CITY OF DE PERE

PROJECT
22-09

POND AND DRAINAGE SYSTEM CONSTRUCTION

BID DATE:
MAY 5, 2022
@ 1:00 PM

Bid documents, including plans and specifications, are available for download at www.QuestCDN.com. The QuestCDN website can also be accessed through the City website at www.deperewi.gov/projects or by pressing the *Projects* icon at the bottom of any City website page. Download cost is $15 for each contract. Bidders will be charged an additional fee of $30 to submit a bid electronically. Bidding documents may be viewed on the QuestCDN website or at the Municipal Service Center, 925 S. Sixth Street, De Pere, WI 54115.

Bid Tabs must be verified by staff prior to posting and will be available for viewing on the website within 7 days following the bid opening. Award information will be pending until approved by the Common Council.

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APRIL 15, 2022 – APRIL 22, 2022

CITY OF DE PERE

ADVERTISEMENT TO BID

PROJECT 22-09

POND AND DRAINAGE SYSTEM CONSTRUCTION

Online bids will be received and accepted for Project 22-09 Pond and Drainage System Construction via the online electronic bidding service through QuestCDN.com, until 1:00 PM, Thursday, May 5, 2022, at which time they will be publicly accepted, displayed and read aloud.

Project 22-09 for which proposals are being sought includes the following approximate quantities:

- 450 LF New and Relay Storm Sewer (12-Inch to 42-Inch) and Associated Appurtenances
- 6,850 CY Unclassified Excavation for Pond Construction
- 4,000 SY Landscape Restoration
- Spot Curb and Gutter Repair

Complete digital project bidding documents are available for viewing and/or downloading at www.QuestCDN.com or may be examined at the office of the Director of Public Works. Digital plan documents may be downloaded for $15 by inputting Quest project #8145721 on Quest's Project Search page. Project documents must be downloaded from QuestCDN which will add your company to the Planholder List and allow access to vBid online bidding for the submittal of your bid. Bidders will be charged an additional fee of $30 to submit a bid electronically. The QuestCDN website can also be accessed through the City website at www.deperewi.gov/projects or by pressing the *Projects* icon at the bottom of any City website page. Contact QuestCDN Customer Support at 952-233-1632 or info@questcdn.com for assistance in membership registration, downloading digital project information and vBid online bid submittal questions.

Each proposal shall be accompanied by a bid bond in an amount equal to five percent (5%) of the bid, payable to the City of De Pere, as a guarantee that if the bid is accepted, the bidder will execute a contract and furnish a contract bond as set forth in the General Conditions of the City of De Pere. In case the bidder fails to file such contract and bond, the amount of the bid bond shall be forfeited to the City of De Pere as liquidated damages.

The letting of the contract is subject to the provisions of the following Wisconsin Statutes:

Section 62.15 regarding Public Works.

Section 66.0901(3) regarding Prequalification of Contractor.

Each bidder shall pre-qualify by submitting proof of responsibility on forms furnished by the Director of Public Works. Such forms shall be filed with the Director of Public Works no later than 4:00 PM, Monday, May 2, 2022. Prospective bidders who have previously submitted such forms subsequent to January 1, 2022 will not be required to separately submit such form for this project.

The City of De Pere reserves the right to reject any or all bids, to waive any informalities in bidding and to accept any proposal which the Common Council deems most favorable to the interest of the City of De Pere.

Dated this 15th day of April 2022.

Board of Public Works
City of De Pere
Eric Rakers, P.E.
City Engineer

Project 22-09

SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

ARTICLE 1 – DEFINED TERMS

1.1 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

None

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.1 Complete sets of the Bidding documents in the number and for the deposit sum, if any, stated in the Advertisement to Bid may be obtained as stated in the Advertisement for bids.

2.2 Complete sets of Bidding Documents shall be used in preparing Bids; Owner does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3 Owner, in providing the Bidding Documents on the terms stated in the Advertisement for Bids, does so only for the purpose of obtaining Bids for the Work and does not confer a license or grant for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.1 In accordance with Section 66.0901(3), each bidder shall pre-qualify by submitting proof of responsibility on forms furnished by the Director of Public Works. Such forms shall be filed with the Director of Public Works as stated in the Advertisement for Bids. Prospective bidders who have previously submitted such forms after January 1st of this year will not be required to separately submit such form for this project.

ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA AND SITE

4.1 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in the General Conditions.

4.2 Underground Facilities

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.3 Subsurface and Physical Conditions

A. The technical data includes:
   1. Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
   2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except underground Facilities).
   3. In preparation of the Plans and Specifications, Engineer relied upon the following reports of explorations and tests of subsurface conditions at the Site:
      a. Geotechnical Engineering Services Report for the Front Street Stormwater Pond, De Pere, WI dated January 25, 2021 prepared by Intertek PSI.

B. Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Contractor may not rely upon or make any claim against Owner, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
   1. the completeness of such reports and drawings for Contractor's purposes, including but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
   2. Other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
   3. Any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.4 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.5 Reference is made to Section 01 10 00: Summary of Work, for work that will be completed and for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other portions thereof related to price) for such other work.

4.6 It is the responsibility of each Bidder before submitting a Bid to:

A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;

B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;

D. Obtain and carefully study (or accept consequences of not doing so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

E. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

F. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

G. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

H. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies, that bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and

I. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.7 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and, procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – SITE AND OTHER AREAS

5.1 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

6.1 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6.2 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner and Engineer.

ARTICLE 7 – BID SECURITY

7.1 A Bid shall be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price and in the form of a certified check or bank money order or Bid bond (on the form attached) issued by a surety meeting the requirements of the General Conditions. Submittal of a Bid Bond on a form other than the Bid Bond form included in the Bidding Documents may be cause for rejection of Bid. The fully executed bid bond must be uploaded into QuestCDN. If the bidder elects to furnish bid security other than a bid bond, the bid security must be submitted in a sealed envelope enclosed in a separate package plainly marked on the outside with the notation "BID SECURITY" along with the project number and name and addressed to the Board of Public Works of the City of De Pere, Municipal Service Center, 925 S. Sixth Street, De Pere, WI 54115 **prior to the deadline for submission of bids.**

7.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner per the General Conditions.

7.3 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 8 – CONTRACT TIMES

8.1 The number of days within which, or the dates by which, Milestones are to be achieved and the Work is to be substantially completed and ready for final payment are set forth in the Bid Form and Summary of Work.

ARTICLE 9 – LIQUIDATED DAMAGES

9.1 Provisions for liquidated damages are set forth in the General Conditions.

ARTICLE 10 – SUBSTITUTE AND "OR-EQUAL" ITEMS

10.1 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Bid Form and Summary of Work.

ARTICLE 11 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.1 The Bidder shall submit with the Bid to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

11.2 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposed to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner subject to revocation of such acceptance after the Effective Date of the Agreement.

11.3 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 12 – PREPARATION OF BID

12.1 The Bid form is included with the Bidding documents.

12.2 All blanks on the Bid Form shall be completed by printing in ink or by typewrite and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each alternative, and unit price item listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.

12.3 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporations shall be shown below the seal.

12.4 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

12.5 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature.

12.6 A Bid by an individual shall show the Bidder's name and official address.

12.7 A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid Form. The official address of the joint venture shall be shown below the signature.

12.8 All names shall be typed or printed in ink below the signatures.

12.9 The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

12.10 The address and telephone number for communications regarding the Bid shall be shown.

12.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 13 – BASIS OF BID; COMPARISON OF BIDS

13.1 Unit Price

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid Schedule.

B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accord with the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

ARTICLE 14 – SUBMITTAL OF BID

14.1 A Bid shall be submitted no later than date and time prescribed and at place indicated in Advertisement for Bids and shall be submitted electronically using the QuestCDN online bidding vBid platform. No paper bids will be accepted.

14.2 See Bid Form for a list of documents typically required to be submitted with the Bid.

ARTICLE 15 – MODIFICATION AND WITHDRAWAL OF BID

15.1 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

15.2 If within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 16 – OPENING BIDS

16.1 Bids will be opened as indicated in the Advertisement to Bid. The bid opening can be viewed live via the GoToMeeting information shown below. An abstract of the amounts of the base bids and major alternatives, if any, will be made available to bidders after opening the bids.

The bid opening can be viewed live via GoToMeeting as follows:
Please join my meeting from your computer, tablet or smartphone.

https://meet.goto.com/740420981

You can also dial in using your phone.
(For supported devices, tap a one-touch number below to join instantly.)

United States (Toll Free): 1 866 899 4679
- One-touch: tel:+18668994679,,740420981#

Access Code: 740-420-981
New to GoToMeeting? Get the app now and be ready when your first meeting starts:
https://meet.goto.com/install

ARTICLE 17 – BIDS REMAIN SUBJECT TO ACCEPTANCE

17.1 All bids will remain subject to acceptance for the period of time stated in the General Conditions, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18 – EVALUATION OF BIDS AND AWARD OF CONTRACT

18.1 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

18.2 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

18.3 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

18.4 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Supplier, and other individuals or entities proposed for those portions of the Work for which the identify of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

18.5 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

18.6 Bidder agrees to waive any claim it has or may have against the Owner and the respective employees arising out of or in connection with the administration, evaluation or recommendation of any Bid.

18.7 If the Contract is to be awarded, Owner will award the Contract to the lowest responsible responsive Bidder whose Bid is in the best interests of the Project.

ARTICLE 19 – CONTRACT SECURITY AND INSURANCE

19.1 The General Conditions set forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds and a certificate of insurance.

ARTICLE 20 – SIGNING OF AGREEMENT

20.1 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within ten (10) days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten (10) days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of Drawings with appropriate identification.

END OF SECTION

SECTION 00 41 13

CITY OF DE PERE

BID FORM

PROJECT 22-09

This bid, submitted by the undersigned Bidder to the City of De Pere, in accordance with the Advertisement to Bid, which will be received until 1:00 PM, Thursday May 5, 2022 is to furnish and deliver all materials, and to perform and do all work on the project designated per Section 01 10 00 Summary of Work.

Bidder has examined and carefully prepared the bid from the plans and specifications and has checked the same in detail before submitting said proposal or bid; and that said bidder or bidder's agents, officer or employees have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal or bid.

Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date
_____	_____
_____	_____

BASIS OF BID:

Bidder will complete the Work in accordance with the Contract documents for the following price(s):

As stated in the attached Unit Price Bid Schedule.

Unit Prices have been computed in accordance with the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

TOTAL BID PRICE: $_____

ATTACHMENTS TO THIS BID

The following documents are submitted with and made a condition of this Bid:

A.	Required Bid Security	
B.	Unit Price Bid Schedule	(Section 00 41 43)
C.	Proposed Products Form	(Section 00 43 33)
D.	Tabulation of Subcontractors	(Section 00 43 36)

BID SUBMITTAL

This Bid is submitted by _____ of _____,_____

The Bidder, being duly sworn, does dispose that they are an authorized representative of

Bidder, if Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____

Date of Qualification to do business in Wisconsin is ___/___/___.

Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of first joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of second joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. Manner of signing for each individual, partnership, and corporation that is a party to joint venture should be in manner indicated above.)

Bidder's Business Address _____

_____

Phone No. _____ Fax No. _____

E-mail _____

SUBMITTED on _____, 20__.

State Contractor License No. _____(if applicable)

SECTION 00 41 43

CITY OF DE PERE

PROJECT 22-09

BID SCHEDULE – UNIT PRICE

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STORM SEWER					
ST-01	Provide 42" RCP (Class III) Storm Sewer (Granular Backfill)	LF	32	$_____	$_____
ST-02	Provide 42" RCP (Class III) Storm Sewer (Natural Backfill)	LF	100	$_____	$_____
ST-03	Remove and Relay 36" RCP (Class III) Storm Sewer	LF	34	$_____	$_____
ST-04	Provide 24" RCP (Class III) Storm Sewer	LF	340	$_____	$_____
ST-05	Provide 12" PVC or RCP (Class III) Storm Sewer	LF	160	$_____	$_____
ST-06	Provide 12" PVC Storm Sewer	LF	110	$_____	$_____
ST-07	Provide 8' Diameter Storm Manhole (With Internal Weir)	VF	7	$_____	$_____
ST-08	Provide 6' Diameter Storm Manhole	VF	13	$_____	$_____
ST-09	Provide 4' Diameter Storm Manhole	VF	9	$_____	$_____
ST-10	Provide Pond Discharge Structure	EA	1	$_____	$_____
ST-11	Provide Type B Inlet	EA	2	$_____	$_____
ST-12	Connect to Structure and/or Existing Pipe	EA	3	$_____	$_____
ST-13	Core Drill Existing Structure	EA	1	$_____	$_____

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STORM SEWER CONTINUED					
ST-14	Provide 42” RCP Endwall	EA	1	$_____	$_____
ST-15	Provide 24” RCP Endwall with Grate	EA	1	$_____	$_____
ST-16	Provide 12" RCP Endwall	EA	3	$_____	$_____
ST-17	12" Backflow Preventer (Tideflex Checkmate or Equal)	EA	1	$_____	$_____
ST-18	Abandon/Remove Existing Storm Sewer Appurtenances	LS	1	$_____	$_____
STREET AND DRAINAGE					
SD-01	Provide Clearing and Grubbing	IN	155	$_____	$_____
SD-02	Unclassified Excavation	CY	6,150	$_____	$_____
SD-03	Provide Large Asphalt Patch (4" Depth Minimum)	SY	62	$_____	$_____
SD-04	Remove and Replace 24” Concrete Curb and Gutter	LF	35	$_____	$_____
SD-05	Provide #4 Reinforcement Bars for Curb and Sidewalk	LF	40	$_____	$_____
SD-06	Drilled Tie Bars (Existing Sidewalk, Driveway, and Curb and Gutter)	EA	4	$_____	$_____
SD-07	Landscaping – Topsoil, Fertilizer, Mesic Prairie Planting, and Erosion Mat	SY	3,000	$_____	$_____
SD-08	Landscaping – Topsoil, Fertilizer, Mesic Prairie Planting, and Mulch	SY	200	$_____	$_____
SD-09	Landscaping – Topsoil, Seed, Fertilizer and Erosion Mat	SY	450	$_____	$_____
SD-10	Landscaping – Topsoil, Seed, Fertilizer and Mulch	SY	200	$_____	$_____

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
SPECIAL CONSTRUCTION					
SC-01	Pipe Foundation Stabilization	CY	20	$_____	$_____
SC-02	Adjust Manhole Provide New Casting	EA	1	$_____	$_____
SC-03	Provide Silt Fence	LF	170	$_____	$_____
SC-04	Bentonite Clay Dam on Sanitary Sewer	EA	1	$_____	$_____
SC-05	Inlet Protection Type D	EA	5	$_____	$_____
SC-06	Provide Medium Rip Rap w/ Geotextile Fabric (Type HR)	SY	150	$_____	$_____
SC-07	Tracking Pad	EA	1	$_____	$_____
SC-08	Remove and Reset Existing Fence, Remove and Replant Existing Apple Trees	LS	1	$_____	$_____
				TOTAL AMOUNT BID	**$_____**

SECTION 00 43 13

CITY OF DE PERE

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That _____,

as Principal, hereinafter called Principal, and _____,

as Surety, hereinafter called Surety, are held and firmly bound unto the City of De Pere, a municipal corporation of the State of Wisconsin, as Obligee, hereinafter called City, in the amount of _____ dollars ($_____) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presence.

WHEREAS, Principal has made a proposal to the City for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work of Project 22-09 in accordance with drawings and specifications prepared by the Director of Public Works of said City, which proposal is by reference made a part hereof, and is hereinafter referred to as the BID.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall be awarded the contract for said project and Principal shall enter into a contract in accordance with the BID, then this obligation shall be null and void; otherwise it shall remain in full force and effect, provided that:

1. The liability of Surety shall in no event exceed the penalty of this bond.

2. Any suits at law or proceedings, in equity brought or to be brought against Surety to recover any claim hereunder shall be executed within six (6) months from the date of this instrument.

Signed and sealed this _____ day of _____, 20____.

In the presence of:

_____ _____
WITNESS PRINCIPAL (SEAL)

_____ _____
WITNESS SURETY (SEAL)

SECTION 00 43 33

PROPOSED PRODUCTS FORM

The following is a list of material, type or model numbers and manufacturers used in the preparation of this proposal and to be used on this project:

ITEM	MATERIAL	SUPPLIER
Storm Sewer	RCP	
Storm Sewer	PVC	
Manhole	RCP	

SECTION 00 43 36

TABULATION OF SUBCONTRACTORS

The following information is submitted which gives the name, business address, and portion of work for each subcontractor that will be used in the work if the bidder is awarded the contract, and no subcontractor doing work in excess of one-half of one percent of the total amount of the bid and who is not listed will be used without the written approval of the Engineer. Additional numbered pages outlining this portion of the proposal may be attached to this page.

PORTION OF WORK	BUSINESS NAME	BUSINESS ADDRESS
Utility Work		
Landscape Restoration		

SECTION 00 51 00

NOTICE OF AWARD

(Contractor)
(Contractor Name)
(Address)
(Address)

Project Description: 22-09 Pond and Drainage System Construction

The City has considered the proposal submitted by you dated (BID DATE) for the above-described project in response to its Advertisement for Bids dated April 15, 2022 and April 22, 2022.

You are hereby notified that the Common Council of the City of De Pere has accepted your bid of (Contract Amount $_____.00).

You are required to execute the Contract and furnish the required Performance Bond, Payment Bond and Certificates of Insurance within ten (10) calendar days from the date of this notice to you.

If you fail to execute said Agreement and to furnish said bonds within ten (10) days from the date of this notice, said City will be entitled to consider all your rights arising out of the City's acceptance of your bid as abandoned and as a forfeiture of your Bid Bond. The City will be entitled to such other rights as may be granted by law.

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

Dated this _____ day of _____2022.

_____
DEPARTMENT OF PUBLIC WORKS

BY: Eric P. Rakers, P.E.
City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by:

_____, this the _____ day of _____, 20___

By:_____

Title:_____

SECTION 00 52 13

CONTRACT

This Contract, made and entered into this day _____ (date to be affixed by City), by and between (Contractor Name), hereinafter called Contractor, and the City of De Pere, a municipal corporation of the State of Wisconsin, hereinafter called City.

WITNESSETH: That, in consideration of the covenants and agreements herein contained, to be performed by the parties hereto, and of the payments hereinafter agreed to be made, it is mutually agreed as follows:

ARTICLE I - SCOPE OF WORK

The Contractor shall furnish all materials and all equipment and labor necessary, and perform all work shown on the drawings and described in the specifications for the project entitled Project 22-09 Pond and Drainage System Construction, all in accordance with the requirements and provisions of the following documents, which are hereby made a part of this Contract:

(a) Advertisement for Bids, dated April 15, 2022 and April 22, 2022.

(b) Drawings designated for Project 22-09 Pond and Drainage System Construction dated March 15, 2022.

(c) City of De Pere 2022 Construction Specifications.

(d) Special Provisions dated March 15, 2022.

(e) Proposal submitted by (Contractor Name) dated Bid Date.

(f) Addenda No. dated

ARTICLE II - TIME OF COMPLETION

(a) The work to be performed under the Contract shall be commenced within (number spelled out) (__) calendar days after receipt of written notice to proceed. The work shall be completed within (Number spelled out) (__) calendar days) or (specific calendar dates) after receipt of Notice to Proceed.

(b) Time is of the essence with respect to the date of completion herein above stated. Failure to complete the work within the number of calendar days stated in this Article, or interim dates included in the work sequence in Section 01 10 00, Summary of Work, including any extensions granted thereto, shall entitle the City to deduct from the monies due the Contractor an amount equal to Update based on 00 70 00 - General Conditions (Page 27)($) per day for each calendar day of delay in the completion of the work. Such amount shall be considered and treated not as a penalty but as liquidated damages, which the City will sustain, by failure of the Contractor to complete the work within the time stated.

ARTICLE III - PAYMENT

(a) The Contract Sum. The City shall pay to the Contractor for the performance of the Contract the amounts determined for the total number of each of the following units of work completed at the unit price stated thereafter. The number of units contained in this schedule is approximate only, and the final payment shall be made for the actual number of units that are incorporated in or made necessary by the work covered by the Contract.

(b) Progress Payments. The City shall make payments on account of the Contract as follows:

1. On not later than the fourth Friday of every month the Contractor shall present to the City an invoice covering an estimate of the amount and proportionate value of the work done as verified by the City under each item of work that has been completed from the start of the job up to and including the fourth Friday of the preceding month, and the value of the work so completed determined in accordance with the schedule of unit prices for such items, together with such supporting evidence as may be required. This invoice shall also include an allowance for the cost of such materials and equipment required in the permanent work as have been delivered to the site but not as yet incorporated in the work.

2. On not later than the third week of the following month, the City shall, after deducting previous payments made, pay to the Contractor 95% of the amount of the approved invoice, retaining 5% of the estimate of work done until 50% of the work has been completed. At 50% completion of the work, the previous retainage shall not yet be paid, but further partial payments shall be made in full to the contractor without additional retainage being taken unless the engineer certifies that the work is not proceeding satisfactorily. If the work is not proceeding satisfactorily, additional amounts may be retained. After substantial completion, an amount retained may be paid to the contractor, keeping retained only such amount as is needed for the remaining work.

3. The Contractor shall notify the City in writing when all work under this Contract has been completed. Upon receipt of such notice the City shall, within a reasonable time, make the final inspection and issue a final certificate stating that the work provided for in this Contract has been completed and is accepted under the terms and conditions thereof, and that the entire balance due the Contractor as noted in said final certificate is due and payable. Before issuance of the final certificate the Contractor shall submit evidence satisfactory to the City that payrolls, material bills, and other indebtedness connected with the work under this Contract have been paid. The City shall make final payment as soon after issuance of the final certificate as practicable.

ARTICLE IV – CONTRACT DOCUMENTS

(a) Contents

1. The Contract documents consist of the following:
   a. This Contract (pages 00 52 13-1 to 0052-13-3, inclusive).
   b. Payment bond (pages 00 61 13-1 to 00 61 13-2, inclusive).
   c. Performance bond (page 00 61 16-1).
   d. General Conditions (pages 00 70 00-1 to 00 70 00-27, inclusive).

e. Specifications as listed in the table of contents of the Project Manual.
f. Drawings consisting of ___ sheets with each sheet bearing the following general title: ___[or] the Drawings listed on attached sheet index.
g. Addenda (numbers ___ to ___ inclusive), dated_____.
h. Exhibits to this Agreement (enumerated as follows):
   1) Contractor's Bid (pages 00 41 13-1 to 00 41 13-3, inclusive).
   2) Bid Schedule – Unit Prices (Pages 00 41 43-1 to 00 41 43- , inclusive).
   3) Proposed Products Form (Page 00 43 33-1).
   4) Tabulation of Subcontractors (page 00 43 36-1).
   5) Documentation submitted by Contractor prior to Notice of Award (00 51 00-1).
i. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
   1) Notice to Proceed (Page 00 55 00-1).
   2) Change Orders.

2. The documents listed in Paragraph (a) Contents, are attached to this Agreement (except as expressly noted otherwise above).

3. There are no Contract Documents other than those listed above in this Article IV.

IN WITNESS WHEREOF, the parties hereto have executed this Contract, the day and year first written above.

_____ _____
(WITNESS) (CONTRACTOR) (SEAL)

_____ BY: _____
(WITNESS)

_____
(TITLE)

BY: _____

_____
(TITLE)

CITY OF DE PERE (SEAL)

Approved as to Form By: _____ (City Attorney)

Sufficient funds are available to provide for the payment of this obligation.

_____
(COMPTROLLER)

BY:_____ BY:_____
(MAYOR) (CITY CLERK)

SECTION 00 55 00

NOTICE TO PROCEED

Date: _____

(CONTRACTOR NAME)
(ADDRESS)
(ADDRESS)

Project Description: 22-09 Pond and Drainage System Construction

You are hereby notified to commence work in accordance with the CONTRACT dated _____, within ten (10) days of this Notice. All work under this contract shall be completed within _____(NUMBER IN WORDS) (__#) consecutive days from the start of construction or _____(DATE) whichever comes first.

_____
Department of Public Works

By: Eric P. Rakers, P.E.
Title: City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by

_____, this _____ day of _____, 20___.
Company Name

_____
Signature

BY: _____
Printed Name

TITLE: _____

SECTION 00 61 13

CITY OF DE PERE

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That (CONTRACTOR NAME), as Principal, hereinafter called Contractor, and _____, as Surety, hereinafter called Surety, are held and firmly bound unto the City of De Pere, a municipal corporation of the State of Wisconsin, as Obligee, hereinafter called the City, for the use and benefit of claimants as herein below defined in the amount _____ _____(CONTRACT AMT. SPELLED OUT) ($_____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ (date to be affixed by City) entered into a contract with City for Project 22-09, in accordance with drawings and specifications prepared by the Director of Public Works of said City, which contract is by reference made a part hereof, and is hereinafter referred to as the CONTRACT.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly make payments to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the CONTRACT, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.

1. A claimant is defined as one having a direct contract with Contractor or with a subcontractor of Contractor for labor, material, or both, used or reasonably required for use in the performance of the contract, labor and material being construed to include that part of water, gas, power, lights, heat, oil, gasoline, telephone service, or rental of equipment directly applicable to the contract.

2. The above named Contractor and Surety hereby jointly and severally agree with the City that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant may sue on this bond for the use of such claimant in the name of the City, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon, provided, however, that the City shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

    a. Unless claimant shall have given written notice to any two of the following: The Contractor, the City, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Contractor, City, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State of Wisconsin, save that such service need not be made by a public officer.

    b. After the expiration of one (1) year following the date on which Contractor ceased work on said CONTRACT.

c. Other than in a state court of competent jurisdiction in and for the County or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed or recorded against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

SIGNED AND SEALED THIS _____ DAY OF _____, 20___.

In Presence of:

_____ _____
(WITNESS) (CONTRACTOR)

_____ _____
(WITNESS) (SURETY)

SECTION 00 61 16

CITY OF DE PERE

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That (CONTRACTOR'S NAME), as Principal, hereinafter called Contractor, and _____, as Surety, hereinafter called Surety, are held and firmly bound unto the City of De Pere, a municipal corporation of the State of Wisconsin, as Obligee, hereinafter called City, in the amount of _____(AMOUNT WRITTEN OUT) ($_____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assign, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ (date to be affixed by City), entered into a contract with the City for Project 22-09, in accordance with drawings and specifications prepared by the Director of Public Works of said City, which contract is by reference made a part hereof, and is hereinafter referred to as the CONTRACT.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Contractor shall promptly and faithfully perform said CONTRACT, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever Contractor shall be, and declared by the City to be in default under the CONTRACT, the City having performed City's obligations there under, the Surety may promptly remedy the default, or shall promptly

1. Complete the CONTRACT in accordance with its terms and conditions or

2. Obtain a bid or bids for submission to City for completing the CONTRACT in accordance with its terms and conditions, and upon determination by the City and Surety of the lowest responsible bidder, arrange for a contract between such bidder and City make available as work progresses (even though there should be a default or succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable by City to Contractor under the CONTRACT and any amendments thereto, less the amount properly paid by City to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the CONTRACT falls due. No right of action shall accrue on this bond to or for the use of any person or corporation other than the owner named herein or the heirs, executors, administrators or successors of City.

SIGNED AND SEALED THIS _____ DAY OF _____, 20_____.

In the Presence of:

_____ _____
(WITNESS) (CONTRACTOR) (SEAL)

_____ _____
(WITNESS) (SURETY) (SEAL)

SECTION 00 62 76

APPLICATION FOR PAYMENT

Contractor's Application for Payment No.

Application Period:	Application Date:
Owner: City of De Pere	Contractor:
	Contractor's Project No.:

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
Total	$0.00	$0.00
NET CHANGE BY CHANGE ORDERS:		$0.00

1.	ORIGINAL CONTRACT PRICE:.....	
2.	Net change by Change Orders and Written Amendments (+ or -):.....	$0.00
3.	CURRENT CONTRACT PRICE (Line 1 plus Line 2):.....	$0.00
4.	Total completed and stored to date Column H on Progress Estimate:.....	$0.00
5.	Retainage (per Agreement):	
a.	Work Completed - Column H (95% up to 50% of Contract or 2.5% of 100% of Contract)	$0.00
6.	AMOUNT ELIGIBLE TO DATE (Line 4 minus 5).....	$0.00
7.	LESS PREVIOUS PAYMENTS (Line 6 from prior Application).....	$0.00
8.	AMOUNT DUE THIS APPLICATION (Line 6 minus Line 7).....	$0.00

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that:(1) all previous progress payments received from Owner on account of Work done under Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by the Application for Payment is in accordance with the Contract Documents and is not defective.

By:	Date:

Payment of: $ _____
(Line 8 or other - attach explanation of other amount)

is recommended by: _____ _____
(Contractor) (Date)

Payment of: $ _____
(Line 8 or other - attach explanation of other amount)

is recommended by: _____ _____
(Owner) (Date)

SECTION 00 65 16

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project:	
Owner:	Owner's Contract No.:
Contractor:	

This [tentative] [definitive] Certificate of Substantial Completion applies to:
☐All Work under the Contract Documents: ☐The following specified portions of the Work:

_____
Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Contractor and Engineer, and found to be substantially complete. The Date of Substantial completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [definitive] list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

☐Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

The following documents are attached to and made part of this Certificate:

_____

_____

_____

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

_____ _____

Executed by Engineer Date

_____ _____

Accepted by Contractor Date

SECTION 01 10 00

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes
   1. References
   2. Work Covered by the Contract Documents
   3. Work Sequence/Schedule
   4. Use of Premises
   5. Warranty
   6. Work by Others
   7. Project Utility Sources
   8. Miscellaneous Provisions

1.2 REFERENCES

A. General Specifications. The work under this contract shall be in accordance with the City of De Pere, 2022 Construction Specifications and these Special Provisions and plans, and the latest edition of the Wisconsin Department of Transportation Standards Specifications for Highway and Structure Construction, where referenced in the City Specifications.

