

Contract Routing Form

ROUTING: Routine

printed on: 07/16/2018

Contract between: Speedway Sand & Gravel Inc
 and Dept. or Division: Engineering Division
 Name/Phone Number:

Project: Old Sauk Road Water Pipeline

Contract No.: 8186
 Enactment No.: RES-18-00509
 Dollar Amount: 506,875.00

File No.: 52052
 Enactment Date: 07/13/2018

(Please DATE before routing)

Signatures Required	Date Received	Date Signed
City Clerk	7-18-18	7-18-18
Director of Civil Rights	7/18/18	8-1-18 FNS
Risk Manager	8/6/18	8/6/18 REN
Finance Director	08-07-2018	8-7-18 R
City Attorney	885 8-08-18	8-10-18
Mayor	08.10.18	08.10.18

Please return signed Contracts to the City Clerk's Office
 Room 103, City-County Building for filing.

Original + 2 Copies

07/16/2018 11:51:54 enjls - Pete Holmgren 261-5530

Dis Rights: OK (N/A) / Problem - Hold
 Prev Wage: AA / Agency / No
 Contract Value: 506,875
 AA Plan: Approved
 Amendment / Addendum #
 Type: POS / Dvlp / Sbdv / Govt /
 Grant / PW / Goal / Loan / Agrmt

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File #:	52052	Version: 1	Name:	Awarding Public Works Contract No. 8186, Old Sauk Road Water Pipeline.
Type:	Resolution		Status:	Passed
File created:	6/12/2018		In control:	BOARD OF PUBLIC WORKS
On agenda:	7/10/2018		Final action:	7/10/2018
Enactment date:	7/13/2018		Enactment #:	RES-18-00509
Title:	Awarding Public Works Contract No. 8186, Old Sauk Road Water Pipeline. (9th AD)			
Sponsors:	BOARD OF PUBLIC WORKS			
Attachments:	1. Contract 8186 .pdf			

[History \(3\)](#) [Text](#)

Fiscal Note

The proposed resolution awards the contract for the Old Sauk Road Water Pipeline project, which is a component of the Water Utility's Far West Elevated Reservoir project within the adopted 2018 capital budget. The 2018 Water Utility adopted capital budget appropriated \$780,000 for this work within the project. This water pipeline project is estimated to cost \$547,430, which will be funded by Water Utility revenue bonds.

MUNIS:

10445-86-179: 54250 (91360)

Title

Awarding Public Works Contract No. 8186, Old Sauk Road Water Pipeline. (9th AD)

Body

BE IT RESOLVED, that the following low bids for miscellaneous improvements be accepted and that the Mayor and City Clerk be and are hereby authorized and directed to enter into a contract with the low bidders contained herein, subject to the Contractor's compliance with Section 39.02 of the Madison General Ordinances concerning compliance with the Affirmative Action provisions **and subject to the Contractor's compliance with Section 33.07 of the Madison General Ordinances regarding Best Value Contracting:**

BE IT FURTHER RESOLVED, that the funds be encumbered to cover the cost of the projects contained herein.

See attached document (Contract No. 8186) for itemization of bids.

CDO
7-16-18



PROJECT _____ CONTRACTOR _____ AMOUNT OF BID _____

CONTRACT NO. 8186
OLD SAUK ROAD WATER PIPELINE

SPEEDWAY SAND & GRAVEL, INC.

\$506,875.00

Acct. No. 10445-86-179: 54250 (91360)

\$506,875.00

Contingency 8%±

40,555.00

GRAND TOTAL

\$547,430.00

Jurisdiction: Wisconsin

Demographics

Company Name: Fidelity and Deposit Company of Maryland
Short Name:
SBS Company Number: 54219634
NAIC CoCode: 39306
FEIN: 13-3046577
Domicile Type: Foreign
State of Domicile: Maryland
Country of Domicile: United States
NAIC Group Number: 212 - ZURICH INS GRP
Organization Type: Stock
Date of Incorporation: 03/18/1969
Merger Flag: No

Address

Business Address
 1299 ZURICH WAY
 Schaumburg, IL 60196
 United States
Mailing Address
 1299 ZURICH WAY
 Schaumburg, IL 60196
 United States
Statutory Home Office Address
 600 Red Brook Blvd
 Owings Mills, MD 21117-5153
 United States
Main Administrative Office Address
 1299 ZURICH WAY
 Schaumburg, IL 60196
 United States

Phone, E-mail, Website

Phone

Type	Number
Business Primary Phone	(847) 605-6000
Business Toll Free Phone	(800) 382-2150
Mailing Primary Phone	(847) 605-6000
Mailing Toll Free Phone	(800) 382-2150
Statutory Home Office Primary Phone	(847) 605-6000
Statutory Home Office Toll Free Phone	(800) 382-2150
Main Admin Office Primary Phone	(847) 605-6000
Main Admin Office Toll Free Phone	(800) 382-2150

Email

No results found.

Website

No results found.

Company Type

Company Type: Property and Casualty
Status: Active
Status Reason:
Status Date: 01/01/1982
Effective Date: 01/01/1982
Legacy State ID: 111700
Issue Date: 01/01/1982
Approval Date:
File Date:
Articles of Incorporation Received: No
Article No:
COA Number:

Appointments

mosc

Licensee Name	License Number	NPN	License Type	Line of Authority	Appointment Date	Effective Date	Expiration Date
ELIZABETH MOSCA	12305256	12305256	Intermediary (Agent) Individual	Casualty	02/03/2016	03/16/2018	03/15/2019
ELIZABETH MOSCA	12305256	12305256	Intermediary (Agent) Individual	Property	02/03/2016	03/16/2018	03/15/2019

Line Of Business

Line of Business	Citation Type	Effective Date
<small>© 2018 National Association of Insurance Commissioners. All rights reserved.</small>		

First Previous **1** Next Last

Contact

Filter

Contact Type	Preferred Name	Name	E-mail	Phone	Address
Registered Agent for Service of Process		*			Other CORPORATION SERVICE COMPANY 8040 EXCELSIOR DR STE 400 MADISON, WI 53717 United States

First Previous **1** Next Last

Company Merger

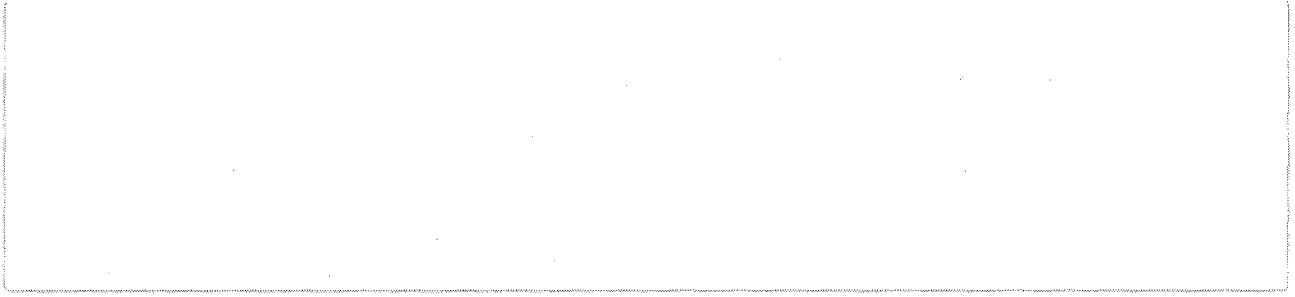
No results found.

Name Change History

Filter

Previous Name	New Name	Effective Date
	Fidelity and Deposit Company of Maryland	

First Previous **1** Next Last



\$506,875.00
FILE

BID OF SPEEDWAY SAND & GRAVEL, INC.

2018

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

OLD SAUK ROAD WATER PIPELINE

CONTRACT NO. 8186

PROJECT NO. 10445

MUNIS NO. 10445-86-179

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL
MADISON, WISCONSIN ON JULY 10, 2018

CITY ENGINEERING DIVISION
1600 EMIL STREET
MADISON, WISCONSIN 53713

<https://bidexpress.com/login>

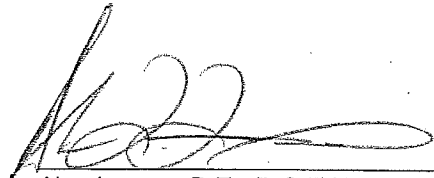
OLD SAUK ROAD WATER PIPELINE
CONTRACT NO. 8186

INDEX

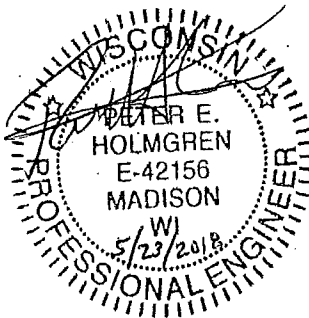
SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS A-1
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SECTION I: PAYMENT AND PERFORMANCE BOND I-1

This Proposal, and Agreement have
been prepared by:

CITY ENGINEERING DIVISION
CITY OF MADISON
MADISON, DANE COUNTY, WISCONSIN

 5/23/18

Alan Larson, P.E., B.C.E.E.
Water Utility Principal Engineer



SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	OLD SAUK ROAD WATER PIPELINE
CONTRACT NO.:	8186
SBE GOAL	4%
BID BOND	5%
SBE PRE BID MEETING (1:00 P.M.)	6/1/2018
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	5/31/2018
BID SUBMISSION (2:00 P.M.)	6/7/2018
BID OPEN (2:30 P.M.)	6/7/2018
PUBLISHED IN WSJ	5/24 & 5/31/2018

SBE PRE BID MEETING: Representatives of the Affirmative Action Department will be present to discuss the Small Business Enterprise requirements at 1600 Emil Street, Madison Wisconsin.

PREQUALIFICATION APPLICATION: Forms are available on our website, www.cityofmadison.com/business/pw/forms.cfm. If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable.

BIDS TO BE SUBMITTED by hand to 1600 EMIL ST., MADISON, WI 53713 or online at www.bidexpress.com.

THE BID OPENING is at 1600 EMIL ST., MADISON, WI 53713.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2018 Edition, as supplemented and amended from time to time, forms a part of these contract documents as if attached hereto.

These standard specifications are available on the City of Madison Public Works website, www.cityofmadison.com/Business/PW/specs.cfm.

The Contractor shall review these Specifications prior to preparation of proposals for the work to be done under this contract, with specific attention to Article 102, "BIDDING REQUIREMENTS AND CONDITIONS" and Article 103, "AWARD AND EXECUTION OF THE CONTRACT." For the convenience of the bidder, below are highlights of three subsections of the specifications.

SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

In accordance with Wisconsin State Statutes 66.0901 (2) and (3), all bidders must submit to the Board of Public Works proof of responsibility on forms furnished by the City. The City requires that all bidders be qualified on a biennial basis.

Bidders must present satisfactory evidence that they have been regularly engaged in the type of work specified herein and they are fully prepared with necessary capital, materials, machinery and supervisory personnel to conduct the work to be contracted for to the satisfaction of the City. All bidders must be pre-qualified by the Board of Public Works for the type of construction on which they are bidding prior to the opening of the bid.

In accordance with Section 39.02(9)(a)l. of the General Ordinances, all bidders shall submit in writing to the Affirmative Action Division Manager of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

The bidder shall be disqualified if the bidder fails to or refuses to, prior to opening of the bid, submit a Certificate of compliance, Affirmative Action Plan or Affirmative Action Data Update, as applicable, as defined by Section 39.02 of the General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of the Standard Specifications.

SECTION 102.4 PROPOSAL

No bid will be accepted that does not contain an adequate or reasonable price for each and every item named in the Schedule of Unit Prices.

A lump sum bid for the work in accordance with the plans and specifications is required. The lump sum bid must be the same as the total amounts bid for the various items and it shall be inserted in the space provided.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. The plans, specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a member/partner or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized registered agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. The required signatures shall in all cases appear in the space provided thereof on the proposal.

Each proposal shall be placed, together with the proposal guaranty, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor or submitted electronically through Bid Express (www.bidexpress.com). Proposals will be accepted at the location, the time and the date designated in the advertisement. Proposals received after the time and date designated will be returned to the bidder unopened.

SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

MINOR DISCREPENCIES

Bidder is responsible for submitting all forms necessary for the City to determine compliance with State and City bidding requirements. Notwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion or performance of the contract.

Bidders for this Contract(s) must be Pre-Qualified for at least one of the following type(s) of construction denoted by an

Building Demolition

- 101 Asbestos Removal
 120 House Mover

- 110 Building Demolition

Street, Utility and Site Construction

- 201 Asphalt Paving
 205 Blasting
 210 Boring/Pipe Jacking
 215 Concrete Paving
 220 Con. Sidewalk/Curb & Gutter/Misc. Flat Work
 221 Concrete Bases and Other Concrete Work
 222 Concrete Removal
 225 Dredging
 230 Fencing
 235 Fiber Optic Cable/Conduit Installation
 240 Grading and Earthwork
 241 Horizontal Saw Cutting of Sidewalk
 242 Infrared Seamless Patching
 245 Landscaping, Maintenance
 246 Ecological Restoration
 250 Landscaping, Site and Street
 251 Parking Ramp Maintenance
 252 Pavement Marking
 255 Pavement Sealcoating and Crack Sealing
 260 Petroleum Above/Below Ground Storage Tank Removal/Installation
 262 Playground Installer

- 265 Retaining Walls, Precast Modular Units
 270 Retaining Walls, Reinforced Concrete
 275 Sanitary, Storm Sewer and Water Main Construction
 276 Sawcutting
 280 Sewer Lateral Drain Cleaning/Internal TV Insp.
 285 Sewer Lining
 290 Sewer Pipe Bursting
 295 Soil Borings
 300 Soil Nailing
 305 Storm & Sanitary Sewer Laterals & Water Svc.
 310 Street Construction
 315 Street Lighting
 318 Tennis Court Resurfacing
 320 Traffic Signals
 325 Traffic Signing & Marking
 332 Tree pruning/removal
 333 Tree, pesticide treatment of
 335 Trucking
 340 Utility Transmission Lines including Natural Gas, Electrical & Communications
 399 Other _____

Bridge Construction

- 501 Bridge Construction and/or Repair

Building Construction

- 401 Floor Covering (including carpet, ceramic tile installation, rubber, VCT)
 402 Building Automation Systems
 403 Concrete
 404 Doors and Windows
 405 Electrical - Power, Lighting & Communications
 410 Elevator - Lifts
 412 Fire Suppression
 413 Furnishings - Furniture and Window Treatments
 415 General Building Construction, Equal or Less than \$250,000
 420 General Building Construction, \$250,000 to \$1,500,000
 425 General Building Construction, Over \$1,500,000
 428 Glass and/or Glazing
 429 Hazardous Material Removal
 430 Heating, Ventilating and Air Conditioning (HVAC)
 433 Insulation - Thermal
 435 Masonry/Tuck pointing

- 437 Metals
 440 Painting and Wallcovering
 445 Plumbing
 450 Pump Repair
 455 Pump Systems
 460 Roofing and Moisture Protection
 464 Tower Crane Operator
 461 Solar Photovoltaic/Hot Water Systems
 465 Soil/Groundwater Remediation
 466 Warning Sirens
 470 Water Supply Elevated Tanks
 475 Water Supply Wells
 480 Wood, Plastics & Composites - Structural & Architectural
 499 Other _____

State of Wisconsin Certifications

- 1 Class 5 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for quarries, open pits and road cuts.
 2 Class 6 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for trenches, site excavations, basements, underwater demolition, underground excavations, or structures 15 feet or less in height.
 3 Class 7 Blaster - Blasting Operations and Activities for structures greater than 15' in height, bridges, towers, and any of the objects or purposes listed as "Class 5 Blaster or Class 6 Blaster".
 4 Petroleum Above/Below Ground Storage Tank Removal and Installation (Attach copies of State Certifications.)
 5 Hazardous Material Removal (Contractor to be certified for asbestos and lead abatement per the Wisconsin Department of Health Services, Asbestos and Lead Section (A&LS).) See the following link for application: www.dhs.wisconsin.gov/Asbestos/Cert. State of Wisconsin Performance of Asbestos Abatement Certificate must be attached.
 6 Certification number as a Certified Arborist or Certified Tree Worker as administered by the International Society of Arboriculture
 7 Pesticide application (Certification for Commercial Applicator For Hire with the certification in the category of turf and landscape (3.0) and possess a current license issued by the DATCP)
 8 State of Wisconsin Master Plumbers License.

SECTION B: PROPOSAL

Please refer to the
Bid Express Website
at <https://bidexpress.com>
look up contract number
and go to
Section B: Proposal Page

You can access all City of Madison bid solicitations for FREE at www.bidexpress.com

Click on the "Register for Free" button and follow the instructions to register your company and yourself. You will be asked for a payment subscription preference, since you may wish to bid online someday. Simply choose the method to pay on a 'per bid' basis. This requires no payment until / unless you actually bid online. You can also choose the monthly subscription plan at this time. You will, however, be asked to provide payment information. Remember, you can change your preference at anytime. You will then be able to complete your free registration and have full access to the site. Your free access does not require completion of the 'Digital ID' process, so you will have instant access for viewing and downloading. To be prepared in case you ever do wish to bid online, you may wish to establish your digital ID also, since you cannot bid without a Digital ID.

