Rock River Water Reclamation District
Rockford, Illinois

Not to be used for bidding purposes

Bidding Requirements and Contract Forms

for

Cherry Valley Parallel Force Main
Capital Project No. 1420
IEPA Project No. L17-4667

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Rock River Water Reclamation District
Rockford, Illinois

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

for

Cherry Valley Parallel Force Main
Capital Project No. 1420
IEPA Project No. L17-4667

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Cherry Valley Parallel Force Main, RRWRD Capital Project No. 1420

IEPA Loan No. L17-4667

Bid opening: Friday, April 17, 2020 @ 10:00 a.m.

Required Bid Submittal Documents	Type*	Page No.	Notes
Bid Form or Proposal & Major Items of Equipment	F	16-29	If any addendum are issued, please acknowledge on Page 17 and do not include copies of said addendum as part of your bid submittal.
Fair Employment Practices Affidavity of Compliance	F	36	
Bid Bond	F	37-38	Requires a Power of Attorney.
U.S. Environmental Protection Agency Certification of Nonsegregated Facilities	F	63	
Notice to Labor Unions or Other Organizations of Workers Nondiscrimination in Employment	F	64	
U.S. Environmental Protection Agency Certification Regarding Debarment, Suspension and Other Responsibility Matters	F	65	
Bidder Certification in Compliance with Article 33E-11 to the "Criminal Code of 2012"	F	71	
Bidder Certification Regarding the Use of American Iron and Steel Products	F	80	For Requirements Specific to American Iron and Steel, see Pages 75-78
Certification of Proof of Publication in newspaper (daily, regional publication)	I / E	Info 73 & 76; Example 75	Advertisement dated on/before **04/01/2020**
Certification of Proof of Publication online - screenshot of advertisement, link to website and receipt is required for proof of advertising.	I / E	Info 73 & 76; Example 75	Advertisement posted on/before **04/01/2020**
IEPA DBE Program Form #1 - Contractor Certification Form	F	77	If they checked "This firm did not receive any inquiries from DBE's," no other DBE documentation is required.
IEPA DBE Program Form #3 - Subcontractor Utilization Form	F	78	One (1) executed form per DBE
IEPA DBE Program Form #4 - Bidders List	F	79	This is a sample form. Bidder is required to submit a similar document. Required DBE contact info is defined on Page 73.
*** - Form (F); Example (E); Instructions (I)**			
			Required if Bidder is using DBEs.

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Capital Project No. 1420
IEPA Project No. L17-4667

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Section I

Bidding Requirements & Contract Documents

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Advertisement for Bids

Rock River Water Reclamation District
3501 Kishwaukee Street
PO Box 7480
Rockford, IL 61126-7480

Separate sealed BIDS for the construction of:

Cherry Valley Parallel Force Main, Capital Project No. 1420, IEPA Project No. L17-4667, is comprised of all labor, materials, equipment, and supervision required to install approximately 16,000 LF of 30" diameter PVC force main piping. Project also includes multiple bore & jack casing installations, roadway restoration, and all necessary traffic control and appurtenances as indicated in the specifications.

A Mandatory Pre-Bid Meeting for this project will be held on Wednesday, March 25, 2020 at 10:00 a.m. in the Rock River Water Reclamation District's Board Room, 3501 Kishwaukee Street, Rockford, Illinois. All contractors that intend to bid on this project must attend this pre-bid meeting.

Bids will be received by Rock River Water Reclamation District at the office of 3501 Kishwaukee Street, Rockford, Illinois 61109 until 10:00 a.m., Friday, April 17, 2020, and then at said office publicly opened and read aloud.

"Any contract or contracts awarded under this invitation for bids are expected to be funded in part by a loan from the Illinois Environmental Protect Agency (Illinois EPA). Neither the State of Illinois nor any of its departments, agencies, or employees is or will be a party to this invitation for bids or any resulting contract. The procurement will be subject to regulations contained in the Procedures for Issuing Loans from the Water Pollution Control Loan Program (35 IAC Part 365), the Davis-Bacon Act (40 USC 276a through 276a-5) as defined by the United States Department of Labor, the Employment of Illinois Workers on Public Works Act (30 ILCS 570), and the "Use of American Iron and Steel" requirements as contained in Section 436 of H.R. 3547, The Consolidated Appropriations Act, 2014. This procurement is also subject to the loan recipient's policy regarding the increased use of disadvantaged business enterprises. **The loan recipient's policy requires all bidders to undertake specified affirmative efforts at least sixteen (16) days prior to bid opening.** The policy is contained in the specifications. Bidders are also required to comply with the President's Executive Order No. 11246, as amended. The requirements for bidders and contractors under this order are explained in 41 CFR 60-4."

The CONTRACT DOCUMENTS may be examined at the following locations:

Bid documents may be obtained at the Rock River Water Reclamation District Engineering Department, 3501 Kishwaukee Street, Rockford, IL 61109, upon payment of $100.00 for each set. The amount of the deposit for each set of specifications will not be refunded. For more information visit the Rock River Water Reclamation District's website at www.rrwrd.dst.il.us or contact the Engineering Department at 815.387.7660. Plans and specifications are available for viewing at the Rock River Water Reclamation District Engineering Department and at

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Northern Illinois Building Contractors Association, whose office is located at 1111 S. Alpine Road, Rockford, Illinois.

Bidder's attention is directed to Instruction to Bidders, Section 3.8, Statement of Qualifications.

Each proposal must be accompanied by the Rock River Water Reclamation District Bid Bond form with an acceptable Bid Security attached, in the amount of not less than five percent (5%) 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.

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

Dated: FEBRUARY 27, 2020

By: Chris Black

Chris Black, Director of Finance

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Information for Bidders

A Mandatory Pre-Bid Meeting for Cherry Valley Parallel Forcemain, Capital Project No. 1420, IEPA Project No. L17-4667, will be held on Wednesday, March 25, 2020 at 10:00 a.m. in the Rock River Water Reclamation District's Board Room, 3501 Kishwaukee Street, Rockford, Illinois. All contractors that intend to bid on this project must attend the pre-bid meeting.

BIDS will be received by Rock River Water Reclamation District (herein called the "OWNER"), at 3501 Kishwaukee St., Rockford IL 61109 until 10:00 a.m., Friday, April 17, 2020, and then at said office publicly opened and read aloud.

Each BID must be submitted in a sealed envelope, addressed to the Engineering Department at Rock River Water Reclamation District, 3501 Kishwaukee Street, Rockford IL 61109. Each sealed envelope containing a BID must be plainly marked on the outside as "BID for Cherry Valley Parallel Force Main, Capital Project No. 1420, IEPA Project No. L17-4667" and the envelope should bear on the outside the name of the BIDDER, his/her address, his/her license number (if applicable), and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to Rock River Water Reclamation District, Engineering Department, 3501 Kishwaukee Street, Rockford IL 61109.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one (1) copy of the BID form is required.

Any BID may be modified or withdrawn prior to the above scheduled time for opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within ninety (90) days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide the BIDDERS prior to BIDDING, all information that is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

A BID bond payable to the OWNER must accompany each BID for five percent (5%) of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the

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BONDS of all except the three (3) lowest responsible BIDDERS. When the Agreement is executed, the bonds of the two (2) remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment of BOND and performance BOND have been executed and approved, after which it will be returned.

A performance BOND and payment BOND, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

Any contract entered into by the loan recipient and any sub-agreement hereunder, shall provide that representatives of the Agency will have access to the work whenever it is in preparation or progress and that the contractor or subcontractor will provide proper facilities for such access and inspection. Such contract or sub-agreement must also provide that the Agency or any authorized representative shall have access to any books, documents, papers, and records of the contractor or subcontractor, which are pertinent to the project for the purpose of making audit, examination, excerpts, and transcriptions thereof.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The necessary Agreement and BOND forms shall accompany the NOTICE OF AWARD. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within ten (10) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed triplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The OWNER shall issue the NOTICE TO PROCEED within ten (10) days of the execution of the Agreement. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR might terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to

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satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted.

Award will be made to the low, responsive, responsible BIDDER.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout including the Employment of Illinois Workers on Public Works Act (30 ILCS 570) and the Davis-Bacon Wage Act (40 USC 276a through 276a-5) as defined by the United States Department of Labor.

All BIDDERS will comply with Sec. 436 of H.R. 3547, "The Consolidated Appropriations Act, 2014", which specifies that all "iron and steel products" used in the project are produced in the United States.
BIDDER shall not discriminate on the basis of race, color, national origin or sex in performance of this contract. The Contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

Each BIDDER is responsible for inspecting the site for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

Each BIDDER shall supply a list of all subcontractors that submitted proposals and if requested by the OWNER all major material suppliers.

Inspection trips for prospective BIDDERS will leave from the office of the Rock River Water Reclamation District at 3501 Kishwaukee St, Rockford, IL 61109.

The PROJECT ENGINEER is Matt Campbell. His direct line is 815.387.7684 and his email address is mcampbell@rrwrd.illinois.gov.

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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 Illinois Department of Transportation 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.

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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. Article 2 of Public Act 83–1472 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 99-093 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 Rock River Water Reclamation District (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 in accordance with District General Provisions & Technical

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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 the 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.

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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 project area.

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

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 District, 3501 Kishwaukee Street, Rockford, Illinois, and be sent preferably by certified mail. The District will not accept facsimile generated bids.

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3.6 Bid Security

Each Proposal must be accompanied by the District Bid Bond form with an acceptable bid security attached in an amount of not less than five percent (5%) 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. Failure to provide a Bid Security in the amount specified will constitute sufficient cause for rejection of the bid. **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 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 ninety (90) 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. The proposal must provide documentation that the bidder possesses the appropriate financial, material, equipment, facility and personnel resources and expertise necessary to meet all contractual obligations as described in 3.10.2, Evaluation of Responsibility. Also, the Bidder shall document no less than three (3) contracts for similar projects 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 ninety (90) days.

The contract will be awarded, if at all, to the lowest responsive, responsible bidder. The 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 District Director of Engineering 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

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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 deemed 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) similar contracts within the last five (5) years of equal or greater value to bid being submitted.

g. Certify 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.

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 either 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

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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 Cherry Valley Parallel Force Main, Capital Project No. 1420, IEPA Project No. L17-4667.
3. The Rock River Water Reclamation 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.

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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 Director of Finance 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 Bond Form

The Contractor shall provide a Performance Bond and Labor & Materials 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 & Materials Bond form for the Contractor's use.

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

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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.

3.12.7 Funding Requirements

Any contract or contracts awarded under this invitation for bids are expected to be funded by a loan from the Illinois Environmental Protection Agency (IEPA). Neither the State of Illinois nor any of its departments, agencies, or employees is or will be a party to this invitation to bids or any resulting contract. The procurement will be subject to regulations contained in the procedures for issuing loans from the State Revolving Loan Fund Program. The Davis-Bacon Act (40 USC 276a through 276a-5), and the Employment of Illinois Worker's on Public Works Act (30 ILCS CS 570). This procurement is also subject to the loan recipient's policy regarding the increased use of disadvantaged business. The loan recipient's policy requires all Bidders to undertake specified affirmative efforts at least 16 days prior to the day of the bid opening. The policy is contained in the Specifications. Bidders also required to comply with the President's Executive Order No. 11246, as amended. The requirements for bidders and contractors under this order are explained in 41 CFR 60-4.

3.12.8 Subcontractor's Payments

Contractor shall pay Subcontractors for satisfactory performance no more than thirty (30) days from the Contractor's receipt of payment from the District.

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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 only applicable taxes in his bid price.

3.14 Guarantee and Maintenance

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 of one (1) year from the date of formal acceptance of the Contract, except where more extended guarantee and maintenance is provided for. The Contractor shall, for this period, indemnify and save harmless the District, its officers and agents from any injury or damage done to persons or property as a direct or alleged result of imperfections in the Contractor's 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 promptly repair, replace, rebuild or restore such defective or damaged work 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.

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Bid Form or Proposal

Proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____doing business as ____ _____ (Insert "a corporation" or "a partnership" or "an individual" as applicable) to the Rock River Water Reclamation District (hereinafter called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of Cherry Valley Parallel Force Main, Capital Project No. 1420, IEPA Project No. L17-4667 in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete by August 31, 2021. BIDDER further agrees to pay as liquidated damages, the sum of $300.00 for each consecutive calendar day thereafter.

BIDDER certifies that all iron and steel products used in the project for the construction, alteration, maintenance, or repair of a public water system are produced in the United States in compliance with Section 436.(a) – (f) of H.R. 3547, "The Consolidated Appropriation Act, 2014."

(I) By submission of the bid, each bidder certifies, and in the case of a joint bid, each party certifies as to his own organization, that in connection with the bid:

(i) The prices in the bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

(ii) Unless otherwise required by law, the prices which have been quoted in the bid have not knowingly been disclosed by the bidder, prior to opening, directly or indirectly to any other bidder or to any competitor; and

(iii) No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.

(II) Each person signing the bid shall certify that:

(i) He is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid and that he has not participated, and will not participate, in any action contrary to (I)(i) through (I)(iii) above; or

(ii) He is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid but that he has been authorized to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to (I)(i) through (I)(iii) above, and as their agent shall so certify; and shall also certify that he has not participated, and will not participate, in any action contrary to (I)(i) through (I)(iii) above.

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BIDDER acknowledges receipt of the following ADDENDUM (where applicable):

_____

_____

_____

BIDDER certifies that wages paid in connection with the PROJECT shall be paid at prevailing rates not less than those prevailing under the Davis-Bacon Wage Act. Bidder further certifies that the provisions contained in the following clauses will be exercised in the performance of any contract resulting from this BID and are made a part of the CONTRACT DOCUMENTS thereto by their inclusion in the BID as follows:

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(1) Minimum wages

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section: also, regular contributions made or costs incurred for more than a weekly period (but not less than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)1(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. Subrecipients may obtain wage determination from the US Department of Labor's website www.dol.gov.

(ii)(A) The subrecipient, on behalf of US EPA, shall require that any class of laborers or mechanics including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The US EPA award official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the subrecipient to IEPA. IEPA will forward the report to the Administrator of the Wage and Hour Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify or disapprove every additional classification action within 30 days of receipt and so advise IEPA or will notify IEPA within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborer or mechanics to be employed in the classification or their representatives, and the subrecipient do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), IEPA shall refer the questions, including the views of all interested parties and the recommendation of the subrecipient, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise IEPA or will notify IEPA within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in that classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics including a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside, in a separate account, assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the subrecipient may, after written notice to the contractor, sponsor,

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applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and the that plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the subrecipient. Such documentation shall be available on request of IEPA or US EPA. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site www.dol.gov/whd/forms/index.html. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient, for transmission to the IEPA, US EPA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5(a)(3)(ii) of Regulations, 29 CFR Part 5, the appropriate information is being maintained under § 5.5(a)(3)(i) of Regulations, 29 CFR Part 5, and that such information is correct and complete.

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(2) That each laborer and mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii)The contractor or subcontractor shall make the records required under paragraph (a)(3)(1) of this section available for inspection, copying, or transcription by authorized representatives of IEPA, US EPA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as state above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ration permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the

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rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid in the full amount of fridge benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with the determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainee. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by form certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at the trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii)Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the US EPA may be appropriate instruction require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

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(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii)The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000 – clauses (1) through (4) shall be inserted in full in any contract in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act.

Contract Work Hours and Safety Standards Act.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation: liability for unpaid wages: liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanics, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

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(3) Withholding for unpaid wages and liquidated damages. The subrecipient, shall upon its own action or upon written request of the US EPA award official or an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clause set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

The following shall be inserted into any contract subject only to the Contract Work Hours and Safety Standards Act.

The contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three (3) years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the US EPA and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

Not to be used for bidding purposes

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit prices or lump sum:

Bid Schedule

NOTE: BIDS shall include sales tax and all other applicable taxes and fees.

No.	Item	Quantity	Unit	Unit Price	Total Price
1	30" Dia. DR 18, C900 PVC Force Main Piping	16,081	LF	$ -	$ -
2	36" x 30" Reducer D.I. AWWA C153, Class 350	1	EA	$ -	$ -
3	45 Deg. Bend, 30" Dia. D.I. AWWA C153, Class 350	15	EA	$ -	$ -
4	22.5 Deg. Bend, 30" Dia. D.I. AWWA C153, Class 350	9	EA	$ -	$ -
5	11.25 Deg. Bend, 30" Dia. D.I. AWWA C153, Class 350	2	EA	$ -	$ -
6	30" x 30" x 12" Tee, D.I. AWWA C153, Class 350	2	EA	$ -	$ -
7	30" x 30" x 16" Tee, D.I. AWWA C153, Class 350	1	EA	$ -	$ -
8	12" Dia. Forcemain Drain Piping, DR 18, C900 PVC	98	LF	$ -	$ -
9	45 Deg. Bend, 12" Dia. D.I. AWWA C153, Class 350	8	EA	$ -	$ -
10	6" Dia. DR 18, C900 PVC Force Main Piping,	40	LF	$ -	$ -
11	45 Deg. Bend, 6" Dia. D.I. AWWA C153, Class 350	3	EA	$ -	$ -
12	30" x 30" x 12" Pressure Connection, PCCP Pipe	1	EA	$ -	$ -
13	30" x 30" x 16" Pressure Connection, PCCP Pipe	1	EA	$ -	$ -
14	Concrete Pipe Encasement, 30" Dia. Forcemain	57	LF	$ -	$ -
15	Rock Excavation	1,638	CY	$ -	$ -

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No.	Item	Quantity	Unit	Unit Price	Total Price
16	Locate Existing Underground Utility, STA 2+90	1	EA	$ -	$ -
17	Locate Existing Underground Utility, STA 26+30	1	EA	$ -	$ -
18	Locate Existing Underground Utility, STA 40+40	1	EA	$ -	$ -
19	Locate Existing Underground Utility, STA 120+00	1	EA	$ -	$ -
20	Bore & Jack Set Up, Barley Ridge Trl., Complete	1	LS	$ -	$ -
21	Bore & Jack Set Up, Perryville Rd., Complete	1	LS	$ -	$ -
22	Bore & Jack Set Up, U.S. Highway 20, Complete	1	LS	$ -	$ -
23	Bore & Jack Set Up, Mulford Rd., Complete	1	LS	$ -	$ -
24	54" I.D., 0.75" Wall Thickness, Steel Casing, Installed	610	LF	$ -	$ -
25	48" I.D., 0.75" Thickness, Steel Casing, Installed	120	LF	$ -	$ -
26	42" Dia. Sanitary Sewer, ASTM F679 PVC	120	LF	$ -	$ -
27	18" Dia. Sanitary Sewer, Remove & Replace, SDR 35 PVC	44	LF	$ -	$ -
28	12" Dia. Sanitary Sewer, Remove & Replace, SDR 35 PVC	25	LF	$ -	$ -
29	8" Dia. Sanitary Sewer, Remove & Replace, SDR 35 PVC	50	LF	$ -	$ -

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No.	Item	Quantity	Unit	Unit Price	Total Price
30	6" Dia. Sanitary Sewer Service, Remove & Replace, SDR 26 PVC	275	LF	$ -	$ -
31	Connect to Existing Sanitary Manhole, Complete	2	EA	$ -	$ -
32	5' Dia. Sanitary Manhole	2	EA	$ -	$ -
33	8' Dia. Force Main Discharge Manhole	1	EA	$ -	$ -
34	6' Dia. Combo Air/Vacuum Release Valve Vault, Complete	6	EA	$ -	$ -
35	6' Dia. Valve Vault, Complete	2	EA	$ -	$ -
36	5' Dia. Valve Vault, Complete	2	EA	$ -	$ -
37	Bypass Pumping, MH 149-060 to 149-140	1	LS	$ -	$ -
38	Bypass Pumping, MH 103-097 to 103-096 (Discharge)	1	LS	$ -	$ -
39	8" Dia. Water Main Remove & Replace, Class 52 D.I.	25	LF	$ -	$ -
40	1" Dia. Water Service Remove & Replace	100	LF	$ -	$ -
41	6" Dia. Water Main Remove & Replace, Class 52 D.I.	25	LF	$ -	$ -
42	12" Dia. Water Main Remove & Replace, Class 52 D.I.	50	LF	$ -	$ -
43	8" Dia. Linestop, Complete	2	EA	$ -	$ -
44	6" Dia. Linestop, Complete	2	EA	$ -	$ -
45	12" Dia. Linestop, Complete	2	EA	$ -	$ -
46	30" Dia. Linestop, Complete	1	EA	$ -	$ -
47	24" Dia. CMP Storm Sewer Remove & Replace	25	LF	$ -	$ -
48	18" Dia. CMP Storm Sewer Remove & Replace	67	LF	$ -	$ -

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No.	Item	Quantity	Unit	Unit Price	Total Price
49	12" Dia. RCP Storm Sewer Remove & Replace	25	LF	$ -	$ -
50	Curb & Gutter, TB.6-24, Remove & Replace	84	LF	$ -	$ -
51	Full Depth Pavement Removal	8,155	SY	$ -	$ -
52	Aggregate Base Course, Type B	5,100	TON	$ -	$ -
53	PCC Driveway Pavement, 6"	38	SY	$ -	$ -
54	HMA Binder Course, N50, IL-19.0	1,017	TON	$ -	$ -
55	HMA Surface Course, Mix "C", N50, IL-9.5	910	TON	$ -	$ -
56	Thermoplastic Pavement Marking, Line 4, White	2,572	LF	$ -	$ -
57	Thermoplastic Pavement Marking, Line 4, Yellow	1,015	LF	$ -	$ -
58	Thermoplastic Pavement Marking, Letters and Symbols	32	SF	$ -	$ -
59	Construction Layout	1	LS	$ -	$ -
60	Traffic Control & Protection	1	LS	$ -	$ -
61	Portable, Changeable Message Boards	360	Cal Day	$ -	$ -
62	Tree Removal (Estimated 1.0 Acres minimum)	1	LS	$ -	$ -
63	Remove and Relocate Sign Panel Assembly	2	EA	$ -	$ -
64	Stabilized Construction Entrance	700	SY	$ -	$ -
65	Inlet and Pipe Protection	30	EA		
66	Ditch Check	4	EA		
67	Erosion Control Blanket	2.5	ACRE		
68	Turf Reinforcement Mat	299	SY		

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No.	Item	Quantity	Unit	Unit Price	Total Price
69	Silt Fence	20,026	LF	$ -	$ -
70	Seeding, Class 1	2.3	ACRE	$ -	$ -
71	Seeding, Class 4	7.3	ACRE	$ -	$ -
72	Rip Rap	178	SY	$ -	$ -
73	Temporary Construction Fence	400	LF	$ -	$ -

Total of Bid…… $ -

Bidder is currently certified as an MBE or WBE under EPA's DBE Program? Yes _____ No _____

Respectfully submitted,

Signature	Mailing Address
Printed Name	City, State Zip
Title	Email Address
Telephone Number	Fax Number

(SEAL – if BID is by a corporation)

Attest

Not to be used for bidding purposes

Not to be used for bidding purposes

Major Items of Equipment

It is hereby expressly agreed that the Contractor shall furnish and install in full compliance with the Plans and Contract Documents, the major items of equipment, as manufactured or supplied by the following listed manufacturers or suppliers:

No.	Description	Manufacturer or Supplier
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		

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Winnebago County Prevailing Wage Rates posted on 7/15/2019

						Overtime								
Trade Title	**Rg**	**Type**	**C**	**Base**	**Foreman**	**M-F**	**Sa**	**Su**	**Hol**	**H/W**	**Pension**	**Vac**	**Trng**	**Other Ins**
ASBESTOS ABT-GEN	All	BLD		39.08	40.08	1.5	1.5	2.0	2.0	9.12	19.21	0.00	0.80	
ASBESTOS ABT-MEC	All	BLD		18.95	0.00	1.5	1.5	2.0	2.0	2.70	3.35	0.00	0.00	
BOILERMAKER	All	BLD		50.51	55.05	2.0	2.0	2.0	2.0	6.97	14.65	0.00	1.10	
BRICK MASON	All	BLD		42.30	45.05	1.5	1.5	2.0	2.0	11.88	14.40	0.00	0.95	
CARPENTER	All	BLD		40.58	45.04	1.5	1.5	2.0	2.0	11.35	15.86	0.00	0.73	
CARPENTER	All	HWY		45.10	46.85	1.5	1.5	2.0	2.0	11.35	16.00	0.00	0.73	
CEMENT MASON	All	ALL		37.75	40.50	1.5	1.5	2.0	2.0	12.05	17.58	0.00	0.50	
CERAMIC TILE FINISHER	All	BLD		35.69	35.69	1.5	1.5	2.0	2.0	10.60	8.24	0.00	0.81	
COMMUNICATION TECHNICIAN	All	BLD		41.00	45.10	1.5	1.5	2.0	2.0	13.74	15.02	0.00	0.82	
ELECTRIC PWR EQMT OP	All	ALL		43.71	59.52	1.5	1.5	2.0	2.0	6.00	13.55	0.00	0.77	1.31
ELECTRIC PWR EQMT OP	All	HWY		41.45	56.38	1.5	1.5	2.0	2.0	5.50	12.87	0.00	0.73	
ELECTRIC PWR GRNDMAN	All	ALL		33.69	59.52	1.5	1.5	2.0	2.0	6.00	10.44	0.00	0.59	1.01
ELECTRIC PWR GRNDMAN	All	HWY		32.00	56.38	1.5	1.5	2.0	2.0	5.50	9.92	0.00	0.66	
ELECTRIC PWR LINEMAN	All	ALL		52.44	59.52	1.5	1.5	2.0	2.0	6.00	16.27	0.00	0.93	1.58
ELECTRIC PWR LINEMAN	All	HWY		49.67	56.38	1.5	1.5	2.0	2.0	5.50	15.40	0.00	0.88	
ELECTRIC PWR TRK DRV	All	ALL		34.90	59.52	1.5	1.5	2.0	2.0	6.00	10.83	0.00	0.62	1.05
ELECTRIC PWR TRK DRV	All	HWY		33.14	56.38	1.5	1.5	2.0	2.0	5.50	10.29	0.00	0.59	
ELECTRICIAN	All	BLD		47.89	52.68	1.5	1.5	2.0	2.0	13.74	20.44	0.00	0.96	
ELEVATOR CONSTRUCTOR	All	BLD		52.09	58.60	2.0	2.0	2.0	2.0	15.57	9.96	4.17	0.62	
GLAZIER	All	BLD		41.03	42.03	1.5	1.5	1.5	2.0	12.30	9.05	0.00	1.25	
HEAT/FROST INSULATOR	All	BLD		33.83	36.87	1.5	1.5	2.0	2.0	9.10	20.67	0.00	0.48	
IRON WORKER	All	ALL		39.39	45.30	2.0	2.0	2.0	2.0	12.27	25.42	0.00	1.20	
LABORER	All	BLD		34.78	35.78	1.5	1.5	2.0	2.0	9.12	19.21	0.00	0.80	
LABORER	All	HWY		36.13	36.88	1.5	1.5	2.0	2.0	9.12	23.21	0.00	0.80	
LABORER, SKILLED	All	HWY		39.08	39.83	1.5	1.5	2.0	2.0	9.12	23.21	0.00	0.80	
LATHER	All	BLD		40.58	45.04	1.5	1.5	2.0	2.0	11.35	15.86	0.00	0.73	
MACHINIST	All	BLD		48.93	51.43	1.5	1.5	2.0	2.0	7.68	8.95	1.85	1.32	
MARBLE FINISHER	All	BLD		35.69	35.69	1.5	1.5	2.0	2.0	10.60	8.24	0.00	0.81	
MARBLE MASON	All	BLD		38.52	41.02	1.5	1.5	2.0	2.0	10.60	10.40	0.00	0.86	
MATERIAL TESTER I	All	ALL		39.08	39.83	1.5	1.5	2.0	2.0	9.12	23.21	0.00	0.80	
MATERIALS TESTER II	All	ALL		39.08	39.83	1.5	1.5	2.0	2.0	9.12	23.21	0.00	0.80	

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MILLWRIGHT	All	BLD		41.42	45.56	1.5	1.5	2.0	2.0	10.60	16.45	0.00	0.75	0.20
OPERATING ENGINEER	All	BLD	1	46.80	50.80	2.0	2.0	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	BLD	2	46.10	50.80	2.0	2.0	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	BLD	3	43.65	50.80	2.0	2.0	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	BLD	4	41.65	50.80	2.0	2.0	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	BLD	5	50.55	50.80	2.0	2.0	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	BLD	6	49.80	50.80	2.0	2.0	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	BLD	7	46.80	50.80	2.0	2.0	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	HWY	1	46.65	50.65	1.5	1.5	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	HWY	2	46.10	50.65	1.5	1.5	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	HWY	3	44.80	50.65	1.5	1.5	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	HWY	4	43.35	50.65	1.5	1.5	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	HWY	5	41.90	50.65	1.5	1.5	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	HWY	6	49.65	50.65	1.5	1.5	2.0	2.0	20.50	15.80	2.35	1.55	
OPERATING ENGINEER	All	HWY	7	47.65	50.65	1.5	1.5	2.0	2.0	20.50	15.80	2.35	1.55	
PAINTER	All	ALL		40.65	42.65	1.5	1.5	1.5	2.0	12.43	9.88	0.00	1.35	
PILEDRIVER	All	BLD		41.00	45.51	1.5	1.5	2.0	2.0	11.10	14.61	0.00	0.73	
PILEDRIVER	All	HWY		46.10	47.85	1.5	1.5	2.0	2.0	11.35	16.00	0.00	0.73	
PIPEFITTER	All	BLD		50.00	53.50	1.5	1.5	2.0	2.0	9.25	12.40	0.00	1.95	
PLASTERER	All	BLD		34.78	38.26	1.5	1.5	2.0	2.0	11.80	18.94	0.00	0.50	
PLUMBER	All	BLD		50.00	53.50	1.5	1.5	2.0	2.0	9.25	12.40	0.00	1.95	
ROOFER	All	BLD		44.60	48.60	1.5	1.5	2.0	2.0	10.38	12.74	0.00	0.58	
SHEETMETAL WORKER	All	BLD		42.89	46.32	1.5	1.5	2.0	2.0	8.38	20.28	0.00	0.50	
SPRINKLER FITTER	All	BLD		50.15	52.65	1.5	1.5	2.0	2.0	13.50	16.60	0.00	0.65	
STONE MASON	All	BLD		42.30	45.05	1.5	1.5	2.0	2.0	11.88	14.40	0.00	0.95	
TERRAZZO FINISHER	All	BLD		35.69	35.69	1.5	1.5	2.0	2.0	10.60	8.24	0.00	0.81	
TERRAZZO MASON	All	BLD		38.52	41.02	1.5	1.5	2.0	2.0	10.60	10.40	0.00	0.86	
TILE LAYER	All	BLD		39.40	43.73	1.5	1.5	2.0	2.0	10.39	13.90	0.00	0.60	
TILE MASON	All	BLD		38.52	41.02	1.5	1.5	2.0	2.0	10.60	10.40	0.00	0.86	
TRUCK DRIVER	All	ALL	1	38.06	42.18	1.5	1.5	1.5	2.0	13.00	6.37	0.00	0.25	
TRUCK DRIVER	All	ALL	2	35.17	0.00	1.5	1.5	2.0	2.0	8.60	8.60	0.00	0.20	
TRUCK DRIVER	All	ALL	3	39.23	42.18	1.5	1.5	2.0	2.0	13.00	6.37	0.00	0.25	
TRUCK DRIVER	All	ALL	4	39.23	42.18	1.5	1.5	2.0	2.0	13.00	6.37	0.00	0.25	
TUCKPOINTER	All	BLD		42.30	45.05	1.5	1.5	2.0	2.0	11.88	14.40	0.00	0.95	

Not to be used for bidding purposes

Legend
Rg Region
Type Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers
C Class
Base Base Wage Rate
OT M-F Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.
OT Sa Overtime pay required for every hour worked on Saturdays
OT Su Overtime pay required for every hour worked on Sundays
OT Hol Overtime pay required for every hour worked on Holidays
H/W Health/Welfare benefit
Vac Vacation
Trng Training
Other Ins Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations WINNEBAGO COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date. ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER, MARBLE FINISHER, TERRAZZO FINISHER

Assisting, helping or supporting the tile, marble and terrazzo mechanic by performing their historic and traditional work assignments required to complete the proper installation of the work covered by said crafts. The term "Ceramic" is used for naming the classification only and is in no way a limitation of the product handled. Ceramic takes into consideration most hard tiles.

COMMUNICATIONS TECHNICIAN

Installing, manufacturing, assembling and maintaining sound and intercom, protection alarm (security), fire alarm, master antenna television, closed circuit television, low voltage control for computers and/or door monitoring, school communications systems, telephones and servicing of nurse and emergency calls, and the installation and maintenance of transmit and receive antennas, transmitters, receivers, and associated apparatus which operates in conjunction with above systems. All work associated with these system installations will be included EXCEPT the installation of protective metallic conduit in new construction projects (excluding less than ten-foot, runs strictly for protection of cable) and 120 volt AC (or higher) power wiring and associated hardware.

LABORER, SKILLED - HIGHWAY

Not to be used for bidding purposes

Individuals engaged in the following types of work, irrespective of the site of the work: asbestos abatement worker, handling of any materials with any foreign matter harmful to skin or clothing, track laborer, cement handlers, chloride handlers, the unloading and loading with steel workers and re-bars, concrete workers wet, tunnel helpers in free air, batch dumpers, mason tenders, kettle and tar men, tank cleaners, plastic installers, scaffold workers, motorized buggies or motorized unit used for wet concrete or handling of building materials, laborers with de-watering systems, sewer workers plus depth, rod and chainmen with technical engineers, rod and chainmen with land surveyors, rod and chainmen with surveyors, vibrator operators, cement silica, clay, fly ash, lime and plasters, handlers (bulk or bag), cofferdam workers plus depth, on concrete paving, placing, cutting and tying of reinforcing, deck hand, dredge hand, and shore laborers, bankmen on floating plant, grade checker, power tools, front end man on chip spreaders, cassion workers plus depth, gunnite nozzle men, lead man on sewer work, welders, cutters, burners and torchmen, chainsaw operators, jackhammer and drill operators, layout man and/or drainage tile layer, steel form setter - street and highway, air tamping hammermen, signal man on crane, concrete saw operator, screedman on asphalt pavers, laborers tending masons with hot material or where foreign materials are used, mortar mixer operators, multiple concrete duct - leadsman, lumen, asphalt raker, curb asphalt machine operator, ready mix scalemen (permanent, portable or temporary plant), laborers handling masterplate or similar materials, laser beam operator, con-crete burning machine operator, coring machine operator, plaster ten-der, underpinning and shoring of buildings, pump men, manhole and catch basin, dirt and stone tamper, hose men on concrete pumps, haz-ardous waste worker, lead base paint abatement worker, lining of pipe, refusing machine, assisting on direct boring machine, the work of lay-ing watermain, fire hydrants, all mechanical joints to watermain work, sewer worker, and tapping water service and forced lift station mechanical worker.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEERS - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver (over 27E cu. ft.): Concrete Paver (27 cu. ft. and under); Concrete Placer; Concrete Pump (Truck Mounted); Concrete Conveyor (Truck Mounted); Concrete Tower; Cranes, All; GCI and similar types (required two operators only); Cranes, Hammerhead; Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment - excluding hose work and any sewer work); Locomotives, All; Lubrication Technician; Manipulators; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Raised and Blind Hole Drill; Rock Drill (self-propelled); Rock Drill - Truck Mounted; Roto Mill Grinder; Scoops - Tractor Drawn; Slipform Paver; Scrapers Prime Movers; Straddle Buggies; Tie Back Machine; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Bobcat (over 3/4 cu. yd.); Boilers; Brick Forklift; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Asphalt Spreader; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, or Drilling - with a seat); Lowboys; Pumps, Over 3" (1 to 3 not to exceed total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

Not to be used for bidding purposes

Class 4. Elevator push button with automatic doors; Hoists, Inside; Oilers; Brick Forklift.

Class 5. Assistant Craft Foreman

Class 6. Mechanics; Welders.

Class 7. Gradall

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Silo Tender; Asphalt Spreader; Autograder; ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Backhoe w/shear attachments; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower of all types; Creter Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Directional Boring Machine over 12"; Dredges; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Hydro Vac, Self Propelled, Truck Mounted (excluding hose work and any sewer work); Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; GCI Crane; Hydraulic Telescoping Form (Tunnel); Tie Back Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader with attached pusher; Tractor with Boom; Tractaire with Attachments; Traffic Barrier Conveyor Machine; Raised or Blind Hole Drills; Trenching Machine (over 12"); Truck Mounted Concrete Pump with Boom; Truck Mounted Concrete Conveyor; Work Boat (no license required - 90 h.p. or above); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw (large self-propelled - excluding walk-behinds and hand-held); Conveyor Muck Cars (Haglund or Similar Type); Drills, all; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro Blaster; All Locomotives, Dinky; Off-Road Hauling Units; Non-Self Loading Dump; Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form - Motor Driven.

Class 4. Air Compressor - Small and Large; Asphalt Spreader, Backend Man; Bobcat (Skid Steer) all; Brick Forklift; Combination - Small Equipment Operator; Directional Boring Machine up to 12"; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro-Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Trencher 12" and under; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Not to be used for bidding purposes

Class 5. Oilers and Directional Boring Machine Locator.

Class 6. Field Mechanics and Field Welders

Class 7. Gradall and machines of like nature.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; TTeamsters Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yeards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

Not to be used for bidding purposes

Fair Employment Practices Affidavit of Compliance

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420, IEPA Project No. L17-4667

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

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

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

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

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

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

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

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

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

_____
Signature

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

_____
Notary Public

Not to be used for bidding purposes

Not to be used for bidding purposes

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ _____ as Principal, and _____as Surety, are hereby held and firmly bound unto Rock River Water Reclamation District as OWNER in the penal sum of five percent (5%) of the total Bid price for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this_____ day of_____, _____.

The Condition of the above obligation is such that whereas the Principal has submitted to Rock River Water Reclamation District a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the Cherry Valley Parallel Force Main, Capital Project No. 1420, IEPA Project No. L17-4667.

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such bid; and said Surety does hereby waive notice of any such extension.

Not to be used for bidding purposes

Not to be used for bidding purposes

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L.S.)
Principal

_____Surety

By: _____

IMPORTANT-Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

Not to be used for bidding purposes

Not to be used for bidding purposes

Agreement

THIS AGREEMENT, made this _____ day of _____, 20_____, by and between Rock River Water Reclamation District, hereinafter called "OWNER" and _____ doing business as (an individual) or (a partnership) or (a corporation) hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of Cherry Valley Parallel Force Main, Capital Project No. 1420, IEPA Project No. L17-4667.

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the Contract Documents within one (1) calendar day after the date of the NOTICE TO PROCEED and will complete this project by August 31, 2021 unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of $_____, or as shown in the BID schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

(A) Advertisement for Bids
(B) Information for Bidders
(C) Instructions for Bidders
(D) Bid Form or Proposal
(E) Bid Bond
(F) Agreement
(G) Payment Bond
(H) Performance Bond
(I) Notice of Award
(J) Notice to Proceed
(K) Change Order
(L) Drawings prepared by Rock River Water Reclamation District
numbered _____ through _____, and dated _____, 20___
(M) Specifications prepared by Rock River Water Reclamation District
dated _____, 20___
(N) Addenda:
No. _____, dated _____, 20_____
No. _____, dated _____, 20_____
No. _____, dated _____, 20_____

Not to be used for bidding purposes

6. The OWNER will pay to the CONTRACTOR in the manner and at such times, such amounts as required by the CONTRACT DOCUMENTS.

7. The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

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

9. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

Not to be used for bidding purposes

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement shall be deemed an original on the date first above written.

OWNER:

Rock River Water Reclamation District

By: _____

Name: _____

(Please Type) Title: _____

(SEAL)

ATTEST:

Rock River Water Reclamation District

By: _____

Name: _____

Title: _____

CONTRACTOR:

_____

By: _____

Name: _____

(Please Type) Address: _____

_____

(SEAL)

ATTEST:

_____

By: _____

Name: _____

Title: _____

Not to be used for bidding purposes

Not to be used for bidding purposes

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto Rock River Water Reclamation District, 3501 Kishwaukee Street, Rockford, IL 61109 hereinafter called OWNER, in the penal sum of _____ _____ ($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20 _____, a copy of which is hereto attached and made a part hereof for the construction of:

_____

_____

_____.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

Not to be used for bidding purposes

PROVIDED, FURTHER, that 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 hereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation 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.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this _____ day of _____ 20 _____.

ATTEST:

_____

_____

(SEAL)

By:_____

_____

_____

_____

_____

_____

_____

ATTEST:

By:_____

_____

_____

_____

_____

_____

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

Not to be used for bidding purposes

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto Rock River Water Reclamation District, 3501 Kishwaukee Street, Rockford, IL 61109 hereinafter called OWNER, in the penal sum of _____ _____($_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20 _____, a copy of which is hereto attached and made a part hereof for the construction of:

_____

_____

_____.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

Not to be used for bidding purposes

PROVIDED, FURTHER, that 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 WORK to be performed hereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation 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.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this _____ day of _____ 20 _____.

ATTEST:

_____

_____ By: _____

(SEAL)

_____ _____

_____ _____

_____ _____

ATTEST:

_____

(SEAL)

_____ By: _____

_____ _____

_____ _____

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

Not to be used for bidding purposes

Notice of Intent to Award

Via Email and USPS:
To: Name of Person who signed the Proposal
Company Name
Street Address
City, State, Zip
Email: _____

Project: Cherry Valley Parallel Force Main, Capital Project No. 1420
IEPA Project No. L17-4667

The OWNER has considered the BID submitted by you for the above described WORK, in response to its Advertisement for Bids, dated _____and Information for Bidders.

You are hereby notified that your BID will be accepted, contingent upon Illinois Environmental Protection Agency (IEPA) approval, for items in the amount of $_____.

You will be required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance (including general and auto liability additional insured endorsements) listing Rock River Water Reclamation District as Additional insured parties within ten (10) calendar days from the date of the final Notice to be sent upon IEPA approval, to you.

Dated this _____ day of _____, 2020.

Rock River Water Reclamation District
(Owner)

By: _____

Name: Timothy S. Hanson
Title: Executive Director

Not to be used for bidding purposes

Not to be used for bidding purposes

Notice of Award

Via Email and USPS:
To: Name of Person who signed the Proposal
Company Name
Street Address
City, State, Zip
Email: _____

Project: Cherry Valley Parallel Force Main, Capital Project No. 1420
IEPA Project No. L17-4667

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids dated _____, 2020 and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of $_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTORS Performance BOND, Payment BOND and certificates of insurance (including general and auto liability additional insured endorsements) listing Rock River Water Reclamation District as Additional insured parties within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 2020.

Rock River Water Reclamation District
(Owner)

By: _____

Name: Timothy S. Hanson
Title: Executive Director

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged,

By: _____ this the _____ day of _____, 2020.
(Contractor)

By: _____

Printed Name: _____
Title: _____

Not to be used for bidding purposes

Not to be used for bidding purposes

Notice to Proceed

Via Email and USPS:

To:	Name _____	Date:	_____
	Company _____	Project:	**Cherry Valley Parallel Force Main**
	Street _____		**Capital Project No. 1420**
	City, State, Zip _____		**IEPA Project No. L17-4667**
	Email _____		_____

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20 _____, on or before _____, 20 _____, and you are to complete the WORK within _____ consecutive calendar days thereafter.

The date of completion of all WORK is therefore August 31, 2021.

Rock River Water Reclamation District
(Owner)

By: _____

Name: Timothy S. Hanson
Title: Executive Director

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED
is hereby acknowledged by:

_____ this the _____ day of _____, 2020.
(Contractor)

By: _____

Printed Name: _____
Title: _____

Not to be used for bidding purposes

Not to be used for bidding purposes

Change Order

No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments: (List documents supporting change):

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: $_____	Original Contract Times: ☐ Working days ☐ Calendar days Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] from previously approved Change Orders No._____ to No._____: $_____	[Increase] [Decrease] from previously approved Change Orders No._____ to No._____: Substantial completion (days): _____ Ready for final payment (days): _____
Contract Price prior to this Change Order: $_____	Contract Times prior to this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order: $_____	[Increase] [Decrease] of this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
Contract Price incorporating this Change Order: $_____	Contract Times with all approved Change Orders: Substantial completion (days or date): _____ Ready for final payment (days or date): _____

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (Authorized Signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable): _____ Date: _____

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A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

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Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offeror or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for minority participation for each trade	Goals for female participation in each trade
	6.3%	**6.9%**

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer to minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is Illinois, Winnebago County, City of Rockford, and the Village of Cherry Valley.

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Construction Contractors Affirmative Action Requirements
Goals for Minority Participation
(As published in the Friday, October 3, 1980 Federal Register)
Female participation = 6.9% Statewide

County	Percentage	County	Percentage	County	Percentage
Adams	3.1%	Henry	4.6%	Perry	11.4%
Alexander	11.4%	Iroquois	18.4%	Piatt	4.8%
Bond	11.4%	Jackson	11.4%	Pike	3.1%
Boone	6.3%	Jasper	11.4%	Pope	5.2%
Brown	3.1%	Jefferson	11.4%	Pulaski	11.4%
Bureau	18.4%	Jersey	11.4%	Putnam	18.4%
Calhoun	11.4%	Jo Davis	0.5%	Randolph	11.4%
Carroll	3.4%	Johnson	11.4%	Richland	11.4%
Cass	4.0%	Kane	19.6%	Rock Island	4.6%
Champaign	7.8%	Kankakee	9.1%	Saline	3.5%
Christian	4.0%	Kendall	18.4%	Sangamon	4.5%
Clark	2.5%	Knox	3.3%	Schuyler	3.3%
Clay	11.4%	Lake	19.6%	Scott	4.0%
Clinton	14.7%	La Salle	18.4%	Shelby	4.0%
Coles	4.8%	Lawrence	3.5%	Stark	3.3%
Cook	19.6%	Lee	4.6%	St. Clair	14.7%
Crawford	2.5%	Livingston	18.4%	Stephenson	4.6%
Cumberland	4.8%	Logan	4.0%	Tazwell	4.4%
De Kalb	18.4%	Macon	7.6%	Union	11.4%
De Witt	4.0%	Macoupin	11.4%	Vermilion	4.8%
Douglas	4.8%	Madison	14.7%	Wabash	3.5%
Du Page	19.6%	Marion	11.4%	Warren	3.3%
Edgar	4.8%	Marshall	3.3%	Washington	11.4%
Edwards	3.5%	Mason	3.3%	Wayne	11.4%
Effingham	11.4%	Massac	5.2%	White	3.5%
Fayette	11.4%	McDonough	3.3%	Whiteside	3.4%
Ford	4.8%	McHenry	19.6%	Will	20.9%
Franklin	11.4%	McLean	2.5%	Williamson	11.4%
Fulton	3.3%	Menard	4.5%	Winnebago	6.3%
Gallatin	3.5%	Mercer	3.4%	Woodford	4.4%
Greene	11.4%	Monroe	14.7%		
Grundy	18.4%	Montgomery	11.4%		
Hamilton	3.5%	Morgan	4.0%		
Hancock	3.4%	Moultrie	4.0%		
Hardin	5.2%	Ogle	4.6%		
Henderson	3.4%	Peoria	4.4%		

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41 CFR 60
60-4.1 Scope and Application.

This part applies to all contractors and subcontractors that hold any Federal and federally assisted construction contract in excess of $10,000. The regulations in this part are applicable to all of a construction contractor's or subcontractor's construction employees who are engaged in on site construction including those construction employees who work on a non-Federal or non-federally assisted construction site. This part also establishes procedures, which all Federal contracting officers and all applicants, as applicable, shall follow in soliciting for and awarding Federal or federally assisted construction contracts. Procedures also are established which administering agencies shall follow in making any grant, contract, loan, insurance, or guarantee involving federally assisted construction which is not exempt from the requirements of Executive Order 11246, as amended. In addition, this part applies to construction work performed by construction contractors and subcontractors for Federal non-construction contractors and subcontractors if the construction work is necessary in whole or in part to the performance of a non-construction contract or subcontract.

