CITY OF DE PERE

PROJECT
20-01A

WEST SEWER AND WATER RELAY AND STREET RESURFACING

BID DATE:
JANUARY 30, 2020
@ 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.depere.wi.gov. On the homepage, click on the Projects Icon in the middle of the page. Download cost is $15 for each contract. 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.

SECTION 00 01 10

TABLE OF CONTENTS

INTRODUCTORY INFORMATION

PROJECT BID DOCUMENTS

CONTRACTING REQUIREMENTS

DIVISION 1 GENERAL REQUIREMENTS

SUPPLEMENTAL SPECIAL PROVISIONS

EXHIBITS

APPENDIX

CITY OF DE PERE 2020 STANDARD SPECIFICATIONS

CONTRACTING REQUIREMENTS

DIVISION 31 – EARTHWORK
(See City of De Pere 2020 Standard Specifications)

DIVISION 32 – EXTERIOR IMPROVEMENTS
(See City of De Pere 2020 Standard Specifications)

DIVISION 33 – UTILITIES
(See City of De Pere 2020 Standard Specifications)

SECTION 00 11 13

JANUARY 9, 2020 – JANUARY 16, 2020

CITY OF DE PERE

ADVERTISEMENT TO BID

PROJECT 20-01A

WEST SEWER AND WATER RELAY AND STREET RESURFACING

Sealed proposals will be received by the Board of Public Works of the City of De Pere at the Municipal Service Center, 925 South Sixth Street, De Pere, Wisconsin 54115, until 1:00 PM, Thursday, January 30, 2020, at which time they will be publicly opened and read aloud.

Project 20-01A for which proposals are being sought includes the following approximate quantities:

- 1,900 LF New and Relay Storm Sewer (8-inch to 60-inch) and Associated Appurtenances
- 700 LF New and Relay Sanitary Sewer (8-inch) and Associated Appurtenances
- 3,700 LF New and Relay Water Main (8-inch to 12-inch) and Associated Appurtenances
- 350 LF Directional Drill Water Main (2-inch to 12-inch) and Associated Appurtenances
- New Storm Lateral Installation (6-inch), New and Relay Sanitary Sewer Laterals (4-inch and 6-inch) and New and Relay Water Services (1-inch)
- 2,600 Tons Asphaltic Concrete Pavement Placement
- 7,500 SY Asphaltic Concrete Pavement Milling
- 5,000 SY Asphaltic Concrete Pavement Pulverizing
- Concrete Curb and Gutter, Sidewalk, Driveway and Concrete Pavement Replacement
- Restoration

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 #6645903 on Quest's Project Search page. The QuestCDN website can also be accessed through the City website at www.de-pere.org. On the homepage, click on the Projects icon in the center of the page.

Each proposal shall be accompanied by a certified check or 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 check or 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, January 27, 2020. Prospective bidders who have previously submitted such forms subsequent to January 1, 2020 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 9th day of January, 2020.

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

Project 20-01A

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 Report for De Pere Project 20-01 by ECS Midwest, LLC.

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.

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 enclosed in a plainly marked package with the Project title (and, if applicable, designated portion of the Project for which the Bid is submitted), name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to City of De Pere, Municipal Service Center, 925 South Sixth Street, De Pere, WI 54115. Electronically transmitted Bids will not 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 at the time and place indicated in the Advertisement to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

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 20-01A

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, January 30, 2020 is to furnish and deliver all materials, and to perform and do all work on the project designated, by September 25, 2020.

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)
B.	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 20-01A

BID SCHEDULE – UNIT PRICE

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
SANITARY SEWER					
SS-01	Provide 8-Inch PVC Sanitary Sewer (Granular Backfill)	LF	720	$	$
SS-02	Provide 8-Inch PVC Sanitary Sewer (Natural Backfill)	LF	100	$	$
SS-03	Remove and Relay 8-Inch PVC Sanitary Sewer (Natural Backfill)	LF	100	$	$
SS-04	Remove and Relay 6-Inch or 4-Inch PVC Sanitary Lateral	LF	1,550	$	$
SS-05	Provide 4-Inch PVC Sanitary Sewer Lateral	LF	40	$	$
SS-06	Provide 8-Inch x 6-Inch Sanitary Wye	EA	2	$	$
SS-07	Provide 8-Inch x 4-Inch Sanitary Wye	EA	12	$	$
SS-08	Provide 6-Inch or 4-Inch Saddle to Existing Sanitary Sewer	EA	45	$	$
SS-09	Provide 4-Foot Diameter Sanitary Sewer Manhole	VF	80	$	$
SS-10	Construct Outside Drop	LS	1	$	$
SS-11	Core Drill Sanitary Manhole	EA	2	$	$
SS-12	Connect to Existing Sanitary Sewer Pipe	EA	5	$	$
SS-13	Sanitary Sewer Dig Down and Repair Offset Joint – 5 feet	EA	1	$	$

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
SANITARY SEWER					
SS-14	Sanitary Sewer Dig Down and Repair Lateral (Leonard & Lost Dauphin)	EA	2	$	$
SS-15	Plug Existing Sanitary Lateral (Reid Street)	EA	2	$	$
SS-16	Dig Down and Verify Active Sanitary Lateral	EA	2	$	$
STORM SEWER					
ST-01	Provide 60-Inch RCP Class IV Storm Sewer Granular Backfill	LF	750	$	$
ST-02	Provide 60-Inch RCP Class IV Storm Sewer Natural Backfill	LF	350	$	$
ST-03	Provide 12-Inch PVC Storm Sewer or RCP Class III Storm Sewer	LF	110	$	$
ST-04	Remove and Relay 12-Inch PVC or RCP Class III Storm Sewer	LF	100	$	$
ST-05	Provide 8-Inch PVC Storm Sewer	LF	800	$	$
ST-06	Provide 6-Inch PVC Storm Sewer Lateral	LF	600	$	$
ST-07	Provide 8-Inch x 6-Inch Storm Branch or Inserta Tee	EA	20	$	$
ST-08	Provide 10-Foot Diameter Storm Manhole or Variable Tee Manhole	VF	20	$	$
ST-09	Provide 9-Foot Diameter Storm Manhole or Variable Tee Manhole	VF	20	$	$
ST-10	Provide 8-Foot Diameter Storm Manhole or Variable Tee Manhole	VF	25	$	$
ST-11	Provide 7-Foot Diameter Storm Manhole or Variable Tee Manhole	VF	20	$	$

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STORM SEWER					
ST-12	Provide 4-Foot Diameter Storm Manhole	VF	10	$	$
ST-13	Remove and Replace 4-Foot Diameter Storm Manhole	VF	5	$	$
ST-14	Remove and Replace Type B Inlet	EA	3	$	$
ST-15	Core Drill Manhole	EA	1	$	$
ST-16	Reconnect to Existing Storm Sewer Pipe or Structure	EA	3	$	$
ST-17	Storm Sewer Dig Down and Repair Offset Joint - 5 feet	EA	1	$	$
ST-18	Abandon/Remove Existing Storm Sewer Appurtenances (Outward Avenue)	LS	1	$	$
ST-19	Abandon/Remove Existing Storm Sewer Appurtenances (Innovation Court)	LS	1	$	$
ST-20	Remove Existing Storm Sewer (West De Pere High School)	LF	725	$	$
ST-21	Remove Existing Storm Sewer Manholes (West De Pere High School)	EA	2	$	$
ST-22	Bulkhead 72-Inch Storm Sewer (West De Pere High School)	LS	1	$	$
ST-23	Remove Obstruction from Pipe	LS	1	$	$
WATER MAIN					
W-01	Provide 12-Inch PVC Water Main Open Cut Natural Backfill	LF	450	$	$
W-02	Provide 12-Inch PVC Water Main Open Cut Granular	LF	200	$	$
W-03	Provide 12-Inch PVC Water Main Directional Drill	LF	150	$	$

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
WATER MAIN					
W-04	Provide 8-Inch PVC Water Main	LF	3,100	$	$
W-05	Provide 6-Inch PVC Water Main and Hydrant Lead	LF	200	$	$
W-06	Provide 2-Inch HDPE Water Service Directional Drill (Lawrence Drive)	LF	250	$	$
W-07	Provide 2-Inch HDPE Water Service (Open Cut)	LF	30	$	$
W-08	Provide 1-Inch HDPE Water Service (Open Cut)	LF	1,550	$	$
W-09	Provide 2-Inch Corporation with Plug/Saddle with 2-Inch HDPE	EA	2	$	$
W-10	Provide 2-Inch Corporation and Curb Stop	EA	1	$	$
W-11	Provide 1-Inch Corporation and Curb Stop	EA	50	$	$
W-12	Provide 12-Inch Gate Valve	EA	1	$	$
W-13	Provide 8-Inch Gate Valve	EA	10	$	$
W-14	Provide 6-Inch Gate Valve	EA	6	$	$
W-15	12-Inch x 12-Inch Tapping Tee and Valve	EA	1	$	$
W-16	10-Inch x 8-Inch Tapping Tee and Valve	EA	1	$	$
W-17	8-Inch x 8-Inch Tapping Tee and Valve	EA	1	$	$
W-18	Provide Connection to Existing Water Main	EA	11	$	$
W-19	Provide Hydrant 6.5-Foot Bury	EA	3	$	$

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
WATER MAIN					
W-20	Provide Hydrant 7.0-Foot Bury	EA	2	$	$
W-21	Provide Hydrant 7.5-Foot Bury	EA	3	$	$
W-22	Provide Water Main Offset	EA	1	$	$
W-23	Provide 1/2 Water Main Offset	EA	1	$	$
W-24	Abandon/Remove Water Main and Appurtenances	LS	1	$	$
STREET AND DRAINAGE					
SD-01	Provide Clearing and Grubbing (Ash Street)	LS	1	$	$
SD-02	Unclassified Excavation	CY	100	$	$
SD-03	Remove Asphaltic Concrete Pavement	SY	85	$	$
SD-04	Remove or Black Out Existing Paint Striping	LS	1	$	$
SD-05	Mill Asphaltic Concrete Pavement	SY	7,400	$	$
SD-06	Pulverize Asphaltic Concrete Pavement and Aggregate	SY	5,000	$	$
SD-07	Salvage and Reuse Asphaltic Concrete Pavement and Aggregate	CY	175	$	$
SD-08	Provide 1 1/4-Inch Crushed Aggregate Base Course	TON	60	$	$
SD-09	Provide 3/4-Inch Crushed Aggregate Base Course (Shouldering Type C-4)	SY	20	$	$
SD-10	Provide Medium Rip Rap w/Geotextile Fabric, Type HR	SY	50	$	$

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STREET AND DRAINAGE					
SD-11	Provide Asphaltic Concrete Pavement Type 4 LT 58-28 S, 2-Inch Upper Layer	TON	1,400	$	$
SD-12	Provide Asphaltic Concrete Pavement Type 3 LT 58-28 S, 2 1/4-Inch Lower Layer	TON	1,100	$	$
SD-13	Provide Asphaltic Concrete Patch (4-Inch)	SY	60	$	$
SD-14	Remove and Replace 24-Inch Concrete Curb and Gutter	LF	1,650	$	$
SD-15	Remove and Replace 24-Inch Concrete Curb and Gutter Integral (Lawrence Drive)	LF	10	$	$
SD-16	Remove and Replace 9-Inch Concrete Pavement with Integral Curb (Lawrence Drive)	SY	10	$	$
SD-17	Remove and Replace 8-Inch Concrete Sidewalk and Driveway	SY	100	$	$
SD-18	Remove and Replace 6-Inch Concrete Sidewalk, Ramp and Driveway	SY	250	$	$
SD-19	Remove and Replace 4-Inch Concrete Sidewalk	SY	500	$	$
SD-20	Provide Concrete Flume	EA	2	$	$
SD-21	Provide #4 Reinforcement Bars for Curb and Sidewalk	LF	3,350	$	$
SD-22	Drilled Tie Bars (Existing Sidewalk, Driveway, and Curb and Gutter)	EA	500	$	$
SD-23	Provide Detectable Warning Field (Natural)	EA	1	$	$
SD-24	Pavement Marking Epoxy 4-Inch White	LF	300	$	$
SD-25	Pavement Marking (Handicap Symbol White) Epoxy	EA	2	$	$

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STREET AND DRAINAGE					
SD-26	Landscaping Topsoil, Seed, Fertilizer, and Mulch	SY	1,100	$	$
SD-27	Landscaping Topsoil, Seed, Fertilizer, and Erosion Mat	SY	2,000	$	$
SD-28	Site Access Restoration - Regrade Topsoil, Seed, Fertilizer and Mulch	SY	1,300	$	$
SPECIAL CONSTRUCTION					
SC-01	Pipe Foundation Stabilization	CY	100	$	$
SC-02	Erosion Bale Ditch Check (Southbridge Condos)	EA	3	$	$
SC-03	Sediment Erosion Control Logs	LF	220	$	$
SC-04	Inlet Protection Type D	EA	30	$	$
SC-05	Tracking Pad	EA	2	$	$
SC-06	Adjust Inlet	EA	7	$	$
SC-07	Adjust Manhole	EA	11	$	$
SC-08	Polystyrene Insulation Board 4-Foot Wide	LF	100	$	$
SC-09	Remove and Reinstall Sign (8th Street)	LS	1	$	$
SC-10	Tree and Stump Removal	ID	50	$	$
SC-11	Traffic Control (1417 Lost Dauphin Road)	LS	1	$	$
SC-12	Traffic Control Lane Closure (8th Street)	LS	1	$	$
SC-13	Traffic Control Detour Route (Southbridge Condos)	LS	1	$	$
				TOTAL	$

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 20-01A 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
Water Main (PVC)		
Valves		
Hydrants		
Manholes		
Inlets		
Storm Sewer (PVC/RCP)		
Sanitary Sewer (PVC)		

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

SECTION 00 51 00

NOTICE OF AWARD

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

Project Description: 20-01A West Sewer and Water Relay and Street Resurfacing

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 January 9, 2020 and January 16, 2020.

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 __th day of _____2020.

_____
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 20-01A West Sewer and Water Relay and Street Resurfacing, 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 January 9, 2020 and January 16, 2020.

(b) Drawings designated for Project 20-01A West Sewer and Water Relay and Street Resurfacing dated January 9, 2020.

(c) City of De Pere 2020 Construction Specifications.

(d) Special Provisions dated January 9, 2020.

(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 22)($) 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 0052-13-4, inclusive).

b. Payment bond (pages 00 61 13-1 to 00 61 13-2, inclusive).
c. Performance bond (page 00 61 16-1 to 00 61 16-2, inclusive).
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: 20-01A West Sewer and Water Relay and Street Resurfacing

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 20-01A, 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 20-01A, 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 covere d by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by the Applicaton 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
   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, 2020 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. Ash Street Easement at 703 N. Ninth Street.
      b. Eighth Street from Reid Street to Main Avenue.
      c. Innovation Court cul-de-sac north of Southbridge Road.
      d. Lawrence Drive at the intersection of Grant Street.
      e. Outward Avenue from Helena Street to Amhart Drive
      f. Park Street from Allard Street to S. Ninth Street.
      g. Reid Street from Eighth Street to Allard Street.
      h. Southbridge Road west of Lawrence Drive at 1881 Southbridge Road.
      i. Sunrise Court from Park Street to the southern cul-de-sac.
      j. West De Pere High School at 665 Grant Street
      k. Pond repairs at 2354 Daytona Speedway
      l. Various spot sewer repairs on the City of De Pere's west side.
   2. Work will be performed under the following prime contract:
      a. Project 20-01A West Sewer and Water Relay and Street Resurfacing

B. The Work includes:
   1. Water main and associated appurtenance relay and new.
   2. Storm sewer and associated appurtenances relay and new, spot storm sewer, inlet lead and inlet repair and replacement.
   3. Sanitary sewer and associated appurtenances relay and new and lateral replacement.
   4. Manhole adjustment and repair.
   5. Spot concrete curb and gutter repair and replacement and new curb and gutter.
   6. Driveway and sidewalk removal and replacement.
   7. Mill asphaltic concrete pavement.
   8. Pulverize asphaltic concrete pavement.
   9. Unclassified excavation.
   10. Asphaltic concrete paving.
   11. Terrace restoration.
   12. Tree and stump removal.
   13. Erosion Control.
   14. Traffic Control.

1.4 WORK SEQUENCE

A. The City anticipates taking this contract to the Board of Public Works on Monday, February 10 and Common Council on Tuesday, February 18 for consideration of award of Contract 20-01A West Sewer and Water Relay and Street Resurfacing.

B. All work under this project shall be completed by September 25, 2020.

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.

E. All water main tracer wire is to be tested prior to paving.

F. Location Specific Work Sequence Details
   1. Ash Street Easement
      a. The City will need to notify the Green Bay Metropolitan Sewerage District (GBMSD) one week in advance of any construction operations. GBMSD will need to be present to access their manhole for the downstream connection.
      b. For verify Active Sanitary Lateral work, excavate down to sanitary lateral such that the City can dye test or camera the pipe for activity.
   2. Eighth Street and Reid Street:
      a. The replacement of the storm sewer inlet lead on Eighth Street at the intersection with Main Avenue will need to be coordinated with the removal of the traffic signal under City of De Pere Project 20-10 Signal Replacement. Once the storm inlet lead is dug, AT&T will need to be contacted to raise, lower or relocate their facility out of conflict with the City's sewer.
      b. The City will provide one week notice to repair the offset joint to the east of Allard Street on Reid Street shown on Sheet C104. The repair needs to be done in advance of the City's Sewer Lining Contract 20-03.
      c. The City will also be verifying two laterals to see if they are still active under the City Sewer Lining Contract 20-03. If the laterals are confirmed to be active, they will be relayed as part of the work under Project 20-01A.
      d. For verify Active Sanitary Lateral work, excavate down to sanitary lateral such that the City can dye test or camera the pipe for activity.
   3. Innovation Court
      a. Work will need to be completed by July 31 to allow concrete paving to occur under Project 20-06.
   4. Lawrence Drive at Grant Street
      a. The Developer has yet to provide a schedule of their construction or the timeframe in which they want work to be completed under this contract. The Developer's schedule will be shared with the Contractor after the notice to proceed is signed.

   b. If needed, the City will need two weeks advance notice to obtain a lane closure permit on Grant Street.
5. Outward Avenue
   a. Work on Outward Avenue cannot start until June 8, 2020 to accommodate the West De Pere School District.
6. Park Street and Sunrise Street
   a. The relay of the water lateral to the north at Station 05+28 will need to be coordinated with the strip mall to the north at 811 and 801 Main Avenue. Each business should be contacted to determine the optimal time to conduct their final water connection to maintain operational hours of the business to the best of the Contractor's ability. Weekend or nighttime work may be needed to facilitate the final water connections.
7. 1881 Southbridge Road
   a. Work will need to be completed by May 1, 2020.
   b. Construction of the outside drop at the GBMSD manhole will need one week advance notice with GBMSD per the City's permit. GBMSD personnel will need to be present to access their manhole.
8. West De Pere High School
   a. Work is permitted to start in may in conjunction with the West De Pere High School expansion project. All work is to be completed by July 31, 2020. School is in session until June 5, 2020. Only storm sewer in the natural backfill areas may be constructed while school is in session to prevent loss of parking or access.
9. Pond Repairs at 2354 Daytona Speedway
   a. None.

G. The calendar days listed below are the allowed durations for each location from the beginning of construction of the street or site to the substantial completion of the area. The start and end dates for each location are also listed below to better illustrate the window to complete work.

Location	**Start Date**	**End Date**	**Calendar Days**
Ash Street Easement Sanitary Sewer Relay	N/A	9-25-2020	7
Eighth Street and Reid Street	N/A	9-25-2020	42
Innovation Court	N/A	7-31-2020	30
Lawrence Drive	TBD	TBD	21
Outward Avenue	N/A	9-25-2020	60
Park Street and Sunrise Court	N/A	9-25-2020	56
1881 Southbridge Road	At Work Start	5-1-2020	14
West De Pere High School Storm Sewer Relay	5-1-2020	7-31-2020	35

Please note that the allowed contract calendar days shown in the table above exceed the total project duration between the proposed start date of April 1, 2020 and the completion date of September 25, 2020. It is expected that the contractor work on multiple streets concurrently to ensure the satisfactory completion of the project within the project duration. Failure to meet the interim contract dates listed above warrants the enforcement of liquidated damages outlined in the City of De Pere Standard Specifications.

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. The City of De Pere Park Department will trim trees in conflict with construction if the City receives advanced notification. Questions regarding trees or landscaping that is bid as part of this contract can be directed to the Engineer.

B. Owner has awarded a separate contract for performance of certain construction operations which will be conducted at the Project Site simultaneously with work under this Contract. This Contract includes the following:
   1. Project 20-03 Sewer Lining
      a. On Reid Street from Allard Street to the West
      b. On Renkens Court north of Grant Street
   2. Project 20-06 Concrete Street Repairs: at Innovation Court. Construction and concrete paving of the cul-de-sac at Innovation Court are to be completed under this project.
   3. Project 20-10 Signal Replacement: at the intersection of Main Avenue and Eighth Street. The traffic signals are to be replaced at this intersection under this project.
   4. Private Development
      a. 2020 Innovation Court – New office building being constructed.
      b. West De Pere High School – High School Expansion
      c. 1881 Southbridge Road – New Condos being constructed.
      d. 1218 Grant Street – New gas station being constructed.

C. 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, Shea Gorzelanczyk, (sg2528@att.com) (920-433-4250)

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. Level3 (Mi-Tech Services), Chris Kraus, (ckraus@mi-tech.us) (414-550-6201)

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. Maintain access to properties during construction, excluding time when utility work is occurring in front of the driveway or when the driveway, curb and gutter are replaced.

C. Maintain garbage pickup and mail service throughout construction.

D. Saw cut or mill all utility trenches. If utility trenches are milled, salvage millings and place on trenches with a roller.

E. No work is to occur on the following dates in observance of national holidays:
   1. Memorial Day - Monday, May 25, 2020
   2. Independence Day – Friday, July 3, 2020
   3. Labor Day – Monday, September 7, 2020

F. Miscellaneous Provisions by Location
   1. Ash Street Easement
      a. Work is to be coordinated with the Green Bay Metropolitan Sewerage District in coordination with the City's Plumbing Permit with GBMSD.
   2. Eighth Street and Reid Street
      a. Any excavations in Main Avenue will need to be restored with hard surface (e.g. temporary concrete or hot mix asphalt) at the end of each work day until final restoration is completed.
   3. Innovation Court
      a. At 1881 Southbridge Road the detour and full road closure duration is limited to one day to get the sanitary sewer across Southbridge Road. Once the sewer is across, the excavation will need to be restored with gravel until final asphaltic concrete pavement can be placed. At the time of asphaltic concrete paving, a flagger will be required and only one lane of traffic can be closed at a time.
   4. Lawrence Drive at Grant Street
      a. Provide traffic control plans for any closures of Grant Street needed to facilitate this work. If needed, these lane closures will need to be permitted through Brown County. The City of De Pere will apply for any permits needed.
   5. Outward Avenue
      a. None

6. Park Street and Sunrise Court
   a. None.
7. 1881 Southbridge Road
   a. At 1881 Southbridge Road the detour and full road closure duration is limited to one day to get the sanitary sewer across Southbridge Road. Once the sewer is across, the excavation will need to be restored with gravel until final asphaltic concrete pavement can be placed. At the time of asphaltic concrete paving, a flagger will be required and only one lane of traffic can be closed at a time.
8. West De Pere High School
   a. Storm sewer trenches with granular backfill shall be restored with gravel backfill to match the existing surface grade at the trench. Final restoration will be completed by the developer in these areas.
9. Pond Repairs at Daytona Speedway
   a. None.
10. 1417 Lost Dauphin Road – Spot sanitary lateral repair. Provide a traffic control plan for the lane closure required to dig down and repair the damaged sanitary lateral.

G. Ingress and egress to the site of work for delivery of materials, hauling of excavation, daily construction activities and all vehicular traffic shall be as follows:

Location	Route
Ash Street Easement	Ash Street via N. Eighth Street
Eighth Street and Reid Street	Main Avenue or Allard Street via Main Avenue
Innovation Court	Southbridge Road
Lawrence Drive at Grant Street	Lawrence Drive or Grant Street
Outward Avenue	Helena Street via S. Sixth Street and Grant Street
Park Street and Sunrise Court	S. Ninth Street via Main Avenue and Allard Street Via Main Avenue
1881 Southbridge Road	Southbridge Road
West De Pere High School	Grant Street
2354 Daytona Speedway	Southwest Park via Lawrence Drive

Please note that Lawrence Drive between Southbridge Road and Fortune Avenue is not designated as a truck route. To view the City of De Pere Designated Heavy Truck Route Map please go to:
www.deperewi.gov/egov/documents/1476890395_45864.pdf

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 22 01

MEASUREMENT AND PAYMENT SANITARY SEWER

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

	Bid Item No.
1. Sanitary Sewer Mains (Granular Backfill)	SS-01
2. Sanitary Sewer Mains (Natural Backfill)	SS-02 & SS-03
3. Sanitary Sewer Laterals	SS-04 & SS-05
4. Sanitary Sewer Service Branches	SS-06, SS-07 & SS-08
5. Sanitary Sewer Manholes	SS-09
6. Construct Outside Drop	SS-10
7. Core Drilling to Existing Sanitary Manhole	SS-11
8. Connect to Existing Sanitary Sewer Pipe	SS-12
9. Sanitary Sewer Dig Down and Repair Lateral/Offset Joint – 5 Feet	SS-13 & SS-14
10. Plug Existing Sanitary Lateral	SS-15
11. Dig Down and Verify Active Sanitary Lateral	SS-16

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 sanitary 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. Bypass pumping.
   6. Excavation.
   7. Open Trench installation method (unless bid item specifies other method).

8. Pipe Bedding.
9. Backfilling and compacting native obtained from the excavation.
10. Supplying, hauling, backfilling and compacting granular material.
11. Loading, hauling and disposing of surplus excavated material.
12. Landscaping – turf establishment surface restoration and trees and bushes damaged during construction.
13. Maintenance, protection, replacement and/or repair of facilities not designated for alteration on the Site beyond the limits identified.
14. Site access requirements including temporary aggregate material as required for local traffic access.
15. Bulkhead and abandoned existing sanitary sewer with flowable fill as shown on Drawings.
16. 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.
17. Dust control.
18. Remove and replace existing mailboxes and traffic signs.
19. Restroom facilities.
20. Easement and right-of-way requirements.
21. Construction staking and other survey work not provided by the Engineer.
22. Regulatory requirements.
23. Preconstruction videotaping and video equipment.
24. Quality assurance and quality control testing and inspections.
25. Shop drawings and other submittals.

1.3 SANITARY SEWER MAINS (GRANULAR BACKFILL)

A. The unit price for Sanitary Sewer Main (Granular Backfill) work includes:
   1. General Work Items of Article 1.2.
   2. Sanitary 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 SANITARY SEWER MAINS (NATURAL BACKFILL)

A. The unit price for Sanitary Sewer Main (Natural Backfill) work includes:
   1. General Work Items of Article 1.2.
   2. Sanitary 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 SANITARY SEWER LATERALS

A. The unit price for Sanitary Sewer Laterals work includes:
   1. General Work Items of Article 1.2.
   2. Sanitary sewer lateral pipe and fittings of the material stated in the Unit Price Bid Schedule and installed using the open trench method.
   3. Watertight plug in the end of the sewer service lateral or connection including transition coupling to the existing building sewer lateral.
   4. Tracer wire.
   5. Install an 8’ – 4” X 4” board at the end of the lateral.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer service lateral pipe (excluding risers) from centerline of the service branch to the end of the pipe at the right of way, easement or existing sewer service lateral with no deductions for fittings.

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

1.6 SANITARY SEWER SERVICE BRANCHES

A. The unit price for Sanitary Sewer Service Branches work includes:
   1. General Work Items of Article 1.2.
   2. Sanitary sewer service branches of same material strength or better than sanitary sewer main pipe.
   3. Installation along with the sanitary sewer main pipe installation.
   4. Plug (where required).

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

C. The unit of measurement for payment is each.

1.7 SANITARY SEWER MANHOLES

A. The unit price for Sanitary Sewer Manholes work includes:
   1. General Work Items of Article 1.2.
   2. Precast reinforced concrete components.
   3. Joint flexible gasket material.
   4. Resilient flexible connector between the manhole structure and the sewer pipe.
   5. Adjusting rings and bituminous plastic cement sealant at chimney.
   6. Manhole steps.
   7. Manhole frame and cover (Neenah Foundry R-1500 Manhole Cover with Non-Rocking Lid or equal). Sanitary Sewer manhole covers shall have gaskets and concealed pick holes.
   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.