If you have any problems with the free registration process, you can call the bidexpress help team, toll free at 1-888-352-2439 (option 1, option1).

SECTION C: SMALL BUSINESS ENTERPRISE

Instructions to Bidders City of Madison SBE Program Information

2 Small Business Enterprise (SBE) Program Information

2.1 Policy and Goal

The City of Madison reaffirms its policy of nondiscrimination in the conduct of City business by maintaining a procurement process which remains open to all who have the potential and ability to sell goods and services to the City. It is the policy of the City of Madison to allow Small Business Enterprises (SBE) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the SBE program and is for the public's protection and welfare.

Please refer to the "ADVERTISEMENT FOR BIDS" for the goal for the utilization of SBEs on this project. SBEs may participate as subcontractors, vendors and/or suppliers, which provide a commercially useful function. The dollar value for SBE suppliers or 'materials only' vendors shall be discounted to 60% for purposes of meeting SBE goals.

A bidder which achieves or exceeds the SBE goal will be in compliance with the SBE requirements of this project. In the event that the bidder is unable to achieve the SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Failure to either achieve the goal or demonstrate a good faith effort to do so will be grounds for the bidder being deemed a non-responsible contractor ineligible for award of this contract.

A bidder may count towards its attainment of the SBE goal only those expenditures to SBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the SBE goal, the contract participation by an SBE is based on the percentage of the total base bid proposed by the Contractor. The total base bid price is inclusive of all addenda.

Work performed by an SBE firm in a particular transaction can be counted toward the goal only if it involves a commercially useful function. That is, in light of industry practices and other relevant considerations, does the SBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the SBE Program, or is the firm's role a superfluous step added in an attempt to obtain credit towards goals? If, in the judgment of the Affirmative Action Division, the SBE firm will not perform a commercially useful function in the transaction, no credit towards goals will be awarded.

The question of whether a firm is performing a commercially useful function is completely separate from the question of whether the firm is an eligible SBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's SBE Program.

If the City of Madison determines that the SBE firm is performing a commercially useful function, then the City of Madison must then decide what that function is. If the commercially useful function is that of an SBE vendor / supplier that regularly transacts business with the respective product, then the City of Madison will count 60% of the value of the product supplied toward SBE goals.

To be counted, the SBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an SBE vendor / supplier, which has a regular trade with a variety of customers, from a firm which performs supplier-like functions on an ad hoc basis or for only one or two contractors with whom it has a special relationship.

A supplier of bulk goods may qualify as an eligible SBE vendor / supplier if it either maintains an inventory or owns or operates distribution equipment. With respect to the distribution equipment; e.g., a fleet of trucks, the term "operates" is intended to cover a situation in which the supplier leases the equipment on a regular basis for its entire business. It is not intended to cover a situation in which the firm simply provides drivers for trucks owned or leased by another party; e.g., a prime contractor, or leases such a party's trucks on an ad hoc basis for a specific job.

If the commercially useful function being performed is not that of a qualified SBE vendor / supplier, but rather that of delivery of products, obtaining bonding or insurance, procurement of personnel, acting as a broker or manufacturer's representative in the procurement of supplies, facilities, or materials, etc., only the fees or commissions will apply towards the goal.

For example, a business that simply transfers title of a product from manufacturer to ultimate purchaser; e. g., a sales representative who re-invoices a steel product from the steel company to the Contractor, or a firm that puts a product into a container for delivery would not be considered a qualified SBE vendor / supplier. The Contractor would not receive credit based on a percentage of the cost of the product for working with such firms.

Concerning the use of services that help the Contractor obtain needed supplies, personnel, materials or equipment to perform a contract: only the fee received by the service provider will be counted toward the goal. For example, use of a SBE sales representative or distributor for a steel company, if performing a commercially useful function at all, would entitle the Contractor receiving the steel to count only the fee paid to the representative or distributor toward the goal. This provision would also govern fees for professional and other services obtained expressly and solely to perform work relating to a specific contract.

Concerning transportation or delivery services: if an SBE trucking company picks up a product from a manufacturer or a qualified vendor / supplier and delivers the product to the Contractor, the commercially useful function it is performing is not that of a supplier, but simply that of a transporter of goods. Unless the trucking company is itself the manufacturer or a qualified vendor / supplier in the product, credit cannot be given based on a percentage of the cost of the product. Rather, credit would be allowed for the cost of the transportation service.

The City is aware that the rule's language does not explicitly mention every kind of business that may contribute work on this project. In administering these programs, the City would, on a case-by-case basis, determine the appropriate counting formula to apply in a particular situation.

2.2 Contract Compliance

Questions concerning the SBE Program shall be directed to the Contract Compliance Officer of the City of Madison Department of Civil Rights, Affirmative Action Division, 210 Martin Luther King, Jr. Blvd., Room 523, Madison, WI 53703; telephone (608) 266-4910.

2.3 Certification of SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs which are currently certified as such by the City of Madison. Contact the Contract Compliance Officer as indicated in Section 2.2 to receive a copy of the SBE Directory or you may access the SBE Directory online at www.cityofmadison.com/dcr/aaTBDDir.cfm.

All contractors, subcontractors, vendors and suppliers seeking SBE status must complete and submit the **Targeted Business Certification Application** to the City of Madison Affirmative Action Division by the time and date established for receipt of bids. A copy of the Targeted Business Certification Application is available by contacting the Contract Compliance Officer at the address and telephone indicated in Section 2.2 or you may access the Targeted Business Certification Application online at www.cityofmadison.com/dcr/aaTBDDir.cfm. Submittal of the Targeted Business Certification Application by the time specified does not guarantee that the applicant will be certified as a SBE eligible to be utilized towards meeting the SBE goal for this project.

2.4 Small Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE goal for this project is achieved. A contractor who self performs a portion of the work, and is pre-qualified to perform that category of work, may subcontract that portion of the work, but shall not be required to do so. When a bidder is unable to achieve the established SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Such a good faith effort should include the following:

- 2.4.1.1 Attendance at the pre-bid meeting.
- 2.4.1.2 Using the City of Madison's directory of certified SBEs to identify SBEs from which to solicit bids.
- 2.4.1.3 Assuring that SBEs are solicited whenever they are potential sources.
- 2.4.1.4 Referring prospective SBEs to the City of Madison Affirmative Action Division for certification.
- 2.4.1.5 Dividing total project requirements into smaller tasks and/or quantities, where economically feasible, to permit maximum feasible SBE participation.
- 2.4.1.6 Establishing delivery schedules, where requirements permit, which will encourage participation by SBEs.
- 2.4.1.7 Providing SBEs with specific information regarding the work to be performed.
- 2.4.1.8 Contacting SBEs in advance of the deadline to allow such businesses sufficient time to prepare a bid.
- 2.4.1.9 Utilizing the bid of a qualified and competent SBE when the bid of such a business is deemed reasonable (i.e. 5% above the lowest bidder), although not necessarily low.
- 2.4.1.10 Contacting SBEs which submit a bid, to inquire about the details of the bid and confirm that the scope of the work was interpreted as intended.
- 2.4.1.11 Completion of Cover Page (page C-6), Summary Sheet (page C-7) and SBE Contact Reports (pages C-8 and C9) if applicable.

2.4.2 Reporting SBE Utilization and Good Faith Efforts

The Small Business Enterprise Compliance Report is to be submitted by the bidder with the bid. This report is due by the specified bid closing time and date. Bids submitted without a completed SBE Compliance Report as outlined below may be deemed non-responsible and the bidder ineligible for award of this contract. Notwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion, performance of the contract, or percentage of SBE utilization.

2.4.2.1 If the Bidder meets or exceeds the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

2.4.2.1.1 **Cover Page**, Page C-6; and

2.4.2.1.2 **Summary Sheet**, C-7.

2.4.2.2 If the bidder does not meet the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

2.4.2.2.1 **Cover Page**, Page C-6;

2.4.2.2.2 **Summary Sheet**, C-7; and

2.4.2.2.3 **SBE Contact Report**, C-8 and C-9. (A separate Contact Report must be completed for each applicable SBE which is not utilized.)

2.5 Appeal Procedure

A bidder which does not achieve the established goal and is found non-responsible for failure to demonstrate a good faith effort to achieve such goal and subsequently denied eligibility for award of contract may appeal that decision to the Small Business Enterprises Appeals Committee. All appeals shall be made in writing, and shall be delivered to and received by the City Engineer no later than 4:30 PM on the third business day following the bidder's receipt of the written notification of ineligibility by the Affirmative Action Division Manager. Postmark not acceptable. The notice of appeal shall state the basis for the appeal of the decision of the Affirmative Action Division Manager. The Appeal shall take place in accordance with Madison General Ordinance 33.54.

2.6 SBE Requirements After Award of the Contract

The successful bidder shall identify SBE subcontractors, suppliers and vendors on the subcontractor list in accordance with the specifications. The Contractor shall submit a detailed explanation of any variances between the listing of SBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's SBE Compliance Report for SBE participation.

No change in SBE subcontractors, vendors and/or suppliers from those SBEs indicated in the SBE Compliance Report will be allowed without prior approval from the Engineer and the Affirmative Action Division. The contractor shall submit in writing to the City of Madison Affirmative Action Division a request to change any SBE citing specific reasons which necessitate such a change. The Affirmative Action Division will use a general test of reasonableness in approving or rejecting the contractor's request for change. If the request is approved, the Contractor will make every effort to utilize another SBE if available.

The City will monitor the project to ensure that the actual percentage commitment to SBE firms is carried out.

2.7 SBE Definition and Eligibility Guidelines

A Small Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Small Business Enterprise is defined as:

- A. An independent business operated under a single management. The business may not be a subsidiary of any other business and the stock or ownership may not be held by any individual or any business operating in the same or a similar field. In determining whether an entity qualifies as a SBE, the City shall consider all factors relevant to being an independent business including, but not limited to, the date the business was established, adequacy of its resources for the work in which it proposes to involve itself, the degree to which financial, equipment leasing and other relationships exist with other ineligible firms in the same or similar lines of work. SBE owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their enjoyment interests, as demonstrated by an examination of the substance rather than form or arrangements that may be reflected in its ownership documents.
- B. A business that has averaged no more than \$4.0 million in annual gross receipts over the prior three year period and the principal owner(s) do not have a personal net worth in excess of \$1.32 million.

Firm and/or individuals that submit fraudulent documents/testimony may be barred from doing business with the City and/or forfeit existing contracts.

SBE certification is valid for one (1) year unless revoked.

SECTION D: SPECIAL PROVISIONS
OLD SAUK ROAD WATER PIPELINE
CONTRACT NO. 8186

It is the intent of these Special Provisions to set forth the final contractual intent as to the matter involved and shall prevail over the Standard Specifications and plans whenever in conflict therewith. In order that comparisons between the Special Provisions can be readily made, the numbering system for the Special Provisions is equivalent to that of the Specifications.

Whenever in these Specifications the term "Standard Specifications" appears, it shall be taken to refer to the City of Madison Standard Specifications for Public Works Construction and Supplements thereto.

SECTION 102.12: BEST VALUE CONTRACTING

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than \$61,000 for a single trade contract; or equal to or greater than \$297,500 for a multi-trade contract pursuant to MGO 33.07(7).

SECTION 103.3 EXECUTION OF CONTRACT AND BID BOND

Execute the signing of this contract completely on or before **JULY 17, 2018**.

ARTICLE 104 SCOPE OF WORK

This project will focus on water main improvements on the west side of the City of Madison. A new 16-inch water pipeline will be installed from the Old Sauk Road and Schewe Road intersection to a new water tower on Madison Water Utility property. Additionally, two new pressure reducing valves will be installed at the Old Sauk Road and Bear Claw Way intersection; and at Madison Water Utility's Booster Station 128 facility (9202 Waterside Street).

The majority of the pipeline installation work is expected to take place along the southern right-of-way of Old Sauk Road and on Madison Water Utility's water tower parcel. While most of the pipeline will not be in roadway areas, all work may require traffic control measures on Old Sauk Road as outlined in this document.

All work shall be contained within City of Madison right-of-way; Madison Water Utility property or easements; or designated right-of-entry areas.

The Madison Water Utility designer and project manager for this contract ("Engineer") is:

- Pete Holmgren
608.261.5530
pholmgren@madisonwater.org

Perform all work in accordance with these provisions and the City of Madison *Standard Specifications For Public Works Construction, 2018 Edition*.

Visit the sites prior to bidding and become familiar with existing conditions and utilities.

ARTICLE 105.12 COOPERATION BY THE CONTRACTOR

Work along the south side of Old Sauk Road will mostly move in parallel with two property frontages: 626 Schewe Road and 10451 Old Sauk Road. The following conditions and restrictions shall apply when working in front of these properties:

626 Schewe Road

A right-of-entry agreement has been established that will allow for up to three feet of access along this property's frontage for related contract work. The full right-of-entry document is attached at the end of this section.

With the exception of the established right-of-entry permissions, no additional access or disturbance will be permitted as part of this contract. If additional property access or coordination is desired, coordinate directly with the property owner as needed:

- Tom Debeck
608.444.7925

The City of Madison will not compensate or be liable for damages or grievances related to any work outside of the areas authorized within this contract.

10451 Old Sauk Road

This Madison Water Utility-owned parcel is the site for construction of the 1-million gallon composite water tower; the water pipeline in this contract will connect to the water tower.

Site access will be permitted for all contract-related work as needed, however water tower construction operations will be ongoing; coordination of all construction activity and site access with the Engineer and the onsite water tower construction contractor will be required prior to beginning any onsite operations.

An approximate schedule of water tower construction operations will be attached to the end of this section. Note that the majority of water tower construction work that will coincide with this contract schedule will be designated as "interior" work.

The water tower construction contact is:

- Maria Bowman
Caldwell Tanks, Inc.
515.468.1654
mbowman@caldwelltanks.com

For reference, all plans and specifications related to the water tower construction are available under City of Madison Public Works Contract #7821 ("Blackhawk Water Tower"), or can be provided by the Engineer upon request.

SECTION 106.4 STORAGE OF MATERIALS

Acceptable storage areas for materials and equipment include:

- Right-of-way sections along the south side of Old Sauk Road.
- The northeast corner of Madison Water Utility's water tower parcel (10451 Old Sauk Road). Coordinate staging or storage onsite with the Engineer.

Land restoration for storage of materials and equipment will be incidental to any such storage and is NOT included as part of bid item 70102 in this contract.

SECTION 107.6 DUST PROOFING

Take all necessary steps to control dust arising from operations connected with this contract. When ordered by the Engineer, dust proof the construction area by using power sweepers and water. Dust proofing shall be incidental with operations connected with this contract.

SECTION 107.7 MAINTENANCE OF TRAFFIC

Old Sauk Road may be reduced to one lane on weekdays from 8:30 a.m. to 4:00 p.m. as needed. Use flaggers to maintain both directions of traffic at all times.

Schewe Road may be closed for two consecutive days to complete work within the intersection at Old Sauk Road. Coordinate this closure with the Engineer, as well as residents and businesses of Schewe Road.

Submit a Traffic Control Plan, including all necessary phases, to Tom Mohr, tmohr@cityofmadison.com, prior to the pre-construction meeting. The Traffic Control Plan shall address all requirements of this section of the Special Provisions. Do not start work on this project until the Traffic Engineering Division has approved a traffic control plan, and traffic control devices have been installed in accordance with the approved plan. Failure to obtain approval of a Traffic Control Plan, as specified above, may prevent timely starting of work and shall be considered a Contractor-caused delay of the project.

Alter traffic control from the provided Traffic Control Plan as conditions change in the field or as unexpected conditions occur. This includes relocating existing traffic control or providing additional traffic control. Install and maintain any necessary modifications or additions to the traffic control, as directed by the City Traffic Engineer, at no cost to the City. Conform all signing and barricading to the Federal Highways Administrations "Manual on Uniform Traffic Control Devices" (MUTCD).

Measure traffic control as a lump sum. Payment for traffic control is full compensation for constructing, assembling, hauling, erecting, re-erecting, maintaining, restoring, and removing non-permanent traffic signs, drums, barricades, and similar control devices for providing, placing, and maintaining work zones. Maintenance shall include replacing damaged or stolen traffic control devices.

Install type A low intensity flashing lights on all barricades used in the project per State of Wisconsin S.D.D. 15C2-4B. Install type C low intensity steady-burn lights on all barrels used in tapers as shown on the traffic control plan.

Maintain emergency vehicle access at all times.

Do not store construction equipment and materials within any street right-of-way that is outside of the project limits.

Backfill, plate or protect work areas with traffic control devices during non-working hours. If steel plates are used, notify the City of Madison Streets Division, 266-4681, one working day prior to placement of the plates.

Contact Tom Mohr, Traffic Engineering Division, tmohr@cityofmadison.com, 608-267-8725, with any questions concerning these traffic control specifications.

SECTION 108.2 PERMITS

Madison Water Utility will obtain a City of Madison Erosion Control Permit. Meet the conditions of the permit by properly installing and maintaining the erosion control measures shown on the plans, specified in these Special Provisions, or as directed by the Construction Engineer or designers.