[43 FR 49254, Oct. 20, 1978; 43 FR 51404, Nov. 3, 1978]

60-4.2 Solicitations

(a) All Federal contracting officers and all applicants shall include the notice set forth in paragraph (d) of this section and the Standard Federal Equal Employment Opportunity Construction Contract Specifications set forth in § 60-4.3 of this part in all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts to be performed in geographical areas designated by the Director pursuant to § 60-4.6 of the part. Administering agencies shall require the inclusion of the notice set forth in paragraph (d) of this section and the specifications set forth in § 60-4.3 of this part as a condition of any grant, contract, subcontract, loan, insurance or guarantee involving federally assisted construction covered by this Part 60-4.

(b) All non-construction contractors covered by Executive Order 11246 and the implementing regulations shall include the notice in paragraph (d) of this section in all construction agreements, which are necessary in whole or in part to the performance of the covered non-construction contract.

(c) Contracting officers, applications and non-construction contractors shall give written notice to the Director within 10 working days of award of a contract subject to these provisions. The notification shall include the name, address and telephone number of the contractor; employer identification number; dollar amount of the contract; estimated starting and completion dates of the contract; the contract number; and geographical area in which the contract is to be performed.

(d) The following notice shall be included in, and shall be a part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of $10,000 to be performed in geographical areas designated by the Director pursuant to § 60-4.6 of this part (see 41 CFR 60-4.2(a)).

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Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offeror or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Time-tables	Goals for minority participation for each trade	Goals for female participation in each trade
	6.3%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction in a geographical area located outside of the covered area, it shall apply the goals established for such geographical are where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting form this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is Illinois, Winnebago County, City of Rockford, City of Loves Park, and the Village of Machesney Park.

[43 FR 49254, Oct. 20, 1978; 43 FR 51401, Nov. 3, 1978, as amended at 45 FR 65977, Oct. 3, 1980]

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60-4.3 Equal Opportunity Clauses.

(a) The equal opportunity clause published at 41 CFR 60-1.4(a) of this chapter is required to be included in, and is part of, all nonexempt Federal contracts and subcontracts, including construction contracts and subcontracts. The equal opportunity clause published at 41 CFR 60-1.4(b) is required to be included in, and is a part of, all nonexempt federally assisted construction contracts and subcontracts. In addition to the clauses described above, all Federal contracting officers, all applicants, and all non-construction contractors, as applicable, shall include the specifications set forth in this section in all Federal and federally assisted construction contracts in excess of $10,000 to be performed in geographical areas designated by the Director pursuant to 60-4.6 of this part and in construction subcontracts in excess of $10,000 necessary in whole or in part to the performance of non-construction Federal contracts and subcontracts covered under the Executive order.

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Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:
   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted.
   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.
   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
   d. "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin)
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with the Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or

Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, nor the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, the Contractor must employ such apprentices and trainees during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

   a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

   b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

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c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore; along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women, and where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of the Contractor's work force.

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k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practice, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of

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existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws, which establish different standards of compliance or upon the application of requirements for the hiring of local or other residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(b) The notice set forth in 41 CFR 60-4.2 and the specifications set forth in 41 CFR 60-4.3 replace the New Form for Federal Equal Employment Opportunity Bid Conditions for Federal and Federally Assisted Construction published at 41 FR 32482 and commonly known as the Model Federal EEO Bid Conditions, and the New Form shall not be used after the regulations in 41 CFR Part 60-4 become effective.

[43 FR 49254, Oct. 20, 1978; 43 FR 51401, Nov. 3, 1978, as amended at 45 FR 65978, Oct. 3, 1980]

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60-4.4 Affirmative Action Requirements

(a) To implement the affirmative action requirements of Executive Order 11246 in the construction industry, the Office of Federal Contract Compliance Programs previously has approved affirmative action programs commonly referred to as "Hometown Plans," has promulgated affirmative action plans referred to as "Imposed Plans" and has approved "Special Bid Conditions" for high impact projects constructed in areas not covered by a Hometown or an Imposed Plan. All solicitations for construction contracts made after the effective date of the regulations in this part shall include the notice specified in § 60-4.2 of this part and the specifications in § 60-4.3 of this part in lieu of the Hometown and Imposed Plans including the Philadelphia Plan and Special Bid Conditions. Until the Director has issued an order pursuant to § 60-4.6 of this part establishing goals and timetables for minorities in the appropriate geographical areas or for a project covered by Special Bid Conditions, the goals and timetables for minorities to be inserted in the Notice required by 41 CFR 60-4.2 shall be the goals and timetables contained in the Hometown Plan, Imposed Plan or Special Bid Conditions presently covering the respective geographical area or project involved.

(b) Signatories to a Hometown Plan (including heavy highway affirmative action plans) shall have 45 days from the effective date of the regulations in this part to submit under such a Plan (for the director's approval) goals and timetables for women and to include female representation on the Hometown Plan Administrative Committee. Such goals for female representation shall be at least as high as the goals established for female representation in the notice issued pursuant to 41 CFR 60-4.6. Failure of the signatories, within the 45-day period, to include female representation and to submit goals for women or a new plan, as appropriate, shall result in an automatic termination of the Office of Federal Contract Compliance Program's approval of the Hometown Plan. At any time, the Office of Federal Contract Compliance Programs terminates of withdraws its approval of a Hometown Plan, or when the plan expires and another plan is not approved, the contractors signatory to the plan shall be covered automatically by the specifications set forth in § 60-4.3 of this part and by the goals and timetables established for that geographical area pursuant to § 60-4.6 of this part.

60-4.5 Hometown Plans

(a) A contractor participating, either individually or through an association, in an approved Hometown Plan (including heavy highway affirmative action plans) shall comply with its affirmative action obligations under Executive Order 11246 by complying with its obligations under the plan: *Provided,* that each contractor or subcontractor participating in an approved plan is individually required to comply with the equal opportunity clause set forth in 41 CFR 60-1.4; to make a good faith effort to achieve the goals for each trade participating in the plan in which it has employees; and that the overall good performance by other contractors or subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the plan's goals and timetables. If a contractor is not participating in an approved Hometown Plan it shall comply with the specifications set forth in § 60-4.3 of this part and with the goals and timetables for the appropriate area as listed in the notice required by 41 CFR 60-4.2 with regard to that trade.

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For the purposes of this part 60-4, a contractor is not participating in a Hometown Plan for a particular trade if it:

(1) Ceases to be signatory to a Hometown Plan covering that trade;

(2) Is signatory to a Hometown Plan for that trade but is not party to a collective bargaining agreement for that trade;

(3) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with labor organizations, which are not or cease to be signatories to the same Hometown Plan for that trade;

(4) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with a labor organization for that trade but the two have not jointly executed a specific commitment to minority and female goals and timetables and incorporated the commitment in the Hometown Plan for that trade;

(5) Is participating in a Hometown Plan for that trade which is no longer acceptable to the Office of Federal Contract Compliance Programs;

(6) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with a labor organization for that trade and the labor organization and the contractor have failed to make a good faith effort to comply with their obligations under the Hometown Plan for that trade.

(b) Contractor participating in Hometown Plans must be able to demonstrate their participation and document their compliance with the provision of the Hometown Plan.

[43 FR 49254, OCT. 20, 1978; 43 FR 51401, NOV. 3, 1978]

60-4.6 Goals and Timetables

The Director, from time to time, shall issue goals and timetables for minority and female utilization, which shall be based on appropriate workforce, demographics, and other relevant data and which shall cover construction projects or construction contracts performed in specific geographical areas. The goals, which shall be applicable to each construction trade in a covered contractor's or subcontractor's entire workforce which is working in the area covered by the goals and timetables, shall be published as notices in the Federal Register, and shall be inserted by the contracting officers and applicants, as applicable, in the Notice required in 41 CFR 60-4.2. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed.

[45 FR 65978, OCT. 3, 1980]

60-4.7 Effect on Other Regulations

The regulations in this part are in addition to the regulations contained in this chapter, which apply to construction contractors and subcontractors generally. See particularly, 41 CFR 60-1.4 (a), (b), (c), (d), and (e); 60-1.5; 60-1.7; 60-1.8; 60-1.26; 60-1.29; 60-1.30; 60-1.32; 60-1.41; 60-1.42; 60-1.43; and 41 CFR Part 60-3; Part 60-20; Part 60-30; Part 60-40; and Part 60-50.

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60-4.8 Show Cause Notice

If an investigation or compliance review reveals that a construction contractor or subcontractor has violated the Executive order, any contract clause, specifications or the regulations in this chapter and if administrative enforcement is contemplated, the Director shall issue to the contractor or subcontractor a notice to show cause which shall contain the items specified in paragraphs (i) through (iv) of 41 CFR 60-2.2(c)(1). In the contractor does not show good cause within 30 days, or in the alternative, fails to enter an acceptable conciliation agreement which includes where appropriate, make up goals and timetables, back pay, and seniority relief for affected class members, the OFCCP shall follow the procedure in 41 CFR 60-1.26(b): *Provided,* that where a conciliation agreement has been violated, no show cause notice is required prior to the initiation of enforcement proceedings.

[43 FR 49254, OCT. 20, 1978; 43 FR 51401, NOV. 3, 1978]

60-4.9 Incorporation by Operation of the Order

By operation of the order, the equal opportunity clause contained in § 60-1.4, the Notice of Requirements for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246) contained in § 60-4.2, and the Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) contained in § 60-4.3 shall be deemed to be a part of every solicitation or of every contract and subcontract, as appropriate, required by the order and the regulations in this chapter to include such clauses whether or not they are physically incorporated in such solicitation or contract and whether or not the contract is written.

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U.S. Environmental Protection Agency
Certification of Nonsegregated Facilities

(Applicable to federally assisted construction contracts and related subcontracts exceeding $10,000 that are not exempt from the Equal Opportunity clause.)

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom or otherwise. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certification in his files.

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_____ _____

Signature Date

_____

Name and Title of Signer (Please type)

_____

Firm Name

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Not to be used for bidding purposes

Notice to Labor Unions or Other Organizations of Workers

Nondiscrimination in Employment

To:

_____

(Name of union or organization of workers)

The undersigned currently holds contract(s) with _____

(name of applicant)

involving funds or credit of the U.S. Government or (a) subcontract(s) with a prime contractor holding such contract(s).

You are advised that under the provisions of the above contract(s) or subcontract(s) and in accordance with Executive Order 11246, as amended, dated September 24, 1965, as amended, the undersigned is obliged not to discriminate against any employee or applicant for employment because of race, color, creed or national origin. This obligation not to discriminate in employment includes, but is not limited to, the following:

> HIRING, PLACEMENT, UPGRADING, TRANSFER OR DEMOTION, RECRUITMENT, ADVERTISING, OR SOLICITATION FOR EMPLOYMENT, TRAINING DURING EMPLOYMENT, RATES OF PAY OR OTHER FORMS OF COMPENSATION, SELECTION FOR TRAINING INCLUDING APPRENTICESHIP, LAYOFF OR TERMINATION.

This notice is furnished you pursuant to the provisions of the above contract(s) or subcontract(s) and Executive Order 11246, as amended.

Copies of this notice will be posted by the undersigned in conspicuous places available to employees or applicants for employment.

Dated this _____ day of _____, 2020.

_____

(Contractor or Subcontractor)

By: _____

Name: _____

Title: _____

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Not to be used for bidding purposes

EPA Project Control #: L17-4667

United States Environmental Protection Agency
Washington, DC 20460

Certification Regarding Debarment, Suspension and Other Responsibility Matters

The prospective participant to the best of its knowledge and belief that it and its principles:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in fine of up to $10,000 or imprisonment for up to 5 years, or both.

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_____

(Typed Name & Title of Authorized Representative)

_____

(Signature of Authorized Representative) (Date)

☐ I am unable to certify the above statements. My explanation is attached.

EPA FORM 5700-49 (11-88)

Instructions

Under Executive Order 12549 an individual or organization debarred or excluded from participation in Federal assistance or benefit programs may not receive any assistance award under a Federal program, or a sub-agreement thereunder for $25,000 or more.

Accordingly, each prospective recipient of an EPA grant, loan, or cooperative agreement and any contract or sub-agreement participant thereunder must complete the attached certification or provide an explanation why they cannot. For further details, see 40 CFR 32.510, Participants' responsibilities, in the attached regulation.

Where to Submit
The prospective EPA grant, loan, or cooperative agreement recipient must return the signed certification or explanation with its application to the appropriate EPA Headquarters or Regional office, as required in the application instructions.

A prospective prime contractor must submit a completed certification or explanation to the individual or organization awarding the contract.

Each prospective subcontractor must submit a completed certification or explanation to the prime contractor for the project.

How to Obtain Forms:
EPA includes the certification form, instructions, and a copy of its implementing regulation (40 CFR Part 32) in each application kit. Applicants may reproduce these materials as needed and provide them to their prospective prime contractor, who, in turn, may reproduce and provide them to prospective subcontractors.

Additional copies/assistance may be requested from:

Compliance Branch
Grants Administration Division (PM-216F)
U.S. Environmental Protection Agency
401 M Street, SW
Washington DC 20460
Telephone: 202.475.8025

EPA Form 5700-19 (11-88)

Not to be used for bidding purposes

Construction Contracts of Loan Recipient and Other Sections from
"Procedures for Issuing Loans from the Water Pollution Control Loan Program"

Section 365.420(b)(2) Change Orders

A) When the loan recipient authorizes the contractor to add, delete, or revise the work within the general scope of the contract documents, or authorizes an adjustment in the contract price or contract time, the loan recipient shall submit a change order to the Agency.

B) For each change order, the loan recipient shall submit to the Agency for approval, the following documentation:

   i) One (1) copy of the fully executed change order signed by the loan recipient, construction engineer, and the contractor; and
   ii) A description of any changes, with justification for the changes.

C) Prior approval by the Agency of a change order is required when a change order results in:

   i) Alterations in design scope that require a modification to a construction permit; or
   ii) An increase in the amount of loan funds needed to complete the project.

D) Failure to give timely notice of proposed project changes or action by the loan recipient that is not consistent with the Agency's determination on those changes may result in disallowance of loan participation for costs incurred that are attributable to the change.

Section 365.620(a) Required Construction Contract Provisions

1) Each construction contract shall include the following provisions:

   A) Audit; access to records:
   The contractor shall maintain books, records, documents and other evidence directly pertinent to performance on loan work in accordance with Generally Accepted Accounting Principles (GAAP). The contractor shall also maintain the financial information and data used by the contractor in the preparation or support of any cost submissions required under subsection (c) above, (Negotiation of Contract Amendments, Change Orders) and a copy of the cost summary submitted to the owner. The Auditor General, the owner, the Agency, or any other duly authorized representatives shall have access to the books, records, documents, and other evidence for purposes of inspection, audit, and copying. The contractor will provide facilities for such access and inspection.

   B) If this contractor is a formally advertised, competitively awarded, fixed price contract, the contractor agrees to include access to records as specified in subsection (d)(1)(A) above. This requirement is applicable to all negotiated change orders and contract amendments in excess of $25,000 that affect the contract price. In the case of all other prime contracts, the contractor also agrees to include access to records as specified above in all his or her contracts and all tier subcontracts or change orders in excess of $25,000 that are directly related to project performance.

   C) Audits shall be consistent in accordance with auditing standards generally accepted in the United States of America.

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D) The contractor agrees to the disclosure of all information and reports resulting from access to records pursuant to subsection (d)(1)(A) above. Where the audit concerns the contractor, the auditing agency will afford the contractor an opportunity for an audit exit conference and an opportunity to comment on the pertinent portions of the draft audit report. The final audit report shall include the written comments, if any, of the audited parties.

E) The records required by subsection (d)(1)(A) above shall be maintained and made available during performance of the work under the loan agreement and for three (3) years after the date of the final loan audit. In addition, records that relate to any dispute or litigation or the settlement claims arising out of any performance, costs or items to which an audit exception has been taken, shall be maintained and made available for three (3) years after resolution of the dispute, appeal, litigation, claim or exception.

F) The right of access will generally be exercised with respect to financial records under:

i) Negotiated prime contracts
ii) Negotiated change orders or contract amendments in excess of $25,000 affecting the price of any formally advertised, competitively awarded, fixed price contract; and
iii) Subcontracts or purchase orders under any contract other than a formally advertised, competitively awarded, fixed price contract.

G) The right of access will generally not be exercised with respect to a prime contract, subcontract, or purchase order awarded after effective price competition. In any event, the right of access shall be exercised under any type of contract or subcontract:

i) With respect to records pertaining directly to contract performance, excluding any financial records of the contractor; and
ii) If there is any indication that fraud, gross abuse, or corrupt practices may be involved in the award or performance of the contract or subcontract.

2) Covenant against contingent fees.

The contractor shall warrant that no person or selling agency has been employed or retained to solicit or secure the contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, an owner shall have the right to annul the contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

3) Wage provision.

The Contractor shall pay prevailing waves in accordance with the Davis-Bacon Act (40 USC 276a through 276a-5 as defined by the US Department of Labor). More information and guidance on the Davis-Bacon Wage Requirements is available on the IEPA website.

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4) Disadvantaged Business Enterprise Requirements.

The contractor shall provide evidence, including, but not limited to, a copy of the advertisement or advertisements and the record of negotiation, that the contractor has taken affirmative steps in accordance with 40 CFR, Part 33 to assure that disadvantaged business enterprises are used when possible as sources of supplies, equipment, construction and services consistent with the provisions of the Agency's Operating Agreement with USEPA.

5) Debarment and Suspension Provisions

The contract shall require the successful bidder or bidders to submit a "Certificate Regarding Debarment, Suspension and Other Responsibility Matters" (EPA Form 5700-49) showing compliance with federal Executive Order No. 12549.

6) Non-segregated Facilities Provision

The successful bidder shall be required to submit a certification of non-segregated facilities as prescribed by 18 USC 1001.

7) American Iron and Steel

The successful bidder shall be required to use American Iron and Steel, if required by USEPA for that fiscal year.

8) A Clause that Provides:

"No contractor or subcontractor shall discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor or subcontractor shall carry out applicable requirements of 40 CFR 33 in the award and administration of contracts awarded under the WPCLP. Failure by the contractor or subcontractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies."

Section 365.620(b) Subcontracts Under Construction Contracts

The award or execution of all subcontracts by a prime contractor and the procurement and negotiation procedures used by the prime contractor shall comply with:

1) All applicable provisions of federal, State, and local law;
2) All provisions of this Part 365 with respect to fraud and other unlawful or corrupt practices;
3) All provisions of this Part 365 with respect to access to facilities, records, and audit of records; and
4) All provisions of subsection (a)(5) that require a "Certification Regarding Debarment, Suspension, and Other Responsibility Matters" (EPA Form 5700-49) showing compliance with federal Executive Order No. 12549.

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Section 365.620(c) Contractor Bankruptcy

In the event of a contractor bankruptcy, the loan recipient shall notify the Agency and shall keep the Agency advised of any negotiations with the bonding company, including any proposed settlement. The Agency may participate in those negotiations and will advise the loan recipient of the impact of any proposed settlement to the loan agreement. The loan recipient shall be responsible for assuring that every appropriate procedure and incidental legal requirement are observed in advertising for bids and re-awarding a construction contract.

Section 365.620(d) Access

Every contract entered by the loan recipient for construction work, and every sub-agreement, shall provide the Agency representatives with access to the word. The contractor or subcontractor shall provide facilities for such access and inspection.

Section 365.640(c) Remedies

All claims, counter-claims, disputes and other matters in question between the loan applicant and the contractor arising out of, or relating to a sub-agreement or its breach shall be decided by arbitration if the parties agree, or in a court of competent jurisdiction within the State.

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Bidder Certification
In Compliance with Article 33E-11 to the
"Criminal Code of 2012"

I, _____, do hereby certify that:

1. I am _____ of the _____ and
   (Position) (Firm)

   have authority to execute this certification on behalf of the firm.

2. This firm is not barred from bidding on this contract due to either a Bid-rigging or Bid Rotating violation as set forth in Article 33E-11 to the "Illinois Criminal Code of 2012 [720 ILCS 5/33E-11]."

Name of Firm: _____

Signature: _____

Title: _____

Date: _____

Corporate Seal (where appropriate)

On this _____ day of _____, 20___, before me appeared (Name) _____ _____ to me personally known, who, being duly sworn, did execute the foregoing affidavit, and did state that he or she was properly authorized by (Name of Firm) _____ _____ to execute the affidavit and did so as his or her free act and deed.

Notary Public _____ Commission Expires _____

Notary Seal

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Specification for Disadvantaged Business Enterprise Participation

Name of Loan Recipient: Rock River Water Reclamation District (RRWRD)

I. Disadvantaged Business Enterprise Policy

A. It is the policy of the State of Illinois to award a fair share of sub-agreements to disadvantaged businesses (DBEs). In complying with this requirement, contractors are required to take affirmative steps to assure that disadvantaged businesses are used when possible as sources of supplies, equipment, construction, and services as explained herein.

B. These specifications define the terms, conditions, and requirements of the State Revolving Fund Loan Program, and RRWRD's policy and procedures for complying with these requirements.

C. As required by the award conditions of USEPA's Assistance Agreement with IEPA, the fair share percentages are 5% for MBEs and 12% for WBEs.

II. Pre-Contract Award Obligations

A. Bidders are required to advertise subcontracting opportunities and to negotiate with disadvantaged businesses prior to bid opening. Failure to document such affirmative efforts shall be deemed, relative to disadvantaged business compliance, non-responsive.

B. To establish a bid as responsible, the bidder will be required to document the proposed utilization of disadvantaged businesses with letters of intent signed by the bidder and by the disadvantaged listed in the bid. The documentation requirements are outlined in Section III of this document.

C. RRWRD's disadvantaged business policy clearly intends for bidders to contact and encourage the participation of disadvantaged businesses prior to bid opening. Affirmative efforts (the written record of conscientious and honest communications between the bidder and disadvantaged business) must be initiated and completed by the bidder prior to bid opening. All bidders must document compliance with the requirements of the disadvantaged business policy.

III. Evaluation of Disadvantaged Business Utilization and Affirmative Efforts

A. As a prerequisite to demonstrate compliance with the RRWRD's disadvantaged business policy, all bidders shall provide the following with its bid:

1. Completed and signed certification from the bidder(s), attesting that the bidder will award no sub-agreements, including the procurement of equipment, materials, supplies and services, in the performance of this contract.

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OR

2. "Certification of publication" or adequate evidence of proof of publication, including an actual copy of the newspaper advertisement from a daily, regional newspaper.

   Bidders may publish the advertisement in an established, online bidder's clearinghouse such as the "Dodge Report (http://construction.com/dodge/)." If an online advertisement is placed with the "Dodge Report" or an equivalent website, a screenshot of the advertisement along with the webpage address and a payment receipt are required as documentation. **The advertisement must run one day at least sixteen (16) days prior to bid opening.**

3. List of all disadvantaged business enterprise (DBE) and non-DBE's that submitted proposals to the bidder along with the date of the proposal. Names, addresses, phone number and/or email are required.

4. List of disadvantaged businesses not being utilized and justification for non-utilization.

5. If DBE subcontractors will be utilized for the project, a completed and signed copy of IEPA DBE Form No. 3 (DBE Subcontractor Utilization Form) or equivalent Notice of Intent" is needed from each subcontractor.

6. If DBE subcontractors will be utilized for the project, a completed and signed certification from the bidder(s), attesting that the bidder has no controlling or dominating interest or conflict of interest with the disadvantaged business that will be utilized.

7. In instances where the bidder(s) does not receive any proposals from disadvantaged businesses prior to bid opening, the bidder(s) must provide a written certification attesting that no proposals were received.

Failure to submit the documentation pursuant to the requirements of A (1-7) above may cause rejection of the bid as non-responsive.

IV. Sanctions

A. RRWRD may reject one (1) or all bids where the information submitted by the bidder(s) fails to objectively demonstrate compliance with the disadvantaged business requirements (i.e. failure to place the pre-bid advertisement by the bidder(s) at least 16 days prior to bid opening shall not be considered as objectively demonstrating compliance with the disadvantaged business requirements).

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B. Upon finding that any Party has not complied with the requirements of these specifications, including misrepresenting a firm as a disadvantaged business, any one or a combination of the following actions may be take:

1. Declare the bidder and/or subcontractor non-responsible and therefore ineligible for contract award.

2. Disallow the contract costs associated with non-compliance.

3. Refer matters which may be fraudulent to the Illinois Attorney General

V. Post-Contract Award Compliance

A. As required by the award conditions of USEPA's Assistance Agreement with IEPA, all sub-agreements of the prime contractor must identify that the fair share percentages are 5% of MBE's and 12% for WBE's.

B. After award of the prime contract copies of all disadvantaged business related sub-agreements between the prime contractor and subcontractors shall be submitted to the owner.

C. Subsequent to Bid Submission, any changes in previously reported disadvantaged businesses utilization shall be handled in accordance with Part 33.302(b-h). If the contractor fails to initiate such actions, the owner may withhold payments and/or institute other appropriate sanctions.

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Suggested Disadvantaged Business Enterprise (DBE)
Advertisement for Construction Contractors

Notice to Disadvantaged Businesses

_____, _____, _____
(Name of Company), (Address of Company), (Telephone),

is seeking disadvantaged businesses for the Rock River Water Reclamation District project for subcontracting opportunities in the following areas: _____, _____ _____, _____.

All disadvantaged businesses should contact, IN WRITING, (certified letter, return receipt requested), _____ to discuss the subcontracting opportunities.
(Company Contact Person)

All negotiations must be completed prior to bid opening _____ (date of bid opening).

* The advertisement must clearly state the method of evaluating the proposals or quotations, and the relative importance attached to each criterion. Bidders must uniformly and objectively evaluate the proposals submitted by disadvantaged business in response to the advertisement based upon the evaluation criteria stated in the advertisement. The evaluation criteria must not be restrictive or exclusionary.

Not to be used for bidding purposes

Not to be used for bidding purposes

Summary Report of Disadvantaged Business Enterprise Requirements for Contractors

1) Completed and signed certification from bidder(s), attesting that the bidder will award no sub-agreements, including the procurement of equipment, materials, supplies and services in the performance of this contract (may use IEPA DBE Form #1).

   OR

   Certificate of Publication or adequate evidence of proof of publication, including an actual copy of the newspaper advertisement from a daily, regional publication. For advertisements placed in a construction project clearinghouse such as www.construction.com, a screenshot of the advertisement, link to website, and receipt is required for proof of advertising.

2) List of all disadvantaged business enterprises (DBE) and non DBE's that submitted proposals to the bidder/prime contractor. Specify as DBE or non-DBE, type of DBE, and the other information listed below (DBE Form #4 may be used for this purpose).

   Name of Company
   Name of Owners
   Address of Company
   Email Address of Company
   Telephone Number
   Date of Proposal
   _____ Business _____ Type of DBE
   Description of work to be performed

3) List of disadvantaged businesses that submitted proposals to the bidder but will not be utilized. Justification for non-utilization must be provided (may use IEPA DBE Form #1).

4) Completed and signed copies IEPA DBE Form #3 (Subcontractor Utilization Form) or equivalent "Notice of Intent." Only applies if using DBE subcontractors.

5) Completed and signed certification from bidder(s) attesting that the bidder has no dominating or conflict of interest with the disadvantaged business to be utilized (IEPA DBE Form #1). Only applies if using DBE subcontractors.

6) In instances where the bidder(s) does not receive any proposals from disadvantaged businesses prior to bid opening, the bidder(s) must provide written certification attesting that no proposals were received (IEPA DBE Form #1).

8) **Note:** DBE Form #2 is **not** included in this packet. It is for consultant/engineers to report DBE activity. It is for consultants/engineers to report DBE activity. This form may be found in IEPA's DBE Guidance Manual which is available on the Agency's website or mailed upon request by calling 217.782.2027.

Not to be used for bidding purposes

Not to be used for bidding purposes

IEPA Disadvantaged Business Enterprise (DBE) Program Form #1
Contractor Certification Form

(To be completed by all Prime Contractors)

Please check the appropriate boxes that apply and complete the information on the bottom of the form.

☐ This firm will award no subcontracts (including in the procurement of equipment, supplies, or services) in the performance of this contract.

☐ This firm advertised for DBE subcontractors according to the good faith efforts outlined in the IEPA DBE Guidance Document.

☐ This firm received proposals from DBE(s) that will not be utilized. A list of the DBEs not hired along with their address, phone number, and reason(s) for non-utilization is below.

_____

_____

_____

_____

_____

_____

_____

_____

☐ This firm did not receive any inquiries from DBEs.

I certify that the above is true. I further certify that this firm and its partners, directors, and officers do not possess a controlling interest in ownership or conflict of interest or any other authority to control the DBE to be used during the performance of the contracts.

Dated this ___ day of _____, 2020.

Contractor:

_____

By: _____
Name: _____
Title: _____
Address: _____
_____

Not to be used for bidding purposes

Not to be used for bidding purposes

EPA Disadvantaged Business Enterprise (DBE) Program Form #3
Subcontractor Utilization Form

(Only complete this form if DBE subcontractors or sub-consultants will be working this project.)

This form is intended to capture the DBE subcontractor's description of work to be performed and the price of the work submitted to the prime contractor. All subcontractors must complete this form and it must be included in the prime contractor's bid package.

Subcontractor Name:	Project Name Cherry Valley Parallel Forcemain, RRWRD Capital Project No. 1420
Contact Person's Name and Title:	
Address:	
Telephone:	Email:
DBE Certified By:	Select One: **MBE WBE SBE DBE**
Prime Contractor Name:	
Type of Work to be Performed	Cost Estimate of Work

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to using the subcontractors above. I am aware that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 C.F.R. Part 33 Section 33.302(c).

Prime Contractor Signature:	**Print Name:**
Date:	**Title:**
Subcontractor's Signature:	**Print Name:**
Date:	**Title:**

Not to be used for bidding purposes

Not to be used for bidding purposes

IEPA Disadvantaged Business Enterprise (DBE) Program Form #4 – Bidders List

(Only complete this form if subcontractors or sub-consultants will be working on this project.)

Using this form / format is optional. Other formats are acceptable.

Company Name & Contact Person	Address	Phone No. w/Area Code	Email	Proposed Work (supplies, paint, etc.)	DBE Status (MBE, WBE, DBE, SBE)
					☐ Check if hired
					☐ Check if hired
					☐ Check if hired
					☐ Check if hired
					☐ Check if hired
					☐ Check if hired
					☐ Check if hired
					☐ Check if hired

Not to be used for bidding purposes

Not to be used for bidding purposes

Bidder Certification Regarding the Use of American Iron and Steel Products

_____, do hereby certify that:
Name

1. I am _____ (title) of the _____ (company, partnership, etc.) and have authority to execute this certification on behalf of the firm.

2. This firm is aware that all iron and steel products used for this project must be produced in the United States per Section 436 (a) – (f) of the Consolidated Appropriation Act, 2014.

3. This firm is aware that the use of American iron and steel products applies to all projects for the construction, alteration, maintenance, or repair of publicly owned treatment works (POTW) or public water systems.

4. This firm understands the term "iron and steel products" refers to the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

5. I am aware that this requirement applies to all portions of the project that are subcontracted.

Name of Firm: _____

Signature: _____

Title: _____

Date: _____

Corporate Seal (where appropriate)

Not to be used for bidding purposes

Not to be used for bidding purposes

Requirements Specific to American Iron and Steel

The Consolidated Appropriations Act of 2014 (Public Law 113-76) first included an "American Iron and Steel (AIS)" requirement that requires Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) loan recipients to use iron and steel products that are produced in the United States for projects involving the construction, alteration, maintenance, or repair of a public water system or treatment works if the project is funded through a CWSRF or a DWSRF loan. Guidance is available on USEPA's website: http://water.epa.gov/grants_funding/aisrequirements.cfm. Waivers from the requirements are available under certain circumstances.

For CWSRF or DWSRF purposes, an iron or steel product is one (1) of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works:

Pipes (lined or unlined) and fittings;
Manhole Covers;
Municipal Castings (defined in more detail below);
Hydrants;
Tanks;
Flanges;
Pipe Clamps and Restraints;
Valves;
Structural Steel (defined in more detail below);
Reinforced Precast Concrete; and
Construction Materials (defined in more detail below).

For one of the listed products to be considered subject to the AIS requirements, it must be made of greater than fifty percent (50%) iron or steel, measured by costs. The cost should be based on the material costs.

For purposes of the AIS, steel means an alloy that includes at least fifty percent (50%) iron, between 0.2 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of steel covers carbon steel, alloy steel, stainless steel, tool steel, and other specialty steels.

For the purposes of AIS, production in the United States of the iron or steel products used in the project requires that all manufacturing processes, including application of coatings, must take place in the United States, except for metallurgical processes involving refinement of steel additives. All manufacturing processes including processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, reefing, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign material. However, raw materials such as iron ore, limestone, and iron and steel scrap are not covered by the AIS requirement, and the material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-US sources.

Not to be used for bidding purposes

For AIS, municipal castings are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and surface infrastructure. They are typically made of grey or ductile iron, or steel. Example of municipal castings are:

Access Hatches;
Ballast Screens;
Benches (Iron or Steel);
Bollards;
Cast Bases;
Cast Iron Hinged Hatches, Square & Rectangular;
Cast Iron Riser Rings;
Catch Basin Inlet;
Cleanout/Monument Boxes;
Construction Covers and Frames;
Curb and Corner Guards;
Curb Openings;
Detectable Warning Plates;
Downspout Shoes (Boot, Inlet);
Drainage Grates, Frames, and Curb Inlets;
Inlets;
Junction Boxes;
Lampposts;
Manhole Covers, Rings and Frames, Risers;
Meter Boxes;
Service Boxes;
Steel Hinged Hatches, Square & Rectangular;
Steel Riser Rings;
Trash Receptacles;
Tree Grates;
Tree Guards;
Trench Grates; and
Valve Boxes, Covers and Risers.

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For AIS, structural steel is rolled flanged shapes, having at least one (1) dimension of their cross-section three inches (3") or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees, and zees. Other shapes include H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

For AIS, construction material are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered "structural steel." This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e. nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drawings, cable handing systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

For the purposes of AIS, mechanical and electrical components, equipment and systems are not considered constructional materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system.

There are specific requirements for precast concrete to comply with AIS. While reinforced precast concrete may not be at least fifty percent (50%) iron or steel, in this case, the reinforcing bar and wire must be produced in the US and meet the same standards as for any other iron or steel product. Additionally, the casting of the concrete product must take place in the US. The cement and other raw materials used in concrete production are not required to be of domestic origin. If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered a construction material and must be produced in the US.

Recordkeeping for Iron and Steel Products:
Documenting the Country of Origin for Iron and Steel Products for Loan Programs

Loan recipients with assistance from their general contractor must be able to verify that products used in their projects comply with AIS requirements. USEPA recommends loan recipients use a "Step Certification" process to ensure that producers adhere to the AIS requirements. Step certification is a process under which each handler (supplier, fabricator, manufacturer, etc.) of the iron and steel products certifies that their step in the process was domestically performed. Each time a step in the manufacturing process takes place, the manufacturer delivers its work along with a certification of its origin. A certification can be quite simple as long as it includes the name of the manufacturer, the location of the manufacturing facility (not company headquarters), a description of the product or item being delivered, and a signature by a manufacturer's responsible party. An example of this type of certification is attached.

Certification could be achieved by other methods such as reporting the final manufacturer, who delivers the iron/steel products to the worksite, to provide certification that all manufacturing processes occurred in the US. While this type of certification is easier and acceptable, it may not provide the same degree of assurance and additional documentation may be needed. USEPA auditors recommend keeping records of when and where the products were delivered. Examples include: Perry Water Plant on August 3, 2017, or Jankousky Construction Offices on October 5, 2017. Records from the manufacturer should refer to specific items such a pipes, valves, meters, etc. Try to avoid records containing broad statements such as, "All products delivered were made in the USA."

Regardless of the method, documents regarding the country of origin for iron and steel products should be collected and maintained by all loan recipients. Having a good paper trail is invaluable during an inspection or audit.

Information is available at http://www.epa.illinois.gov/topics/grants-loans/water-financial-assistance/state-revolving-fund/guidance/index

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Sample Certification Letter

The following information is provided as a sample letter of step certification for AIS compliance. The completed letter is provided to the construction contractor or loan applicant from the supplier, fabricator, manufacturer, etc. of iron and steel products. Documentation must be provided on company letterhead. If email is used, documents should be scanned so the company letterhead is visible.

Company Letterhead

Date

Company Name
Company Address
City, State Zip

Subject: American Iron and Steel Step Certification for Cherry Valley Parallel Force Main, RRWRD Capital Project No. 1420, IEPA Project No. L17-4667

I, (insert name of Company Representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirements as mandated in EPA's State Revolving Fund Program.

Item, Products and/or Materials: (list below)

1. _____
2. _____
3. _____

Such process took place at the following location (City and State must be included):

If any of the above compliance statements change while providing material to the project, we will immediately notify the prime contractor and the engineer.

Signed by Company Representative

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Section II

Detailed Specifications

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Section II - 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 General Provisions and Technical Specifications for Sanitary Sewer Construction*. When referenced, work shall conform to the Illinois Department of Transportation's (IDOT's) *Standard Specifications for Road and Bridge Construction*, current edition.

Throughout these specifications, the term "Owner" and "District" shall be synonymous.

In case of apparent contradictions between *Section II - Detailed Specifications*, *IDOT Standard Specifications*, and *General Provisions and Technical Specifications for Sanitary Sewer Construction*, *Section II - Detailed Specifications* shall govern.

Utility locations shown on the plans are based on the information obtained at the time of design and are not guaranteed. The orientation and location (horizontal and vertical) of all existing underground utilities, such as gas mains, water mains, electric lines, field tiles, irrigation pipes, etc., shall be ascertained by the Contractor. The Contractor shall assume full responsibility for the location of all utilities.

The general location of the proposed sewer is governed by existing field conditions. Minor variations in alignments may be made to facilitate construction operations with prior District approval.

Any construction not supervised by a Rock River Water Reclamation District (District) Inspector will not be accepted.

No work shall be permitted on Sundays or District Holidays without prior approval by the District Director of Engineering.

Suppliers shall implicitly warrant that their products and product components are suitable and appropriate for the intended use and that they are free from all material, design, or workmanship defects. Said warranty shall inure to the benefit of the District. The foregoing shall apply to all products and product components, whether constructed as directed by the Contract documents or produced by an outside source.

District will not supervise, direct, control, have authority over or be responsible for the Contractor's means, methods, techniques, sequences, procedures of construction, safety precautions and programs incident thereto, or for any failure by the Contractor to comply with all applicable laws and regulations in performance of the specified work. The District will not be

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responsible for the Contractor's failure to perform or furnish the work in accordance with the Contract documents.

2 Permit Requirements

2.1 General

All work within public right–of–ways shall be subject to the regulations and requirements of the jurisdictional agencies. Should conflicts or contradictions arise between the plans, specifications and right-of-way 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, including but not limited to, the following:

Roadway Authority	Contact	Phone	Email
Cherry Valley Township Highway Dept.	Scott Frantz	815.874.7237	cvthighway@comcast.net
IDOT	Dan Long	815.284.5471	dan.long@illinois.gov
Winnebago County Highway Dept.	Praful Soni	815.319.4000	highway@wincoil.us

Unless otherwise noted, the Contractor shall be responsible for securing all necessary permits and for all bonds, insurance, etc., and all fees required by any and all permits. The District previously procured permits from IDOT and Winnebago County, original permits are included in these Contract documents in Section VI; renewed permits will be procured by the District. The District has also procured an IEPA Permit which is attached in Section VI. Copies of all Contractor secured permits shall be provided to the District prior to the start of construction.

2.2 Materials – Not used.

2.3 Required Submittals

1. Copies of signed permits, as applicable.

2.4 Payment

No payment shall be made for costs associated with permit procurement or compliance.

3 Notification, Access, and Special Considerations

3.1 General

The Contractor shall notify all utility companies prior to beginning any work. All underground utilities shall be located by the utility owner and special care shall be taken when excavating near underground utilities to avoid damage. Contractor shall call J.U.L.I.E. at 1.800.892.0123 for utility locations in the project area, forty-eight (48) hours, minimum, prior to construction. If permits require more advanced notification measures, permits shall govern.

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The Contractor shall notify the District, all affected property and business owners and all applicable roadway authorities forty-eight (48) hours, minimum, prior to beginning any work.

Prior to work in the public Right-of-Ways of Mill Road and Perryville Road, the Contractor shall notify the Cherry Valley Fire Department at 815.332.5382 and the Cherry Valley Elementary School at 815.332.4938 a minimum of ten (10) business days in advance.

The Contractor shall be responsible for the temporary maintenance of all roadways and drives for the duration of this project and shall maintain access to residences and businesses at all times during construction (i.e. drives, roadways, ramps, etc., must remain open or temporary access must be provided). All materials, equipment, labor, etc., necessary to assure this shall be incidental to the Contract.

It shall be the Contractor's responsibility to secure any temporary or permanent access, storage or construction easements from property owner(s) deemed necessary to perform the work as shown on the plans or defined in the specifications.

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.

3.2 Materials – Not used.

3.3 Required Submittals – Not used.

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

4 Dewatering

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

Groundwater will not be allowed to be pumped on existing ground surfaces or pavements where it may cause a traffic nuisance or discharge 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.

Dewatering well points require permits issued by the Winnebago County Department of Public Health (Health Department). The installation, operation and removal of well points shall conform to the Health Department requirements. The Health Department shall be notified prior to installing dewatering wells and prior to abandonment of well points so that they may be present if they desire; contact 815.720.4000.

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Any permits required to perform dewatering work on this project shall be secured by the Contractor; it shall be his/her responsibility to provide any bonds, insurance's, guarantees, etc., as required by said permit(s). 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 restrict noise levels to ninety decibels (90 dB) or less.

4.2 Materials – Not used.

4.3 Required Submittals

1. Copy of permits, as applicable.

4.4 Payment

Costs associated with dewatering shall be considered incidental to the various bid items including excavation and the installation of underground piping and structures.

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5 Sanitary Force Main

5.1 General

This item includes furnishing all labor, materials, and equipment needed to install the proposed sanitary sewer force main piping in accordance with the contract specifications to the lines and grades shown on the plans. Prior to final acceptance, the force main shall be pressure-tested in accordance with *Section T.S. 9:5* of the *General Provisions and Technical Specifications for Sanitary Sewer Construction*. Excavation, dewatering, bedding, backfill and compaction are incidental to force main installation and shall also conform to the *General Provisions and Technical Specifications*.

5.2 Materials

PVC force mains shall conform to AWWA Specifications C900/C905, DR 18. Pipe joints shall be push-on joints conforming to ASTM D 3139.

All force main fittings shall be ductile iron, Class 350, AWWA C–110, or current standard, with mechanical joints. All fittings shall be furnished and installed with restrained joint retainer glands to prevent movement of the force main and/or fittings while under pressure. Additionally, force main fittings, etc., shall be thrust-blocked using cast-in-place concrete. Thrust-blocking shall be a minimum of 1' thick in all dimensions. Concrete used in thrust blocking shall be class "SI" as defined in Article 1020.04 of *IDOT Standard Specifications*, placed on undisturbed soil.

10 AWG solid copper tracer wire shall be placed 1' above the crown of all force main installed by open-cut methods. Tracer wire shall be HDPE insulated and rated for direct burial with a break load exceeding 600 Lbs. Tracer wire shall be spliced with wire nut connectors. Splices shall be protected with heat-shrinkable tubing as manufactured by 3M or approved equal.

Contractor shall terminate tracer wire at the proposed air/vacuum relief valve vaults leaving a minimum length of 2' inside the structure. Wire shall be installed between the casting and cone of the proposed structure. Cost of tracer wire installation shall be incidental to the cost of pipe installation.

5.3 Required Submittals

1. Force main piping material specifications.
2. Fitting material specifications; including gaskets, glands and connecting hardware.
3. Tracer wire and splice connector material specifications.

5.4 Payment

Payment for force main piping will be made at the Contract unit price per Linear Foot (LF) of the diameter and type of pipe specified, installed, complete in place.

Payment for force main fittings will be made at the Contract unit price per Each (EA) for the diameter and type specified, installed, complete in place.

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6 Pressure Tap Connection – PCCP Pipe

6.1 General

This item shall consist of furnishing all labor, equipment, tools, and materials needed to install a horizontal branch tee connection on existing 30" diameter PCCP force main piping without disrupting service. Contractor shall install tapping sleeve in accordance with AWWA Manual M-9.

Pressure tap connection shall include isolation valves that will be used to accommodate bypass piping and/or draining of the existing pipe. Branch isolation valves shall be removed once no longer required to complete work.

Contractor shall be responsible for maintaining existing levels of sanitary sewer service and shall be responsible for all damages related to work-related sanitary sewer backups, etc., while completing this work.

6.2 Materials

Tapping sleeve body shall be of steel construction, epoxy coated for protection from corrosion with stainless steel straps meeting the requirements of AWWA C-301 and C-303. Model of tapping assembly (sleeve, gland, flange, gaskets and bolts) shall have been commercially available for at least five (5) years.

Sleeve shall contain a grout seal assembly to facilitate fitting oversize, undersize and out of round pipe by providing the means to pour cement grout into the assembly cavity to effect a perfect sleeve fit. Grout and grout seal assembly shall conform to AWWA M-9.

6.3 Required Submittals

1. PCCP tapping sleeve, including glands and hardware.
2. Grout material specifications.
3. Temporary branch isolation valve specifications.

6.4 Payment

Payment for pressured tap connections on PCCP will made at the Contract unit price per Each (EA) connection made, complete in place, for the specified branch connection diameter.

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7 Concrete Pipe Encasement

7.1 General

This item shall consist of furnishing all labor, equipment, tools, and materials needed to install concrete pipe encasement at locations indicated on the plans or as required by field conditions. The minimum thickness of concrete encasement shall be twelve inches (12”) surrounding the entire pipe. Encasement may be earthen or wood formed.

7.2 Materials

Concrete shall conform to Class SI as defined in Article 1020.04 of *IDOT Standard Specifications*.

7.3 Required Submittals

1. Concrete mix design.

7.4 Payment

Payment for concrete pipe encasement shall be made at the Contract unit price per Linear Foot (LF) for the diameter of pipe specified, installed, complete in place.

8 Rock Excavation

8.1 General

This item shall consist of furnishing all labor, equipment, tools, transportation, materials and operations needed to excavate, remove and dispose of rock material during the construction of the proposed project.

The Contractor shall demonstrate to the District that the material encountered while excavating within the lines and grades shown on the plans within the designated limits of payment as described in T.S. 2:3 of the *General Provisions and Technical Specifications for Sanitary Sewer Construction* is not able to be removed employing conventional excavation methods and equipment. This demonstration shall be completed before the subsurface material is classified as rock. The following criteria will be used in the determination of whether or not the work will be considered rock excavation:

1. The guidelines and requirements of the *General Provisions and Technical Specifications for Sanitary Sewer Construction.*
2. A substantial reduction in production rate.
3. Visual evidence of large boulders, rock, granite, trap, quartzite, chert, limestone, hard sand stone, hard shale or slate, or other hard materials, in natural ledges or displaced masses which cannot be removed by a modern backhoe without resorting to the continuous use of pneumatic tools, blasting, barring or wedging for removal from their original beds.

See geotechnical report in *Section V*.