1.8 CONSTRUCT OUTSIDE DROP

A. The unit price for Construct Outside Drop work includes:
   1. General Work Items of Article 1.2.
   2. Install outside drop.
   3. Install A-Lok boot.
   4. Backfilling and compaction.

B. Measurement for payment will not be made.

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

1.9 CORE DRILLING TO EXISTING SANITARY MANHOLE

A. The unit price for Core Drilling to Existing Sanitary Manhole work includes:
   1. General Work Items of Article 1.2.
   2. Core drilling into existing sanitary sewer manhole (where required).
   3. Install A-Lok/Kor-N-Seal boot.
   4. Reform flow line in existing sanitary manhole.

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

C. The unit of measurement for payment is each.

1.10 CONNECT TO EXISTING SANITARY SEWER PIPE

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

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

C. The unit of measurement for payment is each

1.11 SANITARY SEWER DIG DOWN AND REPAIR LATERAL/OFFSET JOINT – 5 FEET

A. The unit price for Sanitary Sewer Dig Down and Repair Lateral/Offset Joint work includes:
   1. General Work Items of Article 1.2.
   2. Excavation.
   3. Exposing sanitary sewer line for repairs to offset joint or lateral.
   4. Sawing existing sanitary sewer.
   5. Remove and replace pipe (if applicable).
   6. Connection to existing sanitary sewer (if applicable).
   7. Repairing offset joints where present.

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

C. The unit of measurement for payment is each.

1.12 PLUG EXISTING SANITARY LATERAL

A. The unit price for Plug Existing Sanitary Lateral work includes:
   1. General Work Items of Article 1.2.
   2. Excavation.
   3. Installing bulkheads and abandon sewer.
   4. Backfilling and compacting.

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

C. The unit of measurement for payment is each.

1.13 DIG DOWN AND VERIFY ACTIVE SANITARY LATERAL

A. The unit price for Dig Down and Verify Active Sanitary Lateral work includes:
   1. General Work Items of Article 1.2.

2. Televise or excavate down to existing sanitary sewer lateral to expose the existing lateral to verify if the lateral is active.
3. City staff will dye test the lateral if needed.
4. Backfilling and compacting.

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

C. The unit of measurement for payment is each.

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, ST-03, ST-04 & ST-05
2. Storm Sewer Mains (Natural Backfill)	ST-02
3. Storm Sewer Laterals	ST-06
4. Storm Sewer Service Branches	ST-07
5. Storm Sewer Manholes	ST-08, ST-09, ST-10, ST-11, ST-12 & ST-13
6. Catch Basin/Inlets	ST-14
7. Core Drilling to Existing Storm Manhole	ST-15
8. Reconnect to Existing Storm Sewer Pipe or Structure	ST-16
9. Storm Sewer Dig Down and Repair Offset Joint – 5 Feet	ST-17
10. Abandon/Remove Existing Storm Sewer	ST-18 & ST-19
11. Remove Existing Storm Sewer	ST-20
12. Remove Existing Storm Sewer Manholes	ST-21
13. Bulkhead 72-Inch Storm Sewer	ST-22
14. Remove Obstruction	ST-23

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 LATERALS

A. The unit price for Storm Sewer Laterals work includes:
   1. General Work Items of Article 1.2.
   2. Storm sewer lateral pipe and fittings of the material stated in the Unit Price Bid Schedule and installed using the open trench method.
   3. Watertight plug in the end of the sewer service lateral or connection including transition coupling to the existing building sewer lateral.
   4. Tracer wire.
   5. Install an 8’ – 4” X 4” board at the end of the lateral.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer service lateral pipe from centerline of the service branch to the end of the pipe at the right of way, easement or existing sewer service lateral with no deductions for fittings.

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

1.6 STORM SEWER SERVICE BRANCHES/INSERTA TEES

A. The unit price for Storm Sewer Service Branches/Inserta Tees work includes:
   1. General Work Items of Article 1.2.
   2. Storm sewer service branches of same material strength or better than storm sewer main pipe (where required).
   3. Core drilling into concrete storm sewer main (where required).
   4. Installation along with the storm sewer main pipe installation.
   5. Plug (where required).

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

C. The unit of measurement for payment is each.

1.7 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.

1.8 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. Sewer pipe stub with connections and watertight plug (where required).
   10. Sand fill and Class “B” concrete floor and flow line.
   11. Temporary cover over catch basin/inlet to prevent eroded materials from entering.
   12. Final casting adjustment.

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

C. The unit of measurement for payment is each.

1.9 CORE DRILL TO EXISTING STORM SEWER MANHOLE

A. The unit price for Core Drilling to Existing 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 (at manholes) or mortar.
   4. Reform flow line in existing sanitary manhole.

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

C. The unit of measurement for payment is each.

1.10 RECONNECT TO EXISTING STORM SEWER PIPE OR STRUCTURE

A. The unit price for Reconnect to Existing Storm Sewer Pipe or Structure work includes:
   1. General Work Items of Article 1.2.
   2. Sawing into existing storm sewer pipe or structure (where required).
   3. Install block and mortar
   4. Reform flowline in existing storm structure.

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

C. The unit of measurement for payment is each.

1.11 STORM SEWER DIG DOWN AND REPAIR OFFSET JOINT – 5 FEET

A. The unit price for Storm Sewer Dig Down and Repair Offset Joint work includes:
   1. General Work Items of Article 1.2.
   2. Excavation.
   3. Exposing sanitary storm sewer line for repairs to offset joint.
   4. Sawing existing storm sewer.
   5. Remove and replace pipe (if applicable).
   6. Connection to existing storm sewer (if applicable).
   7. Repairing offset joints where present.

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

C. The unit of measurement for payment is each.

1.12 ABANDON/REMOVE EXISTING STORM SEWER

A. The unit price for Abandon/Remove Existing Storm Sewer work includes:
   1. General Work Items of Article 1.2.
   2. Excavation.
   3. Installing bulkheads and abandon sewer.

4. Provide and placing flowable fill.
5. Backfilling and compacting.

B. Measurement for payment will not be made.

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

1.13 REMOVE EXISTING STORM SEWER

A. The unit price for Remove Existing Storm Sewer work includes:
   1. General Work Items of Article 1.2.
   2. Excavation.
   3. Removal of existing storm sewer pipe and associated appurtenances.
   4. Providing granular backfill and compacting to grade.

B. Measurement of payment will be the actual horizontal length along the centerline of the removed sewer from centerline of the manhole to centerline of manhole.

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

1.14 REMOVE EXISTING STORM SEWER MANHOLES

A. The unit price for Remove Existing Storm Sewer Manholes work includes:
   1. General Work Items of Article 1.2.
   2. Excavation.
   3. Removal of existing storm sewer structure and associated appurtenances.
   4. Providing granular backfill and compacting to grade.

B. Measurement for payment will be the actual number of storm sewer manholes removed.

C. The unit of measurement for payment is each.

1.15 BULKHEAD 72-INCH STORM SEWER

A. The unit price for Bulkhead 72-Inch Storm Sewer work includes:
   1. General Work Items of Article 1.2.
   2. Install bulkhead in storm sewer manhole to remove temporary 72-inch connection at newly installed storm sewer manhole.
   3. Providing block and mortar to seal 72-inch opening in manhole.
   4. Bypass pumping if required.

B. Measurement for payment will not be made

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

1.16 REMOVE OBSTRUCTION

A. The unit price for Remove Obstruction work includes:
   1. General Work Items of Article 1.2.
   2. Entering storm sewer pipe and removing obstruction blocking the flowline.
   3. Excavation down to storm sewer pipe (if needed).
   4. Cutting of storm sewer pipe (if needed).
   5. Repair of storm sewer pipe (if needed).
   6. Granular backfill and compaction around storm sewer pipe (if needed).
   7. Disposal of storm sewer obstruction.

B. Measurement for payment will not be made

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

END OF SECTION

SECTION 01 22 03

MEASUREMENT AND PAYMENT WATER SYSTEM

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

	Bid Item No.
1. Water Mains (Natural Backfill)	W-01
2. Water Mains (Granular Backfill)	W-02 & W-04
3. Water Mains (Directional Drill)	W-03
4. 6-Inch Water Main Service or Hydrant Leads	W-05
5. Water Services (Directional Drill)	W-06
6. Water Services	W-07 & W-08
7. 2-Inch Corporation w/ Plug or Saddle and HDPE Pipe	W-09
8. Corporation and Curb Stop	W-10 & W-11
9. Valves	W-12, W-13 & W-14
10. Connection to Existing Water Mains	W-15, W-16, W-17 & W-18
11. Fire Hydrants	W-19, W-20 & W-21
12. Water Main Offset	W-22 & W-23
13. Abandon/Remove Water Main and Appurtenances	W-24

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 water 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 abandoned existing water main 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 WATER MAINS (NATURAL BACKFILL)

A. The unit price for Water Main (Natural Backfill) work includes:
   1. General Work Items of Article 1.2.
   2. Water pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
   3. Ductile or cast iron fittings.
   4. Tracer wire.
   5. Polyethylene encasement of ductile iron or cast iron pipe and fittings.
   6. Blocking and joint restraint.
   7. Disinfection of pipelines.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed water main with no deductions for fittings and valves.

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

1.4 WATER MAINS (GRANULAR BACKFILL)

A. The unit price for Water Main (Granular Backfill) work includes:
   1. General Work Items of Article 1.2.
   2. Water pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
   3. Ductile or cast iron fittings.
   4. Tracer wire.
   5. Polyethylene encasement of ductile iron or cast iron pipe and fittings.
   6. Blocking and joint restraints.
   7. Disinfection of pipelines.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed water main with no deductions for fittings and valves.

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

1.5 WATER MAINS (DIRECTIONAL DRILL)

A. The unit price for Water Main (Directional Drill) work includes:
   1. General Work Items of Article 1.2.
   2. Field verifies location and elevation of existing utilities before or during directional drilling.
   3. Boring pit and receiving pit excavation.
   4. PVC pipe and materials (Fusible PVC or PVC and Certa-Lok Restraint).
   5. Tracer wire.
   6. Installation of the PVC pipe by directional drilling.
   7. Backfilling and compacting the boring and receiving pits.
   8. Loading, hauling and disposing of surplus excavated material.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed water main with no deductions for fittings and valves.

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

1.6 6-INCH WATER MAIN SERVICE OR HYDRANT LEADS

A. The unit price for 6-Inch Water Main Service or Hydrant Lead work includes:
   1. General Work Items of Article 1.2.
   2. Water pipe and fitting of material stated in the Unit Price Bid Schedule and installed using the open trench method.
   3. Ductile or cast iron fittings.
   4. Blocking and joint restraints.
   5. Tracer wire.
   6. Disinfection of the pipeline.
   7. Polyethylene encasement of ductile iron or cast iron pipe and fittings.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed water main from the center of the water main to the centerline of the hydrant with no deductions for the fittings and valves.

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

1.7 WATER SERVICES (DIRECTIONAL DRILL)

A. The unit price for Water Services (Directional Drill) work includes:
   1. General Work Items of Article 1.2.
   2. Pipe and fittings of material stated in the Unit Price Bid Schedule.
   3. Field verifies location and elevation of existing utilities before or during directional drilling.
   4. Boring pit and receiving pit excavation.
   5. Tracer wire.
   6. Installation of the pipe by directional drilling.
   7. Backfilling and compacting the boring and receiving pits.
   8. Connection to the existing water service.
   9. Loading, hauling and disposing of surplus excavated material.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed water service with no deductions for fittings and curb stops.

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

1.8 WATER SERVICES

A. The unit price for Water Services work includes:
   1. General Work Items of Article 1.2.
   2. Pipe and fittings of material stated in the Unit Price Bid Schedule.
   3. Tracer wire.
   4. Disinfection of pipelines.
   5. Install an 8’- 4”x4” board at the end of the lateral.

B. Measurement of payment will be the actual horizontal length along the centerline of the installed water service with no deductions for fittings and curb stops.

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

1.9 2-INCH CORPORATION WITH PLUG OR SADDLE AND HDPE PIPE

A. The unit price for 2-Inch Corporation with Plug or Saddle and HDPE Pipe work includes:
   1. General Work Items of Article 1.2.

2. Provide and install 2-inch corporation with plug (where required) with 2-inch HDPE pipe.
3. Provide and install 2-inch corporation with saddle (where required) with 2-inch HDPE pipe.
4. Remove 2-inch corporation with plug/saddle and repair water main.

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

C. The unit of measurement for payment is each.

1.10 CORPORATION AND CURB STOPS

A. The unit price for Corporation and Curb Stops work includes:
1. General Work Items of Article 1.2.
2. Supply curb stops and curb boxes.
3. Connection to existing water service (where required).
4. Installation of curb stops and curb boxes.
5. Tracer wire.

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

C. The unit of measurement for payment is each.

1.11 VALVES

A. The unit price for Valves work includes:
1. General Work Items of Article 1.2.
2. Valve.
3. Valve box.
4. Polyethylene encasement.
5. Stem.
6. Bedding material.

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

C. The unit of measurement for payment is each.

1.12 CONNECTIONS TO EXISTING WATER MAINS

A. The unit price for Connection to Existing Water Mains work includes:
1. General Work Items of Article 1.2.
2. Locating existing water main.
3. Connection to the end of existing pipe.
a. Remove existing plug.
b. Direct connection to end of existing pipe.
c. Transition fittings, if required.

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

C. The unit of measurement for payment is each.

1.13 FIRE HYDRANTS

A. The unit price for Fire Hydrants work includes:
   1. General Work Items of Article 1.2.
   2. Fire hydrant complete of the specified bury depth.
   3. Blocking and joint restraints.
   4. Hydrant wrenches.
   5. Hydrant markers.
   6. Polyethylene encasement.
   7. Drainage pit.
   8. Disinfection of hydrant.
   9. Tracer wire.
   10. Tracer wire access box.

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

C. The unit of measurement for payment is each.

1.14 WATER MAIN OFFSET

A. The unit price for Water Main Offset work includes:
   1. General Work Items of Article 1.2.
   2. Ductile iron fittings and PVC pipe.
   3. Tracer Wire.
   4. Polyethylene encasement of ductile iron pipe and fittings.
   5. Blocking and joint restraints

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

C. The unit of measurement for payment is each.

1.15 ABANDON / REMOVE WATER MAIN AND APPPURTENANCES

A. The unit price for Abandon/Remove Water Main and Appurtenances work includes:
   1. General Work Items of Article 1.2.
   2. Excavating.
   3. Install bulkheads and abandon water line.
   4. Removing existing water main where in conflict with other utilities.
   5. Providing and placing flowable fill.
   6. Backfilling and compacting.
   7. Removal and disposal of appurtenances 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. Unclassified Excavation	SD-02
3. Remove Asphaltic Concrete Pavement	SD-03
4. Remove or Blackout Existing Paint Striping	SD-04
5. Mill Asphaltic Concrete Pavement	SD-05
6. Pulverize Asphaltic Concrete Pavement	SD-06
7. Salvage and Reuse Asphaltic Concrete Pavement and Aggregate	SD-07
8. Crushed Aggregate Base and Surface Course	SD-08
9. Crushed Aggregate Base and Surface Course (Shouldering)	SD-09
10. Rip Rap Erosion Control	SD-10
11. Asphaltic Concrete Pavement	SD-11 & SD-12
12. Asphaltic Concrete Pavement Patch	SD-13
13. Portland Cement Concrete Curb and Gutter	SD-14 & SD-15
14. Portland Cement Concrete Pavement	SD-16
15. Portland Cement Concrete Driveway and Sidewalk	SD-17, SD-18 & SD-19
16. Provide Concrete Flume	SD-20
17. Deformed Reinforcement Bars	SD-21
18. Drilling Tie Bars	SD-22
19. Detectable Warning Field Natural	SD-23
20. Pavement Marking Epoxy Lines	SD-24
21. Pavement Marking Epoxy Symbols	SD-25
22. Landscaping – Topsoil, Seed, Fertilize, and Mulch/Erosion Mat	SD-26 & SD-27
23. Site Access Restoration - Regrade Topsoil, Seed, Fertilizer and Mulch	SD-28

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. Saw cutting 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 trees, brush, windfalls, logs and other vegetation.
   3. Removing and disposing of roots, stumps, stubs, logs and other timber.
   4. Stripping and stockpiling topsoil.

B. Measurement of payment will not be made.

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

1.4 UNCLASSIFIED EXCAVATION

A. The unit price for 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 REMOVE ASPHALTIC CONCRETE PAVEMENT

A. The unit price for Remove Asphaltic Concrete Pavement work includes:
   1. General Work Items of Article 1.2.
   2. Removing existing asphalt surface to length, width and depth as shown on Drawings or specified elsewhere.
   3. Hauling and disposing of removed asphaltic surface.
   4. Cleaning of area removed.
   5. Fine grading existing base to plan elevations.

B. Measurement of payment will be the average horizontal length and width of asphalt surface removed.

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

1.6 REMOVE OR BLACK OUT EXISTING PAINT STRIPING

A. The unit price for Remove or Black Out Existing Paint Striping Pavement work includes:
   1. General Work Items of Article 1.2.
   2. Surface grinding or sand blasting of paint striping at locations and lengths shown on plans such that the existing pavement marking are no longer discernable (if applicable).
   3. Blacking out of existing striping with black paint at locations and lengths shown on plans such that the existing pavement marking are no longer discernable (if applicable).
   4. Containment of grindings or sand blasting.
   5. Cleaning of area where striping is removed.

B. Measurement for payment will not be made.

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

1.7 MILL ASPHALTIC CONCRETE PAVEMENT

A. The unit price for Mill Asphaltic Concrete Pavement work includes:
   1. General Work Items of Article 1.2.
   2. Milling to length, width and depth as shown on Drawings or specified elsewhere.
   3. Hauling and disposing of millings.
   4. Cleaning of area milled.

B. Measurement for payment will be the average horizontal length and width of roadway.

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

1.8 PULVERIZE ASPHALTIC CONCRETE PAVEMENT

A. The unit price for Pulverize Asphaltic Concrete Pavement work includes:
   1. General Work Items of Article 1.2.
   2. Pulverizing asphaltic concrete pavement with crushed aggregate base course to a depth of 8-inches.
   3. Compacting and fine grading of pulverized material.

B. Measurement for payment will be the average horizontal length and width of roadway.

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

1.9 SALVAGE AND REUSE ASPHALTIC CONCRETE PAVEMENT AND AGGREGATE

A. The unit price for Salvage and Reuse Asphaltic Concrete Pavement and Aggregate work includes:
   1. General Work Items of Article 1.2.
   2. Removal of pulverized asphaltic concrete pavement material and stockpiling material at location designated by the engineer.
   3. Placement of asphaltic concrete pavement and aggregate at locations and depths indicated on drawings.
   4. Compacting and fine grading of pulverized material.

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.

1.10 CRUSHED AGGREGATE BASE AND SURFACE COURSE

A. The unit price for Crushed Aggregate Base and Surface Course work includes:
   1. General Work Items of Article 1.2.
   2. Aggregate material.
   3. Preparation of foundation.
   4. Placing and compacting to thickness and width shown on the Drawings or specified elsewhere.
   5. Maintenance until surface pavement is constructed.
   6. Preparation of crushed aggregate base for paving.
   7. Adjustment of manholes and valve boxes to proposed finish road grade.

B. Measurement of payment will be the actual amount of material required and incorporated in the work verified by submitting to the Engineer delivery tickets provided with each load showing the weight measured on a certified scale, type of material, the date delivered and the project name. Aggregates in excess of seven percent (7%) total moisture determined based on the dry mass of the aggregates will have moisture content in excess of seven percent (7%) deducted from the measured weight.

C. The unit of measurement for payment is tons.

1.11 CRUSHED AGGREGATE BASE AND SURFACE COURSE (SHOULDERING)

A. The unit price for Crushed Aggregate Base and Surface Course (Shouldering) work includes:
   1. General Work Items of Article 1.2.
   2. Aggregate material.
   3. Preparation of foundation.
   4. Placing and compacting to thickness and width shown on the Drawings or specified elsewhere.
   5. Maintenance until surface pavement is constructed.
   6. Preparation of crushed aggregate base for paving.
   7. Adjustment of manholes and valve boxes to proposed finish road grade.

B. Measurement of payment will be:
   1. Width:
      a. The width will not be greater than the maximum trench width at the surface which is greater of the pipe outside diameter plus twenty-four (24) inches or the distance from the surface to the top of the pipe embedment; or
      b. If the surface removal and the replacement limits are shown on the drawings outside the maximum trench width, then the actual average width of the area will be measured.
   2. The depth will be the actual measured depth not to exceed the depth shown on the drawings or specified elsewhere.

3. The length will be the actual length measured longitudinally along the installed facility.

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

1.12 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.

1.13 ASPHALTIC CONCRETE PAVEMENT

A. The unit price for Asphaltic Concrete Pavement work includes:
   1. General Work Items of Article 1.2.
   2. Asphaltic concrete mixture, tack coat and other required materials
   3. Surface preparation.
   4. Provide tack coat on base material.
   5. Saw cutting and/or mill adjacent and abutting pavement surfaces.
   6. Asphaltic concrete placement and compaction to thickness and width shown on the drawings or specified elsewhere.
   7. Tack coat between asphaltic concrete courses and abutting pavements.

B. Measurement for payment will be the actual amount of material required and incorporated in the work verified by submitting to the Engineer delivery tickets provided with each load showing the weight measured on a certified scale, type of material, the date delivered and the project name.

C. The Unit Price shall be adjusted for deficiencies for less than minimum density represented by the average lot density of five nuclear density tests of 750 tons of asphaltic concrete placed as shown in the following table:

Density Deficiency-Percent of Unit Price for Payment

%Lot Density Below Specified Minimum	WisDOT Mixes
From 0.5-1.0 inclusive	98%
From 1.1-1.5 inclusive	95%
From 1.6-2.0 inclusive	91%
From 2.1-2.5 inclusive	85%
From 2.6-3.0 inclusive	70%
More than 3.0	0%

D. The unit of measurement for payment is tons.

1.14 ASPHALTIC 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 (where required).
   7. Asphaltic concrete placement and compaction to thickness matching surrounding pavements.
   8. Tack coat between asphaltic courses and abutting pavements.

B. Measurement for payment will be the area of roadway patched.

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

1.15 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.

1.16 PORTLAND CEMENT CONCRETE PAVEMENT

A. The unit price for Portland Cement Concrete Pavement work includes:
   1. General Work Items of Article 1.2.
   2. Furnish all labor, tools, equipment and services.
   3. Providing Portland cement concrete mixture of thickness shown in the drawings or specified elsewhere.
   4. Surface preparation.
   5. Providing reinforcement including tie bars and dowel bars.
   6. Drilling tie bars and dowel bars into existing pavement.
   7. Joint sealing.
   8. Providing curing.
   9. Concrete sealing with linseed oil.
   10. Fine grading of subgrade.
   11. Providing expansion joints and contraction joints.
   12. Adjustment of manholes, water valves, inlets/catch basin and other structures to finish grade.
   13. Finishing.
   14. Protection.

B. Measurement for payment will be length and width of areas paved. Concrete curb and gutter will be measured separately, regardless if the curb is installed with integral curb. Curb and gutter will be paid per linear foot for twenty-four (24) inch width. The width and length will be subtracted from the concrete pavement area if integral curb is constructed.

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

1.17 PORTLAND CEMENT CONCRETE DRIVEWAY AND SIDEWALK

A. The unit price for Portland Cement Concrete Sidewalk and Driveway work includes:
   1. General Work Items of Article 1.2.
   2. Providing Portland cement concrete mixture of thickness shown in the drawings or specified elsewhere.
   3. Providing reinforcement.
   4. Providing expansion joint.
   5. Providing curing.
   6. Existing pavement removal.
   7. Subgrade preparation.
   8. Providing contraction joints.
   9. Handicap ramps.
   10. Sidewalk steps.
   11. Saw cutting adjacent surfaces.
   12. Finishing.
   13. Protection.
   14. Restoration.

B. Measurement for payment will be the average horizontal length and width of the concrete placed.

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

1.18 PROVIDE CONCRETE FLUME

A. The unit price for Provide Concrete Flume work includes:
   1. General Work Items of Article 1.2.
   2. Furnish all labor, tools, equipment and services.
   3. Providing Portland cement concrete mixture of thickness shown in the drawings or specified elsewhere.
   4. Surface preparation.
   5. Providing reinforcement including tie bars and dowel bars.
   6. Joint sealing.
   7. Providing curing.
   8. Concrete sealing with linseed oil.
   9. Fine grading of subgrade.
   10. Providing expansion joints and contraction joints.
   11. Finishing.
   12. Protection.

B. Measurement for payment will be actual quantity of flumes constructed.

C. The unit of measurement for payment is each.

1.19 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.

1.20 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.

1.21 DETECTABLE WARNING FIELD NATURAL

A. The unit price for Detectable Warning Field Natural work includes:
   1. General Work Items of Article 1.2.
   2. Providing and installing Detectable Warning Field per ADA requirements.
   3. Each detectable warning field shall be two (2) feet by four (4) feet.

B. Measurement for payment will be the actual number of detectable warning field installed.

C. The unit of measurement for payment is each.

1.22 PAVEMENT MARKING EPOXY LINES

A. The unit price for Pavement Marking Epoxy Lines includes:
   1. General Work Items of Article 1.2.
   2. Providing and installing the Pavement Marking Epoxy Lines includes preparing the surface, including brush-off blasting of concrete, for providing all marking, including reflectorization with glass beads, for protecting marking until dry or cured, and for replacing marking improperly constructed or that fails during the warranty period.
   3. For remarking if initially applies at less than 90% of the specified rate.

B. Measurement of payment will be by the linear foot, calculates as follows:
   1. For solid lines; by adding the linear feet of solid line measured end to end.
   2. For intermittent lines; by multiplying the specified length of the individual marking of the line by the number of markings in the intermittent line end to end.

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

1.23 PAVEMENT MARKING EPOXY SYMBOLS

A. The unit price for Pavement Marking Epoxy Symbols includes:
   1. General Work Items of Article 1.2.
   2. Providing and installing the Pavement Marking Epoxy Words & Arrows includes preparing the surface, including brush-off blasting of concrete, for providing all marking, including reflectorization with glass beads, for protecting marking until

dry or cured, and for replacing marking improperly constructed or that fails during the warranty period.

3. For remarking if initially applies at less than 90% of the specified rate.

B. Measurement for payment will be by each individual unit.

C. The unit of measurement for payment is each.

1.24 LANDSCAPING- TOPSOIL, SEED, FERTILIZE AND MULCH/EROSION MAT

A. The unit price for Landscaping- Topsoil, Seed, Fertilize, and Mulch/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 where required on the plans.
   6. Provide and place erosion mat material as stated in the Drawings or specified elsewhere.
   7. Provide maintenance

B. Measurement for payment will be the width and length not greater than the road right-of-way, not greater than the easement and not greater than fifteen (15) feet beyond the top of either side of ditches outside the right-of-way.

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

1.25 SITE ACCESS RESTORATION – REGRADE TOPSOIL, SEED, FERTILIZER AND MULCH

A. The unit price for Site Access Restoration - Regrade topsoil, Seed, Fertilizer and Mulch.
   1. General Work Items of Article 1.2.
   2. Regrade topsoil of all disturbed areas on project from mobilization of equipment.
   3. Provide seed.
   4. Provide Fertilizer.
   5. Provide mulch.
   6. Provide maintenance.

B. Measurement for payment will be the width and length not greater than the easement.

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. Erosion Bales	SC-02
3. Erosion Control Logs	SC-03
4. Inlet Protection Erosion Control	SC-04
5. Tracking Pad	SC-05
6. Adjusting Existing Structure Frame and Casting	SC-06 & SC-07
7. Polystyrene Insulation Board	SC-08
8. Remove and Reinstall Sign	SC-09
9. Remove Tree and Grind Stump	SC-10
10. Traffic Control	SC-11, SC-12 & SC-13

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 EROSION BALES

A. The unit price for Erosion Bales work includes:
   1. General Work Items of Article 1.2.
   2. Provide straw bales and anchor stakes.
   3. Excavate and embed the straw bales.
   4. Inspection and maintenance of the installed straw bales.
   5. Removal of the straw bales.
   6. Finish grading.
   7. Topsoil, seeding, fertilizing, and mulching area in the vicinity of the removed erosion bales which does not have established turf.

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

C. The unit of measurement for payment is each.

1.5 EROSION CONTROL LOGS

A. The unit price for Erosion Control Logs work includes:
   1. General Work Items of Article 1.2.
   2. Provide erosion control logs.
   3. Placement of logs and anchor stakes at locations indicated on the plans.
   4. Inspection and maintenance of the installed erosion logs.
   5. Removal of the erosion logs.
   6. Finish grading.
   7. Topsoil, seeding, fertilizing, and mulching area in the vicinity of the removed erosion control logs 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.

1.6 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 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.

1.8 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. City of De Pere will provide structure castings. Contractor will pick up castings at 925 South Sixth Street.
   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.