This work will be paid for under the appropriate contract bid items or, if appropriate items are not included in the contract, shall be paid for as Extra Work. A copy of the permit is available upon request at the City of Madison, Engineering Division office.

Identify and obtain any other permits needed for construction.

SECTION 109.2 PROSECUTION OF WORK

The Contractor shall begin work on **August 13, 2018**.

The total time of completion of the contract shall be 90 (NINETY) calendar days, with the following interim deadlines and restrictions:

- The complete water pipeline, connecting from Schewe Road to the water tower, shall be fully installed and **operational on or before September 10, 2018.**
- The PRV on Bear Claw Way shall be fully installed and **operational on or before September 24, 2018.**
- The PRV at BPS128 shall be fully installed and **operational on or before the contract deadline, however this work may not begin prior to October 15, 2018.**

SECTION 210.1(d) STREET SWEEPING

Perform mechanical street sweeping on all streets or paved surfaces affected by construction equipment, hauling or related construction activities that result in mud tracking or siltation.

Mechanical street sweeping shall remove all loose material to the satisfaction of the Engineer. Depending on the discretion of the Engineer, site conditions, construction activities, and hauling methods utilized, mechanical street sweeping may be required multiple times throughout the day with an absolute minimum that all streets are completely clean at the end of every work day. Areas not accessible by mechanical street sweepers may require hand scraping with shovels.

BID ITEM 21022 SILT FENCE – PROVIDE INSTALL & MAINTAIN

This item is for silt fencing that may need to be relocated as part of the pipeline installation work on the water tower construction site. Remove and replace silt fencing between stations 51+00 and 54+00 as required. Silt fencing that is replaced shall be moved directly to the east and remain in parallel with the pipeline trench.

Maintain any replaced silt fencing for the duration of the pipeline contract; at the end of the pipeline contract, maintenance responsibilities shall be moved to the onsite water tower contractor.

**BID ITEM 20404 CLEARING
BID ITEM 20404 GRUBBING**

Clear and grub all trees as designated on the plans or by instruction of the Engineer onsite.

Use care around existing trees on private property beyond right-of-entry limits. No trees shall be cut without the approval of the Engineer and the City Forester; the abutting property owners shall be notified in accordance with the City's Administrative Procedure Memorandum No. 6-2.

Bid items for the clearing and grubbing of trees shall be paid as respective lump sums, following full completion of the associated work.

BID ITEM 70006 FURNISH AND INSTALL 16-INCH PIPE & FITTINGS

12-inch pipe and fittings, as shown on the plans, shall be measured and paid as 16-inch pipe and fittings. Additional required fittings not shown on the plans shall be paid per their actual sizes, per standard specifications.

BID ITEM 70057 RECONNECT 1½-INCH SERVICE LATERAL

Locate the existing copper piping stub near the water tower as approximated on the plans. Couple the stub with a curb stop and install a curb box at this location. Extend and connect the new copper to a point on the new pipeline that is east of the nearest 16-inch valve shown on the plans.

BID ITEM 90160
BID ITEM 90161

INSTALL PRV – BEAR CLAW WAY
INSTALL PRV – BPS 128

This contract requires the installation of two pressure reducing valve (“PRV”) configurations, at separate sites which are located approximately one mile to the east of the water pipeline installation activities.

Work under each of these items shall include all labor, materials, and restoration shown on their respective plan set sheets and described in this section for installing a PRV, access structure, and piping. The bid amounts shall be lump sums and shall not include quantities or prices from any other bid items in this contract.

Coordinate the order, delivery, installation, calibration, and final inspection of each PRV with the Engineer and the local product representative:

- Mike Barreau
Dorner Company
262.932.2100 Ext. 120
mike@dornerco.com

Each PRV shall be:

- Brand: Cla-Val
- Size: 8-inches
- Model: 690-01 (“Reduced Port”)

Allow for sufficient lag time for Engineer review, order, delivery, and installation of all materials related to these bid items.

Install each PRV and piping configuration per the manufacturer specifications and the detail drawings included in this contract’s plan set. The designated areas shown on the plans are approximations based on the assumed existing water main locations and ground slopes; locate the existing water main prior to agreement with the Engineer of the exact location of any PRV, manhole, and piping configurations.

Refer to the designated sheets in the plan set for additional details.

Refer to Section 109.2 for completion schedule requirements or restrictions at each PRV location.

For work in the street area of Bear Claw Way site, submit a traffic control plan as outlined in Section 107.7 of these Specifications.

Coordinate with the Engineer when scheduling work at the Booster Pump Station 128 (“BPS 128”) site.

BID ITEM 90162 **INSTALL 2-INCH PVC CONDUIT**

Install 2-inch Schedule 80 PVC piping and fittings in parallel with the 16-inch water pipeline from the water tower to Old Sauk Road. Locate and connect to the existing 2-inch pipe stub near the water tower as approximated on the plans.

Terminate the conduit in a hand-hole structure near the property line at Old Sauk Road as shown on the plans. The hand-hole structure shall be furnished by the Engineer for installation.

Installation of the PVC conduit shall be paid per foot installed and will include any required fittings, excavation, backfill, or other materials and labor.

RIGHT OF ENTRY

QRS Company, LLC ("Owner"), being the owner of the property hereinafter described (the "Property"), in consideration of the sum of Zero Dollars (\$0.00), the receipt whereof is hereby acknowledged, grants and conveys to the **City of Madison** (the "City"), a Wisconsin municipal corporation located in Dane County, Wisconsin, its agents and contractors, a Right of Entry over the North 3 feet of the Property for the purpose of performing grading and other construction related activities for the construction of water main related to the City of Madison Public Works contract number 8186 (said water main is to be located within the public right-of-way), including the right of ingress and egress and the right to operate necessary equipment thereon.

This Right of Entry shall commence on July 1 2018, and shall expire on the earlier of (a) the completion of the construction activities, or (b) December 31, 2018.

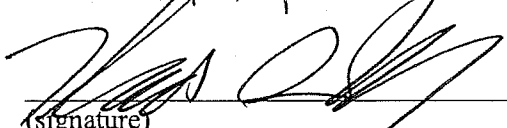
Property Address: 626 Schewe Road

Property Description: A parcel of land located in the NW 1/4 and NE 1/4 of the NE 1/4 of Section 20, T7N, R8E, Town of Middleton, Dane County, Wisconsin, to-wit: Commencing at the northeast corner of said Section 20, thence South 89deg 16min 50sec West, 524.40 ft. to the point of beginning; thence South 01deg, 01min. 55sec. West, 1151.76 ft., thence South 89deg. 16min. 50sec. West, 874.12 ft.; thence North 01deg. 03min. 36sec. East, 1151.78 ft., thence North 89deg. 16min. 50sec. East, 873.55 ft. to the point of beginning. (Doc. 5205343)

SEE ATTACHED EXHIBIT A

By accepting this Right of Entry, the City agrees, as required by Wisconsin law, to pay any liabilities arising out of its Right of Entry whenever those liabilities result from an act or omission of a City employee, contractor or agent acting within the scope of their authority.

Dated this 5th day of April, 2018

OWNER: QRS Company LLC
By: 
(signature)
Tom DeBeck
(print or type name and title)

038/0708-174-9310-0

038/0708-174-8503-0

038/0708-174-9591-0

TOWN OF MIDDLETON
CITY OF MADISON

251/0708-174-0101-4

CITY OF MADISON
TOWN OF MIDDLETON

038/0708-174-9822-0

038/0708-174-9842-0

038/0708-163-9211-0

TOWN OF MIDDLETON
CITY OF MADISON

TOWN OF MIDDLETON
CITY OF MADISON

OLD SAUK ROAD

RIGHT-OF-WAY

PROPERTY LINE

NORTH 3 FT.
NOT DRAWN TO SCALE

RIGHT OF ENTRY
INDICATED BY HATCHED AREA

RIGHT-OF-WAY

SCHEWE ROAD



1"=200'

10451 OLD SAUK RD.
251/0708-201-0103-1
CITY OF MADISON

626 SCHEWE RD.
251/0708-201-0102-3
QRS COMPANY, LLC
QCD DOC. 5205343

251/0708-212-0101-2

CITY OF MADISON
TOWN OF MIDDLETON

CITY OF MADISON
TOWN OF MIDDLETON

038/0708-201-8690-7

TOWN OF MIDDLETON
CITY OF MADISON

CITY OF MADISON
TOWN OF MIDDLETON

038/0708-201-8400-0

EXHIBIT A

ID	Task Name	Start	Finish	Qtr 2, 2018					Qtr 3, 2018			Qtr 4, 2018		
				Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct		
1	1000 CET x 143'-0 HWL	Tue 4/11/17	Sun 9/30/18											
2	Notice to Proceed	Mon 5/1/17	Mon 5/1/17											
3	Foundation Dwgs Submittal/Approval	Tue 4/11/17	Mon 5/8/17											
4	Pedestal Dwgs Submittal/Approval	Tue 6/6/17	Wed 6/21/17											
5	Tank Dwgs Submittal/Approval	Fri 6/9/17	Fri 8/11/17											
6	Piping, Valves & Fittings Submit/Approval	Thu 6/22/17	Mon 7/10/17											
7	Door Submit/Approval	Mon 9/25/17	Fri 10/13/17											
8	Electrical & Control Submittal/Approval	Thu 8/10/17	Fri 8/25/17											
9	Cathodic Protection Submit/Approval	Thu 7/6/17	Mon 7/31/17											
10	Permit Application/Issuance	Wed 4/19/17	Thu 6/15/17											
11	Access Road, Clearing & Grubbing	Mon 5/15/17	Thu 5/18/17											
12	Foundation Construction	Mon 5/22/17	Fri 7/7/17											
13	Pedestal Construction	Tue 6/27/17	Fri 9/1/17											
14	Steel Purchase	Mon 5/1/17	Fri 7/21/17											
15	Shop Fabrication Ladder & Platforms	Thu 6/22/17	Wed 7/12/17											
16	Shop Fabrication Tank	Mon 7/24/17	Mon 8/7/17											
17	Shop Fabrication Tank Roof	Wed 7/26/17	Tue 8/8/17											
18	Tank Construction on Ground	Thu 10/19/17	Wed 11/29/17											
19	Paint on Ground	Mon 3/26/18	Fri 4/6/18											
20	Tank Jack & Finish in Air	Mon 4/9/18	Tue 4/17/18											
21	Paint Roof & Interior	Wed 4/18/18	Thu 5/31/18											
22	Riser Pipe Insulation	Fri 5/25/18	Thu 5/31/18											
23	Under Slab & Slab Install	Fri 6/1/18	Thu 6/28/18											
24	Interior Piping & Valves	Fri 6/29/18	Thu 7/19/18											
25	Interior Buildout	Fri 7/20/18	Thu 8/30/18											
26	Doors	Fri 8/31/18	Thu 9/13/18											
27	Electrical Service Installation	Fri 8/10/18	Tue 8/14/18											
28	Field Electrical & Controls	Fri 8/24/18	Fri 9/21/18											
29	Cathodic Protection	Mon 9/10/18	Fri 9/14/18											
30	Sterilization & Testing	Mon 9/24/18	Fri 9/28/18											
31	Finish Sitework	Mon 9/17/18	Fri 9/28/18											
32	Substantial Completion	Sun 9/30/18	Sun 9/30/18											
33														
34	Existing Tank Work	Mon 9/25/17	Fri 10/6/17											

Caldwell Tanks, Inc.
Project Manager: Mike Beerends
CTI No.: E - 8580

Task		Manual Task		Finish-only	
Milestone		Duration-only		External Tasks	
Summary		Manual Summary Rollup		External Milestone	
Inactive Milestone		Manual Summary		Progress	
Inactive Summary		Start-only		Deadline	

NOTE: This schedule is subject to change due to ambient weather conditions and at the sole discretion of Caldwell Tanks, Inc.



Construction • Geotechnical
Consulting Engineering/Testing

March 9, 2018
C17051-52

Mr. Pete Holmgren, P.E.
Madison Water Utility
119 East Olin Avenue
Madison, WI 53713-1431

Re: Geotechnical Services
Old Sauk Road at Schewe Road Water Main
Madison, Wisconsin

Dear Mr. Holmgren:

CGC, Inc. has completed our geotechnical services for the above-referenced project. At your request, two soil borings were drilled along the proposed alignment of a new water main planned along the south side of Old Sauk Road extending west from the intersection with Schewe Road. Proposed boring locations were marked out in the field by CGC personnel prior to drilling and are shown on a boring location plan (copy attached in Appendix A). Elevations at the boring locations were estimated using topographic information obtained from Dane County DCi Map, while coordinates for boring locations were obtained using a hand-held GPS. Both the elevations and coordinates are indicated on the individual boring logs and should be considered approximate. The following paragraphs discuss our observations and provide opinions relative to water main installation.

SUBSURFACE PROGRAM & OBSERVATIONS

The borings were drilled to depths selected by Madison Water Utility personnel utilizing the services of Badger State Drilling (under subcontract to CGC) using a truck-mounted, rotary CME 55 drill rig equipped with hollow-stem augers. Standard Penetration Test (SPT) drilling techniques (ASTM D1586) were used for the full exploration depths at the boring locations. This method consists of driving a 2-inch outside diameter split-barrel sampler using a 140-pound weight falling freely through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the log of borings and is known as the Standard Penetration Resistance (commonly referred to as the N-value).

During the field exploration program, the driller visually classified the soils and prepared a field log. Water level observations were made within the borings during and shortly after drilling, which are shown on the bottom of each boring log. Note groundwater was not encountered at the boring locations. Groundwater levels are anticipated to fluctuate based on seasonal variations in precipitation, infiltration, nearby lake/stream stages, as well as other factors. Upon completion of drilling, the borings were backfilled to satisfy WDNR requirements and the soil samples delivered to our laboratory for classification. The soils were visually classified by CGC and reviewed by a

Mr. Pete Holmgren
Madison Water Utility
March 9, 2018
Page 2

geotechnical engineer using the Unified Soil Classification System (USCS). The final logs prepared by the engineer and a description of the USCS are presented in Appendix A.

The attached boring logs indicate that somewhat variable soil conditions exist at the boring locations. The following is a generalized profile of the soil strata (in descending order):

- 10 to 12 in. of *crushed aggregate (base course)*; over
- 2 to 4.5 ft of clayey to sandy **fill**; underlain by
- 2.5 to 6.5 ft of very soft to stiff *lean clay*; followed by
- 3 to 14.5 ft of medium dense to very dense *sand* with variable silt and gravel contents, as well as scattered cobbles/boulders.

Please refer to the final logs included in Appendix A for additional information specific to a boring location.

WATER MAIN CONSTRUCTION

Based on the information obtained from the soil borings, it is our opinion that conditions appear suitable for utility installation. We assume traditional open-cut methods will be implemented to install the water main. Open cuts should be sloped and/or braced in accordance with OSHA guidelines. Should the water main alignment coincide with soft/loose conditions, we recommend that increased bedding thicknesses, possibly underlain by a geotextile, be considered. We anticipate that imported sands will be required for use as backfill which is a typical requirement for City projects. On-site sands could be considered for reuse as trench backfill but they should be separated from clay soils and selectively stockpiled. Moisture conditioning could be necessary to achieve desired compaction levels. We recommend that at least a level of 95% compaction be achieved within backfill material placed within the final 3 feet below finished subgrades or within road right-of-ways (including undercut backfill - if any), with 90% compaction required at depths greater than 3 feet. The specified levels of compaction are based on modified Proctor methods (ASTM D1557). Also, the backfill material should be placed and compacted in accordance with our Recommended Compacted Fill Specifications presented in Appendix B.



Mr. Pete Holmgren
 Madison Water Utility
 March 9, 2018
 Page 3

PAVEMENT CONSTRUCTION

As borings were not performed through pavement in areas potentially affected by installation of the new water main, pavement/base course thicknesses and subgrade conditions in said area(s) are unknown. We anticipate trench-patching involving the matching of existing conditions per standard City of Madison specification would be required. In the event that roadway preparations beyond trench patching will be necessary, standard earthwork-related techniques that should be used during roadway construction include:

- Proof-rolling of the exposed subgrades;
- Undercutting and/or stabilization in soft areas; and
- Compaction control of fill/backfill materials.

Should areas of softer clays be encountered (such as where pocket penetrometer values are near 1.5 tsf or less), they may need to be undercut/removed and replaced with granular fill or additional base course. Furthermore, significant construction traffic could destabilize the existing materials and increase the potential for undercuts. Granular materials should be thoroughly compacted and evaluated for stability before the placement of additional fill and/or base course. Pockets of excessively organic soil, if encountered, should also be removed.

