854			16	11-22-27 N=49	1.2		8
	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).
See Appendix C for explanation of symbols and abbreviations.
Elevations were provided by others.

Notes:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

WATER LEVEL OBSERVATIONS

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 08-31-2018

Boring Completed: 08-31-2018

Drill Rig: D-50

Driller: Jim

Project No.: 19185049

Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. 19185049 NORTH MULFORD ROAD.GPJ TERRACON.DATATEMPLATE.GDT 9/5/18

Page 1 of 1

**CLIENT: Rock River Water Reclamation District
Rockford, IL**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185049 NORTH MULFORD ROA.GPJ TERRACON DATATEMPLATE.GDT 9/5/18

Hammer Type: Automatic

Notes:

Exhibit: A-4

BORING LOG NO. B-3

Page 1 of 1

PROJECT: North Mulford Road Special Assessment No. 131

CLIENT: Rock River Water Reclamation District
Rockford, IL

SITE: 690 to 780 North Mulford Road
Rockford, IL

GRAPHIC LOG	LOCATION 720 N Mulford Latitude: 42.275852° Longitude: -89.000603° Surface Elev.: 877.808 (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"	877.5							
	LEAN CLAY (CL) , trace silt, brown, medium stiff to stiff								
					12	2-3-3 N=6	0.5	3000 (HP)	27
					14	2-3-4 N=7	0.1	2000 (HP)	23
	5.0 CLAYEY FINE TO MEDIUM SAND (SC) , reddish brown, loose	873							
					14	2-3-4 N=7	ND		14
	8.0 CLAYEY FINE TO MEDIUM SAND (SC) , light brown, loose to medium dense	870							
					12	1-3-5 N=8	ND		8
					14	8-6-6 N=12	ND		9
	15.0 BOTTOM OF BORING <i>Boring Terminated at 15 Feet</i>	863							

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.
Elevations were provided by others.

Notes:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

WATER LEVEL OBSERVATIONS

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 08-31-2018

Boring Completed: 08-31-2018

Drill Rig: D-50

Driller: Jim

Project No.: 19185049

Exhibit: A-5

APPENDIX B
LABORATORY TESTING

Geotechnical Engineering Report

North Mulford Road Special Assessment No. 131 ■ Rockford, Illinois
September 6, 2018 ■ Terracon Project No. 19185049



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 the one native cohesive sample. 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 FOR BIDDING PURPOSES

APPENDIX C
SUPPORTING DOCUMENTS

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, Qu, psf	Standard Penetration or N-Value Blows/Ft.
	Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1
	Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4
	Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8
	Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15
	Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30
				Hard	> 8,000	> 30
						> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

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

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
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)

RELATIVE PROPORTIONS OF FINES

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

PLASTICITY DESCRIPTION

Term	Plasticity Index
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		
			$Cu < 4$ and/or $1 > Cc > 3$ ^E	GP	Poorly graded gravel ^F		
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F,G,H}		
			Fines classify as CL or CH	GC	Clayey 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	SW	Well-graded sand ^I		
			$Cu < 6$ and/or $1 > Cc > 3$ ^E	SP	Poorly graded sand ^I		
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G,H,I}		
			Fines classify as CL or CH	SC	Clayey sand ^{G,H,I}		
		Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots on or above “A” line ^J	CL	Lean clay ^{K,L,M}
					$PI < 4$ or plots below “A” line ^J	ML	Silt ^{K,L,M}
Organic:	Liquid limit - oven dried			< 0.75	OL	Organic clay ^{K,L,M,N}	
	Liquid limit - not dried				OL	Organic silt ^{K,L,M,O}	
Silts and Clays: Liquid limit 50 or more	Inorganic:		PI plots on or above “A” line	CH	Fat clay ^{K,L,M}		
			PI plots below “A” line	MH	Elastic Silt ^{K,L,M}		
	Organic:		Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K,L,M,P}	
			Liquid limit - not dried		OH	Organic silt ^{K,L,M,Q}	
	Highly organic soils:		Primarily organic matter, dark in color, and organic odor			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

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

^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.

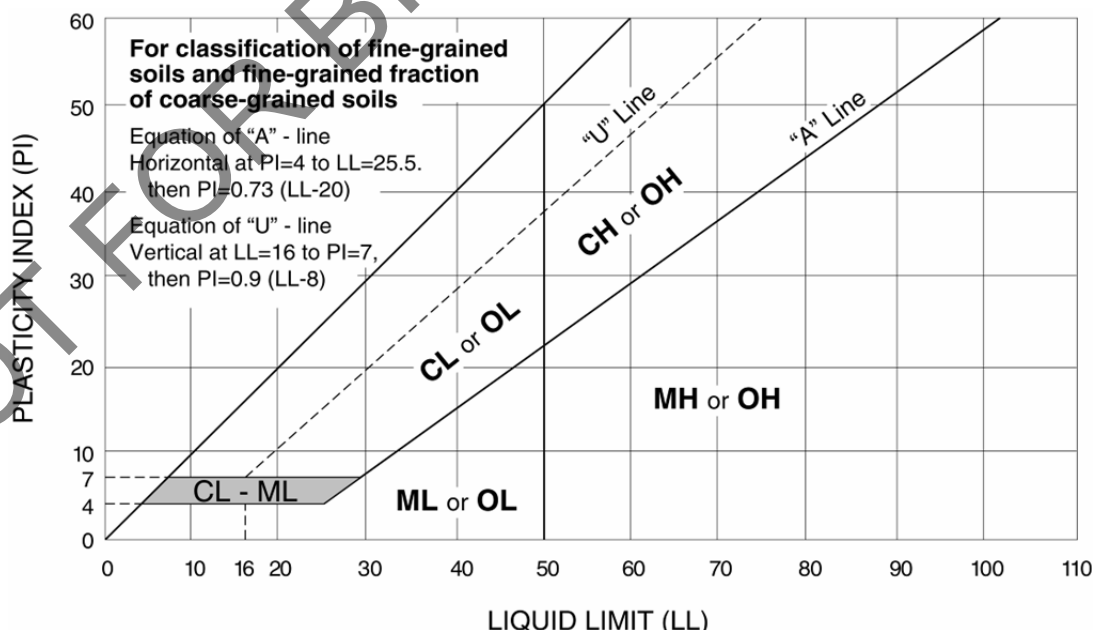
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^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
General Provisions &
Technical Specs

(Incorporated By Reference)