1.8 POLYSTYRENE INSULATION BOARDS

A. The unit price for Polystyrene Insulation Boards work includes:
   1. General Work Items of Article 1.2.
   2. Supply and install a 2-inch thick insulation board per the Standard Specifications along the top of the water main and/or service and 6-inch above the water main and/or service with pipe bedding in between the polystyrene board and pipe.

B. Measurement and payment will be the horizontal length installed.

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

1.9 REMOVE AND REINSTALL SIGN

A. The unit price for Remove and Reinstall Sign work includes:
   1. General Work Items of Article 1.2.
   2. Protection, removal, and storage of existing sign onsite.
   3. Removal and replacement of sign footing once localized work is completed.
   4. Reinstallation of sign to match pre-existing conditions.

B. Measurement for payment will not be made.

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

1.10 REMOVE TREE AND GRIND STUMP

A. The unit price for Remove Tree and Grind Stump 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 diameter 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 is inch diameter.

1.11 TRAFFIC CONTROL

A. The unit price for Traffic Control Work includes:
   1. General Work Items of Article 1.2.
   2. Providing, installing, maintaining, and removing the traffic control signing and barricades as shown on the plan sand per the MUTCD.
   3. Traffic detour including covering signs when not in use.
   4. Flaggers per the MUTCD.
   5. Sidewalk closure.

B. Measurement for payment will not be made. This item applies to the specific bid item lists. All other traffic control is incidental to other items bid.

C. The unit of measurement for payment is for each intersection 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 proceeded 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. Wisconsin Department of Natural Resources – Water Main Extension
   2. Wisconsin Department of Natural Resources – Sanitary Sewer Extension
   3. Wisconsin Department of Natural Resources – WRAPP (Storm Water Notice of Intent)
   4. Green Bay Metropolitan Sewerage District Plumbing Permit (1881 Southbridge Road)
   5. Green Bay Metropolitan Sewerage District Plumbing Permit (Ash Street Easement)
   6. Brown County Lane Closure Permit (Grant Street at Lawrence Drive)

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

PART 2 – PRODUCTS

PART 3 – EXECUTION

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 11 26.16

PULVERIZED ASPHALT AND AGGREGATE BASE COURSE

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes
   1. Material testing.
   2. Foundation preparation.
   3. Pulverize asphalt and aggregate base course installation.

1.2 REFERENCES

A. Wisconsin Department of Transportation Section 325

1.3 QUALITY ASSURANCE

A. The Engineer will obtain an independent testing laboratory to provide quality control testing.

1.4 DELIVERY, STORAGE AND HANDLING

A. Stockpiling of Aggregates
   1. Store aggregates to prevent contamination by foreign matter or by aggregates of different sizes.

B. Delivery of Aggregates
   1. Vehicles used to transport aggregates shall be of a type to minimize loss of materials and excessive segregation of particles.

PART 2 – PRODUCTS

2.1 MATERIALS

2.2 SOURCE QUALITY CONTROL

PART 3 – EXECUTION

3.1 PREPARATION OF FOUNDATION

A. Pulverize the full depth (shown on plans or elsewhere) of the existing asphaltic pavement and aggregate until 97 percent or more will pass the 2-inch sieve. Windrow material as construction operations dictate.

B. Preparation of foundation for pulverized asphalt and aggregate base course shall be in accordance with requirements of Section "Excavation and Fill".

C. Do not place the base course on a foundation that is soft or spongy or one that is covered by ice or snow.

D. Do not place base material on a dry or dusty foundation when existing condition would cause rapid dissipation of moisture from base material and hinder or preclude its proper compaction.
   1. Apply water to such dry foundations and rework or re-compact as necessary.

3.2 PULVERIZE ASPHALT AND AGGREGATE BASE COURSE INSTALLATION

A. Construct surface base course to the width, thickness, section, and location shown on the drawings.
   1. Maximum compacted thickness of any one layer shall not exceed 8 inches.

B. Spreading Base Material
   1. Proceed with the work such that the hauling equipment will travel over previously placed material.
   2. Route hauling equipment as uniformly as possible over all portions of the previously constructed layers of the base course.
   3. Deposit the material on the foundation or previously placed layer in such a manner as to minimize segregation and to facilitate spreading to a uniform layer of the required dimensions.

C. Compaction
   1. After a layer of aggregate has been placed and spread to the required thickness, width, and section, it shall be compacted.
   2. Compact the re-laid material first with either a rubber tired roller or 12.5-ton or heavier vibratory padfoot roller and second with an 8-ton or heavier vibratory steel roller. Add water, as required, both before and during compaction.

3. Each layer or course placed shall be compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTMD1557).
4. Areas where proper compaction is not obtainable due to segregation of materials, excess fines or other deficiencies shall be reworked or removed and replaced with material that will that will yield the desired results.
5. Prior to and during compaction operations, shape and maintain the material to the proper dimensions.

D. Maintenance
   1. Provide maintenance of the base course until surface paving is complete or until the base is otherwise accepted.

E. Dust Abatement
   1. Minimize the dispersion of dust from the base course by the application of water or other approved dust control materials.

END OF SECTION

SECTION 33 00 02.1

FUSIBLE POLYVINYL CHLORIDE (PVC) PIPE

1.1 SUMMARY

A. Section Includes:
   1. PVC pipe for water main

B. The products described are not installed under this Section.

C. This specification section is a supplemental to the City of De Pere 2012 Standard Specifications and Section 33 00 02 Polyvinyl Pipe (PVC) Pipe and Fittings.

D. This material specification covers the requirements of fusible polyvinylchloride pipe, including Fusible C-900 and Fusible C-905.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1.	D1784	Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) Compounds
2.	D1785	Specifications for Poly (Vinyl Chloride) (PVC) Plastic Pipe Schedules 40, 80, and 120
3.	D2152	Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride)(PVC) Pipe and Molded Fittings by Acetone Immersion.
4.	D2241	Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)

B. American Water Works Association (AWWA)

1.	C900	Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch through 12-inch for water
2.	C905	Standard for Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14-inch through 36-inch
3.	M23	Manual of Supply Practices PVC Pipe-Design and Installation, Second Edition

C. National Sanitation Foundation (NSF)

1.	NSF-14	Plastic Piping System Components and Related Materials
2.	NSF-61	Drinking Water Components-Health Effects

D. PPI

1.	TR-2	PVC Range Composition Listing Qualified Ingredients

1.2 SUBMITTALS

A. Submit the following:
   1. Certification of productions date of all materials.
   2. Manufacturer's certification that the materials delivered were manufactured, sampled, tested, and inspected in accordance with this specifications and appropriate referenced standards.
   3. Product data sheet.
   4. Manufacturer's recommendations for assembly.

1.4 QUALITY ASSURANCE

A. Make pipe available to the Engineer's Representative for inspection.

B. Pipe shall be considered defective and will be rejected when:
   1. Pitted or cratered.
   2. Flaking.
   3. Straightness varies more than ½ inch in 10 feet.
   4. Any defect which prevents assembly according to manufacturer's recommendations.
   5. Not utilized within six months of date of production.
   6. Pipe is not properly marked.

C. Material brands and/or pipe classes shall not be mixed.

D. Pipe Marking – pipe and fittings shall be marked as follows:
   1. Manufacturer's name, trademark or logo.
   2. Nominal size.
   3. PVC cell classification.
   4. Pipe stiffness designation, dimension ration, or schedule size and pressure class.
   5. ASTM or AWWA specification designation.
   6. National Sanitation Foundation approval (pipe for potable water).
   7. Production date.

E. MANUFACTURER REQUIREMENTS
   1. All piping shall be made from PVC compound conforming to cell classification 12454 per ASTM D1784.

F. FUSION TECHNICIAN REQUIREMENTS
   1. Fusion Technician shall be qualified by the pipe supplier to install fusible polyvinylchloride pipe. Qualification shall be current as of the actual date of the fusion performance on the project.

G. SPECIFIED PIPE SUPPLIERS
   1. Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900, or Fusible C-905 for Underground Solutions, Inc. or Engineer approved equal.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inspect the pipe shipment to identify shifted loads, broken packaging or rough treatment, which could be an indication of damage.

B. Unload the pipe in a manner which will not put stress on the pipe or strike anything causing damage.

C. Place and store the pipe package units on level ground stacked no more than 8 feet high. Do not store close to heat sources.

D. Store gaskets away from excessive exposure to heat, direct sunlight, ozone, oil or grease.

E. Store Solvent cement in tightly sealed containers away from excessive heat.

F. Handle pipe in a manner to prevent impact blows, abrasion damage, gouging or cutting.

G. When handling pipe in cold weather, provide additional care to prevent damage due to impact. Impact strength is reduced in cold weather.

PART 2 – PRODUCTS

2.1 WATER MAIN

A. Fusible polyvinylchloride pipe for potable water shall conform to AWWA C900, ASSA C905, or ASTM D2241, as applicable. Testing shall be in accordance with the referenced AWWA standards for all pipe types. Pipe shall be marked verifying suitability for potable water service per NSF-61

B. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.

C. The pipe shall be manufactured in a standard 40 foot nominal length or custom lengths, unless otherwise approved by the Engineer.

D. Pipe shall be blue in color for potable water use.

2.2 FUSION JOINTS

A. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints.

2.3 FUSIBLE POLYVINYLCHLORIDE SWEEPS OR BENDS

A. Sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances and pressure class of the pipe being joined by the sweep or bend.

B. Sweeps or bends shall be manufactured from the same fusible polyvinyl chloride pipe being used for the installation, and shall have at least two feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation.

C. Angles shall not be greater than 22.5 degrees, and shall be used in nominal diameters ranging from 4-inch through 16-inch.

PART 3 – EXECUTION

3.1 FUSION PROCESS

A. Pipe shall be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and the pipe supplier guidelines.

B. Pipe shall be fused by a qualified fusion technician.

C. Pipe supplier’s procedures shall be followed at all times during fusion procedures.

D. Each fusion shall be recorded and logged by an approved electronic monitoring device (data logger) connected to the fusion machine, which utilizes a current version of the pipe suppliers recommended and compatible software.

E. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process.

3.3 GENERAL INSTALLATION

A. Installation guidelines from the pipe supplier shall be followed for all installations.

B. The Pipe shall be installed in a manner so as not to exceed the recommended bending radius guidelines.

C. Where pipe is installed by pulling in tension, the recommended maximum safe pulling force, established by the pipe supplier, shall not be exceeded.

END OF SECTION

EXHIBITS

TABLE OF CONTENTS

20-01A
509 LEONARD STREET
SANITARY LATERAL REPAIR

509 LEONARD STREET
SANITARY LATERAL REPAIR
169' FROM MH I9-IZSMO8
APPROXIMATLY 18' DEEP TO FLOWLINE

I9-IUQMJT
I9-ITLMB6
I9-HLELYH
I9-IZSM08
I9-LM7KQM
I9-HLKJJO

48 inch Concrete
15 inch Lined

LEONARD ST
EDGAR ST
DUNNING DR

502
1902
514
516
512
500
1816
1808
515
509
503
532
1813
526
518
512
508
1809
1816
1812
431
1808
502
1804
521
519
500-BK
509
505
501
1800
428
441
437

Legend

- Sanitary Manhole
- Sanitary Pump
- Sanitary Gravity Main
- Sanitary Pressurized Main

N W E S 1 inch = 120 feet

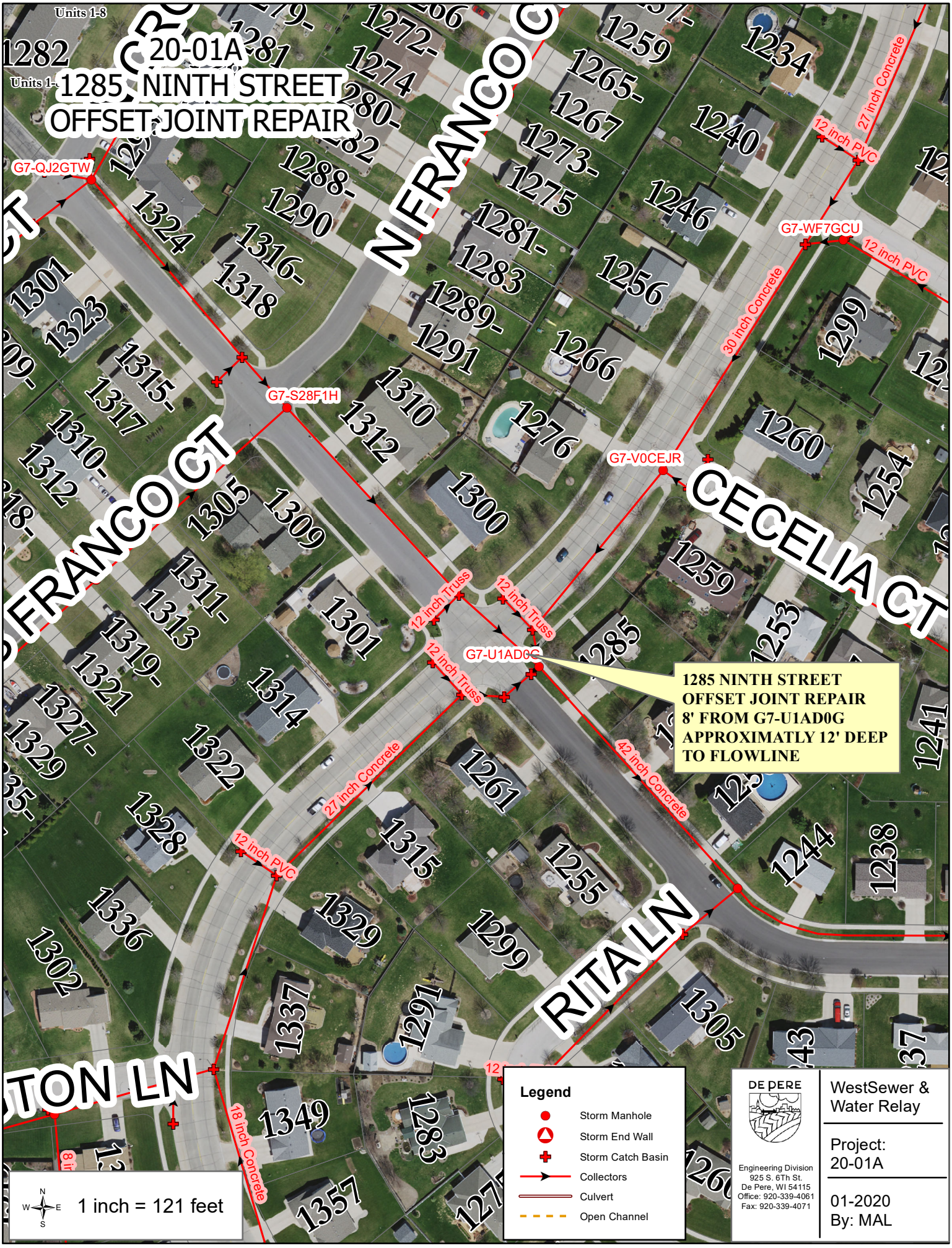
DE PERE
Engineering Division
925 S. 6Th St.
De Pere, WI 54115
Office: 920-339-4061
Fax: 920-339-4071

WestSewer & Water Relay

Project: 20-01A

07-2019
By: MAL


20-01A
1417 LOST DAUPHIN ROAD
SANITARY LATERAL REPAIR
1300
1310
1201
1205
1213
1303
1305
1309
1313
1321
1401
1405
1409
1413
1417
1507
1513
1514
1519
1520
1525
1526
1531
1532
1515
200
213
217
225
229
233
236
237
244
222
224
228
230
235
I7-6OCGC6
I7-3ZBF3E
I7-4F0EUK
I7-30FDAZ
I7-2NKCMO
I7-1JYAKS
8 inch PVC
8 inch Lined
12 inch Lined
8 inch Clay
8 inch Truss
NICOLET PL
PROSPECT PL
LOST DAUPHIN RD
FOX RIDGE CT
28' FROM MANHOLE I7-1JYAKS
HOLE LOCATED AT BOTTOM OF LATERAL
CONNECTION OF 8" CLAY SAN. PROVIDE
NEW WYE AND RECONNECT LATERAL
Legend
Sanitary Manhole
Sanitary Pump
Sanitary Gravity Main
Sanitary Pressurized Main
1 inch = 138 feet
DE PERE
Engineering Division
925 S. 6Th St.
De Pere, WI 54115
Office: 920-339-4061
Fax: 920-339-4071
West Sewer & Water Relay
Project: 20-01A
01-2020
By: MAL


20-01A
1285 NINTH STREET
OFFSET JOINT REPAIR
G7-QJ2GTW
G7-S28F1H
G7-V0CEJR
G7-WF7GCU
G7-U1AD0C
12 inch PVC
27 inch Concrete
30 inch Concrete
12 inch Truss
42 inch Concrete
18 inch Concrete
FRANCO CT
CECELIA CT
RITA LN
1285 NINTH STREET
OFFSET JOINT REPAIR
8' FROM G7-U1AD0G
APPROXIMATLY 12' DEEP
TO FLOWLINE
Legend
Storm Manhole
Storm End Wall
Storm Catch Basin
Collectors
Culvert
Open Channel
1 inch = 121 feet
DE PERE
Engineering Division
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De Pere, WI 54115
Office: 920-339-4061
Fax: 920-339-4071
WestSewer &
Water Relay
Project:
20-01A
01-2020
By: MAL


West Outfall Repair Location
Access to site
from Southwest Park
DAYTONA SPEEDWAY
POCONO SPDWY
TALLADEGA SPDWY
INDY CT
2390
Units 1-3
2396
Units 1-3
2392
Units 1-8
2394
Units 1-3
1 inch = 200 feet
DE PERE
Engineering Division
925 S. 6Th St.
De Pere, WI 54115
Office: 920-339-4061
Fax: 920-339-4071
Daytona Spdwy
(Pocono Ct)
Pond
Project:
June 2019
BY: JML

APPENDIX

GEOTECHNICAL ENGINEERING REPORT FOR DE PERE PROJECT 20-01 BY ECS MIDWEST, LLC.

ECS Midwest, LLC

Geotechnical Engineering Report

De Pere Project 20-01

Various Streets
De Pere, Brown County, Wisconsin

ECS Project Number 59:1669-A

November 22, 2019

November 22, 2019

Mr. Eric Rakers
City of De Pere
925 South Sixth Street
De Pere, WI 54115
Email: erakers@mail.de-pere.org

ECS Project No. 59:1669-A

Reference: Geotechnical Engineering Report
De Pere Project 20-01
Various Streets
De Pere, Brown County, Wisconsin

Mr. Rakers:

ECS Midwest, LLC (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the above-referenced project. We performed our services in general accordance with our Proposal No. 59:1290, dated December 20, 2018. This report presents our understanding of the geotechnical aspects of the project, the results of the field exploration and laboratory testing conducted, and our design and construction recommendations.

It has been our pleasure to be of service to the City of De Pere on this project. We would appreciate the opportunity to continue our services during the remainder of design and provide our services during construction to verify the assumptions of subsurface conditions made for this report. Please contact us should you have any questions concerning the information contained in this report, or if we can be of further assistance to you.

Respectfully submitted,

ECS Midwest, LLC

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Alex E. Barker, P.E.
Office Manager
abarker@ecslimited.com

TABLE OF CONTENTS

APPENDICES

Appendix A – Drawings & Reports

- Site Location Diagram
- Boring Location Diagram

Appendix B – Field Operations

- Reference Notes for Boring Logs
- Test Boring Log 1 through 7
- Soil And Site Evaluation - Storm

Appendix C – Supplemental Report Documents

- Important Information about This Geotechnical-Engineering Report

EXECUTIVE SUMMARY

The main findings of the exploration are briefly summarized below. Information gleaned from the executive summary should not be utilized in lieu of reading the entire geotechnical report.

- The geotechnical subsurface exploration performed at the sites included seven (7) standard penetration test borings. ECS drilled the borings to a depth of approximately 5 to 20 feet below the existing grade for a total of 65 feet.

- The borings generally encountered a topsoil or asphalt pavement section at the surface and then existing fill strata overlying a combination of glacial till and lacustrine soils, which extended to the termination depth of the borings. However, Boring 1, 5 and 7 did not contain existing fill strata. The encountered glacial till consisted of medium stiff to stiff lean clay (CL) and sandy lean clay (CL) soils, while the lacustrine soil consisted of medium stiff to very stiff silty clay (CL/ML), fat clay (CH), and lean clay (CL). Further, the existing FILL consisted of medium stiff to stiff organic silt (OL), lean clay (CL), and sandy lean clay (CL) soils.

- The drill crew observed the boreholes for a groundwater level during drilling and at the completion of drilling operations. However, none of the borings contained a groundwater level.

- ECS recommends the removal of all existing fill and organic soils from below utility structures and pipes.

- ECS anticipates Excavation Below Subgrade (EBS) will be performed where the encountered subgrade soils contain more than 5 percent organic content or proof-rolling operations indicate rutting or deflections in excess of 1 inch. Consideration should be given to providing EBS for frost concerns where the exposed subgrade contains highly frost susceptible soil (e.g. silt or silty clay).

- In our opinion, initial attempts to control groundwater seepage into excavations could include a series of sump pits and pumps. However, if the groundwater level cannot be controlled with a series of sump pumps, or where excavations extend below the static groundwater level, then dewatering efforts will require a more substantial system (such as temporary well point system).

1.0 INTRODUCTION

1.1 GENERAL

ECS prepared this report for the purpose of providing the results of our subsurface exploration and laboratory testing, site characterization, engineering analysis, and geotechnical opinions and recommendations concerning the potential suitability of the subject site for the design and construction of utility infrastructure, pavements, and storm water management systems. The report also includes our recommendations concerning geotechnical subgrade preparation, fill placement, dewatering and construction considerations.

1.2 SCOPE OF SERVICES

ECS performed seven (7) standard penetration test borings at the approximate locations shown on the Soil Bore Location maps dated September 2019, which were prepared by the City of De Pere. We also implemented a limited laboratory-testing program to characterize the physical and engineering properties of the subsurface soils.

This report discusses our exploration and testing procedures, presents our findings and evaluations, and includes the following.

- A brief description of our field and laboratory test procedures and results.
- A description of the observed surface topographical features and site conditions.
- A description of area and site geologic conditions.
- A description of the interpreted subsurface soil stratigraphy with pertinent available physical properties.
- Copies of our records of subsurface exploration (test boring logs).
- Recommendations for design of pavements (rigid and flexible) including subgrade preparation, soil parameters for WisDOT pavement design and pavement drainage.
- Recommendations for storm water infiltration.
- Utility construction considerations.
- Recommendations for site preparation and construction of engineered fills, including an evaluation of on-site soils for use as compacted fills, and delineation of potentially unsuitable soils.
- Evaluation and recommendations relative to groundwater control.

1.3 AUTHORIZATION

ECS provided services in accordance with our Proposal No. 59:1290, (dated December 20, 2018) and the "Agreement for Consulting Services – City of De Pere" authorized by Mr. Michael Walsh, Mayor and Ms. Shana Ledvina, Clerk-Treasurer (dated February 18, 2019), and includes the Terms and Conditions of Service outlined in the Proposal and Agreement.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The project sites are located in the City of De Pere, Brown County, Wisconsin. Specifically, the project sites are located at the following locations:

- East Matthew Drive Storm Ponds (Boring 1 and 2) located at the southeast corner of the intersection of East Matthew Drive and Suburban Drive.
- Cass Street (Boring 3) at the west cul de sac of the street.
- Alley (Boring 4) north of George Street, between Ontario Street and Winnebago Street.
- South 8th Street (Boring 5) between Main Avenue and Reid Street.
- Reid Street (Boring 6) between South 8th Street and Allard Street.
- Patriot Way (Boring 7) at its intersection with Patrick Henry Avenue.

The site location is shown in Figure 2.1.1 and on the Site Location Diagram in Appendix A of this report.

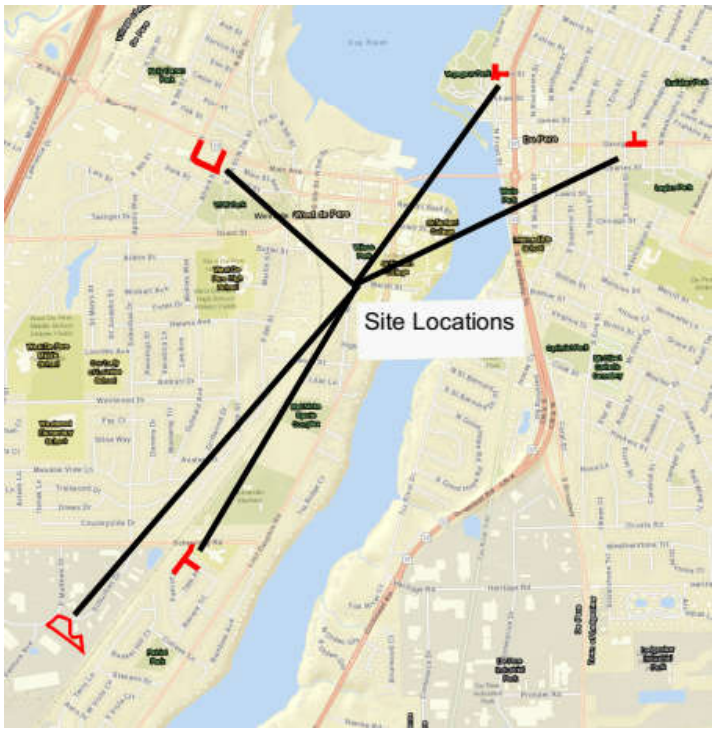


Figure 2.1.1 Site Locations (approximately outlined in red)

2.2 PAST SITE HISTORY/USES

ECS reviewed aerial photographs of the subject site dated 1992, 2005, 2006, 2008, 2010, 2011, 2015, 2017 and 2018. Based on our review of the aerial photographs, the site use at the East Matthew Drive Storm Ponds appeared to consist of vacant land used for storm water management. Further, the site use at Cass Street, Alley, South 8th Street, Reid Street, and Patriot Way appeared to consist of asphalt paved urban street sections. These site uses appeared to have remained relatively unchanged since at least 1992.

2.3 CURRENT SITE CONDITIONS

The site of the proposed construction consisted of groomed lawn and existing storm water pond at the East Matthew Drive Storm Ponds and an asphalt paved urban street section at Cass Street, Alley, South 8th Street, Reid Street, and Patriot Way at the time of drilling. The ground surface generally consisted of nearly level to gently sloping soils across the sites. However, ECS did not determine the surface elevation at the boring locations.

2.4 PROPOSED CONSTRUCTION

ECS understands the proposed project will include reconstruction of existing municipal utilities, roadway pavements, and storm water management devices. Further, we anticipate the proposed pavements will consist of a concrete or bituminous pavement section, and the new vertical and horizontal alignments will approximately match the existing alignments (less than 2 feet of elevation change). The planned traffic volume was not provided to us at the time of this report. ***If the design changes, please notify ECS immediately so that we evaluate our recommendations and verify the recommendations are appropriate for the proposed construction.***

Where the borings encounter subsurface conditions that might be detrimental to the support of the proposed construction, ECS has assumed the owner will have an acceptable risk level if the detrimental material remains in place. With this in mind, this report assumes the owner would only be willing to accept a low risk for utility settlement in excess of 1 inch. In addition, we assume the owner would be willing to accept a moderate risk for reduced pavement performance. ***If these assumptions concerning the owner's acceptable risk level are incorrect, we should be immediately contacted so we can review our recommendations in light of the changed acceptable risk level.***

3.0 FIELD EXPLORATION

3.1 FIELD EXPLORATION PROGRAM

ECS used the boring depths and locations provided by Mr. Bob Krzewina of the City of De Pere, to characterize the project site in general geotechnical and geological terms, and to evaluate subsequent field and laboratory data to assist in the determination of geotechnical recommendations.

3.1.1 Test Borings

ECS drilled seven (7) standard penetration test borings within the limits of the proposed construction. The drill crew advanced four (4) of the borings to a depth of approximately 5 feet, one (1) to 10 feet, one (1) to 15 feet, and one (1) to 20 feet below the existing grade. We performed the borings with a truck vehicle mounted rotary drill rig utilizing continuous flight hollow stem augers (HSA).

City of De Pere personnel staked the test boring locations in the field. The approximate as-drilled test boring locations are shown on the Boring Location Diagram in Appendix A of this report. Please note, the drill crew offset Boring 1, 2, 3 and 5 from the marked locations because of conflicts with existing utilities or drill rig access concerns. The distance and direction of the offsets are noted on the boring logs in Appendix B of this report. However, our scope did not include obtaining the surface elevation at the boring locations.