Pavement Design

Clays will control the pavement design, as we anticipate that the pavement subgrades could at times consist of clay soils or fill materials containing clay. The following *generalized* parameters should be used to develop the design pavement section (which are considered conservative in sandy areas):

<u>TABLE 1</u>	
AASHTO classification	A-6
Frost group index	F-3
Design group index	14
Soil support value	4.0
Subgrade modulus, k (pci)	125
Estimated percent shrinkage	20 - 30
Estimated CBR value	5

Assuming Old Sauk Road is considered a local business/arterial street, we estimate it will experience 51 to 275 design daily ESALs (18,000 pound Equivalent Single Axle Loads). A typical pavement design per WDOT Standard Specifications should then meet E-3 (MT) requirements. Greater volumes could require thicker pavements pending traffic counts. If Schewe Road experiences traffic volumes of less than 3000 cars and 100 trucks per day per design lane (i.e., a medium-heavy classification), a typical pavement design per WDOT Standard Specifications should meet E-1 (LT) requirements.



Mr. Pete Holmgren
Madison Water Utility
March 9, 2018
Page 4

We appreciate the opportunity to be of service on this project and look forward to working with you as it proceeds. Other information regarding this report and its limitations is included in Appendix C.

We trust this report addresses your present needs. If you have any questions, please contact us.

Sincerely,

CGC, Inc.

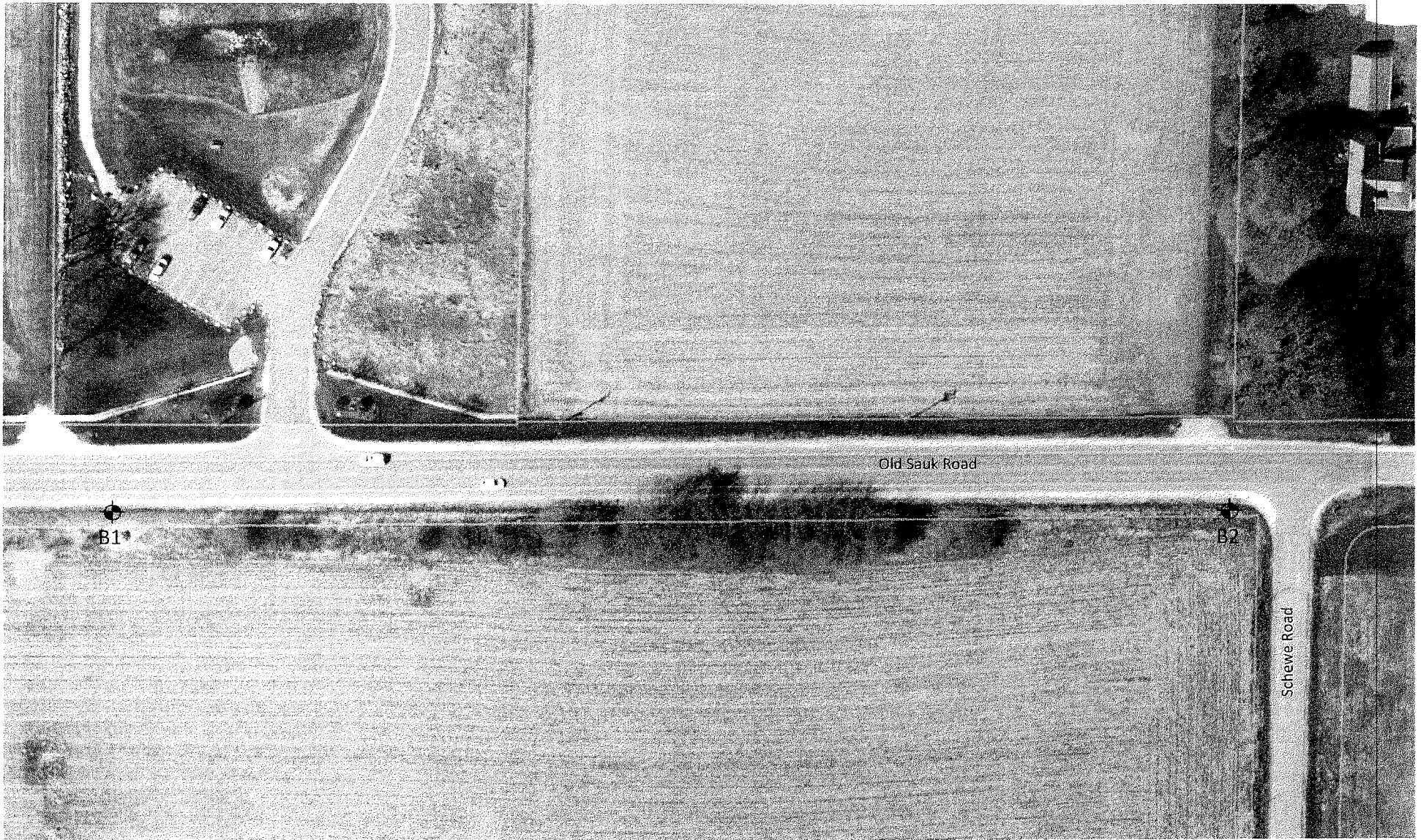
A handwritten signature in cursive script that reads "Michael N. Schultz".

Michael N. Schultz, P.E.
Principal/Consulting Professional


Encl: As stated

APPENDIX A

**SOIL BORING LOCATION PLAN
LOGS OF TEST BORINGS (2)
LOG OF TEST BORING-GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM**



Legend

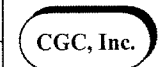
 Denotes Boring Location



Notes

1. Soil borings performed by Badger State Drilling in March 2018
2. Boring locations are approximate.

Scale: Reduced

<p>Date: 3/2018</p>		<p style="text-align: center;">Soil Boring Location Plan Old Sauk Rd. at Scheuwe Rd. Water Main Madison, WI</p>
<p>Job No. C17051-52</p>		



LOG OF TEST BORING

Project Old Sauk Rd. at Schewe Rd. Water Main
N 43° 04.480', W 89° 33.960'
 Location Madison, WI

Boring No. 1
 Surface Elevation (ft) 1130±
 Job No. C17051-52
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth (ft)		q _u (qa) (tsf)	W	LL	PL	LI
					10 in. Crushed Aggregate					
1	12	M	12		FILL: Very Stiff Dark Gray to Brown Clay with Occasional Gravel	(1.5)				
2	12	M	7		Stiff, Brown Lean CLAY (CL)	(1.25)				
3	16	M	15		Medium Dense to Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles and Boulders (SM)					
4	16	M	45							
5	18	M	36							
6	16	M	48							
					End Boring at 15 ft					
					Borehole backfilled with bentonite chips					

WATER LEVEL OBSERVATIONS

While Drilling **NW** Upon Completion of Drilling _____
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____

GENERAL NOTES

Start 3/2/18 End 3/2/18
 Driller BSD Chief MC Rig CME-55
 Logger MG & CV Editor ESF
 Drill Method 2.25 HSA; Autohammer

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST BORING

Project **Old Sauk Rd. at Schewe Rd. Water Main**
 Location **N 43° 04.481', W 89° 33.807'**
Madison, WI

Boring No. **2**
 Surface Elevation (ft) **1118±**
 Job No. **C17051-52**
 Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	DEPTH (ft)	Rec (in.)	Moist	N		qu (qa) (tsf)	W	LL	PL	LI
					12" Crushed Aggregate					
1		16	M	27	FILL: Medium Dense, Dark Brown Silty Sand with Gravel to 3 ft Medium Stiff Dark Gray to Brown Clay to 5.5 ft					
2		12	M	6		(.75)				
3		14	M	7	Stiff to Very Soft, Brown Lean CLAY (CL)	(1.25)				
4		14	M	5		(0.25-0.5)				
5		12	M/W	17	Medium Dense, Dark Brown Silty Fine to Medium SAND (SM)	(0.25-0.5)				
6		14	M	68/11"	Very Dense, Brown Fine to Coarse SAND, Some Gravel, Trace to Little Silt, Scattered Cobbles (SP/SP-SM)					
					End of Boring at 15 ft					
					Backfilled with bentonite chips					

WATER LEVEL OBSERVATIONS

While Drilling NW Upon Completion of Drilling _____
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____

GENERAL NOTES

Start 3/2/18 End 3/2/18
 Driller BSD Chief MC Rig CME-55
 Logger MG & CV Editor ESF
 Drill Method 2.25 HSA; Autohammer

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

LOG OF TEST BORING
General Notes

DESCRIPTIVE SOIL CLASSIFICATION

Grain Size Terminology

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders.....	Larger than 12".....	Larger than 12"
Cobbles.....	3" to 12".....	3" to 12"
Gravel: Coarse.....	¾" to 3".....	¾" to 3"
Fine.....	4.76 mm to ¾".....	#4 to ¾"
Sand: Coarse.....	2.00 mm to 4.76 mm.....	#10 to #4
Medium.....	0.42 to mm to 2.00 mm.....	#40 to #10
Fine.....	0.074 mm to 0.42 mm.....	#200 to #40
Silt.....	0.005 mm to 0.074 mm.....	Smaller than #200
Clay.....	Smaller than 0.005 mm.....	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

General Terminology

Physical Characteristics
 Color, moisture, grain shape, fineness, etc.
Major Constituents
 Clay, silt, sand, gravel
Structure
 Laminated, varved, fibrous, stratified,
 cemented, fissured, etc.
Geologic Origin
 Glacial, alluvial, eolian, residual, etc.

Relative Density

Term	"N" Value
Very Loose.....	0 - 4
Loose.....	4 - 10
Medium Dense.....	10 - 30
Dense.....	30 - 50
Very Dense.....	Over 50

Relative Proportions Of Cohesionless Soils

Proportional Term	Defining Range by Percentage of Weight
Trace.....	0% - 5%
Little.....	5% - 12%
Some.....	12% - 35%
And.....	35% - 50%

Consistency

Term	q _u -tons/sq. ft
Very Soft.....	0.0 to 0.25
Soft.....	0.25 to 0.50
Medium.....	0.50 to 1.0
Stiff.....	1.0 to 2.0
Very Stiff.....	2.0 to 4.0
Hard.....	Over 4.0

Organic Content by Combustion Method

Soil Description	Loss on Ignition
Non Organic.....	Less than 4%
Organic Silt/Clay.....	4 - 12%
Sedimentary Peat.....	12% - 50%
Fibrous and Woody Peat...	More than 50%

Plasticity

Term	Plastic Index
None to Slight.....	0 - 4
Slight.....	5 - 7
Medium.....	8 - 22
High to Very High ..	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

Drilling and Sampling

- CS – Continuous Sampling
- RC – Rock Coring: Size AW, BW, NW, 2"W
- RQD – Rock Quality Designation
- RB – Rock Bit/Roller Bit
- FT – Fish Tail
- DC – Drove Casing
- C – Casing: Size 2 ½", NW, 4", HW
- CW – Clear Water
- DM – Drilling Mud
- HSA – Hollow Stem Auger
- FA – Flight Auger
- HA – Hand Auger
- COA – Clean-Out Auger
- SS - 2" Dia. Split-Barrel Sample
- 2ST – 2" Dia. Thin-Walled Tube Sample
- 3ST – 3" Dia. Thin-Walled Tube Sample
- PT – 3" Dia. Piston Tube Sample
- AS – Auger Sample
- WS – Wash Sample
- PTS – Peat Sample
- PS – Pitcher Sample
- NR – No Recovery
- S – Sounding
- PMT – Borehole Pressuremeter Test
- VS – Vane Shear Test
- WPT – Water Pressure Test

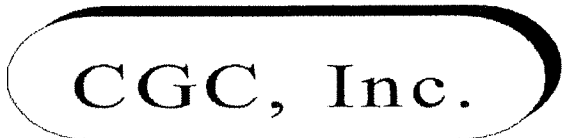
Laboratory Tests

- q_a – Penetrometer Reading, tons/sq ft
- q_a – Unconfined Strength, tons/sq ft
- W – Moisture Content, %
- LL – Liquid Limit, %
- PL – Plastic Limit, %
- SL – Shrinkage Limit, %
- LI – Loss on Ignition
- D – Dry Unit Weight, lbs/cu ft
- pH – Measure of Soil Alkalinity or Acidity
- FS – Free Swell, %

Water Level Measurement

- ▽ - Water Level at Time Shown
- NW – No Water Encountered
- WD – While Drilling
- BCR – Before Casing Removal
- ACR – After Casing Removal
- CW – Cave and Wet
- CM – Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.



Madison - Milwaukee

Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS

(more than 50% of material is larger than No. 200 sieve size)

Clean Gravels (Less than 5% fines)

	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines

GRAVELS
More than 50% of coarse fraction larger than No. 4 sieve size

Gravels with fines (More than 12% fines)

	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures

Clean Sands (Less than 5% fines)

	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines

SANDS
50% or more of coarse fraction smaller than No. 4 sieve size

Sands with fines (More than 12% fines)

	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(50% or more of material is smaller than No. 200 sieve size.)

	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity

SILTS AND CLAYS
Liquid limit less than 50%

	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts

SILTS AND CLAYS
Liquid limit 50% or greater

	PT	Peat and other highly organic soils
--	----	-------------------------------------

HIGHLY ORGANIC SOILS

LABORATORY CLASSIFICATION CRITERIA

GW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

GP Not meeting all gradation requirements for GW

GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line or P.I. greater than 7	

SW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

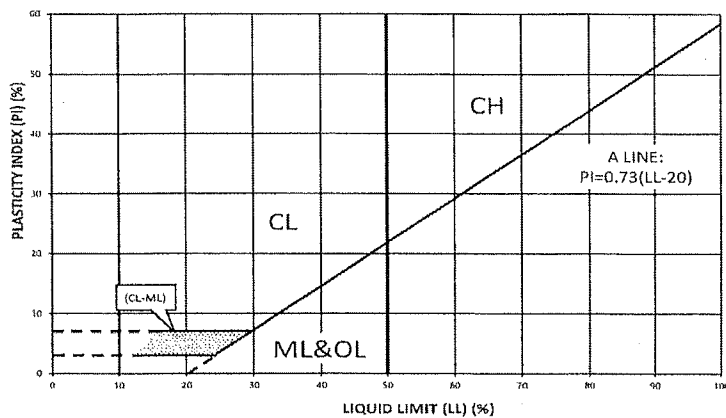
SP Not meeting all gradation requirements for GW

SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent GW, GP, SW, SP
 More than 12 percent GM, GC, SM, SC
 5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX B

RECOMMENDED COMPACTED FILL SPECIFICATIONS

APPENDIX B

CGC, INC.

RECOMMENDED COMPACTED FILL SPECIFICATIONS

General Fill Materials

Proposed fill shall contain no vegetation, roots, topsoil, peat, ash, wood or any other non-soil material which by decomposition might cause settlement. Also, fill shall never be placed while frozen or on frozen surfaces. Rock, stone or broken concrete greater than 6 in. in the largest dimension shall not be placed within 10 ft of the building area. Fill used greater than 10 ft beyond the building limits shall not contain rock, boulders or concrete pieces greater than a 2 sq ft area and shall not be placed within the final 2 ft of finish subgrade or in designated utility construction areas. Fill containing rock, boulders or concrete pieces should include sufficient finer material to fill voids among the larger fragments.

Special Fill Materials

In certain cases, special fill materials may be required for specific purposes, such as stabilizing subgrades, backfilling undercut excavations or filling behind retaining walls. For reference, WisDOT gradation specifications for various types of granular fill are attached in Table 1.

Placement Method

The approved fill shall be placed, spread and leveled in layers generally not exceeding 10 in. in thickness before compaction. The fill shall be placed at moisture content capable of achieving the desired compaction level. For clay soils or granular soils containing an appreciable amount of cohesive fines, moisture conditioning will likely be required.

It is the Contractor's responsibility to provide all necessary compaction equipment and other grading equipment that may be required to attain the specified compaction. Hand-guided vibratory or tamping compactors will be required whenever fill is placed adjacent to walls, footings, columns or in confined areas.

Compaction Specifications

Maximum dry density and optimum moisture content of the fill soil shall be determined in accordance with modified Proctor methods (ASTM D1557). The recommended field compaction as a percentage of the maximum dry density is shown in Table 2. Note that these compaction guidelines would generally not apply to coarse gravel/stone fill. Instead, a method specification would apply (e.g., compact in thin lifts with a vibratory compactor until no further consolidation is evident).

Testing Procedures

Representative samples of proposed fill shall be submitted to CGC, Inc. for optimum moisture-maximum density determination (ASTM D1557) prior to the start of fill placement. The sample size should be approximately 50 lb.

CGC, Inc. shall be retained to perform field density tests to determine the level of compaction being achieved in the fill. The tests shall generally be conducted on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

Table 1
Gradation of Special Fill Materials

Material	WisDOT Section 311	WisDOT Section 312	WisDOT Section 305			WisDOT Section 209		WisDOT Section 210
	Breaker Run	Select Crushed Material	3-in. Dense Graded Base	1 1/4-in. Dense Graded Base	3/4-in. Dense Graded Base	Grade 1 Granular Backfill	Grade 2 Granular Backfill	Structure Backfill
Sieve Size	Percent Passing by Weight							
6 in.	100							
5 in.		90-100						
3 in.			90-100					100
1 1/2 in.		20-50	60-85					
1 1/4 in.				95-100				
1 in.					100			
3/4 in.			40-65	70-93	95-100			
3/8 in.				42-80	50-90			
No. 4			15-40	25-63	35-70	100 (2)	100 (2)	25-100
No. 10		0-10	10-30	16-48	15-55			
No. 40			5-20	8-28	10-35	75 (2)		
No. 100						15 (2)	30 (2)	
No. 200			2-12	2-12	5-15	8 (2)	15 (2)	15 (2)

Notes:

- Reference: Wisconsin Department of Transportation *Standard Specifications for Highway and Structure Construction*.
- Percentage applies to the material passing the No. 4 sieve, not the entire sample.
- Per WisDOT specifications, both breaker run and select crushed material can include concrete that is 'substantially free of steel, building materials and other deleterious material'.