8.2 Materials – Not used.

8.3 Required Submittals – Not used.

8.4 Measurement and Payment
Payment for rock excavation shall be made at the Contract unit price per Cubic Yard (CY).

The limits of what will qualify as rock excavation will be determined by the District in the field. The maximum payable trench width shall not exceed the nominal pipe size plus eighteen inches (18") for 8" to 24" diameter pipes or the nominal pipe size plus twenty-four inches (24") for pipe sizes greater than 24" diameter. No additional payment will be made for extra rock excavation desired for work area enhancement or for areas needed to facilitate manhole or vault installations.

9 Locate Existing Underground Utilities

9.1 General
This item shall consist of furnishing all labor, equipment, tools, and material necessary to locate, expose and record the location and elevation of existing underground utilities at specific locations, as directed by the District.

The Contractor shall locate and expose existing utilities at the following approximate locations:

1. STA 2+92: Confirm the location of existing 30" force main prior to completing the bore & jack Set-up on Barley Ridge Trail.
2. STA 26+30: Confirm the location of existing 30" force main prior to installation of new force main piping from STA 24+00 to STA 27+00.

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3. STA 40+39: Confirm the location of the existing 12" water main west of Perryville Road prior to completing the bore and jack set-up on Perryville Road.
4. STA 95+80: Confirm the location of the existing water and gas mains on west side of Mulford Road prior to completing the bore and jack set-up on Mulford Rd.

No additional compensation will be awarded for corrective work needed to rectify conflicts with utilities that could have been avoided had the above-prescribed locates been performed prior to construction.

No additional compensation will be made for utility location work performed at locations other than those described above.

9.2 Materials - Not used.

9.3 Required Submittals - Not used.

9.4 Payment
Payment for locating existing underground utilities will be made at the Contract price per Each (EA) for completed work at the locations specified.

10 Boring and Jacking

10.1 General
The work under this item pertains to boring and jacking operations required to install steel casing pipes under Barley Ridge Trail, South Perryville Road, U.S. Highway 20, and South Mulford Road. The Contractor shall notify the District, Cherry Valley Township, the Winnebago County Highway Department and the Illinois Department of Transportation seventy-two (72) hours, minimum, prior to performing any work within public rights-of-way.

The Contractor shall keep public rights-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 by the District or governing roadway authority, any appurtenances or property damaged within or adjacent to public rights-of-way or private easements, whether through Contractor negligence or as a result of construction, shall be repaired or replaced by the Contractor to the satisfaction of the District and roadway authority at no additional cost.

10.2 Permits
The Contractor shall obtain all permits required by the governing roadway authority prior to performing any work within public rights-of-way and shall abide by all terms and conditions contained therein. 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. No additional payment will be made for permit procurement and compliance. Acquired permits are attached in *Section VI*.

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10.3 Setup, Complete

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

Under Setup, Complete, the Contractor shall:

1. Identify, locate and relocate, as necessary, any utilities that could be damaged by setup, boring and jacking or related construction activities. Any utilities damaged by construction shall be repaired or replaced by the Contractor to the satisfaction of the affected utility, at the Contractor's sole expense. Except where provided by a separate pay item, the cost of all utility location and/or relocation work shall be included in the Contract unit price for Boring and Jacking Setup, Complete.
2. Excavate suitable jacking and receiving pits adjacent to the area into which the steel casing pipe will be jacked into place as shown on the plans. Every effort shall be made to minimize the size of the jacking and receiving pits without jeopardizing work area safety.
3. Accurately set and maintain guide timbers or rails in the bottoms of the jacking pits in order to keep the casing pipe at the proper elevation, line and grade.
4. Furnish and install heavy backstop supports (bulkheads) at rear of jacking pits sufficient to absorb/support the shock of jacking operations without distortion. Any sheeting or shoring needed to provide a safe working area or to comply with permit requirements shall be considered incidental to this item.

10.4 Boring and Jacking

"Boring and Jacking," shall refer to the process by which a steel casing pipe is jacked through the ground while soil is simultaneously removed from the casing face by an auger. Drilling the entire length followed by pushing casing pipe through the hole after auger/drill rig has been removed shall not be allowed. Boring and jacking shall include the material cost of the specified casing pipe, as well as all labor, equipment and materials associated with the boring and jacking operations.

The process will be advanced by the use of an earth auger where possible, but if conditions are encountered where the auger will not remove material or stay on line and grade, the operation shall be advanced by mining. During mining operations, the amount material removed in front of the pipe shall not exceed six-inches (6") beyond the pipe heading before advancing the casing pipe, unless otherwise approved, in writing, by the roadway authority.

Steel casing pipe installation shall proceed at such a rate that the development of voids is minimized and ground settlement is prevented.

10.5 Tolerances

During the course of the work, the line and grade shall be closely monitored to ensure no deviation from plan alignment or grade will occur. All rails, guides and jacks must be set securely and

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exactly to ensure that tolerances of boring and jacking operations and final casing pipe positions are maintained within the following acceptable limits:

1. Horizontal: End-to-end centerline of finished sleeve shall be within one inch per twenty linear feet (20') of plan centerline.
2. Vertical: Inverts of casing pipe shall be within 0.20' of plan inverts.

Any changes in push alignments must receive prior approval from the District and governing roadway authority before push operations will be allowed to resume. Open-cut installation of the steel casing pipes will not be allowed under any circumstances.

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10.6 Materials

Steel casing pipes shall be grade B structural steel with minimum yield strength of 35,000 psi, per ASTM A-53. Wall thickness shall be as determined by the Contractor based on an evaluation of the jacking forces required but not less than 0.75". Minimum inside diameter of casing pipes shall be as follows:

1. Barley Ridge Trail: 48" Dia.
2. South Perryville Road: 54" Dia.
3. U.S. Highway 20: 54" Dia.
4. South Mulford Road: 54" Dia.

Joints between steel casing pipe sections shall consist of a continuous watertight welded seam extending around the full pipe perimeter and shall provide a strength through the joint equal to that of the pipe shell. The casing pipes shall be new, straight pipe with beveled edges to accommodate weld seams. The carrier pipe shall be 30" diameter DR 18 PVC force main as shown on the plans.

10.7 Exterior Grouting (Casing Pipes)

Immediately following installation, the Contractor shall pressure grout the exterior of steel casing pipes at appropriate intervals to ensure that any voids caused by boring and jacking and/or dewatering operations are completely filled. Grouting tubes shall be installed along the casing pipes to facilitate this process. The Contractor shall verify the acceptability of all void elimination methods and materials with the governing roadway authority prior to grouting.

10.8 Spacers & End Seals

Centered* and restrained spacers with runners shall be installed on the PVC carrier pipe at intervals recommended by the manufacturer (Cascade, BWM or District-approved equivalent). The ends of the casing shall be sealed with flexible rubber pull on seals (Cascade or District-approved equivalent). *Actual spacer configuration required may differ.

10.9 Required Submittals

1. Casing pipe specifications.
2. Pipe spacer specifications.
3. Casing pipe end-seal specifications.
4. Grout specifications

10.10 Responsibility

The Contractor shall assume all risks associated with the installation of the casing pipes and shall be solely responsible for any and all damage occurring as a result of above or below-ground operations, including damage to utilities.

The geotechnical report appended to these Specifications was obtained exclusively for use in the design of this project. The accuracy and reliability of this information is not guaranteed and shall not be construed as a part of the plans governing construction. The Contractor shall perform all necessary site investigations and shall be solely responsible for ascertaining all subsurface conditions that may impact boring and jacking operations.

10.11 Payment

Payment for Boring and Jacking Setup, Complete shall include, but is not limited to, jacking and receiving pit excavations, dewatering, setting of rails on line to grade, shoring, sheeting, backfilling of jacking and receiving pits, traffic control, restoration and cleanup. Payment for this item shall be made at the Contract Lump Sum unit price for each Boring and Jacking Setup, Complete.

A maximum of fifty percent (50%) of the Contract Lump Sum unit price for each Boring and Jacking Setup, Complete will be paid prior to completion of the Boring and Jacking operations.

Payment for Steel Casing Pipe, Bored and Jacked, Complete, in place, shall include the material cost of the casing pipes and the cost of boring and jacking operations needed to place the casing pipes to the lines and grades indicated on the plans, all rock mining, cobble and boulder removal and the removal of any other obstacles, as necessary, special sheeting or shoring to prevent damage or loss of stability to subsurface strata or to proximal structures, dewatering (including sediment screening, as necessary), grouting of exterior casing voids, casing pipe spacers/runners and end seals, all preparatory work necessary for installing the carrier pipes, and all restoration, cleanup and supervision. Payment for this item shall be made at the Contract unit price per lineal foot of Steel Casing Pipe, Bored and Jacked, Complete, in place, of the size specified (four locations). No additional payment will be made for partial or incomplete push attempts, for any reason. No additional compensation will be awarded for the use of larger-than-specified casing pipe diameters or for any special methods, labor (including overtime, weekends and holidays), equipment or materials needed to install the casing pipes.

Payment for sanitary sewer carrier pipe (gravity or force main) shall be made at the Contract unit price per Linear Foot (LF) of the diameter and type of pipe installed, complete in place.

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11 Sanitary Sewers

11.1 General

The work under this item includes all labor, equipment, and materials for furnishing and installing sanitary sewer pipe on grade and in line according to the plans and specifications. This item shall also include all fittings, couplings, adapters, riser pipes and any other item necessary to satisfactorily install and test the new sanitary sewer pipe system.

Excavation, dewatering, bedding and backfilling shall be incidental to the sanitary sewer installation and shall conform to District *General Provisions and Technical Specifications*.

When replacing an existing sanitary sewer or altering alignment of an existing sanitary sewer, abandonment (either in place or by removal and disposal) of existing sanitary sewer piping as required to complete proposed work shall be incidental to the installation of new sanitary sewer. Pipe being abandoned in place shall include installation of a concrete bulkhead at the limits of removal. Costs associate with installation of concrete bulkheads shall be incidental to new sanitary sewer.

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 if directed by the District. The Contractor shall be solely responsible for setting and maintaining proper elevations, lines and grades for all work. The District shall not be obliged to establish construction grade or alignment.

The Contractor shall provide at least one 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 considered a convenience to the Contractor and 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* and as stated elsewhere herein.

When connecting to existing sanitary sewers, contractor shall connect to structurally sound pipe using District-approved transition couplings.

11.2 Materials

8" through 15" diameter PVC pipe shall be SDR 35 PVC pipe meeting the requirements of ASTM D3034. Joints shall conform to ASTM D3212.

18" and larger diameter PVC pipe shall meet the requirements of ASTM F679, PS 46. Joints shall conform to ASTM D3212.

6" diameter service piping shall be water main quality SDR 26 PVC meeting the requirements of ASTM D2241. Joints shall conform to ASTM D 3139.

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), Mission Flex-Seal ARC shear resistant or other District-approved repair couplings made of flexible PVC compound with 316 stainless steel

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clamps and stainless steel rings. Transition couplings shall conform to the applicable parts of ASTM D5926 and C1173.

11.3 Required Submittals

1. Pipe material specifications.
2. Fitting, coupling, and adapter specifications as applicable.

11.4 Measurement and Payment

Payment for sanitary sewers will be made at the Contract unit price per Linear Foot (LF) of the diameter and type specified, installed, complete in place.

Measurement for payment shall be horizontal along the centerline of the installed pipe from center-of-manhole to center-of-manhole, center of manhole to center of repair coupling, or center of repair coupling to center of repair coupling, as applicable.

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12 Connect to Existing Manhole

12.1 General

This work shall consist of connecting the proposed new sanitary sewer pipe to existing manholes as required on this project. This shall include core-drilling all existing concrete, brick, or concrete block manhole walls, necessary fittings, and modifications to existing manhole inverts and benches, and partial reconstruction of existing outside drop connections to the satisfaction of the District.

For connection of the pipe to existing manholes, each pipe end shall be fitted with a District-approved boot (Kor-n-seal). All connections shall be watertight. Any damage done to existing manholes shall be repaired by the Contractor to the satisfaction of the District, at the Contractor's sole expense.

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

12.2 Materials

Manhole boot connection shall be “Kor-n-seal pipe to manhole connector” as manufactured by Trelleborg or District-approved equal. Concrete used for invert/bench reconstruction shall be class “SI” per *IDOT Standard Specifications*.

12.3 Required Submittals

1. Pipe-to-manhole connectors.
2. Concrete mix design.

12.4 Payment

Payment for connecting sanitary sewer to existing manholes will be made at the Contract unit price per Each (EA) connection made, complete in place.

13 Sanitary Manholes

13.1 General

This work shall consist of furnishing and installing all labor, equipment and materials required to install pre-cast concrete sanitary manholes as directed by the District in accordance with the District *Standard Detail Sheet* and Article 6:3 and 7 of the District's *General Provisions and Technical Specifications.* Work shall also include furnishing and placing a District-approved manhole frame and lid (Neenah R-1670 or EJ E-1117) adjusted to grade as shown on plans.

Eccentric cone sections must be a component of all manholes. Unless otherwise noted in plans, flat-top structures will not be allowed.

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.

The Contractor shall field verify all proposed rim elevations and shall construct manholes in accordance with the District *Standard Detail Sheet*.

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 shall be 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. 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 with roadways with curb and gutter.

In roadways only: metal or plastic shims will be required if the casting is located in a roadway and 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 sealant (E-Z Stik, Kent-Seal, or equal) will be required 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

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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 any additional requirements of the governing roadway authority.

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

The Contractor shall field verify the 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 at a minimum of 15 psi hydrostatic pressure (A-LOK model X-CEL or District-approved equivalent).

All connections between new manholes and existing sanitary sewers shall be made with minimum 4.0' lengths of new PVC Pipe. Connection shall be made to structurally sound pipe.

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

13.2 Materials

Materials for manholes and components shall be as shown on the District *Standard Detail Sheet*.

13.3 Required Submittals

1. Shop drawings 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.
2. Frames and lids material specifications.
3. Chimney seals material specifications.
4. Barrel joint seals material specifications.
5. Manhole-to-pipe connection seals material specifications.
6. Manhole steps material specifications.
7. Exterior wall sealant material specifications.

13.4 Payment

Payment for sanitary manholes shall be made at the Contract unit price per Each (EA) of the diameter specified, installed, complete in place.

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14 Force Main Discharge Manhole

14.1 General

This work shall consist of all labor, equipment, and materials needed to furnish and install a pre-cast concrete sanitary force main discharge manhole. Structure shall have an inside diameter of 8'. Interior of final structure shall be coated with a District-approved lining system to protect against corrosion.

14.2 Materials

Pre-cast manhole structure, including butyl joint sealant, external joint seals, and pipe seals shall conform District standards for precast sanitary manholes except for alterations noted in the plans.

The manhole shall include a minimum 4'x4' access hatch of ductile iron construction. Hatch shall be lockable, and include lift-assist and hold-open provisions. Hatch shall be as manufactured by East Jordan Ironworks (8218-Double) or District-approved equal.

After pipes are connected, but before the structure is placed in service, all interior concrete surfaces shall be lined with an approved epoxy coating for corrosion resistance. The epoxy liner shall be a single coat application with a 1/4" (250 mils) minimum thickness as manufactured by Warren Environmental, Raven, Madewell or District-approved equal.

14.3 Required Submittals

1. Pre-cast manhole shop drawings and component material specifications and detail drawings.
2. Epoxy liner material specifications.
3. Access hatch specifications and shop drawings.

14.4 Measurement and Payment

Payment shall be made at the Contract unit price per Each (EA) 8' diameter force main discharge manhole, installed, complete in place.

15 Combination Air/Vacuum Release Valve and Vault

15.1 General

This work shall consist of all labor, equipment and materials needed to furnish and install a pre-cast concrete vault and combination air/vacuum release valve (AVRV) with all components as detailed on the Plans and as directed by the District.

15.2 Materials

The vault structure shall be a 6' diameter pre-cast concrete manhole conforming to District Standards except that the concrete bench shall be omitted, and the lid shall have an open pickhole.

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AVRV's of the size, capacity and location shall be installed as shown on the Plans. AVRV's shall be constructed with stainless steel bodies and internal components, as manufactured by Vent-O-Mat, Series 100-RGX 1643 or District-approved equal.

AVRV's shall connect to the force main by means of a tee fitting with isolation plug valve to allow cleaning and maintenance. Tee fitting shall conform to force main fitting specifications. Isolation valves shall be as manufactured by Dezurik (PEC, F110, DI, NBR, CR) or District-approved equal. Plug valves shall be equipped with hand wheel actuators.

Contractor shall furnish and install two (2) 1" stainless steel ball valves on each AVRV. Ball valves shall be as manufactured by Apollo or approved equal and installed on the factory provided AVRV cleaning ports.

Piping, valve supports, and fasteners shall be constructed of cast-in-place concrete or stainless steel and shall be incidental to valve vault construction.

15.3 Required Submittals

1. Shop drawings for pre-cast concrete structure and component specifications.
2. Combination air/vacuum release valve material specifications.
3. D.I. tee fitting, and installation component specifications.
4. Plug valve material specifications.
5. 1" SS ball valve specifications.
6. Piping, valve support and fastener details and material specifications.

15.4 Payment

Payment for air release valve and vaults will be made at the Contract unit price per Each (EA) 6' diameter combination air/vacuum release valve vault, installed, complete in place.

16 Sanitary Sewer Valve Vault

16.1 General

This work shall consist of all labor, equipment, materials, transportation, excavation, accessories, backfill and compaction required to furnish and install a pre-cast concrete sanitary valve vault and components as detailed on the Plans and as directed by the District.

16.2 Materials

Vault structure shall be a 5' or 6' diameter pre-cast concrete manhole conforming to District Standards except the concrete bench shall be omitted. Piping and valve supports and fasteners shall be of stainless steel construction.

Where indicated in plans, valve vault shall include a minimum 4'x4' ductile iron access hatch. The hatch shall be lockable, water proof, and shall include lift-assist and hold-open mechanisms. Hatch shall be as manufactured by East Jordan Ironworks (8218-Double) or District-approved equal.

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Valves and fittings shall be as detailed in the plans. Plug valves shall be as manufactured by Dezurik (PEC, F110, DI, NBR, CR) or District-approved equal. Plug valves shall be equipped with hand wheel actuators.

16.3 Required Submittals

1. Shop drawings for pre-cast concrete structure and component specifications.
2. Plug valve and accessory specifications.
3. Ductile iron fitting specifications.
4. Access hatch specifications and drawings.
5. Piping, valve support, and fasteners details and material specifications.

16.4 Payment

Payment for sanitary sewer valve and vault shall be made at the Contract unit price per Each (EA) valve vault of the diameter specified, installed, complete in place.

17 Bypass Pumping Sanitary Sewers

17.1 General

The Contractor shall provide bypass pumping as required and shall be responsible for providing all piping, valves, pumps, power, fuel, plugs and other items to divert the flow of sewage as required to complete proposed work.

Bypass for installation of the proposed force main discharge structure shall include connection to the proposed 16" pressure tap connection (see Section II, Part 6) and installation of 16" temporary discharge piping from the 16" pressure tap to the manhole shown on plans. Bypass piping shall be HDPE with butt-welded joints. Temporary bypass piping shall include, at a minimum, one (1) combination air and vacuum release valve. Existing District pumps will remain in service throughout this bypass set-up. Contractor shall coordinate the transition from existing discharge to temporary piping with the District to ensure personnel are at the Cherry Valley Pump Station at the time of transition in case the pumps must be taken offline (1/2 hour estimated but wet well level shall determine maximum amount of downtime available in order to prevent a sewage back-up). Upon completion of the required bypass, all temporary piping shall be removed from the site, and a permanent blind flange installed on the 16" connection.

The Contractor shall furnish the necessary labor and supervision to setup, maintain and operate additional bypass pumping systems for discharge from the District's Pyramid Pump Station and gravity sewers, as required, to complete work. Contractor shall only pump into sanitary sewer manholes approved by the District. The maximum discharge rate of the Pyramid Pump Station is 350 gallons/minute and the 2020 daily average flow is approximately 14,000 gallons per day.

All pumping systems shall have sufficient capacity to accommodate peak flows. The Contractor shall provide sufficient inspection personnel to ensure that surcharging and backups do not occur

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on public or private property. If pumping is required on a 24–hour basis, the equipment supplied shall be equipped with apparatus to restrict noise levels to ninety decibels (90 dB) or less.

The Contractor shall be responsible for providing the current level of service to all properties and shall liable for any damage caused by sewer back-ups resulting from this project.

17.2 Materials – Not used.

17.3 Required Submittals

1. Temporary piping and valve specifications.
2. Pump specifications.
3. Temporary pipe and fitting specifications.
4. Details of temporary pipe alignment, including suction and discharge details.

17.4 Payment

Payment for bypass pumping sanitary sewers shall be made at the Contract Lump Sum (LS) unit price for bypass pumping, complete at the specified locations.

18 Remove and Replace Water Utility Piping

18.1 General

This work shall include all labor, equipment and materials to remove and replace water main sections and/or service piping where proposed force main crosses underneath at locations indicated in plans.

The size and material of the existing water main piping is indicated on the plans. Disposal of removed water main piping shall be incidental to this item.

The Contractor shall coordinate water main shut downs with the Village of Cherry Valley Water Department and shall notify all water customers affected by the water main valve shut off and the need to boil water. Notifications shall include the following information:

1. Streets and boundaries of shut down
2. Time of shut down
3. Approximate duration of shut down
4. Number of customers affected
5. If non-residential customers (hospitals, nursing homes, restaurants, etc.) are affected, a count of the numbers and types of facilities affected must be provided.

The Contractor shall notify the Village of Cherry Valley Water Department when water service has been restored upon completion of repairs.

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18.2 Materials

Water main piping shall be thickness Class 52 ductile iron pipe conforming to ANSI/AWWA C150/A 21.50. Water main repair Couplings shall be ductile iron conforming to AWWA C219.

Water service piping shall be 1" diameter copper tubing, Type K. Service pipe couplings shall be of brass construction, straight compression type couplings as manufactured by Mueller or other source approved by the water utility.

18.3 Required Submittals

1. Water main piping material specifications.
2. Repair coupling material specifications.

18.4 Measurement and Payment

Payment for removal and replacement of existing water utility piping will be made at the Contract unit price per Linear Foot (LF) of piping removed and replaced of the diameter and type specified, complete in place.

19 Line Stop, Complete

19.1 General

This work shall consist of all labor, equipment and materials needed to install a line stop on existing water main or sanitary force main piping of the diameter shown on the plans. Water main work shall only be necessary if existing isolation valves are inoperable, or required by the governing water utility. Work shall conform to Section 46 of the *Standard Specifications for Water Main Construction in Illinois* (current edition).

The outside face of the existing water main and line stop components shall be disinfected with a 1% chlorine solution prior to installation of the line stop sleeve.

19.2 Materials

Water main line stop sleeve(s) shall be constructed of stainless steel as manufactured by Smith Blair or water utility-approved equal. All bolts, nuts, washers and blind flanges shall be constructed of stainless steel. Stopple plug shall be constructed of ductile iron. Sleeve shall be rated for a 150 psi working pressure. The test sleeve shall include a test port and the sleeve installation shall be tested prior to cutting the pipe.

Water main line stop plugs shall be solid (not inflatable).

Sanitary force main line stops will be on existing 30" diameter PCCP. Line stop fitting shall be of steel construction and epoxy coated for corrosion protection as manufactured by JCM or District approve equal. Straps shall be of stainless steel construction.

Inflatable plugs for sanitary force main line stops are preferred.

Not to be used for bidding purposes

19.3 Required Submittals

1. Line stop sleeve specifications for both water and sanitary.
2. Line stop plug specifications for both water and sanitary.
3. Line stop manufacturer's installation and testing procedure instructions for both water and sanitary.

19.4 Measurement and Payment

Payment for line stops will be made at the Contract unit price per Each (EA) of the diameter specified, installed, complete in place.

Not to be used for bidding purposes

20 Remove and Replace Storm Sewers

20.1 General

This work shall conform to Article 551.03 and 551.04 of the *IDOT Standard Specifications*. Pipe, size and material shall be as noted on plans. Pipe removed may be salvaged for reuse if approved by the Inspector. Disposal of removed pipe and materials shall be incidental to the work.

Excavation and trench backfill shall be considered incidental to this item.

20.2 Materials

Corrugated Steel Pipe shall be in conformance with Article 1006.01 of *IDOT Standard Specifications*.

Reinforced concrete pipe shall be in conformance with Article 1042.06 of *IDOT Standard Specifications*.

Water main quality storm sewer pipe shall be in conformance with ASTM-D2241 and ASTM-D3139.

20.3 Required Submittals

1. Pipe material specifications.

20.4 Measurement and Payment

Payment for removal and replacement of existing storm sewer piping shall be made at the Contract unit price per Linear Foot (LF) of the diameter and type specified, installed, complete in place.

21 Remove and Replace PCC Curb and Gutter, TB.6-24

21.1 General

This work shall consist of all labor, equipment and materials required to remove and replace existing PCC curb and gutter to the limits indicated on the plans. Existing curb and gutter shall be saw-cut (full-depth) at removal limits or removed at the nearest construction joint.

Removal and disposal of existing curb and gutter as well as subgrade and base installation/preparation shall be incidental to this bid item.

Curb and gutter shall be Type B-6.24 in accordance with *IDOT Highway Standard B.L.R. 28.* Construction of new PCC curb and gutter shall be in accordance with Section 606 of *IDOT Standard Specifications*.

21.2 Materials

Concrete shall be Class SI in accordance with Section 1020 of *IDOT Standard Specifications*.

21.3 Required Submittals

1. Concrete mix design.

21.4 Measurement and Payment

Payment for removal and replacement of PCC curb and gutter, TB6.24 shall be made at the Contract unit price per Linear Foot (LF), installed, complete in place.

22 Full Depth Pavement Removal

22.1 General

This work shall consist of removing existing bituminous or concrete roadway pavement and driveway pavement as required to construct this project. Bituminous pavement shall be saw-cut full depth prior to removal at no additional cost to the District. PCC Pavement shall be saw-cut full depths or removed at the nearest existing construction joint.

Maximum payment limits for pavement removal shall be as shown on the plans. Contractor shall not remove any pavement outside these limits without receiving prior written approval from the District. Care must be taken to protect bituminous and concrete vertical joint faces are protected from all damage (e.g. spalling). In all cases where drop-offs exist, measures such as temporary asphalt pavement wedges will be required and the cost of installation and removal will be incidental to construction. No additional payment will be made for the removal of aggregate base or soil under the bituminous pavement.

If approved by the appropriate Roadway Authority, existing base aggregates may remain in place. No additional payment will be made for grading, shaping

Not to be used for bidding purposes

Existing pavement thicknesses can generally be surmised from the Geotechnical Report provided in the bid documents. Actual thicknesses may vary from those shown and no additional payment will be made for thicknesses that differ from those indicated.

22.2 Materials – Not used

22.3 Required Submittals – Not used.

22.4 Payment
Payment for full depth pavement removal will be made at the contract unit price per Square Yard (SY) of pavement removed, irrespective of the type or thickness.

Not to be used for bidding purposes

23 Aggregate Base Course, Type B

23.1 General
This work shall consist of placing compacted Aggregate Base Course, Type B, beneath the proposed pavement or as a final surface where indicated on the plans. This work shall include subgrade preparation, removal and disposal of excess material, furnishing, placing, installing and compacting course aggregate to thicknesses identified on plans, and trimming and prepping aggregate base for subsequent pavement placement. This work shall be in conformance with Section 351 of the *IDOT Standard Specifications*.

Existing base material may remain in place at the approval of the appropriate Roadway Authority. No additional payment will be made for grading, shaping, and compacting existing base materials.

The Contractor shall compact the aggregate base course and perform a sufficient number of compaction tests as determined by the District and Roadway Authority. Compaction tests must be performed as work progresses. All compaction tests must meet 95% of Standard Proctor density and must be performed by an approved independent geotechnical company.

Prior to aggregate base course placement, the subgrade of the entire pavement replacement area shall be proof-rolled and witnessed by the District Inspector and the Roadway Authority. Proof-rolling shall consist of using a fully loaded tandem axle dump truck to identify locations of structurally unsuitable subgrade. Proof-rolling shall be scheduled and completed so as to avoid a rain event between proof-rolling and aggregate base course placement. At the direction of the Inspector, the subgrade may be required to dry for a period of time in an attempt to correct areas of structurally unsuitable subgrade before proceeding with road base improvements.

23.2 Materials
Finished aggregate base course thickness shall be as indicated on plans, placed in two compacted lifts of equal thickness. Aggregate shall be of CA-6 or CA-10 gradation. Course Aggregates shall be in accordance with Article 1004.04 of the *IDOT Standard Specifications*.

23.3 Required Submittals

1. Material gradation certifications for aggregates.

23.4 Measurement and Payment

Payment for this item shall be made at the Contract unit price per Ton (TON) for Aggregate Base Course, Type B, installed, complete in place.

24 PCC Driveway Pavement, 6”

24.1 General

This work shall be in accordance with *Section 423* of *IDOT Standard Specifications.*

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.

Finished PCC driveway thickness shall be 6” placed over 4” of CA-6 aggregate base course. Aggregate base course shall be incidental to the PCC driveway pavement pay item.

24.2 Materials

Concrete shall be class “PV” as defined in *Section 1020* of *IDOT Standard Specifications*.

24.3 Required Submittals

Concrete mix design.

24.4 Measurement & Payment

This work will be paid for at the Contract unit price per Square Yard (SY) for PCC Driveway Pavement, 6”, complete in place.

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

25.1 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 *IDOT Standard Specifications*.

The work shall be performed to the satisfaction of the District and jurisdictional 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 and at no additional cost.

All costs associated with placement of the bituminous tack coat shall be considered incidental to this item.

Not to be used for bidding purposes

Finished lift thickness shall be as noted on the plans.

No vibratory rollers may be utilized on this project.

25.2 Materials
HMA Binder Course shall be mixture IL-19.0, N50 in accordance with Section 1030 of *IDOT Standard Specifications*.

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

25.3 Required Submittals

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

25.4 Measurement and Payment
Payment for HMA binder course, N50, IL-19.0 shall be made at the Contract unit price per Ton (TON) installed.

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

26.1 General
This work shall be performed in accordance with Section 406 of *IDOT Standard Specifications* to the satisfaction of the District and jurisdictional 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 and at no additional cost.

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.

To the maximum extent feasible, surface course paving operations shall be scheduled during non-peak traffic times. Flaggers shall be utilized to keep the roadway open to one-way traffic during the surface course paving operations.

Finished lift thickness(es) shall be as noted in plans.

No vibratory rollers will be allowed to be utilized on this project.

26.2 Materials
HMA Surface Course shall be Mix "C", IL-9.5, N50 in accordance with Section 1030 of *IDOT Standard Specifications*.

Not to be used for bidding purposes

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

26.3 Required Submittals

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

26.4 Measurement and Payment

Payment for HMA Surface Course, Mix "C", N50, IL-9.5 shall be made at the Contract unit price per Ton (TON) installed.

Surface course mixture placed 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*.

Not to be used for bidding purposes

27 Pavement Marking

27.1 General

This work shall include all labor, equipment and materials to install pavement markings in accordance with Section 780 of *IDOT Standard Specifications*. Contractor shall submit a layout and obtain approval by the appropriate roadway authority prior to installation.

27.2 Materials

Material shall be thermoplastic pavement marking conforming to Article 1095.01 of *IDOT Standard Specifications*.

27.3 Required Submittals

1. Thermoplastic pavement marking material specifications and MSDS.
2. Pavement marking layout, Perryville and Mill Road intersection.

27.4 Measurement and Payment

Pavement marking shall be paid for at the Contract price per Linear Foot (LF) for striping per the width and color specified, installed, complete in place.

Pavement marking shall be paid for at the Contract unit price per Square Foot (SF) for lettering, numbers and symbols as specified. Square footage used for payment shall be per Table 1 in Article 780.14 of *IDOT Standard Specifications*.

28 Construction Layout

28.1 General

This work shall be in accordance with *IDOT Recurring Special Provision #10: Construction Layout Stakes* and the Contractor shall provide all construction layout for this project to the lines and grades shown on the plans.

Reference points for the survey centerline and benchmarks are shown on the plans. The District will assist in periodic layout checks, particularly before pavement is placed.

28.2 Materials – Not used.

28.3 Required Submittals – Not used.

28.4 Payment
Payment for construction layout will be made at the Contract Lump Sum (LS) price, complete.

Not to be used for bidding purposes

29 Traffic Control and Protection

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

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

All work within public right-of-ways will require traffic control plans prepared by the Contractor and approved by the jurisdictional roadway authority prior to the start of construction.

29.2 Staging and Minimum Requirements
See *Sheet 23* of the project plans for staging requirements and *Section IV* for applicable Highway Standards. Contractor may not cut pavement on Mill Road or Barley Ridge Trail until the proposed casing pipes under U.S. Highway 20, Perryville Road, and South Mulford Road are installed. Traffic Control for Mill Road, at a minimum, shall include the following:

1. Contractor shall install three (3) portable, changeable message signs a minimum of two (2) weeks prior to closure of Mill Road. Locations shall be along Perryville Road north and south of Mill Road, and along the westbound lane of Mill Road, west of State Street. The message shall be as directed by the District and local roadway authority and changed as construction staging changes.
2. Contractor shall close Mill Road to through traffic as detailed in *IDOT, Region 2, District 2 Standard 40.1*. Contractor shall maintain vehicular access at all times for local traffic.

3. Contractor shall close Barley Ridge Trail to through traffic per *Standard 40.1*. Contractor shall maintain access for local traffic at all times. Contractor shall maintain access to residents on Barley Ridge Trail at all times.

29.3 Materials
Traffic control devices shall conform to Article 1106 of *IDOT Standard Specifications*.

29.4 Required Submittals

1. Copies of approved traffic control plans, including detour routing and road closures as required by the roadway authority.
2. Portable, changeable message sign product specifications.

29.5 Payment
Payment for traffic control and protection shall be made at the Contract Lump Sum (LS) price, complete.

Payment for portable, changeable message boards shall be made at the Contract unit price per Calendar Day, per sign, installed and operational.

30 Tree Removal

30.1 General
Trees approved for removal for this project will not require replacement. The Contractor shall save and protect all trees not specifically approved by the District for removal. (Estimated minimum acreage = 1.0)

The Contractor shall remove only those trees necessary to complete the specified work. Tree removal shall consist of cutting, grubbing, removing and off-site disposal of any trees, stumps and brush, as needed, to properly facilitate construction or as shown on the plans. Only trees approved by the District for removal shall be removed.

30.2 Materials – Not used.

30.3 Required Submittals – Not used.

30.4 Payment
Payment for tree removal shall be made at the Contract Lump Sum (LS) price.

31 Remove and Relocate Sign Panel and Sign Panel Assembly

31.1 General
This work includes removal, relocation and installation of existing sign panel and assemblies including supports, bases and/or posts in accordance with Section 724 *of IDOT Standard Specifications* at locations noted in plans.

Not to be used for bidding purposes

31.2 Materials – Not used.

31.3 Required Submittals – Not used.

31.4 Payment
Payment for removal and relocation of sign panels and sign panel assemblies will be made at the Contract unit price per Each (EA).

Not to be used for bidding purposes

32 Erosion and Sediment Control

32.1 General
The Contractor shall comply with all the requirements of the *IEPA Illinois Urban Manual*, current edition and Article 280 of the *IDOT Standard Specifications*. All disturbed areas shall be restored to near original contours as shown on plans.

The Contractor shall take whatever measures the District deems necessary to prevent or eliminate excessive erosion or siltation. Actual field conditions may require additional measures beyond those cited. This shall include, but is not limited to: straw baling of ditches, stabilizing slopes with an approved geo-fabric and/or mulch, seeding, sodding, silt fence installation, rip rap, etc. Sediment control shall be provided around the perimeter of all stockpile areas.

Provisions shall be made to minimize the transport of sediment by runoff or vehicle tracking onto roadways. 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 District approval.

The Contractor shall maintain storm water flow in all ditches and storm water conveyance systems (storm inlets, pipes, culverts, etc.) disturbed as a result of construction. Ditches shall be rough graded at the end of each day and whenever rain in imminent.

Silt Fencing
Silt fencing shall conform to Standard 280001-07 of the IDOT Highway Manual. Silt fencing shall be Amoco 2127, or approved equivalent. Posts shall be 1.5” x 1.5” x 4’ long, minimum, spaced 5’ maximum on center. Silt fencing shall be installed prior to excavation or stockpiling of materials.

Stabilized Construction Entrance
Where required or directed, a temporary construction entrance shall be provided to the project site. The Contractor shall place one-inch (1”) to three-inch (3”) graded washed stone to a minimum thickness of six-inches (6”) over non-woven geo-technical fabric. Temporary culvert pipes shall be of the material and diameter specified by the appropriate roadway authority. At the District’s discretion and direction, the dimensions and location of the stabilized construction

entrance shall be adjusted to accommodate specific field needs and changes in site conditions. The temporary construction entrances shall be routinely washed, as necessary, to prevent tracking of mud onto public roadways.

Storm Inlet and Pipe Protection

This work shall consist of furnishing, installing, maintaining and retrieval of District-approved drainage inlet protection filters to retain storm water runoff sediment as required or as directed. Inlet protection shall be drop-in type installed in accordance with Illinois Urban Manual detail 561D. Filters shall be 9" or 12" diameter sediment logs, erosion eels or straw wattles as manufactured by North American Green (or District-approved equal).

The Contractor shall inspect the work site and review the plans to determine the sizes, types and numbers of inlet protection filters needed.

Erosion control devices shall remain in place until removal is directed by the District. All erosion control devices shall remain the property of the Contractor. Upon stabilization and approval, the Contractor shall promptly remove and dispose of all erosion control devices as well as all debris and sediment accumulations.

Riprap

Riprap shall be minimum RR4 gradation conforming to *Article 1005.01* of *IDOT Standard Specifications*. Installation shall conform to *Article 281* of *IDOT Standard Specifications*.

Notice of Intent

The District has filed a "Notice of Intent" (NOI) with the IEPA. The Contractor shall furnish, install and maintain all erosion and sediment control equipment, devices and materials needed for the duration of construction and shall comply with all NOI requirements, including all inspection and record keeping requirements.

32.2 Materials

Temporary erosion control measures shall conform to IL Urban Manual and Article 1081 of *IDOT Standard Specifications*.

32.3 Required Submittals

Material specifications for erosion control products outlined below or as applicable:

1. Silt fence.
2. Stabilized construction entrance (material gradations and culvert specifications).
3. Ditch checks.
4. Inlet and pipe protection products.
5. Erosion control blanket.
6. Turf reinforcement mat (TRM).
7. Riprap gradation.

Not to be used for bidding purposes

32.4 Payment

Payment for silt fence installed will be made at the Contract unit price per Linear Foot (LF).

Payment for ditch checks installed will be made at the Contract unit price per Each (EA).

Payment for inlet and pipe protection installed will be made at the Contract unit price per Each (EA).

Payment for stabilized construction entrances installed will be made at Contract unit price per Square Yard (SY).

Payment for erosion control blanket installed will be made at the Contract unit price per Square Yard (SY).

Payment for turf reinforcement mat installed will be made at the Contract unit price per Square Yard (SY).

Payment for riprap installed shall be made at the Contract unit price per Square Yard (SY) of the size and thickness noted on the plans, complete in place.

Additional erosion and sediment control measures not explicitly mentioned shall be provided, as needed or directed – no separate payment will be made for additional erosion and sediment control measures. No separate payment will be made for maintenance and retrieval of erosion control devices during construction and upon completion of construction.

33 Restoration and Seeding

33.1 General

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 directed. 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 construction shall be promptly completed, equal to or better than the pre-construction conditions, as directed by the District, and 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.

All drainage devices shall be cleaned of debris. 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 District. 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.

All work shall be guaranteed against trench subsidence for a period of one (1) year.

Not to be used for bidding purposes

Suppliers shall be prepared to certify that laboratory and field testing of their product has been accomplished, based upon 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 and Fertilizing:
Ground surfaces including right–of–ways and easements that were covered with grass before construction shall be seeded as directed by the District. The Contractor shall make certain that all disturbed areas have the same depth (6" minimum) and quality of topsoil that existed prior to construction.

Unless otherwise noted on the plans, work shall conform to the *General Provisions and Technical Specifications for Sanitary Sewer Construction*, T.S. 4:2 and Sections 250 and 251 of *IDOT Standard Specifications*.

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

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

Fertilizing shall be done in accordance with Article 250.04. Fertilizer shall have a 10-10-10 NPK component and be applied at the rate of 400 lbs./acre. No additional compensation will be made for the inclusion of fertilizer.
Straw mulch shall be per Method 2 and done in accordance with the applicable portions of Section 251 of *IDOT Standard Specifications* with the following exceptions:

The rate of application for mulch will be 4,000 lbs./acre using Hydro Tack at a rate of 400 lbs./acre for stabilization. This specification describes mulch for use with the hydraulic application of grass seed which shall consist of specially prepared wood cellulose fiber. It shall be processed in such a manner that it will not contain any growth or germination-inhibiting factors, and shall be dyed in an appropriate color to facilitate metering of the material. It shall be manufactured in such a manner that after additions and agitations in slurry tanks with fertilizers, grass seeds, water and any other approved additives, the fibers in the material will be come uniformly suspended to form a homogenous slurry, and that when hydraulically sprayed on the ground, the material will form a blotter-like cover impregnated uniformly with grass seed, and which after application will allow the absorption of moisture and percolation of rainfall or mechanical watering of the underlying soil.

The mulch material described above shall be supplied in packages having a gross weight not in excess of 55 pounds. The packages shall be adequately wrapped in paper, polyethylene or other suitable material to prevent loss or spillage during handling. Weight specifications of this material from suppliers, and for all applications, shall refer only to air dry weight of the fiber material. Absolute air dry weight is based on the normal weight standard of the Institute of the

Not to be used for bidding purposes

Pulp and Paper Industry for wood cellulose and is considered equivalent to ten percent (10%) moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air-dry weight content.

At the direction of the District or other governing agency, the Contractor shall provide steep slope protection over turf areas disturbed by construction in accordance with Articles 251.03 and 251.04 of *IDOT Standard Specifications*.

33.2 Materials

Seed mixture shall be Class I or Class 4 in accordance with Section 250 of *IDOT Standard Specifications*. Fertilizer shall be in accordance with Section 250 of *IDOT Standard Specifications*. Mulch shall be in accordance with Section 251 of *IDOT Standard Specifications*.

33.3 Required Submittals

1. Seed mixtures, fertilizer and mulch specifications.

33.4 Payment

Payment for seeding shall be made at the Contract unit price per Acre (ACRE) for the particular class of seed specified, installed, complete in place.

34 Quality Control Tests and Certification

34.1 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. The District reserves the right to suspend any or all work until the Contractor fully complies with this requirement.

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 pipe throughout the project.

Not to be used for bidding purposes

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

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

This modifies T.S. 9.4 of *the General Provisions and Technical Specifications for Sanitary Sewer Construction*.

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 installed pipe shall be deflection tested by the Contractor at his own expense. 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 following construction.

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

In addition to the above and T.S. 8:2(c) of the *General Provisions and Technical Specifications for Sanitary Sewer Construction*, use the following deflection test:

Testing of all lines shall be done with a Pin–Type Go/No–Go Gauge, pulled through all lines except the house leads. The diameter of the gauge shall be set at ninety–five percent (95%) of the undeflected 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

Not to be used for bidding purposes

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.

Vacuum Testing – Manholes:
All sanitary sewer 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.

Force Main Pressure and Leakage Test:
After force main piping has been laid and backfilled all piping or any valved section shall be subjected to a hydrostatic pressure test of 100 psi at the lowest elevation of the pipe section being tested, but not to exceed the pressure rating of the pipe specified. The duration of each pressure test shall not be less than one hour and not more than six hours. Basic provisions of AWWA C-600 and C-603 shall apply where applicable.

Each section of pipe to be tested, as determined by the District, shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump pipe connection and all necessary apparatus including gauges and meters shall be furnished by the Contractor. Prior to applying the specified test pressure, all air shall be expelled from the pipe.

Any pipe, fittings, valves or other appurtenance found to be defective in testing shall be removed and replaced by the Contractor with sound material and the test shall be repeated until satisfactory to the District.

The leakage test shall be conducted after the pressure test to determine the quantity of water lost by leakage under the specified test pressure. Allowable leakage in gallons per hour shall not be greater than that determined by the following formula:

$$L = (ND \sqrt{P}) / 7400$$

Where:
L = Allowable leakage in gallons per hour.
N = Number of joints in length of pipe tested.
D = Nominal diameter of the pipe in inches.
P = Average test pressure during the leakage test in psi.

Leakage is defined as the quantity of water to be supplied in the newly laid pipe or any valved section under test which is necessary to maintain the specified test pressure after the pipe has been filled with water and air expelled.

Contractor shall obtain permits as required for procurement of water to be used in the pressure and leakage test. Contractor shall comply with all provisions of permits, including but not limited to, approved supply hydrants, metering of water usage, and time constraints.

34.2 Materials – Not used.

Not to be used for bidding purposes

34.3 Required Submittals – Not used.

34.4 Measurement and Payment
No separate measurement or payment will be made for this work. All costs shall be incidental to sanitary sewer, sanitary manhole, and force main installation.

Not to be used for bidding purposes

Section III

Easement Provisions

Not to be used for bidding purposes

Not to be used for bidding purposes

Section III – Easement Provisions

1 General

All restoration on private property shall be restored to substantially the same pre-construction condition as is practical and reasonable. All restoration of private property including, but not limited to turf area disturbed or damaged as a results of this construction project shall be completed by the date of final District approval. "Standard Specifications" referenced below shall be the *Illinois Department of Transportation Standards for Road and Bridge Construction*, Current Edition.

Not to be used for bidding purposes

2 Easement Requirements by PIN

2.1 PIN 16-04-402-001 Easement Requirements

Contractor shall restore the gravel drive within construction limits. The construction limits may vary from the temporary construction easement limits. District pre-construction video and field reports will be used to determine the limits of gravel drive restoration. Gravel drive restoration shall consist of 6" of compacted CA6 or CA10 aggregate.

Contractor shall remove and dispose of all trees and brush within the easement area.

Turf areas shall be seeded with Class 4 or 4A Seed Mixture in accordance with Table 1 of Article 250.07 of the 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.

Fertilizer work shall be done in accordance with Article 250.04. Fertilizer shall have an analysis of 10-10-10 and be applied at the rate of 400 lbs./acre.

Where indicated in Plans, erosion control blanket shall be installed in accordance with Article 251.04.

2.2 PIN 16-02-351-021 Easement Requirements

Turf areas shall be seeded with Class 1 Seed Mixture in accordance with Table 1 of Article 250.07 of the 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.

Fertilizer work shall be done in accordance with Article 250.04. Fertilizer shall have an analysis of 10-10-10 and be applied at the rate of 400 lbs./acre.

Where indicated in Plans, erosion control blanket shall be installed in accordance with Article 251.04.

2.3 PIN 16-02-351-024 Easement Requirements

Contractor shall provide temporary seeding only. Final restoration/seeding will be completed by owner.

There will be no warranty for private property restoration, including but not limited to, turf areas.

2.4 PIN 16-03-451-001 Easement Requirements

Contractor shall minimize crop damage within permanent and temporary easement limits. Contractor is not responsible to pay for crop damage within easement limits. Contractor is responsible for any/all damage outside easement limits.

There will be no warranty required for restoration of crop damage.

Contractor shall remove and haul away all trees and brush within the easement area.

Production quality topsoil will be excavated from a limited portion of the easement to the depth of sub-standard soils (as determined by the District), up to a maximum depth of 24 inches. Excavated topsoil shall be stockpiled within the easement area and then restored as nearly as may be possible to the pre-construction locations and soil stratigraphy. This item only applies to the trench excavation area. No topsoil shall leave the property.

Turf areas shall be seeded with Class 4 or 4A Seed Mixture in accordance with Table 1 of Article 250.07 of the 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.

Fertilizer work shall be done in accordance with Article 250.04. Fertilizer shall have an analysis of 10-10-10 and be applied at the rate of 400 lbs./acre.