The drill crew conducted standard penetration tests (SPTs) in the boreholes at regular intervals in general accordance with American Society for Testing Materials (ASTM) D1586 and American Association of State Highway and Transportation Officials (AASHTO) T206. The obtained standard penetration resistances provide a general indication of soil relative density and consistency. The drill crew chief visually and manually classified the samples in the field using ASTM D2488 as a guide. Field personnel then collected representative soil samples and returned them to the laboratory for further observation and verification of the field classification.

Some borehole backfill settlement or expansion can and will occur over time. Monitoring the boreholes after the initial drilling activities is not within our scope. Settlement or expansion of the borehole backfill can create a hazard and should be carefully monitored by the client.

3.2 SOIL SURVEY MAPPING

According to the Soil Survey from the USDA - Natural Resources Conservation Service (websoilsurvey.nrcs.usda.gov), which provides soil information to a shallow depth (generally less than 5 feet), the site soils are generally mapped as Fill land (Fd), Manawa silty clay loam (McA), Oshkosh sandy loam (OmB), and Oshkosh silt loam (OnB). These soil types are described with the following properties.

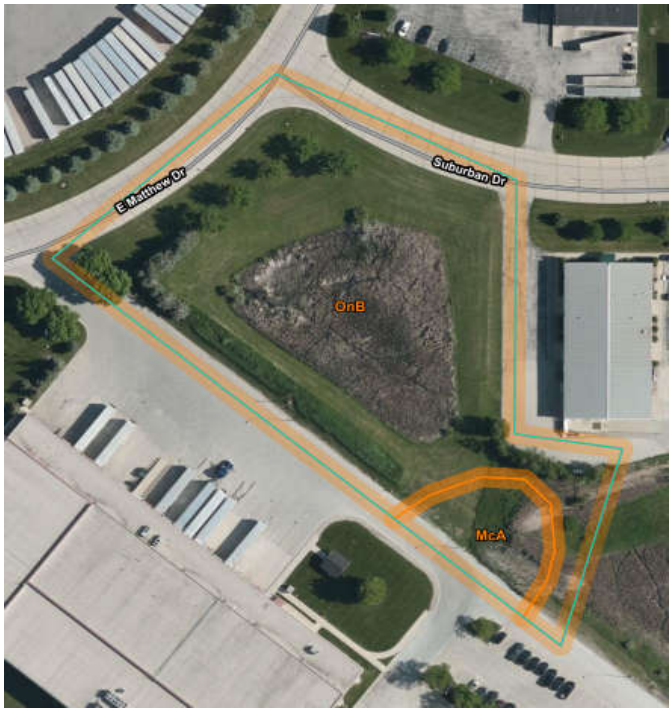
- Fill land (Fd) – Landforms consisting of human transported materials of various soil types. These soils are generally well drained and have a moderate potential for frost action. This soil type is mapped in the area of Boring 3.

- Manawa silty clay loam (McA) – Landforms consisting of drainageways with clayey till, and/or calcareous, dense clayey till. These soils are generally somewhat poorly drained, classified as being in Hydrologic Soil Group D, and have a moderate potential for frost action. This soil type is mapped in the area of Boring 2.

- Oshkosh sandy loam (OmB) – Landforms consisting of glacial lakes with silty loess over clayey lacustrine deposits. These soils are generally well drained, classified as being in Hydrologic Soil Group C, and have a moderate potential for frost action. This soil type is mapped in the area of Boring 5 and 6.

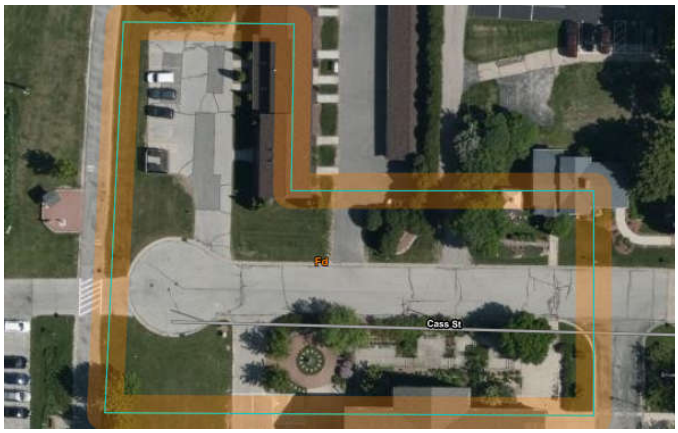
- Oshkosh silt loam (OnB) – Landforms consisting of glacial lakes with silty loess over clayey lacustrine deposits. These soils are generally well drained, classified as being in Hydrologic Soil Group C, and have a moderate potential for frost action. This soil type is mapped in the area of Boring 1, 4 and 7.

Soil mapping of the site vicinity is presented in the following figures.



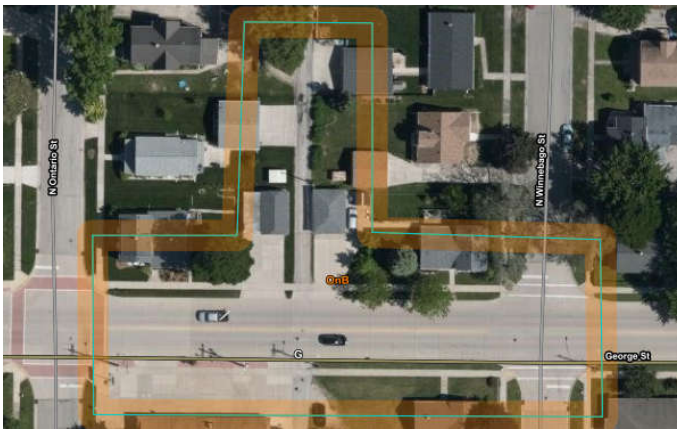
(Source: USDA - Natural Resources Conservation Service)

Figure 3.2.1 Soil Survey Information (East Matthew Drive Storm Ponds)



(Source: USDA - Natural Resources Conservation Service)

Figure 3.2.2 Soil Survey Information (Cass Street)



(Source: USDA - Natural Resources Conservation Service)

Figure 3.2.3 Soil Survey Information (Alley)

(Source: USDA - Natural Resources Conservation Service)

Figure 3.2.4 Soil Survey Information (South 8th Street and Reid Street)

(Source: USDA - Natural Resources Conservation Service)

Figure 3.2.5 Soil Survey Information (Patriot Way)

3.3 SUBSURFACE CHARACTERIZATION

The encountered subsurface conditions in the borings appeared to closely match published geological mapping, with the exception of the existing fill in Boring 2, 4 and 6. Table 3.3.1 of this report provides a generalized characterization of the soil strata encountered at the boring locations during our subsurface exploration. For subsurface information at a specific test boring location, refer to the boring logs in Appendix B of this report.

Table 3.3.1 Subsurface Stratigraphy

Approximate Depth Range (feet)	Strata	Description	SPT[(1)] N-value Range (bpf)	Unconfined Comressive Strength[(2)] (tsf)
Surface	--	Approximately 2 to 3 inch thick topsoil layer at Boring 1 through 3, and 12 to 17 inch thick asphalt pavement section at Boring 4 through 7.	N/A	N/A
2 - 4	I	FILL: medium stiff to stiff organic silt (OL), lean clay (CL), and sandy lean clay (CL) (Boring 2, 3, 4 and 6)	6 - 13	N/A
5 – 20 (End of Boring)	II	Glacial Till and/or Lacustrine: medium stiff to very stiff silty clay (CL/ML), sandy lean clay (CL), lean clay (CL) and fat clay (CH)	6 - 23	1.0 - 5.2

Notes: (1) Standard Penetration Test.
(2) Based on calibrated hand penetrometer test

Where the drill crew used discontinuous material sampling intervals at the test borings, ECS inferred conditions between sample intervals. The soil stratification shown on the boring logs represents the interpreted soil conditions at the actual boring locations. Variations in the stratification can occur between sample intervals and boring locations. The subsurface conditions at other times and locations on the site may differ from those found at the boring locations. If different site conditions are encountered during construction, ECS should be contacted to review our recommendations relative to the new information.

The soil classifications noted on the boring logs may not be representative of the entire soil matrix because of the limitations of the split-spoon sampler, which has a 1⅜-inch inside diameter. Materials larger than the 1⅜-inch inside diameter of the split-spoon sampler cannot be collected and observed directly. Where possible, the drill crew noted on the boring logs the estimated depth of larger diameter materials, such as cobbles, based on things such as changes in the observed drilling resistance and auger cuttings.

3.4 GROUNDWATER OBSERVATIONS

The drill crew observed the bore holes for a measureable groundwater level during and at the completion of drilling operations. However, none of the borings contained a groundwater level.

The borings generally encountered soils with poor draining characteristics. With this in mind, in our opinion, the lack of an observed groundwater level in the borings may not necessarily indicate a static groundwater level below the termination depth of the boring at the time of this exploration program. In addition, variations in the long-term water table elevation may occur as a result of seasonal variations in precipitation, evaporation, surface water runoff, lateral drainage conditions, construction activities, and other factors. The time of year and the weather history during the advancement of the borings should be considered when estimating groundwater levels at other points in time.

4.0 LABORATORY TESTING

The following paragraphs briefly describe the results of the completed laboratory testing program. We performed classification and index property tests on representative soil samples obtained from the test borings to aid classification of the soils, and to help estimate engineering properties.

A geotechnical engineer visually classified each collected soil sample from the test borings on the basis of texture and plasticity using the Unified Soil Classification System (USCS) and ASTM D2488 (AASHTO T206), Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) as a general guideline. After classification, the geotechnical engineer grouped the various soil types into the major zones noted on the test boring logs in Appendix B of this report. The group symbols for each soil type are indicated in parentheses before the soil descriptions on the test boring logs. The bracketed text noted on the boring logs after the group symbols indicates the AASHTO Classification. The stratification lines designating the interfaces between earth materials on the test boring logs are approximate; in-situ, the transitions may be gradual.

The soils retained from Boring 1 and 2 were also classified using the U.S. Department of Agriculture (USDA) Soil Classification System. The USDA classifications can be found on the "Soil and Site Evaluation – Storm" form included in Appendix B of this report.

ECS performed calibrated hand penetrometer tests (Q_p) on select cohesive soil samples. In the hand penetrometer test, the unconfined compressive strength of a soil sample is estimated, to a maximum of 6.0 tons per square foot (tsf), by measuring the resistance of a soil sample to penetration by a small, calibrated, spring-loaded cylinder. The hand penetrometer test results can be found on the boring logs.

The soil samples will be retained in our laboratory for a period of 60 days, after which, they will be discarded unless other instructions are received as to their disposal.

5.0 DESIGN RECOMMENDATIONS

5.1 PAVEMENT DESIGN CONSIDERATIONS

Subgrade Characteristics: The pavement design recommendations assume the subgrade consists of suitable materials evaluated by ECS, and the subgrade is prepared as recommended in the **Subgrade Preparation** and **Earthwork Operations** sections of this report.

Based on the results of our soil borings, ECS recommends the use of the pavement subgrade design parameters noted in Table 5.1.1 of this report, which provides values for the first suitable soil strata encountered in the borings. ECS obtained the values for the Soil Support Value and Design Group Index from the WisDOT Pavement Design Manual and Frost Index values from the frost susceptibility classifications according to the U.S. Army Corps of Engineer's criteria. We estimated the Subgrade and Resilient Modulus values based on historical testing of similar soil.

For grading work and drainage design, shrinkage should be in the range of 20 to 35 percent for the encountered soils. These values correlate to expansion factors of 25 to 54 percent. For design purposes we recommend using an average shrinkage factor of 25 percent (33 percent expansion factor).

Table 5.1.1 Recommended Pavement Subgrade Design Parameters [1, 2]

Boring Number	Location[3]	Soil Classification		Subgrade Reaction Modulus, K (psi/in)	Resilient Modulus, M_R (psi)	Frost Index	Soil Support Value	Design Group Index
		USCS	AASHTO					
1	East Matthew Storm Pond	CH	A-7-6	100	2,600	F-3	3.8	15
2	East Matthew Storm Pond	CL [FILL][4]	A-6	125	2,800	F-3	4.2	12
3	Cass Street	CL	A-6	150	3,000	F-3	4.2	12
4	Alley	CL [FILL][4]	A-6	125	2,800	F-3	4.2	12
5	South 8th Street	CL	A-6	150	3,000	F-3	4.2	12
6	Reid Street	CL	A-6	150	3,000	F-3	4.2	12
7	Patriot Way	CL	A-6	150	3,000	F-3	4.2	12

Notes:
1. All design parameters are estimates only, and are based on historical data for similar soil types. If more accurate values are required, additional testing should be performed.
2. Design parameters are for the first suitable soil strata below the proposed pavement elevation encountered in the borings. If more than 2 feet of sub-base fill material is placed, the characteristics of the fill will govern the pavement design.
3. General boring locations determined by City of De Pere personnel.
4. Denotes existing fill which, understanding the risks noted in the **Subgrade Preparation** section of this report, is suitable to support the proposed pavement section.

Areas of subgrade stabilization and/or undercut may be needed because of the potentially variable support of the existing fill, especially if the subgrade is subjected to construction traffic disturbance or if construction is during adverse weather conditions. A reduced service life, increased pavement maintenance and associated costs should be expected because of the existing fill subgrade. In addition, consideration should be given to providing Excavation Below Subgrade (EBS) for frost

concerns in areas where the exposed subgrade contains highly frost susceptible soil (e.g. silt or silty clay).

The ends of over-excavated areas should be sloped across a minimum length of 10 feet to reduce the potential abrupt changes in the pavement support characteristics that could lead to future pavement distress. Furthermore, in areas requiring over-excavation for detrimental frost concerns and in trenches for utilities, ECS recommends constructing transition zones, which are wedges of backfilled soil used to mask the distinct difference between the native soils and the backfilled area (such as trenches for utilities). The transition zone should start at the trench walls, and a depth of 3 feet below the finished pavement, and rise at a slope of 1 vertical to 3 horizontal as it extends perpendicular to the trench. However, transition zones would not be necessary where EBS areas are backfilled with soils similar to the native soils, or where the native soils contain less than 30 percent material passing the #200 sieve.

Prior to placing the aggregate base material, the pavement subgrade should be prepared as recommended within this report. Crushed aggregate base course utilized below pavements should meet Section 305 of the WisDOT Standard Specifications for Road and Bridge Construction and the gradation should meet the "1¼ inch" specification. The crushed aggregate base course should be compacted to at least 95 percent of the maximum dry density obtained in accordance with ASTM D1557, Modified Proctor method. As an alternative, a dense graded base meeting the "3 inch" specification can be used for the lower 8 inches of the base course layer to bridge over softer subgrade soils.

The aggregate used in the bituminous mixture should meet the 19.0 mm gradation for the lower pavement layer and the 12.5 mm gradation for the upper pavement layer as specified in Section 460 of the WisDOT Standard Specifications for Road and Bridge Construction. The asphalt pavement should be compacted to a minimum of 93 percent of the theoretical density value.

Adequate construction joints, contraction joints and isolation joints should be provided in the areas of rigid pavement to reduce the impacts of cracking and shrinkage. Please refer to ACI 325.12R-02 *Guide for Design of Jointed Concrete Pavements for Streets and Local Roads (Reapproved 2013)*. The Guide recommends an appropriate spacing strategy for the anticipated loads and pavement thickness. It has been our experience that joint spacing closer to the minimum values results in a pavement with less cracking and better long-term performance.

Weather Restrictions: In this region, asphalt plants may close during the months of December through March, and/or April if particularly cold weather conditions prevail. However, this can change based on year to year temperature fluctuations. Daily temperatures from December to March will often stay below 40°F, limiting the days that asphalt placement can occur.

Pavement Drainage: An important consideration with the design and construction of pavements is surface and subsurface drainage. Where standing water develops, either on the pavement surface or within the base course layer, softening of the subgrade and other problems related to the deterioration of the pavement can be expected. The final pavement surface should be shaped or crowned to properly direct surface water to suitable on or off-site storm water drainage infrastructure. In addition, the clayey pavement subgrade should be properly sloped to avoid dips or pockets where water may become trapped. Dips in the clayey subgrade could result in a

"bathtub" effect, which may trap water and potentially soften the subgrade. Good drainage should help reduce the possibility of the subgrade materials becoming saturated over a long period of time.

Infiltration and subterranean water are generally the main sources of water that should be considered in the design of the pavement. Based on the lack of an observed groundwater level in the borings, we consider surface water infiltration through the pavement joints, pores or cracks in the pavement, and through shoulders and areas adjacent to pavements to be the main source of water to be considered for pavement design on this project. To reduce the potential for shallow perched water to develop in areas of the site, "stub" or "finger" drains should be considered around catch basins and in other low-lying areas to reduce the accumulation of water above and within the subgrade soils and aggregate base. As an alternative to the use of stub or finger drains, existing manholes and storm sewer inlets could be perforated with 1-inch diameter holes at 2-foot centers, and the manhole/inlet wrapped with non-woven geotextile to reduce migration of material into the manhole/inlet. The holes could be placed at 90 degree intervals around the perimeter of the manhole, and the excavation around the manhole backfilled with free draining granular materials.

Sheet drainage across large pavement areas allows more water to enter the pavement through openings, cracks and weak points over time, which can adversely affect the base course and subgrade. This can increase the potential risk of premature pavement deterioration, distress and long-term pavement maintenance issues. Intermediate drains should be installed at adequate intervals to reduce the length of sheet flow across the pavement surface.

Pavement Maintenance: A sound maintenance program should be implemented to help maintain and enhance the performance of pavements, and help attain the design service life. A preventative maintenance program should be implemented early in the pavement life to be effective. The "standard in the industry" supported by research indicates that preventative maintenance should typically begin within 2 to 5 years of the placement of pavement. However, maintenance of pavement on undocumented fill sites may require more maintenance and sooner. Failure to perform preventative maintenance will reduce the service life of the pavement, and increase the costs for corrective maintenance and full pavement rehabilitation. To help reduce water infiltration thru the pavement section into the base course layer, which may result in softening of the subgrade and deterioration of the pavement, we recommend timely sealing of pavement joints and cracks with elastomeric caulk. We recommend exterior pavements be observed for distresses, such as cracks, depressions and poor drainage, at least twice a year, typically once in the spring and fall.

5.2 INFILTRATION DESIGN CONSIDERATIONS

The recommendations presented in this section follow the general guidelines of WDNR Conservation Practice Standard 1002, Site Evaluation for Stormwater Infiltration.

ECS understands a storm water management device would likely be constructed in the area of Boring 1 and 2. The "Soil and Site Evaluation – Storm" log included in Appendix B of this report indicates the storm water design parameters for each soil strata encountered in these borings. We determined the design infiltration rate using Table 2 of the Wisconsin Department of Natural Resources Conservation Practice Standards "Site Evaluation for Storm Water Infiltration (1002)".

Design Infiltration Rates: Based on the results of the exploration, the borings encountered soils that have a USDA soil classification of clay (c). Based on the soil textural classification and the

guidelines provided in Table 2 of the WDNR Conservation Practice Standard 1002, the infiltration rate of the clay soils encountered in the borings is 0.07 inches per hour. The soil infiltration rate for each soil strata encountered in the borings can be found on the ***Soil and Site Evaluation – Storm*** form included in Appendix B of this report. Infiltration rates based on soil textural classification and the guidelines provided in Table 2 of the WDNR Conservation Practice Standard 1002 should be adjusted for the least permeable soil layer within 5-feet of each of the listed intervals.

Estimation of the final design infiltration rate should consider the effects of any engineered fill placed, surface vegetation, erosion control devices, and potential groundwater mounding. Prior to and during construction, the design infiltration rate of the soil at the basin bottom should be verified. Compaction of the basin bottom subgrade during and following construction should be prevented as this may reduce the infiltration rate of the soil. This may require exclusion of construction traffic from the infiltration bottom, or loosening of the subgrade soil, such as by raking or discing. Sediment allowed to accumulate at the basin bottom will reduce infiltration. Measures should be taken to reduce accumulation of sediment. Periodic removal of sediment should be expected.

Infiltration Feasibility: Based on the conditions encountered in the test borings, the site is considered to have a low capacity for the infiltration of storm water because of the predominant clayey soils encountered at the test boring locations. In accordance with Section V, Step C5 of the Wisconsin Department of Natural Resources (WDNR) Conservation Practice Standard 1002, the clayey soils have a correlated infiltration rate of 0.07 inches per hour, which is less than 0.6 inches per hour, and as such, these soils are anticipated to be exempt from the infiltration requirements per section NR 151.12(5)(c)6.a of the Wisconsin Administrative Code.

Our scope of services is not inclusive of all steps involved in the initial site screening (Part A) of the WDNR Technical Standard 1002. Therefore, other conditions may exist at, or near the site that could exclude or exempt the site, or portions of the site from the infiltration requirements. Additional evaluation must be conducted prior to the design and implementation of an infiltration device at this site so that its construction meets Wisconsin Administrative Code requirements.

Details of the proposed storm water management device were not provided to ECS at the time of this report preparation; it is recommended ECS be provided the storm water management plans, when available, to check that the recommendations provided herein are applicable. ECS should also be called on to provide observation and testing during infiltration basin construction.

6.0 SITE CONSTRUCTION RECOMMENDATIONS

6.1 SUBGRADE PREPARATION

6.1.1 Existing Utilities

ECS recommends utilities not reused should be capped-off and removed or properly abandoned in-place in accordance with local codes and ordinances. The excavations for utilities to be removed in the influence zone of new construction are recommended to be backfilled with engineered fill. Grading operations must be done carefully so that existing utilities are not damaged or disturbed. Utility invert elevations, depths and sizes should be checked relative to the planned utility and pavement elevations to determine what specific concerns are present.

6.1.2 Stripping and Initial Site Preparation

The subgrade preparation should consist of stripping all pavement to be removed, organic soils (topsoil) and any other soft or unsuitable materials from the 5-foot expanded pavement limits and 5 feet beyond the toe of engineered fills, where feasible. ECS should be called on to observe and document that topsoil and other unsuitable surficial materials have been removed prior to the placement of engineered fill or construction of structures. Please note, topsoil removal should not be based on soil coloration alone. After removal of the root mat, it may be possible to leave some darker soils in place provided the soil contains no more than 5 percent organic matter as determined by ASTM D2974, has the recommended strength characteristics and is stable under proofroll. A landscape architect should approve any topsoil or other materials proposed for use in future landscape areas.

6.1.3 Special Subgrade Preparations – Utilities

The existing fill encountered in Boring 2, 3, 4 and 6 present a concern for the support of utility pipes and structures. The existing fill extended to a depth of between 2 and 4 feet below the existing grade. We anticipate the utilities will likely extend below the encountered fill depths. However, deeper existing fill could be encountered during construction, so the owner should be aware of an increased risk of settlement in excess of 1 inch associated with the construction of utilities on these soils. In our opinion, the risk would be high for utilities constructed on undocumented fill. Based on the anticipated acceptable risk level of the owner, ECS recommends the removal of all existing fill from below utility pipes and structures.

Excavations subcut below the proposed pipe or structure elevation should be oversized one foot horizontally in each direction for every foot of sub-base fill placed below the pipe or structure, to a maximum oversize of 3 feet on each side of the pipe. All over-excavated soils should be replaced with properly compacted engineered fill.

6.1.4 Special Subgrade Preparations – Pavements

In general, pavements derive their strength from the characteristics of the subgrade soils, the sub-base fill and the base course, and the concrete or bituminous upper layer and lower layer mixtures. In the design of the pavement, the total pavement thickness typically includes the concrete or bituminous mixtures, base course, and sub-base fill. The site has generally suitable

conditions for the proposed pavement construction. However, the existing fill and frost susceptible soils encountered in the borings present concerns for the pavement performance.

Existing Fill: The existing fill encountered in Boring 2, 3, 4 and 6 extended to a depth of between 2 and 4 feet below the existing grade. Existing fill provides a concern for the performance of the pavement system. The owner should be aware of the increased risk for a reduced pavement performance associated with constructing pavements on undocumented fill. The risk exists because undocumented fill has a higher potential for variable density. In addition, this risk tends to increase with the presence of organic soils (more than 5 percent organic content). However, because of natural soil variability, every construction site has at least a very low risk for a reduced pavement performance.

Based primarily on the standard penetration N-values, in ECS's opinion, the risk for reduced pavement performance associated with the existing fill at this site would generally be moderate to high. However, the risk could be reduced to a low risk where the existing fill contains less than 5 percent organic content *and* proof-rolling observations do not indicate rutting or deflection greater than 1 inch. Based on our assumption of the owner's acceptable level of risk, we recommend removing all existing fill which contains greater than 5 percent organic content, or does not meet the above proof-rolling requirements, from within 2 feet of the finished pavement grade. The removed material should then be replaced with a compacted engineered fill in accordance with the **Earthwork Operations** section of this report.

Frost Susceptible Soils: The frost susceptible clayey and silty soils encountered in the borings provide another concern for the pavement system. ECS wishes to note, a risk for reduced pavement performance exists with the construction of pavements on frost susceptible soil. The reduced pavement performance may occur because of potential detrimental frost heaving and spring thaw weakening. The risk associated with frost susceptible soils can be reduced by removal of all frost susceptible soils within 3 feet of the finished pavement grade. In our opinion, the risk at this site related to the frost susceptible soils would generally be moderate. However, the risk would be high to very high in areas where highly frost susceptible silt or silty clay soil is present within 3 feet of the finished pavement grade.

Summary: Based on our assumption of the owner's acceptable risk level (as outlined in the "Project Information" section of this report), we recommend the following:

1. Remove all existing fill soils from within 2 feet of the finished pavement grade, unless it contains less than 5 percent organic content *and* proof-rolling observations do not indicate rutting or deflection greater than 1 inch.

2. All over-excavated material should be replaced with compacted engineered fill in accordance with the **Earthwork Operations** section of this report.

3. If the owner is willing to accept a moderate risk for reduced pavement performance, then we anticipate a majority of the frost susceptible soils that have adequate strength will remain in place below pavements. However, we recommend removing all highly frost susceptible soils (e.g. silt and silty clay) from within 3 feet of the finished pavement grade.

6.1.5 Proofrolling

After the removal of all unsuitable surface materials, cutting to the proposed subgrade, and prior to the placement of any engineered fill or other construction materials, the exposed subgrade should be observed by ECS. The contractor should thoroughly proofroll the exposed subgrade with previously approved construction equipment having a minimum axle load of 9 tons (e.g. fully loaded tandem-axle dump truck in clayey soils or large smooth drum roller in sandy soils). The contractor should traverse the areas subject to proofrolling by the equipment in two perpendicular (orthogonal) directions with overlapping passes of the vehicle under the observation of ECS. This procedure is intended to assist in identifying any localized yielding materials. Unstable or pumping subgrade areas identified during the proofroll should be marked for repair prior to the placement of any subsequent engineered fill or other construction materials. Unstable subgrade repair methods, such as undercutting or moisture conditioning or chemical stabilization, should be discussed with ECS to determine the appropriate procedure(s) with regard to the existing conditions causing the instability. A test pit(s) may be excavated to explore the shallow subsurface materials in the area of the instability to aid in determining the cause of the observed unstable materials and to assist in the evaluation of the appropriate remedial action to stabilize the subgrade.

Near surface subgrade soils having a high moisture content and/or those having N-values less than 10 bpf may not pass a proofroll, and may need to be undercut or repaired. Some undercutting or repair of unstable subgrade soils should be anticipated during pavement subgrade preparation. If construction will occur during wet times of the year (such as during the spring or fall months) or immediately following extended periods of rain, then seasonal reduction of the near surface soil strength will occur. This may cause additional unstable or pumping subgrade areas for constructability concerns.

The actual quantity of the subgrade undercut or stabilization should be determined by ECS at the time of construction.

6.1.6 Site Temporary Dewatering

None of the borings encountered a measureable groundwater level. However, seasonal variations in precipitation and site drainage conditions can cause the accumulation of water in the upper soils, particularly within existing fill and more permeable granular soils underlain by less permeable clayey soils. Where excavations extend less than 2 feet below the groundwater level, initial attempts to control water may be accomplished by pumping from sump pits in the excavation bottom, which are backfilled with AASHTO Size No. 57 Stone or open-graded bedding material. If water control cannot be maintained with sump pumps, or where excavations extend more than 2 feet below the static groundwater level, a more substantial excavation dewatering system, such as a temporary well point system, may be required to control groundwater seepage during construction. Dewatering should continue until all earthwork operations and backfilling have extended above the water table.

Lowering the static groundwater level can adversely affect nearby structures, utilities and other construction. We recommend any dewatering scheme be reviewed by ECS and a contractor who specializes in this type of work prior to its implementation.

6.1.7 Subgrade Stabilization

Subgrade Benching: Fill should not be placed on ground with a slope steeper than 5H:1V. The ground should be benched so as to allow for fill placement on a horizontal surface.