Table 2
Compaction Guidelines

Area	Percent Compaction (1)	
	Clay/Silt	Sand/Gravel
<u>Within 10 ft of building lines</u>		
Footing bearing soils	93 - 95	95
Under floors, steps and walks		
- Lightly loaded floor slab	90	90
- Heavily loaded floor slab and thicker fill zones	92	95
<u>Beyond 10 ft of building lines</u>		
Under walks and pavements		
- Less than 2 ft below subgrade	92	95
- Greater than 2 ft below subgrade	90	90
Landscaping	85	90

Notes:

- Based on Modified Proctor Dry Density (ASTM D 1557)

APPENDIX C
DOCUMENT QUALIFICATIONS

APPENDIX C DOCUMENT QUALIFICATIONS

I. GENERAL RECOMMENDATIONS/LIMITATIONS

CGC, Inc. should be provided the opportunity for a general review of the final design and specifications to confirm that earthwork and foundation requirements have been properly interpreted in the design and specifications. CGC should be retained to provide soil engineering services during excavation and subgrade preparation. This will allow us to observe that construction proceeds in compliance with the design concepts, specifications and recommendations, and also will allow design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction. CGC does not assume responsibility for compliance with the recommendations in this report unless we are retained to provide construction testing and observation services.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and no other warranties are expressed or implied. The opinions and recommendations submitted in this report are based on interpretation of the subsurface information revealed by the test borings indicated on the location plan. The report does not reflect potential variations in subsurface conditions between or beyond these borings. Therefore, variations in soil conditions can be expected between the boring locations and fluctuations of groundwater levels may occur with time. The nature and extent of the variations may not become evident until construction.

II. IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the report for any purpose or project except the one originally contemplated.

READ THE FULL REPORT

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report* that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *CGC cannot accept responsibility or liability for problems that occur because our reports do not consider developments of which we were not informed.*

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINION

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most

effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the confirmation-dependent recommendations included in your report. *Those confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *CGC cannot assume responsibility or liability for the report's confirmation-dependent recommendations if we do not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical engineering report. Confront that risk by having CGC participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

GIVE CONSTRUCTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time to perform additional study.* Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and constructors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic

expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

ENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

OBTAIN PROFESSIONAL ASSISTANCE TO DEAL WITH MOLD

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention.* *Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Membership in the Geotechnical Business Council (GBC) of Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with CGC, a member of GBC, for more information.

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Geotechnical Business Council
of the Geoprofessional Business Association
8811 Colesville Road, Suite G 106
Silver Spring, MD 20910



Construction • Geotechnical
Consulting Engineering/Testing

July 26, 2016 (Revised)
C16051-6

Mr. Pete Holmgren, P.E.
Madison Water Utility
119 East Olin Avenue
Madison, WI 53713-1431

Re: Geotechnical Exploration Report
Pioneer & Old Sauk Roads Water Tower
Madison, Wisconsin

Dear Pete:

Construction • Geotechnical Consultants, Inc. (CGC) has completed the subsurface exploration program for the new water tower proposed on the far west side of Madison near the intersection of Pioneer Road and Old Sauk Road. The purpose of this program was to evaluate the subsurface conditions within the proposed construction area and to provide geotechnical recommendations regarding subgrade preparation, foundation design/construction and utility installation. We are sending an electronic copy of this report to you and can provide a paper copy upon request.

PROJECT DESCRIPTION

We understand that a new 1.0 million gallon elevated water tank is proposed for the site south of Old Sauk Road and about 1000 ft east of Pioneer Road in the Town of Middleton. Preliminary tank design parameters indicate the tower will be 142 ft high with a pedestal diameter of 38 ft. The total service load (dead load plus long-term live load) is estimated to be 11,050 kips. A shallow foundation would either be an annular ring (spread footing) or a circular mat (raft) foundation. The maximum diameter of a ring foundation is 1.4 times the pedestal diameter, or about 53 ft in this case for a pedestal diameter of 38 ft. If the required bearing area is larger, a circular mat configuration would be used. Total settlement of the shallow foundation option is limited to 3 in., with differential settlement being limited by an allowable tilt of 1/800 (i.e., about 1 in. of differential settlement in 67 ft). We presume the foundation would typically be placed between about 5 and 10 ft below finish grade to provide sufficient frost protection and resistance to overturning.

Details were not available at the time this report was prepared, but we understand a driveway or access road will be constructed leading to and around the new water tower. We anticipate that the driveway will experience relatively infrequent traffic, including occasional truck traffic.

SITE CONDITIONS / REGIONAL GEOLOGY

The existing tower is located on a sloping hillside in an area that is currently a farm field planted in corn. Ground surface elevations within the proximity of the proposed tank are near EL 1155 to 1158 ft,



Mr. Pete Holmgren, P.E.
Madison Water Utility
July 26, 2016
Page 2

with site grades falling off to the east. The ground rises slightly to the west and then slopes down toward Pioneer Road. Higher ground continues to the south of the proposed location.

The soils at the site are mapped as nonuniform collapsed supraglacial till and sorted supraglacial debris deposited during the last part of the Wisconsin Glaciation¹. In other words, because the site is close to the furthest southwest extent of glaciation, the glacial till found in this area was not overridden by the glacier but instead consists of sandy material within or above the ice that was left behind as the glacier melted and retreated. The ground surface is described as slightly hummocky topography.

SUBSURFACE CONDITIONS

Subsurface conditions on site were explored by drilling three Standard Penetration Test (SPT) soil borings to depths of 50 to 60 ft below existing site grades. The number and desired locations of the borings were determined by Madison Water Utility following guidance provided by the tank manufacturer/installer. The boring locations are shown in plan on the Soil Boring Location Exhibit attached in Appendix B. The borings were drilled on June 30 and July 1, 2016 by Badger State Drilling (under subcontract to CGC) using an ATV-mounted Diedrich D-50 rotary drill rig equipped with hollow-stem augers, an automatic SPT hammer and rock coring equipment. A 5 to 10-ft long rock core was attempted in each boring once apparently sound sandstone bedrock had been reached, but in each case, the sandstone was too friable to recover core samples (i.e., the weakly cemented sandstone was eroded by the drilling fluid and/or fragmented by the coring action). Ground surface elevations were provided by the City of Madison surveyor who staked the boring locations.

The subsurface profile at the boring locations is fairly consistent and can generally be described by the following strata (in descending order):

- 10 to 12 in. of *topsoil*, underlain by
- 2 to 3 ft of medium stiff to stiff *lean clay*, followed by
- 12 to 14 ft of loose to medium dense *sand strata* with varying proportions of silt and gravel, underlain by
- Weathered to somewhat competent *sandstone bedrock* extending to the maximum depth explored.

As noted, the sandstone bedrock was too friable to retrieve any core samples despite attempting to do so in each of the three boreholes. It has been our experience that sandstone from this stratum is very difficult to core, and not being able to recover any intact pieces of core is a common occurrence. Nevertheless, the layer is a very competent bearing stratum. Because of the poor core recovery, we will be relying on SPT blow counts to analyze the layer as a dense to very dense sand. SPT blow counts were typically in the dense to very dense range (averaging about 45 blows/ft) in the upper 10 ft

¹ Lee Clayton and John W. Attig, *Pleistocene Geology of Dane County, Wisconsin*, Wisconsin Geological and Natural History Survey, Bulletin 95, 1997



Mr. Pete Holmgren, P.E.
Madison Water Utility
July 26, 2016
Page 3

of the stratum and were consistently 50 blows over less than a foot (usually 50 blows per 1 to 4 in.) below that.

Groundwater was not encountered in the borings during or shortly after drilling, although the use of drilling fluid to core rock obscured the true groundwater level. Groundwater levels are expected to fluctuate with seasonal variations in precipitation, infiltration, evapotranspiration and other factors, but are anticipated to be below the excavation depths required for this project. A more detailed description of the site soil and groundwater conditions is presented on the Soil Boring Logs attached in Appendix B.

DISCUSSION AND RECOMMENDATIONS

Subject to the limitations discussed below and based on the subsurface exploration, it is our opinion that the site is suitable for the proposed construction and that the water tower can be supported on a conventional spread footing (ring) or mat foundation either by lowering the foundation to the weathered sandstone layer or by using the somewhat lower bearing pressure on the overlying sandy till stratum. Our recommendations for subgrade preparation, foundation and utility design/construction are presented in the following subsections. Additional information regarding the conclusions and recommendations presented in this report is discussed in Appendix C.

1. Subgrade Preparation

As the initial step in preparing the site for the proposed tower foundation, we recommend that topsoil be stripped from the construction area, including a sufficient area extending beyond the water tower to include the limits of the sloped excavation. Topsoil should be stockpiled for later reuse in landscaped areas. Excavation to the proposed base grade for the tower foundation can then commence. Excavation slopes should follow OSHA guidelines, and in this case, we anticipate the shallow silty sand and clay soils would be classified by the contractor's 'competent person' as Type B soils. As such, excavation slopes of 1H:1V or flatter are expected to be at least temporarily stable.

Assuming the excavated soils are likely to be re-used as compacted backfill against the foundation, we recommend that the relatively thin clay layer found below the topsoil be stockpiled separately from the underlying sand. Sand backfill is recommended as backfill in the deeper portions of the excavation, with clay being acceptable in landscaped areas near the ground surface.

2. Foundation Design – Allowable Bearing Pressure

In our opinion, the proposed structure can be supported on reinforced concrete spread footings or a mat foundation bearing on weathered sandstone below about 17 ft or on the overlying stratum of medium dense sand at a more typical footing depth of somewhere between 5 and 10 ft below grade. The following parameters should be used for foundation design:



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- Maximum net allowable bearing pressure:
 - On medium dense sand below 5 ft: 8,000 psf
 - On weathered sandstone bedrock below about 17 ft: 12,000 psf

- Minimum footing depth for frost protection (unheated structure): 5 ft

Undercutting below footing grade will be required if looser than expected pockets are encountered at or just below footing grade that cannot be densified by recompacting. Where undercutting of loose soil is required, the base of the undercut excavations should be widened beyond the footing edges at least 0.5 ft in each direction for each foot of undercut depth for stress distribution purposes. Grade should be restored below foundations designed for 8,000 psf using compacted coarse stone (3-in. dense graded base, 3-in. clear stone or select crushed material, as described in Appendix D). The coarse stone should be rigorously compacted in thin lifts using heavy vibratory plate compactors until no further consolidation of the stone is evident. Undercut excavations below foundations designed for the higher sandstone bearing pressure should be restored using either lean mix concrete (with f'_c of at least 1000 psi at 28 days) or additional footing concrete.

Note that the recommended allowable bearing pressure has been selected to satisfy both bearing capacity and settlement considerations. As is the case for most footings on granular soil strata, the bearing pressure is largely controlled or limited by settlement criteria, with the actual bearing capacity being substantially higher, even after including a factor of safety of 3. As a result, it is our opinion that the recommended design bearing pressure can be exceeded by about 20% for short-term transient loads.

3. Settlement Estimates

Because the site soils and weathered sandstone generally become denser with depth, the estimated settlement will be strongly influenced by the footing grade established for the project. The following table illustrates this by comparing settlement with footing depth below existing grade. To estimate potential differential settlement, we evaluated conditions at two different boring locations. Boring 2 represents the 'loosest' conditions based on SPT blow counts in the upper 15 ft, while Boring 1 represents the 'densest' conditions.



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Table 1
Estimated Total and Differential Settlement vs. Footing Grade

Footing Grade (1)	Bearing Stratum	Bearing Pressure, psf	Estimated Total Settlement by Location, in.		Approximate Differential Settlement, in.
			Boring 1	Boring 2	
5 ft	sand	8,000	1.6	2.3	0.7
10 ft	sand	8,000	1.0	1.5	0.5
17 ft	sandstone	12,000	<1	<1	<0.5

Note:

- 1) Depth below existing grade

The estimated total settlement under any of these scenarios is less than the maximum allowable settlement of 3 in. for shallow foundation systems. Likewise, with the borings being spaced about 60 ft apart, the estimated differential settlement also satisfies the criterion of less than 1 in. of differential settlement in 67 ft. As indicated in the table, the magnitude of settlement decreases with increasing depth of footing grade.

4. Backfill Recommendations

We recommend using granular soils as structural backfill against the foundation, as these soils are generally easier to place and compact in most weather conditions. Note that the sand soils encountered below the topsoil and shallow clayey layers are considered adequate for use as structural fill. We do not recommend using clay/silt soils as structural fill because moisture conditioning will likely be required to achieve desired compaction levels, which could delay construction progress. Instead, silt/clay soils can be used as fill in landscaped areas. Backfill should be compacted to at least 92% (ASTM D1557) in accordance with our Recommended Compacted Fill Specifications presented in Appendix D. If the dead weight of backfill above the footing projection beyond the ring foundation wall is factored into overturning calculations, we recommend that a moist unit weight of 120 lb/cu ft be used for sand backfill compacted as described above.

5. Pavement Design

Following topsoil stripping, the subgrade soils below the access drive are generally expected to consist of native lean clay soils. Pavement subgrades should be proof-rolled with a loaded tri-axle dump truck or other heavy piece of rubber-tired construction equipment such as a front-end loader or scraper. Soft



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or loose subgrades should be stabilized as needed with coarse stone (3-in. clear stone, 3-in. dense graded base, select crushed or breaker run stone as described in Appendix D) or replaced with compacted granular fill. We assume that the driveway pavement will be subjected to infrequent traffic including only an occasional truck (i.e., less than one design daily equivalent 18-kip single axle load). Accordingly, the pavement section tabulated below was selected assuming a lean clay subgrade with a CBR value of approximately 3 and a design life of 20 years.

**TABLE 2
RECOMMENDED LIGHT DUTY PAVEMENT SECTION**

Material	Layer Thickness, in.	WDOT Specification¹
Bituminous Upper Layer (Surface Course)	1.5	Section 460, Table 460-1, 9.5 mm
Bituminous Lower Layer (Binder Course)	1.75	Section 460, Table 460-1, 12.5 mm
Dense Graded Base Course	8	Sections 301 and 305, 75 and 31.5mm
TOTAL THICKNESS	11.25	

Notes:

1. Wisconsin DOT *Standard Specifications for Highway and Structure Construction*, latest edition, including supplement specifications.
2. Compaction requirements:
 - Bituminous concrete: Refer to Section 460-3.
 - Base course: Refer to Section 301.3.4.2, Standard Compaction
3. Mixture Type E-0.3 bituminous pavement is recommended; refer to Section 460, Table 460-2 of the *Standard Specifications*.

The pavement design assumes a stable/non-yielding subgrade and a regular program of preventative maintenance. Alternative pavement designs may prove acceptable and should be reviewed by CGC. If there is a delay between subgrade preparation and placing the base course, the subgrade should be recompact.

Pavement areas subjected to concentrated wheel loads (e.g., dumpster pads, storage pads, aprons, etc.) should be constructed of Portland cement concrete. The slab should be a minimum of 6-in. thick, should be founded on at least 6 in. of dense graded base and should contain mesh reinforcement for

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crack control. A subgrade modulus of 100 pci should be used for concrete pavement resting on compacted granular fill over the native lean clay.

Note that if the driveway will be used as a gravel-surfaced access road during construction and then paved near completion of the project, we recommend the following modifications to the above pavement recommendations:

- A layer of Type 1 biaxial geogrid (Tensar BX 1100 or equivalent) should be placed on the prepared subgrade.
- A minimum of 12 in. of 3-in. dense graded base (DGB) should be placed above the geogrid to serve as the access road. If desired, the upper 3± in. can be finer (1 ¼ in.) DGB to provide a smoother surface for construction traffic.
- Prior to paving, the access road should be re-graded, topped with additional 1 ¼ in. DGB if necessary and then proof-rolled as described above

6. Utility Construction

Based on the available soil and groundwater information, it appears that water main installation in the vicinity of the water tower can proceed using traditional open cut methods. Dewatering will likely not be required. It is expected that excavation sidewalls will be sloped back for relatively shallow installations (i.e., less than 8 ft in depth) and that a trench shield and/or internal bracing will be used for deeper excavations. The following are our recommendations regarding trench excavation, dewatering, and backfilling:

- Excavation: Open cuts should be sloped and/or braced in accordance with OSHA guidelines. Slopes of 1H:1V or flatter through the on-site soil deposits are generally expected to be at least temporarily stable. Temporary bracing should be designed by a registered professional engineer.
- Rock Removal: Even though the borings could be completed to a depth of at least 15 ft without encountering auger refusal, there is a potential for rock removal being required in other locations on site or in deep utility trenches. The use of a ripper tooth on a large excavator/backhoe or a backhoe-mounted rock chisel may be required in some locations. Refer to Appendix E for suggested definitions of bedrock for payment purposes.
- Dewatering: Based on observations made during the field exploration, groundwater infiltration into shallow excavations is generally not expected to be a problem.