Where indicated in Plans, erosion control blanket shall be installed in accordance with Article 251.04.

2.5 PIN 16-10-226-017 Easement Requirements

Only temporary seeding for restoration of turf area is required.

Permanent restoration will be completed by owner. No warranty for private property restoration, including by not limited to, turf areas is required.

Not to be used for bidding purposes

2.6 PIN 16-10-226-016 Easement Requirements

Turf areas shall be seeded with Class 1 Seed Mixture in accordance with Table 1 of Article 250.07 of the 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.

Fertilizer work shall be done in accordance with Article 250.04. Fertilizer shall have an analysis of 10-10-10 and be applied at the rate of 400 lbs./acre.

Where indicated in Plans, erosion control blanket shall be installed in accordance with Article 251.04.

2.7 PIN 16-04-301-002 Easement Requirements

Contractor shall minimize crop damage within permanent and temporary easement limits. Contractor is not responsible to pay for crop damage within easement limits. Contractor is responsible for any/all damage outside easement limits.

There will be no warranty required for restoration of crop damage.

Contractor shall remove and haul away all trees and brush within the easement area.

Production quality topsoil will be excavated from a limited portion of the easement to the depth of sub-standard soils (as determined by the District), up to a maximum depth of 24 inches. Excavated topsoil shall be stockpiled within the easement area and then restored as nearly as may be possible to the pre-construction locations and soil stratigraphy. This item only applies to the trench excavation area. No topsoil shall leave the property.

Turf areas shall be seeded with Class 4 or 4A Seed Mixture in accordance with Table 1 of Article 250.07 of the 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.

Fertilizer work shall be done in accordance with Article 250.04. Fertilizer shall have an analysis of 10-10-10 and be applied at the rate of 400 lbs./acre.

Where indicated in Plans, erosion control blanket shall be installed in accordance with Article 251.04.

Not to be used for bidding purposes

Not to be used for bidding purposes

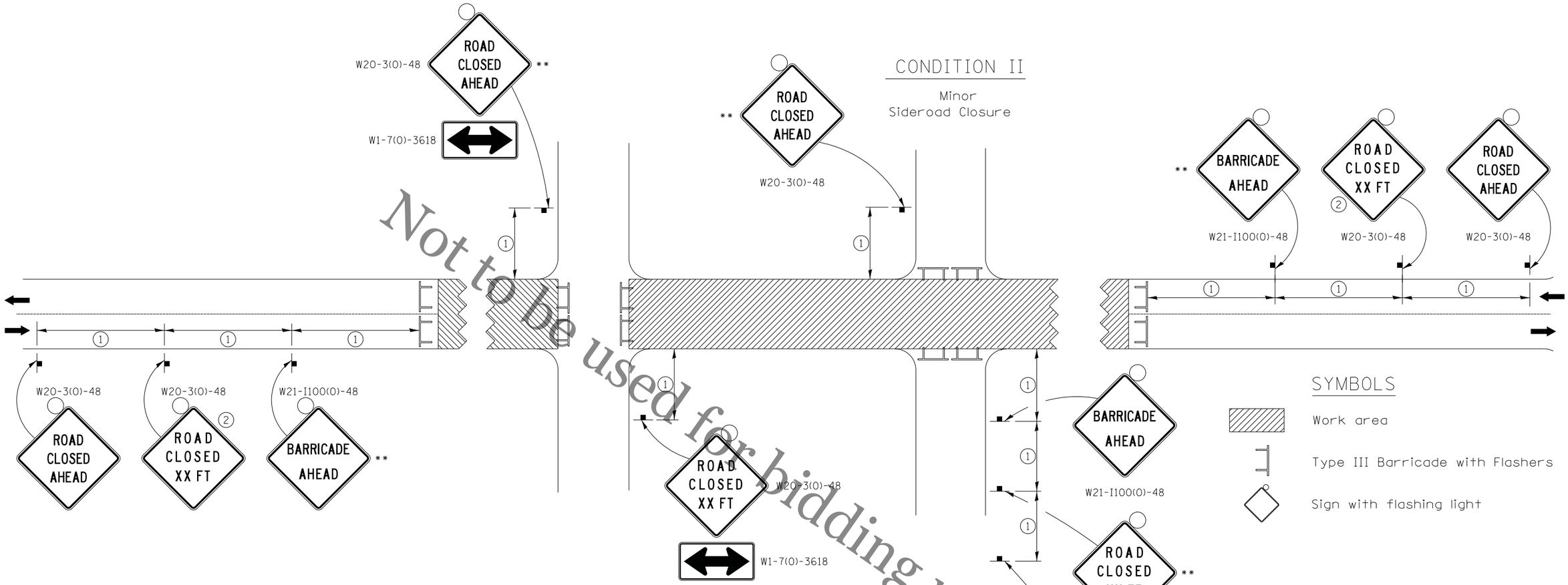
Section IV

Highway Standards

Not to be used for bidding purposes

Not to be used for bidding purposes

TRAFFIC CONTROL FOR ROAD CLOSURE



Not to be used for bidding purposes

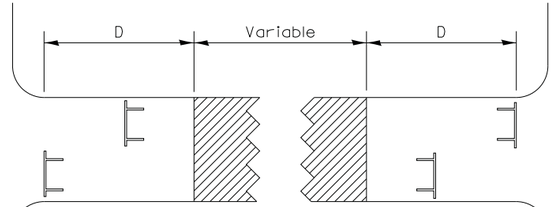
① SIGN SPACING TABLE

Posted Speed	Sign Spacing
45 MPH and above	500′
Below 45 MPH	250′

② SIGN LEGEND

Posted Speed Limit	Distance
45 MPH and above	1000′
Below 45 MPH	500′

ROAD CLOSED TO THRU TRAFFIC BARRICADE SET UP



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

GENERAL NOTES

Longitudinal dimensions may be adjusted to fit field conditions.

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

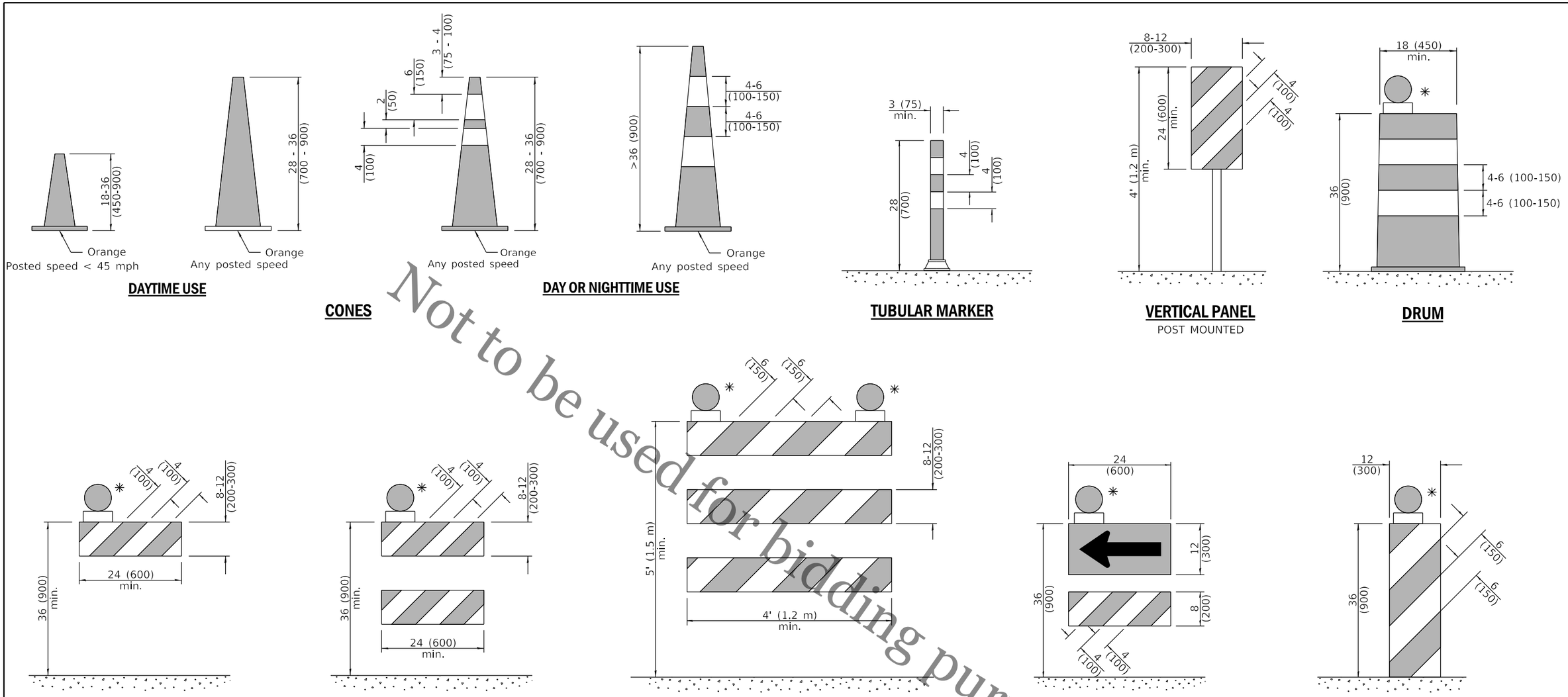
** Where local access is to be maintained, barricades are to be set up as shown in "Road Closed To Thru Traffic". Type III Barricades and R11-2-4830 signs shall be as shown in "Road Closed To All Traffic" detail on Highway Standard 701901.

All dimensions are in inches unless otherwise shown.

TYPICAL APPLICATION FOR ROAD CLOSURE

FILE NAME = District 2 Standard	USER NAME = IDOT/District 2	DESIGNED -	REVISED - 8-03-17	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REGION 2 / DISTRICT 2 STANDARD	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN -	REVISED - 1-05-16						
	PLOT SCALE = 1.0000 ′ / in.	CHECKED -	REVISED - 8-27-13					CONTRACT NO.	
	PLOT DATE = 1/10/2019	DATE -	REVISED - 10-17-11		SCALE: SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	

Not to be used for bidding purposes



DAYTIME USE

CONES

DAY OR NIGHTTIME USE

TUBULAR MARKER

VERTICAL PANEL
POST MOUNTED

DRUM

TYPE I BARRICADE

TYPE II BARRICADE

TYPE III BARRICADE

DIRECTION INDICATOR BARRICADE

VERTICAL BARRICADE

DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE

✳ Warning lights (if required)

Not to be used for bidding purposes

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

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

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-13

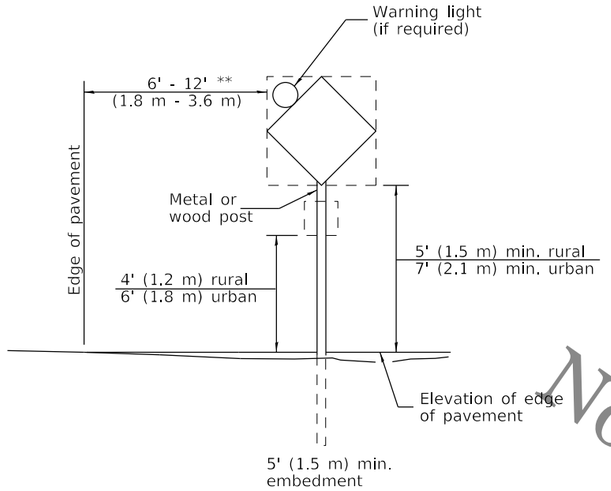
DATE	REVISIONS
1-1-19	Revised cone usage and
	added cones >36" (900 m) height.
1-1-18	Revised END WORK ZONE
	SPEED LIMIT sign from
	orange to white background.

TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

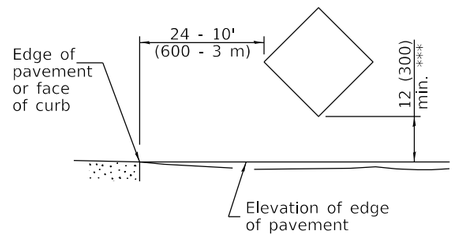
STANDARD 701901-08

Not to be used for bidding purposes



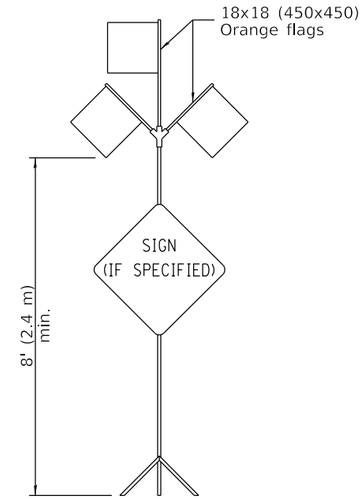
POST MOUNTED SIGNS

** When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.



HIGH LEVEL WARNING DEVICE

G20-I104(0)-6036 G20-I105(0)-6024

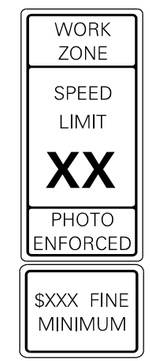
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING



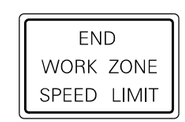
W21-III5(0)-3618

R2-1-3648

R10-I108p-3618 ****

R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.

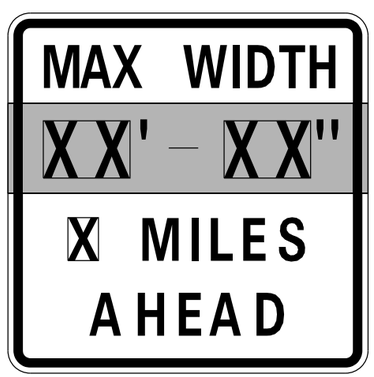


G20-I103-6036

This sign shall be used when the above sign assembly is used.

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

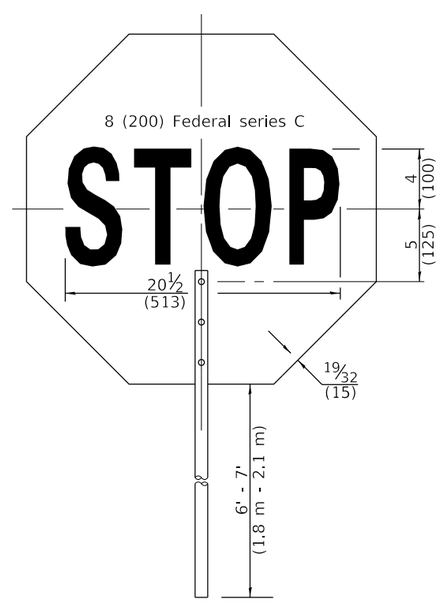
**** R10-I108p shall only be used along roadways under the juristiction of the State.



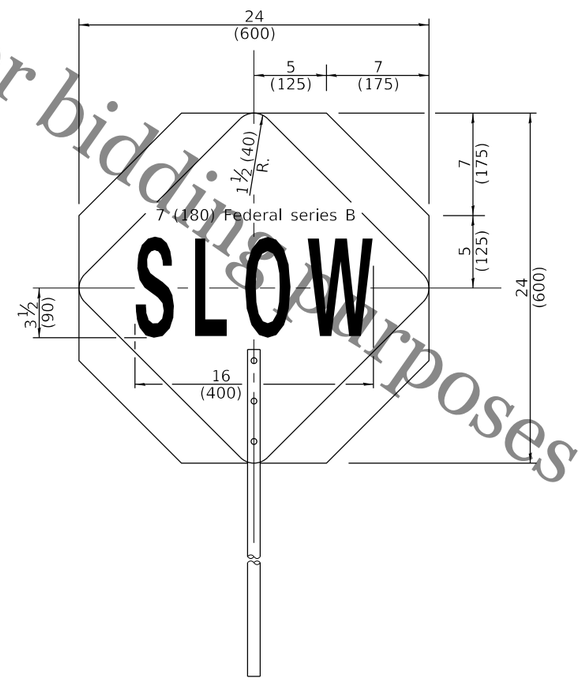
W12-I103-4848

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.



FRONT SIDE



REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN

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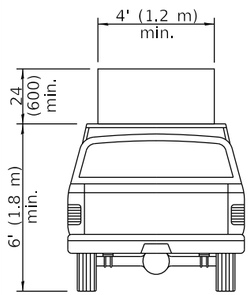

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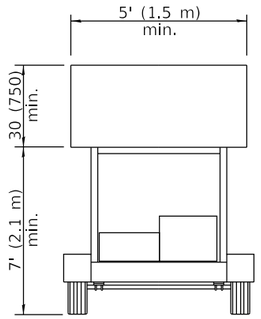

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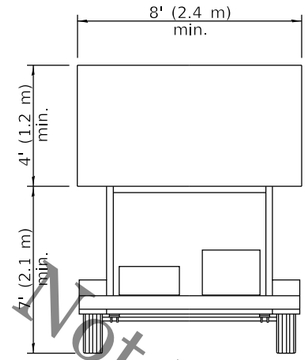
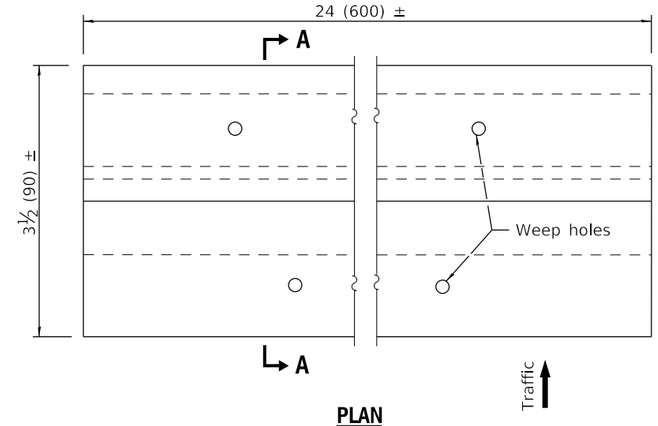
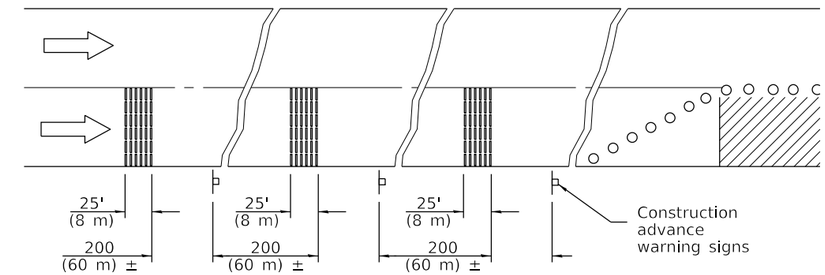


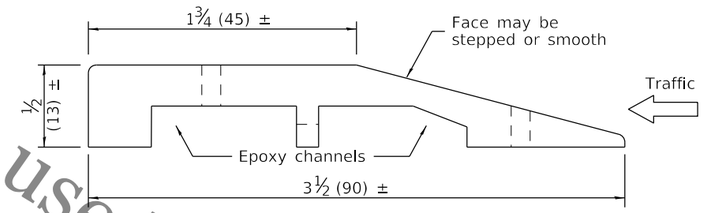
TYPE C
TRAILER MOUNTED

ARROW BOARDS

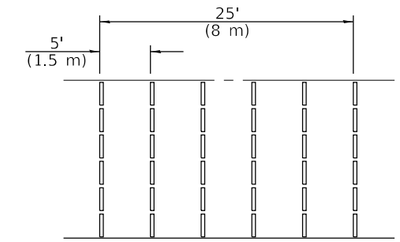


PLAN





SECTION A-A



TYPICAL INSTALLATION

TEMPORARY RUMBLE STRIPS

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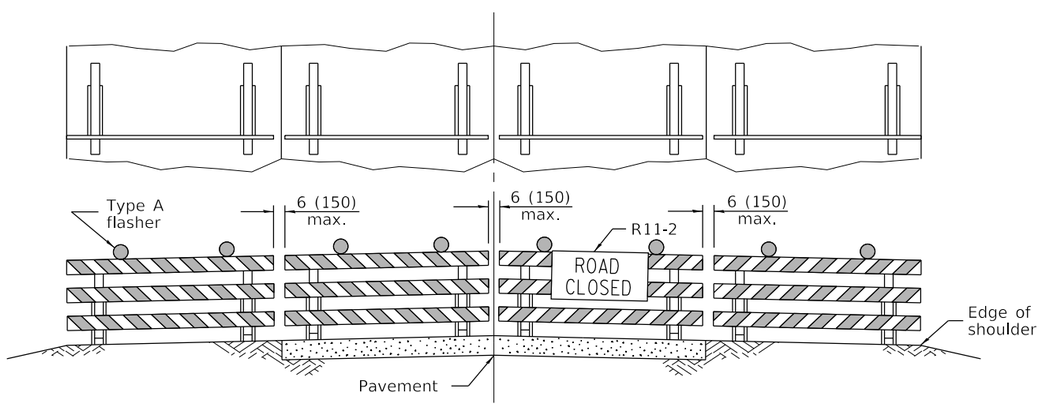
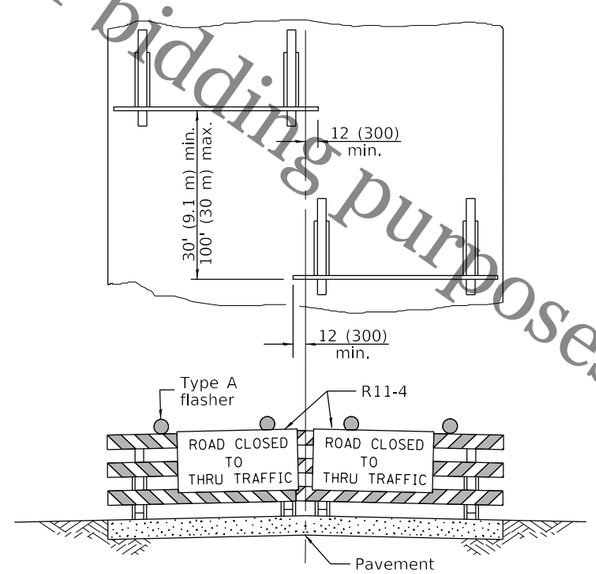


ROAD CLOSED TO ALL TRAFFIC

Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.



ROAD CLOSED TO THRU TRAFFIC

Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

TYPICAL APPLICATIONS OF
TYPE III BARRICADES CLOSING A ROAD

Illinois Department of Transportation

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APPROVED January 1, 2019
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(Sheet 3 of 3)

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Section V

Geotechnical Report

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Geotechnical Engineering Report

Cherry Valley Parallel Force Main

Capital Project No. 1420

Cherry Valley, Illinois

January 8, 2019

Terracon Project No. 19185051

Prepared for:

Rock River Water Reclamation District
Rockford, Illinois

Prepared by:

Terracon Consultants, Inc.
Rockford, Illinois

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Exhibit C-1 General Notes
Exhibit C-2 Unified Soil Classification
Exhibit C-3 General Notes – Sedimentary Rock Classification

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Terracon

January 8, 2019

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

Attn: Mr. Christopher Baer, P.E.

Re: Geotechnical Engineering Report
Cherry Valley Parallel Force Main
Capital Project No. 1420
Cherry Valley, Illinois
Terracon Project No. 19185051

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Dear Mr. Baer:

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. P19185051 dated October 16, 2018 and RRWRD Purchase Order No. 80416 dated October 23, 2018. This report presents the results of the subsurface exploration and provides recommendations regarding excavation and backfilling for the proposed force main.

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.

LICENSED PROFESSIONAL ENGINEER
DOUGLAS ALAN WALDEIER
062-064326
STATE OF ILLINOIS

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
CHERRY VALLEY PARALLEL FORCE MAIN
CAPITAL PROJECT NO. 1420
CHERRY VALLEY, ILLINOIS

Terracon Project No. 19185051

January 8, 2019

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1.0 INTRODUCTION

Terracon has completed a subsurface exploration for the proposed Cherry Valley Parallel Force Main project in Cherry Valley, Illinois. Twenty-four (24) borings extending to depths ranging from about 8 to 20 feet below existing grade were performed along the proposed project alignment. In addition, three (3) auger probes were performed along the alignment to further define the lateral extent of refusal on apparent shallow rock. Boring logs and soil boring location diagrams 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 force main.

2.0 PROJECT INFORMATION

2.1 Project Description

ITEM	DESCRIPTION
Site layout	See Boring Location Diagrams (Exhibits A-2 and A-3)
Proposed Improvements	Force Main
Grading	No changes to existing surface grades are planned.
General Construction	It is anticipated that the force main sewer will be constructed using both open cut excavations and jack and bore methods.

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	The proposed alignment starts at the Cherry Valley Lift Station (Sta. 0+00) along Barley Ridge Trail, travels along Mill Road, crosses Perryville Road and the US 20 Bypass, through agricultural fields to cross Mulford Road, and terminates west of Mulford Road at Sta. 135+00.
Existing Improvements	The area along the alignment consists of residential roadways and agricultural fields.

ITEM	DESCRIPTION
Existing topography	Based upon the estimated surface elevations provided, the grades along the proposed alignment range from about 743 feet to 827 feet.

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 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 1 [1]	14 inches	Existing pavement: 4 inches of asphalt over 10 inches of crushed stone aggregate	N/A
Surface 2 [2]	3 inches	Crushed stone aggregate	N/A
Surface 3 [3]	3 to 12 inches	Topsoil/Topsoil Fill	N/A
Stratum 1 [4]	2½ to 8 feet	Fill: Lean clay, with variable amounts of silt, sand, and gravel or sand with variable amounts of clay and gravel	N/A
Stratum 2 [5]	4 to 20 feet	Native cohesive soils: Lean clay with variable amounts of silt, sand, and gravel or silt, trace gravel Native granular soils: Sand with variable amounts of clay, silt, and gravel or gravel with variable amounts of sand and clay	Cohesive soils: Soft to very stiff Granular soils: Very loose to very dense
Stratum 3 [6]	Auger Refusal depths of 8 to 12½ feet	Highly to moderately weathered limestone	N/A

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1. Existing pavement encountered in borings B-1 and B-2.
2. Encountered in borings B-7 and B-21.
3. Encountered in borings B-3 to B-6, B-8 to B-20, and B-22 to B-24.
4. Stratum 1 (fill) was encountered in Borings B-1 to B-3, B-6, B-15, B-17 to B-19, and B-21.
5. Stratum 2 was encountered to the termination depth of 15 feet in Borings B-1 to B-5 and B-8 to B-21 and to the termination depth of 20 feet in Borings B-6 and B-7.
6. Stratum 3 (weathered limestone) was encountered to the auger refusal depths of 8 to 12½ feet in Borings B-22 to B-24.

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Select soil samples were screened with a photo-ionization detector (PID) to estimate the presence of volatile organic compounds (VOCs). In general, the majority of the samples exhibited no detects (ND). There were five samples, however, that exhibited slight detects in the range of 0.1 to 0.2 ppm. Each of these samples were obtained within 2 feet of the ground surface. Two of the samples were fill materials (Borings B-19 and B-21), while the other 3 were obtained within native clay soils (Borings B-9, B-13, and B-16). Please refer to the attached boring logs for specific test results.

3.1.1 Auger Probe Results

Three borings drilled on the west end of the alignment (borings B-22 to B-24) encountered refusal on weathered limestone at shallower than planned termination depths. At the request of the Client, three (3) auger probe borings were performed to determine if rock was present within the exploration depths in the area east of boring B-22. The probes were advanced with a solid stem auger to refusal on apparent weathered limestone. The conditions encountered in the auger probes are presented in the following table:

Probe Location	Approximate Probe Station	Approximate Depth to Auger Refusal from Surface (ft.)
100' E of B-22	117+00	8.5
200' E of B-22	116+00	8.5
300' E of B-22	115+00	10

3.2 Water Level Observations

The borings were observed during and after the completion of drilling for the presence and level of water. The subsurface water levels observed at these times are indicated on the boring logs in Appendix A. A summary of the boreholes where water levels were observed is presented in the following table.

Boring Number	Observed Water Depth (ft) [1]	
	While Drilling	After Drilling
1	N/A	N/A

Boring Number	Observed Water Depth (ft) [1]	
	While Drilling	After Drilling
2	15	15
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A
6	N/A	N/A
7	9½	13
8	N/A	N/A
9	14	14
10	N/A	N/A
11	9½	8
12	4½	9
13	7½	6
14	7	6
15	6½	8
16	14½	14½
17	14	14
18	9½	8
19	4½	5
20	7	9
21	8½	9
22	4	3½
23	N/A	N/A
24	N/A	N/A

1. Below existing grade

The water levels summarized above are not necessarily indicative of the long term position of the water table. Observation wells would need to be installed and monitored for a period of weeks in order to determine the long term groundwater level. In addition, groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the project may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

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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.

Removal of rock will likely be required for the trench excavations if the utilities are to extend to beyond a depth of 4 to 10 feet for excavations west of Boring B-21 (approximate Stations 111+00 to 135+00). Elevations and depths of bedrock along this section of the alignment are likely to vary.

Since groundwater was encountered in the borings, groundwater seepage into the excavations should be expected. Seepage into the excavations should be controlled. Low volumes of seepage into excavations could 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.

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 soft clay soils or 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. The use of temporary sheeting would also have the added benefit of serving as a groundwater cutoff for the areas that extend to significant depths below the observed water levels in granular soils.

4.2 Force Main Construction

4.2.1 Force Main Trench Excavation Recommendations

Removal of rock will likely be required for the trench excavations if the utilities are to extend to beyond a depth of 4 to 10 feet west of Boring B-21 (Stations 111+00 to 135+00). Elevations and depths of bedrock along the alignment are likely to vary. In our experience, conventional heavy duty excavation equipment such as track-mounted excavators equipped with rock teeth, can sometimes excavate rock materials that were penetrated with flight augers in the exploratory borings. Excavation of rock formations that cannot be penetrated with flight augers is usually more difficult and often requires the use of pneumatic breakers or other rock excavation techniques. Rock removal in confined excavations such as utility trenches is generally difficult, even above the level of auger refusal.

The use of temporary sheeting/shoring or trench boxes will likely be needed where soft clay soils or loose sands are present or where space or other limitations will not permit safe slopes for an open cut excavation. Careful planning and execution of the trench excavations,

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dewatering 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 ¾H to 1V (horizontal to vertical) for Type A soils, 1H to 1V for Type B soils, and 1½H 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 excavations will extend into granular soils. Granular soils are classified as Type C soil according to the OSHA regulations. OSHA recommends a maximum slope inclination of 1½ horizontal to 1 vertical for excavation 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.

Since groundwater was encountered in the borings, groundwater seepage into the excavations should be expected, especially within the granular soils encountered starting at about 5 to 8 feet below current ground elevations. Seepage into the excavations should be controlled. Low volumes of seepage into excavations could be controlled using sump pits and pumps from within the excavations. However, for higher volumes of seepage, more extensive dewatering measures, such as a system of well points, may be necessary. In this case, temporary sheeting may be necessary, particularly in the granular soils. Sheeting, if driven to sufficient depths,

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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 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. 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 below the manhole. An

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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.

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4.2.4 Compaction Requirements

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

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

4.2.5 Horizontal Directional Drilling

We understand that consideration is being given to using horizontal directional drilling and pipe jacking methods to install the pipeline at select locations along the alignment (generally east of

Boring B-9, Station 47+00) in which open cut excavations are not feasible or allowed, such as under existing pavements and roadways. Horizontal directional drilling is a trenchless excavation method which is accomplished in two phases. The first phase consists of drilling a pilot hole along a design directional path. The second phase consists of pulling the pipe through the pilot hole.

Horizontal directional drilling is accomplished using a specialized horizontal drilling rig with ancillary tools and equipment. Based on the soils encountered in the soil borings, we anticipate the directional drilling will likely encounter alternating layers of clay and sand. Furthermore, it is possible that the horizontal directional drilling for the proposed water main may encounter groundwater.

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

The horizontal and vertical modulus of subgrade reactions for buried piping in different soil types are given in the following table:

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

1. For static load conditions. Parameters based on default design values provided in LPILE™ user manual.

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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, force main construction, backfilling, and other earth-related construction phases of the project.

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

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

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

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APPENDIX A

FIELD EXPLORATION

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Field Exploration Description

The borings were performed near the locations shown on the attached Boring Location Diagrams (Exhibits A-2 and A-3). 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 track-mounted, rotary drill rig using continuous flight, hollow-stemmed augers to advance the borehole. Soil samples were obtained using split-barrel sampling procedures, in which a standard 2-inch (outside diameter) split-barrel sampling spoon is driven into the ground with a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. These values, also referred to as SPT N-values, are an indication of soil strength/relative density and are provided on the boring logs at the depths of occurrence. The samples were sealed and transported to the laboratory for testing and classification.

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

Not to be used for bidding purposes

Not to be used for bidding purposes

Not to be used for bidding purposes

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

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

Project Manager: DAW	Project No. 19185051
Drawn by: DAW	Scale: AS SHOWN
Checked by: PLT	File Name: 19185051_BLD
Approved by: PLT	Date: Dec 2018

Terracon
4836 Colt Rd
Rockford, IL 61109-2612

BORING LOCATION PLAN 1

Cherry Valley Parallel Force Main, Capital Project No. 1420
3455 South Mulford Road
Cherry Valley, IL

Exhibit
A-2

Not to be used for bidding purposes

Not to be used for bidding purposes

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

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

Project Manager: DAW	Project No. 19185051
Drawn by: DAW	Scale: AS SHOWN
Checked by: PLT	File Name: ?
Approved by: PLT	Date: Dec 2018

Terracon
4836 Colt Rd
Rockford, IL 61109-2612

BORING LOCATION PLAN 2

Cherry Valley Parallel Force Main, Capital Project No. 1420
3455 South Mulford Road
Cherry Valley, IL

Exhibit
A-3

Not to be used for bidding purposes

BORING LOG NO. B-1

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2217° Longitude: -88.9663°
Northing: 1 Easting: 1
Station: 0+80

Surface Elev.: 743.851 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	743.5	**ASPHALT**, Approximately 4"
1.2	742.5	**CRUSHED STONE AGGREGATE**, Approximately 10"
6.5	737.5	**FILL - LEAN CLAY**, trace sand, brown
8.0	736	**FINE TO MEDIUM SAND (SP)**, trace clay and gravel, brown, medium dense
15.0	729	**FINE TO MEDIUM SAND (SP)**, trace clay, gravel, and cobbles, brown, dense
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	WATER CONTENT (%)
	X	14	4-5-8 N=13	ND	21
	X	12	4-4-4 N=8	ND	15
5	X	16	3-3-7 N=10	ND	9
	X	14	24-27-13 N=40	ND	5
10	X	15	16-20-28 N=48	ND	4
15					

GRAPHIC LOG

WATER LEVEL OBSERVATIONS

LABORATORY HP (psf)

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with Auger Cuttings
Surface capped with asphalt

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018
Boring Completed: 11-28-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-4

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-2

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2255° Longitude: -88.9696°
Northing: 1 Easting: 2
Station: 9+20

Surface Elev.: 751.107 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.3	751	**ASPHALT**, Approximately 4"						
1.2	750	**CRUSHED STONE AGGREGATE**, Approximately 10"						
3.5	747.5	**FILL - FINE TO MEDIUM SAND**, trace clay and gravel, brown		14	10-12-10 N=22	ND		6
8.0	743	**LEAN CLAY (CL)**, reddish brown and gray, medium stiff to stiff	5	12	3-4-4 N=8	ND	4000 (HP)	24
				16	3-3-4 N=7	ND	3000 (HP)	24
12.0	739	**LEAN CLAY (CL)**, trace silt and sand, reddish brown, soft to medium stiff	10	18	2-2-2 N=4	ND	1000 (HP)	20
15.0	736	**FINE TO COARSE SAND (SW)**, with gravel, trace clay, brown, dense	15	16	14-15-15 N=30	ND		6
		BOTTOM OF BORING *Boring Terminated at 15 Feet*						

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with Auger Cuttings
Surface capped with asphalt

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

Notes:

WATER LEVEL OBSERVATIONS

15', While Drilling
15', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018
Boring Completed: 11-28-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-5

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-3

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2257° Longitude: -88.9721°
Northing: 1 Easting: 3
Station: 17+10

Surface Elev.: 763.231 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	762.5	**TOPSOIL FILL**, Approximately 6"					
		FILL - LEAN CLAY, trace silt, brown	16	1-2-2 N=4	ND		21
3.0	760	**LEAN CLAY (CL)**, with silt, reddish brown, medium stiff	14	2-3-3 N=6	ND	1500 (HP)	27
6.0	757	**CLAYEY FINE to MEDIUM SAND (SC)**, with gravel, reddish brown, loose	12	4-4-4 N=8	ND		15
8.0	755	**FINE TO COARSE SAND (SW)**, with gravel, brown, medium dense to dense	16	12-13-14 N=27	ND		4
15.0	748		18	21-25-24 N=49	ND		5
		BOTTOM OF BORING *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018 | Boring Completed: 11-28-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-6

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-4

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2244° Longitude: -88.9746°
Northing: 1 Easting: 4
Station: 25+80

Surface Elev.: 790.473 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.5	790	**TOPSOIL**, Approximately 6"
		FINE TO MEDIUM SAND (SP-SC), with clay, reddish brown, loose to medium dense
8.0	782.5	**LEAN CLAY (CL)**, with sand, trace gravel, reddish brown, stiff
12.0	778.5	**LEAN CLAY (CL)**, trace sand, reddish brown, medium stiff
15.0	775.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	X	18	4-3-5 N=8	ND		9
	X	16	5-5-5 N=10	ND		10
5	X	16	5-5-6 N=11	ND		13
	X	18	3-5-7 N=12	ND	3500 (HP)	14
10	X	18	2-3-3 N=6	ND	1000 (HP)	17
15						

WATER LEVEL OBSERVATIONS

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018 | Boring Completed: 11-28-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-7

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-5

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2244° Longitude: -88.9775°
Northing: 1 Easting: 5
Station: 33+10

Surface Elev.: 782.33 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	782	**TOPSOIL**, Approximately 6"					
		FINE TO MEDIUM SAND (SP-SC), with clay, trace silt, brown, very loose	16	2-2-1 N=3	ND		9
3.0	779.5	**FINE TO MEDIUM SAND (SP-SC)**, with clay, brown, medium dense	14	4-4-6 N=10	ND		11
			16	5-6-5 N=11	ND		15
8.0	774.5	**LEAN CLAY (CL)**, brown, medium stiff to stiff	18	2-3-4 N=7	ND	4000 (HP)	22
14.0	768.5	**FINE SAND (SP-SC)**, with clay, reddish brown, medium dense	10	8-8-10 N=18	ND		8
15.0	767.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-8

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-6

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2246° Longitude: -88.9792°
Northing: 1 Easting: 6
Station: 38+10

Surface Elev.: 780.343 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.4	780	**TOPSOIL FILL**, Approximately 5"
		FILL - LEAN CLAY, trace sand and gravel, dark brown to black
3.0	777.5	
		FINE SAND (SP), trace clay, reddish brown, loose to medium dense
8.0	772.5	
		LEAN CLAY (CL), trace silt, brown and gray, soft
12.0	768.5	
		LEAN CLAY (CL), trace sand and gravel, brown and gray, stiff
17.5	763	
		CLAYEY FINE to MEDIUM SAND (SC), trace gravel, gray, very dense
20.0	760.5	
		BOTTOM OF BORING *Boring Terminated at 20 Feet*

DEPTH (Ft.)	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	16	5-2-3 N=5	ND		17
5	16	5-4-4 N=8	ND		7
	18	4-5-7 N=12	ND		13
10	18	2-2-2 N=4	ND	500 (HP)	24
15	16	3-6-8 N=14	ND	4000 (HP)	10
20	10	17-50/3"	ND	8000 (HP)	8

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018
Boring Completed: 11-29-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-9

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-7

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2248° Longitude: -88.9797°
Northing: 1 Easting: 7
Station: 39+90

Surface Elev.: 777.579 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	777.5	**CRUSHED STONE AGGREGATE**, Approximately 3"
		CLAYEY FINE SAND (SC), reddish brown, loose to medium dense
4.5	773	**LEAN CLAY (CL)**, trace silt, reddish brown and gray, medium stiff to stiff
8.0	769.5	**FINE SAND (SP)**, trace clay, reddish brown, very loose
13.0	764.5	**FINE TO COARSE SAND (SP-SM)**, with silt, light brown, medium dense
17.0	760.5	**CLAYEY FINE TO MEDIUM SAND (SC)**, trace gravel, gray, dense
20.0	757.5	**BOTTOM OF BORING** *Boring Terminated at 20 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		14	3-2-3 N=5	ND		11
		16	7-6-7 N=13	ND		16
5		14	3-2-3 N=5	ND	4000 (HP)	25
		14	1-1-2 N=3	ND		17
10						
		16	7-8-10 N=18	ND		14
15						
		14	13-22-25 N=47	ND	8000 (HP)	8
20						

WATER LEVEL OBSERVATIONS: 9½', While Drilling; 13', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

9½', While Drilling
13', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-10

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-8

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2248° Longitude: -88.9811°
Northing: 1 Easting: 8
Station: 43+30

Surface Elev.: 779.326 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.6	778.5	**TOPSOIL**, Approximately 7"					
		LEAN CLAY (CL), with sand, brown, medium stiff	16	2-2-3 N=5	ND	2000 (HP)	13
3.0	776.5	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, reddish brown, loose to medium dense	14	3-4-7 N=11	ND		10
			18	2-3-3 N=6	ND		12
8.0	771.5	**LEAN CLAY (CL)**, trace sand, light gray, stiff to very stiff	16	3-5-5 N=10	ND	4500 (HP)	12
12.0	767.5	**FINE TO COARSE SAND (SW)**, trace clay, brown, very dense	14	28-36-45 N=81	ND		6
15.0	764.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-11

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-9

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2253° Longitude: -88.9818°
Northing: 1 Easting: 9
Station: 47+00

Surface Elev.: 780.615 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.6	780	**TOPSOIL**, Approximately 7"
6.0	774.5	**LEAN CLAY (CL)**, trace sand, brown, medium stiff to stiff
8.0	772.5	**SANDY LEAN CLAY (CL)**, trace gravel, light brown, medium stiff to stiff
12.0	768.5	**FINE TO MEDIUM SAND (SP-SC)**, with clay, light brown, medium dense
15.0	765.5	**FINE TO MEDIUM SAND (SP)**, trace clay and gravel, brown, very dense
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		14	2-3-4 N=7	0.1	3000 (HP)	18
5		16	1-2-2 N=4	ND	500 (HP)	19
		18	3-2-4 N=6	ND	4000 (HP)	10
10		14	6-8-5 N=13	ND		9
15		14	15-37-50 N=87	ND		8

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

14', While Drilling
14', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018
Boring Completed: 11-29-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-12

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-10

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2255° Longitude: -88.9838°
Northing: 1 Easting: 10
Station: 52+50

Surface Elev.: 768.352 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	768	**TOPSOIL**, Approximately 6"					
		LEAN CLAY (CL), with sand, dark brown, soft to medium stiff	12	1-1-2 N=3	ND	1500 (HP)	18
3.0	765.5	**SILTY CLAY (CL-ML)**, gray, soft to medium stiff	16	1-2-3 N=5	ND	500 (HP)	25
5.5	763	**CLAYEY FINE SAND (SC)**, trace gravel, light brown, medium dense	14	4-6-9 N=15	ND		11
8.0	760.5	**LEAN CLAY (CL)**, trace sand, brown, medium stiff to stiff	16	2-2-4 N=6	ND	3000 (HP)	12
12.0	756.5	**LEAN CLAY (CL)**, trace sand and gravel, brownish gray, very stiff	18	7-8-12 N=20	ND	7000 (HP)	10
15.0	753.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-13

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-11

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2256° Longitude: -88.9848°
Northing: 1 Easting: 11
Station: 55+00

Surface Elev.: 764.69 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.6	764	**TOPSOIL**, Approximately 7"					
3.0	761.5	**LEAN CLAY (CL)**, trace silt, dark brown, medium stiff to stiff	12	2-2-2 N=4	ND	2500 (HP)	27
4.5	760	**LEAN CLAY (CL)**, trace silt and sand seams, reddish brown and gray, medium stiff	16	2-3-3 N=6	ND	1000 (HP)	20
8.0	756.5	**FINE TO COARSE SAND (SW-SC)**, with clay, trace gravel, brown and gray, medium dense	12	2-3-7 N=10	ND		12
13.0	751.5	**FINE TO COARSE SAND (SW)**, with gravel, trace clay, brown and gray, dense	14	13-19-12 N=31	ND		9
15.0	749.5	**LEAN CLAY (CL)**, trace sand, brown, medium stiff	12	5-3-5 N=8	ND	1500 (HP)	14
		BOTTOM OF BORING *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS: 9½', While Drilling; 8', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

9½', While Drilling
8', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-14

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-12

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2264° Longitude: -88.9882°
Northing: 1 Easting: 12
Station: 63+30

Surface Elev.: 765.111 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.7	764.5	**TOPSOIL**, Approximately 8"					
		LEAN CLAY (CL), trace sand, gray, stiff to very stiff	10	2-4-5 N=9	ND	4500 (HP)	21
3.0	762	**FINE TO MEDIUM SAND (SP)**, with gravel, gray, medium dense	14	6-11-13 N=24	ND		12
6.0	759	**FINE TO MEDIUM SAND (SP)**, with gravel, light brown, medium dense	16	12-12-10 N=22	ND		10
9.0	756	**GRAVELLY FINE to MEDIUM SAND (SP)**, trace clay, gray, dense	14	16-25-20 N=45	ND		16
15.0	750		12	9-9-22 N=31	ND		12
		BOTTOM OF BORING *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS: ▽ 4½', While Drilling; ▽ 9', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-15

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-13

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2264° Longitude: -88.9906°
Northing: 1 Easting: 13
Station: 71+00

Surface Elev.: 769.152 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.8	768.5	**TOPSOIL**, Approximately 10"					
3.0	766	**LEAN CLAY (CL)**, with silt, dark brown to black, medium stiff to stiff	14	2-2-2 N=4	0.2	2500 (HP)	36
12.0	757	**GRAVELLY FINE to COURSE SAND (SW)**, trace clay, brown and gray, medium dense to dense	16	9-12-13 N=25	ND		11
			10	5-10-10 N=20	ND		10
			10	7-14-16 N=30	ND		12
15.0	754	**FINE TO COARSE SAND (SW)**, trace gravel, brown, medium dense	18	7-10-12 N=22	ND		12
		BOTTOM OF BORING *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS: 7½', While Drilling; 6', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

7½', While Drilling
6', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-16

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-14

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2261° Longitude: -88.9929°
Northing: 1 Easting: 14
Station: 77+70

Surface Elev.: 776.111 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
1.0	775	**TOPSOIL**, Approximately 12"					
3.0	773	**LEAN CLAY (CL)**, trace silt, dark brown to black, medium stiff	12	2-2-3 N=5	ND	2000 (HP)	17
6.0	770	**CLAYEY FINE SAND (SC)**, light brown, loose	16	6-4-5 N=9	ND	1500 (HP)	10
12.0	764	**FINE TO MEDIUM SAND (SP)**, trace gravel, yellowish brown, medium dense to dense	14	9-12-12 N=24	ND		15
			12	17-24-14 N=38	ND		13
15.0	761	**GRAVELLY FINE to MEDIUM SAND (SP)**, light brown, very dense	16	49-46-50/5"	ND		14
		BOTTOM OF BORING *Boring Terminated at 15 Feet*					

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

7', While Drilling
6', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-17

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-15

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2266° Longitude: -88.9955°
Northing: 1 Easting: 15
Station: 85+00

Surface Elev.: 776.392 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.8	775.5	**TOPSOIL FILL**, Approximately 10"
2.5	774	**FILL - LEAN CLAY (CL)**, trace sand, gray
8.0	768.5	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, light brown, medium dense
12.0	764.5	**GRAVEL (GP-GC)**, with sand and clay, brown, medium dense
15.0	761.5	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, brown, medium dense
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		12	5-9-7 N=16	ND		21
		14	2-4-6 N=10	ND		12
5						
		18	6-8-8 N=16	ND		10
		2	9-11-15 N=26	ND		11
10						
		14	8-11-14 N=25	ND	8000 (HP)	9
15						