B. Definitions. Any reference to the "state" or the "department" in said Standard Specifications shall mean the "City of De Pere" for the purposes of this contract.

C. Industry Standards
   1. Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
   2. Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
   3. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
   4. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.

5. Each section of the specifications generally includes a list of reference standards normally referred to in that respective section. The purpose of this list is to furnish the Contractor with a list of standards normally used for outlining the quality control desired on the project. The lists are not intended to be complete or all inclusive, but only a general reference of standards that are regularly referred to.
6. Each entity engaged in construction on the Project shall be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.

1.3 WORK COVERED BY THE CONTRACT DOCUMENTS

A. Project Identification
   1. Project Location
      a. Front Street extended from Franklin Street to 250 feet north of Fulton Street.
   2. Work will be performed under the following prime contract:
      a. Project 22-09 Pond and Drainage System Construction

B. The Work includes:
   1. Relay and/or new storm sewer and associated appurtenances
   2. Unclassified excavation
   3. Grading
   4. Erosion Control
   5. Landscape Restoration
   6. Curb and gutter repair and/or installation
   7. Asphaltic concrete pavement patching

1.4 WORK SEQUENCE/SCHEDULE

A. Project shall be completed by November 1, 2022.

B. Project is anticipated to start after August 1, 2022.

C. Conduct construction activities to maintain access to businesses and residences throughout construction.

D. Topsoil, seed, and mulch shall be completed prior to asphaltic concrete pavement placement.

1.5 USE OF PREMISES

A. Contractor shall have full use of the premises for construction operations, including use of the Project Site, as allowed by law, ordinances, permits, easement agreements and the Contract documents.

B. Contractor's use of premises is limited only by Owner's right to perform work or to retain other contractors on portions of the Project.

C. The Project Site is limited to property boundaries, rights-of-way, easements, and other areas designated in the Contract Documents.

D. Provide protection and safekeeping of material and products stored on or off the premises.

E. Move any stored material or products which interfere with operations of Owner or other Contractors.

1.6 WARRANTY

A. The Contractor warrants and guarantees to the City that all work shall be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects will be given to the Contractor. All defective work, whether or not in place, may be rejected, corrected or accepted as provided in this proposal.

B. If within one (1) year after the date of contract work completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents or by a special provision of the Contract Documents, any work is found to be defective, the Contractor shall comply in accordance with the City's written instructions. These written instructions will include either correcting such defective work or, if it has been rejected by the City, removing it from the site and replacing it with non-defective work. If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk or loss or damage, the City may have the defective work corrected or the rejected work removed and replaced. All direct and indirect costs of correction or removal and replacement of defective work, including compensation for additional professional services, shall be paid by the Contractor.

1.7 WORK BY OTHERS

A. Cooperate fully with separate contractors and/or Owner so work by others may be carried out smoothly, without interfering with or delaying work under this Contract.

1.8 PROJECT UTILITY SOURCES

A. Green Bay Metropolitan Sewer District (NEW Water), Lisa Sarau, (lsarau@newwater.us) (920-438-1039)

B. AT&T, Victoria Kassab, (vk352k@att.com) (920-202-4002)

C. Wisconsin Public Service, Bob Laskowski, (rtlaskowski@wisconsinpublicservice.com) (920-617-2775)

D. Charter, Vince Albin, (vince.albin@charter.com) (920-378-0444)

E. Nsight, Rick Vincent, (rick.vincent@nsight.com) (920-617-7316)

F. TDS Metrocom, Steve Jakubiec, (steve.jakubiec@tdstelecom.com) (920-882-4166)

G. Net-Lec (Mi-Tech Services), Dennis Lafave, (dlafave@mi-tech.us) (920-619-9774)

H. CenturyLink, Relocation Team, (relocations@lumen.com) (800-871-9244)

I. Central Brown County Water Authority, Rob Michaelson, (rmichaelson@mpu.org) (920-686-4354)

1.9 MISCELLANEOUS PROVISIONS

A. Notification to Residents –notify individually all residents and businesses 2-weeks prior to the start of operations, giving an estimated time that vehicle movement will be limited or prohibited. Property owners shall be notified 24-hours prior to closing a drive.

B. Access to the site shall be from Franklin Street.

C. Maintain access to the Fox River Trail at all times.

D. The following specific events are planned on the Fox River Trail. If trench is not fully restored, provide cold mix patch.
   1. 988 Suicide Prevention Run/Walk – September 10
   2. Headbanger Half Marathon – September 11
   3. Green Bay Hot Cider Hustle – October 23
   4. Veteran Suicide Awareness March – November 12

E. Wisconsin Public Service is required to be on standby when excavating near the gas main.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 22 02

MEASUREMENT AND PAYMENT STORM SEWER

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

	Bid Item No.
1. Storm Sewer Mains (Granular Backfill)	ST-01
2. Storm Sewer Mains (Natural Backfill)	ST-02, ST-03, ST-04, ST-05, ST-06
3. Storm Sewer Manholes	ST-07, ST-08, ST-09
4. Pond Discharge Structure	ST-10
5. Catch Basin/Inlets	ST-11
6. Connect to Structure and/or Existing Pipe	ST-12
7. Core Drill Existing Structure	ST-13
8. Flared End Section	ST-14, ST-15, ST-16
9. 12” Backflow Preventer	ST-17
10. Abandon/Remove Existing Storm Sewer Appurtenances	ST-18

B. Unit Prices include:
   1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all unit price items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but is required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item.
   2. The method of measurement for payment.
   3. The price per unit for payment.

1.2 GENERAL WORK ITEMS

A. Include with the appropriate Unit Price Item the following work items which are common to the Unit Price Items for storm sewer systems.

B. If there is a specific Unit Price Item for any of the following items, then the work item shall be included with that specific unit price item.
   1. Traffic Control.
   2. Sawcutting asphalt and/or concrete.
   3. Removal, hauling and disposal of surface materials including road pavement, curb and gutter, sidewalk, driveways and other pavement surfaces in the trench area and as shown on the drawings.
   4. Dewatering.
   5. Excavation.

6. Open trench installation method (unless bid item specifies other method).
7. Pipe bedding.
8. Backfilling and compacting native obtained from the excavation.
9. Supplying, hauling, backfilling and compacting granular material.
10. Loading, hauling and disposing of surplus excavated material.
11. Landscaping – turf establishment surface restoration and trees and bushes damaged during construction.
12. Maintenance, protection, replacement and/or repair of facilities not designated for alteration on the Site beyond the limits identified.
13. Site access requirements including temporary aggregate material as required for local traffic access.
14. Bulkhead and abandon existing storm sewer with flowable fill as shown on drawings.
15. If crossing or undermining of existing public or private utility, then include:
    a. Maintaining the utility in service.
    b. Replacing of existing utilities, if damaged.
    c. Providing support and bedding material.
16. Dust control.
17. Remove and replace existing mailboxes and traffic signs.
18. Restroom facilities.
19. Easement and right-of-way requirements.
20. Construction staking and other survey work not provided by the Engineer.
21. Regulatory requirements.
22. Preconstruction videotaping and video equipment.
23. Quality assurance and quality control testing and inspections.
24. Shop drawings and other submittals.

1.3 STORM SEWER MAINS (GRANULAR BACKFILL)

A. The unit price for Storm Sewer Main (Granular Backfill) work includes:
    1. General Work Items of Article 1.2.
    2. Storm sewer pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
    3. Excavation, breakdown and removal of abandoned piping inside the trench area, including plugging of existing connections.
    4. Excavation, breakdown and removal of abandoned pipeline structures inside the trench area, including plugging of existing connections.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer from centerline of the manhole to centerline of manhole with no deductions for manholes, sewer services branches and other fittings.

C. The unit of measurement for payment is linear feet.

1.4 STORM SEWER MAINS (NATURAL BACKFILL)

A. The unit price for Storm Sewer Main (Natural Backfill) work includes:
   1. General Work Items of Article 1.2.
   2. Storm sewer pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
   3. Excavation, breakdown and removal of abandoned piping inside the trench area, including plugging of existing connections.
   4. Excavation, breakdown and removal of abandoned pipeline structures inside the trench area, including plugging of existing connections.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer from centerline of the manhole to centerline of manhole with no deductions for manholes, sewer services branches and other fittings.

C. The unit of measurement for payment is linear feet.

1.5 STORM SEWER MANHOLES

A. The unit price for Storm Sewer Manholes work includes:
   1. General Work Items of Article 1.2.
   2. Precast reinforced concrete components.
   3. Joint flexible gasket material.
   4. Grout seal between the manhole and structure and the sewer pipe.
   5. Adjusting rings and bituminous plastic cement sealant at chimney.
   6. Manhole steps.
   7. Manhole frame and cover.
   8. Bedding material.
   9. Sewer pipe stub with connections and watertight plug (where required).
   10. Final casting adjustment.

B. Measurement for payment will be the distance from the invert of the lowest sewer to the top of the frame and cover as set.

C. The unit of measurement for payment is vertical feet.

1.6 POND DISCHARGE STRUCTURES

A. The unit price for Pond Discharge Structure work includes:
   1. General Work Items of Article 1.2.
   2. Precast reinforced concrete components.
   3. Joint flexible gasket material.
   4. Grout seal between the manhole and structure and the sewer pipe.
   5. Installation of the Grate.

6. Bedding material.
7. Sewer pipe stub with connections and watertight plug (where required).

B. Measurement for payment will be each.

C. The unit of measurement for payment is each.

1.7 CATCH BASIN/INLETS

A. The unit price for Catch Basin/Inlets work includes:
1. General Work Items of Article 1.2.
2. Precast reinforced concrete components.
3. Joint flexible gasket material.
4. Grout seal between the catch basin/inlet structure and the sewer pipe.
5. Adjusting rings grouted in place.
6. Casting frame and grate.
7. Bedding material.
8. Supply and install 6 to 10 feet of 4 inch flexible perforated plastic pipe with geotextile wrap subgrade drain.
9. Sand fill and Class “B” concrete floor and flow line.
10. Temporary cover over catch basin/inlet to prevent eroded materials from entering.
11. Final casting adjustment.

B. Measurement for payment will be the actual number installed.

C. The unit of measurement for payment is each.

1.8 CONNECT TO EXISTING STORM SEWER PIPE

A. The unit price for Connect to Existing Storm Sewer Pipe work includes:
1. General Work Items of Article 1.2.
2. Storm sewer pipe same material strength or better than sewer main. Provide Fernco with stainless steel sheer bands and connection water tight seal.
3. Bends as required in the field.
4. Backfilling and compaction.

B. Measurement for payment will be the actual number complete.

C. The unit of measurement for payment is each.

1.9 CORE DRILLING TO STORM MANHOLE

A. The unit price for Core Drilling to Storm Manhole work includes:
1. General Work Items of Article 1.2.

2. Core drilling into existing storm sewer manhole (where required).
3. Install A-Lok boot or mortar connection.
4. Reform flow line in existing storm manhole.

B. Measurement for payment will be the actual number complete.

C. The unit of measurement for payment is each.

1.10 FLARED END SECTION

A. The unit price for Flared End Section includes:
1. General Work Items of Article 1.2.
2. Precast concrete components.
3. Anchors to storm sewer pipe.

B. Measurement for payment will be the actual number installed.

C. The unit of measurement for payment is each.

1.11 PROVIDE BACKFLOW PREVENTER (TIDEFLEX CHECKMATE OR EQUAL)

A. The unit price for Backflow Preventer:
1. General Work Items of Article 1.2.
2. Provide Tideflex Checkmate or Equal and all appurtenances.
3. Installing and attaching as shown on plans.

B. Measurement for payment will be the actual number installed.

C. The unit of measurement for payment is each.

1.12 ABANDON/REMOVE STORM SEWER AND APPURTENANCES

A. The unit price for Abandon/Remove Storm Sewer and Appurtenances work includes:
1. General Work Items of Article 1.2.
2. Excavating, backfilling and compacting.
3. Install bulkheads and abandon storm sewer and/or structures.
4. Removing existing storm sewer and/or structures where in conflict with other utilities.
5. Providing and placing flowable fill.
7. Removal and disposal as shown on the Drawings.

B. Measurement for payment will not be made. This includes all of the project area.

C. The unit of measurement for payment is lump sum.

END OF SECTION

SECTION 01 22 04

MEASUREMENT AND PAYMENT STREET AND DRAINAGE CONSTRUCTION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

	Bid Item No.
1. Clearing and Grubbing	SD-01
2. Topsoil and Unclassified Excavation	SD-02
3. Provide Large Asphalt Patch	SD-03
4. Portland Cement Concrete Curb and Gutter	SD-04
5. Deformed Reinforcement Bars	SD-05
6. Drilling Tie Bars and Dowel Bars	SD-06
7. Landscaping – Topsoil, Seed, Fertilize, and Mulch or Erosion Mat	SD-07, SD-08, SD-09, SD-10

B. Unit Prices include:
   1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all unit price items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but is required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item.
   2. The method of measurement for payment.
   3. The price per unit for payment.

1.2 GENERAL WORK ITEMS

A. Include with the appropriate Unit Price Item the following work items which are common to the Unit Price Items for street and drainage systems.

B. If there is a specific Unit Price Item for any of the following items, then the work item shall be included with that specific unit price item.
   1. Traffic Control.
   2. Sawcutting asphalt and/or concrete.
   3. Removal, hauling and disposal of surface materials including road pavement, curb and gutter, sidewalk, driveways and other pavement surfaces in the trench area and as shown on the drawings.
   4. Maintenance, protection, replacement and/or repair of facilities not designated for alteration on the Site.
   5. Site access requirements including temporary aggregate material as required for local traffic access.
   6. Dust control.

7. Remove and replace existing mailboxes and traffic signs.
8. Restroom facilities.
9. Construction staking and other survey work not provided by the Engineer.
10. Regulatory requirements.
11. Quality assurance and quality control testing and inspections.
12. Final casting and valve box adjustment.
13. Shop drawings and other submittals.

1.3 CLEARING AND GRUBBING

A. The unit price for Clearing and Grubbing work includes:
   1. General Work Items of Article 1.2.
   2. Cutting and disposing of tree.
   3. Grinding down of tree stump to a depth of one (1') foot.
   4. Removing and disposing of roots and stump grindings.

B. Measurement and payment will be by the tree diameter in inches. The tree diameter will be determined by measuring the tree's trunk circumference approximately 4-1/2 feet above the existing ground level, but above the ground swell, and dividing by three. Diameters will be rounded to the nearest inch.

C. The unit of measurement for payment in inch diameter.

1.4 TOPSOIL AND UNCLASSIFIED EXCAVATION

A. The unit price for Topsoil and Unclassified Excavation work includes:
   1. General Work Items of Article 1.2.
   2. Removal of topsoil to depth available.
   3. Hauling and stockpiling topsoil.
   4. Excavation to subgrades shown on the Drawings.
   5. Hauling of unclassified material.
   6. Placing unclassified material in fill areas to subgrades shown on the Drawings and the subgrade required for placement of topsoil.
   7. Compaction of subgrade and fill areas.
   8. Test rolling subgrade.
   9. Excavation of undercut areas for placing topsoil.
   10. Respreading topsoil to final grades shown on the Drawings.
   11. Disposal of surplus topsoil, unclassified material and unsuitable material.
   12. Preparation of disposal site and transportation of material over an Engineer approved haul route from the site including all loading and dumping of material.
   13. Finish grading.

B. Measurement of payment will not be made unless there is a change in project scope. The estimated quantity represents the computed volume by comparing the triangulated surfaces and will be the basis for payment.

C. The unit of measurement for payment is cubic yards.

1.5 ASPHALT CONCRETE PAVEMENT PATCH

A. The unit price for Asphaltic Concrete Pavement Patch work includes:
   1. General Work Items of Article 1.2.
   2. Sawcutting.
   3. Removal of asphalt.
   4. Asphaltic concrete mixture, tack coat and other required materials.
   5. Surface preparation.
   6. Grading subgrade.
   7. Asphaltic concrete placement and compaction to thickness matching surrounding pavements or a minimum depth of 4 inches.
   8. Tack coat between asphaltic courses and abutting pavement.

B. Measurement for payment will be the average horizontal length and width of roadway.
   1. All patches greater than 10 square yards will be paid as a large patch.
   2. All patches less than or equal to 10 square yards will be paid as a small patch.

C. The unit of measurement for payment is square yards.

1.6 PORTLAND CEMENT CONCRETE CURB AND GUTTER

A. The unit price for Portland Cement Concrete Curb and Gutter work includes:
   1. General Work Items of Article 1.2.
   2. Providing Portland cement concrete mixture of size shown in the drawings or specified elsewhere.
   3. Providing expansion joints.
   4. Providing curing.
   5. Existing curb and gutter removal.
   6. Subgrade preparation.
   7. Provide crushed aggregate base.
   8. Fine grading of subgrade.
   9. Providing contraction joints.
   10. Driveway entrances and handicap ramp entrances.
   11. Adjustment of catch basin/inlets.
   12. Finishing.
   13. Protection.
   14. Restoration behind the curb.

B. Measurement for payment will be along the flow line of the gutter and through inlets/catch basins.

C. The unit of measurement for payment is linear feet.

1.7 DEFORMED REINFORCEMENT BARS

A. The unit price for Deformed Reinforcement Bars work includes:
   1. General Work Items of Article 1.2.
   2. Supply and install two - #4 deformed reinforcement bars over all trenches that fall under any portion of the concrete curb and gutter, sidewalk, and driveway being constructed.

B. Measurement for payment will be the horizontal length of each bar installed.
   1. This item applies to concrete curb and gutter, sidewalk, and driveway.
   2. This item does not apply to concrete pavement and patches.

C. The unit of measurement for payment is linear feet.

1.8 DRILLING TIE BARS

A. The unit price for Drilling Tie Bars work includes:
   1. General Work Items of Article 1.2.
   2. Providing and installing tie bars, including coating.
   3. For drilling holes in concrete not placed under the contract.
   4. For epoxying or driving.

B. Measurement for payment will be the actual number of bars installed.
   1. This item applies to concrete curb and gutter, sidewalk, and driveway.
   2. This item does not apply to concrete pavement and patches.

C. The unit of measurement for payment is each.

1.9 LANDSCAPING- TOPSOIL, SEED, FERTILIZE AND MULCH OR EROSION MAT

A. The unit price for Landscaping- Topsoil, Seed, Fertilize, and Mulch or Erosion Mat work includes:
   1. General Work Items of Article 1.2.
   2. Provide 4” topsoil or salvaged topsoil.
   3. Provide seed.
   4. Provide fertilizer.
   5. Provide mulch or erosion mat per the bid item.
   6. Provide maintenance.

B. Measurement for payment will be the width and length of disturbed area.

C. The unit of measurement for payment is square yard.

END OF SECTION

SECTION 01 22 05

MEASUREMENT AND PAYMENT SPECIAL CONSTRUCTION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

	Bid Item No.
1. Pipe Foundation Stabilization	SC-01
2. Silt Fence Erosion Control	SC-03
3. Bentonite Clay Dam on Sanitary Sewer	SC-04
4. Inlet Protection Erosion Control	SC-05
5. Rip Rap Erosion Control	SC-06
6. Tracking Pad	SC-07
7. Adjusting Existing Structure Frame and Casting	SC-02
8. Remove and Reset Fence and Trees	SC-08

B. Unit Prices include:
   1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all unit price items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but is required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item.
   2. The method of measurement for payment.
   3. The price per unit for payment.

1.2 GENERAL WORK ITEMS

A. Include with the appropriate Unit Price Item the following work items which are common to the Unit Price Items for special construction.

B. If there is a specific Unit Price Item for any of the following items, then the work item shall be included with that specific unit price item.
   1. Traffic Control.
   2. Loading, hauling and disposing of surplus material.
   3. Maintenance, protection, replacement and/or repair of facilities not designated for alteration on the Site beyond the limits identified.
   4. Dust control.
   5. Restroom facilities.
   6. Construction staking and other survey work not provided by the Engineer.
   7. Regulatory requirements.
   8. Quality assurance and quality control testing and inspections.
   9. Shop drawings and other submittals.

1.3 PIPE FOUNDATION STABILIZATION

A. The unit price for Pipe Foundation Stabilization work includes:
   1. General Work Items of Article 1.2.
   2. Excavation below the limits of the pipe bedding with the bottom of the excavation wider than the top with 1:1 side slopes.
   3. Dewatering.
   4. Soil Class A-7 or A-8 aggregate material.
   5. Loading, hauling and disposing of surplus excavated material.

B. Measurement of payment will be the volume calculated based on:
   1. The actual depth from four (4) inches below the bottom of pipe to the bottom of the aggregate material placed.
   2. The bottom width is the actual width not to exceed the pipe outside diameter plus twenty-four (24) inches plus1:1 side slopes.
   3. The top width is the pipe outside diameter plus twenty-four (24) inches.

C. The unit of measurement for payment is cubic yards.

1.4 SILT FENCE EROSION CONTROL

A. The unit price for Silt Fence Erosion Control work includes:
   1. General Work Items of Article 1.2.
   2. Provide fabric and post.
   3. Excavate to anchor fabric and compact soil or provide soil class C-3 to anchor the fabric.
   4. Inspection and maintenance of the installed silt fence.
   5. Removal of the silt fence.
   6. Finish grading.
   7. Topsoil, seeding, fertilizing, and mulching area in the vicinity of the removed silt fence which does not have established turf.

B. Measurement of payment will be the actual horizontal length installed.

C. The unit of measurement for payment is linear feet.

1.5 BENTONITE CLAY DAM ON SANITARY SEWER

A. The unit price work for Bentonite Clay Dam on Sanitary Sewer work includes:
   1. General Work Items of Article 1.2.
   2. Excavation.
   3. Exposing sanitary sewer.
   4. Remove stone around pipe and replace with bentonite.
   5. Backfill with natural backfill.

B. Measurement for payment will be the actual number completed.

C. The unit of measurement for payment is each.

1.6 INLET PROTECTION EROSION CONTROL

A. The unit price for Inlet Protection Erosion Control work includes:
   1. General Work Items of Article 1.2.
   2. Provide geotextile and wood materials for type shown on the Drawings.
   3. Placing inlet protection system.
   4. Inspection and maintenance of the installed inlet protection.
   5. Removal of the inlet protection.
   6. Cleaning debris buildup around inlet.

B. Measurement for payment will be actual number of inlet protection erosion control installed.

C. The unit of measurement for payment is each.

1.7 RIP RAP EROSION CONTROL

A. The unit price for Rip Rap Erosion Control work includes:
   1. General Work Items of Article 1.2.
   2. Provide rip rap material and geotextile fabric.
   3. Excavate and place rip rap material.

B. Measurement for payment will be the actual area installed.

C. The unit of measurement for payment is square yards.

1.8 TRACKING PAD

A. The unit price for Tracking Pad work includes:
   1. General Work Items of Article 1.2.
   2. Install to the dimensions as shown on the drawing or specified elsewhere.
   3. Providing filter fabric.
   4. Providing crushed aggregate base course (3 inch clear stone).
   5. Daily maintenance of aggregate.
   6. Removal of aggregate and restore with topsoil, seed, fertilizer and mulch.

B. Measurement for payment will be the actual number of tracking pads installed.

C. The unit of measurement for payment is each.

1.9 ADJUST EXISTING STRUCTURE FRAME CASTING

A. The unit price for Adjusting Existing Structure Frame Casting work includes:
   1. General Work Items of Article 1.2.
   2. Provide structure castings.
   3. Removal of the casting and existing adjusting rings from the structure as required.
   4. Providing concrete adjusting rings and a 2 inch rubber riser ring from the WisDOT approved product list.
   5. Bituminous plastic cement sealing the exterior of the adjusting rings and casting.
   6. The ring will be secured to the precast section with a 3 ½ inch wide Kent Seal or equal.
   7. Above the concrete ring attach ¼ inch thru 3 inch thick ring using two $^{5}/_{16}$ inch bead above and below the ring of sealant type as recommended by the rubber manufacturer.
   8. Initial and final adjustment.
   9. Backfilling and compacting.

B. Measurement for payment will be the actual number of structure frame casting adjusted.

C. The unit of measurement for payment is each.

1.10 REMOVE AND RESET CHAIN LINK FENCE AND APPLE TREES

A. The unit price for Remove and Reset Chain Link Fence and Apple Trees work includes:
   1. General Work Items of Article 1.2.
   2. Remove existing fence shown on the plans and in conflict with the storm sewer.
   3. Excavate and reinstall apple trees in conflict.
   4. Provide metal stakes to keep trees straight.
   5. Reinstall of chain link fence.

B. Measurement for payment will not be made.

C. The unit of measurement for payment is lump sum.

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes:
   1. Administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

A. Unit Price work will be the Schedule of Values used as the basis for reviewing Applications for Payment.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as recommended by the Engineer and approved by Owner.

B. The date for each progress payment should be the 3rd Wednesday of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends the 4th Friday of the Month.

C. Use forms provided by Engineer for Applications for Payment. Sample copy of the Application for Payment and Continuation Sheet is included in Section 00 62 76.

D. Application Preparation Procedures
   1. When requested by the Contractor, the Engineer will determine the actual quantities and classifications of Unit Price Work performed.
      a. Preliminary determinations will be reviewed with the Contractor before completing Application for Payment.
      b. Engineer will complete the Application for Payment based on Engineer's decision on actual quantities and classifications.
      c. Engineer will submit three original copies of Application for Payment to Contractor for certification of all three original copies.
      d. Contractor shall submit signed Application for payment to Owner for approval within time frame agreed to at the Preconstruction Conference.
   2. If payment is requested for materials and equipment not incorporated in the Work, then the following shall be submitted with the Application for Payment:
      a. Evidence that materials and equipment are suitably stored at the site or at another location agreed to in writing.

b. A bill of sale, invoice, or other documentation warranting that the materials and equipment are free and clear of all liens.
c. Evidence that the materials and equipment are covered by property insurance.

3. Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of Contractor.

E. With each Application for Payment, submit waivers of liens from subcontractors and suppliers for the construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested before deduction for retainage on each item.
2. When an application shows completion for an item, submit final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work shall submit waivers.
4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application.
5. Submit waivers of lien on forms executed in a manner acceptable to Owner.

F. The following administrative actions and submittals shall precede or coincide with submittal of first Application for Payment:
1. List of subcontractors.
2. Schedule of Values (For Lump Sum Work).
3. Contractor's construction schedule.

G. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Consent of Surety to Final Payment.
5. Final lien waivers as evidence that claims have been settled.
6. Final liquidated damages settlement statement.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 32 33

CONSTRUCTION PHOTOGRAPHS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Photographs for utility construction sites.

1.2 SUBMITTALS

A. Submit electronic files of each photographic view within seven (7) days of taking photographs.

1.3 QUALITY ASSURANCE

A. Photographs are to be submitted to the Engineer for approval prior to the start of construction.

PART 2 – PRODUCTS

PART 3 – EXECUTION

3.1 UTILITY AND STREET CONSTRUCTION SITES

A. Prior to start of construction provide sufficient photographs to adequately show the existing facilities and conditions within and adjacent to the construction Site to serve as a guide for final restoration including:
   1. Roads including shoulders and/or curb and gutter.
   2. Sidewalks, parking areas, and driveways.
   3. Utility structures.
   4. Landscaping including signs, plantings, walls, fences, trees, shrubbery, etc.
   5. Mailboxes.
   6. Drainage facilities including culverts, inlets, ditches.
   7. Building structures.

B. During construction provide sufficient photographs (a minimum of one per 100 feet of installed utility) to adequately show construction means, methods, and Site conditions including:
   1. Crossings of other utilities.
   2. Exposure of existing structures.
   3. Soil conditions.

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for submittals:
   1. Progress Schedule.
   2. Schedule of Shop Drawings and Sample Submittals.
   3. Shop Drawings.

B. Failure to meet Submittal requirements to the satisfaction of the Engineer will constitute unsatisfactory performance of the work in accordance with the Contract Documents, therefore, the Engineer may recommend to the Owner that all or a portion of payments requested during the corresponding pay period be withheld until these requirements are met.

1.2 SUBMITTAL PROCEDURES

A. Coordination: Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
      a. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
   3. To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals.
      a. Allow two weeks for initial submittal.
      b. Allow two weeks for reprocessing each submittal.
      c. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the work to permit processing.

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
   1. Assign a reference number to each submittal and re-submittal.
   2. Provide a space approximately four (4) by five (5) inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
   3. Include the following information on the label for processing and recording action taken.

a. Project name.
b. Date.
c. Name and address of the Engineer.
d. Name and address of the Contractor.
e. Name and address of the subcontractor.
f. Name and address of the supplier.
g. Name of the manufacturer.
h. Number and title of appropriate Specification Section.
i. Drawing number and detail references, as appropriate.

4. Each submittal shall be stamped by the Contractor indicating that submittal was reviewed for conformance with the Contract Documents. The Engineer will not accept unstamped submittals.

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal to the Engineer. The Engineer will not accept submittals received from sources other than the Contractor.
1. On the transmittal, record relevant information and requests for Engineer action. On a form, or separate sheet, record deviations from Contract Document requirements, including variations, limitations, and justifications. Include Contractor's certification that information complies with Contract Document requirements.

1.3 CONTRACTOR'S PROGRESS SCHEDULE

A. Prepare and submit to the Engineer within 10 (ten) days after the Effective Date of the Agreement, four copies of a preliminary progress schedule of the work activities from Notice to Proceed until Substantial Completion.
1. Provide sufficient detail of the work activities comprising the schedule to assure adequate planning and execution of the work, such that in the judgment of the Engineer, it provides an appropriate basis for monitoring and evaluation of the progress of the work. A work activity is defined as an activity which requires substantial time and resources (manpower, equipment, and/or material) to complete and must be performed before the contract is considered complete.
2. The schedule shall indicate the sequence of work activities. Identify each activity with a description, start date, completion date and duration. Include, but do not limit to the following items, as appropriate to this contract:
a. Shop drawing review by the Engineer.
b. Excavation and grading.
c. Asphalt and concrete placement sequence.
d. Restoration.
e. Construction of various segments of utilities.
f. Subcontractor's items of work.
g. Allowance for inclement weather.
h. Contract interfaces, date of Substantial Completion.
i. Interfacing and sequencing with existing facilities and utilities.

j. Sequencing of major construction activities.
k. Milestones and completion dates.