Subgrade Compaction: Upon completion of subgrade documentation, the exposed subgrade within the 5-foot expanded pavement area limits should be moisture conditioned to within -1 to +3 percent of the soil's optimum moisture content to a depth of 10 inches, and be compacted with suitable equipment (minimum 10-ton vibratory roller for granular soils or a sheepsfoot roller for cohesive soils). The subgrade within the expanded pavement limits should be compacted to a dry density of at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557). Beyond these areas, compaction should be to at least 90 percent. ECS should be called on to document the achievement of proper subgrade compaction.

Subgrade Compaction Control: The expanded limits of the proposed construction areas should be well defined, including the limits for structures, pavements, fills, and slopes, etc. We recommend performing field density testing of subgrade soils at the frequencies listed in Table 6.1.1 of this report.

Table 6.1.1 Frequency of Subgrade Compaction Testing

Location	Frequency of Tests
Pavement Areas	1 test per 10,000 sq. ft.
Other Non-Critical Areas	1 test per 10,000 sq. ft.

Subgrade Stabilization: In some areas, particularly low-lying, wet areas of the site, undercutting of excessively soft materials may be considered inefficient. In such areas the use of a reinforcing geotextile or geogrid might be employed, under the advisement of ECS. Suitable stabilization materials may include medium duty woven geotextile fabrics or geogrids. The suitability and employment of reinforcing or stabilization products should be determined in the field by ECS personnel, in accordance with project specifications.

6.2 EARTHWORK OPERATIONS

6.2.1 Engineered Fill Materials

Product Submittals: Prior to placement of engineered fill, representative bulk samples (about 50 pounds) of on-site and off-site borrow should be submitted to ECS for laboratory testing, which will include natural moisture content, grain-size distribution, and moisture-density relationships for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications.

Satisfactory Engineered Fill Materials: Engineered fills should consist of approved materials, free of organic matter and debris, contain no particle sizes greater than 3 inches in the largest dimension, and have a Liquid Limit and Plasticity Index less than 40 and 15, respectively. Open-graded materials, such as coarser sands and gravels (SP and GP), which contain void space in their mass should not be used in engineered fills unless properly encapsulated within a filter geotextile.

If the fill is to provide non-frost susceptible characteristics, it must be classified as a clean GW, GP, SW or SP per Unified Soil Classification System (ASTM D-2487).

Unsatisfactory Materials: Unsatisfactory engineered fill materials, which do not satisfy the requirements for suitable materials, include topsoil and organic materials (PT, OH, OL), silt (ML), sandy silt (ML), elastic Silt (MH), silty clay (CL-ML), sandy silty clay (CL-ML) and high plasticity clay (CH). Topsoil is not recommended to be used as engineered fill, but may be suitable for use within future landscape areas. A landscape architect should approve any materials proposed for use in future landscape areas.

Pea gravel is not recommended to be used as engineered fill. Pea gravel has round/smooth characteristics, no fines and does not interlock when compacted, which makes it more susceptible to future movement and instability resulting in excessive and variable settlement.

On-Site Borrow Suitability: The on-site soil, with the exception of silty clay (CL-ML) and fat clay (CH), may be feasible to use as engineered fill, but should be further evaluated and approved by ECS prior to its use. On-site soil used as engineered fill must not contain an adverse amount of organic matter, and must be free of frozen matter, deleterious materials, over-sized material (maximum 3-inch particle diameter), or chemicals that may result in the material being classified as "contaminated." Depending on the conditions at the time of construction, the use of on-site soil for foundation support may not be practical, and use of an imported high quality granular material may be needed for foundation support. The material used as engineered fill must be considered low volume change material with a maximum Liquid Limit of 40 and maximum Plasticity Index of 15, unless specifically tested and found to have low volume change properties and approved by ECS. The soils must be compacted within a narrow range of the materials optimum moisture content. The soil samples had relatively high moisture contents so the contractor should expect some drying of on-site soil prior to reuse as engineered fill. The soil should not be compacted too dry as it may lose its apparent stability if it later becomes wet. The suitability of engineered fill materials should be checked by ECS prior to placement. Sorting to remove over-sized material (i.e. cobbles) should be expected at this site prior to re-use of the on-site soil as engineered fill.

Natural soil deposits considered unsuitable by virtue of their plasticity are present on the site. The moisture contents of many of the samples were observed to generally be more than 5 percent above the optimum moisture contents of the material. The construction team should anticipate moisture conditioning (mostly drying) of subgrade soils and engineered fill lifts at this site. Soil chemical modification may be helpful to reduce moisture contents of subgrade soils and fills.

6.2.2 Compaction

Engineered Fill Compaction: Engineered fill within the expanded pavement limits should be placed in maximum 8-inch thick loose lifts, moisture conditioned as necessary to within -1 to +3 percent of the soil's optimum moisture content, and be compacted with suitable equipment to a dry density of at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557). Beyond these areas, the engineered fill should be compacted to at least 90 percent. ECS should be called on to document the achievement of proper fill compaction.

Fill Compaction Control: The expanded limits of the proposed construction areas should be well defined, including the limits of the fill zones for pavements and embankment slopes, etc., at the

time of fill placement. Grade controls should be maintained throughout the filling operations. All filling operations should be observed on a full-time basis by a qualified representative of ECS to document the achievement of the minimum compaction requirements. Field density testing of fills should be performed at the frequencies shown in Table 6.2.1, but not less than 2 tests per lift.

Table 6.2.1 Frequency of Compaction Tests in Fill Areas

Location	Frequency of Tests
Pavement Areas	1 test per 10,000 sq. ft. per lift
Utility Trenches	1 test per 200 linear ft. per lift
All Other Non-Critical Areas	1 test per 10,000 sq. ft. per lift

Compaction Equipment: Compaction equipment suitable to the soil type being compacted should be used to compact the subgrades and fill materials. Sheepsfoot compaction equipment should be suitable for the fine-grained soils (Clays). A vibratory steel drum roller or plate compactor should be used for compaction of coarse-grained soils (Sands and Gravels) as well as for sealing compacted surfaces.

Fill Placement Considerations: Fill materials should not be placed on frozen soils, on frost-heaved soils, and/or on excessively wet soils. Borrow fill materials should not contain frozen materials at the time of placement, and all frozen or frost-heaved soils should be removed prior to placement of engineered fill or other fill soils and aggregates. Scarify, aerate and moisture condition excessively wet soils or aggregates.

At the end of each work day, all fill areas should be graded to facilitate drainage of any precipitation and the surface should be sealed by use of a smooth-drum roller to limit infiltration of surface water. During placement and compaction of new fill at the beginning of each workday, the contractor may need to scarify existing subgrades to a depth of 4 inches or more so that a weak plane will not be formed between the new fill and the existing subgrade soils.

Drying and compaction of wet soils is typically difficult during the cold, winter months. Accordingly, earthwork should be performed during the warmer, drier times of the year, if practical. Proper drainage should be maintained during the earthwork phases of construction to reduce ponding of water which has a tendency to degrade subgrade soils. Alternatively, if these soils cannot be stabilized by conventional methods as previously discussed, chemical modifications of the subgrade soils, such as with lime, cement or other materials, may be utilized to adjust the moisture content. If lime or cement is utilized to control moisture contents and/or for stabilization, then ECS recommends the use of Quick Lime, Calciment® or regular Type 1 cement. The soil modification procedure, such as determination of the quantity of additive, and mixing and curing procedures, should be evaluated before implementation. The contractor should be required to minimize dusting or implement dust control measures.

Where fill materials will be placed to widen existing embankment fills, or placed up against sloping ground, the soil subgrade should be scarified, and the new fill benched and keyed into the existing material. Fill material should be placed in horizontal lifts. In confined areas such as utility trenches, portable compaction equipment and thin lifts of 3 inches to 4 inches may be required to achieve specified degrees of compaction.

We recommend the grading contractor have equipment on site during earthwork for both drying and wetting fill soils. We do not anticipate significant problems in controlling moisture during dry weather, but moisture control may be difficult during winter months or extended periods of rain. The control of moisture content of clay soils can be difficult when these soils become wet. Further, construction traffic can easily degrade soils that have an elevated moisture content.

6.3 PAVEMENT SUBGRADE OBSERVATIONS

Pavement Subgrade Verification: ECS should be called on to observe and test exposed subgrade within the expanded pavement limits prior to engineered fill placement and pavement construction to check achievement of adequate subgrade preparation. A proofroll using a loaded dump truck should be performed in their presence at that time. Once subgrades have been prepared to the satisfaction of ECS, subgrades should be properly compacted and new engineered fill can be placed. Existing subgrades to a depth of at least 10 inches and all engineered fill should be properly moisture conditioned and compacted to the required in-place density. ECS should check the condition of the prepared subgrade prior to placement of the subbase stone and pavement. If there will be significant time lag between the subgrade check and placement of the subbase stone and pavement, ECS may need to recheck the condition of the subgrade before placement of stone and pavement. Prior to final pavement construction, the subgrade may require scarification, moisture conditioning, and re-compaction to restore stable conditions.

6.4 UTILITY INSTALLATIONS

Utility Subgrades: The native soils encountered in our exploration are expected to be generally suitable for support of utility pipes. However, we recommend removing all existing fill and soils that contain more than 5 percent organic content from below utilities. The pipe subgrade should be observed and probed for stability by ECS to evaluate the suitability of the encountered materials. Any loose or unsuitable materials encountered at the utility pipe subgrade elevation should be removed and replaced with suitable compacted engineered fill or pipe bedding material.

Utility Backfilling: The granular bedding material should be at least 4 inches thick, but not less than that specified by the project drawings and specifications. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for engineered fill given in this report. Compacted backfill should be free of topsoil, roots, ice, or any other material designated by ECS as unsuitable. The backfill should be moisture conditioned, placed, and compacted in accordance with the recommendations of this report.

6.5 GENERAL CONSTRUCTION CONSIDERATIONS

Moisture Conditioning: During the cooler and wetter periods of the year, the construction team should anticipate delays and additional costs. At these times, reduction of soil moisture may need to be accomplished by mechanical manipulation to lower moisture contents to levels appropriate for compaction. Alternatively, during the drier times of the year, such as the summer months, moisture may need to be added to the soil to provide adequate moisture for successful compaction according to the project requirements.

Subgrade Protection: Measures should be taken to limit site disturbance, especially from rubber-tired heavy construction equipment, and to control and remove surface water from development

areas, including pavement areas. ECS recommends the design team consider designating a haul road and construction staging area to limit the areas of disturbance and to prevent construction traffic from excessively degrading sensitive subgrade soils and existing pavement areas. Haul roads and construction staging areas could be covered with excess depths of aggregate to protect those subgrades. The aggregate can later be removed and used in pavement areas provided it has not been mixed with silty or clayey soils.

Surface Drainage: The contractor should properly maintain surface drainage conditions. Surface water should be directed away from the construction area, and the work area should be sloped away from the construction area at a gradient of 1 percent or steeper to reduce the potential of ponding water and the subsequent saturation of the surface soils. At the end of each work day, the subgrade soils should be sealed by rolling the surface with a smooth drum roller to reduce infiltration of surface water.

Excavation Safety: The contractor should make and maintain all excavations and slopes in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing and constructing stable, excavations and slopes and should shore, slope, or bench the sides of the excavations and slopes as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in OSHA 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. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; ECS does not imply such responsibility, and the contractor, design team and owner should not infer it.

Excavation Instability: Excavation stability and caving problems may occur in areas containing existing fill soils. The instability problems will generally depend upon the excavation depth, length of time the excavations remain open, inclination of excavation side-walls, magnitude and location of surcharges near the excavations, groundwater levels and the suitability of any dewatering systems if needed.

Existing Construction Considerations: Site preparation will require complete removal and proper disposal of the existing pavement to be removed and any remnants of previous construction, including all underground utilities that are not reused, etc. Disposal of debris should be in accordance with local, state and federal regulations for the material type. It should be noted that any construction remnants left in-place may cause excavation difficulties for new utilities and/or landscape plantings. All excavations must be backfilled with compacted engineered fill performed under engineering controlled conditions.

Removal of the existing pavement and placement of engineered backfill is recommended to be observed and tested by ECS. Alteration to the recommendations of this report may be needed, if conditions different than those noted on the boring logs are revealed below the existing construction.

Existing Fill Considerations: Existing fill was encountered in Boring 2, 3, 4, and 6. Unsuitable materials may have been buried beneath the site surface during previous site grading or construction not detected by the test borings. Questionable material, if encountered, is

recommended to be evaluated by ECS to determine if the material needs to be removed and replaced with engineered fill. Alteration to the recommendations of this report may be needed, if excavations reveal conditions different than those noted on the test boring logs.

Erosion Control: The surface soils may be erodible. Therefore, the Contractor should provide and maintain good site drainage during earthwork operations to maintain the integrity of the surface soils. All erosion and sedimentation controls should be in accordance with sound engineering practices and local requirements.

Bidding/Estimating Considerations: Contractors bidding or undertaking any work at the site should examine the results of the subsurface exploration, satisfy themselves as to the adequacy of the information for bidding and construction, make their own interpretation of the data, and consider the effect it may have on their cost proposal, construction techniques, schedule, and equipment capabilities. Furthermore, contractors should complete any additional fieldwork and investigation they deem necessary to properly prepare a cost proposal for the site work. Soil borings do not provide the same wide-scale view of the subsurface conditions that is obtained during site grading, excavation or other aspects of earthwork construction. Additional scope may be required to obtain more detailed subsurface information needed for earthwork bid preparation, which could include test pits to better understand the lateral and vertical extents of the subsurface materials of concern such as existing undocumented fill. Even with this additional information, budget contingencies should be carried in construction to help cover potential variations in subsurface conditions.

7.0 CLOSING

ECS has prepared this report of findings, evaluations, and recommendations to guide preliminary geotechnical-related design and construction aspects of the project. In fulfilling our obligations and responsibilities, as listed in the proposal, we performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation, expressed or implied, and no warranty or guarantee is included or intended in this report.

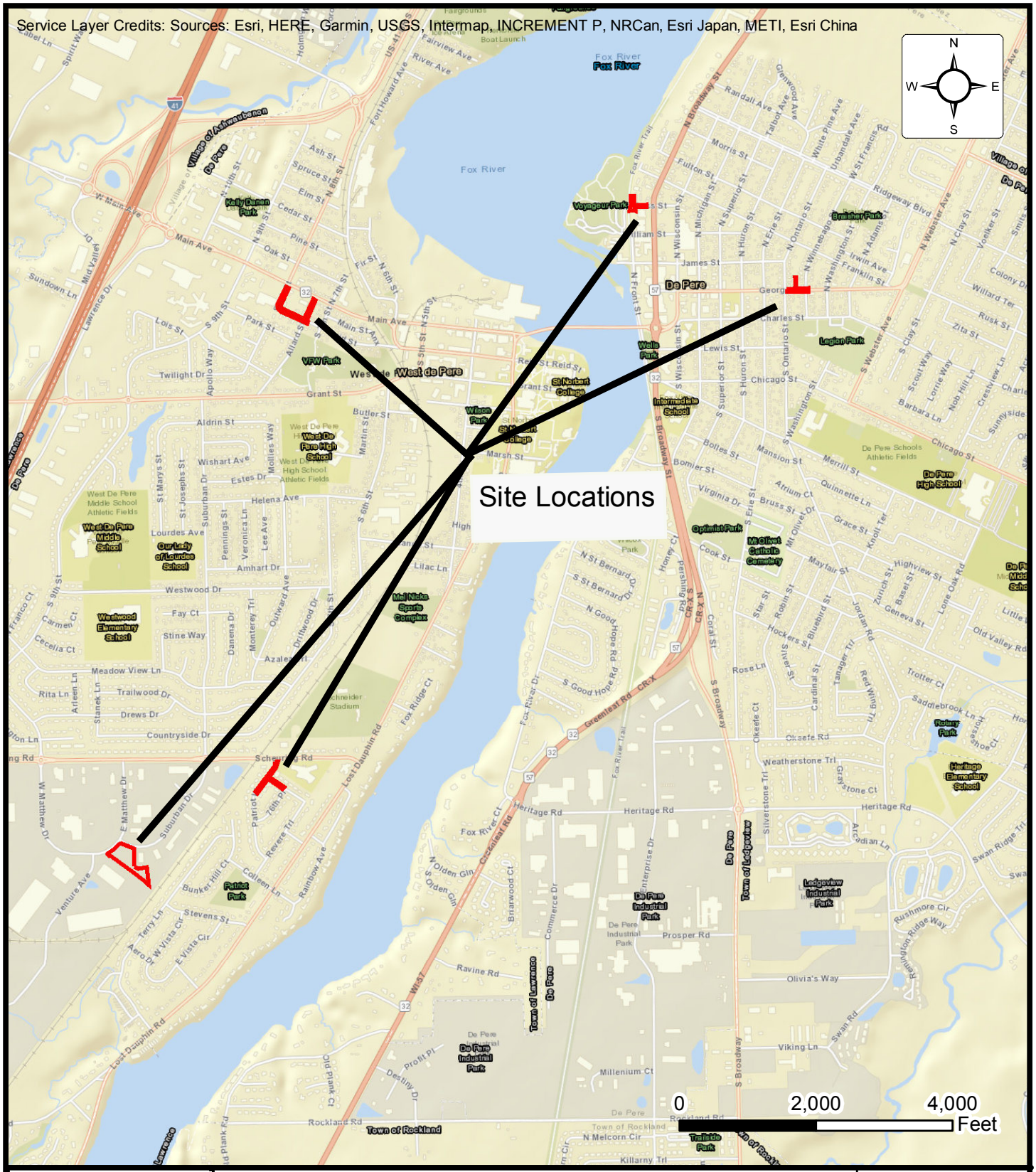
The description of the proposed project is based on information provided to ECS by the City of De Pere. If any of this information is inaccurate, either because of our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted immediately so that we can review the report in light of the changes and provide additional or alternate recommendations as may be required to reflect the proposed construction.

We recommend that ECS be retained to review the project's plans and specifications pertaining to our services so that we may evaluate consistency of those plans/specifications with the intent of this geotechnical report.

Field observations, and quality assurance testing during earthwork, foundations, floor slabs, utility, pavement, and storm water management device installation are an extension of and integral to the geotechnical design recommendation. We recommend the owner retain these quality assurance services and that ECS be retained to continue our involvement throughout these critical phases of construction to provide general consultation as issues arise. ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

APPENDIX A - Drawings & Reports

Site Location Diagram
Boring Location Diagram

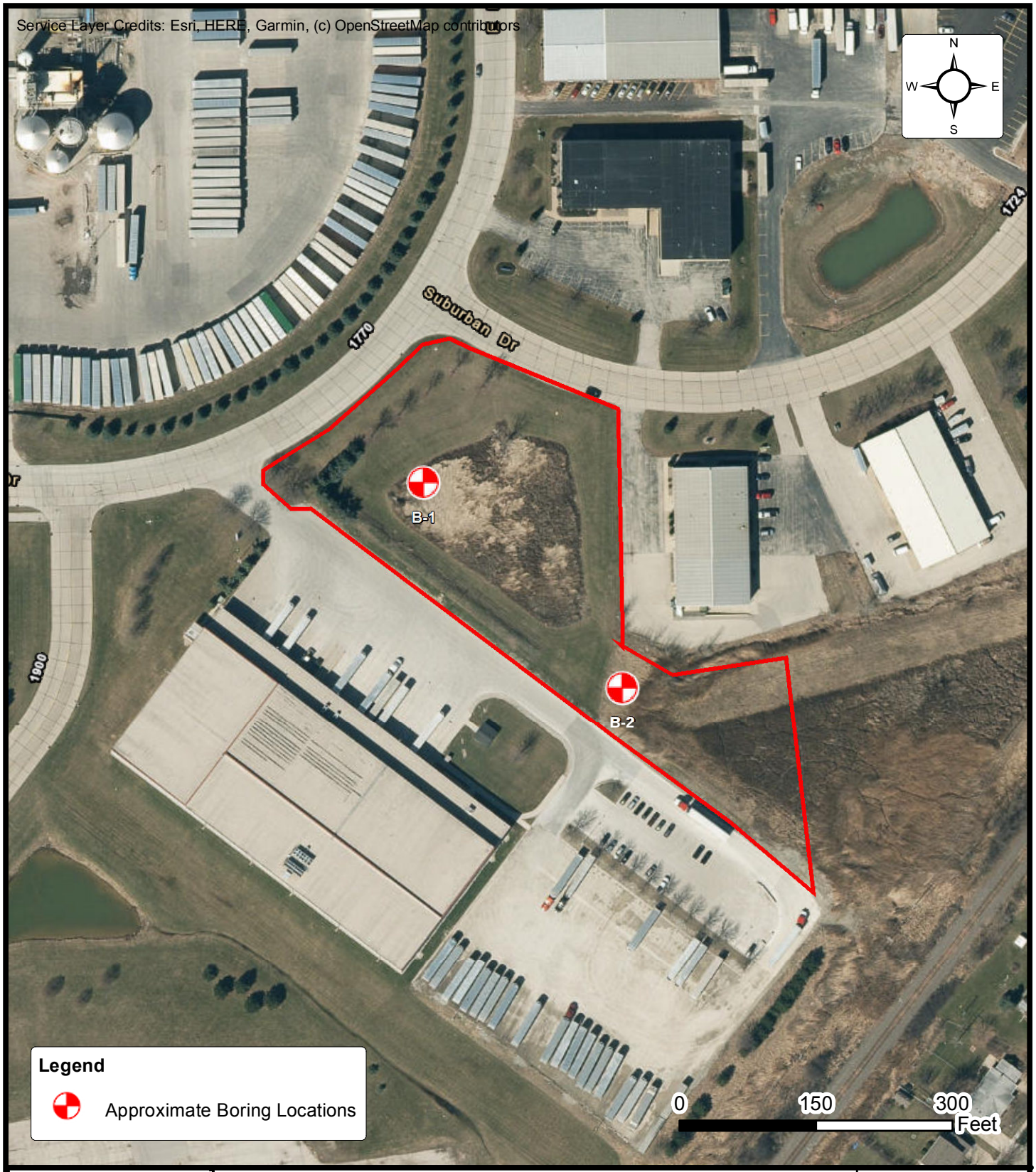


Site Location Diagram
DE PERE PROJECT 20-01

VARIOUS STREETS, DE PERE, WISCONSIN

CITY OF DE PERE

ENGINEER	CAR
SCALE	1 " = 2000 '
PROJECT NO.	59:1669-A
SHEET	1 OF 1
DATE	9/30/2019



Boring Location Diagram
DE PERE PROJECT 20-01

VARIOUS STREETS, DE PERE, WISCONSIN

CITY OF DE PERE

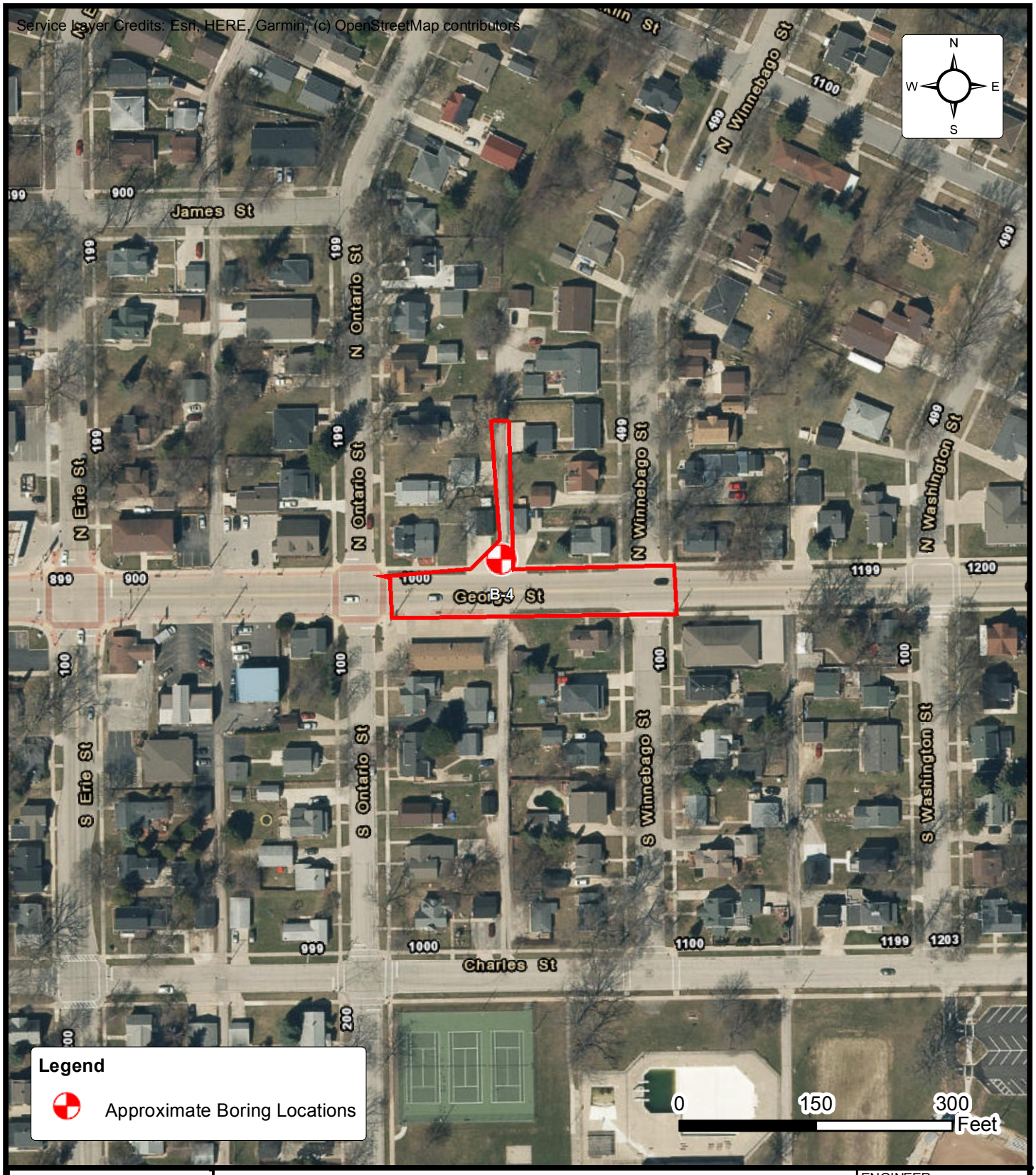
ENGINEER	CAR
SCALE	1 " = 150 '
PROJECT NO.	59:1669-A
SHEET	1 OF 5
DATE	9/30/2019