WATER LEVEL OBSERVATIONS: 6½', While Drilling; 8', After Boring

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

6½', While Drilling
8', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018
Boring Completed: 11-29-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-18

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-16

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2275° Longitude: -88.9959°
Northing: 1 Easting: 16
Station: 94+00

Surface Elev.: 786.183 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.8	785.5	**TOPSOIL**, Approximately 10"
6.5	779.5	**LEAN CLAY (CL)**, trace sand, reddish brown, medium stiff to stiff
8.0	778	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, light brown, loose
13.0	773	**SANDY LEAN CLAY (CL)**, trace gravel, light brown, very stiff
15.0	771	**FINE SAND (SP)**, trace clay and gravel, light brown, medium dense
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	14	3-2-4 N=6	0.2	4000 (HP)	30
5	14	2-2-3 N=5	ND	4000 (HP)	28
	16	4-3-2 N=5	ND		10
10	16	5-6-12 N=18	ND	8000 (HP)	9
15	16	13-14-15 N=29	ND		16

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

14½', While Drilling
14½', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018
Boring Completed: 11-29-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-19

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-17

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2275° Longitude: -88.9991°
Northing: 1 Easting: 17
Station: 95+30

Surface Elev.: 793.937 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.5	793.5	**TOPSOIL FILL**, Approximately 6"
6.0	788	**FILL - LEAN CLAY**, trace sand and gravel, dark brown
8.0	786	**FILL - LEAN CLAY**, light brown and gray
14.0	780	**LEAN CLAY (CL)**, trace organics, dark brown to black, stiff
15.0	779	**SILT (ML)**, trace gravel, light brown, stiff to very stiff
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		10	3-6-6 N=12	ND		15
5		12	6-6-7 N=13	ND		13
		14	6-5-5 N=10	ND		24
10		16	6-5-5 N=10	ND	3000 (HP)	24
15		14	4-5-7 N=12	ND	8000 (HP)	19

WATER LEVEL OBSERVATIONS: 14', While Drilling; 14', After Boring

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS
14', While Drilling
14', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018
Boring Completed: 11-30-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-20

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-18

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2278° Longitude: -89.0006°
Northing: 1 Easting: 18
Station: 98+80

Surface Elev.: 794.512 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	794.5	**TOPSOIL FILL**, Approximately 3"
		FILL - LEAN CLAY, trace sand and gravel, dark brown and brown
4.0	790.5	**LEAN CLAY (CL)**, brown and gray, medium stiff to stiff
8.0	786.5	**FINE SAND (SP-SC)**, with clay, trace gravel, brown and gray, medium dense
13.0	781.5	**FINE SAND (SP-SM)**, with silt, light brown, medium dense
15.0	779.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*

SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	14	10-6-4 N=10	ND		14
	12	3-3-5 N=8	ND	3000 (HP)	27
	16	2-3-4 N=7	ND	3500 (HP)	26
	14	3-5-6 N=11	ND		10
	16	7-10-12 N=22	ND		12

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS: 8', After Boring; 9½', While Drilling

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

9½', While Drilling
8', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018
Boring Completed: 11-30-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-21

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-19

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2281° Longitude: -89.002°
Northing: 1 Easting: 19
Station: 103+00

Surface Elev.: 794.866 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.6	794.5	**TOPSOIL FILL**, Approximately 7"
		FILL - LEAN CLAY, with sand, trace gravel and organics
3.5	791.5	**FINE TO MEDIUM SAND (SP)**, medium dense
12.0	783	**FINE TO COARSE SAND (SW)**, with gravel, trace clay, very dense
15.0	780	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*

SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	WATER CONTENT (%)
	4	6-4-4 N=8	0.1	25
	10	7-11-16 N=27	ND	22
	14	5-7-9 N=16	ND	15
	18	3-5-8 N=13	ND	20
	16	19-22-35 N=57	ND	9

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS: 4½', While Drilling; 5', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS
4½', While Drilling
5', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-22

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-20

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2284° Longitude: -89.0038°
Northing: 1 Easting: 20
Station: 106+80

Surface Elev.: 796.824 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.5	796.5	**TOPSOIL**, Approximately 6"
		LEAN CLAY (CL), trace sand and organics, dark brown to black, stiff
3.0	794	
		LEAN CLAY (CL), with sand, trace gravel, gray, medium stiff
6.0	791	
		FINE SAND (SP), trace silt and gravel, light reddish brown, medium dense
8.0	789	
		LEAN CLAY (CL), with sand, trace gravel, light brown, stiff to very stiff
13.0	784	
		FINE SAND (SP), with gravel, trace silt, light brown, dense
15.0	782	
		BOTTOM OF BORING
		Boring Terminated at 15 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
			18	2-5-4 N=9	ND	2000 (HP)	23
5			14	2-2-3 N=5	ND	1500 (HP)	18
	▽		12	5-4-6 N=10	ND		20
10	▽		16	8-5-4 N=9	ND	5500 (HP)	11
15			14	12-14-16 N=30	ND		9

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *7', While Drilling*
▽ *9', After Boring*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-23

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-21

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2288° Longitude: -89.0049°
Northing: 1 Easting: 21
Station: 111+00

Surface Elev.: 799.158 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	799	**CRUSHED STONE AGGREGATE**, Approximately 3"
		FILL - LEAN CLAY, gray
4.0	795	**CLAYEY FINE to MEDIUM SAND (SC)**, with cobbles, brown and gray
8.5	790.5	**FINE TO COARSE SAND (SW)**, trace clay, brown
12.0	787	**FINE TO MEDIUM SAND (SP)**, trace gravel, light brown
15.0	784	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	WATER CONTENT (%)
		8	5-3-3 N=6	0.2	25
5		10	2-3-4 N=7	ND	20
		6	8-11-13 N=24	ND	8
10		18	9-9-8 N=17	ND	17
15		18	8-11-13 N=24	ND	11

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

8½', While Drilling
9', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018
Boring Completed: 11-30-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-24

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-22

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2292° Longitude: -89.0069°
Northing: 1 Easting: 22
Station: 118+00

Surface Elev.: 802.859 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
TOPSOIL, Approximately 12"									
1.0	802								
SANDY LEAN CLAY (CL), dark brown to black, medium stiff to stiff				X	18	3-2-3 N=5	ND	2500 (HP)	15
4.0	799		▽ ▽						
SILTY FINE SAND (SM), light brown and gray, dense to very dense		5		X	16	11-18-18 N=36	ND		14
7.0	796			X	16	23-37-50/4"	ND		12
HIGHLY to MODERATELY WEATHERED LIMESTONE, light brown									
8.5	794.5								
BOTTOM OF BORING						50/2"			7
Boring Terminated at 8.5 Feet									

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *4', While Drilling*
▽ *3½', After Broing*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-25

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-23

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2295° Longitude: -89.0102°
Northing: 1 Easting: 23
Station: 126+70

Surface Elev.: 808.236 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	WATER CONTENT (%)
0.5	807.5					
TOPSOIL, Approximately 6"						
FINE SAND (SP), trace silt, light gray, medium dense			18	3-4-13 N=17	ND	25
4.0	804		8	29-50/3"	ND	15
HIGHLY WEATHERED LIMESTONE, light brown, very dense		5				
6.5	801.5			50/3"		8
HIGHLY to MODERATELY WEATHERED LIMESTONE, light brown						
8.0	800					
BOTTOM OF BORING						
Auger Refusal at 8 Feet						

GRAPHIC LOG

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

LABORATORY HP (psf)

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018
Boring Completed: 11-30-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-26

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-24

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2299° Longitude: -89.0135°
Northing: 1 Easting: 24
Station: 135+00

Surface Elev.: 827.025 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	WATER CONTENT (%)
0.7	826.5	**TOPSOIL**, Approximately 8"				
3.0	824	**CLAYEY FINE SAND (SC)**, reddish brown, loose	18	2-2-2 N=4	ND	12
8.0	819	**FINE SAND (SP)**, brown, medium dense	18	5-5-8 N=13	ND	7
			18	6-7-9 N=16	ND	8
10.0	817	**CLAYEY FINE SAND (SC)**, brown, dense	10	11-23-21 N=44	ND	7
11.5	815.5	**HIGHLY WEATHERED LIMESTONE**, light brown				
12.5	814.5	**MODERATELY WEATHERED LIMESTONE**, light brown				
		BOTTOM OF BORING *Auger Refusal at 12.5 Feet*				

DEPTH (Ft.): 5, 10

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

LABORATORY HP (psf)

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018
Boring Completed: 11-30-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-27

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

APPENDIX B

LABORATORY TESTING

Not to be used for bidding purposes

Not to be used for bidding purposes

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 native cohesive samples. The test results are provided on the boring logs in Appendix A.

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

Not to be used for bidding purposes

Not to be used for bidding purposes

APPENDIX C

SUPPORTING DOCUMENTS

Not to be used for bidding purposes

Not to be used for bidding purposes

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING

Auger	Split Spoon
Shelby Tube	Macro Core
Ring Sampler	Rock Core
Grab Sample	No Recovery

WATER LEVEL

- Water Initially Encountered
- Water Level After a Specified Period of Time
- Water Level After a Specified Period of Time

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.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

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.	Ring Sampler Blows/Ft.
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

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

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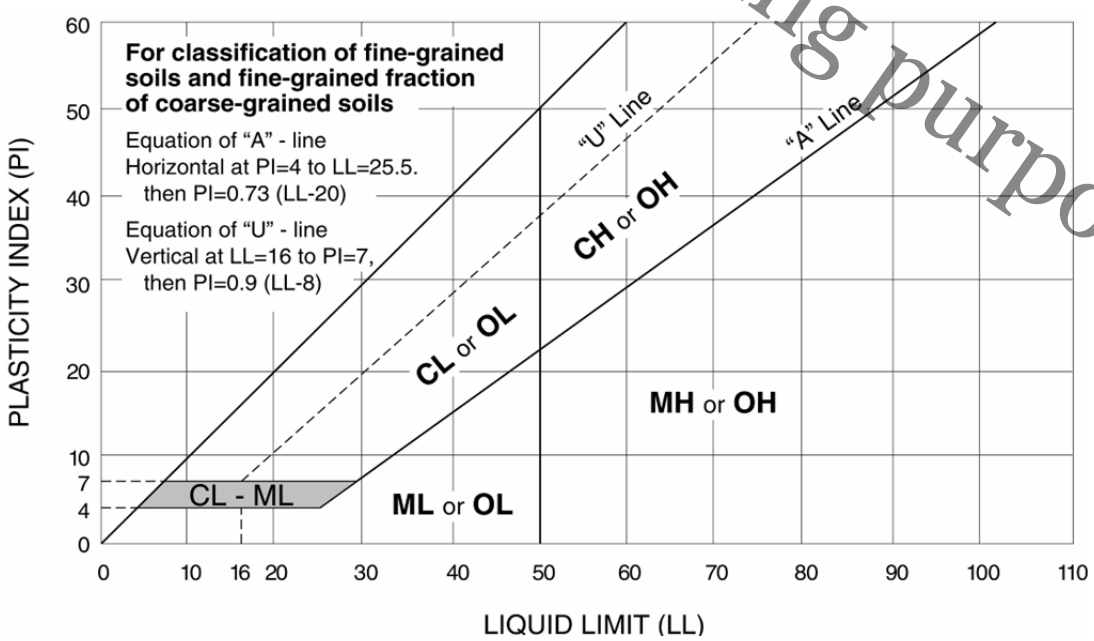
UNIFIED SOIL CLASSIFICATION SYSTEM

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

[F] If soil contains ≥ 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 ≥ 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 ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 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.



Not to be used for bidding purposes

Terracon

Exhibit C-2

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GENERAL NOTES

Sedimentary Rock Classification

DESCRIPTIVE ROCK CLASSIFICATION:

Sedimentary rocks are composed of cemented clay, silt and sand sized particles. The most common minerals are clay, quartz and calcite. Rock composed primarily of calcite is called limestone; rock of sand size grains is called sandstone, and rock of clay and silt size grains is called mudstone or claystone, siltstone, or shale. Modifiers such as shaly, sandy, dolomitic, calcareous, carbonaceous, etc. are used to describe various constituents. Examples: sandy shale; calcareous sandstone.

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LIMESTONE	Light to dark colored, crystalline to fine-grained texture, composed of $CaCo_3$, reacts readily with HCl.
DOLOMITE	Light to dark colored, crystalline to fine-grained texture, composed of $CaMg(CO_3)_2$, harder than limestone, reacts with HCl when powdered.
CHERT	Light to dark colored, very fine-grained texture, composed of micro-crystalline quartz ($Si0_2$), brittle, breaks into angular fragments, will scratch glass.
SHALE	Very fine-grained texture, composed of consolidated silt or clay, bedded in thin layers. The unlaminated equivalent is frequently referred to as siltstone, claystone or mudstone.
SANDSTONE	Usually light colored, coarse to fine texture, composed of cemented sand size grains of quartz, feldspar, etc. Cement usually is silica but may be such minerals as calcite, iron-oxide, or some other carbonate.
CONGLOMERATE	Rounded rock fragments of variable mineralogy varying in size from near sand to boulder size but usually pebble to cobble size (½ inch to 6 inches). Cemented together with various cementing agents. Breccia is similar but composed of angular, fractured rock particles cemented together.

DEGREE OF WEATHERING:

SLIGHT	Slight decomposition of parent material on joints. May be color change.
MODERATE	Some decomposition and color change throughout.
HIGH	Rock highly decomposed, may be extremely broken.

Classification of rock materials has been estimated from disturbed samples.
Core samples and petrographic analysis may reveal other rock types.

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Section VI

Permits

- **Winnebago County Permit No. 60 19 011/U**
- **IDOT Utility Permit No. 219084**
- **IEPA Permit No. 2019-IB-64025**

Not to be used for bidding purposes

Not to be used for bidding purposes

WINNEBAGO COUNTY
ILLINOIS

March 7, 2019

Rock River Water Reclamation District
3501 Kishwaukee Street
Rockford, IL 61109
Attention: Mr. Matt Campbell,

RE: Installation of force main across S. Mulford Road,
Cherry Valley Parallel Force Main, Capital Project No. 1420
WCHD File # 60 19 011/U

Dear Mr. Campbell,

We have reviewed your request submitted on March 6, 2019 to install force main across S. Mulford Road. The permit is approved to the terms and conditions mentioned in the attached, "Winnebago County Highway Department Permit Requirements." It shall be part of the permit and shall be binding to you and the contractor carrying out the proposed work within the County's Right-Of-Way.

Receiving of this permit will not absolve you from your responsibility to apply and obtain permits from other pertinent authorities. Please always have a copy of this permit available at the work site.

Before Starting the work in the County's R.O.W., please contact me or Joe Ponder at least 5 days in advance. When you call, please tell us the following information: permit number, date of issue, and the exact start date. If you do not inform this office in advance as prescribed, you will not have authorization to work in the County's R.O.W. and this permit will be considered invalid.

This permit remains valid up to six months from the date of issue. Please always refer to Winnebago County File Number in future correspondence in the matter. Please call me at (815) 319-4028, if you have any question in the matter.

Very truly yours,
Winnebago County Highway Department

Prafull Soni
Civil Engineer, Sr.
Encl: as above

Not to be used for bidding purposes

Not to be used for bidding purposes

County of Winnebago

HIGHWAY DEPARTMENT

424 North Springfield Avenue
Rockford, Illinois 61101-5097
Phone (815) 319-4000
Fax (815) 319-4001
Highway@wincoil.us

Joseph A. Vanderwerff, Sr. P.E.
County Engineer

Utility Permit

Permit # 60 19 011/U

Company Name: Rock River Water Recl. Dist.			Date: 02/07/2019
Address: 3501 Kishwaukee St.	City: Rockford	State: IL	Zip Code: 61109
Contact Person: Matt Campbell		Job Title: Project Engineer	
Phone Number: 815-387-7684		Cell Number: 815-978-0232	
Work Description: Attach map(s) or sketch(s) with application.	Proposed installation of a 54" diameter steel casing pipe under S. Mulford Road ROW, perpendicular to the centerline of existing ROW. Proposed casing is for a new 30" dia. sanitary sewer force main. Excavation within ROW of Mulford Rd. includes exposing existing gas & water utilities to confirm elevation.		
Location: Crossing S. Mulford Road, approximately 1150' north of Sandy Hollow Road.			
County Section Number: 16 (T43N, R2E)		Utility Account Number:	
Number & Name of County Highway : South Mulford Road			
Work Duration		**Work Shift Hours**	
Starting Date: Letting May 2019		From: 7:00 AM	
Completion Date: January 2020		To: 5:00PM	
Traffic Control & Protection			
Agency Name: TBD by Bid/Contract Award		Contact Person:	
Phone Number:		Cell Number:	

Signature of Applicant

Title: Engineering Manager

Date: 2/7/2019

Approval Stamp

APPROVED
Winnebago County Highway Dept.
File No. 60 19 011/U
Date 03/07/2019
Permit Engineer/Technician

Application Fee:	~~$500.00~~
Highway Fee:	
Traffic Control Fee:	
Total:	10.00

Check the box: ☑ Utility Company or ☐ Consultant of Utility Company or ☐ Contractor
If consultant; specify for whom you are working.

Not to be used for bidding purposes

WINNEBAGO COUNTY HIGHWAY DEPARTMENT PERMIT REQUIREMENT

1. The applicant represent all parties in interest and shall furnish material, do all work, pay all cost, and shall in a reasonable length of time, restore the damaged portions of the highway. Restoration to a condition similar or equal to that existing before the commencement of the described work, including any seeding or sodding.

2. The proposed work shall be located and constructed to the satisfaction of the County Engineer or his/her duly authorized representative. No revisions or additions shall be made to the proposed work on the right-of-way without the written permission of the County Engineer.

3. All boring and/or receiving pits shall be a minimum of 5 feet from the edge of pavement or back of curb in urban areas.

4. All underground installations shall have at least 3 feet of cover to avoid conflict with sign installations.

5. The work performed by applicant is for the bona fide purpose expressed and not for the purpose of, nor will it result in, the parking or servicing of vehicles on the highway right-of-way. Signs located on or overhanging the right-of-way shall be prohibited.

6. Care shall be taken to avoid existing underground installations within the highway right-of-way, especially cross road culverts.

7. The applicant, his/her successors or assigns, agrees to hold harmless the County of Winnebago and its duly appointed agents and employees against any action for personal injury or property damage sustained by reason of the exercise of this permit.

8. The applicant shall not trim, cut or in any way disturb any trees or shrubbery along the highway without the approval of the County Engineer or his/her duly authorized representative.

9. The County reserves the right to make such changes, additions, repairs and relocations within its statutory limits to the facilities constructed under this permit, or their appurtenances on the right-of-way as may at any time be considered necessary to permit the relocation, reconstruction, widening or maintaining of the highway and/or to provide proper protection to life and property on or adjacent to the County right-of-way. However, in the event this permit is granted to construct, locate, operate and maintain utility facilities on the County right-of-way, the applicant, upon written request by the County Engineer, shall perform such alteration or change of location of the facilities, without expense to the County. Should the applicant fail to make satisfactory arrangements to comply with this request within a reasonable time, the County reserves the right to make such alterations or change of location or remove the work, and the applicant agrees to pay for the cost incurred.

10. This permit is effective only insofar as the County has jurisdiction and does not presume to release the applicant from compliance with the provisions of any existing statutes or local regulation relating to the construction of such work.

11. The construction of access driveways is subject to the regulations listed in the "Policy on Permits for Access Driveways to State Highways". If, in the future, the land use of property served by an access driveway described and constructed in accordance with this permit change so as to require a higher driveway type as defined in that policy, the owner shall apply for a new permit and bear the regulations listed in that policy. Utility installation shall be subject to the "Policy of the Accommodation of Utilities on Right-of-Way" of the Illinois Department of Transportation.

12. The applicant affirms that the property lines shown on the attached sheet (s) are true and correct and binds and obligates him/her self to perform the operation in accordance with the description and attached sketch and to abide by the policy regulations.

13. Failure to adhere to the above requirement will result in future permits being held until satisfactory remedial action has been preformed by the applicant.

14. The Winnebago County Highway Department shall be notified a minimum of five working days in advance of work in the County right-of-way and prior to a request for a final inspection.

15. The contractor shall keep the pavement free of all dust, dirt and construction debris. The contractor shall implement and maintain dust control measures.

16. All unpaved, disturbed areas in the County right-of-way shall be properly graded, restore with a minimum of four inches of top soil and seeded with seeding class 1 per the requirements of the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction".

17. Property corners shall be carefully protected until a professional land surveyor references them. The contractor at his/her cost shall replace property monuments and other structures disturbed or damaged during construction.

18. The contractor shall be responsible for protecting utility property from construction operations. The contractor shall contact J.U.L.I.E. for utility locations. The J.U.L.I.E. phone number is 1-800-892-0123. They need a minimum of 48 hours advance notice.

19. In case of laying water supply storm sewer and/or sanitary sewers along or across each other, relevant provisions of Section 8 of the Drainage Manual shall be followed.

20. The contractor shall keep all the traffic lanes open to traffic and provide complete traffic control and protection in accordance with 701 and Article 107.09 of the Standard Specification for Road and Bridge Construction, latest edition, adopted by the Illinois Department of Transportation. If the work is to create any obstruction to the traffic on any traffic lane or needs to close a lane or a road for any period of time, the Winnebago County Highway Department shall be informed a minimum of five days in advance with a work schedule so that Winnebago County can issue a press release for the information to the general public. A traffic control and protection and detour plan in accordance with the relevant provisions of IDOT Standard Specifications shall be submitted for approval.

Not to be used for bidding purposes

Not to be used for bidding purposes

file: I:\District Projects\Cherry Valley Parallel FM 1420\Engineering\Dwgs\Standard Sheets.dwg

Rock River Water Reclamation District

ROCK RIVER WATER RECLAMATION DISTRICT
3501 KISHWAUKEE STREET
ROCKFORD, ILLINOIS 61109
(815) 387-7660

No.	DATE	REVISION	INT.

CHERRY VALLEY PARALLEL FORCEMAIN
CAPITAL IMPROVEMENT PROJECT #1420

PROPOSED FORCEMAIN ALIGNMENT
PLAN & PROFILE SEQUENCE

Sheet No. 23 OF 80

Date 1/16/2019

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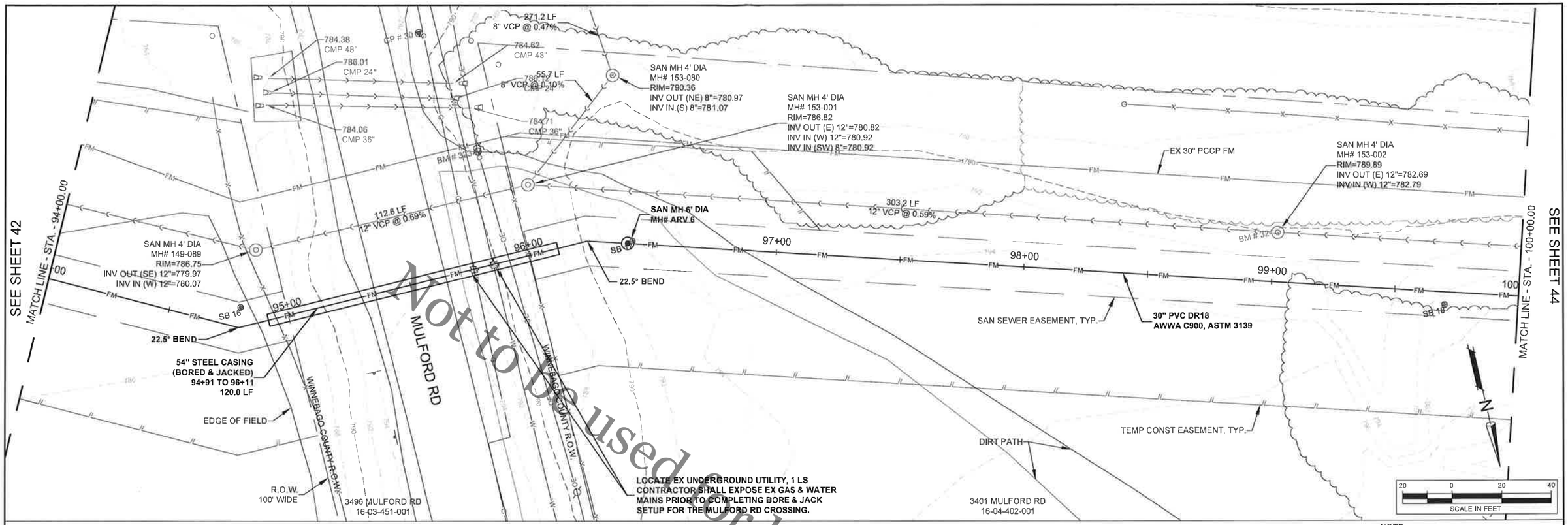

NOTE:
1. ALL PROPOSED FORCE MAIN PIPING SHALL BE 30" DIA. DR 18 C900 PVC W/ ASTM 3139 JOINTS UNLESS NOTED OTHERWISE.
2. ALL FITTINGS SHALL BE CLASS 350 D.I. AWWA C-110.
3. SEE SHEETS 5-8 FOR HORIZONTAL & VERTICAL CONTROL.

Not to be used for bidding purposes

Rock River Water Reclamation District
ROCK RIVER WATER RECLAMATION DISTRICT
3501 KISHWAUKEE STREET
ROCKFORD, ILLINOIS 61109
(815) 387-7660

No.	DATE	REVISION	INT.

CHERRY VALLEY PARALLEL FORCEMAIN
CAPITAL IMPROVEMENT PROJECT #1420

PLAN & PROFILE STA. 94+00.00 TO 100+00.00

Sheet No. 43 OF 80

Date 2/7/2019

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file: I:\District Projects\Cherry Valley Parallel FM 1420\Engineering\Dwgs\Design.dwg

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Illinois Department of Transportation
Office of Highways Project Implementation / Region 2 / District 2
819 Depot Avenue / Dixon, Illinois 61021-3500

PROGRAM DEVELOPMENT
Project Support
Route: US 20 / I-39
County: Winnebago
Description: Install new sanitary sewer main from South Mulford Road and South Perryville Road, Rockford

March 5, 2019

Rock River Water Reclamation District
3501 Kishwaukee Street
Rockford, Illinois 61126

Dear Permit Applicant:

Enclosed is your approved copy of Utility Permit, District Serial No. **2-19-084.** This permit allows you to proceed immediately with the proposed construction you requested to perform in, upon, along or under a State maintained roadway, as noted therein. This permit in no way presumes to release you from conforming with County or Municipal zoning regulations.

When the work is completed and the right-of-way is restored, please sign this letter as indicated below and return it to this office via mail or email at DOT.D2.Permits@illinois.gov. The letter must be returned within **180 days** of the date of issuance, unless a time extension is given, otherwise the permit becomes null and void.

Please request clarification of the permit in the event the terms and specifications are not clear.

If you have any questions, please contact Dan Long, Project Support Engineer at (815) 284-5353.

Sincerely,

Kevin Marchek, P.E.
Region Two Engineer

Masood Ahmad

By: Masood Ahmad, P.E.
Engineer of Program Development

DL.fd.ps22
Enclosures

Completed this _____ day of _____, 20_____.

Signed _____

Not to be used for bidding purposes

Not to be used for bidding purposes

Abandoned pipes over 6" in diameter that will be left in place under the curb & gutter or under the pavement, are to be filled with flowable fill (CLSM).

"Significant" Rated Route Condition 2
Speed 70 Potential Drop Off NO
ADT 53,900
Work Zone Time Restriction:
ACCESS CONTROL

No work shall be performed from vehicles parked on, or equipment stored on, the throug traffic lanes or shoulders of the Freeway / Interstate Route or any ramps or shoulders leading thereto.

Illinois Department of Transportation

Utility Permit

FEB 07 2019

See attached Special Provisions & Traffic Control Standards.

Public Improvement Yes ☒ No
IDOT Permit No. 219084
Utility Reference No.

I (We) Rock River Water Reclamation District (Name of Applicant), 3501 Kishwaukee St., P.O. Box 7480 (Mailing Address)

Rockford (City), Illinois 61126-7480 (State & Zip), hereinafter termed the Permittee,

request permission and authority to occupy, and to do certain work herein described on, the right-of-way of the State highway

known as U.S. Highway 20 / Interstate 39, Section Rockford,

~~from~~ BETWEEN S. Mulford Rd. ~~to~~ AND S. Perryville Rd. in Winnebago County.

The work is described in detail below and/or on the attached sketch or plans. 42.225436, -88.980658

Install a new 54" diameter steel casing pipe underneath U.S. 20/I-39 from Right-of-Way to Right-of-Way, perpendicular to the existing Right-of-Way centerline, approximately 800' southwest of the Perryville Road Bridge over U.S. 20/I-39 (Bridge No. 101-0098). The proposed casing pipe will carry a new 30" diameter sanitary sewer force main.

Plan sheets and specificaitons pertaining to this segment of the project are attached with this application. Complete plans and specifications can be provided upon request.

This permit covers the operation and presence of specified equipment, material or facility on the right-of-way that may be related to the authorized work. A copy of this permit must be present when crews or equipment occupy highway right-of way. Failure to comply may result in the cessation of all construction.

This permit is subject to conditions and restrictions of Part 530 of Title 92 of the Illinois Administrative Code, Accommodation of Utilities on Right-of-Way of the Illinois State Highway System. The removal, relocation or modification of facilities permitted to occupy the right-of-way is governed by Section 9-113 of the Illinois Highway Code, as amended by Public Act 92-0470. The Permittee agrees to comply with the requirements of these laws and with all terms and conditions established by this permit. This permit is subject to revocation by the Department on violation of the terms and conditions governing its use.

The contractor will be required to monitor the pavement elevations before any work is started and if a dewatering system is installed.

2-6-2019
Signature of Agent for Permittee — Date

Christopher T. Baer, PE
Name of Permittee (Print or Type)

3501 Kishwaukee St., PO Box 7480
Mailing Address

Rockford — IL — 61126-7480
City — State — Zip

2 DAYS NOTICE REQUIRED PRIOR TO BORING OPERATIONS!! CONTACT MR. JAN TWARDOWSKI OF IDOT AT 815-284-5429

The work authorized by this permit shall be completed by _____ or within 180 days after the date of approval by the Department, otherwise the permit will be considered null and void.

Public Improvement Projects only: The anticipated letting date is —

This permit allowing occupancy and work on state right-of-way is approved. The Utility Coordination Council established by the Department in the area covered by this permit is the Dixon Utility Coordination Council

Karin Marchetti
Department of Transportation

03-04-2019
Date

sewer main construction / repair shall be done in accordance with the latest issue of the Standard Specifications for Water & Sewer Main Construction in Illinois

The right-of-way shall be returned to a condition which is at least as good as it was before the permitted work took place, in a timely manner. This includes restoration of entrances, sidewalks & turf areas.

Not to be used for bidding purposes

This permit is subject to the conditions and restrictions **established in accordance with the Illinois Highway Code and** Part 530 of Title 92 of the Illinois Administrative Code including but not limited to the following:

(1) The applicant represents all parties in interest and shall furnish material, do all work, pay all costs and shall in a reasonable length of time restore the damaged portions of the highway to a condition similar or equal to that existing before the commencement of the described work, including any landscape restoration necessary. (See Section 530.250 of Title 92).

(2) The proposed work shall be located and constructed to the satisfaction of the Regional Engineer or his duly authorized representative. No revisions or additions shall be made to the proposed work on the right-of-way without the written permission of the Regional Engineer or his duly authorized representative (See Section 530.200 of Title 92). **In certain circumstances the Department may require that the construction plans and/or the as-built documents be sealed by an Illinois Registered Professional Engineer.** Typical of such projects would be petroleum or gas pipelines.

(3) The applicant shall at all times conduct the work in such a manner as to minimize hazards to vehicular and pedestrian traffic. All signs, barricades, flaggers, etc., required for traffic control shall be furnished by the applicant. (See Section 530.240 of Title 92).

(4) The applicant must ascertain the presence of Highway Authority Agreements established in accordance with 35 Ill. Admin. Code Section 742.1020 in the path of its proposed installation and take precautions to protect its workers, human health and the environment in those areas. (See Section 530.240 of Title 92). Where contamination is encountered through excavation in the ROW, it should be managed offsite and IDOT's generator number for the appropriate county may be used.

(5) The applicant shall not trim, cut or in any way disturb any trees or shrubbery along the highway without the approval of the Regional Engineer or his duly authorized representative. (See Section 530.600 of Title 92).

(6) The facilities authorized to occupy the right-of-way by this permit are subject to removal, relocation or modification by the permittee at no expense to the State on notice given by the Department in accordance with Section 9-113 of the Illinois Highway Code, as amended. Participation by the permittee in the UTILITY Coordination Council identified on page one of this permit is required as a condition of this permit. Permittee shall cooperate with the Department with the scheduling of any removal, relocation or modification deemed necessary for highway or highway safety purposes, and, if Utility Coordination Council participation is required by this permit, with the activities of the council identified on the first page of this permit. (See Section 9-113 of the Illinois Highway Code.) Use of and compliance with current IDOT Traffic Control Standards will be required.

(7) If the applicant and the District cannot agree either on whether the permit should be issued or on what conditions would be appropriate, the applicant may, within 30 days of the issuance of written notice of the District's position, appeal the District's determination to the Chief of the Department's Central Bureau of Operations. (See Section 530.900 of Title 92).

(8) The permittee agrees to fully comply with the following legal obligations in advance of entering and while upon any Right-of-way within the Illinois State Highway System.

a) Only a permit issued by the Department under this Part will satisfy the "written consent" requirement of Section 9-113 of the Illinois Highway Code (the Code).
b) A permit from the Department grants a license only to undertake certain activities in accordance with this Part on a State right-of-way, and does not create a property right or grant authority to the permittee to impinge on the rights of others who may have an interest in the right-of-way. Such others might include an owner of an underlying fee simple interest if the right-of-way is owned as an easement or dedication of right of way, an owner of an easement, or another permittee.
c) It shall be the responsibility of the permittee to ascertain the presence and location of existing above-ground or underground facilities on the highway right-of-way to be occupied by their proposed facilities. The Department will make its permit records available to a permittee for the purpose of identifying possible facilities. When notified of an excavation or when requested by the Department, a permittee shall locate, physically mark, and indicate the depth of its underground facilities within 48 hours excluding weekends and holidays.
d) The permittee shall avoid conflicts with any existing underground or above-ground facilities on or near the highway right-of-way. Both the Department and J.U.L.I.E. are to be contacted for assistance during the application process.
e) The permittee shall comply with all other applicable laws relating to the placement of utility lines.
f) The issuance of a utility permit by the Department does not excuse the permittee from complying with any existing statutes, local regulations or requirements of other Department (e.g., oversize and overweight vehicles) or the requirements of other State agencies including, but not limited to, the following:

Illinois Commerce Commission, Illinois Department of Agriculture
Illinois Department of Natural Resources, Illinois Department of Mines and Minerals
Illinois Environmental Protection Agency, Illinois Historic Preservation Agency

g) Rights of abutting and underlying property owners are protected by common law and Sections 9-113 and 9-127 of the Code. The permittee will address these rights prior to initiating activities on State right-of-way. The Department will not be a party in any negotiations between the utility and abutting property owners.
h) In no case shall the permit give or be construed to give an entity any easement, leasehold or other property interest of any kind in, upon, under, above or along the State highway right-of-way.
i) Each person responsible for a utility, in place on the effective date of this Part, on a State highway right-of-way shall notify the Department in writing, if that facility does not comply with this Part. The Department shall treat such a notice as a request for a variance under Section 530.130. Until informed that a variance will not be granted, a person responsible for a pre-existing utility will not be in violation of this Part. The failure to provide such notice constitutes a violation of this Part and of the utility accommodation permit (if any) and would justify the imposition of the sanctions set forth in Section 530.810.

Work to be coordinated with Department Representatives:

Ryan Renkes - Utility Permit technician — Phone (815) 284-5471
Kevin Hansen - traffic control technician — Phone (815) 284-5474

Utility Contact Person: Matt Campbell, mcampbell@rrwrd.illinois.gov — Phone (815) 387-7684

Work to be done by:

Contractor: To be determined.

Daytime Phone: ( ) _____ Emergency Phone: ( ) _____

Traffic control operation:

Number of lane closures: _____ Time of closures: _____

Not to be used for bidding purposes

Call JULIE at 1-800-892-0123 before any excavation or sign installations.

The Illinois Department of Transportation is **NOT** a member of JULIE. If you are near any overhead lighting, intersection lighting or traffic signals, contact the IDOT Traffic Office at 815-284-5469 at least 48 hour prior to work.

Not to be used for bidding purposes

As per Article 107.09 of the Standard Specifications for Road and Bridge Construction:

- On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical.
- No broken pavement, open holes, trenches, barricades, cones, or drums will remain on or adjacent to the traveled way and all lanes shall be opened to traffic during any legal holiday period, except where major bridge construction and/or other roadway reconstruction (excluding patching and resurfacing) requiring overnight lane closures would make it impractical. The legal holidays will include:

New Year's Day	Easter	Memorial Day	Independence Day
Labor Day	Thanksgiving Day	Christmas Day	

Day of Holiday	Length of Holiday Period
Sunday	3 P.M. Friday to 11:59 P.M. Monday
Monday	3 P.M. Friday to 11:59 P.M. Monday
Tuesday	3 P.M. Friday to 11:59 P.M. Tuesday
Wednesday	3 P.M. Tuesday to 11:59 P.M. Wednesday
Thursday	3 P.M. Wednesday to 11:59 P.M. Sunday
Friday	3 P.M. Thursday to 11:59 P.M. Sunday
Saturday	3 P.M. Thursday to 11:59 P.M. Sunday

Layout and construction shall be as indicated on the attached drawing(s).

The sewer main and/or watermain and/or service line location and construction on state highway right-of-way shall be performed in accordance with the conditions and restrictions of the attached Special Provisions.

On conventional highways, boring or jacking under state highways shall be accomplished from pits located a minimum distance from the edge of pavement of 10 feet (3 m) plus the depth of the pit without shoring. If shoring is used, the pits shall be located a minimum of 10 feet (3 m) from the edge of pavement. The shoring shall be installed immediately after excavation of the pit and it shall be designed, erected, supported, braced, and maintained so that it will safely support all vertical and lateral loads that may be imposed upon it during the boring or jacking operation. On fully access controlled highways, the bore pits shall be located a minimum of 30' from the edge of pavement.

Curb ramps for sidewalks shall be repaired using Standard 424001-05 with the BDE specification of August 1, 2005 for Detectable Warnings meeting the ADAAG.

Sidewalks will be restored following Section 424 of IDOT's Standard Specifications for Road and Bridge Construction, latest version.

Whenever any of the work done under this permit involves any obstruction or hazard to the free flow of traffic in the normal traffic lanes, the Applicant shall, at his expense, provide all required traffic control devices in accordance with the State of Illinois Manual on Uniform Traffic Control Devices, amendment thereof, and the attached Standard(s).

The Permittee or Contractor shall have a copy of the approved permit available at the site during construction.

Storage of construction material or vehicles on state right-of-way is prohibited.

If relocation of any highway signs is necessary in order to complete the work authorized by this permit, the Applicant shall contact this office at 815-284-5469 with at least 48 hours prior notice.

The use of Concrete Barrier wall on utility permits must be reviewed and approved by IDOT Traffic Operations prior to use. Please contact Kevin Henson at (815) 284-5474.

Not to be used for bidding purposes

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGWAYS
District 2, Region 2
819 Depot Avenue Dixon, Illinois 61021
Telephone (815) 284-2271

SPECIAL PROVISIONS FOR CONSTRUCTION OF WATERMAIN AND/OR SEWER MAIN SYSTEMS WITHIN THE HIGHWAY RIGHT-OF-WAY ON STATE MAINTAINED ACCESS CONTROLLED ROADWAYS.

CONDITIONS AND RESTRICTIONS:

The location, construction and maintenance of installing water, sewer mains and/or service lines on state right-of-way shall comply with all local, state and federal requirements. All utility installations are subject to the policy on "Accommodations of Utilities on Right-Of-Way of the Illinois State Highway System", adopted by the state of Illinois February, 1992.

This permit is granted upon the express condition and provision that authority or permission to use the lands to be occupied by the described facilities shall be secured from land owners or public authorities as and where required by law. The applicant shall be responsible for contacting all utility companies having existing underground facilities in the proposed construction area, prior to commencing with the work.

All turf areas which are disturbed during the course of this work shall be restored to the original line and grade and be promptly seeded in accordance with Standard State Specifications.

All major tree roots of trees on the State's right-of-way shall be protected by tunneling or augering wherever the underground facility is closer than two-thirds (2/3) of the radius of the drip line to the trunk of trees. All limbs and branches of state trees shall be protected from equipment operating in the area.

Curb ramps for sidewalks shall be repaired using Standard 424001-05 with the BDE specification of August 1, 2005 for Detectable Warnings meeting the ADAAG.

Sidewalks will be restored following Section 424 of IDOT's Standard Specifications for Road and Bridge Construction, latest version.

HIGHWAY CROSSINGS:

Underground water or sewer main systems shall be bored or pushed under the roadway pavement and shoulders at or as near as practicable to a 90 degree angle with the highway centerline.

Encasement of water and sewer mains will not be required if the crossing is made with a continuous or restrained joint carrier pipe that provides a continuous pipeline that will be water tight and lend itself to being jacked into place.

Encasement of water and sewer mains will be required when a spigot type or mechanical joint type mains are used. Encasement of water and sewer mains will also be required in areas where unstable soil conditions are involved or other physical conditions exist to indicate possible failure of the mains in the future.

Water and sewer crossings of highway under traffic (as noted above) shall be made in a steel encasement pipe of a larger diameter which shall be bored, pushed or jacked under the roadway without disturbing the pavement or interfering with through traffic.

Water and sewer crossings of new or proposed highways under construction may be made in extra-strength pipe in lieu of encasement if installed by the open trench method prior to paving.

Water and sewer crossings of all "fully access controlled highways" shall be encased.

Boring or jacking under state highways shall be accomplished from pits located outside of the access-controlled

Not to be used for bidding purposes

right-of-way. The shoring shall be installed immediately after excavation of the pit and it shall be designed, erected, supported, braced, and maintained so that it will safely support all vertical and lateral loads that may be imposed upon it during the boring or jacking operation.

Trenches shall be backfilled in six (6") inch layers, each layer to be thoroughly compacted and the right-of-way restored to its original condition, including reseeding or sodding of all disturbed areas. The Applicant shall maintain the backfill until all settlement has ceased.

Underground utilities will not be permitted to occupy highway crossroad culverts, or other large drainage structures constructed for drainage purposes.

PARALLEL CONSTRUCTION:

Parallel installation of underground utilities on right-of-way of conventional highways shall be located as near as possible on an alignment not over eight (8') feet from and parallel to the right-of-way line. Variations from this distance (approved by the Department) shall be covered by an 'as built" plan upon completion of the installation.

Underground utilities will not be permitted on the shoulders of any highway under the jurisdiction of the Department.

All underground appurtenances, such as valve boxes, valve vaults and manholes, shall not extend above the surface of the right-of-way being occupied.

In no case shall the highway pavement be closed to through traffic by excavating outside the limits of the pavement, by waste dirt, by equipment or other operations. The traveled portion of the pavement shall not be blocked by loading, by backfilling or hauling equipment. Trenches shall not be backfilled by any equipment traveling across the pavement.

All excavated material, gravel, sod, mud, or any other material related to the work being performed under this permit, shall be kept off the pavement so as not to cause a hazardous condition to the through traffic on the highway. If this provision is not complied with, the State will deem it necessary to stop all operations in connection with this permit.

All underground utilities shall be placed under existing Portland Cement Concrete or bituminous surfaced driveways, sidewalks and side roads approaches by augering unless otherwise specifically specified by the Department.

TRAFFIC CONTROL DEVICES:

Whenever any of the work under this permit involves any obstruction or hazard to the free flow of traffic in the normal traffic lanes, plans for the proposed method of traffic control must be submitted to and approved by the Region Engineer at least 72 hours before the start of work.

All traffic control shall be in accordance with the State of Illinois Manual on Uniform Traffic Control Devices and amendments thereof. It should be noted that standards and typical placement of devices shown in the Uniform Manual are minimums. Many locations may require additional or supplemental devices.

Violations of this policy will result in the withholding of all future or pending requests for permits until the necessary corrective measures have been accomplished.

The use of Concrete Barrier wall on utility permits must be reviewed and approved by IDOT Traffic Operations prior to use. Please contact Kevin Henson at (815) 284-5474.

PERFORMANCE BOND:

If required, the Applicant shall deposit with the Department of Transportation an Individual Highway Permit Bond. Failure of the Applicant to comply with this bond requirement shall constitute a forfeiture of the permit.

Not to be used for bidding purposes

Dewatering

Soils boring logs indicate that groundwater levels could encroach on the construction limits of this casing boring. The groundwater, in addition to the presence of water bearing sand at the elevation of the proposed casing boring, could make the dewatering of this excavation very difficult. It shall be the responsibility of the Contractor to control the groundwater and divert flow during construction in order to keep the construction zone free of water. The method of dewatering the excavation shall be subject to the approval of the Engineer.

The Contractor shall maintain dry trenches at all times to the satisfaction of the Department.

The Contractor is responsible for maintaining water service for any residential wells that he dries, and shall be liable for damage to any wells or public and private water systems.

Ground water 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 Department, with all erosion control specifications taken into account.

If dewatering well points are required by local the County Public Heath Department, then permits shall be filed. The installation, operation and removal of well points shall conform to the Health Department requirements. The Health Department shall be notified prior to installing dewatering wells and prior to abandonment of wells so that they may be present if they desire.

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, insurances, 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, the device(s) shall be equipped with an adequate muffler and properly maintained to prevent excessive noise.

The contractor will be required to monitor the pavement elevations before any work is started and if a dewatering system is installed.

Not to be used for bidding purposes

TRENCHLESS CONSTRUCTION:

Unless explicitly authorized in the permit, all installation of mains, pipes, conduits, etc., under State pavements shall be done by approved trenchless construction methods contained herein.

All operation pits shall be located a minimum of 9.1 M (30 feet) from the edge of pavement on fully access controlled highways and at a minimum distance of 3.1 M (10 feet) plus the depth of the pit without shoring on conventional highways. If shoring is used, the pits shall be located a minimum of 3.1 M (10 feet) from the edge of pavement on conventional highways. The shoring shall be installed immediately during excavation of the pit, and it shall be designed, erected, supported, braced, and maintained so that it will safely support all vertical and lateral loads that may be imposed upon it during the boring or jacking operation.

'The operation pits necessary to complete the casing installation, shall be excavated in accordance with OSHA 29 CFR 1926.650 in "construction regulations for excavations".

The method/system chosen for the "Protective System" should be included with the permit application, for approval prior to issuance of the Permit."

Pits for boring or jacking shall be excavated no more than 48 hours in advance of boring or jacking operations and backfilled within 48 hours after boring or jacking operations are completed. While pits are open, they shall be clearly marked and protected by barricades. The use of Concrete Barrier wall on utility permits must be reviewed and approved by IDOT Traffic Operations prior to use. Please contact Kevin Henson at (815) 284-5474.

Encasement of underground utilities shall meet the latest requirements of the "Accommodation of Utilities on Right-of-way of the Illinois Highway System". When casing pipe is required, crossings shall be accomplished with a steel casing pipe conforming to ASTM A139 Grade A.