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- **Backfilling** - Excavation backfilling may proceed using the following guidelines:
 - A. Both clayey and sandy excavation spoils may be used to backfill the utility trenches above the pipe and associated granular bedding material in landscaped areas. *However, we recommend that granular soils be used as backfill below paved areas because they are relatively easy to place and compact in most weather conditions.* The clayey soils on site will likely require some moisture conditioning prior to placement and compaction, which could delay construction progress. Granular soils with cobbles and boulders should not be used in direct contact with utility lines.
 - B. Backfill material should be placed in accordance with recommendations presented in Appendix D of this report.
 - C. Compaction recommendations below pavements:
 - Depths greater than 3 ft below grade: 90% modified Proctor (ASTM D1557)
 - Final 3 ft: 95% modified Proctor

CONSTRUCTION CONSIDERATIONS

Due to variations in weather, construction methods and other factors, specific construction problems are difficult to predict. Soil related difficulties which could be encountered on the site are discussed below:

- Due to the potentially sensitive nature of some of the on-site soils, we recommend that final site grading activities be completed during dry weather, if possible. Construction traffic should be avoided on prepared subgrades to minimize potential disturbance.
- Earthwork construction during the early spring or late fall could be complicated as a result of wet weather and freezing temperatures. During cold weather, exposed subgrades should be protected from freezing before and after footing construction. Fill should never be placed while frozen or on frozen ground.
- Excavations extending greater than 4 ft in depth below the existing ground surface should be sloped or braced in accordance with current OSHA standards.
- Based on observations made during the field exploration, groundwater infiltration into foundation excavations is not expected to be a problem. However, water accumulating at the base of excavations as a result of precipitation or seepage should be controlled and quickly removed using pumps operating from filtered sump pits.



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RECOMMENDED CONSTRUCTION MONITORING

The quality of the foundation subgrades will be largely determined by the level of care exercised during site development. To check that earthwork and foundation construction proceeds in accordance with our recommendations, the following operations should be monitored by CGC:

- Foundation excavation/subgrade preparation;
- Concrete placement; and
- Fill/backfill placement and compaction.

* * * * *

It has been a pleasure to serve you on this project. If you have any questions or need additional consultation, please contact us.

Sincerely,

CGC, Inc.

William W. Wuellner, P.E.
Senior Geotechnical Engineer

Michael N. Schultz, P.E.
Principal/Consulting Professional

- Encl: Appendix A - Field Exploration
 Appendix B - Soil Boring Location Plan
 Logs of Test Borings (3)
 Log of Test Boring-General Notes
 Unified Soil Classification System
 Appendix C - Document Qualifications
 Appendix D - Recommended Compacted Fill Specifications
 Appendix E - Rock Excavation Considerations

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Subsurface conditions on site were explored by drilling three Standard Penetration Test (SPT) soil borings to depths of 50 to 60 ft below existing site grades. The number and desired locations of the borings were determined by Madison Water Utility following guidance provided by a tank manufacturer/installer. The boring locations are shown in plan on the Soil Boring Location Exhibit attached in Appendix B. The borings were drilled on June 30 and July 1, 2016 by Badger State Drilling (under subcontract to CGC) using an ATV-mounted Diedrich D-50 rotary drill rig equipped with hollow-stem augers, an automatic SPT hammer and rocking coring equipment. A 5-ft long rock core was attempted in each borings once apparently sound sandstone bedrock had been reached, but in each case, the sandstone was too friable to recover core samples (i.e., the sandstone was eroded by the drilling fluid while coring). Ground surface elevations were provided by the City of Madison, who staked the boring locations.

In each boring, soil samples were obtained at 2.5 foot intervals to a depth of 10 ft and at 5 ft intervals thereafter. The soil samples were obtained in general accordance with specifications for standard penetration testing, ASTM D 1586. The specific procedures used for drilling and sampling are described below.

1. Boring Procedures between Samples

The boring is extended downward, between samples, by a hollow-stem auger.

2. Standard Penetration Test and Split-Barrel Sampling of Soils
(ASTM Designation: D 1586)

This method consists of driving a 2-inch outside diameter split-barrel sampler using a 140-pound weight falling freely through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the log of borings and is known as the Standard Penetration Resistance.

3. Diamond Core Drilling for Site Exploration
(ASTM Designation: D 2113)

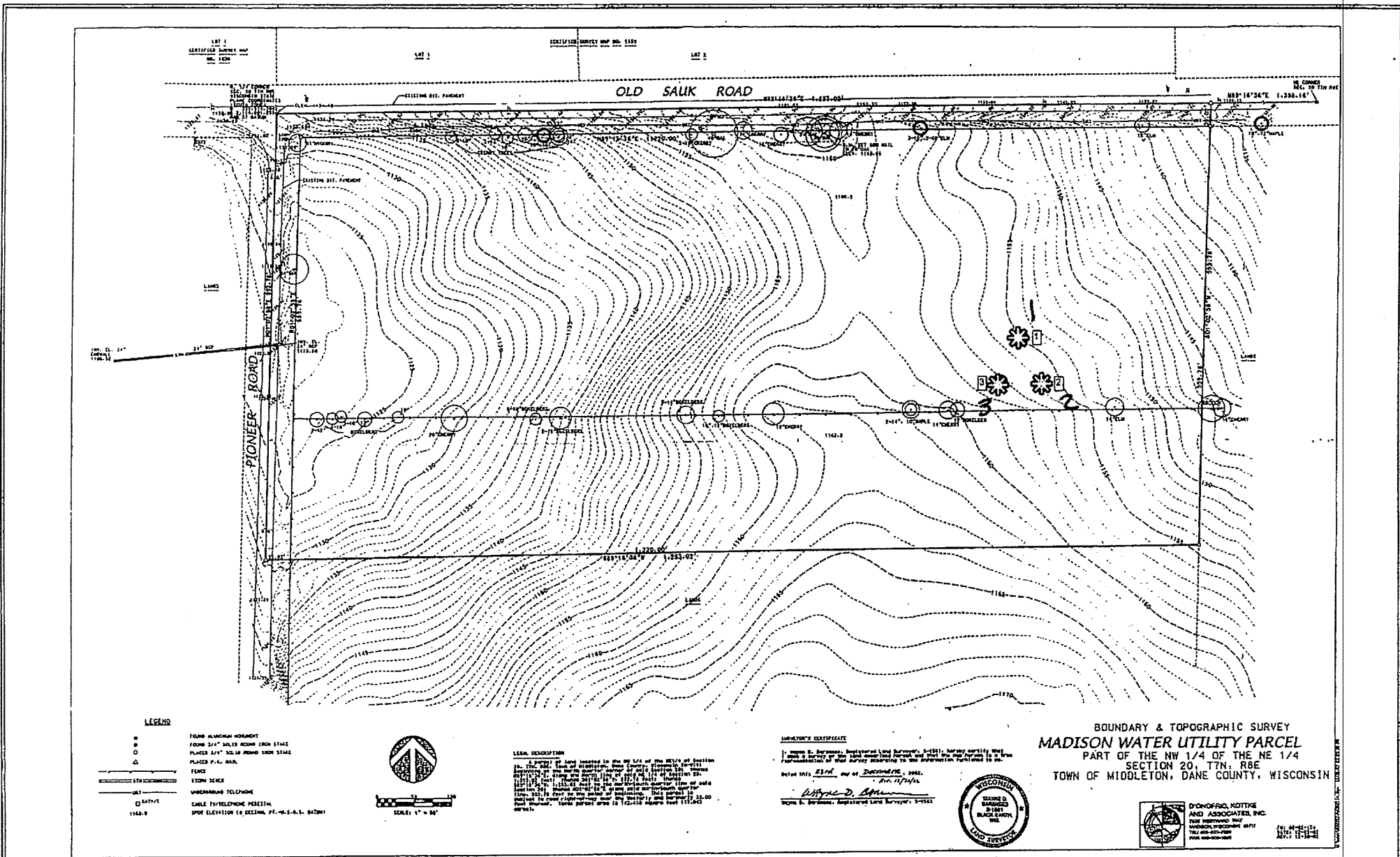
This method consists of advancing a hole in hard strata by rotating downward a single or double tube core barrel equipped with a cutting bit. Diamond, Tungsten carbide, or other cutting agents may be used for the bit. Wash water is used to remove the cuttings. A 1 3/4-in. O.D. core sample is examined in the field and the laboratory. Cores are stored in partitioned boxes and the length of recovered material is expressed as a percentage of the actual distance penetrated as core recovery. The total length of recovered pieces at least 4 in. long as a percent of the length cored is the Rock Quality Designation (RQD).

During the field exploration, the driller visually classified the soil and prepared a field log. *Field screening of the soil samples for possible environmental contaminants was not conducted by the*

drillers as these services were not part of CGC's work scope. Water level observations were made in each boring during and after drilling and are shown at the bottom of each boring log. Upon completion of drilling, the borings were backfilled with bentonite (where required) to satisfy WDNR regulations and the soil samples were delivered to our laboratory for visual classification and laboratory testing. The soils were visually classified by a geotechnical engineer using the Unified Soil Classification System. The final logs prepared by the engineer and a description of the Unified Soil Classification System are presented in Appendix B.

APPENDIX B

**SOIL BORING LOCATION PLAN
LOGS OF TEST BORINGS (3)
LOG OF TEST BORING – GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM**



Legend

Denotes Boring Location and Number

Scale: Reduced

Notes

1. Soil borings were performed by Badger State Drilling in July 2016.
2. Base map was prepared by D'Onofrio Kottke and provided by Madison Water Utility.
3. Boring locations are approximate.

Date: 7/20/16		SOIL BORING LOCATION EXHIBIT Proposed Water Tower Pioneer & Old Sauk Roads Madison, Wisconsin
Job No. C16051-6		



LOG OF TEST BORING

Project Pioneer/Old Sauk Water Tower
PT #10000
 Location Madison, WI

Boring No. 1
 Surface Elevation (ft) 1155.1
 Job No. C16051-6
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	q _u (qa) (tsf)	W	LL	PL
1		14	M	6	0 - 10.5	10.5 in. TOPSOIL	(1.0)	26.3		
2		14	M	11	10.5 - 15	Medium Stiff to Stiff, Brown Lean CLAY, Trace Sand and Gravel (CL)				
3		18	M	11	15 - 20	Medium Dense to Dense, Brown, Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)				
4		16	M	20	20 - 25					
5		0	M	38	25 - 38.5	Weathered to Competent Orange-Brown Sandstone BEDROCK Hard Drilling Noted Near 15 ft				
6		12	M	34	38.5 - 43.5	Core Run A: 38.5 - 43.5 ft 0% Recovery; SPT blow count at 38.5 ft = 50/2"				
7		10	M	43	43.5 - 45					
8		0		50/4"	45 - 48.5					
9		0		50/2"	48.5 - 50					
A		0			43.5 - 48.5					
10		0		50/1"	48.5 - 50					
11		0		50/2"	50 - 55					
End of Boring at 50 ft										
Backfilled with Bentonite Slurry and Chips, Topsoil Cover										

WATER LEVEL OBSERVATIONS					GENERAL NOTES				
While Drilling	<input checked="" type="checkbox"/>	Upon Completion of Drilling	<input type="checkbox"/>		Start	7/1/16	End	7/1/16	
Time After Drilling					Driller	BSD	Chief	KD	Rig D-50
Depth to Water					Logger	DD	Editor	ESF	
Depth to Cave in					Drill Method	2.25" HSA to 10 ft; 3 7/8 RB with Mud to 50 ft; Automatic Hammer			
<small>The stratification lines represent the approximate boundary between soil types and the transition may be gradual.</small>									



LOG OF TEST BORING

Project Pioneer/Old Sauk Water Tower
 PT #10001
 Location Madison, WI

Boring No. 2
 Surface Elevation (ft) 1155.8
 Job No. C16051-6
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth (ft)		qu (qa) (tsf)	W	LL	PL	LI
1	14	M	8	0	10 in. TOPSOIL	(1.75)	28.2			
2	14	M	5	5	Stiff, Brown Lean CLAY, Trace Sand and Gravel (CL)	(.25)				
3	16	M	13	10	Loose to Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
4	14	M	10	15	Very Soft and Sandy Near 3.5 ft					
5	8	M/W	13	20	Weathered to Competent Orange-Brown Sandstone BEDROCK					
6	12	M	37	25						
7	12	M	47	30	Hard Drilling Noted Near 30 ft					
8	12	M	73/10"	35						
9	0	W	50/1"	40						
10	1	M/W	50/2"	45						
A				43.5 - 48.5	Core Run A: 43.5 - 48.5 ft 0% Recovery: SPT blow count at 43.5 ft = 50/1"					
11	0		50/1"	50	End of Boring at 50 ft					
				55	Backfilled with Bentonite Slurry and Chips, Topsoil Cover					
				60						
				65						
				70						

WATER LEVEL OBSERVATIONS

While Drilling _____ Upon Completion of Drilling _____
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____

GENERAL NOTES

Start 7/1/16 End 7/1/16
 Driller BSD Chief KD Rig D-50
 Logger DD Editor ESF
 Drill Method 2.25" HSA to 10 ft; 3 7/8 RB with Mud to 50 ft; Automatic Hammer

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST BORING

Project Pioneer/Old Sauk Water Tower
 Location PT #10002
Madison, WI

Boring No. 3
 Surface Elevation (ft) 1156.4
 Job No. C16051-6
 Sheet 1 of 1

2921 Parry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Rec (in.)	Moist	N	Depth (ft)		q _u (qa) (tsf)	w	LL	PL	LI
1	12	M	6	0-12	12 in. TOPSOIL	(1.0)	23.0			
2	12	M	9	12-15	Medium Stiff to Stiff, Brown Lean CLAY, Trace Sand and Gravel (CL)					
3	14	M	20	15-19	Loose to Medium Dense, Brown Fine to Medium SAND, Some Silt and Gravel, Scattered Cobbles/Boulders (SM)					
4	14	M	12	19-31						
5	14	M	10	31-41	Weathered to Competent Orange-Brown Sandstone BEDROCK Firm Drilling Noted Near 17 ft					
6	16	M	64	41-43.5						
7	18	M	49	43.5-53.5	Core Run A: 43.5 - 53.5 ft 0% Recovery; SPT blow count at 43.5 ft = 50/1"					
8	8	M	50/2"	53.5-55						
9	0		50/2"	55-56.5	End of Boring at 60 ft Backfilled with Bentonite Slurry and Chips, Topsoil Cover					
10	0		50/1"	56.5-58						
A	0			58-60						
11	0		50/3"	60-61.5						

WATER LEVEL OBSERVATIONS

While Drilling _____ Upon Completion of Drilling _____
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____

GENERAL NOTES

Start 6/30/16 End 6/30/16
 Driller BSD Chief KD Rig D-50
 Logger DD Editor ESF
 Drill Method 2.25" HSA to 30 ft; 3 7/8
RB with Mud to 60 ft; Automatic Hammer

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

LOG OF TEST BORING
General Notes

DESCRIPTIVE SOIL CLASSIFICATION

Grain Size Terminology

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

General Terminology

- Physical Characteristics
Color, moisture, grain shape, fineness, etc.
- Major Constituents
Clay, silt, sand, gravel
- Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.
- Geologic Origin
Glacial, alluvial, eolian, residual, etc.

Relative Density

Term	"N" Value
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

Relative Proportions Of Cohesionless Soils

Proportional Term	Defining Range by Percentage of Weight
Trace	0% - 5%
Little	5% - 12%
Some	12% - 35%
And	35% - 50%

Consistency

Term	q _u -tons/sq. ft
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

Organic Content by Combustion Method

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4 - 12%
Sedimentary Peat	12% - 50%
Fibrous and Woody Peat	More than 50%

Plasticity

Term	Plastic Index
None to Slight	0 - 4
Slight	5 - 7
Medium	8 - 22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

Drilling and Sampling

- CS - Continuous Sampling
- RC - Rock Coring: Size AW, BW, NW, 2"W
- RQD - Rock Quality Designation
- RB - Rock Bit/Roller Bit
- FT - Fish Tail
- DC - Drove Casing
- C - Casing: Size 2 ½", NW, 4", HW
- CW - Clear Water
- DM - Drilling Mud
- HSA - Hollow Stem Auger
- FA - Flight Auger
- HA - Hand Auger
- COA - Clean-Out Auger
- SS - 2" Dia. Split-Barrel Sample
- 2ST - 2" Dia. Thin-Walled Tube Sample
- 3ST - 3" Dia. Thin-Walled Tube Sample
- PT - 3" Dia. Piston Tube Sample
- AS - Auger Sample
- WS - Wash Sample
- PTS - Peat Sample
- PS - Pitcher Sample
- NR - No Recovery
- S - Sounding
- PMT - Borehole Pressuremeter Test
- VS - Vane Shear Test
- WPT - Water Pressure Test

Laboratory Tests

- q_a - Penetrometer Reading, tons/sq ft
- q_a - Unconfined Strength, tons/sq ft
- W - Moisture Content, %
- LL - Liquid Limit, %
- PL - Plastic Limit, %
- SL - Shrinkage Limit, %
- LI - Loss on Ignition
- D - Dry Unit Weight, lbs/cu ft
- pH - Measure of Soil Alkalinity or Acidity
- FS - Free Swell, %

Water Level Measurement

- ▽ - Water Level at Time Shown
- NW - No Water Encountered
- WD - While Drilling
- BCR - Before Casing Removal
- ACR - After Casing Removal
- CW - Cave and Wet
- CM - Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

CGC, Inc.