B. Distribution: Following response to the initial submittal, print and distribute copies of the revised construction schedule to the Engineer, Subcontractors, and other parties required to comply with scheduled dates. When revisions are made, distribute to the same parties. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

C. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

D. Punch List: Prepare and submit to the Engineer within ten (10) days after substantial completion a detailed progress schedule for outstanding work and punch list items.

1.4 SCHEDULE OF SHOP DRAWINGS AND SAMPLE SUBMITTALS

A. Submit four (4) hard copies or electronic copies of preliminary submittal schedule in accordance with the General Conditions of the Contract and as follows:
1. Coordinate submittal schedule with the subcontractors, Schedule of Values, and of products as well as the Contractor's Progress Schedule.
2. Prepare the schedule in chronological order. Provide the following information:
a. Scheduled date for the first submittal.
b. Related Section number.
c. Submittal category (Shop Drawings, Product Data, or Samples).
d. Name of the subcontractor.
e. Description of the part of the work covered.
f. Scheduled date for the Engineer's final release or approval.

B. Distribution: Following response to the initial submittal, print and distribute copies of the revised construction schedule to the Engineer, Subcontractors, and other parties required to comply with scheduled dates. Post copies in the field office. When revisions are made, distribute to the same parties. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

C. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SHOP DRAWINGS

A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or

copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.

B. Collect product data into a single submittal for each element of construction of system. Product data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
   1. Mark each copy to show actual product to be provided. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
      a. Manufacturer's printed recommendations.
      b. Compliance with trade association standards.
      c. Compliance with recognized testing agency standards.
      d. Application of testing agency labels and seals.
      e. Notation of dimensions verified by field measurement.
      f. Notation of coordination requirements.

C. Do not use shop drawings without an appropriate final stamp indicating action taken.

D. Submittals: Submit four (4) copies of each required submittal. The Engineer will retain two (2) copies, and return the others to the Contractor marked with action taken and corrections or modifications required.

E. Distribution: Furnish copies of reviewed submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms. Maintain one copy at the project site for reference.
   1. Do not proceed with installation until a copy of the Shop drawing is in the Installer's possession.
   2. Do not permit use of unmarked copies of the Shop Drawing in connection with construction.

1.6 ENGINEER'S ACTION

A. Except for submittals for the record or information, where action and return is required, the Engineer will review each submittal, mark to indicate action taken, and return promptly. The Engineer will stamp each submittal with a uniform action stamp. The Engineer will mark the stamp appropriately to indicate the action taken, as follows:
   1. "No Exceptions Taken": The work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.
   2. "Make Corrections Noted": The work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.

3. "Amend and Resubmit": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Amend and Resubmit" at the Project Site or elsewhere where work is in progress.
4. "Rejected – See Remarks": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Rejected and Resubmit" at the Project Site or elsewhere where work is in progress.

B. Unsolicited Submittals: The Engineer will return unsolicited submittals to the sender without action.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Underground Utilities.
   2. Property Monuments.
   3. Traffic Control.
   4. Permits for Project.

1.2 UNDERGROUND UTILITIES

A. Under the provisions of Wisconsin Statutes, Section 182.0175, all contractors, subcontractors, and any firm or individual intending to do work on this Contract shall contact all utility firms in the affected area of construction a minimum of three (3) working days prior to beginning construction so that affected utilities will be located and marked.

1.3 PROPERTY MONUMENTS

A. Protect iron pipe monuments from movement.

B. The cost of replacement of any monuments moved or destroyed during construction shall be the Contractor's responsibility.

C. Perpetuation of destroyed or moved monuments shall be performed in accordance with state statutes by a registered land surveyor.

1.4 TRAFFIC CONTROL

A. Provide traffic control facilities including barricades, signs, lights, warning devices, pavement markings, flaggers, etc.

B. Construct and use traffic control facilities in accordance with the U.S. D. O. T. Federal Highway Administration's Manual on Uniform Traffic Control Devices for Streets and Highways.

C. Maintain traffic control devices as required to properly safeguard the public travel through final completion, including during periods of suspension of work.

1.5 PERMITS FOR PROJECT

A. The following permits are being obtained by the Owner:

1. WDNR – Chapter 30
2. WDNR – WRAPP
3. WDNR – Fox River Trail Crossing
4. ARMY CORPS

B. Any costs associated with violations pertaining to the NOI permit will be the responsibility of the Contractor.

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Engineering Surveys Provided by the Engineer.
   2. Engineering Surveys Provided by the Contractor.

1.2 SUBMITTALS

A. None

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 PREPARATION

A. Investigate and verify the existence and location of site improvements, utilities, and other existing facilities.

B. Before construction, verity the location of invert elevations at points of connection of sanitary sewer, storm sewer, water piping and underground electrical services.

C. Furnish information to the Engineer and the appropriate utility regarding conflicts that are necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction.

D. Provide the Engineer two (2) working days advance notification when ready for engineering surveys for construction to be provided by the Engineer.

3.2 ENGINEERING SURVEYS TO BE PROVIDE BY THE ENGINEER

A. General
   1. Establish benchmarks for construction as shown on the drawings.
   2. Establish control points as shown on the drawings.

B. Gravity Sewer Systems and Water Distribution Systems
   1. Provide construction reference stakes set for pipe construction location at critical changes in horizontal and vertical alignment.

2. Provide construction stakes for location of pipe at connections.

C. New Road Construction
1. Provide construction slope intercept stakes for horizontal and vertical alignment on each side of the road base on each cross section in the cross section sheets for requests received at least seventy-two (72) hours before the related work begins.
2. Provide construction reference stakes for subgrade at a minimum of fifty (50) foot intervals and maximum of one-hundred (100) foot intervals on tangents. Provide construction reference stakes for subgrade at twenty-five (25) foot intervals within vertical and horizontal curves. Provide a reference line stake at each location.
3. Provide construction reference stakes for top of crushed aggregate at a minimum of fifty (50) foot intervals and maximum of one-hundred (100) foot intervals on tangents. Provide construction reference stakes for top of crushed aggregate at twenty-five (25) foot intervals within vertical and horizontal curves. Provide a reference or centerline stake.

3.3 ENGINEERING SURVEYS TO BE PROVIDED BY THE CONTRACTOR

A. General
1. Locate, preserve and protect established construction reference stakes, benchmarks and control points.
2. Locate, preserve and protect property corners and section corner monuments. If moved or destroyed due to Contractor negligence, then replace in accordance with state requirements; some of which are referenced in the “Regulatory Requirements”.
3. Provide additional construction staking as necessary to complete construction based on the construction reference stakes provided by the Engineer and the Drawings.
4. Before beginning with necessary construction staking, verify the information shown on the Drawings, in relation to the established construction reference stakes, bench marks, control points and property corners. Notify the Engineer of any discrepancies.
5. Remove construction reference stakes when directed by the Engineer.

B. Gravity Sewer Systems and Water Distribution Systems
1. Provide any intermediate construction reference points as required to verify installation at the line and grade established and locate appurtenant structures.
2. Check the line and grade with construction reference stakes at each pipe length.

C. New Road Construction
1. Provide additional construction reference stakes necessary to establish location and grade in accordance with the plans.

END OF SECTION

SECTION 32 90 10

NATIVE LANDSCAPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes requirements for the following:
   1. Site Preparation.
   2. Seeding.
   3. Planting.
   4. Maintenance.
   5. Warranty.

1.2 REFERENCES

A. Native material references:
   1. Black, M.R. and E.J. Judziewicz. 2009. Wildflowers of Wisconsin and the Great Lakes Region. University of Wisconsin Press, Madison, WI.
   2. Curtis, J. 1959. Vegetation of Wisconsin. University of Wisconsin Press, Madison, WI.
   3. Fassett, N.C. 1975. A Manual of Aquatic Plants. University of Wisconsin Press, Madison, WI.
   4. Fassett, N.C. 1976. Spring Flora of Wisconsin. University of Wisconsin Press, Madison, WI.
   5. Hip, A.L. 2008. Field Guide to Wisconsin Sedges – An Introduction to the Genus *Carex* (*Cyperaceae*). University of Wisconsin Press, Madison, WI.
   6. Kelsey, H.P, and W.A. Dayton. Standardized Plant Names. American Joint Committee on Horticulture Nomenclature (current edition).

B. "State Specifications:" State of Wisconsin Department of Transportation, "Standard Specifications for Highway and Structure Construction – Sections 627,630 & 632," current edition, including any subsequent Supplemental Specifications.

C. Wisconsin Statutes and Wisconsin Administrative Code - Chapters ATCP 20 and 29.

D. American Association of Nurserymen, Inc. (AAN) Standard: American Standard for Nursery Stock (ANSI Z60.1).

E. Standard Methods of the Association of Official Agricultural Chemists.

1.3 SUBMITTALS

A. Submit the following to the OWNER and ENGINEER prior to installation:

1. Information indicating vendor, species botanical and common names, gross weight, seed purity (% PLS), harvest date, and origin. Original nursery packaging for each species must be provided 14 days after seeding activities are completed.
2. Information indicating vendor, species botanical and common names, and pot size. Plant material shall comply with State of Wisconsin and federal laws with respect to inspection for plant diseases and insect infestation.
3. Inspection certificates and paperwork indicating the licensed nursery, species botanical and common names, and material size within 14 days of shipment.
4. Chemical Labels and Herbicide Application Record(s) within 30 days after application.
5. Photograph or detailed design of goose fencing system.

1.4 QUALITY ASSURANCE

A. Qualifications:
   1. CONTRACTOR or Subcontractor shall be a company specializing in native landscaping installation and be able to show three (3) successful projects.
   2. Perform planting by personnel familiar with accepted native landscape planting procedures. Qualified foreman, representing CONTRACTOR or Subcontractor, shall be on-site during planting procedures. The individual shall be an ecologist with at least 3 years of native plant installation experience.
   3. Submit qualifications requested on the ***qualification form*** with the bid. OWNER has sole authority to approve or disapprove native landscape contractor and/or subcontractor at OWNER's sole discretion.

B. Ability to Deliver:
   1. Investigate sources of supply and confirm they can supply plants specified on plant list in sizes, variety, and quantity noted and specified before submitting bid. Failure to take this precaution will not relieve responsibility for furnishing and installing plant material in accordance with Contract requirements.
   2. Substitutions may be permitted only upon submission of written proof that specified plant is not obtainable locally. Such substitution may be made upon written authorization by qualified botanist. Adjustments will be made at no additional cost to OWNER.
   3. Provide seed and plant materials discussed below in quantity and size designated.

C. Inspection:
   1. OWNER and ENGINEER may inspect plant material at nursery. Such inspection shall be in addition to inspection at job site.
   2. Upon delivery and before seeding and/or planting, OWNER and ENGINEER may inspect seed packages and plants.
   3. Inspection and approval is for quality, size, and variety only, and in no way impairs right of rejection for failure to meet other requirements during progress of Work.
   4. CONTRACTOR shall be present during required inspections.

D. Source Quality Control.

1. Certification: Landscape materials shall be from stock inspected and certified by authorized governmental agencies. Material shall comply with governmental regulations prevailing at supply source and project.
2. Plant material shall comply with State of Wisconsin and federal laws with respect to inspection for plant diseases and insect infestation.
3. Size and grading standards of plant materials shall be in accordance with American Association of Nurserymen, Inc. (AAN) Standard: American Standard for Nursery Stock (ANSI Z60.1).

E. VHS and INVASIVE SPECIES
1. To the extent practicable, equipment and gear used on infested waters should not be used on other non-infested waters.
2. All equipment utilized for the project including but not limited to tracked equipment, barges, boats, silt/turbidity curtains, hoses and pumps shall be decontaminated for invasive and exotic viruses and species prior to and after use. The following steps shall be taken every time equipment is moved to avoid transporting invasive and exotic viruses and species:
   a. Inspect and remove terrestrial and aquatic plants, seeds, animals and mud from equipment.
   b. Drain all water from equipment that comes in contact with infested waters.
   c. Dispose of aquatic plants and animals in the trash. Never release or transfer aquatic plants, animals or water from one water body to another.
   d. Wash equipment with hot (>104 degrees F) and/or high pressure water **OR** allow your equipment to dry thoroughly for 5 days.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Preparation for Delivery:
1. Seed:
   a. Pack seeds for delivery in suitable bags in accordance with standard commercial practice.
   b. Tag or label each bag as required by laws of State of Wisconsin and Federal Seed Act. Vendor's name shall show on or be attached to each bag together with statement signed by vendor indicating following:
      i. Kind of seed contained.
      ii. Percentage of purity and germination for native grass/sedge mix.
      iii. Percentage of hard seed, if any.
      iv. Statement conforming to laws of State of Wisconsin herein before mentioned showing percentage of weed seeds, if any.
2. Potted or Container Plants:
   a. Provide container to hold rootstock protecting root mass and structure during delivery and handling.
   b. Roots shall be developed and free from root rot.
   c. Roots shall be kept cool and moist and out of sun and wind.
   d. Bare root plants are unacceptable unless potted material is unavailable and substitution is accepted by OWNER and ENGINEER. Where bare root stock is used, it must be delivered and handled in such a way that roots are never allowed to dry out.

e. Before wetland plant stock is transported, the top of the bulrush and other tall emergent shall be cut to leave an approximate 2-foot height. The intent is to promote rapid regrowth upon transplanting and to make them easier to transport.

B. Delivery:
1. Schedule shipping to minimize on-site storage of materials.
2. Plant Material: Take precautions in accordance with best trade practices and nursery recommendations to ensure arrival of material at Project Site in good condition and without injury. Cover plants to prevent freezing, drying, transit injury, or other exposure. During shipment, plants shall not be bent, stacked, or bound in manner that damages or destroys natural shape. Soil moisture shall be checked and material watered, if necessary.
3. Seed: Each species shall be delivered to the project site in the nursery's original, sealed packaging and labeled in accordance with Wisconsin State Law and the Federal Seed Act.
4. Notify ENGINEER 48 hours before delivery of seed and/or plant material.
5. Each shipment shall be accompanied by paperwork showing sizes and varieties included. Failure to notify ENGINEER in advance, in order to arrange proper scheduling, may result in loss of time or removal of plant material not installed as specified.
6. Protect seed against weather-related damage or other damages occurring during transit. Remove from site, seed that has become wet, moldy, or otherwise damaged and replace without extra cost to OWNER.
7. Fertilizer: Deliver fertilizer to site in original, unopened containers bearing weight, manufacturer's guaranteed chemical analysis, name, trade name, trademark, and conformance to state law.
8. Deliver topsoil in an unfrozen and non-muddy condition.

C. Temporary Storage:
1. Storage of Plant Material:
   a. Set plants that are not to be planted within 4 hours, on ground and heal in with peat, soil, mulch or other approved media.
   b. Protect roots of plant material from drying or other possible injury.
   c. Water plants as necessary until planted.
   d. Plants shall not remain unplanted for longer than 3 days.
   e. Maintain plants in cold storage at approximately 30^{o}F prior to being delivered to Site.
2. Keep seed cool and dry and protect against weather-related damage or other damages occurring during storage so their effectiveness will not be impaired. Do not store in direct contact with ground. Replace seed that has become wet, moldy, or otherwise damaged at CONTRACTOR'S expense.
3. Store fertilizer, humus, and spray materials in weatherproof storage areas and in such manner their effectiveness will not be impaired.

PART 2 - PRODUCTS

2.1 PLANT SPECIMENS

A. General:
   1. Plant material shall be nursery grown or harvested unless otherwise specified or approved in writing by ENGINEER.
   2. Unless specifically noted otherwise, plant material shall be of selected specimen quality, have normal habit of growth, and be sound, healthy, vigorous plants with well-developed root systems.
      Plants shall be free of disease, insect pests, their eggs or larvae, and injuries.
   3. Plant/Seed information:
      a. See Paragraphs 2.01 E. & F. for seed mix and plant quantity requirements. It is the CONTRACTOR'S responsibility to ensure plants and/or seed are true to species and variety and conform to measurement specified in Paragraphs 2.01 E. & F., except plants larger than specified may be used if approved by ENGINEER. Use of such plants shall not result in increase in Contract Price.
      b. Where plants larger than specified have been submitted in writing for approval and approved in writing by ENGINEER, CONTRACTOR shall assume responsibility of guarantee for plant in size as planted.
      c. ENGINEER must approve any substitutions.

B. Cover Crop
   1. Cover Crop Seed mix for all restored areas shall be as follows:

SPECIES	% MINIMUM PURITY	% MINIMUM GERMINATION
Annual Oats	98	90
Winter Wheat	95	90
Barnyard Grass(*Echinochloa crus-galli*)	95	90

   2. Seeding a cover crop by itself between April 15th & August 15th shall be conducted using Annual Oats at a rate of 120 lbs/acre.
   3. Seeding a cover crop by itself between August 15th & November 30th shall be conducted using Winter Wheat at a rate of 90 lbs/acre.
   4. Native seeding conducted between April 15th & June 15th shall include a cover crop of Annual Oats at a rate of 20 lbs/acre.
   5. Native seeding conducted between October 15th & November 30th shall include a cover crop of Winter Wheat at a rate of 10 lbs/acre.
   6. Native wetland seeding shall also include a cover crop of Barnyard Grass at a rate of 1 lb/acre.

C. Native Seed
   1. Seed stock shall be wild ecotype indigenous to Wisconsin or have natural origins within a 250 mile radius of the intended planting site.
   2. Grasses classified as "Agricultural Grasses" shall be PLS as specified. Other seed shall be "clean" according to high quality industry standards.
   3. Seed shall not be more than one year old at time of seeding.

4. Legumes shall be inoculated with proper rhizobia immediately prior to planting (six hours or less).

D. Mesic Prairie and Wet Meadow Seed Mix species and quantities:

Mesic Prairie Planting Zone

Common Name	Species *Scientific Name*	PLS Ounces Required Per Acre
Forbs		
Nodding Pink Onion	*Allium cernuum*	5.9
Butterfly Weed	*Asclepias tuberosa*	3.2
Heath Aster	*Aster ericoides*	0.3
Smooth Blue Aster	*Aster laevis*	2.4
New England Aster	*Aster novae-angliae*	2.0
Purple Prairie Clover	*Dalea purpurea*	4.5
Showy Tick Trefoil	*Desmodium canadense*	6.1
Pale Purple Coneflower	*Echinacea pallida*	12.8
Purple Coneflower*	*Echinacea purpurea*	6.7
Rattle Snake Master	*Eryngium yuccifolium*	11.9
Round Headed Bush Clover	*Lespedeza capitata*	2.8
Ox-eye	*Heliopsis helianthoides*	7.1
Prairie Blazing Star	*Liatris pycnostachya*	4.1
Wild Bergamot	*Monarda fistulosa*	5.7
Wild Quinine	*Parthenium integrifolium*	3.8
Smooth Penstemon*	*Penstemon digitalis*	0.9
Yellow coneflower	*Ratibida pinnata*	5.2
Black-eyed Susan	*Rudbeckia hirta*	1.9
Brown -eyed Susan	*Rudbeckia triloba*	3.3
Stiff Goldenrod	*Solidago rigida*	4.3
Common Spiderwort	*Tradescantia ohiensis*	5.6
Culver's Root	*Veronicastrum virginicum*	0.3
Golden Alexanders	*Zizia aurea*	10.1
Grasses		
Big Bluestem	*Andropogon gerardii*	36.4
Side Oats Grama	*Bouteloua curtipendula*	45.5
Prairie Sedge	*Carex bicknellii*	10.7
Brown Fox Sedge	*Carex vulpinoidea*	1.8
Canada Wild Rye	*Elymus canadensis*	35.0
Switch Grass	*Panicum virgatum*	19.5
Little Bluestem	*Schizachyrium scoparium*	12.1
Indian Grass	*Sorghastrum nutans*	22.8
	TOTAL	**294.7**

***North American native species introduced into Wisconsin**

Wet Meadow Planting Zone		
	Species	**PLS**
Common Name	***Scientific Name***	**Ounces Required Per Acre**
Forbs		
Canada Anemone	*Anemone canadensis*	4.6
Marsh Milkweed	*Asclepias incarnata*	7.6
Calico Aster	*Aster lateriflorus*	1.3
New England Aster	*Aster novae-angliae*	3.3
Common Beggars Tick	*Bidens frondosa*	4.4
Joe Pye Weed	*Eupatorium maculatum*	4.6
Boneset	*Eupatorium perfoliatum*	4.1
Sneezeweed	*Helenium autumnale*	7.6
Northern Blue Flag	*Iris versicolor*	7.0
Marsh Blazingstar	*Liatris spicata*	6.6
Great Blue Lobelia	*Lobelia siphilitica*	1.5
Obedient Plant	*Physotegia virginiana*	3.3
Common Mountain Mint	*Pycnanthemum virginianum*	2.0
Riddell's Goldenrod	*Solidago riddellii*	3.9
Blue Vervain	*Verbena hastata*	1.6
Ironweed	*Vernonia fasciculata*	3.0
Culver's Root	*Veronicastrum virginicum*	1.4
Golden Alexander	*Zizia aurea*	9.9
Grasses/Sedges/Rushes		
Big Bluestem	*Andropogon gerardii*	35.7
Canada Bluejoint	*Calamagrostis canadensis*	2.0
Bebb's Sedge	*Carex bebbii*	10.5
Crested Oval Sedge	*Carex cristatella*	2.3
Awl-fruited Sedge	*Carex stipata*	6.6
Brown Fox Sedge	*Carex vulpinoidea*	3.6
Virginia Wild Rye	*Elymus virginicus*	31.8
Fowl Manna Grass	*Glyceria striata*	8.1
Rice Cut Grass	*Leersia oryzoides*	5.4
Switch Grass	*Panicum virgatum*	31.8
Green Bulrush	*Scirpus atrovirens*	1.9
Wool Grass	*Scirpus cyperinus*	1.3
	TOTAL	**218.7**

2.2 PLANTING MATERIALS

A. Topsoil:
   1. Obtained from natural well drained areas, and be fertile, friable soil, clean of undesirable materials such as plants, weeds, roots, stalks, stones, and other debris.

2. Existing topsoil shall be salvaged as it will be placed during restoration activities.
3. Acidity range of pH 5.0 and pH 7.0 and shall contain no less than 4% organic matter as determined by loss on ignition of moisture free samples dried at 100^{o}C.

B. Soil Amendments:
   1. Planting to be installed in native soils.

C. Water: CONTRACTOR shall make arrangements for water used for planting with appropriate water utilities. Cost of water usage is responsibility of CONTRACTOR and is incidental to contract.
   1. Obtain from fresh water sources and free from injurious chemical or other toxic substances harmful to plant life. No water, which is brackish, may be used.
   2. Provide hose and equipment necessary for proper watering of plant material.

2.3 EROSION CONTROL MATERIALS

A. Mulch:
   1. Straw:
      a. Oat or wheat straw shall be air-dried, free of noxious and invasive weed species including reed canary grass, and other objectionable foreign matter.
      b. Wet and/or moldy straw is not acceptable and shall be removed from the site by the CONTRACTOR.

B. Erosion Blanket & Stakes:
   1. Materials shall be completely biodegradable (Class I, Urban, Type A) and included on WisDOT PAL
   2. Anchoring devices shall be a minimum of 4” in length, be completely biodegradable (Urban) and included on WisDOT PAL

2.4 HERBICIDE, ADJUVANT & DYES

A. General:
   1. Use only chemicals approved by and registered with the Environmental Protection Agency (EPA).
   2. Chemicals used around water shall be aquatic approved.
   3. The chemical or combination of chemicals shall be chosen based on the target species present and the desired treatment outcome.

PART 3 - SUPPLIERS

3.1 PLANT SUPPLIERS

A. At CONTRACTOR’S option, CONTRACTOR may contact the following companies for seed and plant supplies:

JFNew
708 Roosevelt Rd
Walkerton, IN 46574
(574) 586-2412

Taylor Creek Restoration Nursery
17921 Smith Road
PO Box 256
Brodhead, WI 53520
(608) 897-8641

Marshland Transplant Aquatic Nursery
116 East Huron Street
Berlin, WI 54923-2050
(800) AQUATIC

J&J Transplant Aquatic Nursery, LLC
PO Box 227
Wild Rose, WI 54984
(800) 622-5055

Prairie Nursery, Inc.
PO Box 306
Westfield, WI 53964
(800) 476-9453

Prairie Moon Nursery
32115 Prairie Lane
Winona, MN 55987
(866) 417-8156

Dragonfly Gardens
491 State Highway 46
Amery, WI 54001
(715) 268-7660

Hickory Road Gardens
2041 Hickory Road
Mosinee, WI 54455
(715) 693-6446

Stone Silo Prairie Garden
2325 Oak Ridge Circle
De Pere, WI 54115
(920) 336-1662

Agrecol, LLC
10101 North Casey Road
Evansville, WI 53536
(608) 223-3571

3.2 HERBICIDE SUPPLIERS

A. At CONTRACTOR'S option, CONTRACTOR may contact following companies for chemical supplies:

Crop Production Services
N125 County Highway C
DeForest, WI 53532
(608) 846-1100

Red River Specialties, Inc
7545 Haygood Road
Shreveport, LA 71107
(317) 440-7103

PART 4 - EXECUTION

4.1 PROJECT/SITE CONDITIONS

A. Inspection:
   1. Prior to beginning Work, CONTRACTOR shall examine and verify acceptability of Project site for conditions under which seeding and planting are to be performed. Do not proceed with Work until satisfactory conditions are present.

2. Starting Work constitutes acceptance of conditions under which Work is to be performed. After such acceptances, CONTRACTOR shall be responsible for correcting unsatisfactory and defective Work resulting from such unsatisfactory conditions.
3. When landscape work is executed in conjunction with construction of other work, coordinate schedule to permit execution of landscape work.

4.2 SEEDING

A. Seedbed Preparation
   1. Prior to seeding a cover crop or native species, the planting area shall be prepared through the following sequence:
      a. Topsoil shall be worked with a pulverizer, tiller, disc, or harrow to a depth of 1-2". The topsoil shall be free of heavy clay, refuse, stumps, large roots, rocks over 2 inches in diameter, weeds, or other extraneous material which would be detrimental to good seed-to-soil contact, and therefore seed establishment.
      b. The surface shall then be dragged or raked to provide a smooth, fine textured soil throughout the planting area. All debris (e.g., wood, rocks, garbage, etc.) shall be removed during final seedbed preparation.
      c. A temporary cover crop shall then be seeded. The species chosen and the rate utilized will follow the requirements per Paragraph 2.01 B. Seed shall be sown with a broadcast seeder and follow those guidelines found in Paragraph 4.02 C. Straw mulch may be applied to assist with cover crop establishment.
      d. Once the cover crop has grown to a height of 6-8", a series of three (3) or four (4) herbicide applications will be conducted throughout the growing season(s). A combination of Glyphosate and 2,4-D are to be utilized for each application and shall be applied at the rates recommended on the label for the vegetation species present. The first application is expected to be completed in late May to early June. The second and third applications are expected to be undertaken in late July and mid-September – prior to the first hard freeze. The schedule for herbicide applications will be flexible to accommodate the weather and existing growing conditions; however, the Contractor must communicate with the Owner and the Engineer prior to conducting any application. Incomplete, untimely or unsuccessful herbicide treatments may result in additional treatment requirements to be conducted at the Contractor's expense.
      e. Following the last herbicide application and prior to sowing the native seed the soil shall be lightly worked to a depth of ¼" – ½" in depth with a disc or harrow. If the soil is too light and fluffy, the area shall be cultipacked to provide a firmer seedbed prior to seeding.

B. Installation and Procedures:
   1. Seeding shall occur immediately after seedbed preparation. Restored areas shall be seeded with the native seed mixes at the PLS ounces per acre rate indicated in Paragraph 2.01 E. Seeding shall be conducted within the designated communities (Drawings) between October 15th and November 30th.
   2. All native seed species shall be mixed on-site prior to installation.

3. If the communities are hand sown, the seed shall be mixed with a carrier (e.g., sawdust, vermiculite, moist sand, etc.) to ensure even seed distribution. If a broadcast seeder is utilized, it shall be properly calibrated to ensure an even seed distribution is achieved within the planting area.
4. After the seed has been installed, the area shall be rolled to ensure good seed to soil contact.
5. Once seed installation is complete, erosion blanket shall be placed in those areas designated on the Drawings. Mulch, if applied with the cover crop, and erosion blanket installation shall follow those requirements outlined in 4.05 below.

C. Seeding shall not be permitted during the following conditions unless otherwise approved:
   1. Saturated soil conditions.
   2. Frozen soil conditions.
   3. Wind speeds >15 miles per hour.
   4. Temperatures less than 32 degrees Fahrenheit.
   5. Temperatures greater than 90 degrees Fahrenheit.

4.3 EROSION CONTROL MATERIALS

A. Mulch
   1. General:
      a. Place clean, straw mulch on the cover crop seeding within 72 hours after seeding, if desired.
      b. Do not apply during high winds.
      c. Place loosely enough to allow some sunlight penetration and air circulation, but thickly enough to shade the ground, conserve moisture and reduce erosion.
   2. The CONTRACTOR shall perform mulching in accordance with “Method C” as explained in the “State Specifications:” State of Wisconsin Department of Transportation, “Standard Specifications for Highway and Structure Construction – Sections 627” current edition.

B. Erosion Blanket & Stakes
   1. General:
      a. Install Class I, Urban, Type A erosion blanket and biodegradable stakes on the slopes of the native seeding per Sheets 6 and 7 within 72 hours after seeding.
      b. Do not apply during high winds.
   2. The CONTRACTOR shall install the erosion blanket and stakes per manufacturer’s recommendations.