The casing shall be continuous either by one piece fabrication or by field welded joints done in accordance with AWWA C206. The steel casing material shall have a minimum yield strength of 241,325 kpa (35,000 psi), and the following minimum wall thickness:

Under 350 mm (14 in)	4.8 mm (0.188 in)
350 mm to 400 mm (14 and 16 in)	6.4 mm (0.250 in)
450 mm (18 in)	6.4 mm (0.250 in)
500 mm (20 in)	6.4 mm (0.250 in)
600 mm (24 in)	7.9 mm (0.312 in)
750 mm (30 in)	7.9 mm (0.312 in)
900 mm (36 in)	9.5 mm (0.375 in)
1050 mm (42 in)	9.5 mm (0.375 in)
1200 mm (48 in)	9.5 mm (0.375 in)
1375 mm (54 in)	12.7 mm (0.500 in)
1500 mm (60 in)	14.6 mm (0.575 in)
1650 mm (66 in)	16.5 mm (0.650 in)
1800 mm (72 in)	16.5 mm (0.650 in)

The casing pipe shall have a minimum cover of 0.8 M (60 inches) from the bottom of the lowest point of the highway, includes all of the right-of-way, including structures, ditches and embankments, to the top of the casing pipe. Underground utility crossings without encasement, when permitted, will generally preclude future maintenance or repair within the area between ditch lines or toes of slopes.

Borings over 152 mm (6 inches) in diameter shall be accomplished with an auger and following pipe (casing pipe). The diameter of the auger shall not exceed the outside diameter of the casing pipe by more than 25 mm (1 inch).

Borings 152 mm (6 inches) and under may be accomplished by either jacking using a guided whip auger, or augering as previously described. The inner diameter of the casing pipe shall not exceed

Not to be used for bidding purposes

the outer diameter of the carrier pipe by more than 152 mm (6 inches). When the proposed installation is made by boring, care must be taken to make the bore in a straight line and of uniform diameter. If an obstruction is encountered, the operation shall be suspended at once and another trial made at a different location. The pipe casing shall not be retrieved but shall be completely backfilled and sealed.

If, as a result of the boring operation, excessive voids or too large a bore hole is produced, pressure grouting should be applied through fittings installed in the easing pipe wall. The pressure grouting shall fill all excessive voids on the outside of the casing pipe. The grout mixture shall consist of a clean, dry concrete mix, composed of one part portland cement and ten parts of sand and gravel by volume or other mix approved by the Engineer.

When pushing pipe or casing under the State's pavement, the shoulder shall not be disturbed. Suitable lubricants, if required, may be used to decrease the frictional resistance on the exterior surface of the pipe being jacked.

Care shall be taken in arranging the jacking equipment and struts to ensure that thrust is applied parallel with the centerline of the pipe or as approved by the Engineer. A jacking head or collar shall be used to apply pressure from the jack to the pipe.

Casing spacers, sized precisely for the individual installation, shall be used. The maximum allowable movement resulting from the spacer installation shall be 51 mm (2 inches) in any direction within the casing pipe. The spacers shall be installed at a minimum of 3.1 M (10 feet) intervals. If the carrier pipe sections measure less than 3.1 M (10 feet) in length, provide a minimum of two (2) spacers per pipe section.

Voids between the casing pipe and carrier pipe shall be filled with blown sand or pea gravel meeting the requirements of the "Standard Specification for Road and Bridge Construction", <u>if required</u> by Engineer. The ends of the casing pipe shall be sealed with either: brick and mortar, concrete, or synthetic rubber and seals specifically made for this purpose.

Installation of underground utilities in the-vicinity of trees which are to be preserved shall be accomplished by tunneling. The tunneling limits shall coincide with the dripline of the tree(s) to be preserved.

Tree tunneling shall consist of boring within the specified area with an auger. The diameter of the auger shall be at least 152 mm (6 inches) greater than the bell of the pipe to be installed. A 102 mm (4 inch) sand cushion shall be placed in the bored hole prior to installation of the pipe. The pipe shall be pushed, carefully, into place so as not to disturb the bored hole. Voids surrounding the pipe shall be filled with sand meeting the requirements of the "Standard Specification for Road and Bridge Construction".

Refer to the "Standard Specifications for Water and Sewer Construction in Illinois", current edition. Section 23 Trenchless Construction Methods (TCM).

Not to be used for bidding purposes

Void Elimination (Casing Pipe Exterior)

Grouting tubes shall be installed along the casing pipe to facilitate this process if required. If deemed necessary by the Department, immediately after installation, the Contractor shall pressure grout the exterior of the steel casing pipe at appropriate intervals to ensure that any voids created during boring and/or dewatering operations are completely filled. The Contractor shall verify the acceptability of all void elimination methods and materials with IDOT prior to performing the work.

Methods

The Contractor shall install the steel sleeve 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 sleeve 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 IDOT Geo-Technical Engineer Jan Twardowski (Phone: 815-284-5429).*

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, provision shall be made for accurate checking of line and grade so that no deviation of planned alignment or grade will occur.

Responsibility

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

Not to be used for bidding purposes

Personal Protective Equipment

All personnel on foot, excluding flaggers, within the highway right-of-way shall wear a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have a manufacturer's tag identifying them as meeting the ANSI Class 2 requirement."

Flaggers

All flaggers shall be certified by an agency approved by the Department. While on the job site, each flagger shall have in his/her possession a current driver's license and a current flagger certification I.D. meeting Department requirements. For non-drivers, the Illinois Identification Card issued by the Secretary of State will meet the requirement for a current driver's license. This flagger certification requirement may be waived by the Engineer for emergency situations that arise due to actions beyond the Contractor's control where flagging is needed to maintain sate traffic control on a temporary basis.

The signaling methods used by flaggers shall comply with those contained in the Department's "Traffic Control Field Manual" current at the time the permit is issued.

Flaggers shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green, or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 2 garments and flagger traffic control paddles. Other types of garments may be substituted for the vest as long as the garments have a manufacturer's tag identifying them as meeting the ANSI Class 2 requirement. The longitudinal placement of the flagger may be increased up to 100 ft (30 m) from that shown on the plans to improve the visibility of the flagger. Flaggers shall not encroach on the open lane of traffic unless traffic has been stopped.

For nighttime flagging, flaggers shall be illuminated by an overhead light source providing a minimum vertical Illuminance of 10 fc (108 lux) measured 1 foot (300 mm) out from the flagger's chest. The bottom of any luminaire shall be a minimum of 10 feet (3 m) above the pavement. Luminaire(s) shall be shielded to minimize glare to approaching traffic and trespass light to adjoining properties.

Nighttime flaggers shall be equipped with fluorescent orange or fluorescent orange and fluorescent yellow/green apparel meeting the requirements of ANSI/ISEA 107-2004 or ANSI/ISEA 107-2010 for Conspicuity Class 3 garments.

Flaggers shall be provided per the traffic control plan and as follows:

(a) Two Lane Highways. Two flaggers will be required for each separate operation where two-way traffic is maintained over one lane of pavement. Work operations controlled by flaggers shall be no more than 1 mile (1600 m) in length. Flaggers shall be in sight of each other or in direct communication at all times. Direct communication shall be obtained by using portable two-way radios or walkie-talkies.

The Engineer will determine when a side road or entrance shall be closed to traffic. A flagger will be required at each side road or entrance remaining open to traffic within the operation where two-way traffic is maintained on one lane of pavement. The flagger shall be positioned as shown on the plans or as directed by the Engineer.

(b) Multilane Highways. At all times where traffic is restricted to less than the normal number of lanes on a multilane pavement with a posted speed limit greater than 40 mph and the workers are present, but not separated from the traffic by physical barriers, a flagger shall be furnished to support the workers and to warn and direct traffic. One flagger will be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic.

Flaggers will not be required when no work is being performed, unless there is a lane closure on two-lane, two-way pavement.

Not to be used for bidding purposes

Signs & Traffic Control Devices

Signs

Orange signs shall be fluorescent orange in color.

Sign sheeting shall be mounted on materials such as aluminum, rigid plastic or exterior grade plywood. Signs utilizing a base of fabric, fiberboard, or other highly flexible or frangible material will not be permitted, except signs having a reflective sheeting face bonded to a durable plastic or fabric base will be permitted, (a) in work zones with posted speeds above 45 mph (70 km/hr) when workers are present to maintain the devices and (b) in all work zones having posted speeds of 45 mph (70 km/hr) or less.

When work operations exceed four days, signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, temporary sign supports may be used where posts are impractical. When post mounting is not required, either temporary sign supports or sign trailers may be used.

Post mounted signs shall be a "breakaway" design. The signs shall be within five degrees of vertical. Two posts shall be used for signs greater than 16 sq ft (1.5 sq m) in area or where the height between the sign and the ground exceeds 7 ft (2.1 m). Bracing no heavier than 2 x 4 in. (50 x 100 mm) wood may be used for added support and shall be placed parallel to the road sloping down toward approaching traffic.

Signs on temporary supports shall meet the requirements of NCHRP Report 350 or MASH. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support as per the manufacturer's specifications.

Sign trailers, when erected, shall have their tires resting on the ground or elevated a maximum of 5 in. (15G mm) above the ground. Weights used to stabilize the trailer shall be sandbags mounted a maximum of 12 in (300 mm) above the ground. To prevent wind induced rolling of the trailer, the wheels shall be chocked with sandbags or the trailer tongue may be pinned. The pinning method shall be designed to give way in the event of a vehicular impact and shall meet the approval of the Engineer.

The sign trailer shall only be attached to its tow vehicle when the sign is actually being moved. The tow vehicle, when not attached to the trailer, shall be parked according to Article 701.11.

"ROAD CONSTRUCTION AHEAD" –or- "UTILITY WORK AHEAD" Signs shall be erected on all side roads located within the project limits.

Traffic Control Devices

Cones are used to channelize traffic during daylight operations.

Type I, II, and III Barricades, Vertical Barricades, and Vertical Panels. Barricades and vertical panels shall have alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass. Barricade stripes shall be 6 in. (150 mm) in width on barricades rails 36 in. (900 mm) or greater in length and 4 in. (100 mm) in width on barricades barricade rails less than 36 in. (900 mm) in length. Type I and Type II Barricades, and Vertical Barricades shall be striped on both

Not to be used for bidding purposes

sides. Type III Barricades shall be striped on both sides where traffic approaches from either direction. The predominant color for other barricade components shall be white, orange, or silver."

Type I, II, and III Barricades. Type I and Type II barricades are used to channelize traffic; to delineate unattended obstacles, patches, excavations, drop-offs, and other hazards; and as check barricades.

Type I barricades are for use on roads with normal posted speeds of 40 mph or less. However, they may be used on higher speed roads provided the reflective area of the upper rail is at least 2 sq ft (0.18 sq m).

Type III Barricades are used to close lanes and to close roads.

Devices having angled striping shall be oriented with the stripes sloping down toward the side on which traffic will pass. Lights on devices shall be mounted on the side of the device on which traffic shall pass and shall not obscure any reflectorized portion of the device.

Vertical Barricades. Vertical barricades are used to channelize traffic, as well as to delineate unattended obstacles, patches, excavations, drop-offs, and other hazards. Vertical barricades shall not be used in lane closure tapers or as check barricades.

Vertical Panels. Vertical panels are used to channelize traffic and to delineate unattended excavations and drop-offs.

Direction Indicator Barricades. Direction indicator barricades are used in lane closure tapers.

Drums. Drums are used to channelize traffic and to delineate unattended obstacles, patches, excavations, drop-offs, and other hazards.

Truck Mounted Attenuators (TMA). TMA units shall have a roll ahead distance in the event of an impact. The TMA shall be between 100 and 200 ft (30 and 60m) behind the vehicle ahead or the workers. This distance may be extended.

Arrow Boards. Arrow boards are used to warn motorists of an upcoming lane closure. Arrow boards shall not be used to direct passing moves into lanes used by opposing traffic or to shift traffic without having a lane change.

On roads with normal posted speeds of 45 mph and above, Type C units shall be used for all operations 24 hours or more in duration, and Type B units may be used for operations less than 24 hours in duration on roads with normal posted speeds less than 45 mph, Type A, B, or C units may be used for all operations.

Flagger Traffic Control Paddle. The "STOP" face shall consist of white letters and border on a red background, The "SLOW" face shall consist of black letters and border on a fluorescent orange background. Areas outside sign borders shall be light blue or black. The portion of the staff within the sign face shall match the sign colors. The staff may consist of two sections joined by a coupling.

Detectable Pedestrian Channelizing Barricade. Detectable pedestrian channelizing barricades are cane detectable and visible to persons having low vision. These barricades are used to channelize pedestrian traffic. The top and bottom rails shall be continuous to allow for detection for hand trailing and cane trailing, respectively. The faces of the barricade rails shall be vertical. The top and bottom panels shall have alternating white and orange stripes sloping at 45 degrees on the side exposed to

Not to be used for bidding purposes

pedestrian traffic. Barricade stripes shall be 6 in. (150 mm) in width. The predominant color for other barricade components shall be white, orange, or silver.

Lights. Lights shall be used on devices as required in the traffic control plan and the following table. Batteries for the sights shall be replaced on a group bases as such times as may be specified by the Engineer.

Circumstance	Lights Required
Daylight operations	None
First two warning signs on each approach to the work involving a night time lane closure	Flashing mono-directional lights
Devices delineating isolated obstacles, excavations or hazards at night. (Does not apply to patching)	Flashing bi-directional lights
Devices delineating obstacles, excavations, or hazards exceeding 100 ft (30 m) in length at night. (Does not apply to widening)	Steady burn bi-directional lights
Channelizing devices for night time lane closures on two-lane roads	None
Channelizing devices for night time lane closures on multi-lane roads	None
Channelizing devices for night time lane closures on multi-lane roads separating opposing directions of Traffic.	None
Devices in nighttime lane closure tapers on Standards 701316 and 701321	Steady burn bi-directional lights
Devices in nighttime lane closure tapers	Steady burn mono-directional lights
Devices delineating a widening trench	None
Devices delineating patches at night on roadways with an ADT less than 25,000	None
Devices delineating patches at night on roadways with an ADT of 25,000 or more	None

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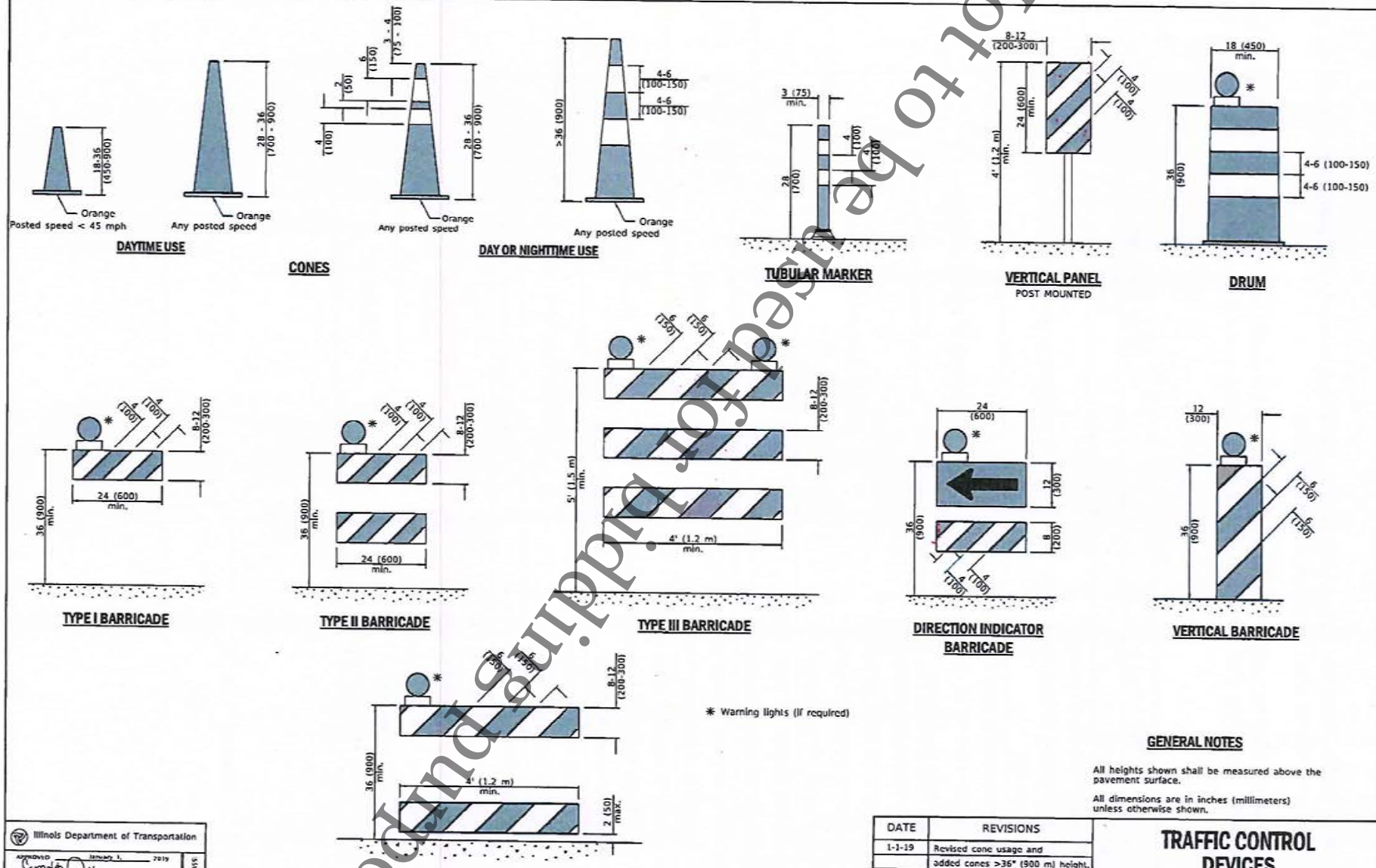
(Signs & TC Devices, 4-2016)



GENERAL NOTES

All heights shown shall be measured above the pavement surface.

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

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

SSRD 1-1-13

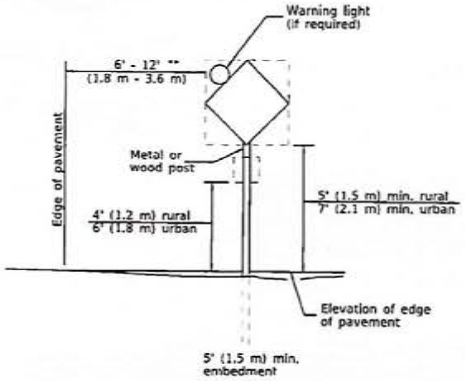
DATE	REVISIONS
1-1-19	Revised cone usage and
	added cones >36" (900 m) height.
1-1-18	Revised END WORK ZONE
	SPEED LIMIT sign from
	orange to white background.

TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

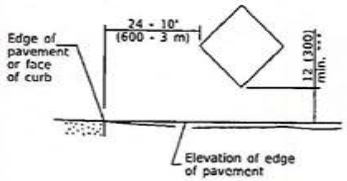
STANDARD 701901-08

Not to be used for building purposes



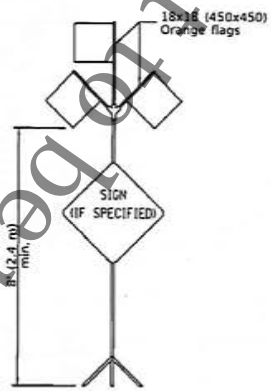
POST MOUNTED SIGNS

** When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.



SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.

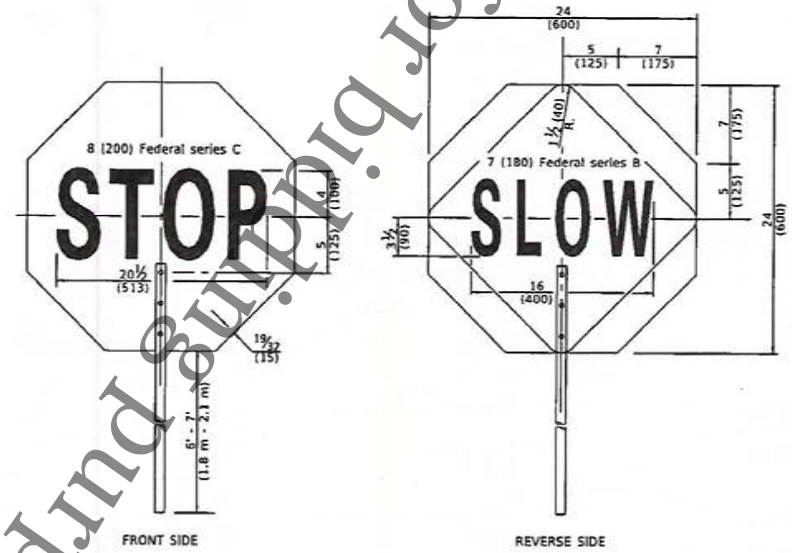


HIGH LEVEL WARNING DEVICE

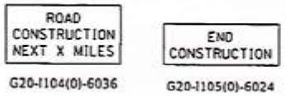
W12-I103-4848

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.



FLAGGER TRAFFIC CONTROL SIGN



G20-I104(0)-6036 G20-I105(0)-6024

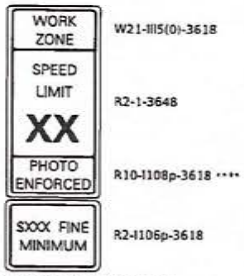
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING



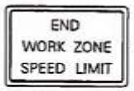
W21-I115(0)-3618

R2-1-3648

R10-I108p-3618 ****

R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.



G20-I103-6036

This sign shall be used when the above sign assembly is used.

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

**** R10-I108p shall only be used along roadways under the juristiction of the State.

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

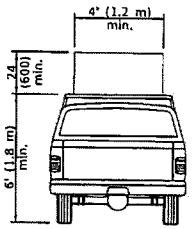
SSRD 1-1-19

TRAFFIC CONTROL DEVICES

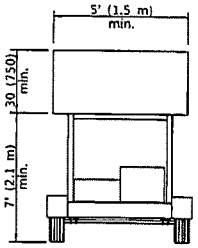
(Sheet 2 of 3)

STANDARD 701901-08

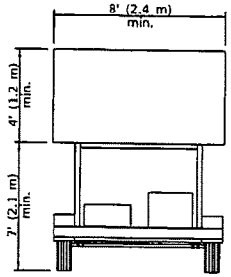
Not to be used for bidding purposes



TYPE A ROOF MOUNTED

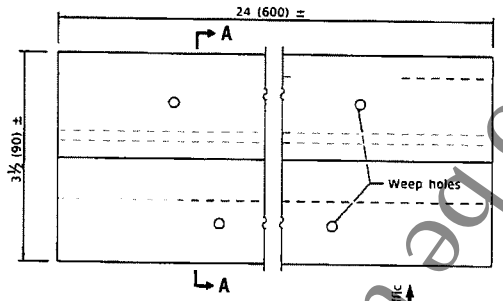


TYPE B ROOF OR TRAILER MOUNTED

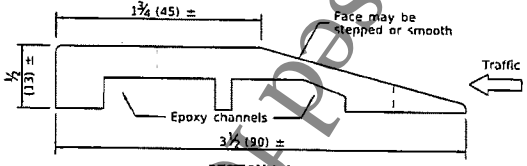


TYPE C TRAILER MOUNTED

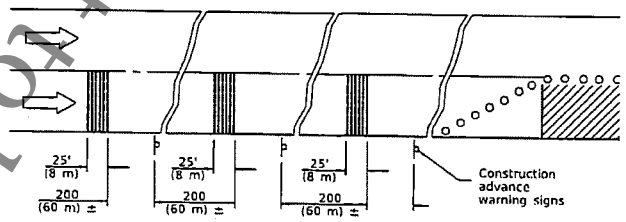
ARROW BOARDS

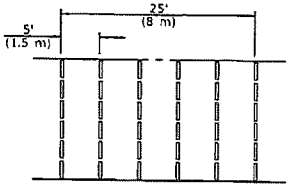


PLAN



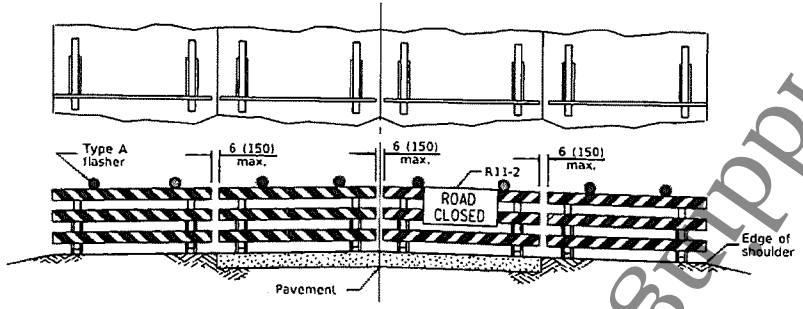
SECTION A-A





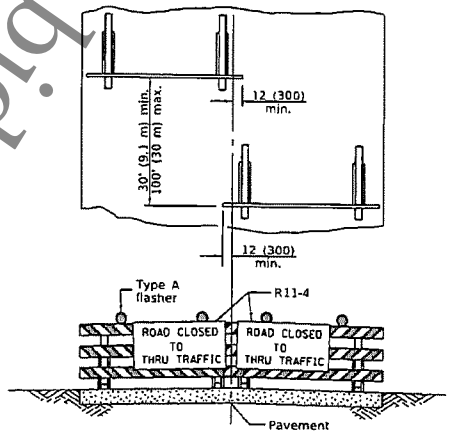
TYPICAL INSTALLATION

TEMPORARY RUMBLE STRIPS



ROAD CLOSED TO ALL TRAFFIC

Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.



ROAD CLOSED TO THRU TRAFFIC

Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

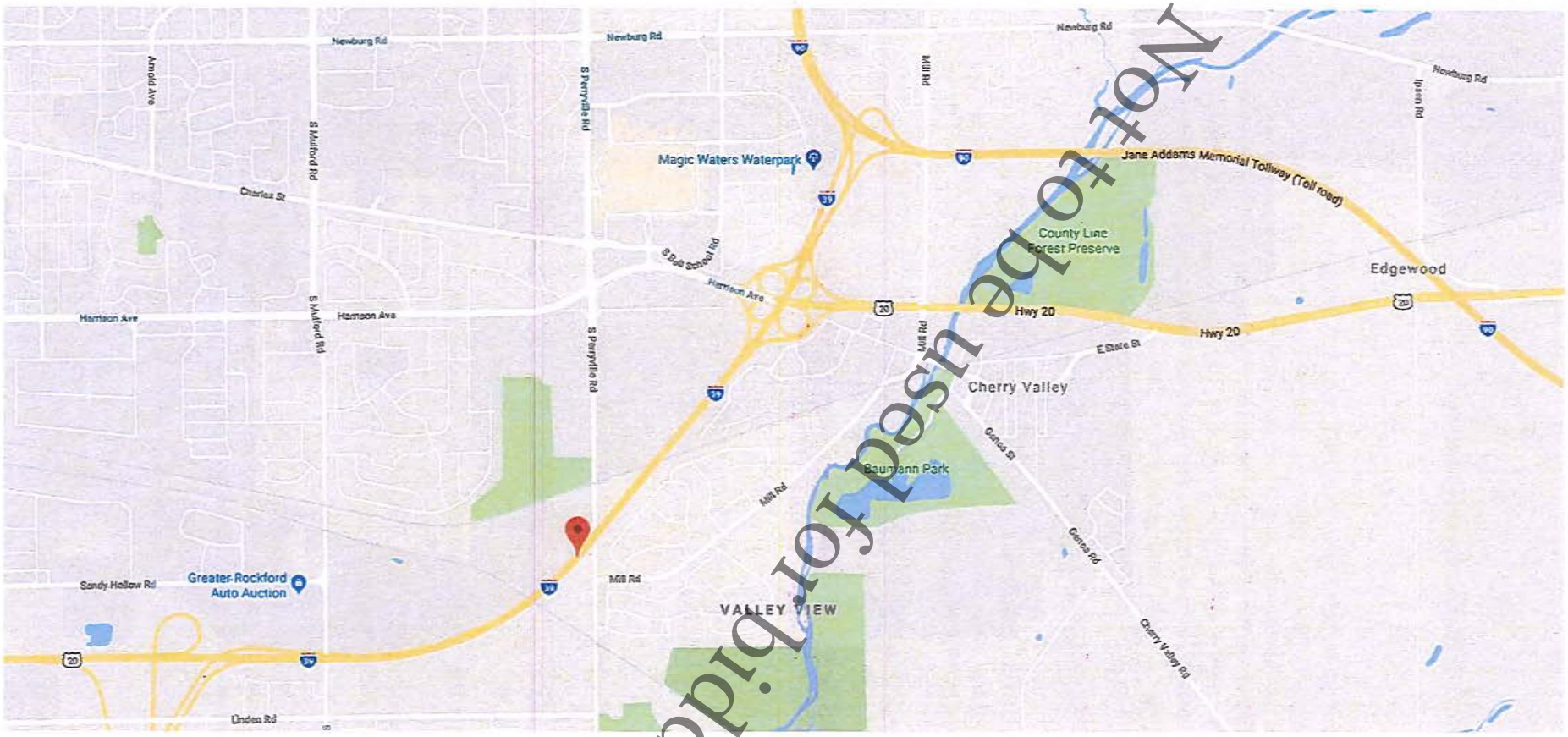
ISSUED 1-1-19

TRAFFIC CONTROL DEVICES

(Sheet 3 of 3)

STANDARD 701901-08

Not to be used for bidding purposes



Not to be used for bidding purposes

Section II 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 General Provisions and Technical Specifications for Sanitary Sewer Construction*. When referenced, work shall conform to the Illinois Department of Transportation's *Standard Specifications for Road and Bridge Construction*, current edition.

Throughout these specifications, the term "Owner" and "District" shall be synonymous.

In case of apparent contradictions between *Section II - Detailed Specifications*, *IDOT Standard Specifications*, and *General Provisions and Technical Specifications for Sanitary Sewer Construction*, *Section II - Detailed Specifications* shall govern.

Utility locations shown on the plans are based on the information obtained at the time of design and are not guaranteed. The orientation and location (horizontal and vertical) of all existing underground utilities, such as gas mains, water mains, electric lines, field tiles, irrigation pipes, etc., shall be ascertained by the Contractor. The Contractor shall assume full responsibility for the location of all utilities.

The general location of the proposed sewer is governed by existing field conditions. Minor variations in alignments may be made to facilitate construction operations with prior District approval.

Any construction not supervised by a District Inspector will not be accepted.

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

Suppliers shall implicitly warrant that their products and product components are suitable and appropriate for the intended use and that they are free from all material, design, or workmanship defects. Said warranty shall inure to the benefit of the District. The foregoing shall apply to all products and product components, whether constructed as directed by the Contract documents or produced by an outside source.

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

Not to be used for bidding purposes

2 PERMIT REQUIREMENTS

2.1 General

All work in public or private right–of–ways shall be subject to the regulations and requirements of the jurisdictional agencies. Should conflicts or contradictions arise between the plans, specifications and right-of-way 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, including but not limited to, the following:

Roadway Authority	Contact	Phone	Email
Cherry Valley Township Highway Dept.	Ken Mattson	815-874-8100	cvthighway@comcast.net
IDOT	Dan Long	815-284-5471	dan.long@illinois.gov
Winnebago County Highway Dept.	Praful Soni	815-319-4000	highway@wincoil.us

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

2.2 Materials – Not used.

2.3 Required Submittals

1. Copies of signed permits, as applicable.

2.4 Payment

No payment shall be made for costs associated with permit procurement and compliance.

3 NOTIFICATION, ACCESS, & SPECIAL CONSIDERATIONS

3.1 General

The Contractor shall notify all utility companies prior to beginning any work. All underground utilities shall be located by the utility owner and special care shall be taken when excavating near underground utilities to avoid damage. Contractor shall call J.U.L.I.E. at 1–800–892–0123 for utility locations in the project area, 48 hours, minimum, prior to construction.

The Contractor shall notify the Rock River Water Reclamation District (District), affected property and business owners and applicable roadway authorities forty-eight (48) hours, minimum, prior to beginning any work.

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

Not to be used for bidding purposes

It shall be the Contractor's responsibility to secure any temporary or permanent access, storage or construction easements which he deems necessary from property owner(s) to perform the work as shown on the plans or defined in the specifications.

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.

3.2 Materials – Not used.
3.3 Required Submittals – Not used.

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

Not to be used for bidding purposes

4 DEWATERING

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

Groundwater will not be allowed to be pumped on existing ground surfaces or pavements where it may cause a traffic nuisance or discharge 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.

Dewatering well points require permits issued by the Winnebago County Department of Public Health (Health Department). The installation, operation and removal of well points shall conform to the Health Department requirements. The Health Department shall be notified prior to installing dewatering wells and prior to abandonment of well points so that they may be present if they desire; contact (815) 720-4000.

Any permits required to perform dewatering work on this project shall be secured by the Contractor; it shall be his/her responsibility to provide any bonds, insurance's, guarantees, etc. as required by said permit(s). 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 levels to ninety decibels (90 dB) or less.

4.2 Materials – Not used.
4.3 Required Submittals
1. Copy of permits, as applicable.

4.4 Payment

Costs associated with dewatering shall be considered incidental to the various bid items that include excavation or installation of underground piping and structures.

5 SANITARY FORCE MAIN

5.1 General

This item includes furnishing all labor, materials, and equipment needed to install the proposed sanitary sewer force main piping in accordance with the Technical Specifications to the lines and grades shown on the plans. Prior to final acceptance, force main shall be pressure tested in accordance with Section T.S. 9:5 of the Technical Specifications. Excavation, dewatering, bedding, backfill and compaction are incidental to force main piping installation and shall conform to Technical Specifications.

5.2 Materials

PVC force mains shall conform to AWWA Specifications C900/C905, DR 18. Pipe joints shall be push-on joints conforming to ASTM D 3139.

All force main fittings shall be ductile iron, Class 350, AWWA C–110, or current standard, with mechanical joints. All fittings shall be furnished and installed with restrained joint retainer glands to prevent movement of the force main and/or fittings while under pressure. Additionally, force main fittings, etc., shall be thrust blocked using cast-in-place concrete. Thrust blocking shall be a minimum of 1' thick in all dimensions. Concrete used in thrust blocking shall be class "SI" as defined in Article 1020.04 of *IDOT Standard Specifications*, place on undisturbed soil.

10 AWG solid copper tracer wire shall be placed 1' above the crown of all force main installed by open-cut methods. Tracer wire shall be HDPE insulated and rated for direct burial with a break load exceeding 600 Lbs. Tracer wire shall be spliced with wire nut connectors. Contractor shall terminate tracer wire at the proposed air/vacuum relief valve vaults leaving a minimum length of 2' inside the structure. Wire may be installed between the casting and cone of the proposed structure. Cost of tracer wire installation shall be incidental to the cost of pipe installation.

5.3 Required Submittals

1. Force main piping material specifications.
2. Fitting material specifications; including gaskets, glands and connecting hardware.
3. Tracer wire and splice connector material specifications.

5.4 Payment

Payment for force main piping will be made at the contract unit price per linear foot (LF) of the diameter and type of pipe specified, installed, complete in place.

Payment for force main fittings will be made at the contract unit price per each (EA) for the diameter and type specified, installed, complete in place.

Not to be used for bidding purposes

6 PRESSURE TAP CONNECTION – PCCP PIPE

6.1 General

This item shall consist of furnishing all labor, equipment, tools, and materials needed to install a 30" x 30" x 12" tee on existing 30" diameter PCCP force main piping without disrupting service through the existing force main. Contractor shall install tapping sleeve in accordance with AWWA Manual M-9.

Contractor shall be responsible for maintaining existing levels of sanitary sewer service and shall be responsible for all damages related to work-related sanitary sewer backups, etc. while completing this project.

6.2 Materials

Tapping sleeve body shall be of steel construction, epoxy coated for protection from corrosion meeting the requirements of AWWA C-301 and C-303. Model of tapping assembly (sleeve, gland, flange, gaskets and bolts) shall have been commercially available for at least five (5) years.

Sleeve shall contain a grout seal assembly to facilitate fitting oversize, undersize and out of round pipe by providing the means to pour cement grout into the assembly cavity making a perfect sleeve fit. Grout and grout seal assembly shall conform to AWWA M-9.

6.3 Required Submittals

1. PCCP tapping sleeve, including glands and hardware.
2. Grout material specifications.

6.4 Payment

Payment for pressured tap connections on PCCP will made at the contract unit price per each (EA) connection made, complete in place.

7 CONCRETE PIPE ENCASEMENT

7.1 General

This item shall consist of furnishing all labor, equipment, tools, and materials needed to install concrete pipe encasement at locations indicated on the plans or as required by field. The minimum thickness of concrete encasement shall be twelve inches (12") surrounding the entire pipe. Encasement may be earthen or wood formed.

7.2 Materials

Concrete shall conform to Class SI as defined in Article 1020.04 of *IDOT Standard Specifications*.

7.3 Required Submittals

1. Concrete mix design.

Not to be used for bidding purposes

7.4 Payment
Payment for concrete pipe encasement shall be made at the contract unit price per linear foot (LF) for the diameter of pipe specified, installed, complete in place.

8 ROCK EXCAVATION

8.1 General
This item shall consist of furnishing all labor, equipment, tools, transportation, materials and operations needed to excavate, remove and dispose of rock material during the construction of the proposed project.

The Contractor shall demonstrate to the District that the material encountered while excavating within the lines and grades shown on the plans within the designated limits of payment as described in T.S. 2:3 of the *General Provisions and Technical Specifications for Sanitary Sewer Construction* is not able to be removed employing conventional excavation methods and equipment. This demonstration shall be completed before the subsurface material is classified as rock. The following criteria will be used in the determination of whether or not the work will be considered rock excavation:

1. The guidelines and requirements of *the General Provisions and Technical Specifications for Sanitary Sewer Construction.*
2. A substantial reduction in production rate.
3. Visual evidence of large boulders, rock, granite, trap, quartzite, chert, limestone, hard sand stone, hard shale or slate, or other hard materials, in natural ledges or displaced masses which cannot be removed by a modern backhoe without resorting to the continuous use of pneumatic tools, blasting, barring or wedging for removal from their original beds.

See geotechnical report appended to bid documents.

8.2 Materials – Not used.
8.3 Required Submittals – Not used.

8.4 Measurement and Payment
Payment for rock excavation shall be made at the contract unit price per cubic yard (CY).

The limits of what will qualify as rock excavation will be determined by the District in the field. The maximum payable trench width shall not exceed the nominal pipe size plus eighteen inches (18") for 8" to 24" diameter pipes or the nominal pipe size plus twenty-four inches (24") for pipe sizes greater than 24" diameter. No additional payment will be made for extra rock excavation desired for work area enhancement or for areas needed to facilitate manhole or vault installations.

Not to be used for bidding purposes

9 LOCATE EXISTING UNDERGROUND UTILITIES

9.1 General

This item shall consist of furnishing all labor, equipment, tools, and material necessary to locate, expose and record the location and elevation of existing underground utilities at specific locations, as directed by the District.

The Contractor shall locate and expose existing utilities at the following approximate locations:

1. STA 2+92: Confirm the location of existing 30" force main prior to completing the bore & jack Set-up on Barley Ridge Trail.
2. STA 26+30: Confirm the location of existing 30" force main prior to installation of new force main piping from STA 24+00 to 27+00.
3. STA 40+39: Confirm the location of the existing 12" water main west of Perryville Road prior to completing the bore and jack set-up on Perryville Road.
4. STA 95+80: Confirm the location of the existing water and gas mains on west side of Mulford Road prior to completing the bore and jack set-up on Mulford Rd.

No additional compensation will be awarded for corrective work needed to rectify conflicts with utilities that could have been avoided had the above prescribed locates been performed prior to construction.

No additional compensation will be made for utility location work performed at locations other than those described above.

9.2 Materials - Not used.

9.3 Required Submittals - Not used.

9.4 Payment

Payment for locating existing underground utilities will be made at the contract lump sum (LS) price for completed work at the locations specified.

10 BORING & JACKING

10.1 General

Work under this item pertains to boring and jacking operations required to install steel casing pipe under Barley Ridge Trail, South Perryville Road, U.S. Highway 20, and South Mulford Road. Contractor shall provide a minimum of 48-hour advance notice to the District, Cherry Valley Township, Winnebago County Highway Department and Illinois Department of Transportation prior to performing any work within public rights-of-way.

Contractor shall keep public rights-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 by the District or governing roadway authority, any appurtenances or property damaged within or adjacent to public rights-of-way or easements, whether through Contractor

Not to be used for bidding purposes

negligence or as a result of construction, shall be repaired and replaced by the Contractor to the satisfaction of the District and roadway authority at no additional cost.

10.2 Setup, Complete

Bore and jack "setup" 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, material disposal and backfilling of push and receiving pits.

Under Setup, Complete, the Contractor shall:

1. Locate all adjacent utilities, including elevation. Contractor shall excavate as necessary to determine existing utility elevations. Except where paid for under a separate pay item, location of existing utilities shall be incidental to the bore and jack setup.
2. Excavate suitable jacking and receiving pits adjacent to the area into which the steel casing pipe will be jacked into place as shown on the plans. Every effort shall be made to minimize the size of the jacking and receiving pits without jeopardizing work area safety.
3. Set and maintain guide timbers or rails accurately in the bottom of the jacking pit in order to keep the casing pipe at the correct elevation, line and grade.
4. Furnish and install heavy backstop supports (bulkheads) 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.
5. Identify, locate and relocate as necessary any utilities that could be damaged by setup, boring and jacking or related construction activities. Any damage done to utilities due to construction shall be repaired or replaced by the Contractor at his or her own expense, to the satisfaction of the affected utility owner.

10.3 Boring and Jacking

"Boring and Jacking" shall refer to the process by which a steel casing pipe is jacked through the ground while soil is simultaneously removed from the casing face by an auger. Drilling the entire length followed by pushing casing pipe through the hole after auger/drill rig has been removed shall not be allowed. Boring and jacking shall include the material cost the specified casing pipe, as well as all labor, equipment and materials associated with actual boring and jacking operations.

The process will be advanced by the use of an earth auger where possible, but if conditions are encountered where the auger will not remove material or stay on line and grade, the operation will be advanced by mining. No additional costs will be entertained by the District for claims of differing site conditions, above or below grade.

If, for any reason, the excavation should extend beyond the outside diameter of the casing pipe, leaving voids outside the casing pipe, Contractor shall drill through the casing pipe from inside and completely fill exterior voids by pressure grouting with a District approved cement grout at no additional cost to the District.

Not to be used for bidding purposes

10.4 Tolerances

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

1. Horizontal: End to end centerline of finished sleeve shall be within one inch per twenty linear feet (20') of plan centerline.
2. Vertical: Inverts of casing pipe shall be within 0.20' of plan inverts.

10.5 Materials

Steel casing pipes shall be grade B structural steel with minimum yield strength of 35,000 psi, per ASTM A-53. Wall thickness shall be as determined by the Contractor based on an evaluation of the jacking forces required but not less than 0.75". Minimum inside diameter of casing pipes shall be as follows:

1. Barley Ridge Trail: 48" Ø
2. South Perryville Road: 54" Ø
3. U.S. Highway 20: 54" Ø
4. South Mulford Road: 54" Ø

Joints in steel casing pipe shall be made by continuous weld completely around the perimeter of the pipe, 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 30" diameter DR 18 PVC force main as detailed on the plans. Adequate pipe spacers shall be installed to keep carrier pipe centered within the casing pipe and provide thrust support. Spacers shall be as manufactured by Cascade, BWM or District approved equivalent. Installation and interval of pipe spacers shall be as recommended by the District approved spacer manufacturer.

Ends of casing pipe shall be sealed with an approved pull-on flexible rubber end seal.

10.6 Required Submittals

1. Casing pipe specifications.
2. Pipe spacer specifications.
3. Casing pipe end seal specifications.

10.7 Payment

Payment for boring and jacking set-up, complete will be made at the contract lump sum (LS) price for each location specified.

Payment for the steel casing pipe will be made at the contract unit price per linear foot (LF) of the size specified, installed, complete in place.

No additional payment will be made for partial or complete push attempts. No additional payment will be made for mining of rock or cobble and/or boulder removal. The cost of all spacers, casing pipe end seals and grouting, as needed or directed, shall be incidental to this item.

Not to be used for bidding purposes

Payment for sanitary sewer carrier pipe (gravity or force main) shall be made at the contract unit price per linear foot (LF) of the diameter and type of pipe specified, installed, complete in place.

11 SANITARY SEWERS

11.1 General

The work under this item includes all labor, equipment, and materials for furnishing and installing sanitary sewer pipe on grade and in line according to the plans and specifications herein. This item shall also include all fittings, couplings, adapters, riser pipes and any other item necessary to satisfactorily install and test the new sanitary sewer pipe system.

Excavation, dewatering, bedding and backfilling shall be incidental to the sanitary sewer installation and shall conform to District *General Provisions and Technical Specifications*.

When replacing existing sanitary sewer or altering alignment of existing sanitary sewer, abandonment (in place or by removal and disposal) of existing sanitary sewer piping as required to complete proposed work shall be incidental to the installation of new sanitary sewer. Pipe to be abandoned in place shall include installation of a concrete bulkhead at the limits of removal. Costs associate with installation of concrete bulkheads shall be incidental to new sanitary sewer.

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 if directed by the District. The Contractor shall be solely responsible for setting and maintaining proper elevations, 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 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 considered a convenience to the Contractor and 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* and as stated elsewhere herein.

When connecting to existing sanitary sewers, contractor shall connect to structurally sound pipe using District-approved repair transition couplings.

11.2 Materials

8" through 15" diameter PVC pipe shall be SDR 35 PVC pipe meeting the requirements of ASTM D3034. Joints shall conform to ASTM D3212.

Not to be used for bidding purposes

18" and larger diameter PVC pipe shall meet the requirements of ASTM F679, PS 46. Joints shall conform to ASTM D3212.

6" diameter service piping shall be water main quality SDR 26 PVC meeting the requirements of ASTM D2241. Joints shall conform to ASTM D 3139.

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), Mission Flex-Seal ARC shear resistant or other 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.

Not to be used for bidding purposes

11.3 Required Submittals

1. Pipe material specifications.
2. Fitting, coupling, and adapter specifications as applicable.

11.4 Measurement and Payment

Payment for sanitary sewers will be made at the contract unit price per linear foot (LF) of the diameter and type specified, installed, complete in place.

Measurement for payment shall be horizontal along the centerline of the installed pipe from center-of-manhole to center-of-manhole, center of manhole to center of repair coupling, or center of repair coupling to center of repair coupling as applicable.

12 CONNECT TO EXISTING MANHOLE

12.1 General

This work shall consist of connecting the proposed new sanitary sewer pipe to existing manholes as required on this project. This shall include all core-drilling existing concrete, brick, or concrete block manhole walls, necessary fittings, and modifications to the existing manhole invert and bench, partial reconstruction of existing outside drop connections to the satisfaction of the District.

For connection of the pipe to existing manholes, each pipe end shall be fitted with a District-approved boot (Kor-n-seal). Any damage done to existing manholes shall be repaired by the Contractor to the satisfaction of the District, at the Contractor's sole expense.

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

12.2 Material

Manhole boot connection shall be "Kor-n-seal pipe to manhole connector" as manufactured by Trelleborg or District-approved equal. Concrete used for invert reconstruction shall be class "SI" per *IDOT Standard Specifications*.

12.3 Required Submittals

1. Pipe-to-manhole connectors.
2. Concrete mix design.

12.4 Payment

Payment for connecting sanitary sewer to existing manholes will be made at the contract price per each (EA) connection made, complete in place.

Not to be used for bidding purposes

13 SANITARY MANHOLES

13.1 General

This work shall consist of furnishing and installing all labor, equipment and materials required to install pre-cast concrete sanitary manholes as directed by the District in accordance with the District *Standard Detail Sheet* and Article 6:3 and 7 of the District's *General Provisions and Technical Specifications.* Work shall also include furnishing and placing a District approved manhole frame and lid (Neenah R-1670 or EJ E-1117) adjusted to grade as detailed on plans.