Madison - Milwaukee

Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS

(more than 50% of material is larger than No. 200 sieve size)

Clean Gravels (Less than 5% fines)

GRAVELS
More than 50% of coarse fraction larger than No. 4 sieve size



GW

Well-graded gravels, gravel-sand mixtures, little or no fines



GP

Poorly-graded gravels, gravel-sand mixtures, little or no fines

Gravels with fines (More than 12% fines)



GM

Silty gravels, gravel-sand-silt mixtures



GC

Clayey gravels, gravel-sand-clay mixtures

Clean Sands (Less than 5% fines)

SANDS
50% or more of coarse fraction smaller than No. 4 sieve size



SW

Well-graded sands, gravelly sands, little or no fines



SP

Poorly graded sands, gravelly sands, little or no fines

Sands with fines (More than 12% fines)



SM

Silty sands, sand-silt mixtures



SC

Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(50% or more of material is smaller than No. 200 sieve size.)

SILTS AND CLAYS

Liquid limit less than 50%



ML

Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity



CL

Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays



OL

Organic silts and organic silty clays of low plasticity

SILTS AND CLAYS

Liquid limit 50% or greater



MH

Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts



CH

Inorganic clays of high plasticity, fat clays



OH

Organic clays of medium to high plasticity, organic silts

HIGHLY ORGANIC SOILS



PT

Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

GP Not meeting all gradation requirements for GW

GM Atterberg limits below "A" line or P.I. less than 4

Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

GC Atterberg limits above "A" line or P.I. greater than 7

SW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

SP Not meeting all gradation requirements for GW

SM Atterberg limits below "A" line or P.I. less than 4

Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

SC Atterberg limits above "A" line with P.I. greater than 7

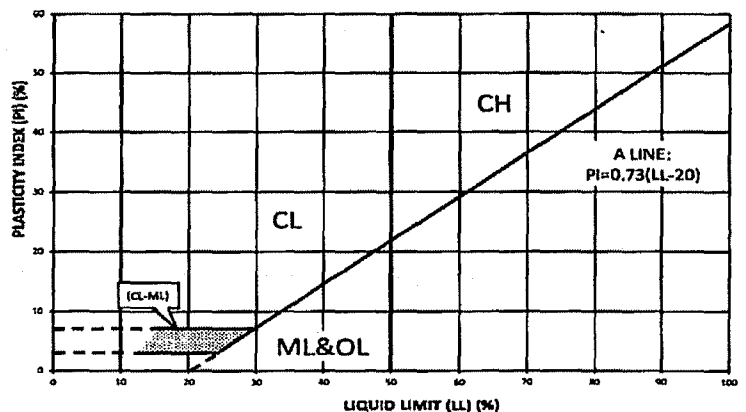
Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent GW, GP, SW, SP

More than 12 percent GM, GC, SM, SC

5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX C

DOCUMENT QUALIFICATIONS

APPENDIX C DOCUMENT QUALIFICATIONS

I. GENERAL RECOMMENDATIONS/LIMITATIONS

CGC, Inc. should be provided the opportunity for a general review of the final design and specifications to confirm that earthwork and foundation requirements have been properly interpreted in the design and specifications. CGC should be retained to provide soil engineering services during excavation and subgrade preparation. This will allow us to observe that construction proceeds in compliance with the design concepts, specifications and recommendations, and also will allow design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction. CGC does not assume responsibility for compliance with the recommendations in this report unless we are retained to provide construction testing and observation services.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and no other warranties are expressed or implied. The opinions and recommendations submitted in this report are based on interpretation of the subsurface information revealed by the test borings indicated on the location plan. The report does not reflect potential variations in subsurface conditions between or beyond these borings. Therefore, variations in soil conditions can be expected between the boring locations and fluctuations of groundwater levels may occur with time. The nature and extent of the variations may not become evident until construction.

II. IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the report for any purpose or project except the one originally contemplated.

READ THE FULL REPORT

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report that was:*

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *CGC cannot accept responsibility or liability for problems that occur because our reports do not consider developments of which we were not informed.*

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINION

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most

effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the confirmation-dependent recommendations included in your report. *Those confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *CGC cannot assume responsibility or liability for the report's confirmation-dependent recommendations if we do not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical engineering report. Confront that risk by having CGC participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

GIVE CONSTRUCTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and constructors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic

expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

ENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

OBTAIN PROFESSIONAL ASSISTANCE TO DEAL WITH MOLD

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Membership in the Geotechnical Business Council (GBC) of Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with CGC, a member of GBC, for more information.

Modified and reprinted with permission from:

Geotechnical Business Council
of the Geoprofessional Business Association
8811 Colesville Road, Suite G 106
Silver Spring, MD 20910

APPENDIX D

RECOMMENDED COMPACTED FILL SPECIFICATIONS

APPENDIX D

CGC, INC.

RECOMMENDED COMPACTED FILL SPECIFICATIONS

General Fill Materials

Proposed fill shall contain no vegetation, roots, topsoil, peat, ash, wood or any other non-soil material which by decomposition might cause settlement. Also, fill shall never be placed while frozen or on frozen surfaces. Rock, stone or broken concrete greater than 6 in. in the largest dimension shall not be placed within 10 ft of the building area. Fill used greater than 10 ft beyond the building limits shall not contain rock, boulders or concrete pieces greater than a 2 sq ft area and shall not be placed within the final 2 ft of finish subgrade or in designated utility construction areas. Fill containing rock, boulders or concrete pieces should include sufficient finer material to fill voids among the larger fragments.

Special Fill Materials

In certain cases, special fill materials may be required for specific purposes, such as stabilizing subgrades, backfilling undercut excavations or filling behind retaining walls. For reference, WisDOT gradation specifications for various types of granular fill are attached in Table 1.

Placement Method

The approved fill shall be placed, spread and leveled in layers generally not exceeding 10 in. in thickness before compaction. The fill shall be placed at moisture content capable of achieving the desired compaction level. For clay soils or granular soils containing an appreciable amount of cohesive fines, moisture conditioning will likely be required.

It is the Contractor's responsibility to provide all necessary compaction equipment and other grading equipment that may be required to attain the specified compaction. Hand-guided vibratory or tamping compactors will be required whenever fill is placed adjacent to walls, footings, columns or in confined areas.

Compaction Specifications

Maximum dry density and optimum moisture content of the fill soil shall be determined in accordance with modified Proctor methods (ASTM D1557). The recommended field compaction as a percentage of the maximum dry density is shown in Table 2. Note that these compaction guidelines would generally not apply to coarse gravel/stone fill. Instead, a method specification would apply (e.g., compact in thin lifts with a vibratory compactor until no further consolidation is evident).

Testing Procedures

Representative samples of proposed fill shall be submitted to CGC, Inc. for optimum moisture-maximum density determination (ASTM D1557) prior to the start of fill placement. The sample size should be approximately 50 lb.

CGC, Inc. shall be retained to perform field density tests to determine the level of compaction being achieved in the fill. The tests shall generally be conducted on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

Table 1
Gradation of Special Fill Materials

Material	WisDOT Section 311	WisDOT Section 312	WisDOT Section 305			WisDOT Section 209		WisDOT Section 210
	Breaker Run	Select Crushed Material	3-in. Dense Graded Base	1 1/4-in. Dense Graded Base	3/4-in. Dense Graded Base	Grade 1 Granular Backfill	Grade 2 Granular Backfill	Structure Backfill
Sieve Size	Percent Passing by Weight							
6 in.	100							
5 in.		90-100						
3 in.			90-100					100
1 1/2 in.		20-50	60-85					
1 1/4 in.				95-100				
1 in.					100			
3/4 in.			40-65	70-93	95-100			
3/8 in.				42-80	50-90			
No. 4			15-40	25-63	35-70	100 (2)	100 (2)	25-100
No. 10		0-10	10-30	16-48	15-55			
No. 40			5-20	8-28	10-35	75 (2)		
No. 100						15 (2)	30 (2)	
No. 200			2-12	2-12	5-15	8 (2)	15 (2)	15 (2)

Notes:

1. Reference: Wisconsin Department of Transportation *Standard Specifications for Highway and Structure Construction*.
2. Percentage applies to the material passing the No. 4 sieve, not the entire sample.
3. Per WisDOT specifications, both breaker run and select crushed material can include concrete that is 'substantially free of steel, building materials and other deleterious material'.

Table 2
Compaction Guidelines

Area	Percent Compaction (1)	
	Clay/Silt	Sand/Gravel
Within 10 ft of building lines		
Footing bearing soils	93 - 95	95
Under floors, steps and walks		
- Lightly loaded floor slab	90	90
- Heavily loaded floor slab and thicker fill zones	92	95
Beyond 10 ft of building lines		
Under walks and pavements		
- Less than 2 ft below subgrade	92	95
- Greater than 2 ft below subgrade	90	90
Landscaping	85	90

Notes:

1. Based on Modified Proctor Dry Density (ASTM D 1557)

APPENDIX E

ROCK EXCAVATION CONSIDERATIONS

APPENDIX E

ROCK EXCAVATION CONSIDERATIONS

In order to minimize probable "rock" excavation expenses during construction, we suggest that project specifications incorporate the following:

- A. It is assumed that all excavations to levels and dimensions required by the Contract Documents are earth excavation. Earth excavation includes removal and disposal of all materials encountered except rock/sound bedrock which is defined as natural materials which:
 - 1. Cannot be excavated with a minimum 3/4 cubic yard capacity backhoe without drilling and blasting;
 - 2. Cannot be economically removed with a one-tooth ripper on a D8 cat (or equivalent);
 - 3. Requires the use of special equipment such as a pneumatic hammer;
 - 4. Requires the use of explosives (after obtaining written permission of the owner).

- B. Examples of material classified as rock are boulders 1/2 cubic yard or more in volume, bedrock, rock in ledges, and rockhard cementitious aggregate deposits.

- C. Do not proceed with rock excavation work until architect, engineer and/or testing firm (i.e., CGC) has taken the necessary measures to determine quantity of rock excavation required to complete the work. Measurements will be taken after properly stripped of earth by the contractor. Contractor will be paid the difference between the cost of rock and earth excavation based on an agreed upon unit price established prior to starting rock excavation.

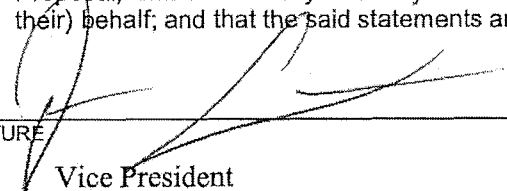
A statement should also be included in the specifications to the effect that: "Stated models of earth excavation equipment are merely for purposes of defining the various excavation categories and are not intended to indicate the brand or type of equipment that is to be used."

SECTION E: BIDDERS ACKNOWLEDGEMENT

OLD SAUK ROAD WATER PIPELINE
CONTRACT NO. 8186

Bidder must state a Unit Price and Total Bid for each item. The Total Bid for each item must be the product of quantity, by Unit Price. The Grand Total must be the sum of the Total Bids for the various items. In case of multiplication errors or addition errors, the Grand Total with corrected multiplication and/or addition shall determine the Grand Total bid for each contract. The Unit Price and Total Bid must be entered numerically in the spaces provided. All words and numbers shall be written in ink.

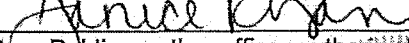
1. The undersigned having familiarized himself/herself with the Contract documents, including Advertisement for Bids, Instructions to Bidders, Form of Proposal, City of Madison Standard Specifications for Public Works Construction - 2018 Edition thereto, Form of Agreement, Form of Bond, and Addenda issued and attached to the plans and specifications on file in the office of the City Engineer, hereby proposes to provide and furnish all the labor, materials, tools, and expendable equipment necessary to perform and complete in a workmanlike manner the specified construction on this project for the City of Madison; all in accordance with the plans and specifications as prepared by the City Engineer, including Addenda Nos. _____ through _____ to the Contract, at the prices for said work as contained in this proposal. (Electronic bids submittals shall acknowledge addendum under Section E and shall not acknowledge here)
2. If awarded the Contract, we will initiate action within seven (7) days after notification or in accordance with the date specified in the contract to begin work and will proceed with diligence to bring the project to full completion within the number of work days allowed in the Contract or by the calendar date stated in the Contract.
3. The undersigned Bidder or Contractor certifies that he/she is not a party to any contract, combination in form of trust or otherwise, or conspiracy in restraint of trade or commerce or any other violation of the anti-trust laws of the State of Wisconsin or of the United States, with respect to this bid or contract or otherwise.
4. I hereby certify that I have met the Bid Bond Requirements as specified in Section 102.5. (IF BID BOND IS USED, IT SHALL BE SUBMITTED ON THE FORMS PROVIDED BY THE CITY. FAILURE TO DO SO MAY RESULT IN REJECTION OF THE BID).
5. I hereby certify that all statements herein are made on behalf of Speedway Sand & Gravel Inc. (name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of Wisconsin a partnership consisting of _____; an individual trading as _____ of the City of _____ State of _____; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.



 SIGNATURE
 Vice President

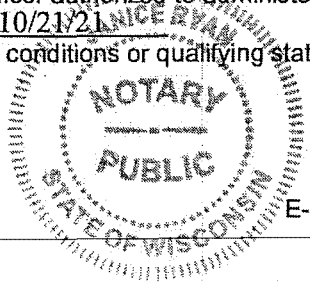
 TITLE, IF ANY

Sworn and subscribed to before me this
7th day of June, 2018



 (Notary Public or other officer authorized to administer oaths)
 My Commission Expires 10/21/21

Bidders shall not add any conditions or qualifying statements to this Proposal



Contract 8186 – Speedway Sand & Gravel, Inc.

Section F: Best Value Contracting (BVC)

This section is a required document for the bid to be considered complete. There are two methods for completing the Best Value Contracting (BVC) form. Method one: The form can be filled out online and submitted to this site to be included with your electronic bid. Method two: The form can be downloaded from the site and submitted by hand to the City of Madison.

Method of Submittal for BVC (click in box below to choose) *

I will submit Bid Express fillable online form (BVC).

Best Value Contracting

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

2. Madison General Ordinance (M.G.O.), 33.07(7), does provide for some exemptions from the active apprentice requirement. Apprenticeable trades are those trades considered apprenticeable by the State of Wisconsin. Please check applicable box if you are seeking an exemption.

- Contractor has a total skilled workforce of four or less individuals in all apprenticeable trades combined.
- No available trade training program; The Contractor has been rejected by the only available trade training program, or there is no trade training program within 90 miles.
- Contractor is not using an apprentice due to having a journey worker on layoff status, provided the journey worker was employed by the contractor in the past six months.
- First time contractor on City of Madison Public Works contract requests a onetime exemption but intends to comply on all future contracts and is taking steps typical of a "good faith" effort.
- Contractor has been in business less than one year.
- Contractor doesn't have enough journeyman trade workers to qualify for a trade training program in that respective trade.
- An exemption is granted in accordance with a time period of a "Documented Depression" as defined by the State of Wisconsin.

3. The Contractor shall indicate on the following section which apprenticeable trades are to be used on this contract. Compliance with active apprenticeship, to the extent required by M.G.O. 33.07(7), shall be satisfied by documentation from an applicable trade training body; an apprenticeship contract with the Wisconsin Department of Workforce Development or a similar agency in another state; or the U.S Department of Labor. This documentation is required prior to the Contractor beginning work on the project site.

The Contractor has reviewed the list and shall not use any apprenticeable trades on this project.

LIST APPRENTICABLE TRADES (check all that apply to your work to be performed on this contract)

- BRICKLAYER
- CARPENTER
- CEMENT MASON / CONCRETE FINISHER
- CEMENT MASON (HEAVY HIGHWAY)
- CONSTRUCTION CRAFT LABORER
- DATA COMMUNICATION INSTALLER
- ELECTRICIAN
- ENVIRONMENTAL SYSTEMS TECHNICIAN / HVAC SERVICE TECH/HVAC INSTALL / SERVICE
- GLAZIER
- HEAVY EQUIPMENT OPERATOR / OPERATING ENGINEER
- INSULATION WORKER (HEAT and FROST)
- IRON WORKER
- IRON WORKER (ASSEMBLER, METAL BLDGS)
- PAINTER and DECORATOR
- PLASTERER
- PLUMBER
- RESIDENTIAL ELECTRICIAN
- ROOFER and WATER PROOFER
- SHEET METAL WORKER
- SPRINKLER FITTER
- STEAMFITTER
- STEAMFITTER (REFRIGERATION)
- STEAMFITTER (SERVICE)
- TAPER and FINISHER
- TELECOMMUNICATIONS (VOICE, DATA and VIDEO) INSTALLER-TECHNICIAN
- TILE SETTER

OLD SAUK ROAD WATER PIPELINE
CONTRACT NO. 8186

Small Business Enterprise Compliance Report

This information may be submitted electronically through
Bid Express or submitted with bid in sealed envelope.