4. 4 CLEAN UP AND REPAIR

A. Remove excess and waste material daily.

B. Upon completion of planting, remove excess soil, stones, and debris and dispose of off-site.

C. CONTRACTOR shall be liable for any damage caused to surrounding properties as a result of negligence when conducting landscape installation. Damage to existing landscape, pavements, or other site features as result of Work shall be repaired to its original condition.

4.5 PRELIMINARY ACCEPTANCE

A. Notify ENGINEER at conclusion of planting and seeding operations so OWNER and ENGINEER can determine completion by field inspection.

B. Completion requires:
   1. Seed and plant material conforms to Contract Documents with respect to quantity, quality, size, species, and location, except those items accepted or revised in the field by OWNER and ENGINEER.
   2. Plant material shall be established, upright, green (i.e., healthy condition), and exist in the locations as determined by the OWNER and ENGNEER.

4.6 MAINTENANCE DURING WARRANTY PERIOD

A. General:
   1. CONTRACTOR shall provide maintenance during the two-year warranty period in accordance with the submitted and approved Maintenance Plan.
   2. Repair work necessitated by CONTRACTOR'S operations, land disturbance outside designated work areas, CONTRACTOR'S failure to perform adequate maintenance or due to CONTRACTOR'S negligence shall be performed without cost to OWNER.
   3. Any soil erosion resulting from inadequate cover crop or permanent seed establishment shall be corrected at the CONTRACTOR'S expense.

B. Protection:
   1. CONTRACTOR is liable for damage to planted areas caused by deicing compounds, toxic substances, fertilizers, pesticides, and other materials applied by CONTRACTOR. CONTRACTOR is not liable for materials applied by others or damage caused by vandalism or natural causes.
   2. Protect landscape Work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection until completion and acceptance.
   3. Protect existing property and improvements within these sites and those adjacent to OWNER'S property.

4.7 WARRANTY

A. During the 1-year warranty period CONTRACTOR shall re-seed areas with poor germination to meet the following criteria:
   1. Seeding success criteria – An area will be considered satisfactory if it meet the following:
      a. A minimum of 75% total native vegetative coverage.

b. No bare areas larger than 10 square feet.
c. Vegetation is in healthy condition.

2. 90% of the installed plants are living and healthy.

B Replacement and Damages:

1. On or about expiration of the 1-year warranty period, follow-up inspections will be made to determine replacements or corrections required to be made by CONTRACTOR in accordance with provisions of these Specifications and the Maintenance Plan. ENGINEER will document findings in field report, and forward copies to CONTRACTOR. Items identified for replacement will be tagged during inspection with plastic flagging. Decision of OWNER and ENGINEER for required replacements is final and binding upon CONTRACTOR.
2. CONTRACTOR is responsible for repairing damage to property caused by defective workmanship and materials.

C. Exclusions:

1. CONTRACTOR is not liable for replacement cost of seeds damaged by extreme weather conditions. CONTRACTOR is not liable for plants not installed by CONTRACTOR under CONTRACTOR'S supervision, by relocation or removal by others, by acts of God, or by vandalism, and losses because of curtailment of water by local authorities.

4.8 REPLACEMENTS

A. General Procedure

1. Reseeding shall be performed at the CONTRACTOR'S expense and in conformance with the original seeding and planting specifications unless they are modified by the ENGINEER.
2. Seed shall be of the same species, quality, and size as originally installed, or with substitutes pre-approved in writing by the ENGINEER.
3. Reseeding activities shall be conducted during the first available period, as determined by the OWNER and ENGINEER.
4. Dispose of dead plants off-site.
5. Restore areas damaged by replacement operations to original condition.
6. Notify OWNER and ENGINEER at conclusion of replacement program
7. OWNER and ENGINEER will conduct inspection of replacements for determining final acceptance.

4.9 FINAL ACCEPTANCE

A. Procedure

1. Upon completion of replacement program, CONTRACTOR shall notify OWNER and ENGINEER.
2. OWNER and ENGINEER will inspect the site to determine acceptability of required replacements.
3. If acceptable and the warranty criteria outlined in 4.09.A.1.&2. are met, OWNER and ENGINEER shall notify CONTRACTOR, in writing, of final acceptance of Work.
4. After acceptance, OWNER will be responsible for all future replacements and maintenance.

4.10 MEASUREMENT AND PAYMENT

A. Include cost of:
   1. Providing and installing seed mixtures.
   2. Providing and installing wetland plants.
   3. Providing and installing goose fencing.
   4. Providing and installing erosion blanket.
   5. Maintenance Plan.
   6. All labor, materials and equipment necessary for planting and maintenance during establishment of native vegetation.
   7. Replacement of plants under warranty period.
   8. Cleanup.
   9. Other appurtenant and incidental Work.

B. Do not include cost of:
   1. Work included in other Bid items.

C. Measurement for Payment:
   1. Work under this section shall be paid for at the contract unit price.

END OF SECTION

EXHIBIT A

Geotechnical Engineering Services Report for the Front Street Stormwater Pond, De Pere, WI

Prepared by: Intertek PSI

GEOTECHNICAL ENGINEERING SERVICES REPORT

For the:

Front Street Stormwater Pond
Front Street (Franklin Street to Fulton Street)
De Pere, Wisconsin

Prepared for:

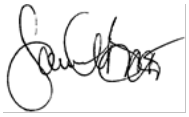
City of De Pere
925 South Sixth Street
De Pere, Wisconsin 54115

Prepared by:

Professional Service Industries, Inc.
3009 Vandenbroek Road
Kaukauna, Wisconsin 54130
Phone (920) 735-1200
Fax (920) 735-1840

January 25, 2021

PSI Report Number: 00941315



James M. Becco, P.E.
Regional Vice President

Patrick Bray, E.I.T.
Branch Manager

Zachary Ashauer
Staff Geologist

TABLE OF CONTENTS

1 INTRODUCTION

1.1 GENERAL

This report presents the results of the subsurface exploration and stormwater evaluation for the proposed Front Street Stormwater Pond in De Pere, Wisconsin. The work was performed for the City of De Pere, at the request of Mr. Michael Walsh.

1.2 PURPOSE

The purpose of this study was to evaluate the subsurface conditions at specific boring locations on the site for use by the engineers in designing the stormwater management area for the proposed project.

1.3 SCOPE

The scope of services included the subsurface exploration, field and laboratory testing, and a presentation of the data obtained. Construction considerations have been provided. The scope of the field work, including the number, depth, and locations of the borings was determined by the client.

1.4 AUTHORIZATION

The description of services and authorization to perform this subsurface exploration and evaluation were in the form of a signed Agreement for Contractor Services between The City of De Pere and PSI (2020 Soil Boring), dated April 9, 2020, referencing PSI Proposal No. 0094-301529, dated January 31, 2020. The general conditions for the performance of the work were referenced in the signed Agreement. This report has been prepared on behalf of, and exclusively for the use of the City of De Pere. The information contained in this report may not be relied upon by any other parties without the express written consent of PSI, and acceptance by such parties of PSI's General Conditions.

2 SITE AND PROJECT DESCRIPTION

2.1 SITE FEATURES

The subject site is located along the northwest side of Front Street, generally extending from Franklin Street to Fulton Street, in De Pere, Wisconsin. At the time of the exploration, the subject site was vacant and covered with grass. The asphalt Fox River Trail borders the west/northwest side of the site, with the Fox River present beyond the trail to the west. The surrounding parcels primarily consisted of residential properties. Based on a review of historical aerial photographs available on Google Earth between the years of 1992 and 2018, the surface features of the site appear to have remained relatively similar in appearance to those described above since the earliest photo taken in 1992, and the site has remained vacant. The subject site is depicted on the enclosed Boring Location Plan (Figure 1).

The topography of the subject site is relatively flat, with an elevation difference of about 0.6 feet between the boring locations. The site generally slopes slightly down towards the north. Existing elevations at the boring locations ranged between about EL. 588.3 and EL. 587.7. At the time of the exploration, the surface of the site at the boring locations was snow covered; therefore, an ATV-drill rig was utilized to access the boring locations.

2.2 PROJECT DESCRIPTION

Based on the information provided by the client, the proposed project is planned to consist of the construction of an approximately 27,000 square foot stormwater management pond along the northwest side of Front Street. It is understood the preliminary bottom elevation of the pond will be at about EL. 577.3. No other details were provided.

3 EXPLORATION AND LABORATORY PROCEDURES

3.1 SCOPE SUMMARY

The field and laboratory data utilized in the evaluation of the subsurface materials was obtained by drilling exploratory test borings, securing soil samples by the split-spoon sampling method, and subjecting the samples to laboratory testing consisting of moisture content determination and unconfined compressive strength estimates.

With respect to the stormwater management area, the field and laboratory work for classification of the subgrade soils was performed to provide information for use by the basin design personnel when considering requirements of Chapter NR151 of the Wisconsin Administrative Code, and of WDNR Technical Standard 1002, “Site Evaluation for Stormwater Infiltration” guidelines. The design of the proposed stormwater management area was beyond the scope of services for this project.

3.2 FIELD EXPLORATION

A total of two (2) soil test borings were performed to a depth of about 20 feet below existing grade. The number, depth, and locations of the borings were determined by the client. The borings were staked in the field by the client. The surface elevations shown on the boring logs were provided by the client.

The soil test borings were performed with an ATV-mounted rotary drilling rig utilizing continuous flight hollow stem augers to advance the holes. Representative samples were obtained by the Standard Penetration Test (SPT) method using split-spoon sampling procedures in general accordance with ASTM D-1586 procedures. Samples were collected at 2-foot continuous intervals. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty (30) inches, required to advance the split-spoon sampler one (1) foot into the soil. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of the three (3) successive increments of six (6) inches penetration. The “N” value is

obtained by adding the second and third incremental numbers. The SPT provides a means of estimating the relative density of granular soils and comparative consistency of cohesive soils, thereby providing a method of evaluating the relative strength and compressibility characteristics of the subsoils.

The SPT soil samples were transferred into clean glass jars immediately after retrieval, and returned to the laboratory upon completion of the field operations. Samples will be discarded unless other instructions are received. The samples were visually classified by a certified soil tester in general accordance with USDA National Resources Conservation Service textural soil classification procedures (B-1 and B-2). The soil samples obtained from B-1 and B-2 were also visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488-75), and are provided on boring logs B-1A and B-2A. A description of the subsurface conditions encountered at each boring location is shown on the enclosed Soil Boring Logs. After completion of the borings, the auger holes were backfilled to the ground surface with bentonite chips.

A copy of the Soil Boring Logs and Boring Location Plan (Figure 1) are enclosed in the Appendix. The soil stratification shown on the logs represents the approximate soil conditions in the actual boring locations at the time of the exploration. The terms and symbols used on the logs are described in the General Notes found in the Appendix.

3.3 LABORATORY PHYSICAL TESTING

Soil samples obtained from the exploration were visually classified in the laboratory, and subjected to testing, which included moisture content determinations, mechanical grain size analyses and Atterberg Limits determinations. Selected cohesive soil samples were tested in unconfined compression with an uncontrolled strain loading rate and/or with a calibrated hand penetrometer to aid in evaluating the soil strength characteristics. The values of strength tests performed on soil samples obtained by the Standard Penetration Test Method (SPT) are considered approximate, recognizing that the SPT method provides a representative but somewhat disturbed soil sample.

The laboratory testing was performed in general accordance with the respective ASTM methods, as applicable, and the results are shown on the boring logs in the Appendix.

4 DESCRIPTION OF SUBSURFACE CONDITIONS

4.1 GENERAL

A description of the subsurface conditions encountered at the test boring locations is shown on the Soil Boring Logs. The lines of demarcation shown on the logs represent approximate boundaries between the various soil classifications. It must be recognized that the soil descriptions are considered representative for the specific test boring location, but that variations may occur between and beyond the sampling intervals and boring locations. Soil depths, topsoil and layer thicknesses, and demarcation lines utilized for preconstruction

planning should not be expected to yield exact and final quantities. A summary of the major soil profile components is described in the following paragraphs.

4.2 SUBSURFACE CONDITIONS

The surface at borings B-1 and B-2 consisted of about 10 and 8 inches of topsoil comprised of very dark brown silty clay loam with intermixed root matter, respectively. Beneath the surface topsoil, the natural soils predominantly consisted of reddish brown and dark reddish gray clay to the maximum depth explored by the borings. As an exception, a layer of silty clay was present beneath the topsoil at B-2.

The soils samples obtained at B-1 and B-2 were also classified in general accordance with the Unified Soil Classification System (B-1A and B-2A). The topsoil encountered at the borings generally consisted of clayey silt with intermixed root matter. The natural soils encountered beneath the surface topsoil generally consisted of light reddish brown clay, with variable amounts of sand and silt, and reddish brown to dark reddish gray clay to the maximum depth explored by the borings.

The natural cohesive soils encountered in the borings were generally stiff to hard in comparative consistency, with Standard Penetration resistances (N-values) generally between about 6 and 13 blows per foot (bpf), and unconfined compressive strengths generally ranging from about 1.25 to 4.5+ tons per square foot (tsf).

Atterberg Limits and mechanical grain-size analyses were performed on a bulk composite SPT soil sample obtained from boring B-1 between depths of about 2 and 6 feet (EL. 586.3 to EL. 582.3) below existing grade, and another from boring B-2 between depths of about 6 to 10 feet (EL. 581.7 to EL. 577.7). The test results indicated the sample obtained from B-1 between depths of about 2 to 6 feet, and the sample obtained at B-2 between 6 to 10 feet, had Liquid Limits of about 38 and 37, and Plastic Limits of about 18 and 17, respectively. Each had a Plasticity Index of about 20. Based on the test results, the clay soils encountered in the upper portions of B-1 and B-2 are generally classified as CL by the USCS method. The laboratory data sheets provided in the Appendix.

The foregoing discussion of soil conditions on this site represents a generalized soil profile as determined at the test boring locations. A more detailed description and supporting data for each test location can be found on the individual Soil Boring Logs.

4.3 GROUNDWATER OBSERVATIONS

Groundwater observations were made during the drilling operations, and in the open boreholes upon completion. Groundwater was not encountered during auger advancement or upon completion and removal of the augers at borings B-1 and B-2. The borings caved at depths ranging from about 16 to 17 feet below existing grade; therefore, observations could not be made below the caved depths.

The groundwater observations reported herein are considered approximate. It must be recognized that groundwater levels fluctuate with time due to variations in seasonal precipitation, lateral drainage conditions, and soil permeability characteristics. The water level of the Fox River may have an effect on the groundwater fluctuations on this site. Longer term monitoring would be required to better evaluate groundwater levels on this site.

5 CONSIDERATIONS

5.1 STORMWATER MANAGEMENT CONSIDERATIONS

Based on the information provided by the client, it is understood that the proposed project is planned to consist of the construction of an approximately 27,000 square foot stormwater management pond along Front Street. The preliminary bottom elevation of the pond will be at about EL. 577.3.

Samples of the subgrade soils encountered in the borings have been given estimated visual classifications in general accordance with the USDA textural soil classification system. Beneath the surface topsoil, the natural soils predominantly consisted of reddish brown and dark reddish gray clay to the maximum depth explored by the borings. As an exception, a layer of silty clay was present beneath the topsoil at B-2. Groundwater was not encountered during drilling or upon completion and removal of the augers.

With regard to the above soil and groundwater conditions encountered at the borings, NR 151.124(4)(c)1 and 2 – *Infiltration rate exemptions* indicates that infiltration practices located in an area where the infiltration rate of the soil measured at the proposed bottom of the infiltration system is less than 0.6 inches per hour using a scientifically credible field test method; or an area where the least permeable soil horizon to 5 feet below the proposed bottom of the infiltration system using the USDA method of soils analysis consists of sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay or clay may be credited toward meeting the requirements, but the decision to infiltrate under these conditions is optional. In addition, NR 151.124(4)(b)1 – *Separation distances* indicates that infiltration practices shall be located so that the characteristics of the soil and the separation distance between the bottom of the infiltration system and the elevation of seasonal high groundwater or the top of bedrock are in accordance with the following Table (reproduced from NR 151.124):

Table 3. Separation Distances and Soil Characteristics		
Source Area	**Separation Distance**	**Soil Characteristics**
Industrial, Commercial, Institutional Parking Lots and Roads	5 feet or more	Filtering Layer*
Residential Arterial Roads	5 feet or more	Filtering Layer*
Roofs Draining to Surface Infiltration Practices	1 foot or more	Native or Engineered Soil with Particles Finer than Coarse Sand
Roofs Draining to Surface Infiltration Practices	Not Applicable	
All Other Impervious Source Areas	3 feet or more	Filtering Layer*

*Defined in NR 151.002(14r) as a "soil that has at least a 3-foot deep layer with at least 20 percent fines; or at least a 5-foot deep layer with at least 10 percent fines; or an engineered soil with an equivalent level of protection as determined by the regulatory authority for the site."

The laboratory testing of the bulk composite SPT samples obtained at B-1 between depths of about 2 to 6 feet (EL. 586.3 to EL. 582.3); and of the samples obtained from B-2 between depths of about 6 to 10 feet (EL. 581.7 to EL. 577.7), had 79 and 84% of the material passing the No. 200 sieve, Liquid Limits of about 38 and 37, and Plastic Limits of about 18 and 17, respectively. Each sample had a Plasticity Index of about 20. Appendix D of the Wet Detention Pond (1001) document, which is published by the Wisconsin Department of Natural Resources Conservation Practice Standards, indicates that materials for a Type A Clay Liner (for sites with the highest potential for groundwater pollution) must contain 50% or more of the material passing the No. 200 sieve; and have an average liquid limit of 25 or greater, with no value less than 20; and have an average plasticity index of 12 or more, with no value less than 10. The tested samples meet these requirements. However, other specifications or requirements also apply, such as outlined in Section B of Appendix D, or as may be included within other applicable state or local documents. In addition, soils may vary between and beyond the borings.

The information presented above is provided as general guidance for considering stormwater management in conjunction with the encountered subsurface conditions. However, Chapter NR151 of the Wisconsin Administrative Code; the Site Evaluation for Stormwater Infiltration (1002) document; the Wisconsin Department of Natural Resources Conservation Practice Standard for Wet Detention Ponds (1001), including additional specifications in Appendix D; or other applicable references must be consulted for appropriate site-specific stormwater design guidance and requirements.

Stormwater management basins are not recommended to be placed in close proximity to basements or other below grade structures. Proper and careful consideration of soils and subsurface conditions must be given during site and design planning, and extreme care must be exercised during construction. Lateral migration of water may result in substantially

increased sump pump activity and can quickly overcome the ability of such pumps to maintain a desirable water level, resulting in significant flooding. The potential for such conditions to occur can greatly increase when basement floors are below the elevation of basin bottoms and/or when basins are placed in close proximity to structures (strongly not recommended). In addition, the presence of granular or other generally permeable soils, which is typically necessary in the areas of structures, especially within utility backfill, alongside basement walls, or within other development excavations, can act as extensive migration channels to rapidly carry large volumes of water from basins and into nearby basements. Building codes or municipal regulations may require that basement floor elevations be a specified distance above the water level of nearby basins. It is therefore recommended that the design engineer (or other appropriate representative) review applicable municipal requirements, and if necessary, verify the design normal and design high water elevations of stormwater basins with respect to planned basement slab elevations.

5.2 GROUNDWATER CONTROL

Groundwater was not encountered during drilling or upon completion and removal of the augers at the boring locations. Based on the observations, no major difficulties during excavation and construction of the proposed stormwater pond are anticipated. A gravity drainage system and filtered sump pumps or other conventional dewatering procedures, may be adequate to control isolated small volume perched water if encountered. However, if larger volume perched zones are encountered, or if groundwater levels rise due to seasonal variations, more comprehensive dewatering with a series of sump pumps may be required.

While no groundwater was encountered at the time the borings were drilled, seasonal variations in precipitation, site drainage conditions, soil permeability, and other factors can cause groundwater to be present in the upper soils at other times, including during construction. In addition, the water level of the Fox River may have an effect on the groundwater fluctuations on this site.

5.3 EXCAVATIONS AND SITE DRAINAGE

Sloping, shoring, or bracing of the excavation sidewalls will be necessary. Excavating may be difficult due to the instability of vertical slopes, and will therefore require a flattening of trench sides, or some other means of protection, to facilitate construction and to protect life and property. Sloughing and caving should be expected within unprotected excavations. The degree of excavation instability problems is dependent upon the depth and length of time that excavations remain open, excavation bank slopes, water levels and the effectiveness of any dewatering systems. However, severe instability may occur within granular soils, especially encroaching upon and extending below the groundwater or perched zones. All excavation work must be performed in accordance with OSHA and local building code requirements.

Where excavations encroach upon or extend below the groundwater or perched zones and into fine sand, silt, or soft clay, they may become substantially unstable when the confining effect of the overburden is removed. Significant sloughing or caving of sidewalls may also occur. Some overexcavation of softened or loosened soils, in conjunction with the use of a crushed

stone working mat, may be necessary to establish a stable bearing subgrade. Additionally, significantly widened excavations may result, or be required to maintain or achieve sidewall stability.

All excavations must be performed with caution and utilize methods which will prevent undermining or destabilization of buildings, utilities, pavements, sidewalks or other structures. The use of a properly designed shoring and bracing, sheet piling, or underpinning system must be utilized as necessary to adequately protect buildings, utilities, pavements, and other structures. This must be performed by an experienced specialty contractor. Additionally, extreme care must be used during the installation of any bracing system, especially those using driven or vibratory methods, in order to avoid damaging existing buildings, utilities, and other structures. Consideration should be given to the performance of video and/or photographic documentation of the condition of nearby buildings, utilities, and other structures prior to installation.

Since the subgrade soils are generally sensitive to moisture, every effort should be made to provide adequate drainage across the site during construction, and to prevent ponding of runoff on the subgrade. These soils are also subject to erosion caused by runoff, and erosion control measures should be implemented where needed or required by local ordinances.

It is mandated that excavations, whether they be for utility trenches, basement excavations or footing excavations, be constructed in accordance with current Occupational Safety and Health Administration (OSHA) guidelines to protect workers and others during construction. PSI recommends that these regulations be strictly enforced; otherwise, workers could be in danger and the owner(s) and the contractor(s) could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

PSI is providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

6 GENERAL COMMENTS

This geotechnical exploration has been prepared to aid in the evaluation of the conditions on this site. The recommendations presented herein are based on the available soil information and the design information provided. Any changes in the design information or building locations should be brought to the attention of PSI to determine if modifications in the

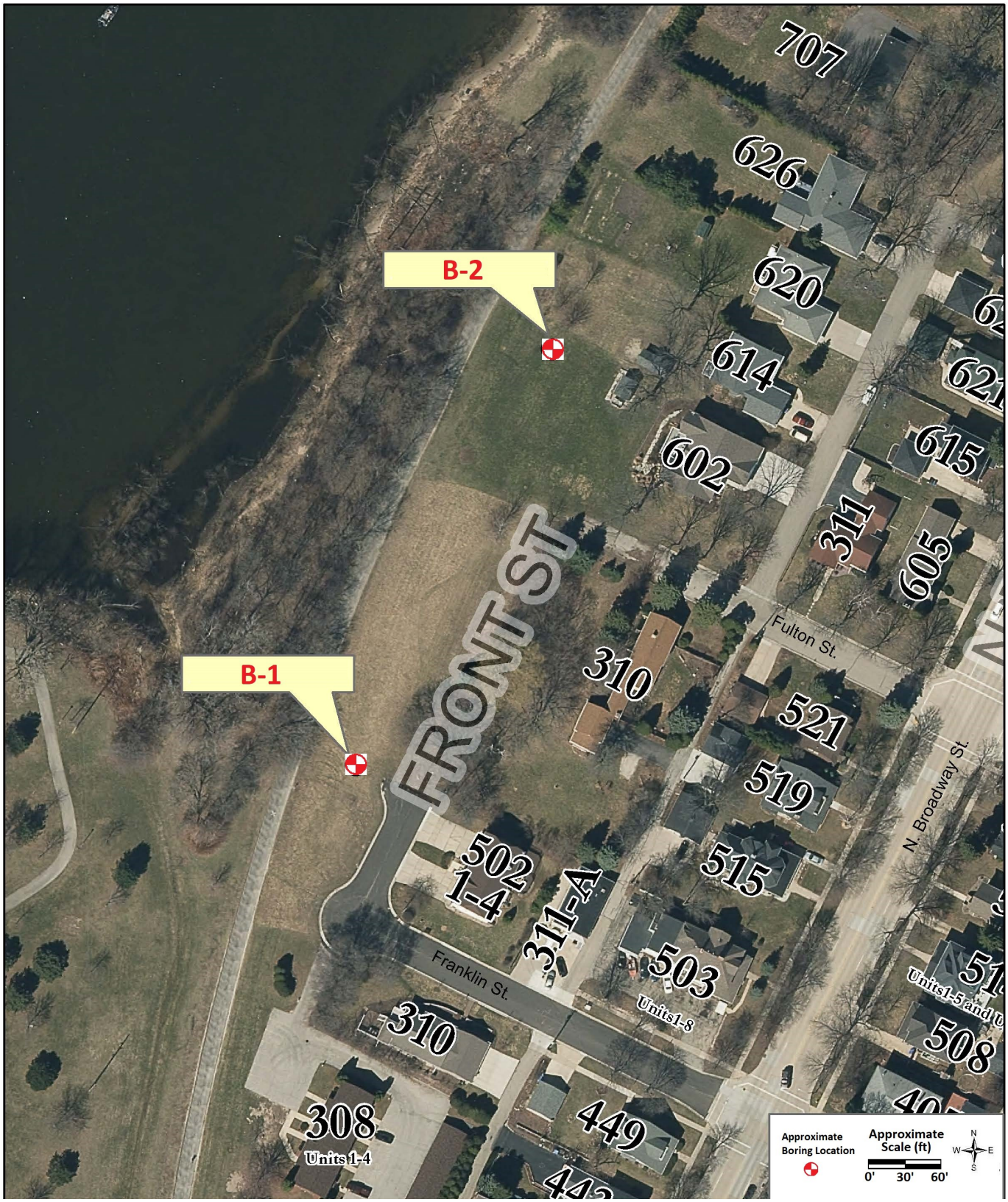
recommendations are required. The final design plans and specifications should also be reviewed by PSI to determine that the recommendations presented herein have been interpreted and implemented as intended.

This geotechnical study has been conducted in a manner consistent with that level of care ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. The findings, recommendations and opinions contained herein have been promulgated in accordance with generally accepted practice in the fields of foundation engineering, soils mechanics, and engineering geology. No other representations, expressed or implied, and no warranty or guarantee is included or intended in this report.

It is recommended that the earthwork operations be monitored by the soils engineer, to test and evaluate the bearing capacities, and the selection, placement and compaction of controlled fills.