Eccentric cone sections must be a component of all manholes. Unless otherwise noted in plans, flat-top structures will not be allowed.

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.

The Contractor shall field verify all proposed rim elevations and shall construct manholes in accordance with the District *Standard Detail Sheet.*

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 shall be 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. 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 with roadway having curb and gutter.

In roadways only: metal or plastic shims will be required if the casting is located in a roadway and 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 sealant (E-Z Stik, Kent-Seal, or equal) will be required under the casting. The void area between the casting, and masonry shall be grouted from the outside to the inside face of the adjusting ring, filling the entire void. No trench compaction shall take place until the concrete has cured and hardened to the District's satisfaction. Final manhole adjustment shall meet additional requirements of the governing roadway authority.

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

The Contractor shall field verify the 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 at a minimum of 15 psi hydrostatic pressure (A-LOK model X-CEL or District approved equivalent).

All connections between new manholes and existing sanitary sewers shall be made with minimum 4.0' length of new PVC Pipe. Connection shall be made to structurally sound pipe.

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

13.2 Materials

Materials for manholes and components shall be as shown on the District *Standard Detail Sheet.*

13.3 Required Submittals

1. Shop drawings 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.
2. Frames and lids material specifications.
3. Chimney seals material specifications.
4. Barrel joint seals material specifications.
5. Manhole-to-pipe connection seals material specifications.
6. Manhole steps material specifications.
7. Exterior wall sealant material specifications.

13.4 Payment

Not to be used for bidding purposes

Payment for sanitary manholes shall be made at the contract unit price per each (EA) of the diameter specified, installed, complete in place.

14 FORCE MAIN DISCHARGE MANHOLE

14.1 General

This work shall consist of all labor, equipment, and materials needed to furnish and install a pre-cast concrete sanitary force main discharge manhole. Structure shall have an inside diameter of 8'. Interior of final structure shall be coated with a District approved lining system to protect against corrosion.

14.2 Materials

Pre-cast manhole structure, including butyl joint sealant and external joint seals shall conform District standards for precast sanitary manholes except for alterations noted in the plans.

After pipes are connected, but before the structure is placed in service, all interior concrete surfaces shall be lined with an epoxy for corrosion resistance. The epoxy liner shall be a single coat application with a 1/8" (125 mils) minimum thickness as manufactured by Warren Environmental, Raven, or District approved equal.

14.3 Required Submittals

1. Pre-cast manhole shop drawings and component material specifications and detail drawings.
2. Epoxy liner material specifications.

14.4 Measurement and Payment

Payment for force main discharge manholes will be made at the contract unit price per each (EA) of the diameter specified, installed, complete in place.

15 AIR RELEASE VALVE VAULT

15.1 General

This work shall consist of all labor, equipment and materials needed to furnish and install a pre-cast concrete sanitary air release valve vault as detailed in the plans and as directed by the District.

15.2 Materials

The vault structure shall be a 5' diameter pre-cast concrete manhole conforming to District Standards except the concrete bench shall be omitted and the floor of the vault shall contain an opening filled to grade with crushed stone chips. Floor opening shall be 1.75 square feet minimum.

Proposed force mains shall have a combination air/vacuum release valves (AVRV) with sizes, capacities and locations as shown on the plans. AVRV's shall be constructed with stainless steel bodies and internal components, as manufactured by Vent-O-Mat, Series RGX or District approved equal.

Not to be used for bidding purposes

AVRV's shall connect to the force main by means of a tee fitting with isolation gate valve to allow cleaning and maintenance. Tee fitting shall conform to force main fitting specifications. Isolation valves shall be resilient wedge gate valves as manufactured by Kennedy, Clow or other District-approved equal. Gate valves shall be equipped with hand wheel actuators.

Piping and valve supports shall be constructed of cast-in-place concrete or stainless steel and incidental to valve vault construction. Fasteners shall be of stainless steel construction.

15.3 Required Submittals

1. Shop drawings for pre-cast concrete structure and component specifications.
2. Combination air/vacuum release valve material specifications.
3. D.I. tee fitting, and installation component specifications.
4. Gate valve material specifications.
5. Piping and valve support details and material specifications.

15.4 Payment

Payment for air release valve and vaults installed will be made at the contract unit price per each (EA) of the diameter specified, installed, complete in place.

16 SANITARY SEWER VALVE VAULT

16.1 General

This work shall consist of all labor, equipment, materials, transportation, excavation, accessories, backfill and compaction required to furnish and install a pre-cast concrete sanitary valve vault as detailed in the plans and as directed by the District.

Piping and valve supports shall be constructed of cast-in-place concrete or stainless steel and incidental to sanitary valve vault construction.

16.2 Materials

Vault structure shall be a 5' or 6' diameter pre-cast concrete manhole conforming to District Standards except the concrete bench shall be omitted. Fasteners shall be of stainless steel construction.

Valves and fittings shall be as detailed in the plans. Gate valves shall be resilient wedge gate valves conforming to AWWA C509 as manufactured by Kennedy, Clow or District-approved equal. Gate valves shall be equipped with hand wheel actuators.

16.3 Required Submittals

1. Shop drawings for pre-cast concrete structure and component specifications.
2. Resilient wedge gate valve and accessory specifications.
3. Ductile iron fitting specifications.
4. Piping and valve support details and material specifications.

16.4 Payment

Not to be used for bidding purposes

Payment for sanitary sewer valve and vaults installed shall be made at the contract unit price per each (EA) of the diameter specified, installed, complete in place.

17 BYPASS PUMPING SANITARY SEWERS

17.1 General

The Contractor shall provide bypass pumping as required and shall be responsible for providing all pumps, power, fuel, conduits, plugs and other items to divert the flow of sewage as required to complete proposed work.

The Contractor shall furnish the necessary labor and supervision to setup, maintain and operate the bypass pumping system and shall only pump flow into sanitary sewer manholes approved by the District. The pumping system shall have sufficient capacity to accommodate peak flows. 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 with apparatus to restrict noise levels to ninety decibels (90 dB) or less. The Contractor shall be responsible for providing the current level of service to all properties and shall 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. The Contractor shall be responsible for the clean up, repair, restoration of damaged property and any costs and claims resulting from sewage backups.

Peak flow rates at proposed bypass locations are as follows during a 10-year rain event:

1. 24" Dia. Sewer @ MH 149-060 = 2.31 MGD
2. 36" Dia. Sewer @ MH 103-097 = 13.55 MGD

Flow rates are estimates only generated by EPA SWMM 5.0 hydraulic modeling software. Contractor is responsible for providing pumps capable of handling actual sanitary sewer flow volumes.

17.2 Materials – Not used.

17.3 Required Submittals

1. Pump specifications.
2. Temporary pipe and fitting specifications.
3. Details of temporary pipe alignment, including suction and discharge details.

17.4 Payment

Payment for bypass pumping sanitary sewers shall be made at the contract lump sum (LS) unit price for bypass pumping at the specified locations, complete.

Not to be used for bidding purposes

18 REMOVE AND REPLACE WATER UTILITY PIPING

18.1 General

This work shall include all labor, equipment and materials to remove and replace water main sections and/or service piping where proposed force main crosses underneath at locations indicated in plans.

The size and material of the existing water main piping is indicated on the plans. Disposal of removed water main piping shall be incidental to this item.

The Contractor shall coordinate water main shut downs with the Village of Cherry Valley Water Department and shall notify all water customers affected by the water main valve shut off and the need to boil water. Notifications shall include the following information:

1. Streets and boundaries of shut down
2. Time of shut down
3. Approximate duration of shut down
4. Number of customers affected
5. If non-residential customers (hospitals, nursing homes, restaurants, etc.) are affected, a count of the numbers and types of facilities affected must be provided.

The Contractor shall notify the Village of Cherry Valley Water Department when water service has been restored upon completion of repairs.

18.2 Materials

Water main piping shall be thickness Class 52 ductile iron pipe conforming to ANSI/AWWA C150/A 21.50. Water main repair Couplings shall be ductile iron conforming to AWWA C219.

Water service piping shall be 1" diameter copper tubing, Type K. Service pipe couplings shall be of brass construction, straight compression type couplings as manufactured by Mueller or other source approved by the water utility.

18.3 Required Submittals

1. Water main piping material specifications.
2. Repair coupling material specifications.

18.4 Measurement and Payment

Payment for removal and replacement of existing water utility piping will be made at the contract unit price per linear foot (LF) of piping removed and replaced of the diameter and type specified, complete in place.

Not to be used for bidding purposes

19 WATER MAIN LINE STOP, COMPLETE

19.1 General

This work shall consist of all labor, equipment and materials needed to install a water stop on existing water main piping of the diameter shown on the plans. This work shall only be necessary if existing isolation valves are inoperable, or required by the governing water utility. Work shall conform to Section 46 of the *Standard Specifications for Water Main Construction in Illinois* (current edition).

The outside face of the existing water main and line stop components shall be disinfected with a 1% chlorine solution prior to installation of the line stop sleeve.

19.2 Materials

Line stop sleeve(s) shall be constructed of stainless steel as manufactured by Smith Blair or water utility-approved equal. All bolts, nuts, washers and blind flanges shall be constructed of stainless steel. Stopple plug shall be constructed of ductile iron. Sleeve shall be rated for a 150 psi working pressure. The test sleeve shall include a test port and the sleeve installation shall be tested prior to cutting the pipe.

Line stop plug shall be solid (not inflatable).

19.3 Required Submittals

1. Line stop sleeve specifications.
2. Line stop plug specifications.
3. Line stop manufacturer's installation and testing procedure instructions.

19.4 Measurement and Payment

Payment for water main line stops will be made at the contract unit price per each (EA) of the diameter specified, installed, complete in place.

20 REMOVE AND REPLACE STORM SEWERS

20.1 General

This work shall conform to Article 551.03 and 551.04 of the *IDOT Standard Specifications*. Pipe, size and material shall be as noted on plans. Pipe removed may be salvaged as determined by the Inspector. Disposal of removed pipe and materials shall be incidental to work.

Excavation and trench backfill shall be considered incidental to this item.

20.2 Materials

Corrugated Steel Pipe shall be in conformance with Article 1006.01 of *IDOT Standard Specifications*.

Reinforced concrete pipe shall be in conformance with Article 1042.06 of *IDOT Standard Specifications*.

Not to be used for bidding purposes

Water main quality storm sewer pipe shall be in conformance with ASTM-D2241 and ASTM-D3139.

20.3 Required Submittals

1. Pipe material specifications.

20.4 Measurement and Payment

Payment for removal and replacement of existing storm sewer piping shall be made at the contract unit price per linear foot (LF) of the diameter and type specified, installed, complete in place.

Not to be used for bidding purposes

21 REMOVE AND REPLACE PCC CURB AND GUTTER, TB.6-24

21.1 General

This work shall consist of all labor, equipment and materials required to remove and replace existing PCC curb and gutter to the limits indicated on the plans. Existing curb and gutter shall be saw-cut (full-depth) at removal limits or removed at the nearest construction joint.

Removal and disposal of existing curb and gutter as well as subgrade and base installation/preparation shall be incidental to this bid item.

Curb and gutter shall be Type B-6.24 in accordance with *IDOT Highway Standard B.L.R. 28.* Construction of new PCC curb and gutter shall be in accordance with Section 606 of *IDOT Standard Specifications.*

21.2 Materials

Concrete shall be Class SI in accordance with Section 1020 of *IDOT Standard Specifications.*

21.3 Required Submittals

1. Concrete mix design.

21.4 Measurement and Payment

Payment for removal and replacement of PCC curb and gutter, TB6.24 shall be made at the contract unit price per linear foot (LF), installed, complete in place.

22 FULL DEPTH PAVEMENT REMOVAL

22.1 General

This work shall consist of removing existing bituminous or concrete roadway pavement and driveway pavement as required to construct this project. Bituminous pavement shall be saw-cut full depth prior to removal at no additional cost to the District. PCC Pavement shall be saw-cut full depths or removed at the nearest existing construction joint.

Maximum payment limits for pavement removal shall be as shown on the plans. Contractor shall not remove any pavement outside these limits without receiving prior written approval from the District. Care must be taken to protect bituminous and concrete vertical joint faces are

protected from damage (e.g. spalling). In all cases where drop-offs exist, measures such as temporary asphalt pavement wedges will be required and the cost of installation and removal will be incidental to construction. Should the required depth of pavement removal result in the removal of aggregate base or soil under the bituminous no extra payment will be made.

Existing pavement thicknesses as observed in geotechnical report provided in bid documents. Actual thicknesses may vary from those shown and no additional payment will be made for thicknesses that differ from those indicated.

22.2 Materials – Not used
22.3 Required Submittals – Not used.

22.4 Payment
Payment for full depth pavement removal will be made at the contract unit price per square yard (SY), irrespective of the pavement type or thickness.

23 AGGREGATE BASE COURSE, TYPE B

23.1 General
This work shall consist of placing compacted Aggregate Base Course, Type B, beneath proposed pavement or as a final surface where indicated on the plans. This work shall include subgrade preparation, removal and disposal of excess material, furnishing, placing, installing and compacting course aggregate to thicknesses identified on plans, and trimming and prepping aggregate base for subsequent pavement placement. This work shall be in conformance with Section 351 of the *IDOT Standard Specifications*.

The Contractor shall compact the aggregate base course and perform a sufficient number of compaction tests as determined by the District and Roadway Authority. Compaction tests must be performed as work progresses. All compaction tests must meet 95% of Standard Proctor density and must be performed by an approved independent geotechnical company.

Prior to aggregate base course placement, the subgrade of the entire pavement replacement area shall be proof-rolled and witnessed by the District Inspector and the Roadway Authority. Proof-rolling shall consist of using a fully loaded tandem axle dump truck to identify locations of structurally unsuitable subgrade. Proof-rolling shall be scheduled and completed so as to avoid a rain event between proof-rolling and aggregate base course placement. At the direction of the Inspector, the subgrade may be required to dry for a period of time in an attempt to correct areas of structurally unsuitable subgrade before performing road base improvements.

23.2 Materials
Finished aggregate base course thickness shall be as indicated on plans, placed in two compacted lifts of equal thickness. Aggregate shall be of CA-6 or CA-10 gradation. Course Aggregates shall be in accordance with Article 1004.04 of the *IDOT Standard Specifications*.

Not to be used for bidding purposes

23.3 Required Submittals

1. Material gradation certifications for aggregates.

23.4 Measurement and Payment

Payment for this item shall be made at the contract unit price per ton (TON) for Aggregate Base Course, Type B, installed, complete in place.

24 HOT-MIX ASPHALT BINDER COURSE, N50, IL-19.0

24.1 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 *IDOT Standard Specifications*.

The work shall be performed to the satisfaction of the District and jurisdictional 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 and at no additional cost.

All costs associated with placement of the bituminous tack coat shall be considered incidental to this item.

Finished lift thickness shall be as noted on the plans.

No vibratory rollers may be utilized on this project.

24.2 Materials

HMA Binder Course shall be mixture IL-19.0, N50 in accordance with Section 1030 of *IDOT Standard Specifications*.

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

24.3 Required Submittals

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

24.4 Measurement and Payment

Payment for HMA binder course, N50, IL-19.0 shall be made at the contract unit price per ton (TON) installed.

Not to be used for bidding purposes

25 HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50, IL-9.5

25.1 General

This work shall be performed in accordance with Section 406 of *IDOT Standard Specifications* to the satisfaction of the District and jurisdictional 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 and at no additional cost.

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.

To the maximum extent feasible, surface course paving operations shall be scheduled during non-peak traffic times. Flaggers shall be utilized to keep the roadway open to one-way traffic during the surface course paving operations.

Finished lift thickness(es) shall be as noted in plans.

No vibratory rollers will be allowed to be utilized on this project.

25.2 Materials

HMA Surface Course shall be Mix "C", IL-9.5, N50 in accordance with Section 1030 of *IDOT Standard Specifications*.

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

25.3 Required Submittals

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

25.4 Measurement and Payment

Payment for HMA Surface Course, Mix "C", N50, IL-9.5 shall be made at the contract unit price per ton (TON) installed.

Surface course mixture placed 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*.

Not to be used for bidding purposes

26 PAVEMENT MARKING

26.1 General

This work shall include all labor, equipment and materials to install pavement markings in accordance with Section 780 of *IDOT Standard Specifications*. Contractor shall submit a layout and obtain approval by the appropriate roadway authority prior to installation.

26.2 Materials

Material shall be thermoplastic pavement marking conforming to Article 1095.01 of *IDOT Standard Specifications*.

26.3 Required Submittals

1. Thermoplastic pavement marking material specifications and MSDS.
2. Pavement marking layout, Perryville and Mill Road intersection.

26.4 Measurement and Payment

Pavement marking shall be paid for at the contract price per linear foot (LF) for striping in the specified width and color, installed, complete in place.

Pavement marking shall be paid for at the contract unit price per square foot (SF) for lettering, numbers and symbols as specified. Square footage used for payment shall be per Table 1 in Article 780.14 of *IDOT Standard Specifications*.

27 CONSTRUCTION LAYOUT

27.1 General

This work shall be in accordance with *IDOT Recurring Special Provision #10: Construction Layout Stakes* and the Contractor shall provide all construction layout for this project to the lines and grades shown on the plans.

Reference points for the survey centerline and benchmarks are shown on the plans. The District will assist in periodic layout checks, particularly before pavement is placed.

27.2 Materials – Not used.

27.3 Required Submittals – Not used.

27.4 Payment

Payment for construction layout will be made at the contract lump sum (LS) price, complete.

Not to be used for bidding purposes

28 TRAFFIC CONTROL & PROTECTION

28.1 General

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

The Contractor shall provide detailed traffic control plans as required by permits and implement and maintain approved traffic control measures, including detour routes if necessary. Traffic control and protection shall be in accordance with the current *IDOT Standard Specifications* and the current Highway Standards.

All work within public right-of-ways will require traffic control plans prepared by the Contractor and approved by the jurisdictional roadway authority prior to the start of construction.

The Contractor may close streets intersecting Mill Road, as required, for construction on working days. Closures shall be minimized in both quantity and duration. Contractor shall restore uninterrupted vehicular access at the end of each day. Traffic control for road closures shall be per IDOT, Region 2, District 2 *Standard 40.1*.

Five-day advance notice of pending roadway closures shall be posted at the job site on signs approved by the roadway authority. The local roadway authority shall approve traffic control plans any and all detours/road closures prior to the start of construction.

28.2 Materials

Traffic control devices shall conform to Article 701.15 of *IDOT Standard Specifications*.

28.3 Required Submittals

1. Copies of approved traffic control plans, including detour routing and road closures as required by the roadway authority.

28.4 Payment

Payment for traffic control and protection shall be made at the contract lump sum (LS) price, complete.

Not to be used for binding purposes

29 TREE REMOVAL

29.1 General

Trees approved for removal for this project will not require replacement. The Contractor shall save and protect all trees not specifically approved by the District for removal.

The Contractor shall remove only those trees necessary to complete the specified work. Tree removal shall consist of cutting, grubbing, removing and disposing of any trees, stumps and brush, as needed, to properly facilitate construction or as shown on the plans. Only trees approved by the District for removal shall be removed.

29.2 Materials – Not used.

29.3 Required Submittals – Not used.

29.4 Payment

Payment for tree removal shall be made at the contract lump sum (LS) price.

30 REMOVE & RELOCATE SIGN PANEL & SIGN PANEL ASSEMBLY

30.1 General

This work includes removal, relocation and installation of existing sign panel and assemblies including supports, bases and/or posts in accordance with Section 724 *of IDOT Standard Specifications* at locations noted in plans.

30.2 Materials – Not used.

30.3 Required Submittals – Not used.

30.4 Payment

Payment for removal and relocation of sign panels and sign panel assemblies will be made at the contract unit price per each (EA).

31 EROSION & SEDIMENT CONTROL

31.1 General

The Contractor shall comply with all the requirements of the *IEPA Illinois Urban Manual*, current edition and Article 280 of the *IDOT Standard Specifications*. All disturbed areas shall be restored to near original contours as shown on plans.

The Contractor shall take whatever measures the District deems necessary to eliminate excessive erosion or siltation. This shall include, but is not limited to: straw baling of ditches, stabilizing slopes with an approved geo-fabric and/or mulch, seeding, sodding, silt fence installation, rip rap, etc. Sediment control shall be provided around the perimeter of all stockpile areas.

Provisions shall be made to minimize the transport of sediment by runoff or vehicle tracking onto roadways. Mud and debris shall be removed daily from roadway surfaces at the end of each workday or as necessary.

Not to be used for bidding purposes

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

The Contractor shall follow any measures prescribed by the governing roadway authority or the District to prevent or eliminate excessive erosion. Actual field conditions may require additional measures beyond those cited.

The Contractor shall maintain storm water flow in all ditches and storm water conveyance systems (storm inlets, pipes, culverts, etc.) disturbed as a result of construction. Ditches shall be rough graded at the end of each day and whenever rain in imminent.

Not to be used for bidding purposes

Silt Fencing
Silt fencing shall conform to Standard 280001-07 of the IDOT Highway Manual. Silt fencing shall be Amoco 2127, or approved equivalent. Posts shall be 1.5" x 1.5" x 4' long, minimum, spaced 5' maximum on center. Silt fencing shall be installed prior to excavation or stockpiling of materials.

Stabilized Construction Entrance
Where required or directed, a temporary construction entrance shall be provided to the project site. The Contractor shall place one-inch (1") to three-inch (3") graded washed stone to a minimum thickness of six-inches (6") over non-woven geo-technical fabric. Temporary culvert pipes shall be of the material and diameter specified by the appropriate roadway authority. At the District's discretion and direction, the dimensions and location of the stabilized construction entrance shall be adjusted to accommodate specific field needs and changes in site conditions. The temporary construction entrance shall be routinely washed, as necessary, to prevent tracking of mud onto public roadways.

Storm Inlet and Pipe Protection
This work shall consist of furnishing, installing, maintaining and retrieval of District-approved drainage inlet protection filters to retain storm water runoff sediment as required or as directed. Inlet protection shall be drop-in type installed in accordance with Illinois Urban Manual detail 561D. Filters shall be 9" or 12" diameter sediment logs, erosion eels or straw wattles as manufactured by North American Green (or District-approved equal).

The Contractor shall inspect the work site and review the plans to determine the sizes, types and numbers of inlet protection filters needed.

Erosion control devices shall remain in place until removal is directed by the District. All erosion control devices shall remain the property of the Contractor. Upon stabilization and approval, the Contractor shall promptly remove and dispose of all erosion control devices as well as all debris and sediment accumulations.

Riprap
Riprap shall be minimum RR4 gradation conforming to *Article 1005.01* of *IDOT Standard Specifications*. Installation shall conform to *Article 281* of *IDOT Standard Specifications*.
Notice of Intent

The District has filed a "Notice of Intent" (NOI) with the IEPA. The Contractor shall furnish, install and maintain all erosion and sediment control equipment, devices and materials needed for the duration of construction and shall comply with all NOI requirements, including all inspection and record keeping requirements.

31.2 Materials

Temporary erosion control measures shall conform to IL Urban Manual and Article 1081 of *IDOT Standard Specifications*.

31.3 Required Submittals

Material specifications for erosion control products outlined below or as applicable:

1. Silt fence.
2. Stabilized construction entrance (material gradations and culvert specifications).
3. Ditch checks.
4. Inlet and pipe protection products.
5. Erosion control blanket.
6. Turf reinforcement mat (TRM).
7. Riprap gradation.

31.4 Payment

Payment for silt fence installed will be made at the contract unit price per linear foot (LF).

Payment for ditch checks installed will be made at the contract unit price per each (EA).

Payment for inlet and pipe protection installed will be made at the contract unit price per each (EA).

Payment for stabilized construction entrances installed will be made at contract unit price per square yard (SY).

Payment for erosion control blanket installed will be made at the contract unit price per square yard (SY).

Payment for turf reinforcement mat installed will be made at the contract unit price per square yard (SY).

Payment for riprap installed shall be made at the contract unit price per square yard (SY) of the size and thickness noted on the plans, complete in place.

Additional erosion and sediment control measures not explicitly mentioned shall be provided, as needed or directed – no separate payment will be made for additional erosion and sediment control measures. No separate payment will be made for maintenance and retrieval of erosion control devices during construction and upon completion of construction.

Not to be used for bidding purposes

32 RESTORATION AND SEEDING

32.1 General

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 directed. 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 construction shall be promptly completed, equal to or better than the pre-construction conditions, as directed by the District, and 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.

All drainage devices shall be cleaned of debris. 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 District. 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.

All work shall be guaranteed against trench subsidence for a period of one (1) year.

Suppliers shall be prepared to certify that laboratory and field testing of their product has been accomplished, 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 and Fertilizing:

Ground surfaces including right–of–ways and easements that were covered with grass before construction shall be seeded as directed by the District. The Contractor shall make certain that all disturbed areas have the same depth (6" minimum) and quality of topsoil that existed prior to construction.

Seed mixtures shall be as indicated on the plans.

Unless otherwise noted on the plans, work shall conform to the *General Provisions and Technical Specifications for Sanitary Sewer Construction*, T.S. 4:2 and Sections 250 and 251 of *IDOT Standard Specifications*.

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

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

Fertilizing shall be done in accordance with Article 250.04. Fertilizer shall have a 10-10-10 NPK component and be applied at the rate of 400 lbs./acre. No additional compensation will be made for the inclusion of fertilizer.

Not to be used for bidding purposes

Straw mulch shall be per Method 2 and done in accordance with the applicable portions of Section 251 of *IDOT Standard Specifications* with the following exceptions:

The rate of application for mulch will be 4,000 lbs./acre using Hydro Tack at a rate of 400 lbs./acre for stabilization. This specification describes mulch for use with the hydraulic application of grass seed which shall consist of specially prepared wood cellulose fiber. It shall be processed in such a manner that it will not contain any growth or germination-inhibiting factors, and shall be dyed in an appropriate color to facilitate metering of the material. It shall be manufactured in such a manner that after additions and agitations in slurry tanks with fertilizers, grass seeds, water and any other approved additives, the fibers in the material will be come uniformly suspended to form a homogenous slurry, and that when hydraulically sprayed on the ground, the material will form a blotter-like cover impregnated uniformly with grass seed, and which after application will allow the absorption of moisture and percolation of rainfall or mechanical watering of the underlying soil.

The mulch material described above shall be supplied in packages having a gross weight not in excess of 55 pounds. The packages shall be adequately wrapped in paper, polyethylene or other suitable material to prevent loss or spillage during handling. Weight specifications of this material from suppliers, and for all applications, shall refer only to air dry weight of the fiber material. Absolute air dry weight is based on the normal weight standard of the Institute of the Pulp and Paper Industry for wood cellulose and is considered equivalent to ten percent (10%) moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air-dry weight content.

At the direction of the District or other governing agency, the Contractor shall provide steep slope protection over turf areas disturbed by construction in accordance with Articles 251.03 and 251.04 of *IDOT Standard Specifications*.

32.2 Materials

Seed mixture shall be Class I or Class 4 in accordance with Section 250 of *IDOT Standard Specifications*. Fertilizer shall be in accordance with Section 250 of *IDOT Standard Specifications*. Mulch shall be in accordance with Section 251 of *IDOT Standard Specifications*.

32.3 Required Submittals

1. Seed mixtures, fertilizer and mulch specifications.

32.4 Payment

Payment for seeding shall be made at the contract unit price per acre (ACRE) for the particular class of seed specified, installed, complete in place.

Not to be used for bidding purposes

33 QUALITY CONTROL TESTS AND CERTIFICATION

33.1 General

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

Final, satisfactory low-pressure air tests, deflection tests and manhole vacuum tests shall be performed no later than 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. The District reserves the right to suspend any or all work until the Contractor fully complies with this requirement.

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 pipe throughout the project.

Low Pressure Air Test - Gravity Sewers:

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

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

This modifies T.S. 9.4 of *the General Provisions and Technical Specifications for Sanitary Sewer Construction*. The following table may be used to determine the minimum test time required:

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 installed pipe shall be deflection tested by the Contractor at his own expense. 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 *General Provisions and Technical Specifications for Sanitary Sewer Construction.*

Not to be used for bidding purposes

In addition to the above and T.S. 8:2(c) of the *General Provisions and Technical Specifications for Sanitary Sewer Construction*, use the following deflection test:

Testing of all lines shall be done with a Pin–Type Go/No–Go Gauge, pulled through all lines except the house leads. The diameter of the gauge shall be set at ninety–five percent (95%) of the undeflected 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.

Vacuum Testing – Manholes:
All sanitary sewer 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.

Force Main Pressure and Leakage Test:
After force main piping has been laid and backfilled all piping or any valved section shall be subjected to a hydrostatic pressure test equal to 50 percent more than the operating pressure at the lowest elevation of the pipe section being tested, but not to exceed the pressure rating of the pipe specified. The duration of each pressure test shall not be less than one hour and not more than six hours. Basic provisions of AWWA C-600 and C-603 shall apply where applicable.

Each section of pipe to be tested, as determined by the District, shall be slowly filled with water and the specified test pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump pipe connection and all necessary apparatus including gauges and meters shall be furnished by the Contractor. Prior to applying the specified test pressure, all air shall be expelled from the pipe.

Any defective pipe, fittings, valves or other appurtenance found to be defective in testing shall be removed and replaced by the Contractor with sound material and the test shall be repeated until satisfactory to the District.

Not to be used for bidding purposes

The leakage test shall be conducted after the pressure test to determine the quantity of water lost by leakage under the specified test pressure. Allowable leakage in gallons per hour shall not be greater than that determined by the following formula:

$$L = (ND \sqrt{P}) / 7400$$

Where:
L = Allowable leakage in gallons per hour.
N = Number of joints in length of pipe tested.
D = Nominal diameter of the pipe in inches.
P = Average test pressure during the leakage test in psi.

Leakage is defined as the quantity of water to be supplied in the newly laid pip or any valved section under test which is necessary to maintain the specified leakage test pressure after the pipe has been filled with water and air expelled.

Contractor shall obtain permits as required for procurement of water to be used in the pressure and leakage test. Contractor shall comply with all provisions of permits including but not limited to approved supply hydrants, metering of water usage, and time constraints.

33.2 Materials – Not used.
33.3 Required Submittals – Not used.

33.4 Measurement and Payment
No separate measurement or payment will be made for this work. All costs shall be incidental to sanitary sewer, sanitary manhole, and force main installation.

Not to be used for bidding purposes

ROCK RIVER WATER RECLAMATION DISTRICT

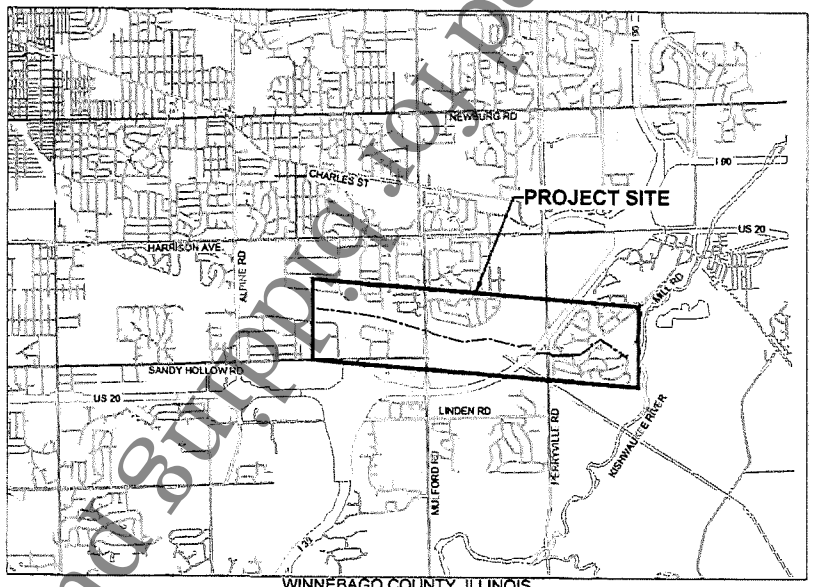
CHERRY VALLEY PARALLEL FORCEMAIN
CAPITAL IMPROVEMENT PROJECT #1420
2019

BOARD OF TRUSTEES

DONALD MASSIER	PRESIDENT
ELMER JONES	VICE-PRESIDENT
RICHARD POLLACK	CLERK/TREASURER
JOHN SWEENEY	TRUSTEE
BEN BERNSTEN	TRUSTEE

OFFICIALS

TIMOTHY S. HANSON	DISTRICT DIRECTOR
CHRISTOPHER T. BAER, PE	ENGINEERING MANAGER



WINNEBAGO COUNTY, ILLINOIS

Rock River Water Reclamation District

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MATTHEW L. CAMPBELL
ILLINOIS
JAN. 7 2019

Not to be used for bidding purposes

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sheet set CHERRY VALLEY PARALLEL FORCEMAIN PLAN SET

No work shall be performed from vehicles parked on, or equipment stored on, the through traffic lanes or shoulders of the Freeway / Interstate Route or any ramps or shoulders leading thereto.

ROCK RIVER WATER RECLAMATION DISTRICT 3501 KISHWAUKEE STREET ROCKFORD, ILLINOIS 61109 (815) 387-7660	CHERRY VALLEY PARALLEL FORCEMAIN CAPITAL IMPROVEMENT PROJECT #1420	PROPOSED FORCEMAIN ALIGNMENT PLAN & PROFILE SEQUENCE	Sheet No 23 OF 80 Date 1/16/2019

No	DATE	REVISION

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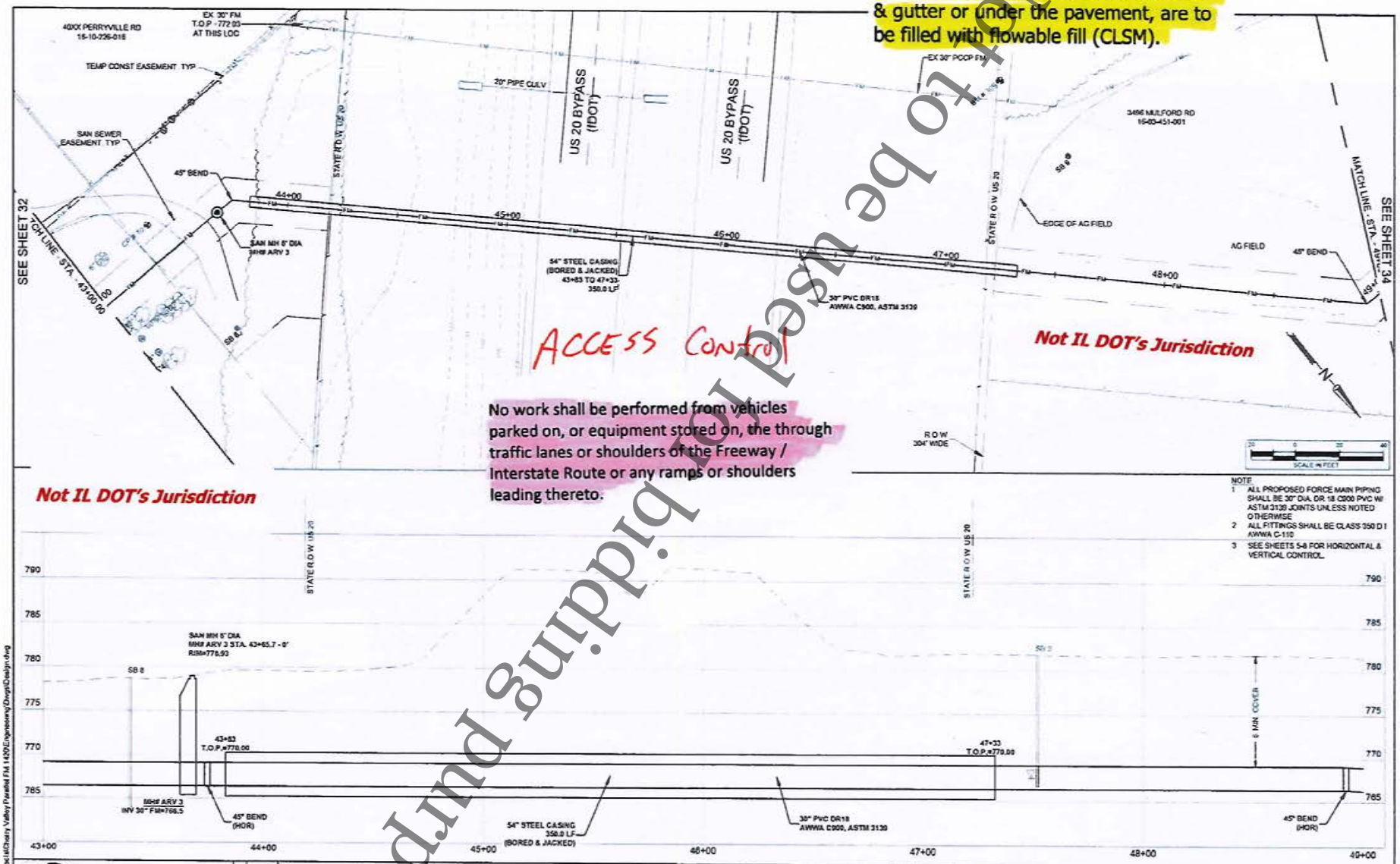
Not to be used for bidding purposes

Abandoned pipes over 6" in diameter that will be left in place under the curb & gutter or under the pavement, are to be filled with flowable fill (CLSM).



ROCK RIVER WATER RECLAMATION DISTRICT
3501 KISHWAUKEE STREET
ROCKFORD, ILLINOIS 61109
(815) 387-7880

No.	DATE	REVISION	INIT.

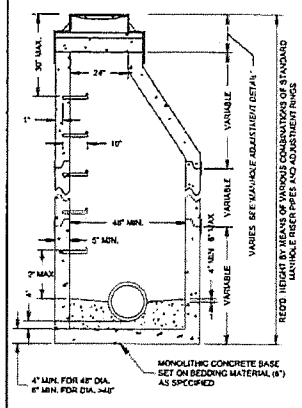
CHERRY VALLEY PARALLEL FORCEMAIN
CAPITAL IMPROVEMENT PROJECT #1420

PLAN & PROFILE STA. 43+00.00 TO 49+00.00

Sheet No
33 OF 80

Date
1/16/2019

Not to be used for bidding purposes



NOTES:

1. THE MAX. DROP FROM THE INVERT OF ANY PIPE TO THE CONCRETE CHANNEL UNDER THAT PIPE SHALL BE 8'.
2. MANHOLES LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE MARKED WITH A STEEL FENCE POST AS DIRECTED.
3. ALL NEW MANHOLES SHALL BE VACUUM TESTED PER A.S.T.M. C-1244 PRIOR TO ACCEPTANCE.
4. ALL BARREL JOINTS SHALL BE SEALED WITH 3 $\frac{3}{4}$" x $\frac{3}{4}$" BITUMINOUS MATERIAL ON THE LOWER SHIPLAP.
5. ALL BARREL JOINTS SHALL BE SEALED WITH AN EXTERNAL BARREL SEAL CENTERED ON THE JOINT (MAR MAC MACWRAP OR EQ.)
6. MANHOLE STRUCTURE SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE MANHOLE RISER SECTIONS IN ACCORDANCE WITH A.S.T.M. C478-90 OR THE LATEST DESIGNATION
7. PRECAST FLAT TOPS ARE NOT APPROVED FOR USE.
8. SEE *'MANHOLE ADJUSTMENT DETAIL'* FOR ADJUSTMENT REQUIREMENTS
9. PIPE CONNECTIONS TO NEW MANHOLES SHALL BE MADE BY MEANS OF EITHER RUBBER GASKET SEAL (A-LOK OR APPROVED EQUAL) CONFORMING TO ASTM F-477 CAST INTEGRALLY IN MANHOLE WALL, OR RUBBER GASKET SEAL AND STAINLESS STEEL CLAMP (PSX SERIES SIX OR APPROVED EQUAL) CONFORMING TO ASTM C-923. FOR PIPE CONNECTIONS WITH A DEPTH OF >20 FT., A RUBBER GASKET SEAL (A-LOK OR APPROVED EQUAL) CONFORMING TO ASTM F-477 CAST INTEGRALLY IN MANHOLE WALL SHALL BE USED.
10. PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE BY MEANS OF CORE DRILLING MANHOLE WALL AND INSTALLING RUBBER GASKET SEAL AND STAINLESS STEEL CLAMP (PSX SERIES SIX OR APPROVED EQUAL) CONFORMING TO ASTM C-923.
11. THE MAXIMUM DISTANCE FROM ANY INLET PIPE INVERT TO THE OUTLET PIPE INVERT SHALL BE 7'. A DISTANCE GREATER THAN 7' WILL REQUIRE AN INSIDE DROP CONNECTION PER *'INSIDE DROP MANHOLE DETAIL'*.

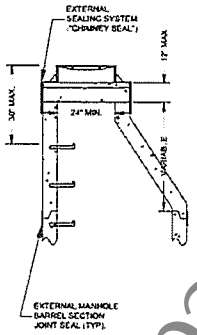
STANDARD MANHOLE DETAIL

(*'MANHOLE ADJUSTMENT DETAIL'* SHALL APPLY)

Rev. 5-13-18

NOTES:

1. MANHOLE FRAME & LID SHALL BE NEENAH R-1670 OR EAST JORDAN E-1117 WITH NON-ROCKING & SELF-SEALING LID.
2. LID SHALL HAVE 2" HIGH "SANITARY" LETTERING & A CONCEALED PICK HOLE.
3. ALL ADJUSTMENT RING JOINTS SHALL BE SEALED WITH TWO 1" BEADS OF APPROVED BITUMINOUS MATERIAL INCLUDING FRAME TO CONCRETE JOINT.
4. NO TARRING OR GROUTING IS ALLOWED ON THE INSIDE OF MANHOLE OR ADJUSTMENT JOINTS.
5. 2" RINGS ALLOWED ONLY IN THE CITY OF ROCKFORD RIGHT-OF-WAY; ALL OTHER 2" RINGS SHALL BE RRWRD APPROVED RUBBER ADJUSTMENT RING.
6. ONLY ONE 2" RING ALLOWED PER MANHOLE MAXIMUM ADJUSTMENT IS 12". MINIMUM ADJUSTMENT IS 4" UNLESS OFF-ROAD OR IN CURB & GUTTER ROADWAY.
7. WHEN A FRAME REQUIRES PITCHING, A MIN OF 3 SHIMS EQUALLY SPACED SHALL BE INSTALLED BETWEEN THE FRAME AND CONCRETE AND HYDRAULIC CEMENT SHALL BE USED TO FILL THE VOID BETWEEN THE FRAME & CONCRETE.
8. FLAT-TOPS ARE NOT PERMITTED ON 4' OR 5' DIA. MANHOLES.
9. REPLACEMENT OF EXISTING BARREL SECTIONS MAY BE REQUIRED TO MEET THE ABOVE REQUIREMENTS.



MANHOLE ADJUSTMENT DETAIL

(FOR ADJUSTMENT OF BOTH NEW & EXISTING MANHOLES)

Rev. 5-13-18

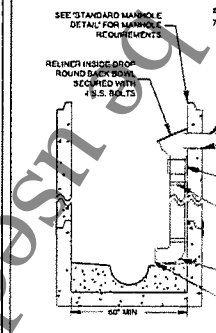
DROP BOWL & DROP PIPE SIZING

INLET PIPE DIA.	DROP PIPE DIA. (MIN.)
4 or INCH	4 INCH
6 INCH	6 INCH
10 INCH	8 INCH
>10 INCH	*

* PER MFG. OR AS DIRECTED BY RRWRD

NOTES:

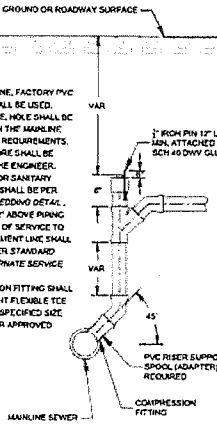
1. INSIDE DROP TYPE MANHOLES SHALL BE 5' MIN. INSIDE DIA.
2. ALL INSIDE DROP TYPE CONNECTIONS FOR SERVICES AND COLLECTOR SEWERS SHALL USE THE DROP AS PRODUCED BY RELINER DURAN INC. OR EQUAL.
3. SEE TABLE FOR DROP BOWL AND DROP PIPE SIZES
4. ALL INSIDE DROP PIPING SHALL BE PVC SDR35 ASTM D3034.
5. ATTACH THE ROUND BACK DROP BOWL AND EACH CLAMPING BRACKET TO THE MANHOLE WALL WITH $\frac{3}{4}$" x 1" MIN. S.S. BOLTS AND EPOXY IMPREGNATED LUGS PER MFG. RECOMMENDATIONS.
6. ALLOW 1" CLEARANCE BETWEEN PIPE & BOWL
7. CUT A 1"x1" NOTCH IN INVERT OF INLET PIPE



INSIDE DROP MANHOLE DETAIL

(*'STANDARD MANHOLE DETAIL'* SHALL APPLY)

Rev. 5-13-18



NOTES:

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

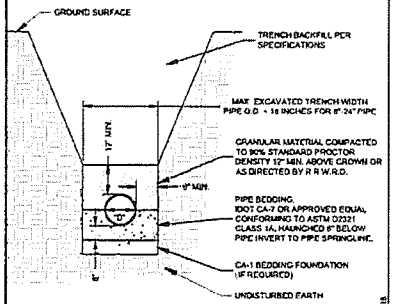
VERTICAL SERVICE RISER DETAIL

(FOR MAINLINE DIA. 8" - 18")

Rev. 5-13-18

NOTES:

1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
2. LOOSE MATERIAL TO BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.

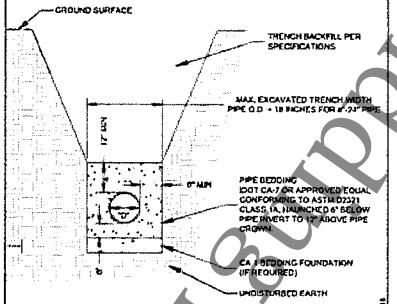


RIGID PIPE BEDDING DETAIL

Rev. 5-13-18

NOTES:

1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
2. LOOSE MATERIAL TO BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.



FLEXIBLE PIPE BEDDING DETAIL

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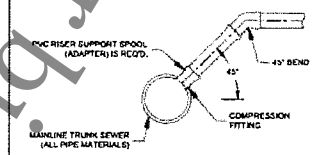


NOTES:

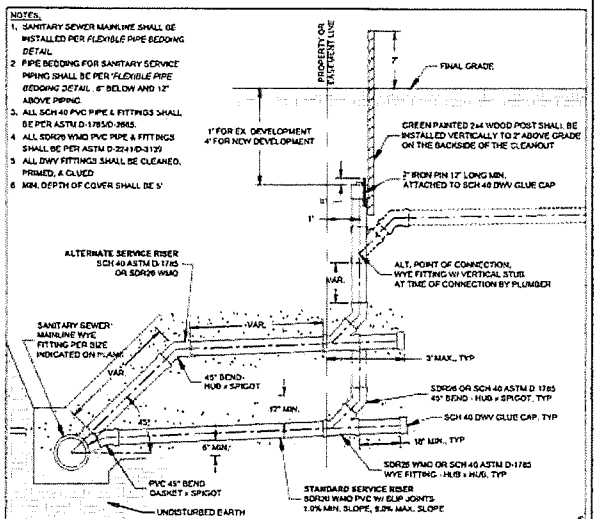
1. HOLE SHALL BE CORE DRILLED IN THE MAINLINE PIPE PER MFG.'S REQUIREMENTS.
2. LOCATION OF CORE SHALL BE APPROVED BY THE ENGINEER.
3. PIPE BEDDING SHALL BE PER *FLEXIBLE PIPE BEDDING DETAIL* 6" BELOW AND 12" ABOVE.
4. THE REMAINDER OF SERVICE TO PROPERTY/EASEMENT LINE SHALL BE INSTALLED PER *'STANDARD SERVICE & ALTERNATE SERVICE DETAIL'*.
5. THE COMPRESSION FITTING SHALL BE A WATER TIGHT FLEXIBLE TEE CONNECTOR OF SPECIFIED SIZE. (INSERT-A-TEE OR APPROVED EQUAL).