Cover Sheet

Prime Bidder Information

Company: Speedway Sand & Gravel Inc.

Address: 8500 Greenway Blvd Suite 202, Middleton, WI 53562

Telephone Number: 608-836-1071 ext 222 Fax Number: 608-836-7485

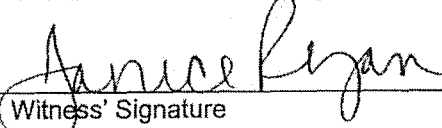
Contact Person/Title: John Czerepinski, Vice President

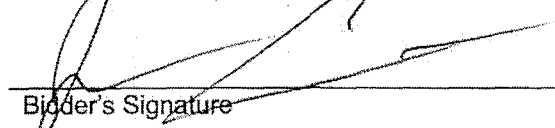
Prime Bidder Certification

I, John Czerepinski, Vice President of
Name Title

Speedway Sand & Gravel Inc certify that the information
Company

contained in this SBE Compliance Report is true and correct to the best of my knowledge and belief.


Witness' Signature


Bidder's Signature

June 7, 2018
Date

OLD SAUK ROAD WATER PIPELINE

CONTRACT NO. 8186

DATE: 6/7/18

**Speedway Sand & Gravel,
Inc.**

Item	Quantity	Price	Extension
Section B: Proposal Page			
10701 - TRAFFIC CONTROL - LUMP SUM	1.00	\$8,000.00	\$8,000.00
10911 - MOBILIZATION - LUMP SUM	1.00	\$24,500.00	\$24,500.00
21011 - CONSTRUCTION ENTRANCE - EACH	1.00	\$300.00	\$300.00
21013 - STREET SWEEPING - LUMP SUM	1.00	\$3,000.00	\$3,000.00
21022 - SILT FENCE - PROVIDE INSTALL & MAINTAIN - L.F.	300.00	\$3.50	\$1,050.00
20404 - CLEARING - LUMP SUM	1.00	\$2,000.00	\$2,000.00
20409 - GRUBBING - LUMP SUM	1.00	\$2,000.00	\$2,000.00
40203 - HMA PAVEMENTS TYPE E-3 - TON	5.00	\$300.00	\$1,500.00
40301 - FULL WIDTH GRINDING - S.Y.	25.00	\$75.00	\$1,875.00
50225 - UTILITY TRENCH PATCH TYPE III - T.F.	40.00	\$100.00	\$4,000.00
70002 - FURNISH AND INSTALL 6 INCH PIPE & FITTINGS - L.F.	40.00	\$131.00	\$5,240.00
70006 - FURNISH AND INSTALL 16 INCH PIPE & FITTINGS - L.F.	1500.00	\$175.00	\$262,500.00
70031 - FURNISH AND INSTALL 6-INCH WATER VALVE - EACH	4.00	\$2,000.00	\$8,000.00
70034 - FURNISH AND INSTALL 12-INCH WATER VALVE - EACH	1.00	\$3,950.00	\$3,950.00
70035 - FURNISH AND INSTALL 16-INCH WATER VALVE - EACH	3.00	\$4,130.00	\$12,390.00
70040 - FURNISH AND INSTALL HYDRANT - EACH	4.00	\$5,400.00	\$21,600.00
70057 - RECONNECT 1 ½-INCH SERVICE LATERAL - EACH	1.00	\$3,600.00	\$3,600.00
70080 - CUT-IN OR CONNECT TO EXISTING WATER SYSTEM - EACH	2.00	\$3,125.00	\$6,250.00
70102 - LANDSCAPE RESTORATION FOR WATER MAIN - L.F.	1000.00	\$25.00	\$25,000.00
70104 - ADJUST WATER VALVE BOX SECTIONS - EACH	6.00	\$300.00	\$1,800.00
90160 - INSTALL PRV - BEAR CLAW WAY - LUMP SUM	1.00	\$51,000.00	\$51,000.00
90161 - INSTALL PRV - BPS 128 - LUMP SUM	1.00	\$53,000.00	\$53,000.00
90162 - INSTALL 2-INCH PVC CONDUIT - L.F.	360.00	\$12.00	\$4,320.00
23 Items	Totals		\$506,875.00



Department of Public Works
Engineering Division

Robert F. Phillips, P.E., City Engineer

City-County Building, Room 115
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53703
Phone: (608) 266-4751
Fax: (608) 264-9275
engineering@cityofmadison.com
www.cityofmadison.com/engineering

Assistant City Engineer
Michael R. Dailey, P.E.

Principal Engineer 2
Gregory T. Fries, P.E.
Christopher J. Petykowski, P.E.

Principal Engineer 1
Christina M. Bachmann, P.E.
Eric L. Dundee, P.E.
John S. Fahmey, P.E.

Facilities & Sustainability
Jeanne E. Hoffman, Manager

Operations Manager
Kathleen M. Cryan

Mapping Section Manager
Eric T. Pederson, P.S.

Financial Manager
Steven B. Danner-Rivers

BIENNIAL BID BOND

Speedway Sand & Gravel, Inc.

(a corporation of the State of Wisconsin)
(individual), (partnership), (hereinafter referred to as the "Principal") and
Fidelity and Deposit Company of Maryland

a corporation of the State of Maryland (hereinafter referred to as the "Surety") and licensed to do business in the State of Wisconsin, are held and firmly bound unto the City of Madison, Wisconsin (hereinafter referred to as the "City"), in the sum equal to the individual proposal guaranty amounts of the total bid or bids of the Principal herein accepted by the City, for the payment of which the Principal and the Surety hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is that the Principal has submitted to the City certain bids for projects from the time period of February 1, 2018 through January 31, 2020.

If the Principal is awarded the contract(s) by the City and, within the time and manner required by law after the prescribed forms are presented for its signature, the Principal enters into (a) written contract(s) in accordance with the bid(s), and files with the City its bond(s) guaranteeing faithful performance and payment for all labor and materials, as required by law, or if the City rejects all bids for the work described, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

In the event the Principal shall fail to execute and deliver the contract(s) or the performance and payment bond(s), all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to pay to the City within ten (10) calendar days of written demand a total equal to the sum of the individual proposal guaranty amounts of the total bid(s) as liquidated damages.

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

This bond may be terminated by the Surety upon giving thirty (30) days written notice to the City of its intent to terminate this bond and to be released and discharged therefrom, but such termination shall not operate to relieve or discharge the Surety from any liability already accrued or which shall accrue before the expiration of such thirty (30) day period.

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, on the day and year set forth below.


PRINCIPAL

Speedway Sand & Gravel, Inc. 11-16-2017
COMPANY NAME AFFIX SEAL DATE

By:  V.P.
SIGNATURE AND TITLE


SURETY

Fidelity and Deposit Company of Maryland 11-16-2017
COMPANY NAME AFFIX SEAL DATE

By: 
SIGNATURE AND TITLE
Elizabeth Mosca, Attorney-in-Fact

This certifies that I have been duly licensed as an agent for the Surety in Wisconsin under National Provider No. 12305256 for the year 2018 and appointed as attorney in fact with authority to execute this bid bond, which power of attorney has not been revoked.

11-16-2017
DATE


AGENT SIGNATURE

PO Box 259408
ADDRESS

Madison, WI 53725-9408
CITY, STATE AND ZIP CODE

608-252-9674
TELEPHONE NUMBER

Note to Surety and Principal: Any bid submitted which this bond guarantees may be rejected if the Power of Attorney form showing that the Agent of Surety is currently authorized to execute bonds on behalf of Surety is not attached to this bond.

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **GERALD F. HALEY, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Judith A. WALKER, Timothy HAUSMANN, Patrick A. MCKENNA, Brooke L. PARKER and Elizabeth MOSCA, all of Madison, Wisconsin, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

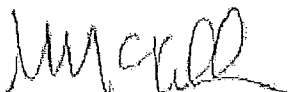
The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

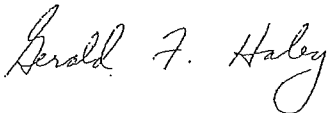
IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 11th day of April, A.D. 2017.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



By: 
*Secretary
Michael McKibben*


*Vice President
Gerald F. Haley*

State of Maryland
County of Baltimore

On this 11th day of April, A.D. 2017, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **GERALD F. HALEY, Vice President, and MICHAEL MCKIBBEN, Secretary**, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.





Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 16 day of November, 2017.



Michael Bond

Michael Bond, Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT ALL REQUIRED INFORMATION TO:

Zurich American Insurance Co.
Attn: Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056

SECTION H: AGREEMENT

THIS AGREEMENT made this 11 day of JULY in the year Two Thousand and Eighteen between **SPEEDWAY SAND & GRAVEL, INC.** hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted **JULY 10, 2018**, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

1. **Scope of Work.** The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions and contract; perform all items of work covered or stipulated in the proposal; perform all altered or extra work; and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work or improvements:

OLD SAUK ROAD WATER PIPELINE CONTRACT NO. 8186

2. **Completion Date/Contract Time.** Construction work must begin within seven (7) calendar days after the date appearing on mailed written notice to do so shall have been sent to the Contractor and shall be carried on at a rate so as to secure full completion SEE SPECIAL PROVISIONS, the rate of progress and the time of completion being essential conditions of this Agreement.
3. **Contract Price.** The City shall pay to the Contractor at the times, in the manner and on the conditions set forth in said specifications, the sum of **FIVE HUNDRED SIX THOUSAND EIGHT HUNDRED SEVENTY-FIVE AND NO/100 (\$506,875.00)** Dollars being the amount bid by such Contractor and which was awarded to him/her as provided by law.
4. **Affirmative Action.** In the performance of the services under this Agreement the Contractor agrees not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, disability, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status. The Contractor further agrees not to discriminate against any subcontractor or person who offers to subcontract on this contract because of race, religion, color, age, disability, sex, sexual orientation, gender identity or national origin.

The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered. The notice will include a job description, classification, qualification and application procedures

and deadlines. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin and that the employer shall provide harassment free work environment for the realization of the potential of each employee. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V.

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

1. Cancel, terminate or suspend this Contract in whole or in part.

2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.
3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or five thousand dollars (\$5,000), whichever is less. Under public works contracts, if a subcontractor is in noncompliance, the City may recover liquidated damages from the prime Contractor in the manner described above. The preceding sentence shall not be construed to prohibit a prime Contractor from recovering the amount of such damage from the non-complying subcontractor.

Article VIII

The Contractor shall include the above provisions of this contract in every subcontract so that such provisions will be binding upon each subcontractor. The Contractor shall take such action with respect to any subcontractor as necessary to enforce such provisions, including sanctions provided for noncompliance.

Article IX

The Contractor shall allow the maximum feasible opportunity to small business enterprises to compete for any subcontracts entered into pursuant to this contract. (In federally funded contracts the terms "DBE, MBE and WBE" shall be substituted for the term "small business" in this Article.)

5. **Substance Abuse Prevention Program Required.** Prior to commencing work on the Contract, the Contractor, and any Subcontractor, shall have in place a written program for the prevention of substance abuse among its employees as required under Wis. Stat. Sec. 103.503.
6. **Contractor Hiring Practices.**

Ban the Box - Arrest and Criminal Background Checks. (Sec. 39.08, MGO)

This provision applies to all prime contractors on contracts entered into on or after January 1, 2016, and all subcontractors who are required to meet prequalification requirements under MGO 33.07(7)(l), MGO as of the first time they seek or renew pre-qualification status on or after January 1, 2016. The City will monitor compliance of subcontractors through the pre-qualification process.

- a. **Definitions.** For purposes of this section, "Arrest and Conviction Record" includes, but is not limited to, information indicating that a person has been questioned, apprehended, taken into custody or detention, held for investigation, arrested, charged with, indicted or tried for any felony, misdemeanor or other offense pursuant to any law enforcement or military authority.

"Conviction record" includes, but is not limited to, information indicating that a person has been convicted of a felony, misdemeanor or other offense, placed on probation, fined, imprisoned or paroled pursuant to any law enforcement or military authority.

"Background Check" means the process of checking an applicant's arrest and conviction record, through any means.

- b. **Requirements.** For the duration of this Contract, the Contractor shall:
 1. Remove from all job application forms any questions, check boxes, or other inquiries regarding an applicant's arrest and conviction record, as defined herein.

2. Refrain from asking an applicant in any manner about their arrest or conviction record until after conditional offer of employment is made to the applicant in question.
3. Refrain from conducting a formal or informal background check or making any other inquiry using any privately or publicly available means of obtaining the arrest or conviction record of an applicant until after a conditional offer of employment is made to the applicant in question.
4. Make information about this ordinance available to applicants and existing employees, and post notices in prominent locations at the workplace with information about the ordinance and complaint procedure using language provided by the City.
5. Comply with all other provisions of Sec. 39.08, MGO.

c. Exemptions: This section shall not apply when:

1. Hiring for a position where certain convictions or violations are a bar to employment in that position under applicable law, or
2. Hiring a position for which information about criminal or arrest record, or a background check is required by law to be performed at a time or in a manner that would otherwise be prohibited by this ordinance, including a licensed trade or profession where the licensing authority explicitly authorizes or requires the inquiry in question.

To be exempt, Contractor has the burden of demonstrating that there is an applicable law or regulation that requires the hiring practice in question, if so, the contractor is exempt from all of the requirements of this ordinance for the position(s) in question.

**OLD SAUK ROAD WATER PIPELINE
CONTRACT NO. 8186**

IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused these presents to be sealed with its corporate seal and to be subscribed by its Mayor and City Clerk the day and year first above written.

Countersigned:

SPEEDWAY SAND & GRAVEL, INC.

[Signature] July 17, 2018
 Witness Date

[Signature] July 17, 2018
 Witness Date

Company Name
[Signature] July 17, 2018
 President Date

[Signature] July 17, 2018
 Secretary Date

CITY OF MADISON, WISCONSIN

Provisions have been made to pay the liability that will accrue under this contract.

Approved as to form:

[Signature]
 Finance Director

Signed this 10th day of August, 2018

[Signature]
 Witness

[Signature]
 Witness

[Signature]
 City Attorney

[Signature] 10 AUG 2018
 Mayor Date

[Signature] 7-18-18
 City Clerk Date

SECTION I: PAYMENT AND PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we SPEEDWAY SAND & GRAVEL, INC. as principal, and Fidelity and Deposit Company of Maryland Company of Maryland as surety, are held and firmly bound unto the City of Madison, Wisconsin, in the sum of FIVE HUNDRED SIX THOUSAND EIGHT HUNDRED SEVENTY-FIVE AND NO/100 (\$506,875.00) Dollars, lawful money of the United States, for the payment of which sum to the City of Madison, we hereby bind ourselves and our respective executors and administrators firmly by these presents.

The condition of this Bond is such that if the above bounden shall on his/her part fully and faithfully perform all of the terms of the Contract entered into between him/herself and the City of Madison for the construction of:

**OLD SAUK ROAD WATER PIPELINE
CONTRACT NO. 8186**

in Madison, Wisconsin, and shall pay all claims for labor performed and material furnished in the prosecution of said work, and save the City harmless from all claims for damages because of negligence in the prosecution of said work, and shall save harmless the said City from all claims for compensation (under Chapter 102, Wisconsin Statutes) of employees and employees of subcontractor, then this Bond is to be void, otherwise of full force, virtue and effect.

Signed and sealed this 11 day of July, 2018

Countersigned:

[Signature]
Witness

[Signature]
Secretary

SPEEDWAY SAND & GRAVEL, INC.
Company Name (Principal)

[Signature]
President Seal

Approved as to form:

[Signature]
City Attorney

Fidelity and Deposit Company of Maryland
Surety Seal

Salary Employee Commission
By [Signature]
Attorney-in-Fact, Elizabeth Mosca

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Producer Number 12305256 for the year 2018, and appointed as attorney-in-fact with authority to execute this payment and performance bond which power of attorney has not been revoked.

July 11, 2018
Date

[Signature]
Agent Signature

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **DAVID MCVICKER, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Judith A. WALKER, David ZENOBI, Patrick A. MCKENNA, Brooke L. PARKER and Elizabeth MOSCA, all of Madison, Wisconsin, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.


The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

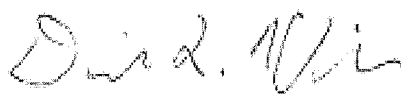
IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 15th day of March, A.D. 2018.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



By: 
Secretary
Michael McKibben


Vice President
David McVicker

State of Maryland
County of Baltimore

On this 15th day of March, A.D. 2018, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **DAVID MCVICKER, Vice President, and MICHAEL MCKIBBEN, Secretary**, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.





Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 11 day of July, 2018.



Michael Bond, Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT ALL REQUIRED INFORMATION TO:

Zurich American Insurance Co.
Attn: Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056