APPENDIX

Figure 1 - Boring Location Plan
Soil Boring Logs
Laboratory Data Sheets
Storm Forms
General Notes



intertek psi	Front Street Stormwater Pond De Pere, Wisconsin	**SCALE: SHOWN ABOVE**
		PROJECT NO: 00941315
	FIGURE 1: Boring Location Plan	**PAGE 1 OF 1** **1/25/2021**

SOIL BORING LOG: B - 1

Project: Front Street Stormwater Pond
Project No.: 00941315

Location: Front Street (Franklin Street to Fulton Street)
De Pere, Wisconsin
Drill Date: January 6, 2020
Drilled By: GW/KH

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 588.3	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 / 587.3	0-10": 10YR 2/2 Very dark brown SILTY CLAY LOAM, with roots (3,vf), 2,sbk,vf, mlo-moist (TOPSOIL)			-	-	19	
2 / 586.3	5YR 4/4 Reddish brown CLAY, 1,sbk,vf, mvfi-moist	1-SS	10	3.25	-	25	
3 / 585.3	5YR 4/4 Reddish brown CLAY, with GLEY1 6/10Y greenish gray (f,1,P) blotches, 1,sbk,vf, mvfi-moist	2-SS	7	1.75	3.1	29	
4 / 584.3							
5 / 583.3		3-SS	6	2.75	-	17	
6 / 582.3							
7 / 581.3	5YR 4/3 Reddish brown CLAY, 0,m, mvfi-moist	4-SS	13	4.5+	4.5	20	
8 / 580.3							
9 / 579.3		5-SS	10	3.25	3.1	19	
10 / 578.3							
11 / 577.3		6-SS	11	2.75	1.7	20	
12 / 576.3							
13 / 575.3	5YR 4/2 Dark reddish gray CLAY, 0,m, mfr-moist	7-SS	8	1.25	2.0	23	
14 / 574.3							
15 / 573.3		8-SS	11	2.25	2.2	19	
16 / 572.3							⊥
17 / 571.3		9-SS	11	2.25	3.0	22	
18 / 570.3							
19 / 569.3		10-SS	9	3.25	3.0	21	
20 / 568.3							
	END OF BORING @ 20± FEET						

FIELD OBSERVATIONS

Water Level $_{\text{during drilling}}$: Not Encountered ⩒
Water Level $_{\text{upon completion}}$: Not Present ▼
Caved at $_{\text{upon completion}}$: 16± feet below existing grade (EL. 572.3±) ⊥
Delay Time: N/A
Water Level $_{\text{delayed}}$: N/A ¥
Caved at $_{\text{delayed}}$: N/A

ADDITIONAL COMMENTS:

Note: Lines of stratification represent an approximate boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

SOIL BORING LOG: B - 1A

Project: Front Street Stormwater Pond
Project No.: 00941315

Location: Front Street (Franklin Street to Fulton Street)
De Pere, Wisconsin
Drill Date: January 6, 2020
Drilled By: GW/KH

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 588.3	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
0 / 588.3	0-10": Very dark brown Clayey SILT, with trace root matter, moist (TOPSOIL)			-	-	19	
1 / 587.3	Light reddish brown CLAY, moist	1-SS	10	3.25	-	25	
2 / 586.3							
3 / 585.3		2-SS	7	1.75	3.1	29	
4 / 584.3							
5 / 583.3	Light reddish brown CLAY, with sand, trace gravel, and silt, moist	3-SS	6	2.75	-	17	
6 / 582.3							
7 / 581.3	Reddish brown CLAY, with trace sand, moist	4-SS	13	4.5+	4.5	20	
8 / 580.3							
9 / 579.3		5-SS	10	3.25	3.1	19	
10 / 578.3							
11 / 577.3		6-SS	11	2.75	1.7	20	
12 / 576.3							
13 / 575.3	Dark reddish gray CLAY, with trace sand, moist	7-SS	8	1.25	2.0	23	
14 / 574.3							
15 / 573.3		8-SS	11	2.25	2.2	19	
16 / 572.3							⊥
17 / 571.3		9-SS	11	2.25	3.0	22	
18 / 570.3							
19 / 569.3		10-SS	9	3.25	3.0	21	
20 / 568.3							
	END OF BORING @ 20± FEET						

FIELD OBSERVATIONS

Water Level $_{\text{during drilling}}$: Not Encountered ⩒
Water Level $_{\text{upon completion}}$: Not Present ▼
Caved at $_{\text{upon completion}}$: 16± feet below existing grade (EL. 572.3±) ⊥
Delay Time: N/A
Water Level $_{\text{delayed}}$: N/A ¥
Caved at $_{\text{delayed}}$: N/A

ADDITIONAL COMMENTS:

Note: Lines of stratification represent an approximate boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

SOIL BORING LOG: B - 2

Project: Front Street Stormwater Pond
Project No.: 00941315

Location: Front Street (Franklin Street to Fulton Street)
De Pere, Wisconsin
Drill Date: January 6, 2020
Drilled By: GW/KH

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 587.7	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 586.7	0-8": 10YR 2/2 Very dark brown SILTY CLAY LOAM, with roots (3,vf), 2,sbk,vf, mvfr-moist (TOPSOIL)	1-SS	6	-	-	24	
2 585.7	5YR 5/3 Reddish brown SILTY CLAY, with roots (1,vf), 2,sbk,vf, mvfi-moist			4.5+	-	24	
3 584.7 4 583.7	5YR 4/4 Reddish brown CLAY, with GLEY1 6/10Y greenish gray (f,1,P) blotches, 2,pl,f, mvfi-moist	2-SS	6	3.0	2.6	25	
5 582.7 6 581.7	5YR 4/3 Reddish brown CLAY, with 5YR 5/2 reddish gray silt seams, 2,sbk,vf, mvfi-moist	3-SS	9	2.75	3.0	22	
7 580.7 8 579.7	5YR 4/3 Reddish brown CLAY, 0,m, mvfi-moist	4-SS	10	4.0	3.9	19	
9 578.7 **10 577.7**		5-SS	9	3.0	2.6	20	
11 576.7 12 575.7		6-SS	12	4.5+	3.6	20	
13 574.7 14 573.7	5YR 4/2 Dark reddish gray CLAY, 0,m, mfi-moist	7-SS	10	2.0	2.6	22	
15 572.7 16 571.7		8-SS	12	-	-	21	
17 570.7 18 569.7		9-SS	12	2.5	3.1	21	⊥
19 568.7 **20 567.7**		10-SS	12	3.25	2.8	22	
	END OF BORING @ 20± FEET						

FIELD OBSERVATIONS

Water Level $_{\text{during drilling}}$: Not Encountered ⩒
Water Level $_{\text{upon completion}}$: Not Present ▼
Caved at $_{\text{upon completion}}$: 17± feet below existing grade (EL. 570.7±) ⊥
Delay Time: N/A
Water Level $_{\text{delayed}}$: N/A ¥
Caved at $_{\text{delayed}}$: N/A

ADDITIONAL COMMENTS:

Note: Lines of stratification represent an approximate boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

SOIL BORING LOG: B - 2A

Project: Front Street Stormwater Pond
Project No.: 00941315

Location: Front Street (Franklin Street to Fulton Street)
De Pere, Wisconsin
Drill Date: January 6, 2020
Drilled By: GW/KH

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 587.7	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 586.7	0-8": Very dark brown Clayey SILT, with trace root matter, moist (TOPSOIL)			-	-	24	
2 585.7	Light reddish brown Silty CLAY, moist	1-SS	6	4.5+	-	24	
3 584.7	Light reddish brown CLAY, moist	2-SS	6	3.0	2.6	25	
4 583.7							
5 582.7	Reddish brown CLAY, with silt seams, moist	3-SS	9	2.75	3.0	22	
6 581.7							
7 580.7	Reddish brown CLAY, with trace sand, moist	4-SS	10	4.0	3.9	19	
8 579.7							
9 578.7		5-SS	9	3.0	2.6	20	
10 577.7							
11 576.7		6-SS	12	4.5+	3.6	20	
12 575.7							
13 574.7	Dark reddish gray CLAY, with trace sand and gravel, moist	7-SS	10	2.0	2.6	22	
14 573.7							
15 572.7		8-SS	12	-	-	21	
16 571.7							
17 570.7		9-SS	12	2.5	3.1	21	⊥
18 569.7							
19 568.7		10-SS	12	3.25	2.8	22	
20 567.7							
	END OF BORING @ 20± FEET						

FIELD OBSERVATIONS

Water Level $_{\text{during drilling}}$: Not Encountered ▽
Water Level $_{\text{upon completion}}$: Not Present ▼
Caved at $_{\text{upon completion}}$: 17± feet below existing grade (EL. 570.7±) ⊥
Delay Time: N/A
Water Level $_{\text{delayed}}$: N/A ¥
Caved at $_{\text{delayed}}$: N/A

ADDITIONAL COMMENTS:

Note: Lines of stratification represent an approximate boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

Professional Service Industries, Inc.
3009 Vandenbroek Road
Kaukauna, WI 54130

Phone: (920) 735-1200
Fax: (920) 735-1840

Report No: MAT:00941315-1-S1
Issue No: 1

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Material Test Report

Client: CITY OF DE PERE
925 SOUTH 6TH STREET
DE PERE, WI 54115

CC:

Project: FRONT STREET STORMWATER MANAGE
DE PERE, WI

Approved Signatory: Patrick Bray (Branch Manager)
Date of Issue: 1/22/2021

Sample Details

Sample ID:	00941315-1-S1
Client Sample ID:	
Date Sampled:	01/21/21
Sampled By:	Zachary Ashauer
Specification:	Standard Sieve
Supplier:	
Source:	Soil Boring
Material:	Light reddish brown CLAY
Sampling Method:	Split Spoon
Soil Description:	USCS:CL AASHTO:A-6
General Location:	B-1 2-6'

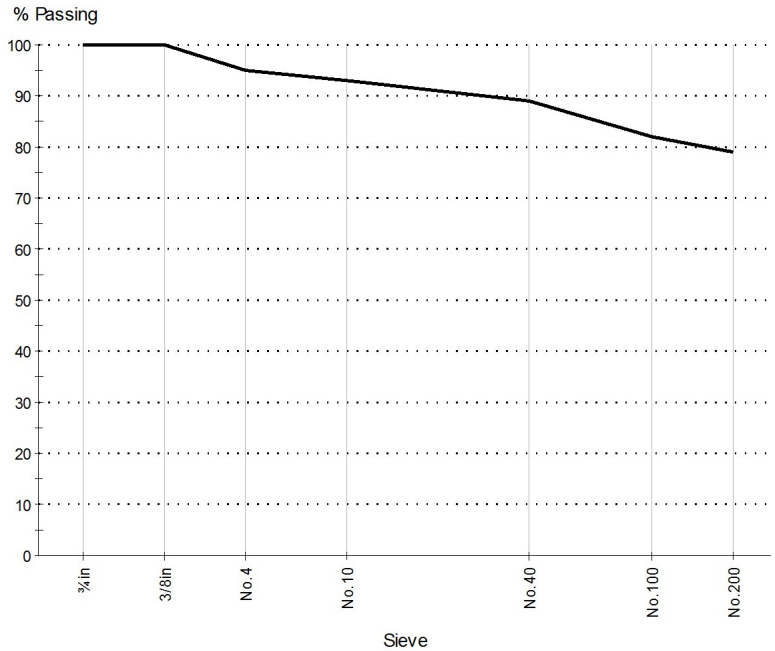
Sample Description:

USCS:CL AASHTO:A-6

Atterberg Limit:

Liquid Limit:	38
Plastic Limit:	18
Plasticity Index:	20

Particle Size Distribution



Grading: ASTM C 136

Date Tested: 1/21/2021
Tested By: Zachary Ashauer

Sieve Size	% Passing	Limits
¾in (19.0mm)	100	
3/8in (9.5mm)	100	
No.4 (4.75mm)	95	
No.10 (2.0mm)	93	
No.40 (425µm)	89	
No.100 (150µm)	82	
No.200 (75µm)	79	

COBBLES	GRAVEL		SAND			FINES (79.3%)	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
(0.0%)	(0.0%)	(4.6%)	(2.3%)	(4.3%)	(9.5%)		

D85: 0.2344 **D60:** N/A **D50:** N/A
D30: N/A **D15:** N/A **D10:** N/A

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Professional Service Industries, Inc.
3009 Vandenbroek Road
Kaukauna, WI 54130

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Report No: MAT:00941315-1-S1
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Material Test Report

Client: CITY OF DE PERE
925 SOUTH 6TH STREET
DE PERE, WI 54115

CC:

Project: FRONT STREET STORMWATER MANAGE
DE PERE, WI

Approved Signatory: Patrick Bray (Branch Manager)
Date of Issue: 1/22/2021

Sample Details

Sample ID:	00941315-1-S1
Client Sample ID:	
Date Sampled:	01/21/21
Sampled By:	Zachary Ashauer
Specification:	Standard Sieve
Supplier:	
Source:	Soil Boring
Material:	Light reddish brown CLAY
Sampling Method:	Split Spoon
Soil Description:	USCS:CL AASHTO:A-6
General Location:	B-1 2-6'

Other Test Results

Description	Method	Result	Limits
Approximate maximum grain size	ASTM D 4318		
Material retained on 425µm (No. 40) (%)		11.2	
Method of Removal			
Grooving Tool Type		Plastic	
Specimen preparation method		Dry	
Drying Method		Air	
Special selection process			
Rolling Method for PL		Hand	
As Received Water Content (%)			
Liquid Limit Device Type			
Liquid Limit		38	
Plastic Limit		18	
Plasticity Index		20	
Liquid Limit Procedure		One-point (B)	
Tested By		Zachary Ashauer	
Date Tested		1/21/2021	

Comments

N/A

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Professional Service Industries, Inc.
3009 Vandenbroek Road
Kaukauna, WI 54130

Phone: (920) 735-1200
Fax: (920) 735-1840

Report No: MAT:00941315-1-S2
Issue No: 1

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Material Test Report

Client: CITY OF DE PERE
925 SOUTH 6TH STREET
DE PERE, WI 54115

CC:

Project: FRONT STREET STORMWATER MANAGE
DE PERE, WI

Approved Signatory: Patrick Bray (Branch Manager)
Date of Issue: 1/22/2021

Sample Details

Sample ID:	00941315-1-S2
Client Sample ID:	
Date Sampled:	
Sampled By:	Zachary Ashauer
Specification:	Standard Sieve
Supplier:	
Source:	Soil Boring
Material:	Reddish brown CLAY
Sampling Method:	Split Spoon
Soil Description:	USCS:CL AASHTO:A-6
General Location:	B-2 6-10'

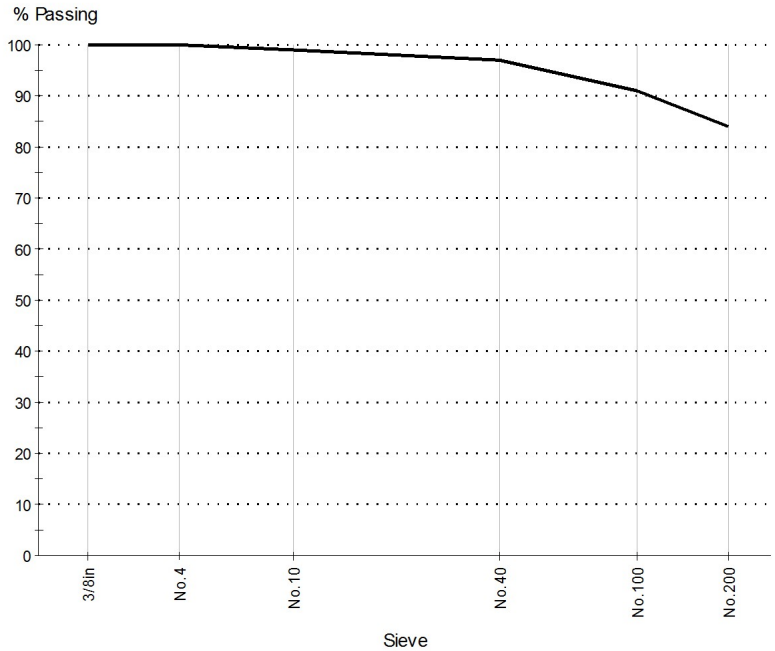
Sample Description:

USCS:CL AASHTO:A-6

Atterberg Limit:

Liquid Limit:	37
Plastic Limit:	17
Plasticity Index:	20

Particle Size Distribution



Grading: ASTM C 136

Date Tested: 1/21/2021
Tested By: Zachary Ashauer

Sieve Size	% Passing	Limits
3/8in (9.5mm)	100	
No.4 (4.75mm)	100	
No.10 (2.0mm)	99	
No.40 (425µm)	97	
No.100 (150µm)	91	
No.200 (75µm)	84	

COBBLES	GRAVEL		SAND			FINES (84.4%)	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
(0.0%)	(0.0%)	(0.4%)	(0.6%)	(1.5%)	(13.0%)		

D85: 0.0828 **D60:** N/A **D50:** N/A
D30: N/A **D15:** N/A **D10:** N/A

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3009 Vandenbroek Road
Kaukauna, WI 54130

Phone: (920) 735-1200
Fax: (920) 735-1840

Report No: MAT:00941315-1-S2
Issue No: 1

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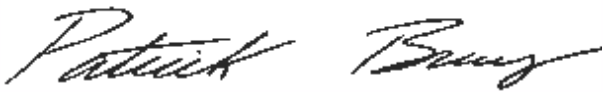
Material Test Report

Client: CITY OF DE PERE
925 SOUTH 6TH STREET
DE PERE, WI 54115

CC:

Project: FRONT STREET STORMWATER MANAGE
DE PERE, WI



Approved Signatory: Patrick Bray (Branch Manager)
Date of Issue: 1/22/2021

Sample Details

Sample ID: 00941315-1-S2
Client Sample ID:
Date Sampled:
Sampled By: Zachary Ashauer
Specification: Standard Sieve
Supplier:
Source: Soil Boring
Material: Reddish brown CLAY
Sampling Method: Split Spoon
Soil Description: USCS:CL AASHTO:A-6
General Location: B-2 6-10'

Other Test Results

Description	Method	Result	Limits
Approximate maximum grain size	ASTM D 4318		
Material retained on 425µm (No. 40) (%)		2.5	
Method of Removal			
Grooving Tool Type		Plastic	
Specimen preparation method		Dry	
Drying Method		Air	
Special selection process			
Rolling Method for PL		Hand	
As Received Water Content (%)			
Liquid Limit Device Type		Manual	
Liquid Limit		37	
Plastic Limit		17	
Plasticity Index		20	
Liquid Limit Procedure		One-point (B)	
Tested By		Zachary Ashauer	
Date Tested		1/21/2021	

Comments

N/A

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Wis. Dept. of Safety and Professional Services
Division of Safety and Buildings

SOIL EVALUATION - STORM

in accordance with SPS 382.365 and 385, Wis. Adm. Code

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale, or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04 (1) (m)).

County	Parcel I.D.	Reviewed by	Date
Brown	ED-372		

Property Owner	Property Location
City of De Pere	Govt. Lot S T N R E

Property Owner's Mailing Address	Lot #	Block #	Subd. Name or CSM#
335 South Broadway		1 and 2	

City	State	Zip Code	Phone Number	[X] City [ ] Village [ ] Town	Nearest Road
De Pere	WI	54115		De Pere	Front Street

Drainage area _____ [ ] sq. ft. [ ] acres

Optional:

Test Site Suitable for (check all that apply)

[ ] Irrigation [ ] Bioretention trench [ ] Trench(es)

[ ] Rain Garden [ ] Grassed swale [ ] Reuse

[ ] Infiltration Trench [ ] SDS (> 15' wide) [ ] Other _____

Hydraulic Application Test Method:

[X] Morphological Evaluation

[ ] Double-Ring Infiltrometer

[ ] Other (specify) _____

B-1 Obs. # [X] Boring [ ] Pit Ground surface elev. 588.3 ft. Depth to limiting factor 24* in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Roots Qu. Sz.	%Rock Frag.	Hydraulic App. Rate Inches/Hr
	0-10	10YR 2/2	TOPSOIL	sicl	2,sbk,vf	mlo	3,vf	<15	0.04
	10-24	5YR 4/4	-	c	1,sbk,vf	mvfi	-	<15	0.07
	24-72	5YR 4/4	f,1,P GLEY1 6/10Y	c	1,sbk,vf	mvfi	-	<15	0.07
	72-144	5YR 4/3	-	c	0,m	mvfi	-	<15	0.07
	144-240	5YR 4/2	-	c	0,m	mfr	-	<15	0.07

*Water was not encountered during drilling or upon completion.

B-2 Obs. # [X] Boring [ ] Pit Ground surface elev. 587.7 ft. Depth to limiting factor 24* in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Roots Qu. Sz.	%Rock Frag.	Hydraulic App. Rate Inches/Hr
	0-8	10YR 2/2	TOPSOIL	sicl	2,sbk,vf	mvfr	3,vf	<15	0.04
	8-24	5YR 5/3	-	sic	2,sbk,vf	mvfi	1,vf	<15	0.07
	24-48	5YR 4/4	f,1,P GLEY1 6/10Y	c	2,pl,f	mvfi	-	<15	0.07
	48-72	5YR 4/3	-	c	2,sbk,vf	mvfi	-	<15	0.07
	72-144	5YR 4/3	-	c	0,m	mvfi	-	<15	0.07
	144-240	5YR 4/2	-	c	0,m	mfi	-	<15	0.07

*Water was not encountered during drilling or upon completion.

CST/PSS Name (Please Print)	Signature	CST/PSS Number
Zachary Ashauer		SP-111802007
Address	**Date Evaluation Conducted**	**Telephone Number**
3009 Vandenbroek Road Kaukauna, WI 54130	1/6/2021	920-735-1200

GENERAL NOTES

SAMPLE IDENTIFICATION

1. Information on each log is a compilation of subsurface conditions, based on visual soil classifications of soil samples obtained from the field as assigned by a soils engineer, as well as from laboratory testing of samples, if performed. The strata lines on the logs may be approximate or the transition between the strata may be gradual rather than distinct. Water level measurements refer only to those observed at the times and locations indicated, and may vary with time, geologic condition and construction activity.
2. Unified Soil Classification System (USCS) designations are based on visual soil classification estimates on the basis of textural and particle size categorization and various soil behavior characteristics. If laboratory tests were performed to classify the soil, the USCS designation is shown in parenthesis.

USCS SOIL PARTICLE SIZE CLASSES

U.S. Std. Sieve			#200	#40	#10	#4	¾"	3"	12"	
Soil Type	Clay	Silt	Sand			Gravel		Cobbles	Boulders	
			Fine	Medium	Coarse	Fine	Coarse			
Millimeters	0.002	0.074	0.42	2	4.8	19	76	300		

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487-00)

Criteria for assigning group symbols and group names using laboratory tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve)	Gravels (More than 50% of coarse fraction retained on No. 4 sieve)	Clean gravels w/ < 5% fines [E]	Cu ≥ 4 and 1 ≤ Cc ≤ 3 [C]	GW	Well-graded gravel [D]
			Cu < 4 and/or1 > Cc > 3 [C]	GP	Poorly graded gravel [D]
		Gravels w/ > 12% fines [E]	Fines classify as ML or MH	GM	Silty gravel [D,F,G]
			Fines classify as CL or CH	GC	Clayey gravel [D,F,G]
	Sands (More than 50% of coarse fraction passes the No. 4 sieve)	Clean sands w/ < 5% fines [I]	Cu ≥ 6 and 1 ≤ Cc ≤ 3 [C]	SW	Well-graded sand [H]
			Cu < 6 and/or 1 > Cc > 3 [C]	SP	Poorly graded sand [H]
		Sands w/ > 12% fines [I]	Fines classify as ML or MH	SM	Silty sand [F,G,H]
			Fines classify as CL or CH	SC	Clayey sand [F,G,H]
FINE-GRAINED SOILS (More than 50% passes the No. 200 sieve)	Silts and clays w/ liquid limit (LL) < 50	Inorganic	PI > 7 and plots on or above "A" line [J]	CL	Lean clay [K,L,M]
			PI < 4 and plots below "A" line [J]	ML	Silt [K,L,M]
		Organic	LL (Oven dried) / LL (Not dried) < 0.75	OL	Organic clay [K,L,M,N]
				OL	Organic silt [K,L,M,O]
	Silts and clays w/ liquid limit (LL) ≥ 50	Inorganic	PI plots on or above "A" line	CH	Fat clay [K,L,M]
			PI plots below "A" line	MH	Elastic silt [K,L,M]
		Organic	LL (Oven dried) / LL (Not dried) < 0.75	OH	Organic clay [K,L,M,P]
				OH	Organic silt [K,L,M,Q]
HIGHLY ORGANIC SOILS		Primarily organic matter, dark in color, and organic odor		PT	Peat

[A] Based on the material passing the 3-inch (75 mm) sieve
[B] If field sample contained cobbles or boulders, or both, add " with cobbles or boulders, or both" to group name
[C] $Cu = D_{60}/D_{10}$; $Cc = (D_{30})^2 / D_{10} \times D_{60}$
[D] If soil contains ≥ 15% sand, add "with sand" to group name
[E] Gravels with 5 to 12% fines require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
[F] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM
[G] If fines are organic, add "with organic fines" to group name
[H] If soil contains ≥ 15% gravel, add "with gravel" to group name
[I] Sands with 5 - 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay
[J] If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay
[K] If soil contains 15 - 29% plus No. 200, add "with sand" or "with gravel"
[L] If soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name
[N] PI ≥ 4 and plots on or above "A" line
[O] PI < 4 or plots below "A" line
[P] PI plots on or above "A" line
[Q] PI below "A" line

RELATIVE SOIL COMPOSITION

Trace - 0 - 15% of sample
With - 15 - 35% of sample
Soil modifier - > 35% of sample (i.e. sandy, silty, clayey, gravelly)

DRILLING & SAMPLING SYMBOLS

AU - Auger sample from cuttings
BS - Bag sample
HA - Hand auger sample
SS - Split spoon sample (2" O.D. by 1⅜" I.D.)
ST - Shelby Tube sample (2" or 3" O.D.)
WS - Wash sample from wash water return

SOIL PROPERTY SYMBOLS

N - N-value (blow count) is the standard penetration resistance based on the total number of blows required to advance a split spoon sampler one (1) foot, using a 140 lb. hammer with a 30 inch free fall. To avoid damage to sampling tools, driving is typically limited to 50 blows during any 6 inch interval. Additional description is provided below:

N-value (bpf)	Description
HW	Sampler penetrated soil under weight of hammer and rods; no driving required
25	25 blows to advance sampler 12 inches after initial 6 inches of seating
75/10"	75 blows to advance sampler 10 inches after initial 6 inches of seating
50/S3"	50 blows to advance sampler 3 inches during initial 6 inch seating interval

MC - Moisture content, %
Qu - Unconfined compressive strength, tons per square foot (tsf)
Qp - Calibrated hand penetrometer resistance, tsf
γd - Dry density, pounds per cubic foot (pcf)
LL - Liquid limit, % (ASTM D4318)
PL - Plastic limit, % (ASTM D4318)
PI - Plasticity index, % (ASTM D4318)
%P200 - Percent of sample passing the No. 200 sieve
RQD - Rock quality designation of NX-size core sample
RMR - Rock mass rating, as developed by Z.T. Bieniawski
PID - Photoionization detector (Hnu meter) volatile vapor level, ppm

SOIL RELATIVE DENSITY & CONSISTENCY CLASSIFICATION

NON-COHESIVE SOILS		COHESIVE SOILS		
Density	N-Value Range	Consistency	Qu Range (tsf)	Approximate N-value Range
Very loose	0 - 3	Very soft	0 - 0.25	0 - 2
Loose	3 - 7	Soft	0.25 - 0.5	2 - 5
Medium dense	7 - 15	Medium stiff	0.5 - 1.0	5 - 10
Dense	15 - 38	Stiff	1.0 - 2.0	10 - 14
Very dense	38+	Very Stiff	2.0 - 4.0	14 - 32
		Hard	4.0+	32+

SOIL STRUCTURE TERMINOLOGY

Interlayered - Alternating layers of different soil types
Layer - Inclusion greater than 3 inches thick
Seam - Inclusion ⅛ to 3 inches thick
Laminated - Alternating seams of different soil type
Intermixed - Pockets of different soil types, no layering
Pocket - Inclusion of material of different texture
Varved - Alternating layers or seams of sand, silt, and/or clay

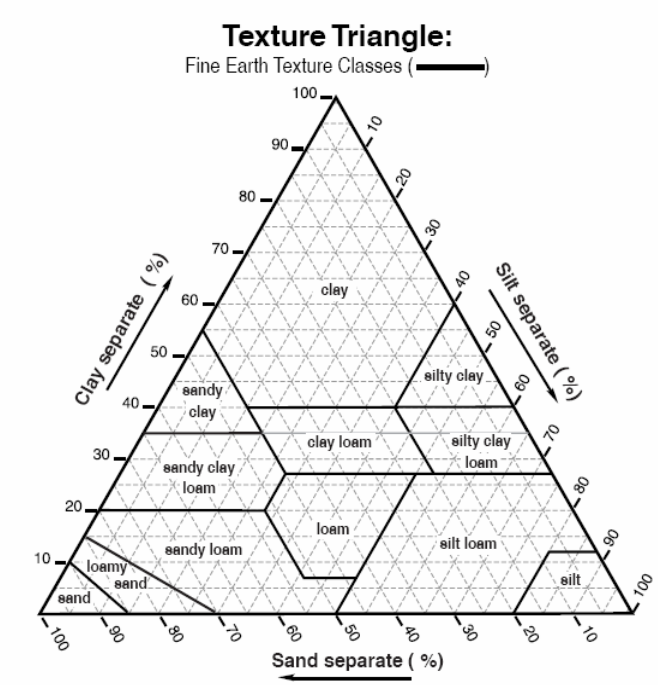
GROUNDWATER & MOISTURE CONDITIONS

v - Approximate groundwater level as noted during drilling and sampling
▼ - Groundwater level as noted within the open borehole upon removal of the augers
¥ - Delayed groundwater level within open borehole
Dry - Absence of moisture, dry to the touch
Moist - Damp, but no visible water
Wet - Visible free water, saturated, usually below water table

NOTE: General Notes have been adapted from and incorporate portions of ASTM D2487 "Classification of Soils for Engineering Purposes (Unified Soil Classification System)" and ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)."

Professional Service Industries, Inc.

USDA SOIL CLASSIFICATION SYSTEM*



NOTE: **Soil Texture** encompasses only the fine earth fraction (≤ 2 mm). **Particle Size Distribution** (PSD) encompasses the whole soil, including both the fine earth fraction (≤ 2 mm; weight %) and rock fragments (> 2 mm; volume %).

TEXTURE CLASS

Texture Class or Subclass	Code	
	Conv.	NASIS
Coarse Sand	cos	COS
Sand	s	S
Fine Sand	fs	FS
Very Fine Sand	vfs	VFS
Loamy Coarse Sand	lcos	LCOS
Loamy Sand	ls	LS
Loamy Fine Sand	lfs	LFS
Loamy Very Fine Sand	lvfs	LVFS
Coarse Sandy Loam	cosl	COSL
Sandy Loam	sl	SL
Fine Sandy Loam	fsl	FSL
Very Fine Sandy Loam	vfsl	VFSL
Loam	l	L
Silt Loam	sil	SIL
Silt	si	SI
Sandy Clay Loam	scl	SCL
Clay Loam	cl	CL
Silty Clay Loam	sicl	SICL
Sandy Clay	sc	SC
Silty Clay	sic	SIC
Clay	c	C

TEXTURE MODIFIERS - Conventions for using "Rock Fragment Texture Modifiers" and for using textural adjectives that convey the "% volume" ranges for **Rock Fragments - Size and Quantity**.

Fragment Content % By Volume	Rock Fragment Modifier Usage
< 15	No texture adjective is used (noun only; e.g., *loam*).
15 to < 35	Use adjective for appropriate size; e.g., *gravelly*.
35 to < 60	Use "very" with the appropriate size adjective; e.g., *very gravelly*.
60 to < 90	Use "extremely" with the appropriate size adjective; e.g., *extremely gravelly*.
≥ 90	No adjective or modifier. If ≤ 10% fine earth, use the appropriate noun for the dominant size class; e.g., *gravel*. Use **Terms in Lieu of Texture**.