Boring Location Diagram
DE PERE PROJECT 20-01

VARIOUS STREETS, DE PERE, WISCONSIN

CITY OF DE PERE

ENGINEER	CAR
SCALE	1 " = 150 '
PROJECT NO.	59:1669-A
SHEET	2 OF 5
DATE	9/30/2019

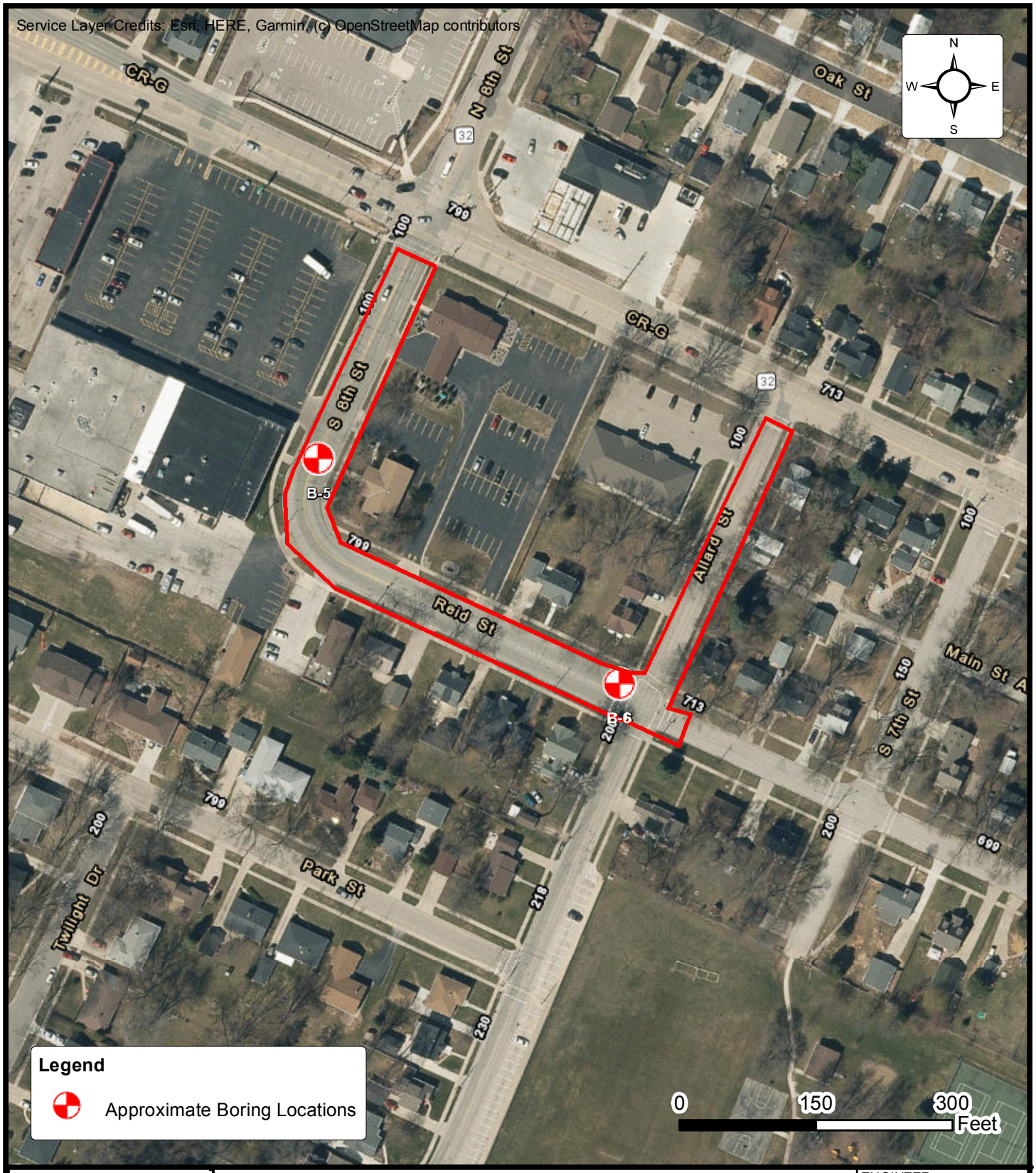


Boring Location Diagram
DE PERE PROJECT 20-01

VARIOUS STREETS, DE PERE, WISCONSIN

CITY OF DE PERE

ENGINEER	CAR
SCALE	1 " = 150 '
PROJECT NO.	59:1669-A
SHEET	3 OF 5
DATE	9/30/2019

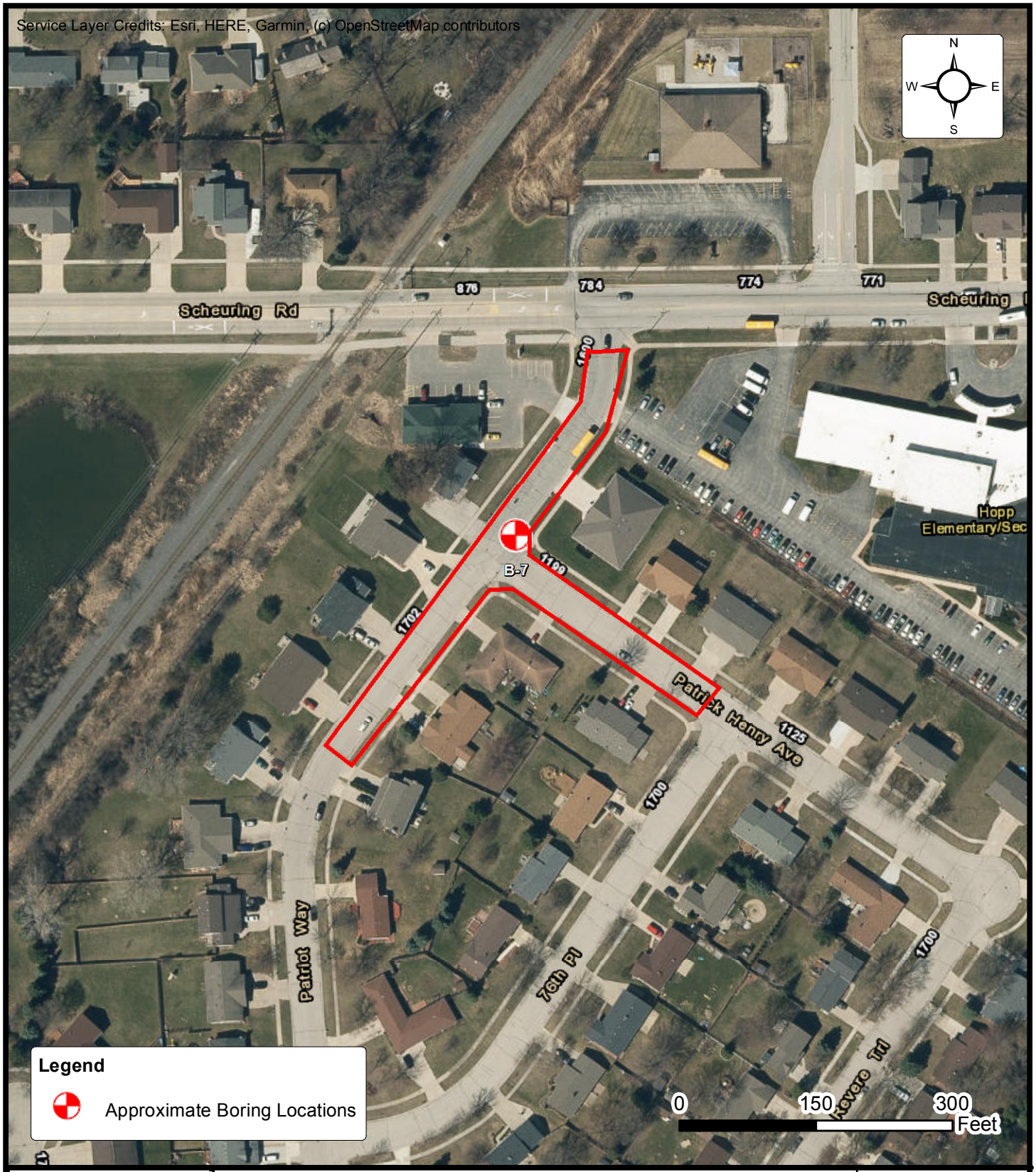


Boring Location Diagram
DE PERE PROJECT 20-01

VARIOUS STREETS, DE PERE, WISCONSIN

CITY OF DE PERE

ENGINEER	CAR
SCALE	1 " = 150 '
PROJECT NO.	59:1669-A
SHEET	4 OF 5
DATE	9/30/2019



Boring Location Diagram
DE PERE PROJECT 20-01

VARIOUS STREETS, DE PERE, WISCONSIN

CITY OF DE PERE

ENGINEER	CAR
SCALE	1 " = 150 '
PROJECT NO.	59:1669-A
SHEET	5 OF 5
DATE	9/30/2019

APPENDIX B - Field Operations

Reference Notes for Boring Logs
Boring Logs 1 through 7
Soil and Site Evaluation - Storm

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]	
	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	SHALE
	BRICK
	AGGREGATE BASE COURSE
	FILL[3] MAN-PLACED SOILS
GW	**WELL-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GP	**POORLY-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GM	**SILTY GRAVEL** gravel-sand-silt mixtures
GC	**CLAYEY GRAVEL** gravel-sand-clay mixtures
SW	**WELL-GRADED SAND** gravelly sand, little or no fines
SP	**POORLY-GRADED SAND** gravelly sand, little or no fines
SM	**SILTY SAND** sand-silt mixtures
SC	**CLAYEY SAND** sand-clay mixtures
ML	**SILT** non-plastic to medium plasticity
MH	**ELASTIC SILT** high plasticity
CL	**LEAN CLAY** low to medium plasticity
CH	**FAT CLAY** high plasticity
OL	**ORGANIC SILT or CLAY** non-plastic to low plasticity
OH	**ORGANIC SILT or CLAY** high plasticity
PT	**PEAT** highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS			
SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION		
DESIGNATION		**PARTICLE SIZES**
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS		
UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	**SPT[5] (BPF)**	**CONSISTENCY[7] (COHESIVE)**
<0.25	<3	Very Soft
0.25 - <0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Medium Stiff
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS	
SPT[5]	**DENSITY**
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
Dual Symbol *(ex: SW-SM)*	10	10
With	15 - 20	15 - 25
Adjective *(ex: "Silty")*	≥25	≥30

WATER LEVELS[6]		
	WL	Water Level (WS)(WD)
		(WS) While Sampling
		(WD) While Drilling
	SHW	Seasonal High WT
	ACR	After Casing Removal
	SWT	Stabilized Water Table
	DCI	Dry Cave-In
	WCI	Wet Cave-In

[1] Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.

[2] To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

*[3] Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-**FILL**)].*

[4] Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

[5] Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf).

[6] The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

[7] Minor deviation from ASTM D 2488-09 Note 16.

[8] Percentages are estimated to the nearest 5% per ASTM D 2488-09.

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CLIENT	JOB #	BORING #	SHEET
City of De Pere	1669-A	1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
De Pere Project 20-01	

SITE LOCATION

De Pere, Brown County, Wisconsin

East Matthew Drive Storm Pond

CALIBRATED PENETROMETER TONS/FT2: 1 2 3 4 5+

PLASTIC LIMIT | WATER CONTENT % | LIQUID LIMIT %

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — REC.% —

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ LOSS OF CIRCULATION (100%)

SURFACE ELEVATION: Not Determined

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	STANDARD PENETRATION BLOWS/FT
0					Topsoil Thickness [3"]				
	S-1	SS	24	20	(CH) {A-7-6} Lacustrine, FAT CLAY WITH SEAMS OF SILT, reddish brown with gray, moist, medium stiff to stiff			2 2 4 6	6 — 3.5
	S-2	SS	24	8				5 6 8 12	14 — 3.3
5	S-3	SS	24	20	(CL) {A-6} Glacial till, LEAN CLAY WITH SAND AND GRAVEL, brown, moist, stiff			6 6 9 12	15 — 5.0
	S-4	SS	18	4				5 7 8	15 — 4.0
	S-5	SS	18	14				4 6 8	14 — 3.0
10	S-6	SS	18	8				4 6 8	14 — 2.8
	S-7	SS	18	18				3 4 5	9 — 2.2
15	S-8	SS	18	13	(CL/ML, CH) {A-4, A-7-6} Lacustrine, SILTY CLAY WITH VARVES OF FAT CLAY, gray and reddish brown, moist, stiff			4 5 5	10 — 2.2
	S-9	SS	18	18				3 3 6	9 — 2.0
20					END OF BORING @ 20'				
					Note: Boring offset 30 feet west of staked location.				
25									
30									

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU 20% 40% 60% 80% 100%

WL None WS ☐ WD ☒	BORING STARTED 11/15/19	
WL(BCR) WL(ACR) None	BORING COMPLETED 11/15/19	CAVE IN DEPTH
WL	RIG Truck FOREMAN BB/CB	DRILLING METHOD 3 1/4" HSA 0' to 20' (AH)

CLIENT	JOB #	BORING #	SHEET
City of De Pere	1669-A	2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
De Pere Project 20-01	

SITE LOCATION

De Pere, Brown County, Wisconsin

East Matthew Drive Storm Pond

CALIBRATED PENETROMETER TONS/FT2: 1 2 3 4 5+

PLASTIC LIMIT | WATER CONTENT % | LIQUID LIMIT %

ROCK QUALITY DESIGNATION & RECOVERY: RQD% REC.%: 20% 40% 60% 80% 100%

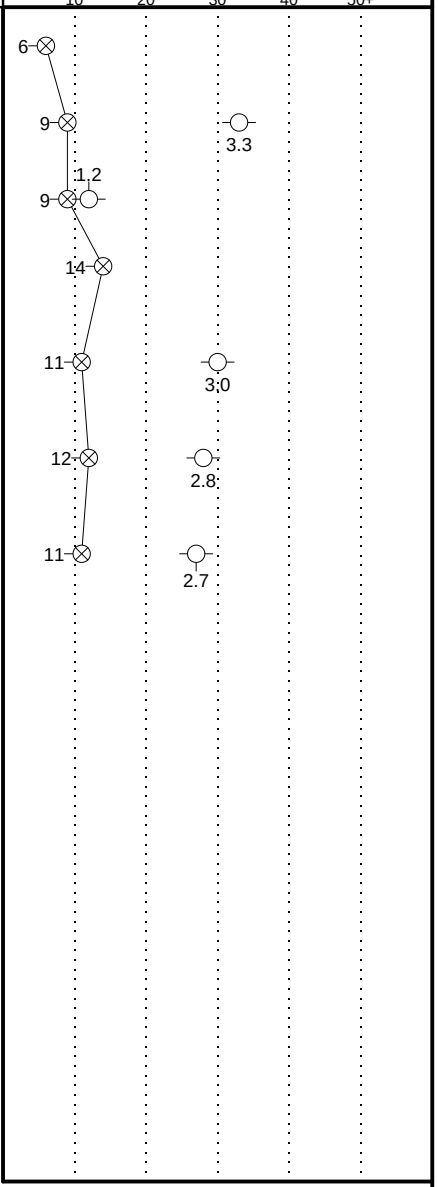
STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50+

BOTTOM OF CASING → LOSS OF CIRCULATION (100%)

SURFACE ELEVATION: Not Determined

ENGLISH UNITS

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [2"]			2 2
	S-1	SS	24	14	(CL) {A-6} FILL, LEAN CLAY, trace organics, dark brown, moist, medium stiff			4 5
	S-2	SS	24	10	(CL) {A-6} Glacial till, LEAN CLAY WITH SAND, brown, moist, medium stiff			3 4 5 6
5	S-3	SS	24	20	(CL) {A-6} Glacial till, SANDY LEAN CLAY, brown, moist, stiff			3 3 6 7
	S-4	SS	18	0				5 6 8
	S-5	SS	18	16	(CL) {A-6} Glacial till, LEAN CLAY WITH SAND AND GRAVEL, brown, moist, stiff			4 4 7
10	S-6	SS	18	18				3 5 7
	S-7	SS	18	18				3 5 6
15					END OF BORING @ 15'			
					Note: Boring offset 30 feet south of staked location.			
20								
25								
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU 20% 40% 60% 80% 100%

WL None WS ☐ WD ☒	BORING STARTED 11/15/19	
WL(BCR) WL(ACR) None	BORING COMPLETED 11/15/19	CAVE IN DEPTH
WL	RIG Truck FOREMAN BB/CB	DRILLING METHOD 3 1/4" HSA 0' to 15' (AH)

CLIENT	JOB #	BORING #	SHEET
City of De Pere	1669-A	3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
De Pere Project 20-01	

SITE LOCATION

De Pere, Brown County, Wisconsin

Cass Street

CALIBRATED PENETROMETER TONS/FT2: 1 2 3 4 5+

PLASTIC LIMIT | WATER CONTENT % | LIQUID LIMIT %

ROCK QUALITY DESIGNATION & RECOVERY
RQD% REC.%
20% 40% 60% 80% 100%

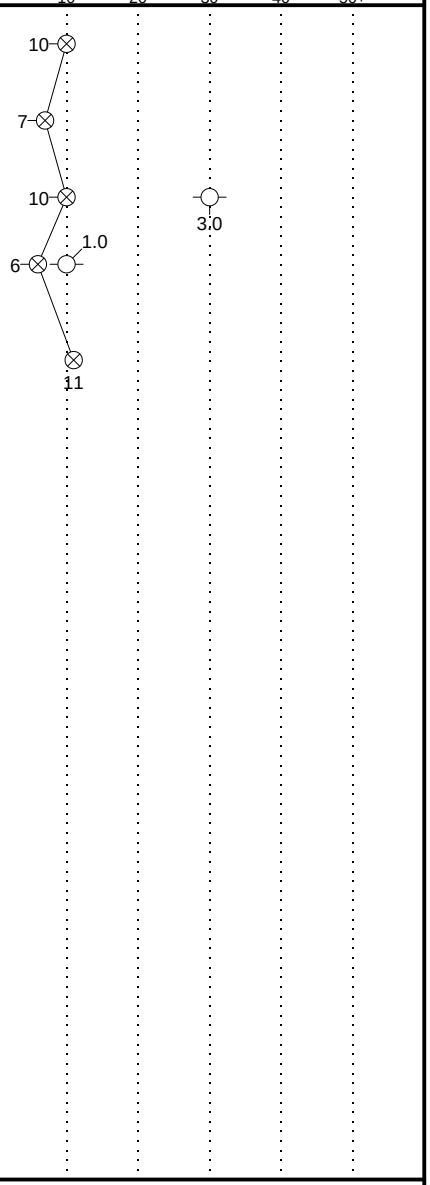
STANDARD PENETRATION BLOWS/FT
10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING → LOSS OF CIRCULATION (100%)

SURFACE ELEVATION: Not Determined

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	16	Topsoil Thickness [3"] (CL,OL) {A-6, A-8} FILL, MIXTURE OF LEAN CLAY WITH SAND AND ORGANIC SILT, dark brown and black, moist, stiff to medium stiff			2 5 5
	S-2	SS	24	18				5 9 6
5	S-3	SS	24	18	(CL) {A-6} Lacustrine, LEAN CLAY WITH SAND, brown, moist, medium stiff to stiff			4 3 4
	S-4	SS	18	14				2 3 7
								6 2 2
	S-5	SS	18	1				4 3 5
10					END OF BORING @ 10' Note: Boring offset 5 feet south of staked location.			6
15								
20								
25								
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU 20% 40% 60% 80% 100%

WL None WS ☐ WD ☒	BORING STARTED 11/14/19	
WL(BCR) WL(ACR) None	BORING COMPLETED 11/14/19	CAVE IN DEPTH
WL	RIG Truck FOREMAN BB/CB	DRILLING METHOD 3 1/4" HSA 0' to 10' (AH)

CLIENT	JOB #	BORING #	SHEET
City of De Pere	1669-A	4	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
De Pere Project 20-01	

SITE LOCATION

De Pere, Brown County, Wisconsin

Alley

CALIBRATED PENETROMETER TONS/FT2: 1 2 3 4 5+

PLASTIC LIMIT | WATER CONTENT % | LIQUID LIMIT %

ROCK QUALITY DESIGNATION & RECOVERY
RQD% — — REC.% —
20% 40% 60% 80% 100%

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING → LOSS OF CIRCULATION (100%)

SURFACE ELEVATION: Not Determined

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Thickness [5"]			
					Base Course Thickness [7"]			
	S-1	SS	24	8	(CL) {A-6} FILL, SANDY LEAN CLAY, trace gravel and organics, dark brown, moist, medium stiff			3 2 4
	S-2	SS	24	6	(CL) {A-6} Lacustrine, LEAN CLAY, brown, moist, stiff			5 4 5 4 7
5					END OF BORING @ 5'			
10								
15								
20								
25								
30								

6
9

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU 20% 40% 60% 80% 100%

WL None WS ☐ WD ☒	BORING STARTED 11/14/19	
WL(BCR) WL(ACR) None	BORING COMPLETED 11/14/19	CAVE IN DEPTH
WL	RIG Truck FOREMAN BB/CB	DRILLING METHOD 3 1/4" HSA 0' to 5' (AH)

CLIENT	JOB #	BORING #	SHEET
City of De Pere	1669-A	5	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
De Pere Project 20-01	

SITE LOCATION

De Pere, Brown County, Wisconsin

South 8th Street

CALIBRATED PENETROMETER TONS/FT2: 1 2 3 4 5+

PLASTIC LIMIT | WATER CONTENT % | LIQUID LIMIT %

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — REC.% —

20% 40% 60% 80% 100%

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING → LOSS OF CIRCULATION (100%)

SURFACE ELEVATION: Not Determined

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Thickness [7"]			
					Base Course Thickness [10"]			
	S-1	SS	18	18	(CL) {A-6} Lacustrine, LEAN CLAY WITH SAND, brown, moist, medium stiff			3 3 3
	S-2	SS	24	11				3 3 4
5					END OF BORING @ 5'			7
					Note: Boring offset 5 feet south of marked location.			

6 — 7 — 3.0 — 3.0

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU 20% 40% 60% 80% 100%

WL None WS ☐ WD ☒	BORING STARTED 11/14/19	
WL(BCR) WL(ACR) None	BORING COMPLETED 11/14/19	CAVE IN DEPTH
WL	RIG Truck FOREMAN BB/CB	DRILLING METHOD 3 1/4" HSA 0' to 5' (AH)

CLIENT	JOB #	BORING #	SHEET
City of De Pere	1669-A	6	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
De Pere Project 20-01	

SITE LOCATION

De Pere, Brown County, Wisconsin

Reid Street

CALIBRATED PENETROMETER TONS/FT2: 1 2 3 4 5+

PLASTIC LIMIT | WATER CONTENT % | LIQUID LIMIT %

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — REC.% —

20% 40% 60% 80% 100%

STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING → LOSS OF CIRCULATION

SURFACE ELEVATION: Not Determined

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Thickness [7"]			
					Base Course Thickness [10"]			
	S-1	SS	18	10	(CL, OL) {A-6, A-8} FILL, A MIXTURE OF LEAN CLAY WITH SAND AND ORGANIC SILT, dark brown and black, moist, stiff			5 6 7
	S-2	SS	24	24	(CL) {A-6} Lacustrine, LEAN CLAY WITH SEAMS OF SILT, brown with gray, moist, stiff			4 5 7 10
5					END OF BORING @ 5'			
10								
15								
20								
25								
30								

13

12

3.9

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU 20% 40% 60% 80% 100%

WL None WS ☐ WD ☒	BORING STARTED 11/14/19	
WL(BCR) WL(ACR) None	BORING COMPLETED 11/14/19	CAVE IN DEPTH
WL	RIG Truck FOREMAN BB/CB	DRILLING METHOD 3 1/4" HSA 0' to 5' (AH)

CLIENT	JOB #	BORING #	SHEET
City of De Pere	1669-A	7	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
De Pere Project 20-01	

SITE LOCATION

De Pere, Brown County, Wisconsin

Patriot Way

CALIBRATED PENETROMETER TONS/FT2: 1 2 3 4 5+

PLASTIC LIMIT | WATER CONTENT % | LIQUID LIMIT %

ROCK QUALITY DESIGNATION & RECOVERY: RQD% — REC.% —

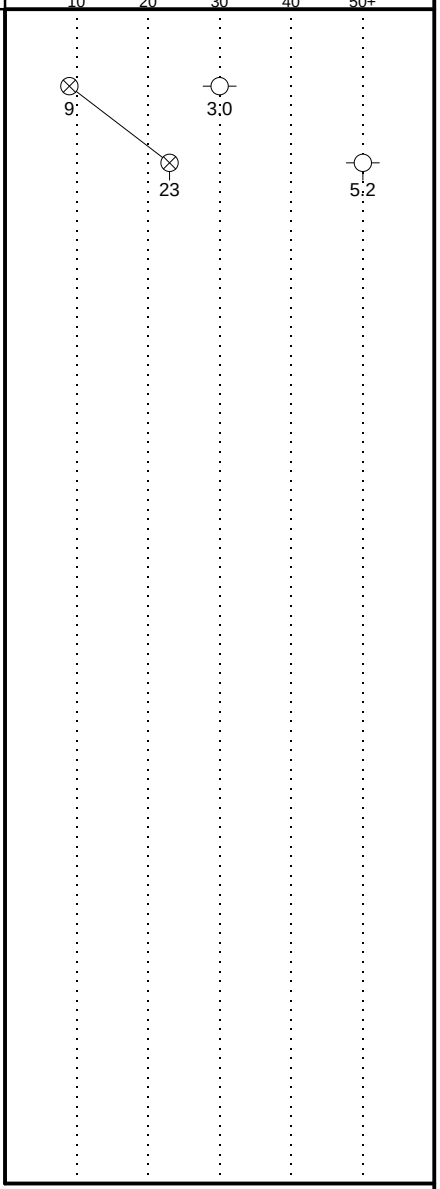
STANDARD PENETRATION BLOWS/FT: 10 20 30 40 50+

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING → LOSS OF CIRCULATION (100%)

SURFACE ELEVATION: Not Determined

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Thickness [5"]			
					Base Course Thickness [7"]			
	S-1	SS	24	24	(CL) {A-6} Lacustrine, LEAN CLAY WITH SEAMS OF SILT, brown with gray, moist, stiff to very stiff			3 4 5 6
	S-2	SS	24	18				8 11 12 16
5					END OF BORING @ 5'			
10								
15								
20								
25								
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU 20% 40% 60% 80% 100%

WL None WS ☐ WD ☒	BORING STARTED 11/14/19	
WL(BCR) WL(ACR) None	BORING COMPLETED 11/14/19	CAVE IN DEPTH
WL	RIG Truck FOREMAN BB/CB	DRILLING METHOD 3 1/4" HSA 0' to 5' (AH)

1002-CPS-1

Division of Industry Services
P. O. Box 2658
Madison, Wisconsin 53701
Tony Evers, Governor

SOIL AND SITE EVALUATION – STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent of 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: Brown

Parcel I.D.: WD-364-D-506-2

Reviewed by: M. King / M. Meyer
Date: 11/18/19

Property Owner	Property Location
City of De Pere	Govt. Lot SE ¼ NE ¼ S 32 T 23 N R 20 E ~~(or) W~~

Property Owner' Mail Address	Lot #	Block #	Subd. Name or CSM #
925 S. Sixth Street			

City	State	Zip Code	Phone Number
De Pere	WI	54115	920.339.4060

☒ City ☐ Village ☐ Town Nearest Road: E. Matthew Drive

De Pere

Drainage area _____ ☐ sq .ft ☐ acres

Test site suitable for (check all that apply): ☐ Site not suitable;

☐ Bioretention; ☐ Subsurface Dispersal System;

☐ Reuse; ☐ Irrigation; ☐ Other _____

Hydraulic Application Test Method

☒ Morphological Evaluation
☐ Double Ring Infiltrometer
☐ Other: (specify) _____

Soil Moisture
Date of soil borings: 11/15/19

USDA-NRCS WETS Value:
☐ Dry =1;
☒ Normal = 2;
☐ Wet = 3.

1 #OBS. ☐ Pit ☒ Boring Ground surface elevation. N/A ft. Depth to limiting factor --- ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
A	0 – 3	7.5 YR 3/3	No Redox Features	c	0, cdy	fr	c	0 – 5	70 – 80	0.07
C	3 – 48	5 YR 5/4	No Redox Features	c	1, f, abk	fi	c	0 – 5	80 – 90	0.07
C	48 – 180	7.5 YR 5/3	No Redox Features	c	1, f, sbk	fi	c	10 – 15	70 – 80	0.07
C	180 - 240	7.5 YR 5/1	No Redox Features	sic, c	1, f, pl	fi	--	0 - 5	90 - 100	0.07

Comments:

2 #OBS. ☐ Pit ☒ Boring Ground surface elevation. N/A ft. Depth to limiting factor --- ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App Rate Inches/Hr
--	0 – 2	7.5 YR 3/3	No Redox Features	c	0, cdy	fr	c	0 – 5	70 – 80	0.07
--	2 – 24	7.5 YR 3/2	No Redox Features	c	0, cdy	fi	c	0 – 5	70 – 80	0.07
C	24 – 60	7.5 YR 5/4	No Redox Features	c	1, f, sbk	fi	c	0 – 5	75 – 85	0.07
C	60 – 96	7.5 YR 5/4	No Redox Features	c	1, f, sbk	fi	c	0 – 5	60 – 70	0.07
C	96 - 180	7.5 YR 5/4	No Redox Features	c	1, f, sbk	fi	--	10 - 15	70 – 80	0.07

Comments:

Name (Please Print)	Signature	Credential Number
Matthew A. Meyer		1053414
Address	**Date Evaluation Conducted**	**Telephone Number**
1060 Breezewood Lane, Suite 102 Neenah, WI 54956		920-886-1406

APPENDIX C - Supplemental Report Documents

Important Information about This Geotechnical-Engineering Report

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

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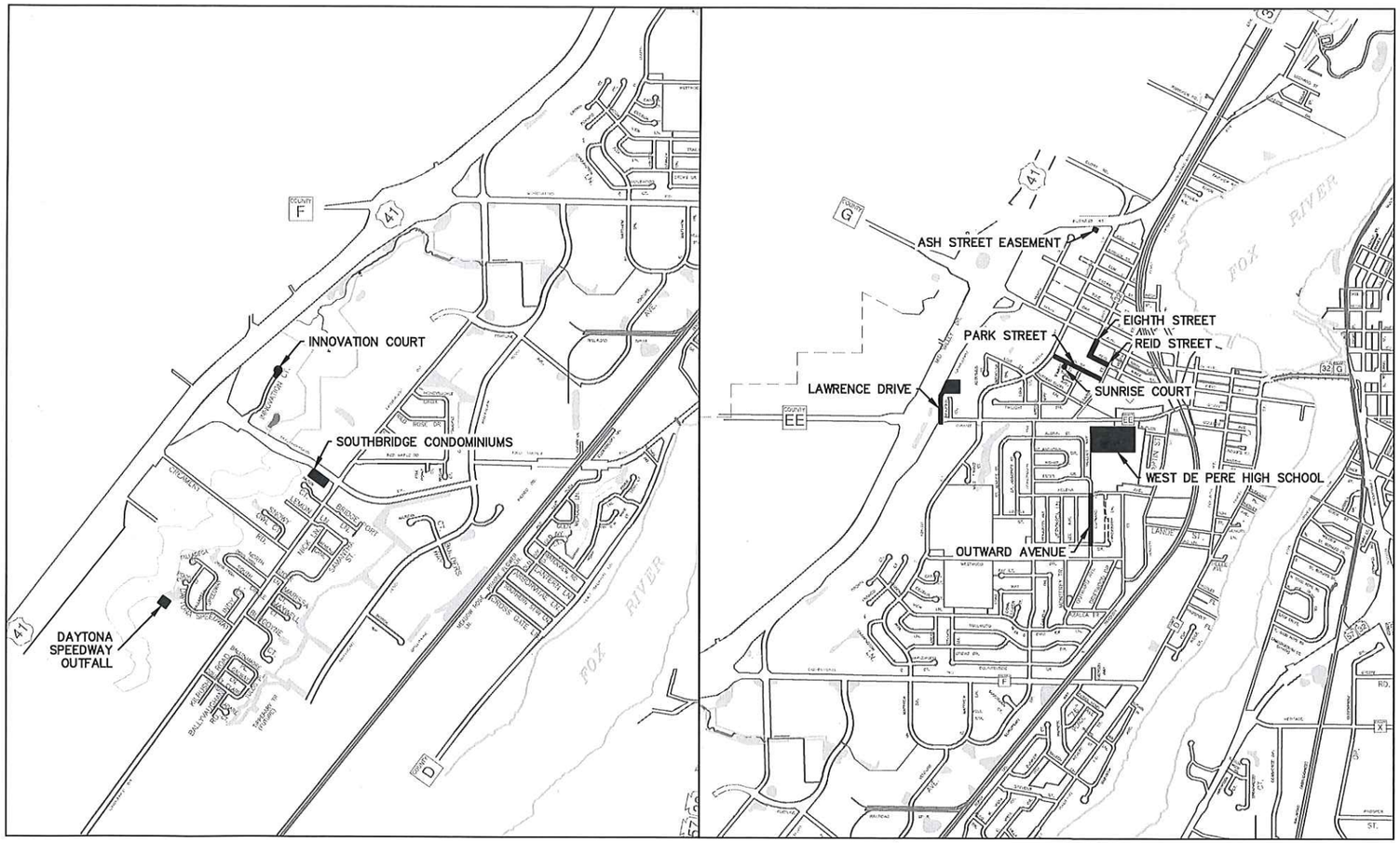
PROJECT# 20-01A
WEST SEWER & WATER RELAY AND STREET RESURFACING

CITY OF DE PERE

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



SITE LOCATION MAP
N.T.S.