SERVICE CONNECTION DETAIL FOR CONNECTION TO 18" DIA. OR LARGER PIPE

Rev. 5-13-18

NOTES:

1. SANITARY SEWER MAINLINE SHALL BE INSTALLED PER *FLEXIBLE PIPE BEDDING DETAIL*.
2. PIPE BEDDING FOR SANITARY SERVICE PIPING SHALL BE PER *'FLEXIBLE PIPE BEDDING DETAIL'*, 6" BELOW AND 12" ABOVE PIPING
3. ALL SCH 40 PVC PIPE & FITTINGS SHALL BE PER ASTM D-1785/D-2665.
4. ALL SDR26 WMO PVC PIPE & FITTINGS SHALL BE PER ASTM D-2241/D-3139
5. ALL DWV FITTINGS SHALL BE CLEANED, PRIMED, & GLUED
6. MIN. DEPTH OF COVER SHALL BE 5'



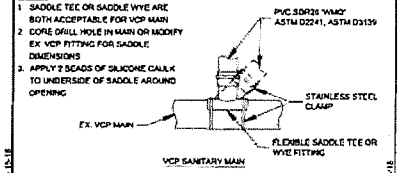
STANDARD SERVICE & ALTERNATE SERVICE DETAIL

(FOR MAINLINE DIA. 8" - 18")

Rev. 5-13-18

NOTES:

1. SADDLE TEE OR SADDLE WYE ARE BOTH ACCEPTABLE FOR VCP MAIN
2. CORE DRILL HOLE IN MAIN OR MODIFY EX. VCP FITTING FOR SADDLE DIMENSIONS
3. APPLY 2 BEADS OF SILICONE CAULK TO UNDERSIDE OF SADDLE AROUND OPENING

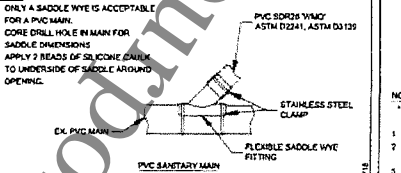


FLEXIBLE SADDLE CONNECTION DETAIL

Rev. 5-13-18

NOTES:

1. ONLY A SADDLE WYE IS ACCEPTABLE FOR A PVC MAIN.
2. CORE DRILL HOLE IN MAIN FOR SADDLE DIMENSIONS
3. APPLY 2 BEADS OF SILICONE CAULK TO UNDERSIDE OF SADDLE AROUND OPENING.



FLEXIBLE SADDLE CONNECTION DETAIL

Rev. 5-13-18

NOTES

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

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

CASING & SPACER DETAIL

Rev. 5-13-18

ROCK RIVER WATER RECLAMATION DISTRICT
STANDARD DETAILS
(NOT TO SCALE)
3501 KISHWAUKEE ST. P.O. BOX 7480
ROCKFORD, ILLINOIS 61109 PH. (815) 387-7660

SHEET No
55 of 80

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Geotechnical Engineering Report

Cherry Valley Parallel Force Main

Capital Project No. 1420

Cherry Valley, Illinois

January 8, 2019

Terracon Project No. 19185051

Prepared for:

Rock River Water Reclamation District
Rockford, Illinois

Prepared by:

Terracon Consultants, Inc.
Rockford, Illinois

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Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

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APPENDIX A – FIELD EXPLORATION

Exhibit A-1	Field Exploration Description
Exhibit A-2 & A-3	Boring Location Diagrams
Exhibits A-4 to A-27	Boring Logs

APPENDIX B – LABORATORY TESTING

Exhibit B-1	Laboratory Testing

APPENDIX C – SUPPORTING DOCUMENTS

Exhibit C-1	General Notes
Exhibit C-2	Unified Soil Classification
Exhibit C-3	General Notes – Sedimentary Rock Classification

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Terracon

January 8, 2019

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

Attn: Mr. Christopher Baer, P.E.

Re: Geotechnical Engineering Report
Cherry Valley Parallel Force Main
Capital Project No. 1420
Cherry Valley, Illinois
Terracon Project No. 19185051

Dear Mr. Baer:

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. P19185051 dated October 16, 2018 and RRWRD Purchase Order No. 80416 dated October 23, 2018. This report presents the results of the subsurface exploration and provides recommendations regarding excavation and backfilling for the proposed force main.

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.

LICENSED PROFESSIONAL ENGINEER
DOUGLAS ALAN WALDEIER
062-064326
STATE OF ILLINOIS

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
CHERRY VALLEY PARALLEL FORCE MAIN
CAPITAL PROJECT NO. 1420
CHERRY VALLEY, ILLINOIS

Terracon Project No. 19185051
January 8, 2019

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1.0 INTRODUCTION

Terracon has completed a subsurface exploration for the proposed Cherry Valley Parallel Force Main project in Cherry Valley, Illinois. Twenty-four (24) borings extending to depths ranging from about 8 to 20 feet below existing grade were performed along the proposed project alignment. In addition, three (3) auger probes were performed along the alignment to further define the lateral extent of refusal on apparent shallow rock. Boring logs and soil boring location diagrams 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 force main.

2.0 PROJECT INFORMATION

2.1 Project Description

ITEM	DESCRIPTION
Site layout	See Boring Location Diagrams (Exhibits A-2 and A-3)
Proposed Improvements	Force Main
Grading	No changes to existing surface grades are planned.
General Construction	It is anticipated that the force main sewer will be constructed using both open cut excavations and jack and bore methods.

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	The proposed alignment starts at the Cherry Valley Lift Station (Sta. 0+00) along Barley Ridge Trail, travels along Mill Road, crosses Perryville Road and the US 20 Bypass, through agricultural fields to cross Mulford Road, and terminates west of Mulford Road at Sta. 135+00.
Existing Improvements	The area along the alignment consists of residential roadways and agricultural fields.

ITEM	DESCRIPTION
Existing topography	Based upon the estimated surface elevations provided, the grades along the proposed alignment range from about 743 feet to 827 feet.

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 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 1 [1]	14 inches	Existing pavement: 4 inches of asphalt over 10 inches of crushed stone aggregate	N/A
Surface 2 [2]	3 inches	Crushed stone aggregate	N/A
Surface 3 [3]	3 to 12 inches	Topsoil/Topsoil Fill	N/A
Stratum 1 [4]	2½ to 8 feet	Fill: Lean clay, with variable amounts of silt, sand, and gravel or sand with variable amounts of clay and gravel	N/A
Stratum 2 [5]	4 to 20 feet	Native cohesive soils: Lean clay with variable amounts of silt, sand, and gravel or silt, trace gravel Native granular soils: Sand with variable amounts of clay, silt, and gravel or gravel with variable amounts of sand and clay	Cohesive soils: Soft to very stiff Granular soils: Very loose to very dense
Stratum 3 [6]	Auger Refusal depths of 8 to 12½ feet	Highly to moderately weathered limestone	N/A

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1. Existing pavement encountered in borings B-1 and B-2.
2. Encountered in borings B-7 and B-21.
3. Encountered in borings B-3 to B-6, B-8 to B-20, and B-22 to B-24.
4. Stratum 1 (fill) was encountered in Borings B-1 to B-3, B-6, B-15, B-17 to B-19, and B-21.
5. Stratum 2 was encountered to the termination depth of 15 feet in Borings B-1 to B-5 and B-8 to B-21 and to the termination depth of 20 feet in Borings B-6 and B-7.
6. Stratum 3 (weathered limestone) was encountered to the auger refusal depths of 8 to 12½ feet in Borings B-22 to B-24.

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Select soil samples were screened with a photo-ionization detector (PID) to estimate the presence of volatile organic compounds (VOCs). In general, the majority of the samples exhibited no detects (ND). There were five samples, however, that exhibited slight detects in the range of 0.1 to 0.2 ppm. Each of these samples were obtained within 2 feet of the ground surface. Two of the samples were fill materials (Borings B-19 and B-21), while the other 3 were obtained within native clay soils (Borings B-9, B-13, and B-16). Please refer to the attached boring logs for specific test results.

3.1.1 Auger Probe Results

Three borings drilled on the west end of the alignment (borings B-22 to B-24) encountered refusal on weathered limestone at shallower than planned termination depths. At the request of the Client, three (3) auger probe borings were performed to determine if rock was present within the exploration depths in the area east of boring B-22. The probes were advanced with a solid stem auger to refusal on apparent weathered limestone. The conditions encountered in the auger probes are presented in the following table:

Probe Location	Approximate Probe Station	Approximate Depth to Auger Refusal from Surface (ft.)
100' E of B-22	117+00	8.5
200' E of B-22	116+00	8.5
300' E of B-22	115+00	10

3.2 Water Level Observations

The borings were observed during and after the completion of drilling for the presence and level of water. The subsurface water levels observed at these times are indicated on the boring logs in Appendix A. A summary of the boreholes where water levels were observed is presented in the following table.

Boring Number	Observed Water Depth (ft) [1]	
	While Drilling	After Drilling
1	N/A	N/A

Boring Number	Observed Water Depth (ft) [1]	
	While Drilling	After Drilling
2	15	15
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A
6	N/A	N/A
7	9½	13
8	N/A	N/A
9	14	14
10	N/A	N/A
11	9½	8
12	4½	9
13	7½	6
14	7	6
15	6½	8
16	14½	14½
17	14	14
18	9½	8
19	4½	5
20	7	9
21	8½	9
22	4	3½
23	N/A	N/A
24	N/A	N/A

1. Below existing grade

The water levels summarized above are not necessarily indicative of the long term position of the water table. Observation wells would need to be installed and monitored for a period of weeks in order to determine the long term groundwater level. In addition, groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the project may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

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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.

Removal of rock will likely be required for the trench excavations if the utilities are to extend to beyond a depth of 4 to 10 feet for excavations west of Boring B-21 (approximate Stations 111+00 to 135+00). Elevations and depths of bedrock along this section of the alignment are likely to vary.

Since groundwater was encountered in the borings, groundwater seepage into the excavations should be expected. Seepage into the excavations should be controlled. Low volumes of seepage into excavations could 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.

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 soft clay soils or 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. The use of temporary sheeting would also have the added benefit of serving as a groundwater cutoff for the areas that extend to significant depths below the observed water levels in granular soils.

4.2 Force Main Construction

4.2.1 Force Main Trench Excavation Recommendations

Removal of rock will likely be required for the trench excavations if the utilities are to extend to beyond a depth of 4 to 10 feet west of Boring B-21 (Stations 111+00 to 135+00). Elevations and depths of bedrock along the alignment are likely to vary. In our experience, conventional heavy duty excavation equipment such as track-mounted excavators equipped with rock teeth, can sometimes excavate rock materials that were penetrated with flight augers in the exploratory borings. Excavation of rock formations that cannot be penetrated with flight augers is usually more difficult and often requires the use of pneumatic breakers or other rock excavation techniques. Rock removal in confined excavations such as utility trenches is generally difficult, even above the level of auger refusal.

The use of temporary sheeting/shoring or trench boxes will likely be needed where soft clay soils or loose sands are present or where space or other limitations will not permit safe slopes for an open cut excavation. Careful planning and execution of the trench excavations,

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dewatering 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 ¾H to 1V (horizontal to vertical) for Type A soils, 1H to 1V for Type B soils, and 1½H 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 excavations will extend into granular soils. Granular soils are classified as Type C soil according to the OSHA regulations. OSHA recommends a maximum slope inclination of 1½ horizontal to 1 vertical for excavation 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.

Since groundwater was encountered in the borings, groundwater seepage into the excavations should be expected, especially within the granular soils encountered starting at about 5 to 8 feet below current ground elevations. Seepage into the excavations should be controlled. Low volumes of seepage into excavations could be controlled using sump pits and pumps from within the excavations. However, for higher volumes of seepage, more extensive dewatering measures, such as a system of well points, may be necessary. In this case, temporary sheeting may be necessary, particularly in the granular soils. Sheeting, if driven to sufficient depths,

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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 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. 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 below the manhole. An

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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.

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4.2.4 Compaction Requirements

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

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

4.2.5 Horizontal Directional Drilling

We understand that consideration is being given to using horizontal directional drilling and pipe jacking methods to install the pipeline at select locations along the alignment (generally east of

Boring B-9, Station 47+00) in which open cut excavations are not feasible or allowed, such as under existing pavements and roadways. Horizontal directional drilling is a trenchless excavation method which is accomplished in two phases. The first phase consists of drilling a pilot hole along a design directional path. The second phase consists of pulling the pipe through the pilot hole.

Horizontal directional drilling is accomplished using a specialized horizontal drilling rig with ancillary tools and equipment. Based on the soils encountered in the soil borings, we anticipate the directional drilling will likely encounter alternating layers of clay and sand. Furthermore, it is possible that the horizontal directional drilling for the proposed water main may encounter groundwater.

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

The horizontal and vertical modulus of subgrade reactions for buried piping in different soil types are given in the following table:

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

1. For static load conditions. Parameters based on default design values provided in LPILE™ user manual.

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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, force main construction, backfilling, and other earth-related construction phases of the project.

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

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

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

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APPENDIX A

FIELD EXPLORATION

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Field Exploration Description

The borings were performed near the locations shown on the attached Boring Location Diagrams (Exhibits A-2 and A-3). 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 track-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.

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AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

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

Project Manager: DAW	Project No.: 19185051
Drawn by: DAW	Scale: AS SHOWN
Checked by: PLT	File Name: 19185051_BLD
Approved by: PLT	Date: Dec 2018

Terracon
4836 Colt Rd
Rockford, IL 61109-2612

BORING LOCATION PLAN 1

Cherry Valley Parallel Force Main, Capital Project No. 1420
3455 South Mulford Road
Cherry Valley, IL

Exhibit
A-2

Not to be used for bidding purposes

Not to be used for bidding purposes

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

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

Project Manager: DAW	Project No. 19185051
Drawn by: DAW	Scale: AS SHOWN
Checked by: PLT	File Name: ?
Approved by: PLT	Date: Dec 2018

Terracon
4836 Colt Rd
Rockford, IL 61109-2612

BORING LOCATION PLAN 2

Cherry Valley Parallel Force Main, Capital Project No. 1420
3455 South Mulford Road
Cherry Valley, IL

Exhibit A-3

Not to be used for bidding purposes

Not to be used for bidding purposes

BORING LOG NO. B-1

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2217° Longitude: -88.9663°
Northing: 1 Easting: 1
Station: 0+80

Surface Elev.: 743.651 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.3	743.5	**ASPHALT**, Approximately 4"								
1.2	742.5	**CRUSHED STONE AGGREGATE**, Approximately 10"								
		FILL - LEAN CLAY, trace sand, brown			X	14	4-5-8 N=13	ND		21
					X	12	4-4-4 N=8	ND		15
			5							
6.5	737.5	**FINE TO MEDIUM SAND (SP)**, trace clay and gravel, brown, medium dense			X	16	3-3-7 N=10	ND		9
8.0	736	**FINE TO MEDIUM SAND (SP)**, trace clay, gravel, and cobbles, brown, dense			X	14	24-27-13 N=40	ND		5
			10							
					X	15	16-20-28 N=48	ND		4
15.0	729	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with Auger Cuttings
Surface capped with asphalt

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018 | Boring Completed: 11-28-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-2

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2255° Longitude: -88.9696°
Northing: 1 Easting: 2
Station: 9+20

Surface Elev.: 751.107 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	751	**ASPHALT**, Approximately 4"
1.2	750	**CRUSHED STONE AGGREGATE**, Approximately 10"
3.5	747.5	**FILL - FINE TO MEDIUM SAND**, trace clay and gravel, brown
8.0	743	**LEAN CLAY (CL)**, reddish brown and gray, medium stiff to stiff
12.0	739	**LEAN CLAY (CL)**, trace silt and sand, reddish brown, soft to medium stiff
15.0	736	**FINE TO COARSE SAND (SW)**, with gravel, trace clay, brown, dense
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY (")	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	X	14	10-12-10 N=22	ND		6
5	X	12	3-4-4 N=8	ND	4000 (HP)	24
	X	16	3-3-4 N=7	ND	3000 (HP)	24
10	X	18	2-2-2 N=4	ND	1000 (HP)	20
15	X	16	14-15-15 N=30	ND		6

WATER LEVEL OBSERVATIONS: ▽ 15', While Drilling; ▽ 15', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with Auger Cuttings, Surface capped with asphalt

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

Notes:

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018 | Boring Completed: 11-28-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-5

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-3

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2257° Longitude: -88.9721°
Northing: 1 Easting: 3
Station: 17+10

Surface Elev.: 763.231 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psi)	WATER CONTENT (%)
0.5	762.5	**TOPSOIL FILL**, Approximately 6"								
		FILL - LEAN CLAY, trace silt, brown			X	16	1-2-2 N=4	ND		21
3.0	760	**LEAN CLAY (CL)**, with silt, reddish brown, medium stiff			X	14	2-3-3 N=6	ND	1500 (HP)	27
			5							
6.0	757	**CLAYEY FINE to MEDIUM SAND (SC)**, with gravel, reddish brown, loose			X	12	4-4-4 N=8	ND		15
8.0	755	**FINE TO COARSE SAND (SW)**, with gravel, brown, medium dense to dense			X	16	12-13-14 N=27	ND		4
			10							
15.0	748				X	18	21-25-24 N=49	ND		5
			15							
		BOTTOM OF BORING *Boring Terminated at 15 Feet*								

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018	Boring Completed: 11-28-2018
Drill Rig: D-50	Driller: Jim
Project No.: 19185051	Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-4

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2244° Longitude: -88.9746°
Northing: 1 Easting: 4
Station: 25+80

Surface Elev.: 790.473 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	790								
TOPSOIL, Approximately 6"									
FINE TO MEDIUM SAND (SP-SC), with clay, reddish brown, loose to medium dense				X	18	4-3-5 N=8	ND		9
				X	16	5-5-5 N=10	ND		10
		5		X	16	5-5-6 N=11	ND		13
8.0	782.5								
LEAN CLAY (CL), with sand, trace gravel, reddish brown, stiff				X	18	3-5-7 N=12	ND	3500 (HP)	14
		10							
12.0	778.5								
LEAN CLAY (CL), trace sand, reddish brown, medium stiff				X	18	2-3-3 N=6	ND	1000 (HP)	17
15.0	775.5	15							
BOTTOM OF BORING *Boring Terminated at 15 Feet*									

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-28-2018 | Boring Completed: 11-28-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-5

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2244° Longitude: -88.9775°
Northing: 1 Easting: 5
Station: 33+10

Surface Elev.: 782.33 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	782	**TOPSOIL**, Approximately 6"								
		FINE TO MEDIUM SAND (SP-SC), with clay, trace silt, brown, very loose			X	16	2-2-1 N=3	ND		9
3.0	779.5	**FINE TO MEDIUM SAND (SP-SC)**, with clay, brown, medium dense			X	14	4-4-6 N=10	ND		11
			5		X	16	5-6-5 N=11	ND		15
8.0	774.5	**LEAN CLAY (CL)**, brown, medium stiff to stiff			X	18	2-3-4 N=7	ND	4000 (HP)	22
			10							
14.0	768.5	**FINE SAND (SP-SC)**, with clay, reddish brown, medium dense			X	10	8-8-10 N=18	ND		8
15.0	767.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-8

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-6

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2246° Longitude: -88.9792°
Northing: 1 Easting: 6
Station: 38+10

Surface Elev.: 780.343 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.4	780	**TOPSOIL FILL**, Approximately 5"
		FILL - LEAN CLAY, trace sand and gravel, dark brown to black
3.0	777.5	**FINE SAND (SP)**, trace clay, reddish brown, loose to medium dense
8.0	772.5	**LEAN CLAY (CL)**, trace silt, brown and gray, soft
12.0	768.5	**LEAN CLAY (CL)**, trace sand and gravel, brown and gray, stiff
17.5	763	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, gray, very dense
20.0	760.5	**BOTTOM OF BORING** *Boring Terminated at 20 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	X	16	5-2-3 N=5	ND		17
5	X	16	5-4-4 N=8	ND		7
	X	18	4-5-7 N=12	ND		13
10	X	18	2-2-2 N=4	ND	500 (HP)	24
15	X	16	3-6-8 N=14	ND	4000 (HP)	10
	X	10	17-50/3"	ND	8000 (HP)	8
20						

WATER LEVEL OBSERVATIONS

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

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BORING LOG NO. B-7

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2248° Longitude: -88.9797°
Northing: 1 Easting: 7
Station: 39+90

Surface Elev.: 777.579 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	777.5	**CRUSHED STONE AGGREGATE**, Approximately 3"
		CLAYEY FINE SAND (SC), reddish brown, loose to medium dense
4.5	773	**LEAN CLAY (CL)**, trace silt, reddish brown and gray, medium stiff to stiff
8.0	769.5	**FINE SAND (SP)**, trace clay, reddish brown, very loose
13.0	764.5	**FINE TO COARSE SAND (SP-SM)**, with silt, light brown, medium dense
17.0	760.5	**CLAYEY FINE TO MEDIUM SAND (SC)**, trace gravel, gray, dense
20.0	757.5	**BOTTOM OF BORING** *Boring Terminated at 20 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		14	3-2-3 N=5	ND		11
		16	7-6-7 N=13	ND		16
5		14	3-2-3 N=5	ND	4000 (HP)	25
		14	1-1-2 N=3	ND		17
10						
		16	7-8-10 N=18	ND		14
15						
		14	13-22-25 N=47	ND	8000 (HP)	8
20						

WATER LEVEL OBSERVATIONS: 9½', While Drilling; 13', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

9½', While Drilling
13', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-10

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-8

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2248° Longitude: -88.9811°
Northing: 1 Easting: 8
Station: 43+30

Surface Elev.: 779.326 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.6	778.5	**TOPSOIL**, Approximately 7"
		LEAN CLAY (CL), with sand, brown, medium stiff
3.0	776.5	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, reddish brown, loose to medium dense
8.0	771.5	**LEAN CLAY (CL)**, trace sand, light gray, stiff to very stiff
12.0	767.5	**FINE TO COARSE SAND (SW)**, trace clay, brown, very dense
15.0	764.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*

DEPTH (FT.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		X	16	2-2-3 N=5	ND	2000 (HP)	13
5		X	14	3-4-7 N=11	ND		10
		X	18	2-3-3 N=6	ND		12
10		X	16	3-5-5 N=10	ND	4500 (HP)	12
15		X	14	28-36-45 N=81	ND		6

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-9

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2253° Longitude: -88.9818°
Northing: 1 Easting: 9
Station: 47+00

Surface Elev.: 780.615 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.6	780	**TOPSOIL**, Approximately 7"								
		LEAN CLAY (CL), trace sand, brown, medium stiff to stiff			X	14	2-3-4 N=7	0.1	3000 (HP)	18
					X	16	1-2-2 N=4	ND	500 (HP)	19
			5							
6.0	774.5	**SANDY LEAN CLAY (CL)**, trace gravel, light brown, medium stiff to stiff			X	18	3-2-4 N=6	ND	4000 (HP)	10
8.0	772.5	**FINE TO MEDIUM SAND (SP-SC)**, with clay, light brown, medium dense			X	14	6-8-5 N=13	ND		9
			10							
12.0	768.5	**FINE TO MEDIUM SAND (SP)**, trace clay and gravel, brown, very dense			X	14	15-37-50 N=87	ND		8
15.0	765.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

14', While Drilling
14', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-12

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-10

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2255° Longitude: -88.9836°
Northing: 1 Easting: 10
Station: 52+50

Surface Elev.: 768.352 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	768	**TOPSOIL**, Approximately 6"								
		LEAN CLAY (CL), with sand, dark brown, soft to medium stiff			X	12	1-1-2 N=3	ND	1500 (HP)	18
3.0	765.5	**SILTY CLAY (CL-ML)**, gray, soft to medium stiff			X	16	1-2-3 N=5	ND	500 (HP)	25
5.5	763	**CLAYEY FINE SAND (SC)**, trace gravel, light brown, medium dense	5		X	14	4-6-9 N=15	ND		11
8.0	760.5	**LEAN CLAY (CL)**, trace sand, brown, medium stiff to stiff			X	16	2-2-4 N=6	ND	3000 (HP)	12
12.0	756.5	**LEAN CLAY (CL)**, trace sand and gravel, brownish gray, very stiff	10		X	18	7-8-12 N=20	ND	7000 (HP)	10
15.0	753.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-11

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2256° Longitude: -88.9848°
Northing: 1 Easting: 11
Station: 55+00

Surface Elev.: 764.69 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.6	764	**TOPSOIL**, Approximately 7"								
		LEAN CLAY (CL), trace silt, dark brown, medium stiff to stiff			X	12	2-2-2 N=4	ND	2500 (HP)	27
3.0	761.5	**LEAN CLAY (CL)**, trace silt and sand seams, reddish brown and gray, medium stiff			X	16	2-3-3 N=6	ND	1000 (HP)	20
4.5	760	**FINE TO COARSE SAND (SW-SC)**, with clay, trace gravel, brown and gray, medium dense	5		X	12	2-3-7 N=10	ND		12
8.0	756.5	**FINE TO COARSE SAND (SW)**, with gravel, trace clay, brown and gray, dense		▽	X	14	13-19-12 N=31	ND		9
13.0	751.5	**LEAN CLAY (CL)**, trace sand, brown, medium stiff	10		X	12	5-3-5 N=8	ND	1500 (HP)	14
15.0	749.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ 9½', While Drilling
▽ 8', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-14

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-12

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2264° Longitude: -88.9882°
Northing: 1 Easting: 12
Station: 63+30

Surface Elev.: 765.111 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.7	764.5	**TOPSOIL**, Approximately 8"								
3.0	762	**LEAN CLAY (CL)**, trace sand, gray, stiff to very stiff			X	10	2-4-5 N=9	ND	4500 (HP)	21
6.0	759	**FINE TO MEDIUM SAND (SP)**, with gravel, gray, medium dense	5	▽	X	14	6-11-13 N=24	ND		12
9.0	756	**FINE TO MEDIUM SAND (SP)**, with gravel, light brown, medium dense			X	16	12-12-10 N=22	ND		10
15.0	750	**GRAVELLY FINE to MEDIUM SAND (SP)**, trace clay, gray, dense	10	▽	X	14	16-25-20 N=45	ND		16
					X	12	9-9-22 N=31	ND		12
		BOTTOM OF BORING *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *4½', While Drilling*
▽ *9', After Boring*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018	Boring Completed: 11-29-2018
Drill Rig: D-50	Driller: Jim
Project No.: 19185051	Exhibit: A-15

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-13

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2264° Longitude: -88.9906°
Northing: 1 Easting: 13
Station: 71+00

Surface Elev.: 769.152 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.8	768.5	**TOPSOIL**, Approximately 10"								
3.0	766	**LEAN CLAY (CL)**, with silt, dark brown to black, medium stiff to stiff			X	14	2-2-2 N=4	0.2	2500 (HP)	36
12.0	757	**GRAVELLY FINE to COURSE SAND (SW)**, trace clay, brown and gray, medium dense to dense			X	16	9-12-13 N=25	ND		11
			5	▽	X	10	5-10-10 N=20	ND		10
				▽	X	10	7-14-16 N=30	ND		12
			10							
15.0	754	**FINE TO COARSE SAND (SW)**, trace gravel, brown, medium dense			X	18	7-10-12 N=22	ND		12
		BOTTOM OF BORING *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *7½', While Drilling*
▽ *6', After Boring*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-16

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-14

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2261° Longitude: -88.9929°
Northing: 1 Easting: 14
Station: 77+70

Surface Elev.: 776.111 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
1.0	775	**TOPSOIL**, Approximately 12"
3.0	773	**LEAN CLAY (CL)**, trace silt, dark brown to black, medium stiff
6.0	770	**CLAYEY FINE SAND (SC)**, light brown, loose
12.0	764	**FINE TO MEDIUM SAND (SP)**, trace gravel, yellowish brown, medium dense to dense
15.0	761	**GRAVELLY FINE to MEDIUM SAND (SP)**, light brown, very dense
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	X	12	2-2-3 N=5	ND	2000 (HP)	17
	X	16	6-4-5 N=9	ND	1500 (HP)	10
5						
	X	14	9-12-12 N=24	ND		15
	X	12	17-24-14 N=38	ND		13
10						
	X	16	49-46-50/5"	ND		14
15						

WATER LEVEL OBSERVATIONS: 7', While Drilling; 6', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS
7', While Drilling
6', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-17

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-15

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2266° Longitude: -88.9955°
Northing: 1 Easting: 15
Station: 85+00

Surface Elev.: 776.392 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.8	775.5	**TOPSOIL FILL**, Approximately 10"
2.5	774	**FILL - LEAN CLAY (CL)**, trace sand, gray
8.0	768.5	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, light brown, medium dense
12.0	764.5	**GRAVEL (GP-GC)**, with sand and clay, brown, medium dense
15.0	761.5	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, brown, medium dense
		BOTTOM OF BORING *Boring Terminated at 15 Feet*

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		X	12	5-9-7 N=16	ND		21
		X	14	2-4-6 N=10	ND		12
5							
	▽	X	18	6-8-8 N=16	ND		10
	▽						
		X	2	9-11-15 N=26	ND		11
10							
		X	14	8-11-14 N=25	ND	8000 (HP)	9
15							

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *6½', While Drilling*
▽ *8', After Boring*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018	Boring Completed: 11-29-2018
Drill Rig: D-50	Driller: Jim
Project No.: 19185051	Exhibit: A-18

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-16

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2275° Longitude: -88.9959°
Northing: 1 Easting: 16
Station: 94+00

Surface Elev.: 786.183 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.8	785.5	**TOPSOIL**, Approximately 10"								
		LEAN CLAY (CL), trace sand, reddish brown, medium stiff to stiff			X	14	3-2-4 N=6	0.2	4000 (HP)	30
					X	14	2-2-3 N=5	ND	4000 (HP)	28
			5							
6.5	779.5	**CLAYEY FINE to MEDIUM SAND (SC)**, trace gravel, light brown, loose			X	16	4-3-2 N=5	ND		10
8.0	778	**SANDY LEAN CLAY (CL)**, trace gravel, light brown, very stiff								
					X	16	5-6-12 N=18	ND	8000 (HP)	9
			10							
13.0	773	**FINE SAND (SP)**, trace clay and gravel, light brown, medium dense								
				▽	X	16	13-14-15 N=29	ND		16
15.0	771	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *14½', While Drilling*
▽ *14½', After Boring*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-29-2018 | Boring Completed: 11-29-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-19

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-17

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2275° Longitude: -88.9991°
Northing: 1 Easting: 17
Station: 95+30

Surface Elev.: 793.937 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	793.5	**TOPSOIL FILL**, Approximately 6"								
		FILL - LEAN CLAY, trace sand and gravel, dark brown			X	10	3-6-6 N=12	ND		15
					X	12	6-6-7 N=13	ND		13
			5							
6.0	788	**FILL - LEAN CLAY**, light brown and gray			X	14	6-5-5 N=10	ND		24
8.0	786	**LEAN CLAY (CL)**, trace organics, dark brown to black, stiff			X	16	6-5-5 N=10	ND	3000 (HP)	24
			10							
14.0	780	**SILT (ML)**, trace gravel, light brown, stiff to very stiff		▽	X	14	4-5-7 N=12	ND	8000 (HP)	19
15.0	779	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *14', While Drilling*
▽ *14', After Boring*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018
Boring Completed: 11-30-2018
Drill Rig: D-50
Driller: Jim
Project No.: 19185051
Exhibit: A-20

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-18

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2278° Longitude: -89.0006°
Northing: 1 Easting: 18
Station: 98+80

Surface Elev.: 794.512 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	794.5	**TOPSOIL FILL**, Approximately 3"
		FILL - LEAN CLAY, trace sand and gravel, dark brown and brown
4.0	790.5	**LEAN CLAY (CL)**, brown and gray, medium stiff to stiff
8.0	786.5	**FINE SAND (SP-SC)**, with clay, trace gravel, brown and gray, medium dense
13.0	781.5	**FINE SAND (SP-SM)**, with silt, light brown, medium dense
15.0	779.5	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
	X	14	10-6-4 N=10	ND		14
	X	12	3-3-5 N=8	ND	3000 (HP)	27
5	X	16	2-3-4 N=7	ND	3500 (HP)	26
	X	14	3-5-6 N=11	ND		10
10						
	X	16	7-10-12 N=22	ND		12
15						

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

- 9½', While Drilling
- 8', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-21

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-19

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2281° Longitude: -89.002°
Northing: 1 Easting: 19
Station: 103+00

Surface Elev.: 794.866 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.6	794.5	**TOPSOIL FILL**, Approximately 7"								
		FILL - LEAN CLAY, with sand, trace gravel and organics			X	4	6-4-4 N=8	0.1		25
3.5	791.5	**FINE TO MEDIUM SAND (SP)**, medium dense		▽ ▽	X	10	7-11-16 N=27	ND		22
			5		X	14	5-7-9 N=16	ND		15
					X	18	3-5-8 N=13	ND		20
12.0	783	**FINE TO COARSE SAND (SW)**, with gravel, trace clay, very dense	10							
					X	16	19-22-35 N=57	ND		9
15.0	780	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *4½', While Drilling*
▽ *5', After Boring*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-22

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-20

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2284° Longitude: -89.0038°
Northing: 1 Easting: 20
Station: 106+80

Surface Elev.: 796.824 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	796.5	**TOPSOIL**, Approximately 6"								
		LEAN CLAY (CL), trace sand and organics, dark brown to black, stiff			X	18	2-5-4 N=9	ND	2000 (HP)	23
3.0	794	**LEAN CLAY (CL)**, with sand, trace gravel, gray, medium stiff			X	14	2-2-3 N=5	ND	1500 (HP)	18
6.0	791	**FINE SAND (SP)**, trace silt and gravel, light reddish brown, medium dense	5	▽	X	12	5-4-6 N=10	ND		20
8.0	789	**LEAN CLAY (CL)**, with sand, trace gravel, light brown, stiff to very stiff		▽	X	16	8-5-4 N=9	ND	5500 (HP)	11
13.0	784	**FINE SAND (SP)**, with gravel, trace silt, light brown, dense	10		X	14	12-14-16 N=30	ND		9
15.0	782	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*	15							

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ 7', While Drilling
▽ 9', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-23

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-21

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2288° Longitude: -89.0049°
Northing: 1 Easting: 21
Station: 111+00

Surface Elev.: 799.158 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	799	**CRUSHED STONE AGGREGATE**, Approximately 3"
		FILL - LEAN CLAY, gray
4.0	795	**CLAYEY FINE to MEDIUM SAND (SC)**, with cobbles, brown and gray
8.5	790.5	**FINE TO COARSE SAND (SW)**, trace clay, brown
12.0	787	**FINE TO MEDIUM SAND (SP)**, trace gravel, light brown
15.0	784	**BOTTOM OF BORING** *Boring Terminated at 15 Feet*

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	WATER CONTENT (%)
	X	8	5-3-3 N=6	0.2	25
	X	10	2-3-4 N=7	ND	20
5	X	6	8-11-13 N=24	ND	8
10	X	18	9-9-8 N=17	ND	17
15	X	18	8-11-13 N=24	ND	11

WATER LEVEL OBSERVATIONS: ▽ 8½', While Drilling; ▽ 9', After Boring

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS
▽ 8½', While Drilling
▽ 9', After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-24

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-22

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2292° Longitude: -89.0069°
Northing: 1 Easting: 22
Station: 118+00

Surface Elev.: 802.859 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
		TOPSOIL, Approximately 12"								
1.0	802	**SANDY LEAN CLAY (CL)**, dark brown to black, medium stiff to stiff			X	18	3-2-3 N=5	ND	2500 (HP)	15
4.0	799	**SILTY FINE SAND (SM)**, light brown and gray, dense to very dense	5	▽ ▽	X	16	11-18-18 N=36	ND		14
7.0	796	**HIGHLY to MODERATELY WEATHERED LIMESTONE**, light brown			X	16	23-37-50/4"	ND		12
8.5	794.5	**BOTTOM OF BORING** *Boring Terminated at 8.5 Feet*					50/2"			7

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

▽ *4', While Drilling*
▽ *3½', After Broing*

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018	Boring Completed: 11-30-2018
Drill Rig: D-50	Driller: Jim
Project No.: 19185051	Exhibit: A-25

Not to be used for bidding purposes

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

BORING LOG NO. B-23

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2295° Longitude: -89.0102°
Northing: 1 Easting: 23
Station: 126+70

Surface Elev.: 808.236 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	LABORATORY HP (psf)	WATER CONTENT (%)
0.5	807.5								
TOPSOIL, Approximately 6"									
FINE SAND (SP), trace silt, light gray, medium dense									
				X	18	3-4-13 N=17	ND		25
4.0	804			X	8	29-50/3"	ND		15
HIGHLY WEATHERED LIMESTONE, light brown, very dense		5							
6.5	801.5			X		50/3"			8
HIGHLY to MODERATELY WEATHERED LIMESTONE, light brown									
8.0	800								
BOTTOM OF BORING									
Auger Refusal at 8 Feet									

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

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018	Boring Completed: 11-30-2018
Drill Rig: D-50	Driller: Jim
Project No.: 19185051	Exhibit: A-26

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

BORING LOG NO. B-24

PROJECT: Cherry Valley Parallel Force Main, Capital Project No. 1420

CLIENT: Rock River Water Reclamation District Rockford, IL

SITE: 3455 South Mulford Road Cherry Valley, IL

LOCATION See Exhibit A-2

Latitude: 42.2299° Longitude: -89.0135°
Northing: 1 Easting: 24
Station: 135+00

Surface Elev.: 827.025 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	SAMPLE TYPE	RECOVERY ()	FIELD TEST RESULTS	PID (ppm)	WATER CONTENT (%)
0.7	826.5	**TOPSOIL**, Approximately 8"						
3.0	824	**CLAYEY FINE SAND (SC)**, reddish brown, loose		X	18	2-2-2 N=4	ND	12
8.0	819	**FINE SAND (SP)**, brown, medium dense	5	X	18	5-5-8 N=13	ND	7
				X	18	6-7-9 N=16	ND	8
10.0	817	**CLAYEY FINE SAND (SC)**, brown, dense	10	X	10	11-23-21 N=44	ND	7
11.5	815.5	**HIGHLY WEATHERED LIMESTONE**, light brown						
12.5	814.5	**MODERATELY WEATHERED LIMESTONE**, light brown						
		BOTTOM OF BORING *Auger Refusal at 12.5 Feet*						

GRAPHIC LOG | WATER LEVEL OBSERVATIONS | LABORATORY HP (psf)

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

Hammer Type: Automatic

Advancement Method: Hollow Stem Auger

Abandonment Method: Boring backfilled with auger cuttings upon completion.

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

Notes:

WATER LEVEL OBSERVATIONS

None, While Drilling
None, After Boring

Terracon
4836 Colt Rd
Rockford, IL

Boring Started: 11-30-2018 | Boring Completed: 11-30-2018
Drill Rig: D-50 | Driller: Jim
Project No.: 19185051 | Exhibit: A-27

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 19185051 CHERRY VALLEY PAR.GPJ MODELLAYER.GPJ 1/8/19

Not to be used for bidding purposes

APPENDIX B

LABORATORY TESTING

Not to be used for bidding purposes

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 native cohesive samples. The test results are provided on the boring logs in Appendix A.

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

Not to be used for bidding purposes

APPENDIX C

SUPPORTING DOCUMENTS

Not to be used for bidding purposes

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING

Auger	Split Spoon
Shelby Tube	Macro Core
Ring Sampler	Rock Core
Grab Sample	No Recovery

WATER LEVEL

- Water Initially Encountered
- Water Level After a Specified Period of Time
- Water Level After a Specified Period of Time

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.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

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.	Ring Sampler Blows/Ft.
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

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

Not for use for bidding purposes

Terracon

Exhibit C-1

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 / Liquid limit - not dried	< 0.75	OL	Organic clay [K,L,M,N] / 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 / Liquid limit - not dried	< 0.75	OH	Organic clay [K,L,M,P] / 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] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 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 ≥ 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 ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 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.

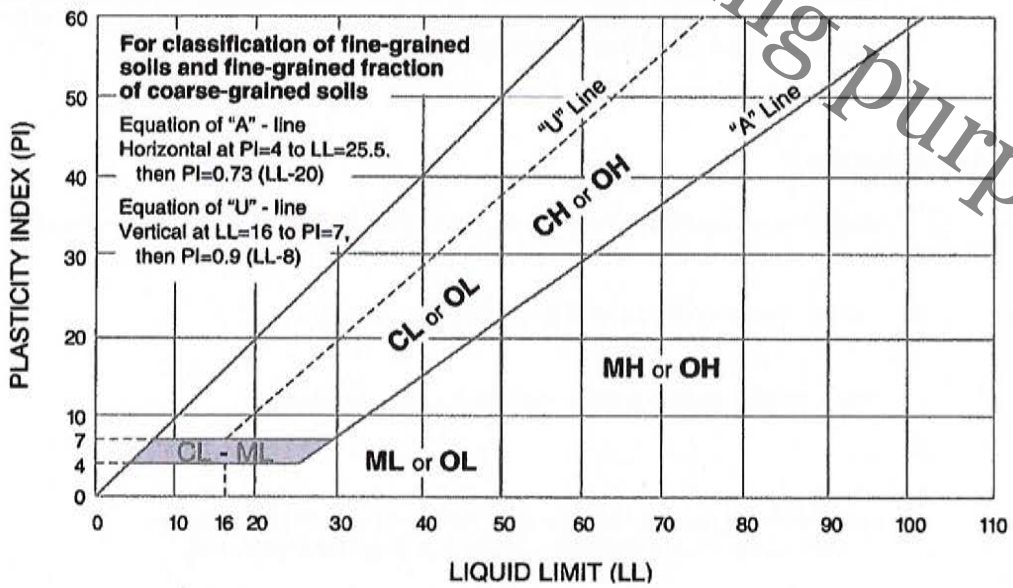

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Exhibit C-2

Not to be used for bidding purposes

GENERAL NOTES

Sedimentary Rock Classification

DESCRIPTIVE ROCK CLASSIFICATION:

Sedimentary rocks are composed of cemented clay, silt and sand sized particles. The most common minerals are clay, quartz and calcite. Rock composed primarily of calcite is called limestone; rock of sand size grains is called sandstone, and rock of clay and silt size grains is called mudstone or claystone, siltstone, or shale. Modifiers such as shaly, sandy, dolomitic, calcareous, carbonaceous, etc. are used to describe various constituents. Examples: sandy shale; calcareous sandstone.

LIMESTONE	Light to dark colored, crystalline to fine-grained texture, composed of $CaCo_3$, reacts readily with HCl.
DOLOMITE	Light to dark colored, crystalline to fine-grained texture, composed of $CaMg(CO_3)_2$, harder than limestone, reacts with HCl when powdered.
CHERT	Light to dark colored, very fine-grained texture, composed of micro-crystalline quartz (SiO_2), brittle, breaks into angular fragments, will scratch glass.
SHALE	Very fine-grained texture, composed of consolidated silt or clay, bedded in thin layers. The unlaminated equivalent is frequently referred to as siltstone, claystone or mudstone.
SANDSTONE	Usually light colored, coarse to fine texture, composed of cemented sand size grains of quartz, feldspar, etc. Cement usually is silica but may be such minerals as calcite, iron-oxide, or some other carbonate.
CONGLOMERATE	Rounded rock fragments of variable mineralogy varying in size from near sand to boulder size but usually pebble to cobble size (½ inch to 6 inches). Cemented together with various cementing agents. Breccia is similar but composed of angular, fractured rock particles cemented together.

DEGREE OF WEATHERING:

SLIGHT	Slight decomposition of parent material on joints. May be color change.
MODERATE	Some decomposition and color change throughout.
HIGH	Rock highly decomposed, may be extremely broken.

Classification of rock materials has been estimated from disturbed samples. Core samples and petrographic analysis may reveal other rock types.

Not to be used for bidding purposes

Exhibit C-3

Terracon

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL PERMIT

LOG NUMBERS: 2019-64025 **PERMIT NO.:** 2019-IB-64025
Bureau ID: W2010300010

FINAL PLANS, SPECIFICATIONS, APPLICATION AND SUPPORTING DOCUMENTS **DATE ISSUED:** April 11,2019
PREPARED BY: Rock River Water Reclamation District

SUBJECT: ROCK RIVER WATER RECLAMATION DISTRICT - Cherry Valley Parallel Force Main Project No 1420 (Rock River Water Reclamation District Sewage Treatment Plant) - Sanitary Sewer Permit

PERMITTEE TO CONSTRUCT, OWN AND OPERATE

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

Not to be used for bidding purposes

Permit is hereby granted to the above designated permittee(s) to construct and/or operate water pollution control facilities described as follows (quantities are approximate):

16460 feet of 30 inch force main, 120 feet of 42 inch sanitary sewer and 2 manholes to serve existing population within the Cherry Valley area (0 P.E.,0 GPD, DAF) located at the intersection of Mill Road and Perryville Road with discharge to an existing 42 inch sanitary sewer tributary to the above indicated sewage treatment plant.

This Permit is issued subject to the following Special Condition(s). If such Special Condition(s) require(s) additional or revised facilities, satisfactory engineering plan documents must be submitted to this Agency for review and approval for issuance of a Supplemental Permit.

SPECIAL CONDITION 1: Any connections to this sanitary sewer extension must be in accordance with the latest Revisions of Title 35, Subtitle C, Chapter 1. Permits must be obtained if required by said regulations.

SPECIAL CONDITION 2: If this project is located within a wetlands, the U.S. Army Corps of Engineers may require a permit for construction pursuant to Section 404 of the Clean Water Act.

SPECIAL CONDITION 3: The Permittee to Construct shall be responsible for obtaining an NPDES Storm Water Permit prior to initiating construction if the construction activities associated with this project will result in the disturbance of one (1) or more acres total land area.

An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Agency's Division of Water Pollution Control - Permit Section.

THE STANDARD CONDITIONS OF ISSUANCE INDICATED ON THE REVERSE SIDE MUST BE COMPLIED WITH IN FULL. READ ALL CONDITIONS CAREFULLY.

ALD:TTL:n:\docs\permits\statecon\Lamm\2019-64025.docx

DIVISION OF WATER POLLUTION CONTROL

cc: EPA-Des Plaines FOS
Rock River Water Reclamation District
Records - Municipal

Amy L. Dragovich, P.E.
Manager, Permit Section

READ ALL CONDITIONS CAREFULLY:
STANDARD CONDITIONS

The Illinois Environmental Protection Act (Illinois Revised Statutes Chapter 111-12. Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

1. Unless the construction for which this permit is issued has been completed, this permit will expire (1) two years after the date of issuance for permits to construct sewers or wastewater sources or (2) three years after the date of issuance for permits to construct treatment works or pretreatment works.

2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.

4. The permittee shall allow any agent duly authorized by the Agency upon the presentations of credentials:

   a. to enter at reasonable times, the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit;

   b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit;

   c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit;

   d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants;

   e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;

   b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;

   c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;

   d. does not take into consideration or attest to the structural stability of any units or parts of the project;

   e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6. Unless a joint construction/operation permit has been issued, a permit for operating shall be obtained from the agency before the facility or equipment covered by this permit is placed into operation.

7. These standard conditions shall prevail unless modified by special conditions.

8. The Agency may file a complaint with the Board for suspension or revocation of a permit:

   a. upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed; or

   b. upon finding that any standard or special conditions have been violated; or

   c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.

Not to be used for binding purposes

RECEIVED
APR 15 2019
ROCK RIVER WATER
RECLAMATION DISTRICT

Section VII

General Provisions & Technical Specifications for Sanitary Sewer Construction

(Separate document incorporated by reference)

Not to be used for bidding purposes