TEXTURE MODIFIERS - *(adjectives)*

ROCK FRAGMENTS: Size & Quantity [1]	Code		Criteria: Percent (By Volume) of Total Rock Fragments and Dominated By (*name size*): [1]
	Conv.	PDP/ NASIS	
ROCK FRAGMENTS (> 2 mm; ≥ Strongly Cemented)			
Gravelly	GR	GR	≥ 15% but < 35% gravel
Fine Gravelly	FGR	GRF	≥15% but < 35% fine gravel
Medium Gravelly	MGR	GRM	≥15% but < 35% med. gravel
Coarse Gravelly	CGR	GRC	≥ 15% but < 35% coarse gravel
Very Gravelly	VGR	GRV	≥ 35% but < 60% gravel
Extremely Gravelly	XGR	GRX	≥ 60% but < 90% gravel
Cobbly	CB	CB	≥ 15% but < 35% cobbles
Very Cobbly	VCB	CBV	≥ 35% but < 60% cobbles
Extremely Cobbly	XCB	CBX	≥ 60% but < 90% cobbles
Stony	ST	ST	≥ 15% but < 35% stones
Very Stony	VST	STV	≥ 35% but < 60% stones
Extremely Stony	XST	STX	≥ 60% but < 90% stones
Bouldery	BY	BY	≥ 15% but < 35% boulders
Very Bouldery	VBY	BYV	≥ 35% but < 60% boulders
Extremely Bouldery	XBY	BYX	≥ 60% but < 90% boulders
Channery	CN	CN	≥ 15% but < 35% channers
Very Channery	VCN	CNV	≥ 35% but < 60% channers
Extremely Channery	XCN	CNX	≥ 60% but < 90% channers
Flaggy	FL	FL	≥ 15% but < 35% flagstones
Very Flaggy	VFL	FLV	≥ 35% but < 60% flagstones
Extremely Flaggy	XFL	FLX	≥ 60% but < 90% flagstones

* As outlined in the NRCS Field Book for Describing and Sampling Soils, Version 2.0 (2002).

PROJECT# 22-09
POND AND DRAINAGE SYSTEM CONSTRUCTION

CITY OF DE PERE

DE PERE

ENGINEER DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

SITE LOCATION MAP
N.T.S.

N

SHEET NO.	DESCRIPTION
G001	TITLE SHEET
G002	STANDARD ABBREVIATION & SYMBOLS
G003	EXISTING CONDITIONS SITE DEMOLITION PLAN
G004	TYPICAL SECTIONS
C101 – C102	FRONT/FRANKLIN/FULTON PLAN & PROFILE SHEETS
C301 – C305	CROSS SECTIONS
C401	BENCH MARKS & ALIGNMENT
C402	EROSION CONTROL
C403	SITE RESTORATION
C501 – C504	CONSTRUCTION DETAILS

CITY OF DE PERE
BOARD OF PUBLIC WORKS

DATE	SIGNATURE
4/21/2022	CITY ENGINEER
4/22/22	CITY ADMINISTRATOR
4/22/22	MAYOR

STAMPS:

WISCONSIN
ERIC P. RAKERS
E-30929
GREEN BAY, WI
PROFESSIONAL ENGINEER
4/21/2022

LIST OF STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC
AGGR	AGGREGATE
AH	AHEAD
ASPH	ASPHALT
B/B	BACK TO BACK
BARR	BARRICADE
BC	BACK OF CURB
BK	BACK
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BOW	BACK OF SIDEWALK
BSMT	BASEMENT
C	CUT
C&G	CURB AND GUTTER
C/C	CENTER TO CENTER
CABC	CRUSHED AGGREGATE BASE COURSE
CB	CATCH BASIN
CE	CONSTRUCTION ENTRANCE
CI	CAST IRON PIPE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CNTY	COUNTY
CO	CLEANOUT
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONSTR JT	CONSTRUCTION JOINT
CORP	CORPORATION
CP	CONTROL POINT
CTH	COUNTY TRUNK HIGHWAY
CTRL JT	CONTROL JOINT
CTV	CABLE TV
CY	CUBIC YARD
D	DEPTH
DIA	DIAMETER
DI	DUCTILE IRON PIPE
DISCH	DISCHARGE
DW	DRIVEWAY
E	EAST (SEE ELEC BELOW)
EA	EACH
EB	EASTBOUND
EBS	EXCAVATION BELOW SUBGRADE
ECS	EXTERNAL CHIMNEY SEAL
EL	ELEVATION
ELEC	ELECTRIC (E WHEN USED IN LINE STYLE)
EMB	EMBANKMENT
ENTR	ENTRANCE
EP	EDGE OF PAVEMENT
EW	ENDWALL
EXC	EXCAVATION
EXIST	EXISTING
F	FILL
F/F	FACE TO FACE
FDN	FOUNDATION
FE	FIELD ENTRANCE
FERT	FERTILIZER
FIN GR	FINISHED GRADE
FL	FLOWLINE
FO	FIBER OPTIC
FOW	FRONT OF SIDEWALK
FT	FOOT
FTG	FOOTING
G	GAS
GV	GAS VALVE
GW	GUY WIRE
HDPE	HIGH DENSITY POLYETHYLENE
HR	HANDICAP RAMP
HSE	HOUSE
HT	HEIGHT
HYD	HYDRANT
I	INTERSECTION ANGLE
ICS	INTERNAL CHIMNEY SEAL
ID	INSIDE DIAMETER
IN	INCH
INL	INLET
INTERS	INTERSECTION
INV	INVERT
IP	IRON PIPE OR PIN
JCT	JUNCTION
L	LENGTH (OF CURVE)
LC	LONG CHORD OF CURVE
LP	LIGHTPOLE
LS	LIFT STATION OR LUMP SUM
LT	LEFT
MAINT	MAINTENANCE
MATL	MATERIAL
MB	MAILBOX
MH	MANHOLE
MP	MARKER POST
N	NORTH
NB	NORTHBOUND
NC	NORMAL CROWN
NE	NORTHEAST
NO	NUMBER
NTS	NOT TO SCALE
NW	NORTHWEST
O	OIL
O&C	OIL AND CHIP
OBLIT	OBLITERATE
OD	OUTSIDE DIAMETER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PCC	PORTLAND CEMENT CONCRETE
PED	PEDESTAL
PLE	PERMANENT LIMITED EASEMENT
PVMT	PAVEMENT
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PJF	PRE-FORMED JOINT FILLER
PL	PROPERTY LINE
POC	POINT OF CURVE
POT	POINT ON TANGENT
PP	POLYETHYLENE
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSI	POUND PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
R	RANGE OR RADIUS
RCP	REINFORCED CONCRETE PIPE
REBAR	REINFORCEMENT BAR
REL	RELOCATE
REM	REMAINING
REQD	REQUIRED
RL	REFERENCE LINE
ROW	RIGHT OF WAY
RP	REFERENCE POINT
RR	RAILROAD
RT	RIGHT
RW	RETAINING WALL
S	SOUTH
SALV	SALVAGE
SAN	SANITARY
SB	SOUTHBOUND
SDWK	SIDEWALK
SE	SOUTHEAST
SF	SQUARE FEET
SHLDR	SHOULDER
SY	SQUARE YARD
SS	STORM SEWER
SSD	STOPPING SIGHT DISTANCE
ST	STREET
STA	STATION
STD	STANDARD
STH	STATE HIGHWAY TRUNK
STM	STORM
STP	SEWAGE TREATMENT PLANT
STRUCT	STRUCTURE OR STRUCTURAL
SW	SOUTHWEST
TAN	TANGENT
T	TOWN (T WHEN USED FOR TELEPHONE LINE)
TEL	TELEPHONE
TEMP	TEMPORARY
TLE	TEMPORARY LIMITED EASEMENT
TOC	TOP OF CURB
TOW	TOP OF WATER
TRANS	TRANSITION
TYP	TYPICAL
UG	UNDERGROUND
USH	US HIGHWAY
VC	VERTICAL CURVE
VERT	VERTICAL
VOL	VOLUME
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPRC	VERTICAL POINT OF REVERSE CURVE
VPT	VERTICAL POINT OF TANGENCY
W	WEST
WB	WESTBOUND
WM	WATERMAIN
WSO	WATER SHUTOFF VALVE
WTP	WATER TREATMENT PLANT
WV	WATER VALVE
WWTP	WASTE WATER TREATMENT PLANT
YD	YARD

MAPPING & TOPOGRAPHY SYMBOLOGY

DESCRIPTION	SYMBOL: EXISTING	SYMBOL: PROPOSED
BENCHMARK		
BUSH		
CATCH BASIN		
CABLE TV BOX	CTV	
CONTROL POINT		
ELECTRICAL BOX	E	
EROSION CONTROL – INELT		
FIELD INLET		
GAS VALVE	GV	
HEDGE		
HYDRANT		
IRON PIPE		
LIGHTPOLE		
MAILBOX	MB	
MANHOLE ELECTRIC	E	
MANHOLE SANITARY	SS	SS
MANHOLE STORM	ST	ST
MONTORING WELL	MW	
POWER POLE		
LIGHT POLE		
SIGN		
SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE		
SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE		(xx)
SOIL BORING		(B-#)
STUMP		
TELEPHONE MANHOLE	tel	
TELEPHONE PEDESTAL	TEL	
TREE		
WELL	W	
WATER SERVICE VALVE		
BUTTERFLY WATER VALVE		
WATER VALVE		

GENERAL CONSTRUCTION NOTES:

1. ALL ELEVATIONS ARE REFERENCED TO NAVD 88.
2. THE WORK UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE CITY OF DE PERE, CURRENT CONSTRUCTION SPECIFICATIONS AND THESE SPECIAL PROVISIONS AND PLANS, AND THE LATEST ADDITION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION SPECIFICATIONS, LATEST EDITION, WHERE REFERENCED IN THE CITY SPECIFICATIONS.
3. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND SHALL CONFIRM TO THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION CONTROL AND TECHNICAL STANDARDS.
4. EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF ALL UTILITIES. WHETHER SHOWN OR NOT, FROM THE OWNERS OF THE RESPECTIVE UTILITIES. ALL UTILITIES OWNERS SHALL BE NOTIFIED BY THE CONTRACTOR 72 HOURS PRIOR TO EXCAVATION.

MAPPING & TOPOGRAPHY SYMBOLOGY

DESCRIPTION	SYMBOL
PLAN	
EXISTING SANITARY SEWER LINE	(SIZE AND MATERIAL) — San
PROPOSED SANITARY SEWER LINE	100'–8" PVC SAN — San
EXISTING STORM SEWER LINE	(SIZE AND MATERIAL) — ST
PROPOSED STORM SEWER LINE	100'–8" PVC STM — ST
EXISTING WATER MAIN LINE	(SIZE AND MATERIAL) — W
PROPOSED WATER MAIN LINE	100'–8" PVC WM (TEE–BEND) — W
EXISTING ELECTRICAL LINE	E
EXISTING GAS MAIN LINE	G
EXISTING TELEPHONE LINE	T
EXISTING CABLE TV LINE	TV
EXISTING SANITARY LATERAL	San
EXISTING WATER SERVICE	W
RIGHT OF WAY	ROW
PROPERTY LINE	PL
EASEMENT	Esm — Esm
SILT FENCE EROSION CONTROL	
EXISTING FIBER OPTIC	FO
EXISTING MAJOR CONTOUR	615
EXISTING MINOR CONTOUR	612
PROPOSED MAJOR CONTOUR	615
PROPOSED MINOR CONTOUR	612
PROFILE	
EXISTING SANITARY SEWER LINE	(SIZE AND MATERIAL)
PROPOSED SANITARY SEWER LINE	100'–8" PVC SAN @ 0.40%
EXISTING STORM SEWER LINE	(SIZE AND MATERIAL)
PROPOSED STORM SEWER LINE	100'–8" PVC STM @ 1.0%
EXISTING WATER MAIN LINE	(SIZE AND MATERIAL)
PROPOSED WATER MAIN LINE	PROPOSE 8" PVC WM

PATCH SYMBOLS

ASPHALTIC CONCRETE PAVEMENT

CRUSHED AGGREGATE BASE COURSE

PORTLAND CEMENT CONCRETE

DE PERE

CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920–339–4060 FAX 920–339–4071

STANDARD ABBREVIATIONS AND SYMBOLS

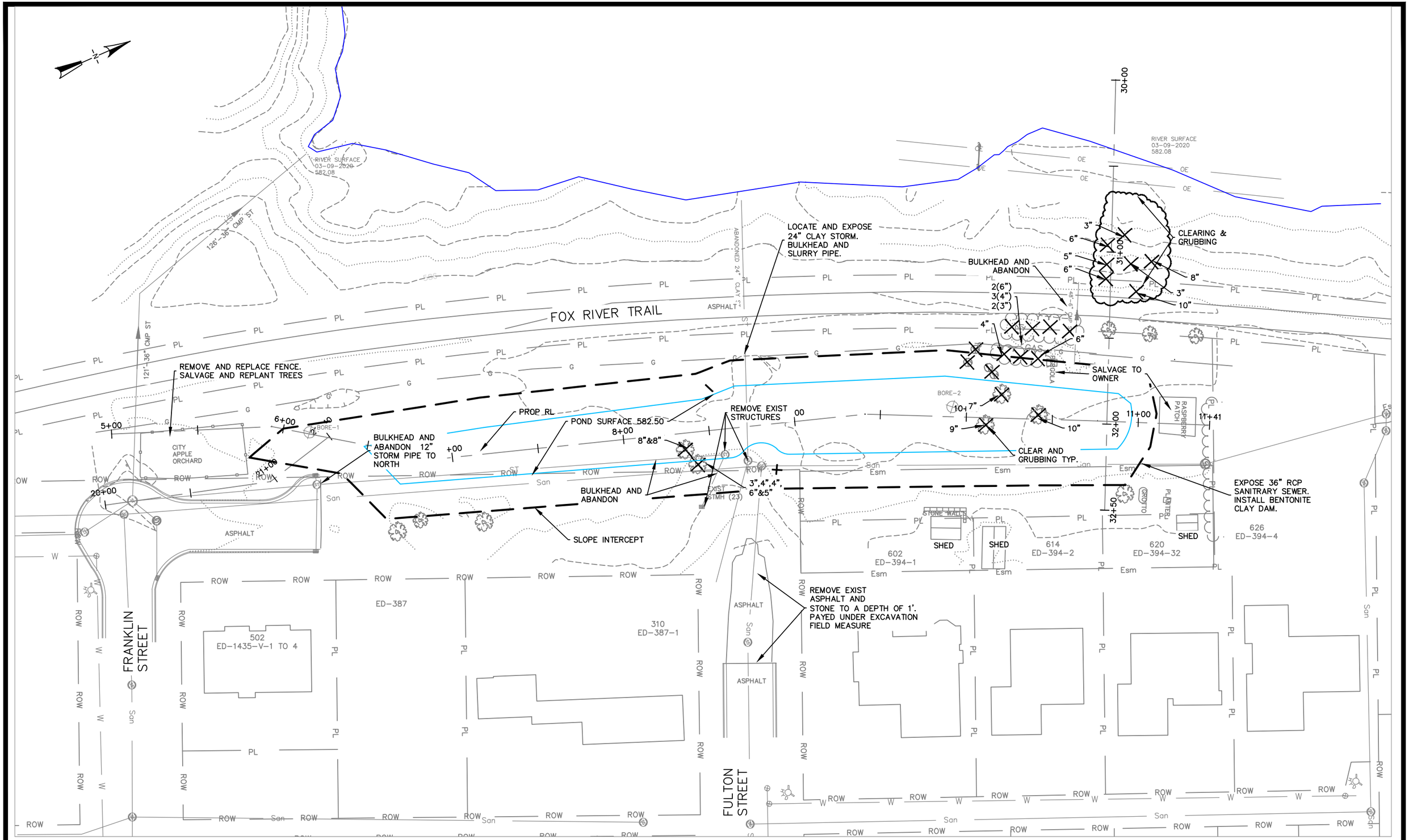
NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION

PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6–2021
DRAWN	BK	12–2021
DESIGNED		
CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. **G002**



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ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON STORMSEWER AND POND

EXISTING CONDITIONS & SITE DEMOLITION

NAME:
POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED	REL	01-2022
CHECKED	EPR	01-2022

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO.
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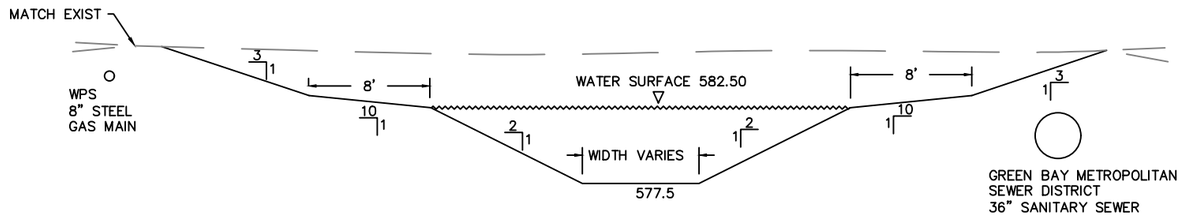

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OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON
STORM SEWER AND POND
TYPICAL SECTION

NAME:
POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

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SURVEYED	BK	6-2021
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CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO.
G004

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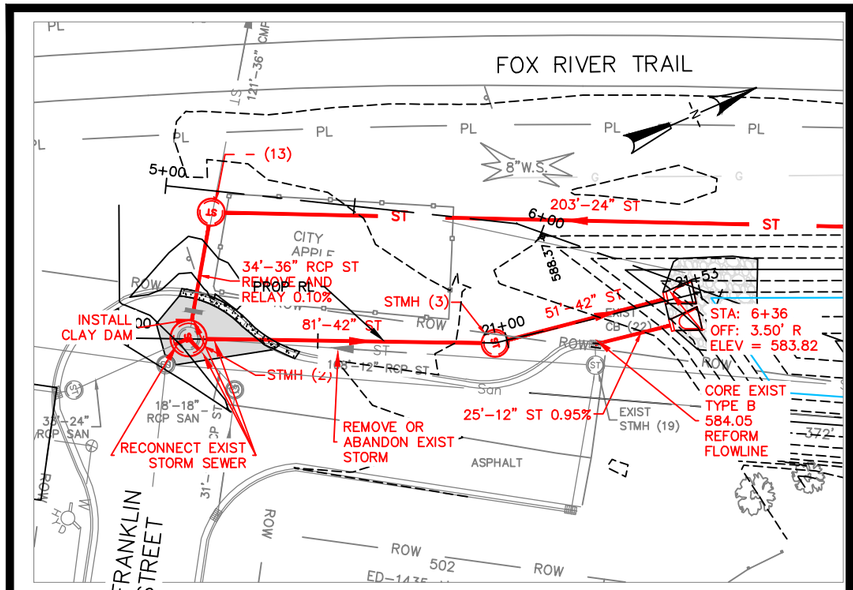

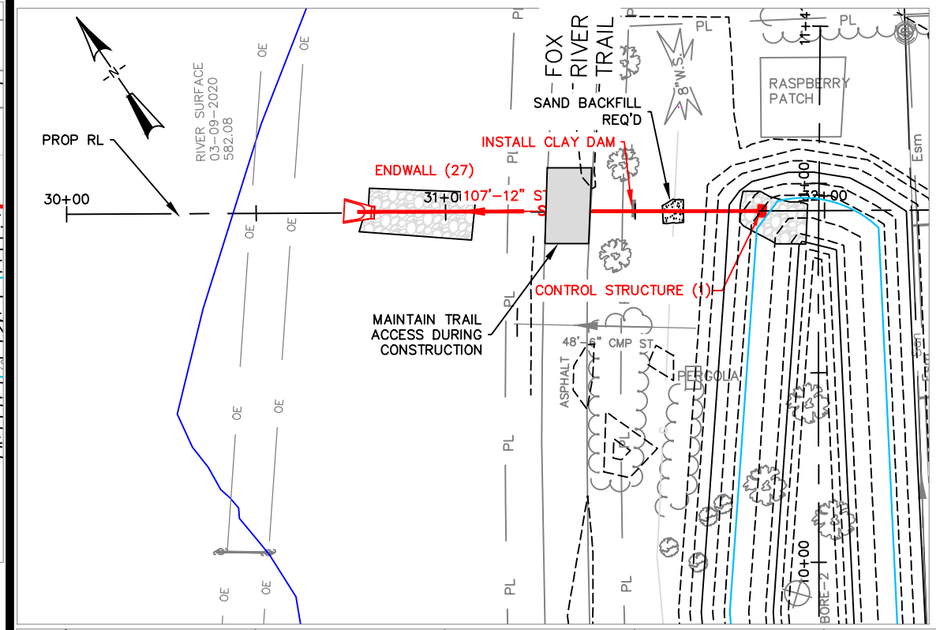

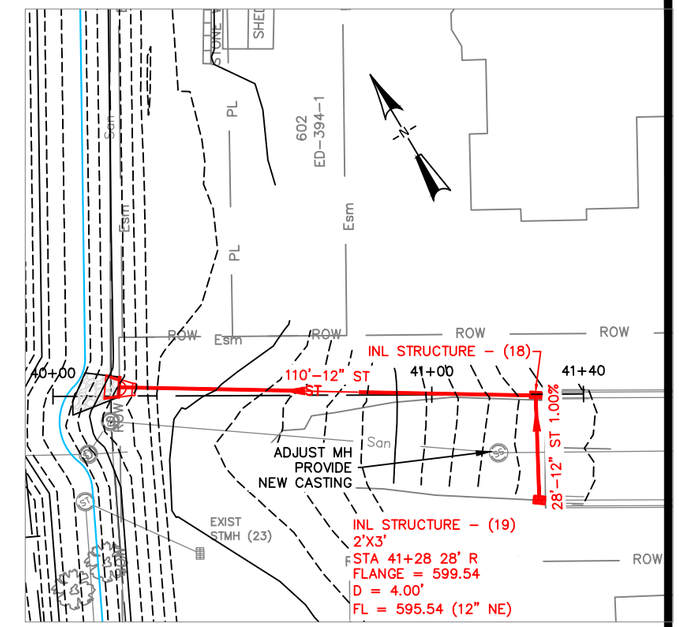

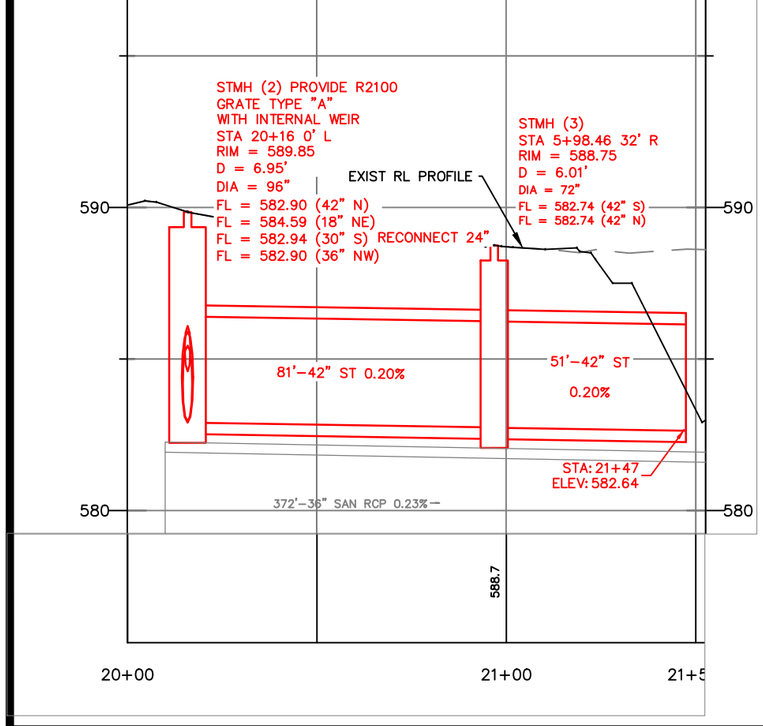

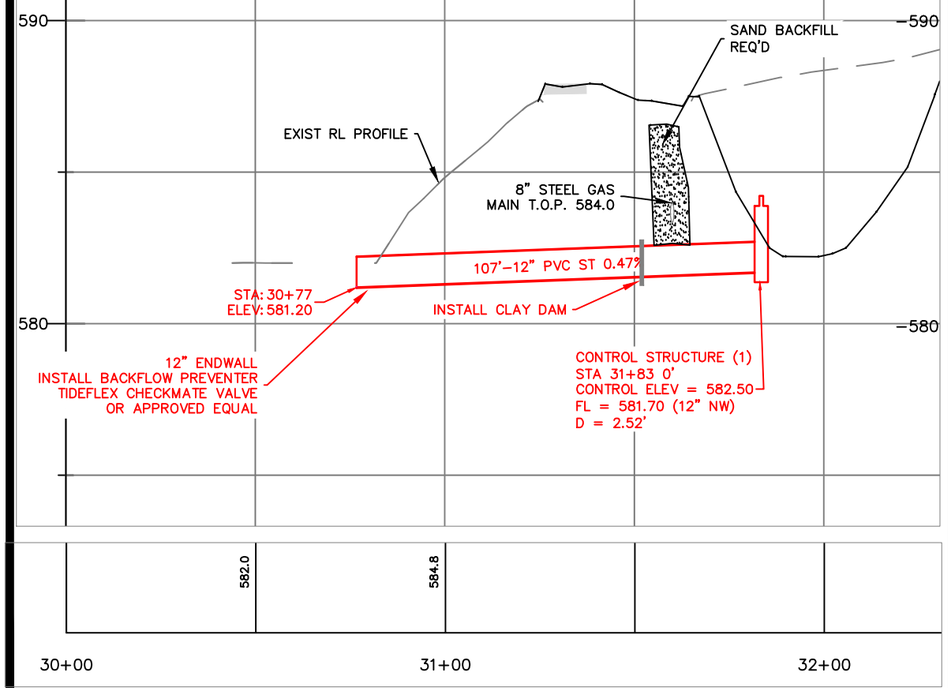

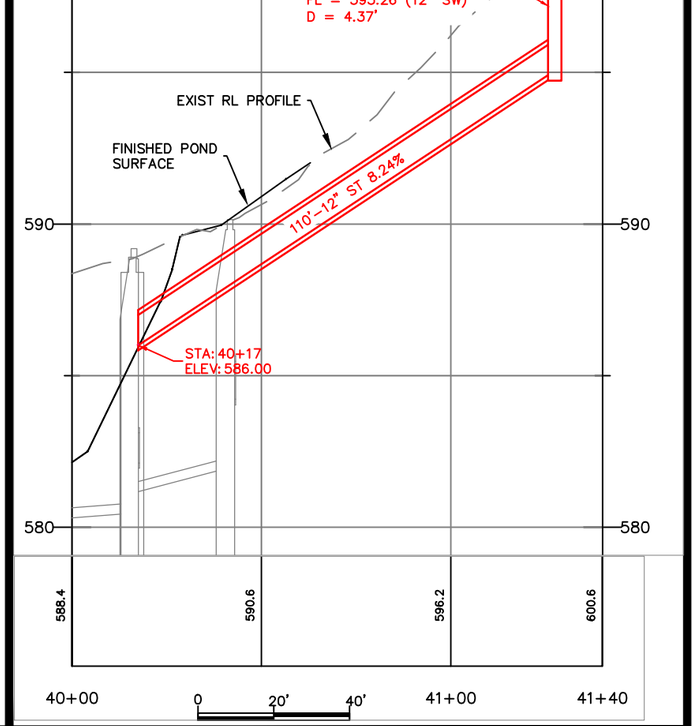

DE PERE

CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON
STORM SEWER AND POND

NAME:
POND AND DRAINAGE SYSTEM
CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED	REL	01-2022
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REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO.
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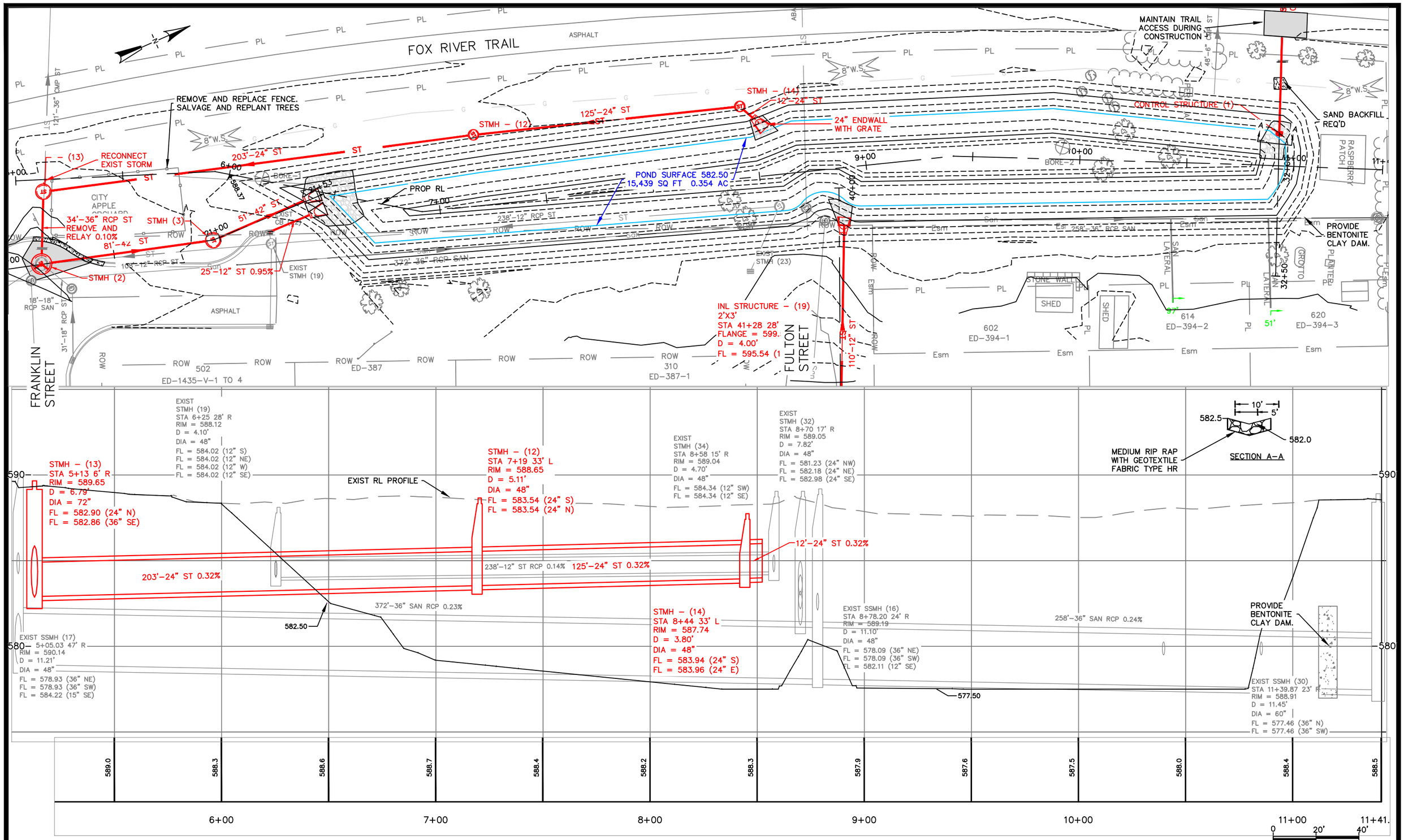