SHEET NO.	DESCRIPTION
G001	TITLE SHEET
G002	STANDARD ABBREVIATION & SYMBOLS
G003	TYPICAL SECTIONS
C101 – C102	PARK STREET PLAN AND PROFILE SHEETS
C103	SUNRISE COURT PLAN AND PROFILE SHEETS
C104	REID STREET PLAN AND PROFILE SHEETS
C105	S EIGHTH STREET PLAN AND PROFILE SHEETS
C106 – C107	OUTWARD AVENUE PLAN AND PROFILE SHEETS
C108 – C111	WEST DE PERE H.S. PLAN AND PROFILE SHEETS
C112	ASH STREET EASEMENT PLAN AND PROFILE SHEETS
C113	SOUTHBRIDGE CONDOS PLAN AND PROFILE SHEETS
C114 – C115	LAWRENCE DRIVE PLAN AND PROFILE SHEETS
C116	DAYTONA SPEEDWAY PLAN AND PROFILE SHEETS
C117	INNOVATION COURT PLAN AND PROFILE SHEETS
C401 – C403	INNOVATION COURT GRADING, PAVEMENT MARKING, AND DEMOLITION PLANS
C404 – C405	SOUTHBRIDGE CONDOS EROSION CONTROL AND TRAFFIC CONTROL PLAN
C406	S EIGHTH STREET TRAFFIC CONTROL PLAN
C407 – C412	BENCHMARK AND CONTROL POINT SHEETS
C501 – C508	CONSTRUCTION DETAILS

CITY OF DE PERE
BOARD OF PUBLIC WORKS

1/16/20 DATE — E.P. Rakers — CITY ENGINEER

1/16/20 DATE — CITY ADMINISTRATOR

1/16/20 DATE — Michael J. Walsh — MAYOR

STAMPS:

WISCONSIN
ERIC P. RAKERS
E-30929
GREEN BAY, WI
PROFESSIONAL ENGINEER
1/16/20

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
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
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		
SIGN BASE		
SIGN		
SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE		
SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE		(xx)
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

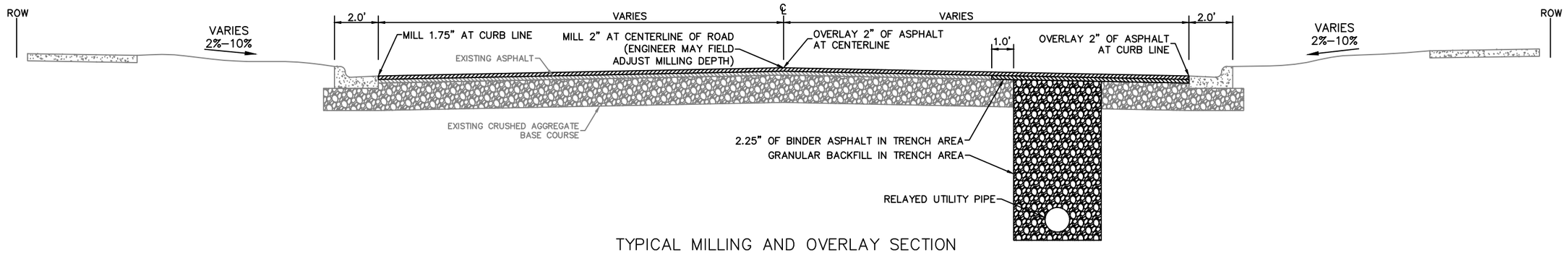
NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING

PROJECT # 20–01A

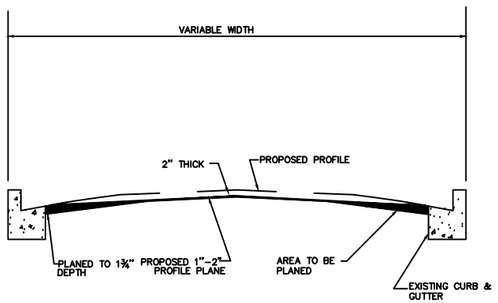
	BY	DATE
SURVEYED		
DRAWN	MAL	12–2019
DESIGNED		
CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. **G002**



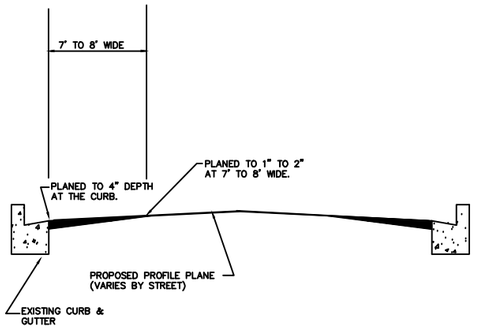
TYPICAL MILLING AND OVERLAY SECTION
WITH CURB AND GUTTER



NOTES

1. EXISTING ASPHALT AT EDGE OF GUTTER SHALL BE PLANED TO A DEPTH OF 1¾" AND PLANED TO A DEPTH OF 1" FOR THE DESIRED CROSS–SLOPE. IN MOST CASES THE PROFILE PLANE WILL BE 1" UNIFORM DEPTH AS SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
2. MINIMUM THICKNESS OF OVERLAY SHALL BE 2" + 0.1" PLUS THE THICKNESS OF THE LEVELING COURSES.
3. LEVELING COURSES (SCRATCH COAT) OF ASPHALT TO A DEPTH AS REQUIRED SHALL BE PROVIDED IN AREAS OF LOCALIZED SETTLEMENT.
4. BITUMINOUS CONCRETE AGGREGATES USED IN OVERLAY WORK SHALL CONFORM TO GRADATION NO. 2, SURFACE COURSE.

MILLING AND RESURFACING DETAIL



NOTES

1. EXISTING ASPHALT AT EDGE OF GUTTER SHALL BE PLANED TO A DEPTH OF 4" AND PLANED TO A DEPTH OF 1" TO 2" FOR THE DESIRED CROSS–SLOPE. IN MOST CASES THE PROFILE PLANE WILL BE 1" UNIFORM DEPTH AS SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
2. MINIMUM THICKNESS OF OVERLAY SHALL BE 2" + 0.1" PLUS THE THICKNESS OF THE LEVELING COURSES.
3. LEVELING COURSES (SCRATCH COAT) OF ASPHALT TO A DEPTH AS REQUIRED SHALL BE PROVIDED IN AREAS OF LOCALIZED SETTLEMENT.
4. BITUMINOUS CONCRETE AGGREGATES USED IN OVERLAY WORK SHALL CONFORM TO GRADATION NO. 2, SURFACE COURSE.

4'' MILLING DETAIL

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

CITY OF DE PERE
TYPICAL SECTION

NAME:
WEST SEWER & WATER RELAY
AND STREET RESURFACING

PROJECT #
20–01A

	BY	DATE
SURVEYED		
DRAWN	MAL	12–2019
DESIGNED	MAL	12–2019
CHECKED	CKK	12–2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO.
G003

X:\ENG\Projects\City Projects\2020\Project 20–01A West Sewer and Water Relay and Street Resurfacing\1200– CAD\TYP Sections.dwg

STA 0+28, 8.0' LT
1-8"X10" TAPPING TEE AND VALVE

STA 0+34, 7.0' LT
1-22' BEND

STA 03+76, 7.0' LT
1-8"X6" TEE
13'-6" PVC WM
1-6" GATE VALVE
1-HYDRANT 7.5' BURY CAP
COLOR CLASS-AA BLUE

STA 03+80, 7.0' LT
1-8" GATE VALVE

STA 5+22, 25.0' LT
1-CONNECTION TO EXISTING WM

STA 05+28, 7.0' LT
1-8"X6" TEE
30'-6" PVC WM
2-45° BEND

STA 05+28, 22' LT
1-6" GATE VALVE

NOTES:
REPOUR DRIVEWAY AT 810-812 WITH NO CENTER HUMP

REMOVE & REPLACE SANITARY LATERAL (TYP)
VERIFY WATER SERVICE SIZE
ADJUST INLET
EXIST CB (8)
332'-18" CONC SAN
68'-18" RCP ST
EXIST STMH (2)
6'-15" RCP ST
297'-15" RCP ST
REMOVE CURB STOP (TYP)
6' 8" PVC WM(TEE-BEND)
28' 8" PVC WM(BEND-TEE)
284' 8" PVC WM(TEE-TEE)
EXIST RL
PROP RL
276'-8" LINED CONC SAN
31'-12" RCP ST
END CONSTRUCTION
ADJUST INLET
CAP EXISTING 10"X6" TEE
EXIST SANMH (13)
EXIST CB (9)
EXIST 10" C.I. WM
EXIST 6" C.I. WM
15" STORM LATERAL EXIST
294'-18" CONC SAN
WD-86 840
WD-86-5 850
ADJUST MANHOLE
EXIST SANMH (14)
31' 8" PVC WM(TEE-TEE)
ADJUST INLET
EXIST STMH (3)
4'-15" RCP ST
EXIST CB (4)
44'-12" RCP ST
152' 8" PVC WM(TEE-TEE)
EXIST SANMH (15)
105'-8" LINED CONC SAN
149'-15" RCP ST
EXIST CB (7)
ADJUST INLET
ADJUST MANHOLE
215'-8" LINED CONC SAN
WD-86-6 818-820
WD-726-M-5 810-812
REMOVE TREE (TYP)
NEW 1" HDPE WATER SERVICE(TYP)
153' 8" PVC WM(TEE-TEE)
EXIST SANMH (16)
ADJUST MANHOLE
REMOVE VALVE BOX (TYP)
REMOVE HYDRANT (TYP)
ABANDON EXIST WM
WD726-M-7 234
WD-86-5 819
SEE PAGE C102
SEE PAGE 103
S. NINTH STREET
STA 00+62, 7.0' LT
1-8"X6" TEE
27'-6" PVC WM
1-6" GATE VALVE
1-HYDRANT 6.5' BURY CAP
COLOR CLASS-AA BLUE
WATER SERVICE OFF OF MORNING GLORY LANE
SANITARY SERVICE OFF OF EASEMENT ALONG 9TH STREET
STA 03+45, 7.0' LT
1-8"X8" TEE
SUNRISE COURT
WATER SERVICE OFF OF TWILIGHT DRIVE
SANITARY SERVICE OFF OF TWILIGHT DRIVE

EXIST RL PROFILE
PROP. 8" PVC WM
STA. 00+28 T.O.P. 600.08
STA. 00+58 T.O.P. 600.14 MAINTAIN 1.5' SEPARATION
STA. 03+64 T.O.P. 601.03 MAINTAIN 1.5' SEPARATION
STA. 3+45 T.O.P. 600.76
STA. 03+57 T.O.P. 600.78 MAINTAIN 1.5' SEPARATION
STA. 4+27 T.O.P. 602.71
STA. 4+08 T.O.P. 602.55
STA. 5+21 T.O.P. 603.33
APPROX. DEPTH OF EXISTING 6" WM (604.06)
68'-18" RCP 0.53%
297'-15" RCP 0.73%
276'-8" SAN LINED CONC 0.54%
60'-8" SAN LINED CONC 0.27%
44'-12" RCP 2.49%
215'-8" SAN LINED CONC 0.70%
31'-12" RCP 2.63%

EXIST CB (9) STA 0+51 16' RT RIM = 605.96 D = 4.32' FL = 601.64 (12" NE) FL = 601.72 (15" SW)
EXIST STMH (2) STA 0+60 20' LT RIM = 606.63 D = 6.60' DIA = 48" FL = 600.03 (18" NW) FL = 600.03 (15" SE) FL = 600.43 (15" SW)
EXIST CB (8) STA 0+60 14' LT RIM = 605.82 D = 5.03' FL = 600.79 (15" NE) FL = 600.82 (12" SW)
EXIST SANMH (13) STA 0+17 1' RT RIM = 606.07 D = 20.60' DIA = 48" FL = 596.47 (8" SE) FL = 585.47 (18" SW) FL = 585.47 (18" NE) FL = 585.65 (8" SE) OUTSIDE DROP
EXIST STMH (3) STA 3+57 17' LT RIM = 607.89 D = 5.70' DIA = 48" FL = 602.19 (15" NW) FL = 602.22 (15" SW)
EXIST SANMH (14) STA 2+94 2' RT RIM = 607.72 D = 9.76' DIA = 48" FL = 597.96 (8" NW) FL = 597.96 (8" SE)
EXIST CB (4) STA 3+57 14' LT RIM = 607.58 D = 5.30' FL = 602.28 (15" NE) FL = 602.58 (15" SW) FL = 602.38 (12" S)
EXIST SANMH (15) STA 3+53 2' RT RIM = 608.11 D = 9.99' DIA = 48" FL = 598.12 (8" NW) FL = 598.17 (8" SE) FL = 598.26 (8" SW)
EXIST CB (7) STA 3+89 16' RT RIM = 607.87 D = 4.40' FL = 603.47 (12" N)
EXIST SANMH (16) STA 5+68 2' RT RIM = 610.76 D = 11.08' DIA = 48" FL = 599.68 (8" NW) FL = 600.77 (8" E) BULKHEADED

610
600
0+00
1+00
2+00
3+00
4+00
5+00
6+00
606.3
606.8
607.2
607.4
607.6
607.8
608.2
608.5
609.1
609.7
610.4
611.1
5'
0
0
20'
40'

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

PARK STREET
NINTH STREET TO 250' E OF SUNRISE COURT

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	07-2019
DRAWN	MAL	10-2019
DESIGNED	MAL	11-2019
CHECKED	CKK	11-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C101

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\Park and Sunrise\Park & Sunrise_P&P.dwg

STA 06+80, 7.0' LT
1-8"X8" TEE
1-CONNECTION TO EXISTING WM (VALVE INSTALLED IN 2014)
1. CAP TEE ON NEW WM
2. ONCE SAFE, CUT OUT EXISTING TEE AND SWAB TO CONNECTION

STA 06+97, 7.0' LT
1-8" GATE VALVE

STA 07+02, 7.0' LT
1-8"X6" TEE
13'-6" PVC WM
1-HYDRANT 7.0' BURY CAP
COLOR CLASS-AA BLUE

WATER SERVICE OFF OF ALLARD STREET
SANITARY SERVICE OFF OF ALLARD STREET

STA 11+46, 7.0' LT
1-CONNECTION TO EXISTING WM
1-8"X8" TAPPING TEE AND VALVE

SEE PAGE C101

WD-726-M-5-A 802 | WD-726-M-4 752 | WD-726-M-3 744 | WD-726-M-2 736 | WD-726-M-1 732 | WD-86-2 218

NEW 1" HDPE WATER SERVICE(TYP)

REMOVE CURB STOP (TYP)

315' | 230' | 170'

REMOVE & REPLACE SANITARY LATERAL (TYP)

444' 8" PVC WM(TEE-TEE)

EXIST RL

ADJUST MANHOLE

EXIST SANMH (21)

EXIST SANMH (22)

21' 8" PVC WM(TEE-TEE)

31' 8" PVC WM(TEE-EXIST)

ADJUST MANHOLE

6+00 | 7+00 | 8+00 | 9+00 | 10+00 | 11+00 | 11+70

368'-8" LINED CONC SAN

8' | PROP RL

172'-8" LINED CONC SAN

74'-8" PVC ST

30'-10" PVC ST

EXIST CB (11)

EXIST SANMH (23)

END CONSTRUCTION

EXIST CB (10)

STORM LATERAL

CAP EXISTING 8"X6" TEE AND REMOVE VALVE BOX

REMOVE VALVE BOX (TYP)

REMOVE HYDRANT (TYP)

306' | 236' | 163'

WD-726-M-32 | WD-726-M-33 741 | WD-726-M-34 737 | WD-726-M-35 733 | WD-86-4 230

295'-8" LINED CONC SAN

220'-8" LINED CONC SAN

EXIST 8" PVC WM

WATER SERVICE OFF OF TWILIGHT DRIVE
SANITARY SERVICE OFF OF TWILIGHT DRIVE

WATER SERVICE OFF OF TWILIGHT DRIVE
SANITARY SERVICE OFF OF TWILIGHT DRIVE

WATER SERVICE OFF OF ALLARD STREET
SANITARY SERVICE OFF OF ALLARD STREET
STORM SERVICE OUT OF INLET

TWILIGHT DRIVE

ALLARD STREET

EXIST SANMH (21)
STA 6+72 2' RT
RIM = 611.77
D = 8.32'
DIA = 48"
FL = 603.45 (8" SW)
FL = 604.15 (4" NE)
FL = 603.45 (8" NE)

STA. 06+80
T.O.P. 605.49

STA. 06+80
T.O.P AT EXISTING 605.32

STA. 07+02
T.O.P. 605.54

EXIST SANMH (22)
STA 7+90 2' RT
RIM = 611.24
D = 5.84'
DIA = 48"
FL = 605.40 (8" SE)
FL = 605.40 (8" NW) BULKHEADED

EXIST RL PROFILE

STA. 08+33
T.O.P. 604.65

368'-8" SAN LINED CONC 0.57%

PROP. 8" PVC WM

EXIST CB (10)
STA 11+21 17' RT
RIM = 607.68
D = 2.60'
FL = 605.08 (10" NE)
FL = 605.19 (6" SW)

EXIST CB (11)
STA 11+20 13' LT
RIM = 607.39
D = 2.65'
FL = 604.76 (10" SW)
FL = 604.74 (8" SE)

74'-8" ST PVC 1.99%

EXIST SANMH (23)
STA 11+57 1' RT
RIM = 607.98
D = 4.71'
DIA = 48"
FL = 603.29 (8" NW)
FL = 603.27 (8" NE)
FL = 603.27 (8" SW)

STA. 10+66
T.O.P. 602.49

STA. 11+46
T.O.P. 601.30
VERIFY ELEVATION

610 | 600

5' | 0

0 | 20' | 40'

611.1 | 611.6 | 611.6 | 611.2 | 610.9 | 610.5 | 610.0 | 609.6 | 609.1 | 608.7 | 608.1 | 607.9

6+00 | 7+00 | 8+00 | 9+00 | 10+00 | 11+00 | 11+70

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PARK STREET
250' E OF SUNRISE COURT TO ALLARD STREET

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	07-2019
DRAWN	MAL	10-2019
DESIGNED	MAL	11-2019
CHECKED	CKK	11-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C102

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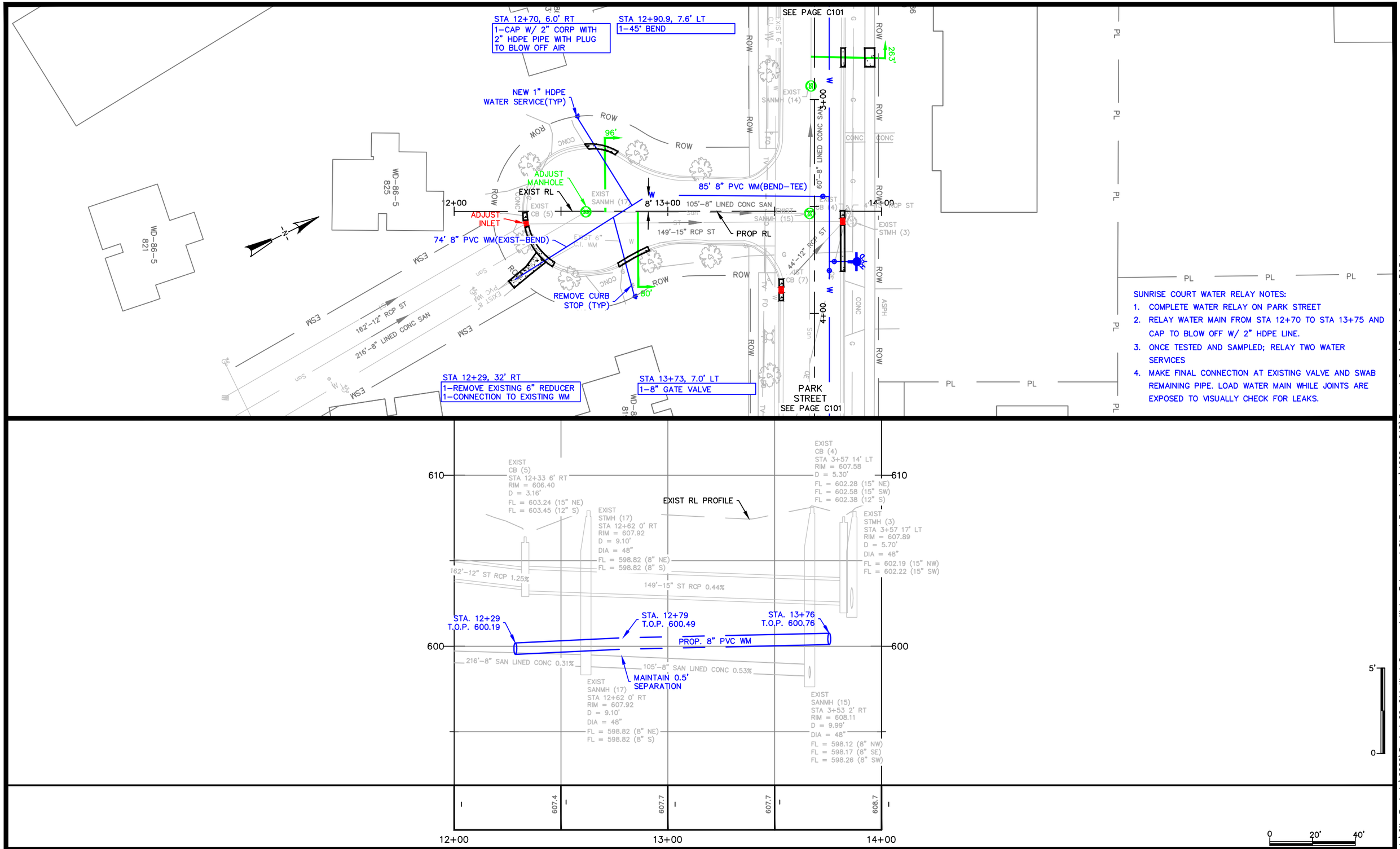

CITY OF DE PERE
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

SUNRISE COURT
PARK STREET TO TERMINI

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	07-2019
DRAWN	MAL	10-2019
DESIGNED	MAL	11-2019
CHECKED	CKK	11-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C103

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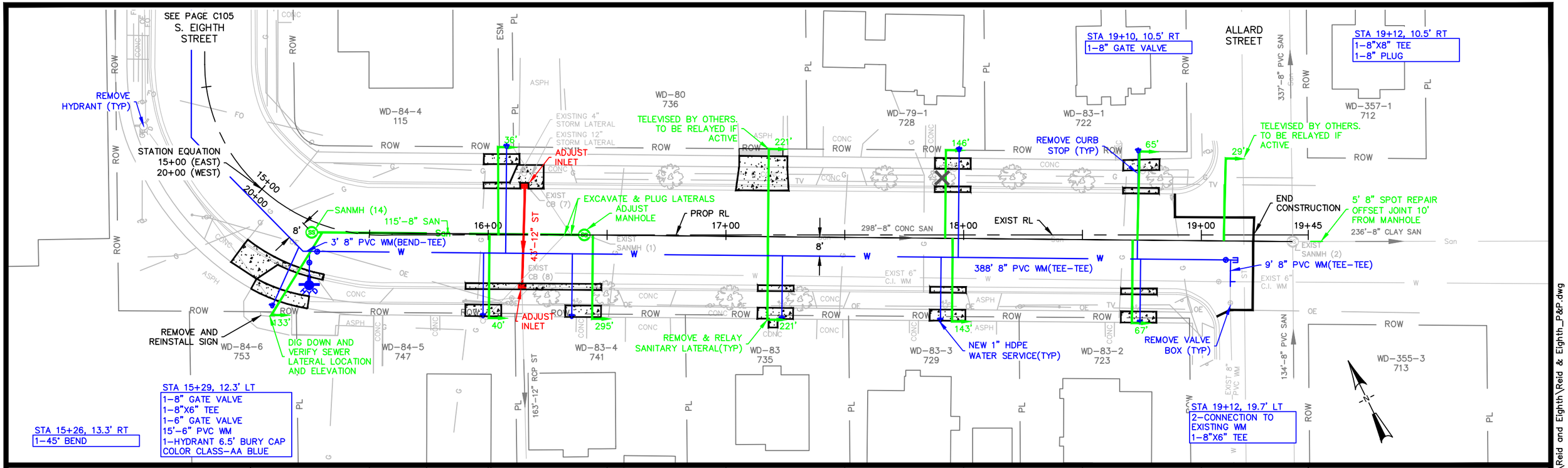

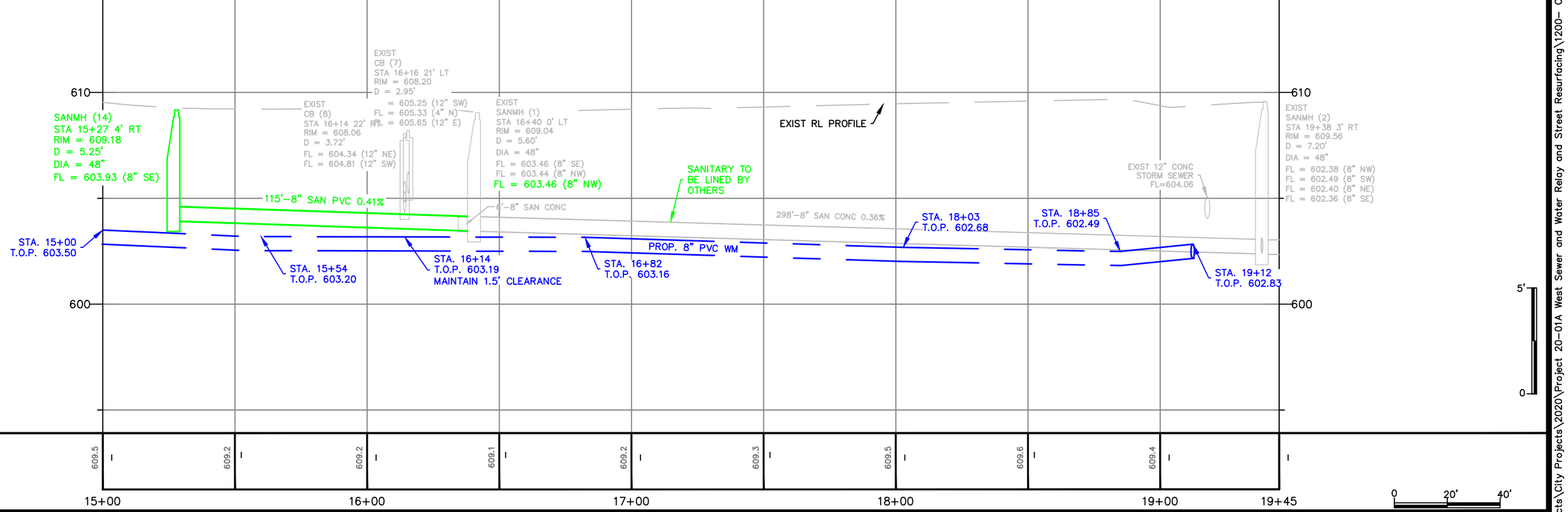

CITY OF DE PERE
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
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REID STREET
S. EIGHTH STREET TO ALLARD STREET

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	07-2019
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DESIGNED	MAL/CKK	10-2019
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REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C104

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WATER SERVICE OFF OF MAIN AVENUE
SANITARY SERVICE OFF OF MAIN AVENUE

STA 20+33, 11.8' LT
1–45° BEND

NOTE:
ABANDON WATER MAIN BY TURNING OFF VALVE AT 23+24, INSTALL BLOW OFF AND FILLING MAIN TO THE SOUTHWEST

STA 23+20, 28.4' LT
CAP EXISTING WATER MAIN

STA 23+27, 6.0' LT
1–45° BEND

STA 23+20, 5.7' LT
1–8" GATE VALVE

STA 23+50, 28.6' LT
1–CONNECTION TO EXISTING WM
1–45° BEND
1–6"X8" REDUCER

MAIN AVENUE

WD–84–3
801–805

34'–12" ST 2.09%
34'–12" CONC ST

45'–8" CONC ST

REMOVE HYDRANT (TYP)

ABANDON EXIST WM

REMOVE VALVE BOX (TYP)

INLET (10)

330' 8" PVC WM(BEND–TEE)

67' 8" PVC WM(BEND–BEND)

21+00 W

22+00 W

23+00 W

23+70

PROP RL

EXIST RL

6'

20+00

15+00

STATION EQUATION
15+00 (EAST)
20+00 (WEST)

SANMH (14)

END CONSTRUCTION

WD–84–6
753

WD–84–7
747

WD–84–1
749

WD–84–5
800

WD–84–4
115

REID STREET
SEE PAGE C104

STORM SERVICE OFF OF MAIN AVENUE
WATER SERVICE OFF OF MAIN AVENUE
SANITARY SERVICE OFF OF MAIN AVENUE

NOTE:
UTILITY BORED THROUGH INLET LEAD APPROXIMATELY 8' FROM CB (10). TRAFFIC SIGNALS ARE TO BE REMOVED UNDER PROJECT 20–10, REMOVE AND REPLACE INLET LEAD AT THAT TIME.