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CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920–339–4061 FAX 920–339–4071

FRONT / FRANKLIN / FULTON STORM SEWER AND POND

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22–09

	BY	DATE
SURVEYED	BK	6–2021
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REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

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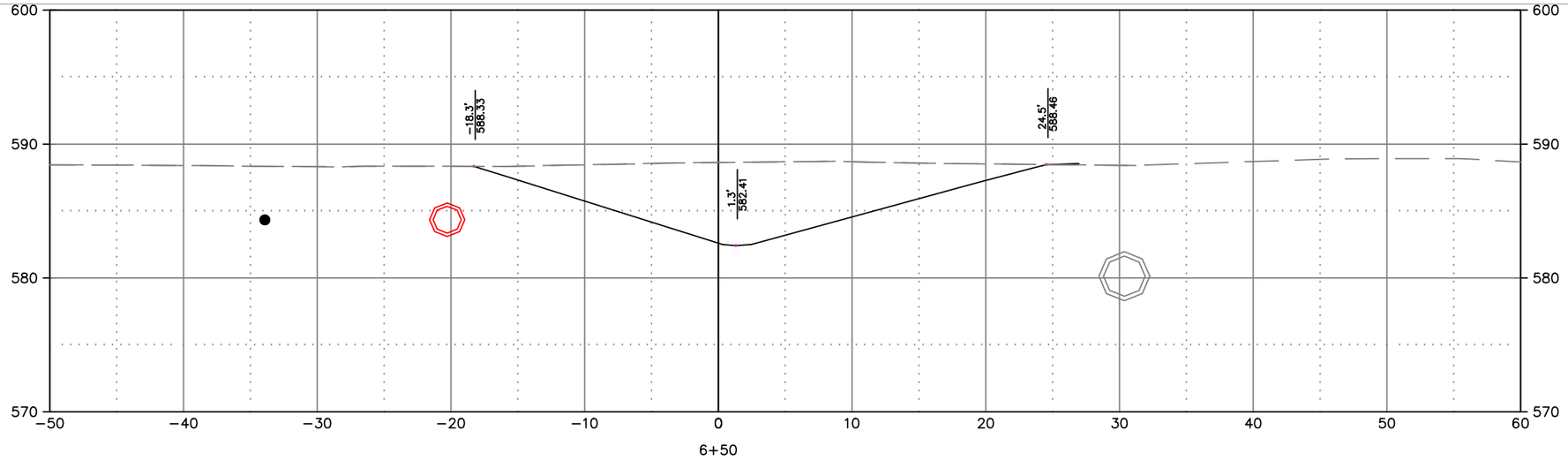

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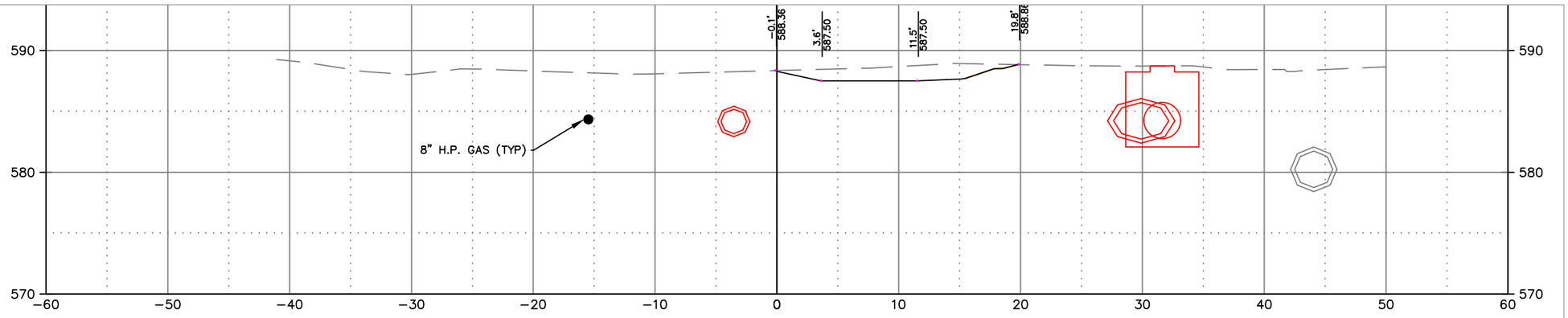

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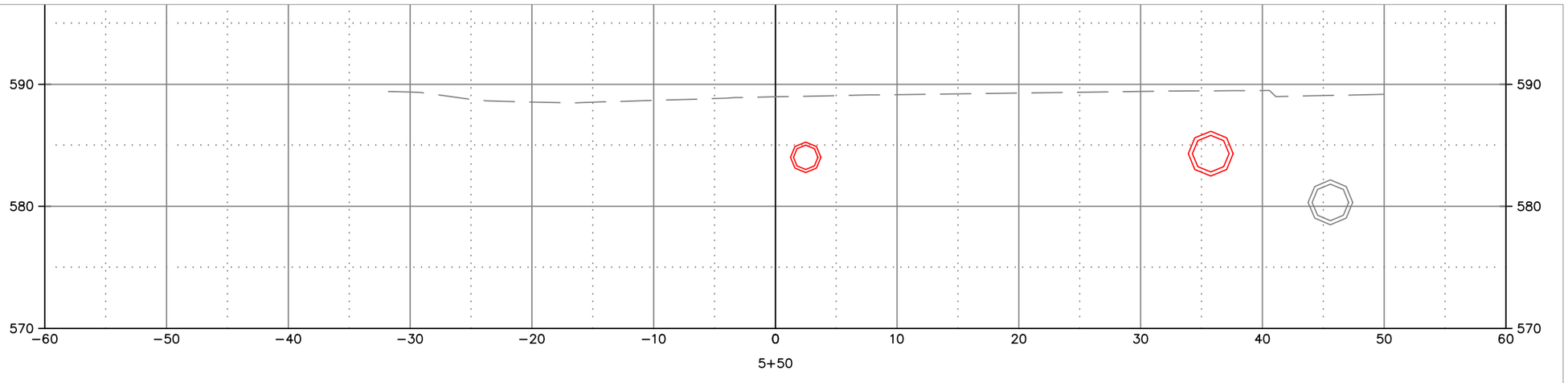

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DE PERE

CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON
STORM SEWER AND POND
CROSS SECTIONS

NAME:
POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED		
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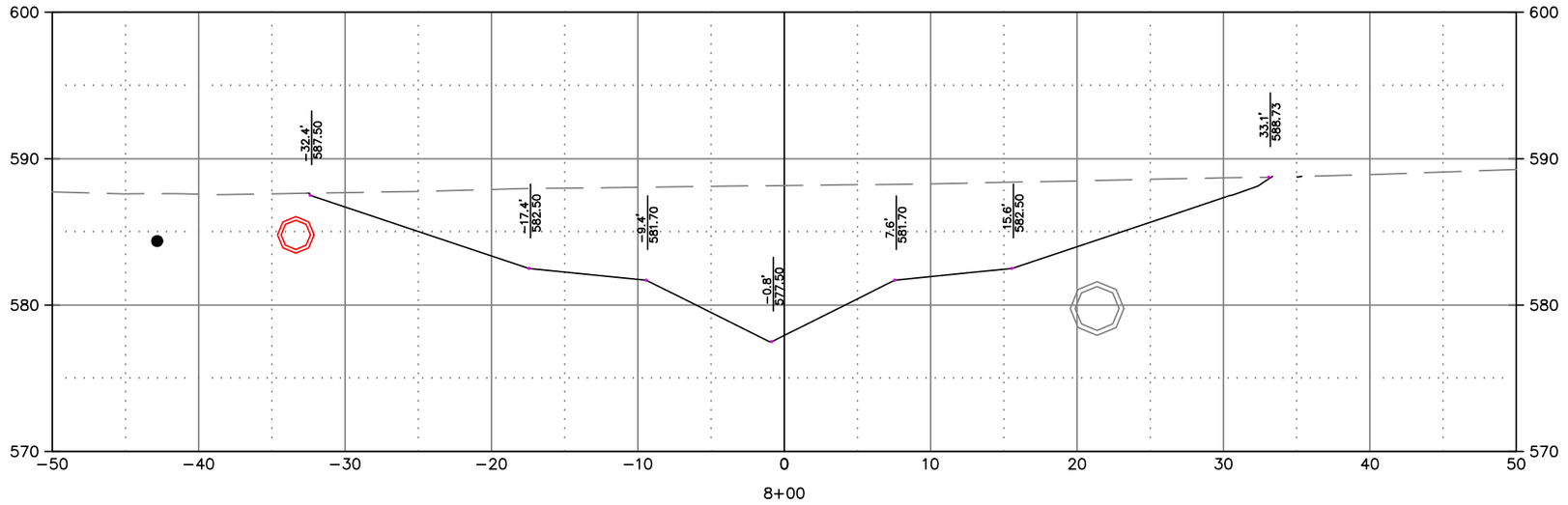
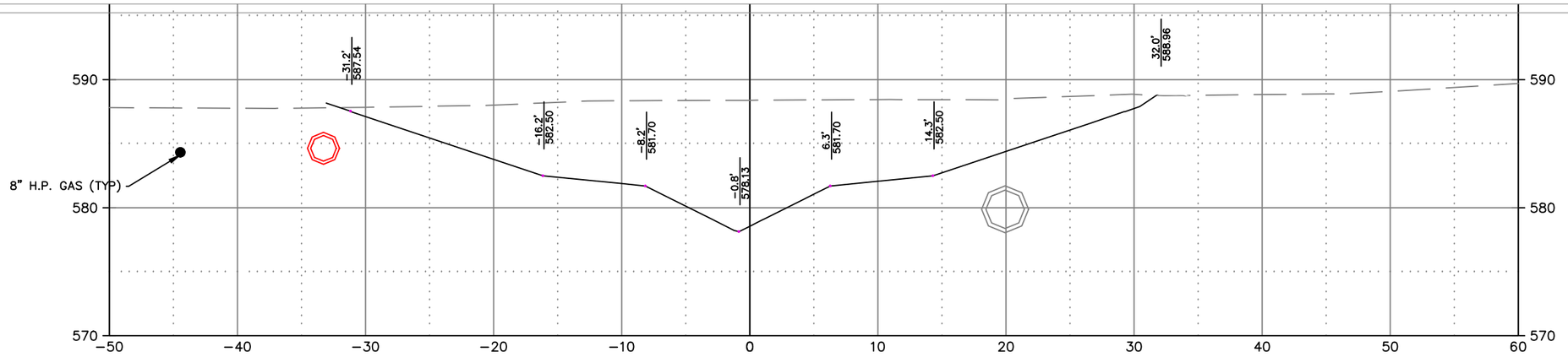
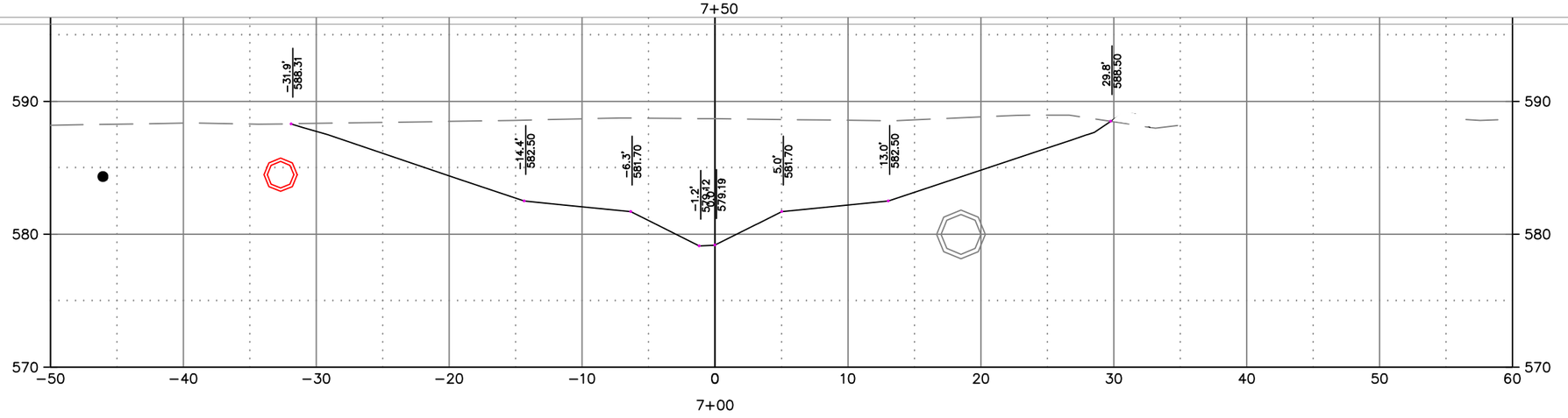
REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO.
C301







DE PERE	**CITY OF DE PERE** ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115 OFFICE 920-339-4061 FAX 920-339-4071	**FRONT / FRANKLIN / FULTON STORM SEWER AND POND** **CROSS SECTIONS**

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
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NO.	DATE	BY	REMARKS

PAGE NO. **C302**

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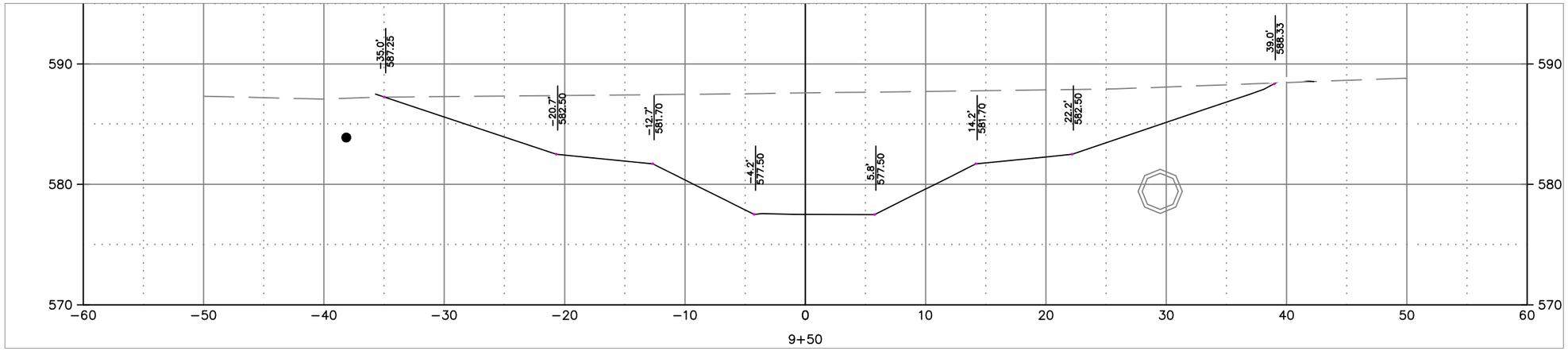

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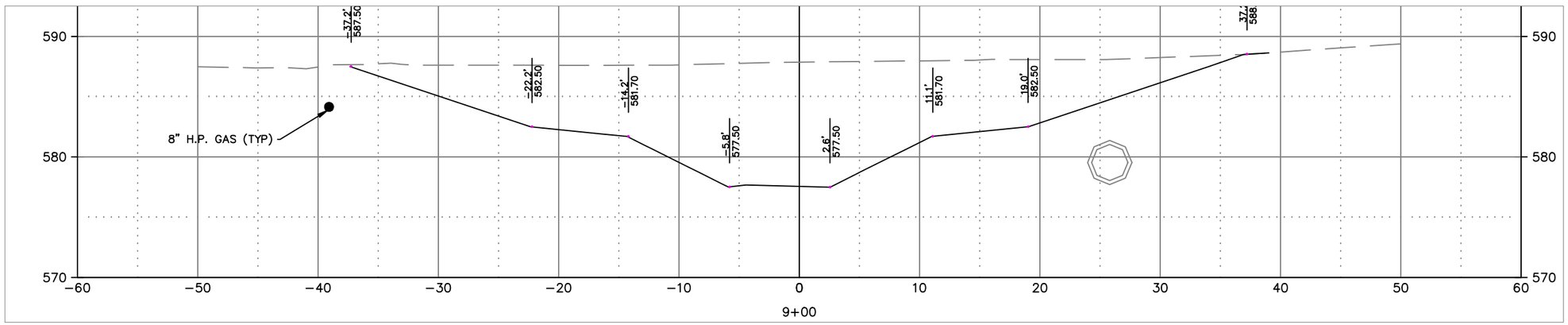

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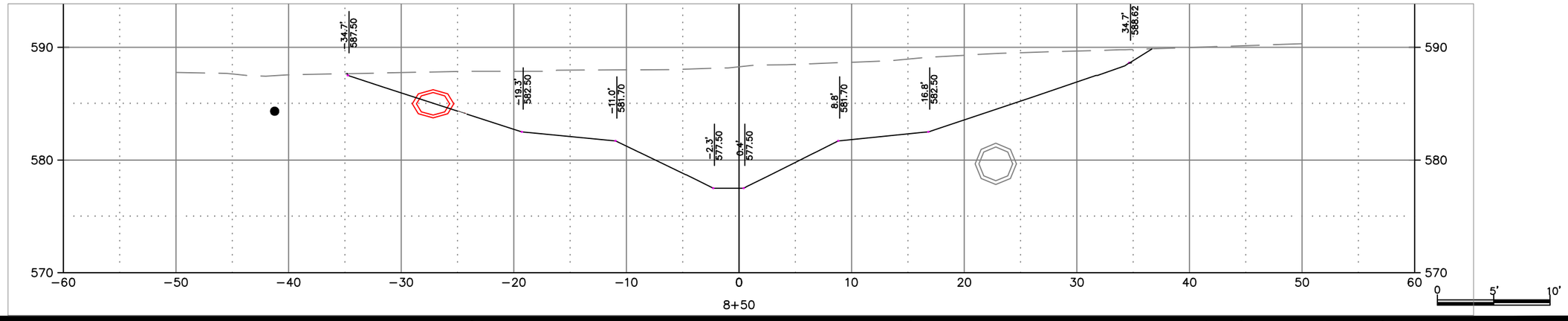

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CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON
STORM SEWER AND POND
CROSS SECTIONS

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED		
CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. **C303**

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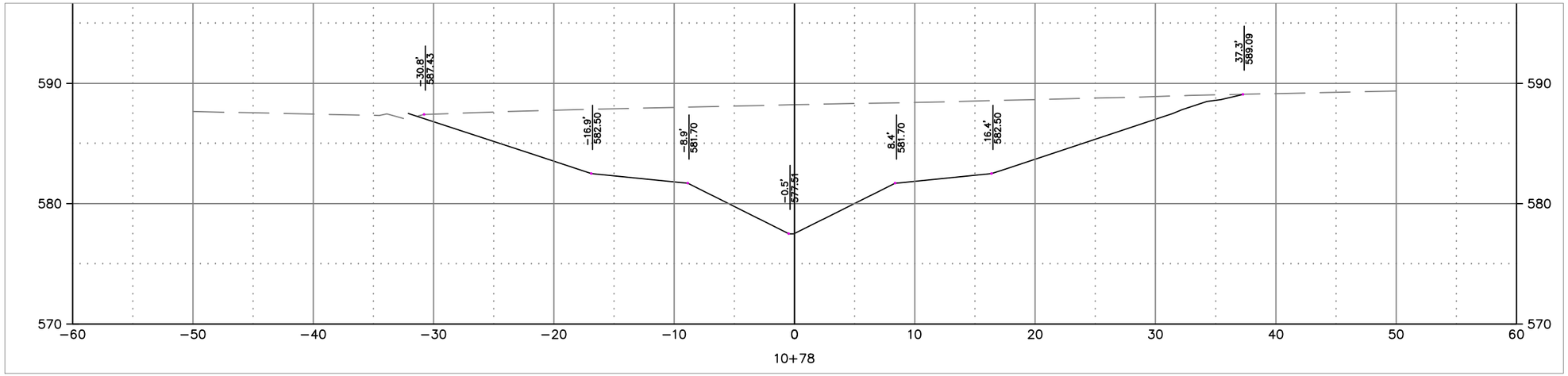

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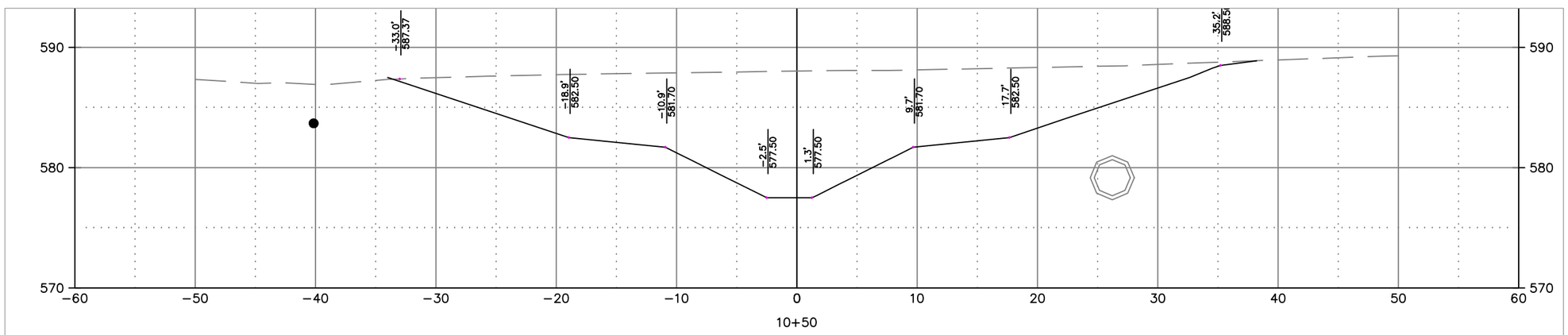

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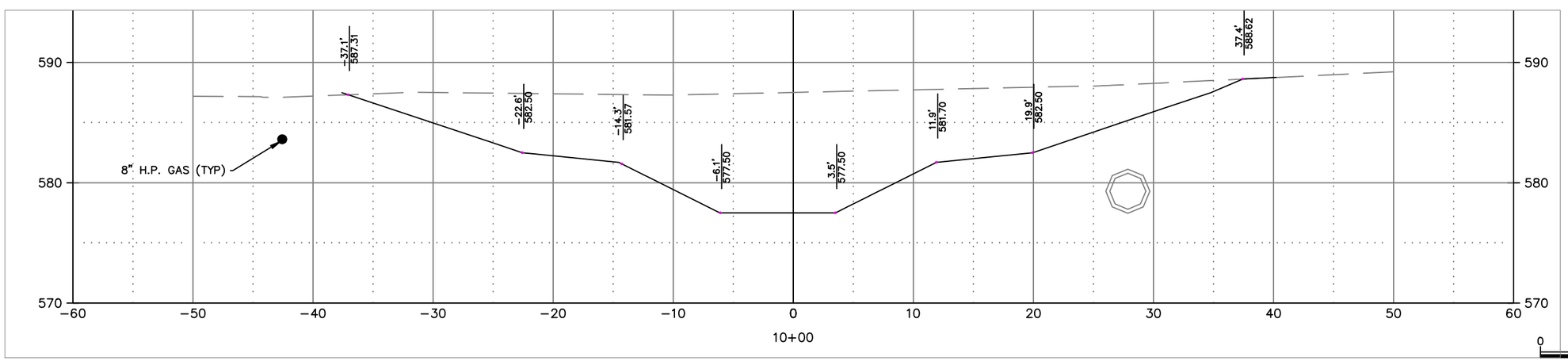

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OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON
STORM SEWER AND POND
CROSS SECTIONS

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED		
CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. **C304**

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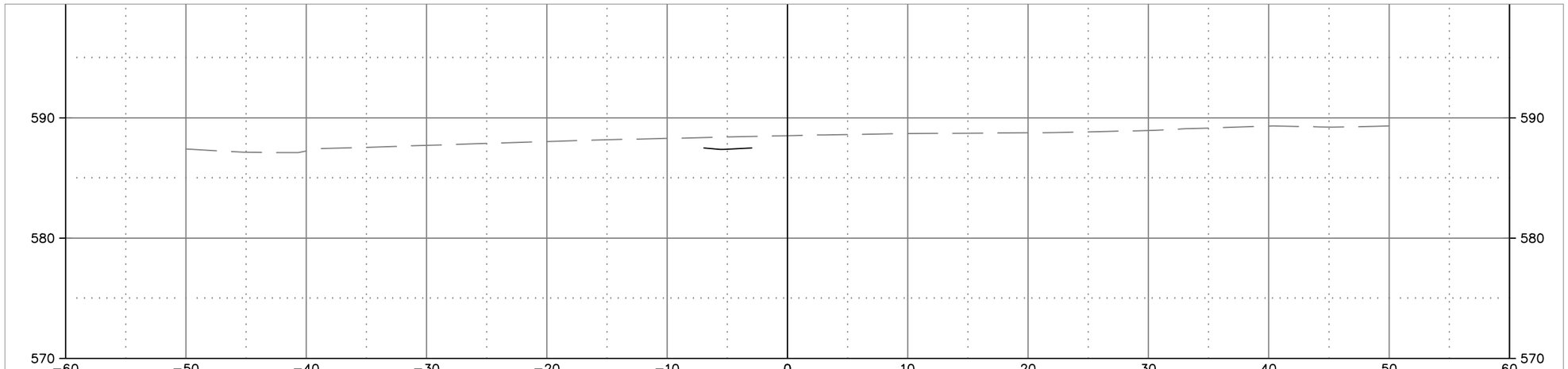

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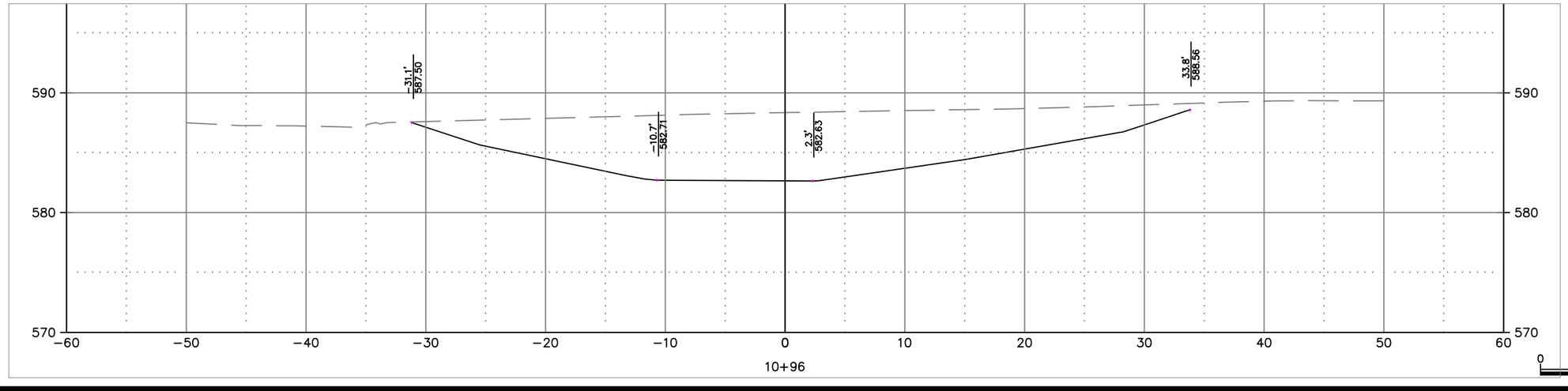

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ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON
STORM SEWER AND POND
CROSS SECTIONS

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED		
CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. **C305**

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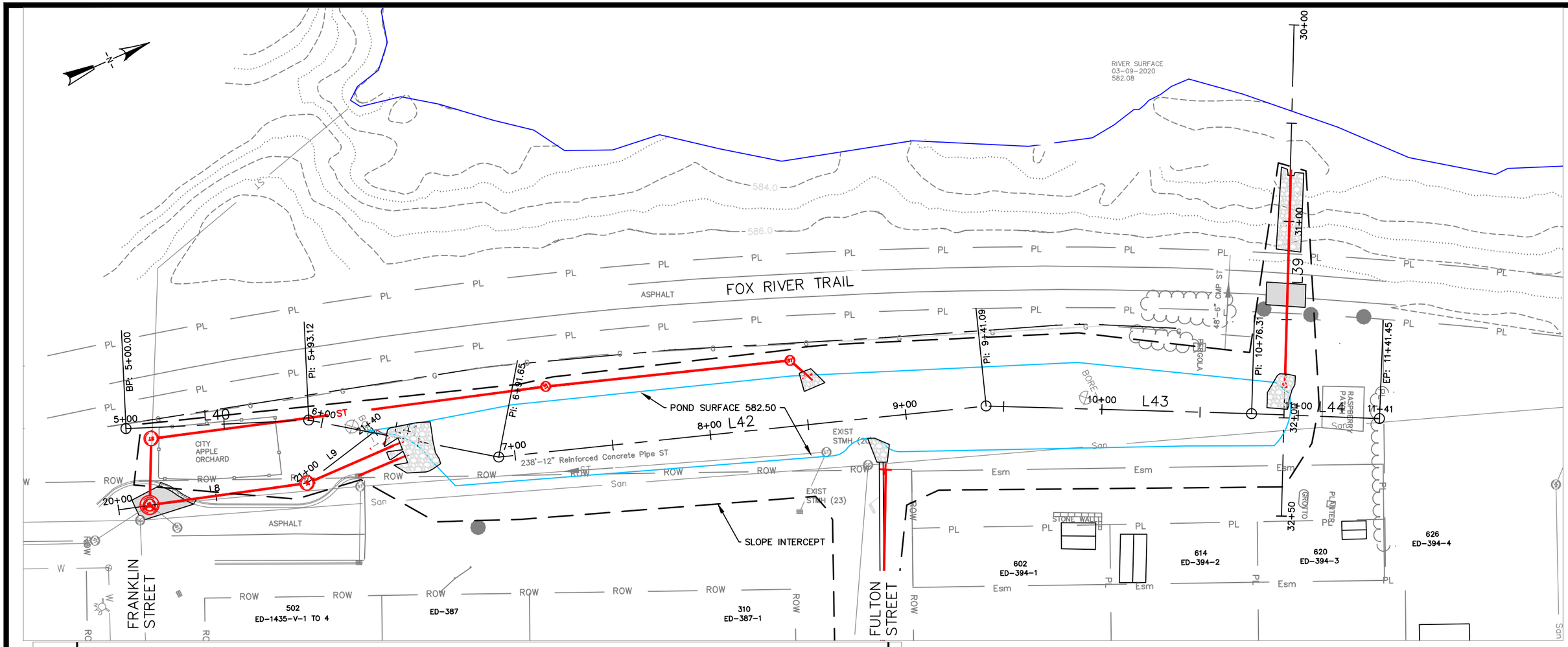


Line Table: Alignments

Line #	Length	Direction	Start Point	End Point
L40	93.122	N24° 26' 36.21"E	N 545086.9454), E 87635.4503	N 545171.7205, E (87673.9834
L41	98.526	N38° 06' 09.03"E	N 545171.7205), E 87673.9834	N 545249.2514, E (87734.7809
L42	249.444	N21° 08' 03.17"E	N 545249.2514), E 87734.7809	N 545481.9170, E (87824.7187
L43	135.214	N28° 45' 37.38"E	N 545481.9170), E 87824.7187	N 545600.4514, E (87889.7768

Line Table: Alignments

Line #	Length	Direction	Start Point	End Point
L39	250.000	S61° 24' 33.04"E	N 545709.8110), E 87723.5733	N 545590.1731, E (87943.0883

0 25' 50'

DE PERE

CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON STORM SEWER AND POND
BENCHMARKS AND ALIGNMENTS

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED	REL	01-2022
CHECKED	EPR	01-2022

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. **C401**

INLET EROSION CONTROL

TRACKING PAD

SILT FENCE

INSTALL SILT FENCE

MAINTAIN TRAIL ACCESS DURING CONSTRUCTION

POND SLOPE LIMITS

FOX RIVER TRAIL

ASPHALT

RIVER SURFACE 03-09-2020 582.08

126' - 36" PVC ST

372' 36" RCP SAN

CITY APPLE ORCHARD

BORE-1

BORE-2

FRANKLIN STREET

FULTON STREET

ED-387

502 ED-1435-V-1 TO 4

310 ED-387-1

602 ED-394-1

614 ED-394-2

620 ED-394-3

626 ED-394-4

STONE WALL

GROTTO

RASPBERRY PATCH

588

CITY OF DE PERE	**FRONT / FRANKLIN / FULTON STORM SEWER POND**
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115	**EROSION CONTROL**
OFFICE 920-339-4061 FAX 920-339-4071	

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION

PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	04-2022
DESIGNED		
CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C402

TOPSOIL, FERTILIZER, SEED, AND EROSION MAT

TOPSOIL, FERTILIZER, MESIC PRAIRIE PLANTING, AND EROSION MAT

TOPSOIL, FERTILIZER, MESIC PRAIRIE PLANTING, & MULCH

TOPSOIL, FERTILIZER, SEED, & MULCH

ASPHALT PATCH

CONCRETE REPLACEMENT

MEDIUM RIP RAP WITH GEOTEXTTILE FABRIC TYPE HR

FOX RIVER TRAIL

ASPHALT

SLOPE INTERCEPT

POND SURFACE 582.50

RIVER SURFACE 03-09-2020 582.08

126'-36" CMP ST

121'-36" CMP ST

ABANDONED 24" CLAY ST

BORE-2

5+00

6+00

7+00

8+00

9+00

10+00

11+00

11+41

20+00

21+00

32+00

32+50

30+00

REMOVE AND RESET FENCE.
REMOVE AND REPLANT
EXISTING APPLE TREES

APPLE ORCHARD

RASPBERRY PATCH

GROTTO

STONE WALL

FRANKLIN STREET

FULTON STREET

ED-387

502
ED-1435-V-1 TO 4

310
ED-387-1

602
ED-394-1

614
ED-394-2

620
ED-394-3

626
ED-394-4

0 25' 50'

CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRONT / FRANKLIN / FULTON STORM SEWER AND POND

SITE RESTORATION

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION

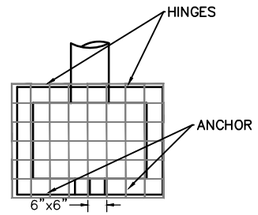
PROJECT # 22-09

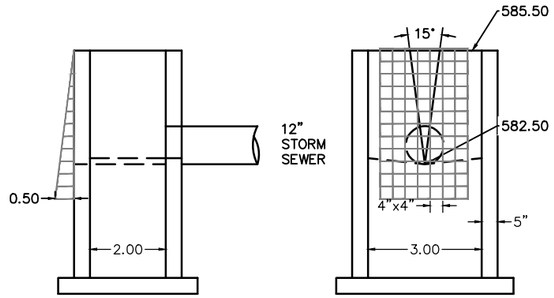
	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED	REL	01-2022
CHECKED	EPR	01-2022

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

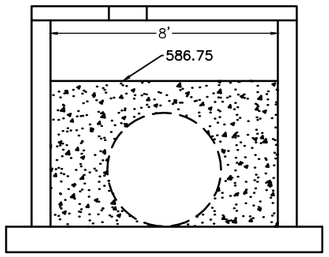
PAGE NO. C403

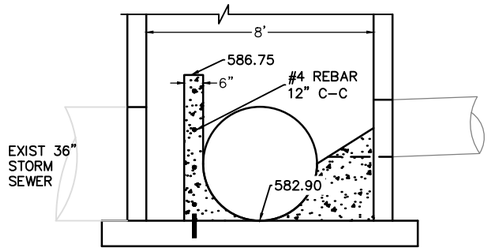
PROPOSED ORIFICE GRATE NO.4 GALVANIZED OR STAINLESS STEEL 6" O/C. 4" FOR FACE OF STRUCTURE ATTACH TO STRUCTURE USING STAINLESS STEEL (TYPE 304 OR 316) ANCHOR STRAPS. DROP-IN ANCHORS AND HINGE TOP ACCESS.

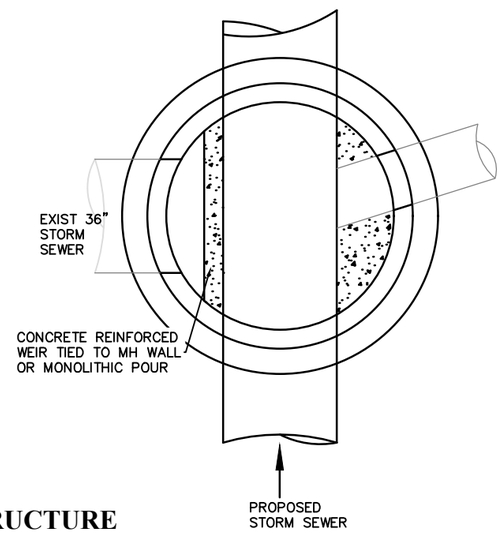




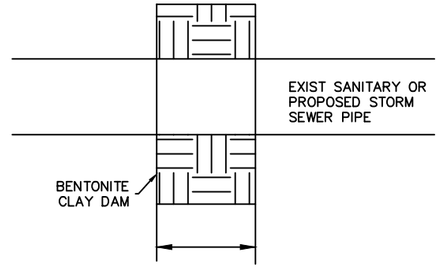
POND OUTLET STRUCTURE

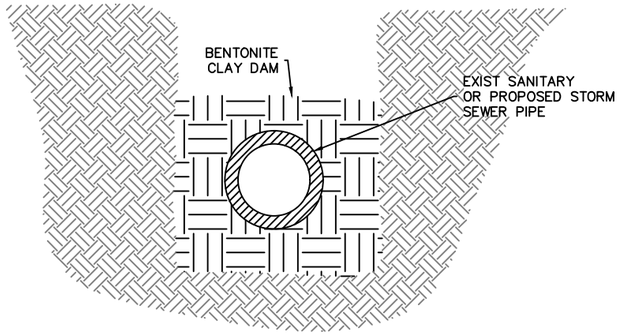






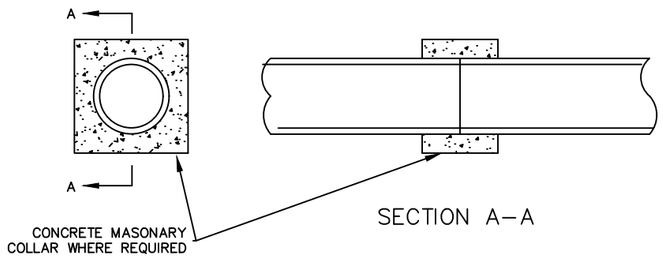
OVERFLOW CONTROL STRUCTURE





BENTONITE CLAY DAM DETAIL

N.T.S.



CONCRETE COLLAR DETAIL

DE PERE

CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

CONSTRUCTION DETAIL
STORM SEWER CONTROL STRUCTURES, CLAY DAM AND CONCRETE COLLAR

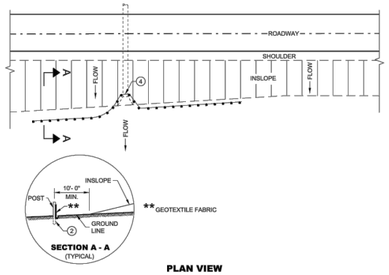
NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED		
DRAWN	SRL	4-2016
DESIGNED		
CHECKED		

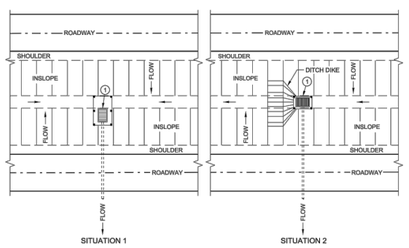
REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

SHEET NO. **C501**

SDD 08E09 Silt Fence



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

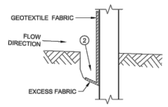


PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

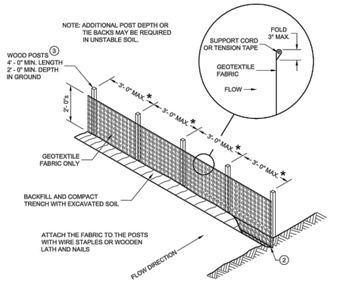
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

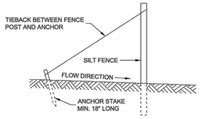
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 ½" X 1 ½" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL. IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



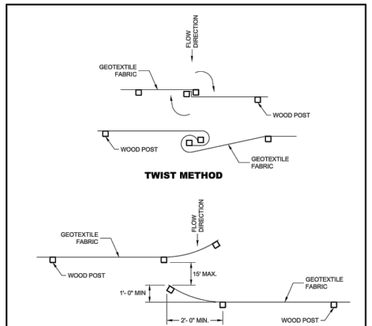
TRENCH DETAIL



SILT FENCE



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)



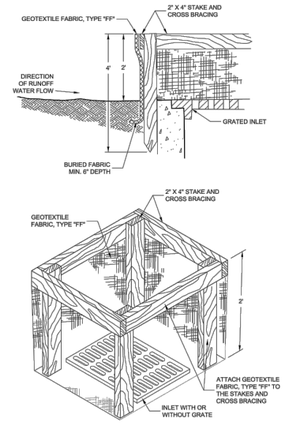
JOINING TWO LENGTHS OF SILT FENCE ⑤

SILT FENCE
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED 4/29/05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

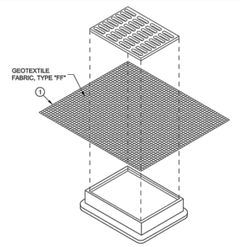
SDD 08E09 - 06

SDD 08E09 - 06

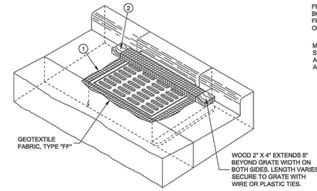
SDD 08E10 Inlet Protection, Types A, B, C and D



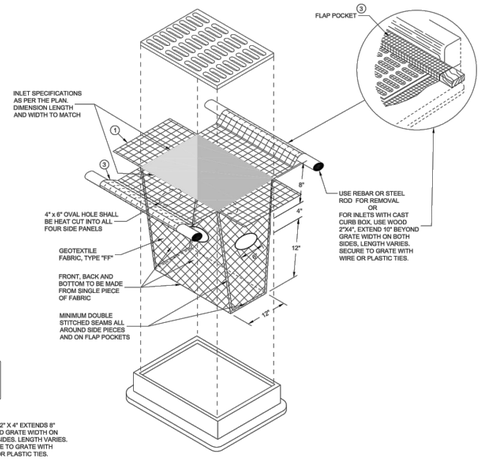
INLET PROTECTION, TYPE "A"



INLET PROTECTION, TYPE "B"
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE "C"
(WITH CURB BOX)



INLET PROTECTION, TYPE "D"
(CAN BE INSTALLED IN ANY INLET WITH OR WITHOUTA CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPES B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

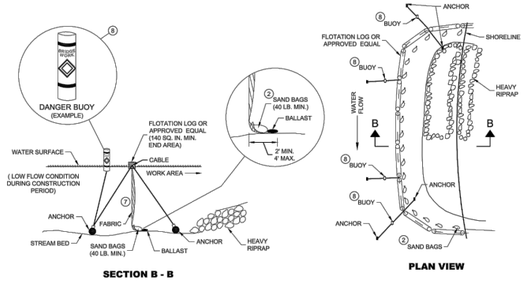
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION TYPES A, B, C AND D
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED 10/16/02 DATE
/S/ Beth Cannestra
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

SDD 08E10 - 02

SDD 08E10 - 02

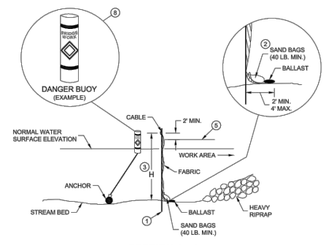
SDD 08E11 Turbidity Barrier



SECTION B - B

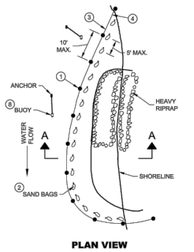
TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6

PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

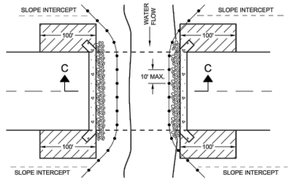
TURBIDITY BARRIER PLACEMENT DETAILS

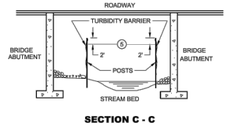
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

1. DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
2. SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
3. WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
4. IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
5. ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
6. FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
7. ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
8. USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.





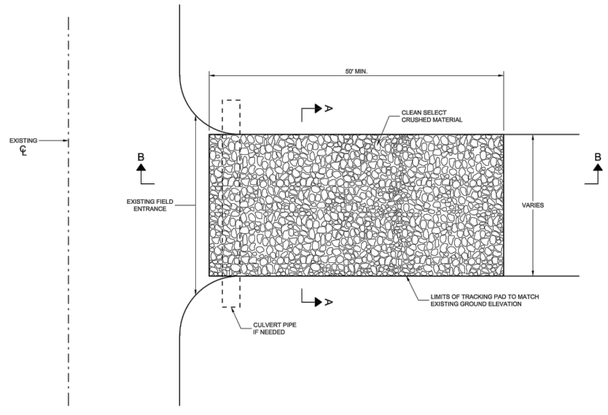
TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

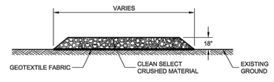
TURBIDITY BARRIER
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED 6/4/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

SDD 08E11 - 02

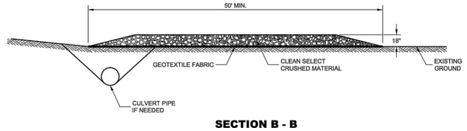
SDD 08E11 - 02

SDD 08E14 Tracking Pad





SECTION A - A



SECTION B - B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.

TRACKING PAD
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED 3/24/2011 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

SDD 08E14 - 01

SDD 08E14 - 01

CITY OF DE PERE
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRANKLIN AND FULTON EROSION CONTROL

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
SURVEYED	BK	6-2021
DRAWN	BK	12-2021
DESIGNED		
CHECKED		

REVISIONS / ISSUES

NO.	DATE	BY	REMARKS

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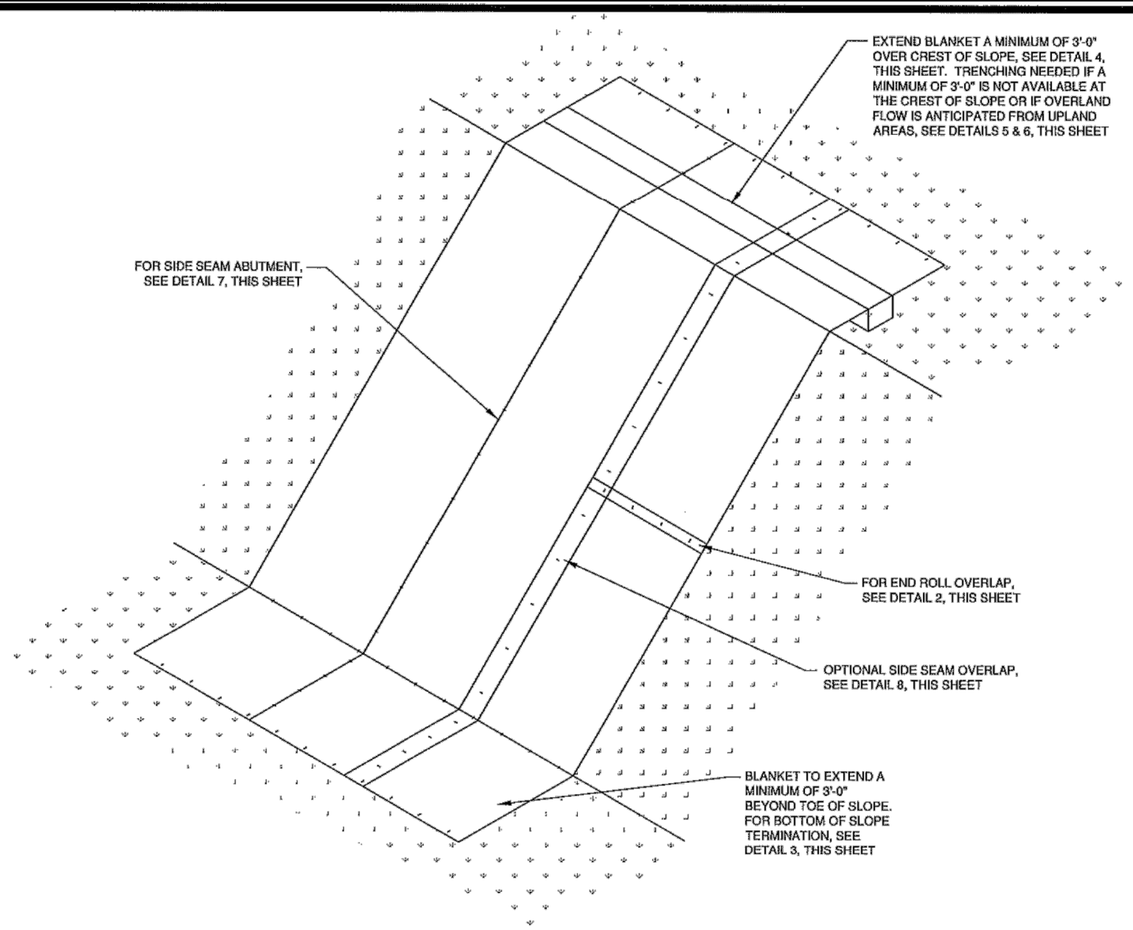
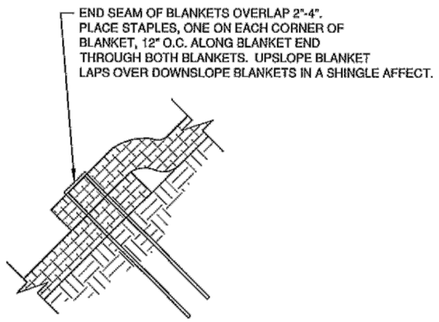
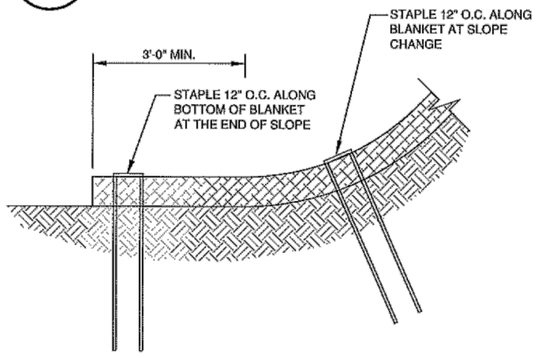


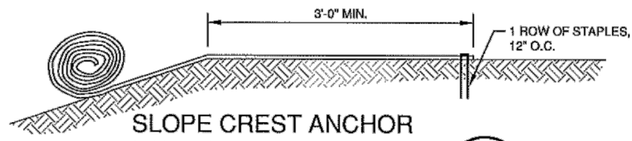
SLOPE DETAIL 1 XX



END ROLL OVERLAP 2 XX

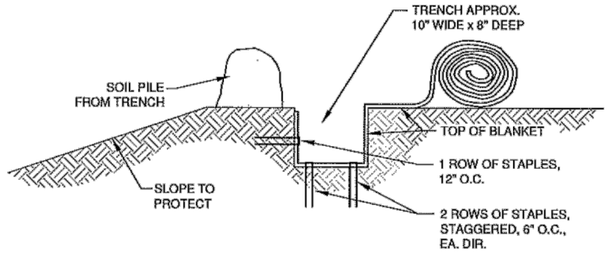


BOTTOM OF SLOPE TERMINATION 3 XX

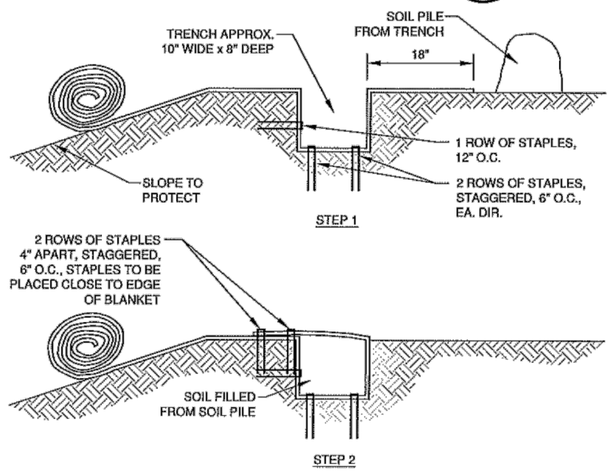


SLOPE CREST ANCHOR METHOD "A" (NO TRENCH) 4 XX

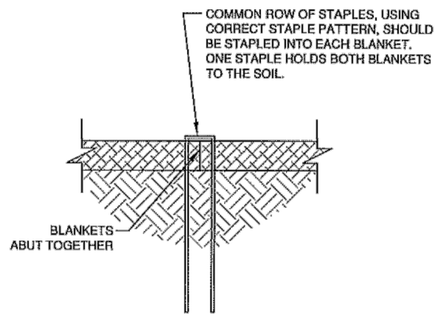
DO NOT NEED TO TRENCH BLANKET IN IF IT CAN BE EXTENDED A MINIMUM OF 3'-0" OVER THE CREST OF THE SLOPE.



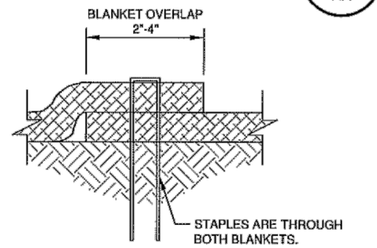
SLOPE TRENCHING METHOD "B" 5 XX



SLOPE TRENCHING METHOD "C" 6 XX



SIDE SEAM ABUT STAPLE DETAIL 7 XX



SIDE SEAM OVERLAP STAPLE DETAIL 8 XX

NOTES:
1. STAPLE PATTERNS ARE DEPENDENT ON SITE CONDITIONS. SEE MANUFACTURER STAPLE PATTERN GUIDE FOR DETAILS.

Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
920-662-9641 www.releeinc.com

CITY OF DE PERE
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

FRANKLIN AND FULTON
EROSION CONTROL

NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION
PROJECT # 22-09

	BY	DATE
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NO.	DATE	BY	REMARKS

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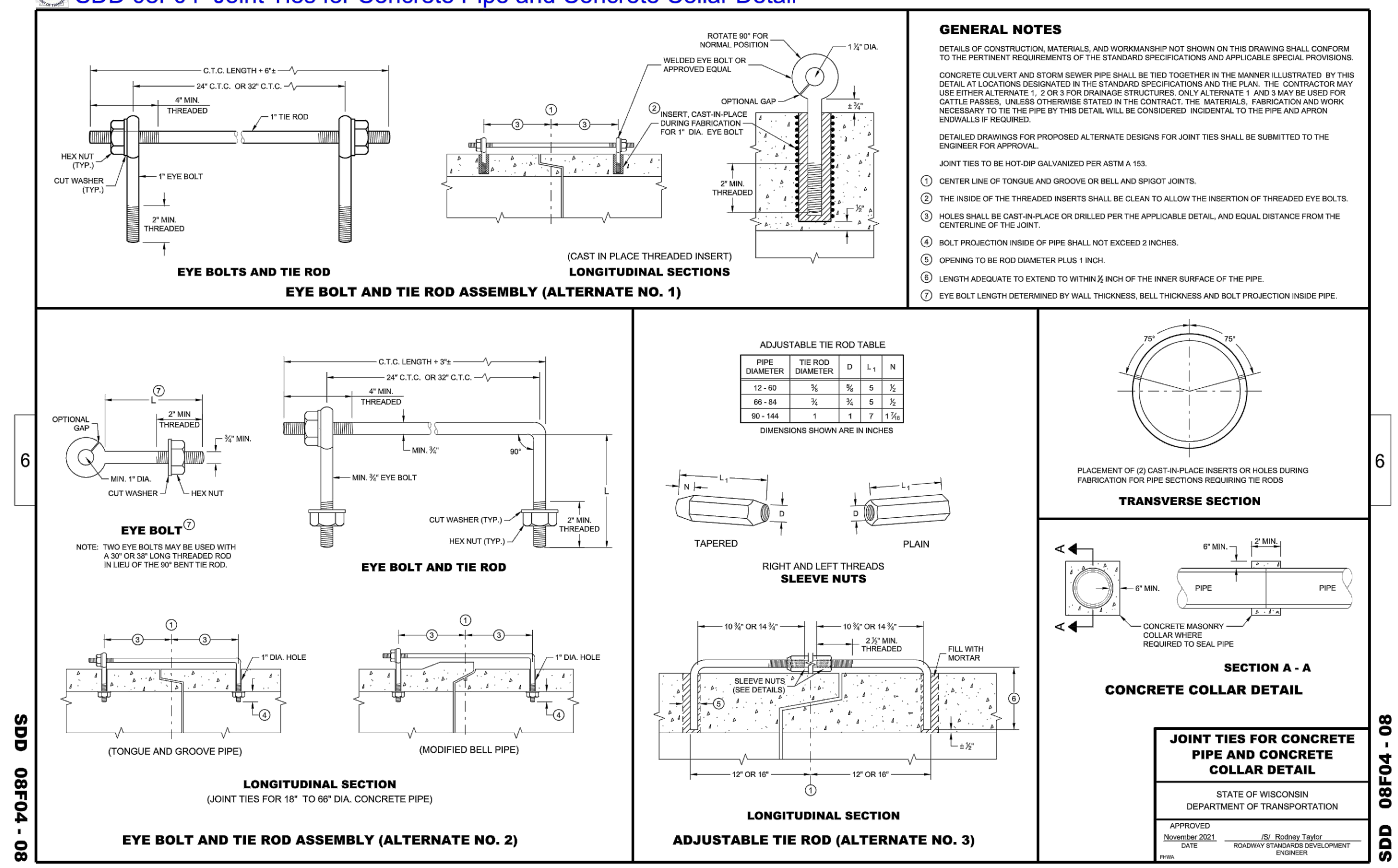
SDD 08F04 Joint Ties for Concrete Pipe and Concrete Collar Detail



GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

(1) CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

(2) THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

(3) HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.

(4) BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

(5) OPENING TO BE ROD DIAMETER PLUS 1 INCH.

(6) LENGTH ADEQUATE TO EXTEND TO WITHIN ½ INCH OF THE INNER SURFACE OF THE PIPE.

(7) EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	⅝	⅝	5	½
66 - 84	¾	¾	5	½
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES

DE PERE	**CITY OF DE PERE** ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115 OFFICE 920-339-4061 FAX 920-339-4071	**CONSTRUCTION DETAIL** **PIPE TIES**	NAME: POND AND DRAINAGE SYSTEM CONSTRUCTION PROJECT # 22-09	SHEET NO. **C504**

	BY	DATE
SURVEYED		
DRAWN	SRL	4-2016
DESIGNED		
CHECKED		

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