EXIST RL PROFILE

INLET (10)
2'X3'
STA 23+18 22' LT
RIM = 608.89
D = 2.19'
FL = 606.70 (12" N)

EXIST CB (13)
STA 23+45 44' LT
RIM = 609.08
D = 3.10'
FL = 605.98 (8" NE)
FL = 605.98 (12" S)

34'–12" ST 2.09%

45'–8" ST CONC 0.98%

STA. 20+22
T.O.P. 603.55

STA. 20+00
T.O.P. 603.50

PROP. 8" PVC WM

EXIST 8" WM
VERIFY ELEVATION

610
600

609.5 609.7 610.0 610.2 610.1 610.0 609.6 608.9

20+00 21+00 22+00 23+00 23+69.81

5'
0

0 20' 40'

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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

S. EIGHTH STREET
REID STREET TO MAIN AVENUE

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20–01A

	BY	DATE
SURVEYED	MAL	07–2019
DRAWN	MAL	10–2019
DESIGNED	MAL/CKK	XX–2010
CHECKED	CKK	XX–2010

REVISIONS / ISSUES

NO.	DATE	BY	REMARKS

PAGE NO. C105

STA 0+44, 7.8' LT
2-CONNECTION TO EXISTING WM
1-8"X8"CROSS CAPPED TO THE SOUTH

STA 0+50, 7.8' LT
1-8" GATE VALVE

STA 4+43, 7.6' LT
1-8" GATE VALVE

WD-758-L-187
802
WATER SERVICE OFF OF AMHART DRIVE
SANITARY SERVICE OFF OF AMHART DRIVE

WD-758-L-188
1058

WD-758-L-189
1044

WD-758-L-190
1030

WD-758-L-191
1016

WD-758-L-192
1002

WD-758-L-193
992

WD-758-
974

STMH (16)
26'-10" PVC/CONC ST
26'-12" ST
13'-6" ST
INLET (15)
INLET (14)
36'-12" ST 0.40%
ABANDON EXIST WM
PLUG EXIST 10" TO THE NORTH
EXIST 10" C.I. WM
291'-8" LINED CONC SAN
303'-12" RCP ST
EXIST 6" C.I. WM
303'-8" LINED CONC SAN
END CONSTRUCTION
319'-8" TRUSS SAN
EXIST 8" D.I. WM
EXIST SANMH (3)
EXIST SANMH (6)
36'-8" TRUSS/CONC ST
ADJUST MANHOLE
EXIST RL
0+00
1+00
2+00
3+00
4+00
5+00
6+00
276'
205'
127'
47'
271'
195'
209'
107'
16'
231'
145'
8'
11'
345' 8" PVC WM(CROSS-TEE)
350'-8" LINED CONC SAN
387'-8" ST
298'-8" LINED CONC SAN
STMH (31)
STMH (32)
REMOVE CURB STOP (TYP)
REMOVE HYDRANT (TYP)
ADJUST MANHOLE
EXIST SANMH (7)
PROP RL
NEW 1" HDPE WATER SERVICE(TYP)
PROVIDE 6" STORM LATERAL(TYP)
SEE PAGE C107

EXIST STMH (18)
AMHART DRIVE
WATER SERVICE OFF OF AMHART DRIVE
SANITARY SERVICE OFF OF AMHART DRIVE
STORM SERVICE OFF OF AMHART DRIVE

WD-883-G-1
1071-1073

WD-123-2
1055-1057

WD-123-3
1029-1031

WD-708-J-9
1017

WD-708-J-8
1003

WD-708-J-7

STA 4+38, 7.6' LT
1-8"X6" TEE
16'-6" PVC WM
1-HYDRANT 7.5' BURY CAP
COLOR CLASS-AA BLUE

STMH (16)
STA 0+35 37' LT
RIM = 609.57
D = 4.00'
DIA = 48"
FL = 605.57 (12" NE)
FL = 605.57 (12" W)

INLET (15)
2'X3'
STA 0+54 18' LT
RIM = 609.48
D = 3.81'
FL = 605.67 (12" E)
FL = 605.67 (12" SW)
FL = 606.00 (6" NW)

INLET (14)
2'X3'
STA 0+56 18' RT
RIM = 609.30
D = 3.49'
FL = 605.81 (12" W)

26'-12" ST 0.40%

STA. 0+44
T.O.P. 602.63

EXIST SANMH (3)
STA 0+25 0' LT
RIM = 610.12
D = 12.00'
DIA = 48"
FL = 598.12 (8" S)
FL = 598.12 (8" E)
FL = 598.12 (8" W)

303'-8" SAN LINED CONC 0.33%

EXIST SANMH (6)
STA 1+01 0' RT
RIM = 610.37
D = 9.00'
DIA = 48"
FL = 601.37 (8" N)

STMH (31)
STA 2+06 11' RT
RIM = 610.46
D = 4.50'
DIA = 48"
FL = 605.77 (8" N)

EXIST RL PROFILE

STA. 2+07
T.O.P. 604.23

PROP. 8" PVC WM

350'-8" SAN LINED CONC 0.47%

387'-8" ST 0.40%

STA. 4+38
T.O.P. 604.51

EXIST SANMH (7)
STA 4+50 0' LT
RIM = 611.33
D = 11.60'
DIA = 48"
FL = 599.73 (8" S)
FL = 599.73 (8" N)

STMH (32)
STA 5+93 11' RT
RIM = 609.48
D = 5.26'
DIA = 48"
FL = 604.22 (8" S)
FL = 604.22 (8" N)

STA. 6+18
T.O.P. 602.96

298'-8" SAN LINED CONC 0.36%

610
600

5'
0
20'
40'
0

609.7 | 610.2 | 610.4 | 610.7 | 610.9 | 611.2 | 611.4 | 611.5 | 611.5 | 611.3 | 610.9 | 610.4 | 609.8

0+00 1+00 2+00 3+00 4+00 5+00 6+00

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

OUTWARD AVENUE
AMHART DR TO 600' N/O AMHART DR

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	12-2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	01-2020

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C106

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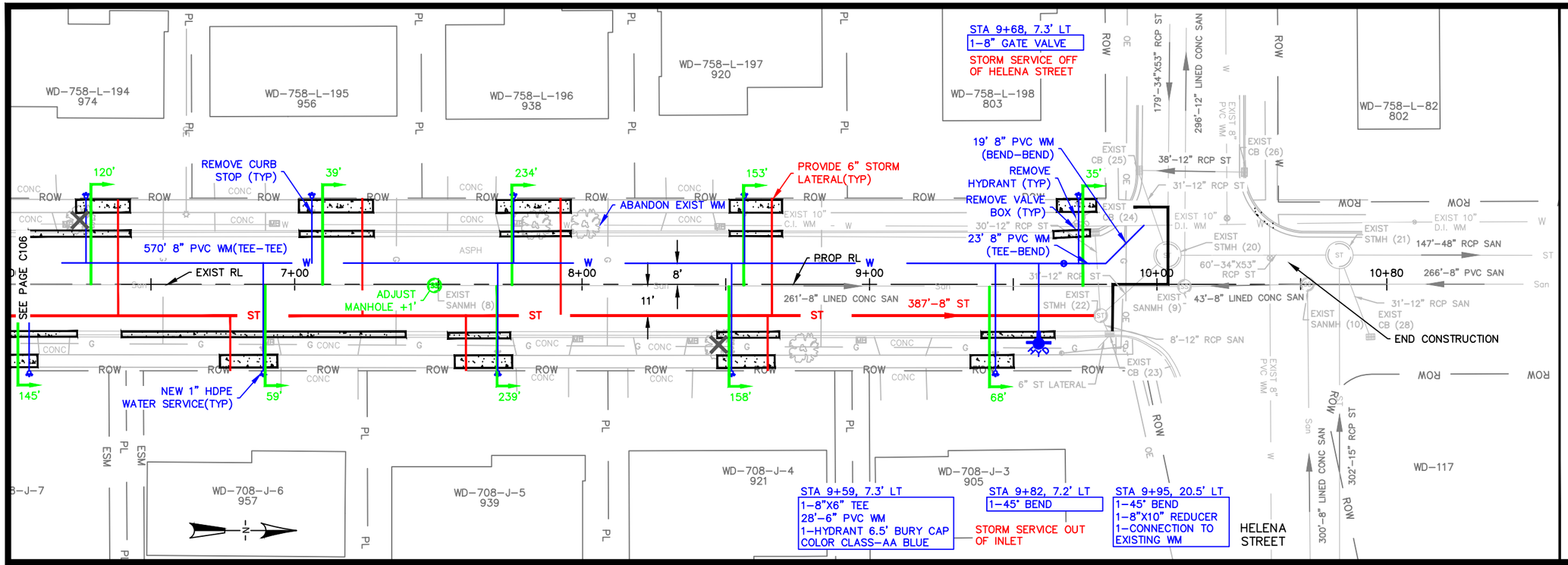

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OFFICE 920-339-4061 FAX 920-339-4071

OUTWARD AVENUE
600' N/O AMHART DR TO HELENA STREET

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	12-2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	01-2020

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C107

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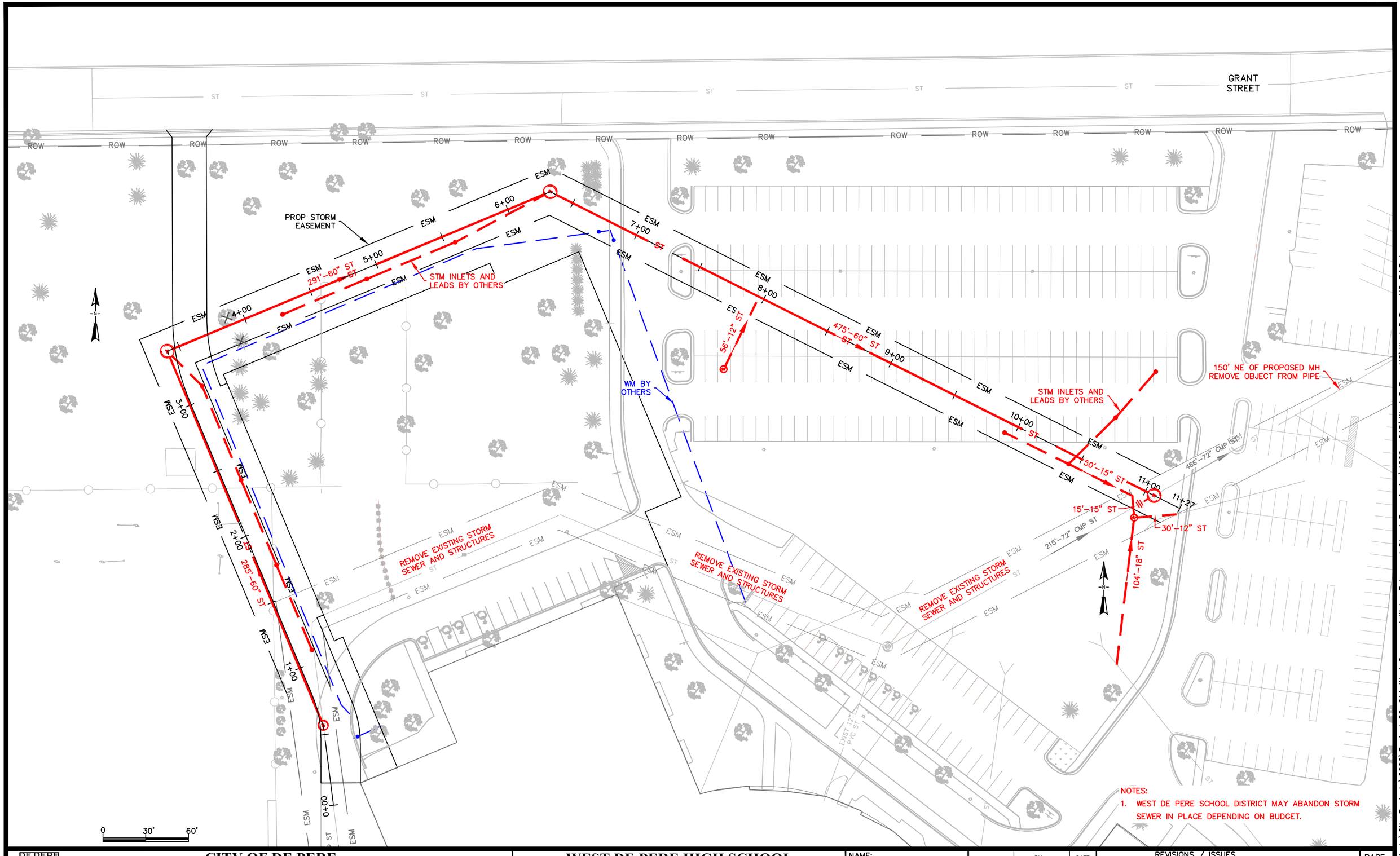

NOTES:

1. WEST DE PERE SCHOOL DISTRICT MAY ABANDON STORM SEWER IN PLACE DEPENDING ON BUDGET.

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WEST DE PERE HIGH SCHOOL
665 GRANT STREET
OVERVIEW

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAU	11-2019
DRAWN	MAL	12-2010
DESIGNED	POB	11-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C108

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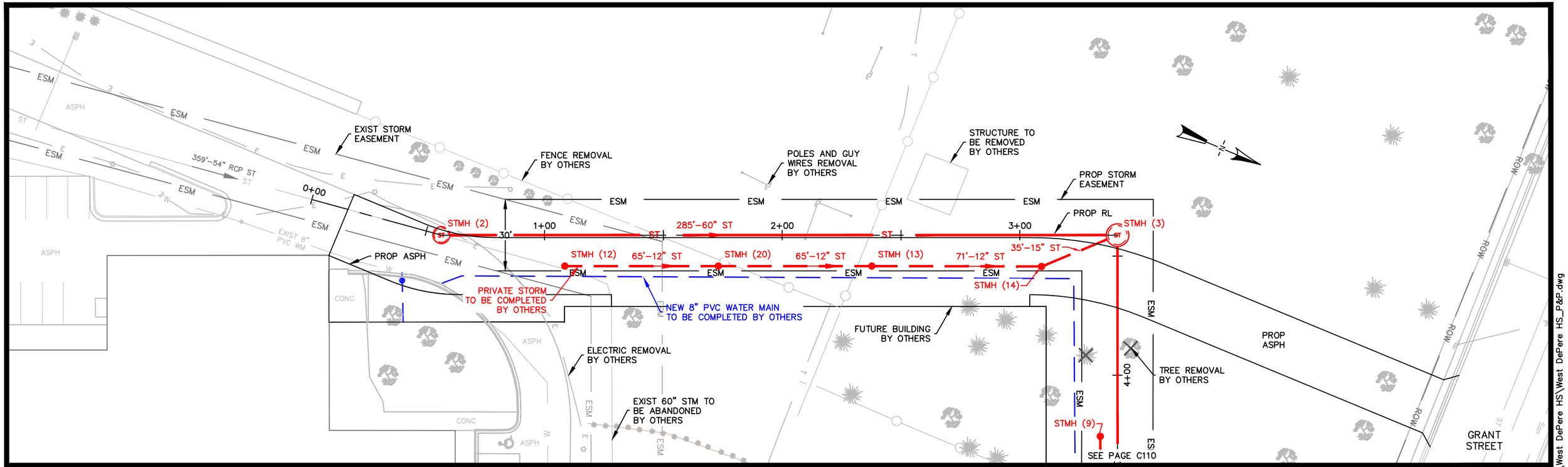

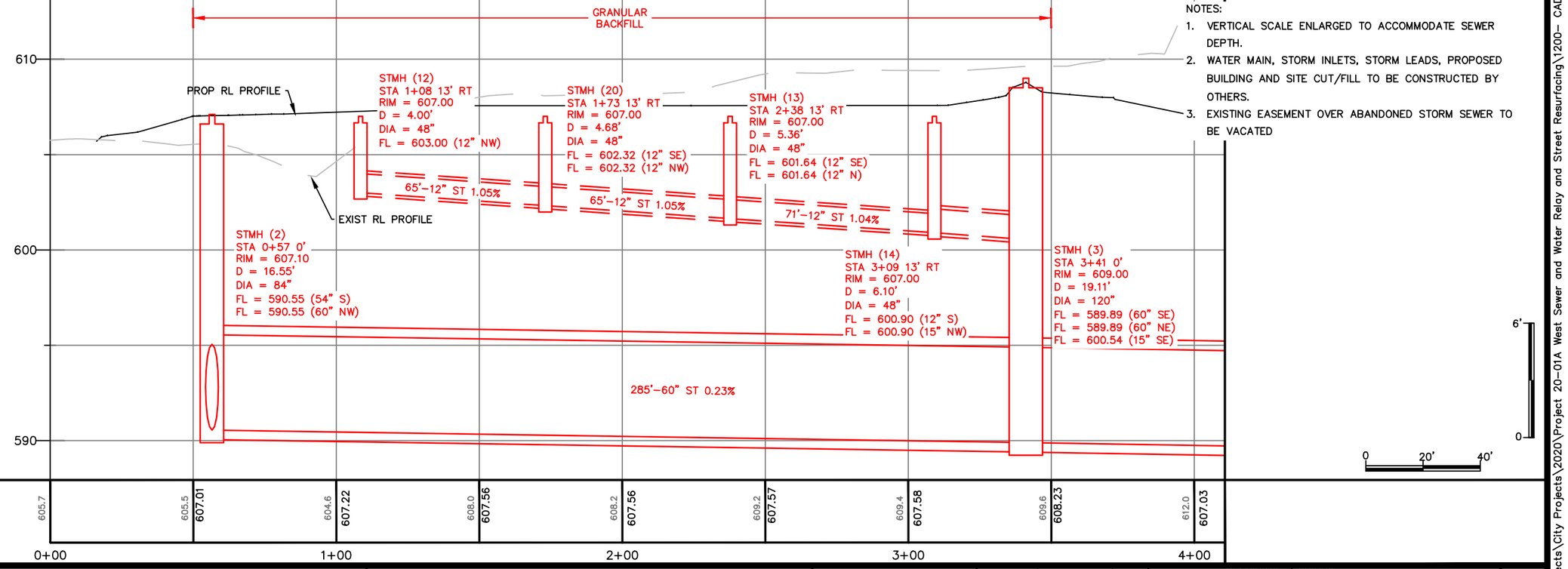

NOTES:

1. VERTICAL SCALE ENLARGED TO ACCOMMODATE SEWER DEPTH.
2. WATER MAIN, STORM INLETS, STORM LEADS, PROPOSED BUILDING AND SITE CUT/FILL TO BE CONSTRUCTED BY OTHERS.
3. EXISTING EASEMENT OVER ABANDONED STORM SEWER TO BE VACATED

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ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115

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WEST DE PERE HIGH SCHOOL

665 GRANT STREET

0+00 TO 4+00

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING

PROJECT # 20-01A

	BY	DATE
SURVEYED	MAU	11-2019
DRAWN	MAL	12-2010
DESIGNED	POB	11-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. **C109**

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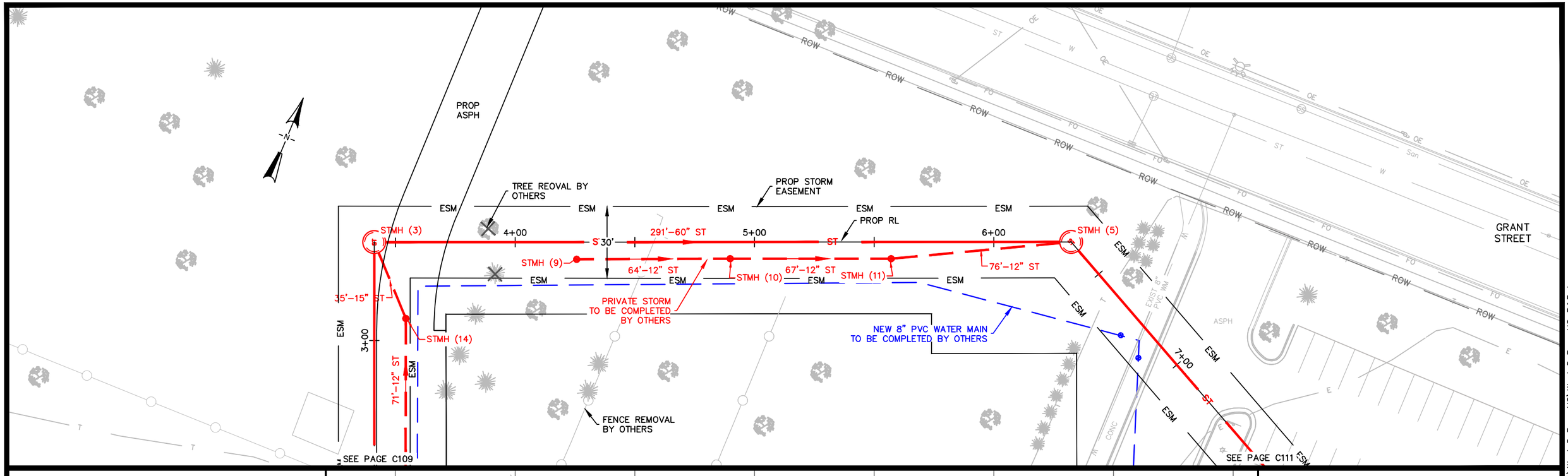

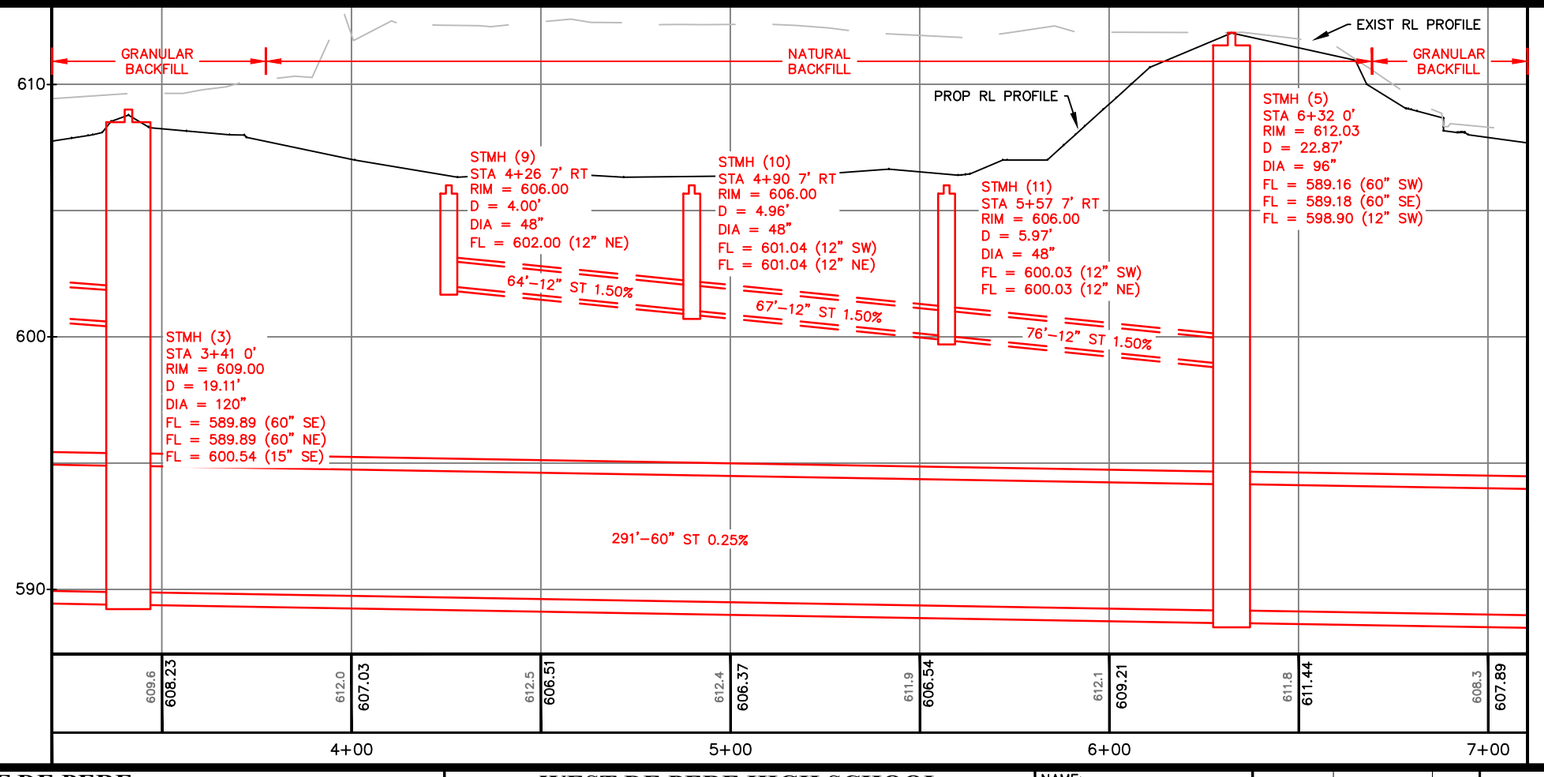

NOTES:

1. VERTICAL SCALE ENLARGED TO ACCOMMODATE SEWER DEPTH.
2. WATER MAIN, STORM INLETS, STORM LEADS, PROPOSED BUILDING AND SITE CUT/FILL TO BE CONSTRUCTED BY OTHERS.

6'
0
0 20' 40'

DE PERE

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ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
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WEST DE PERE HIGH SCHOOL
665 GRANT STREET
4+00 TO 7+00

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAU	11-2019
DRAWN	MAL	12-2010
DESIGNED	POB	11-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C110

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GRANT STREET

SEE PAGE C110

TREE REMOVAL BY OTHERS

PROP STORM EASEMENT

SIGN REMOVAL BY OTHERS

LIGHT POLE REMOVAL BY OTHERS

NEW 8" PVC WATER MAIN TO BE COMPLETED BY OTHERS AFTER STORM SEWER CONSTRUCTION.

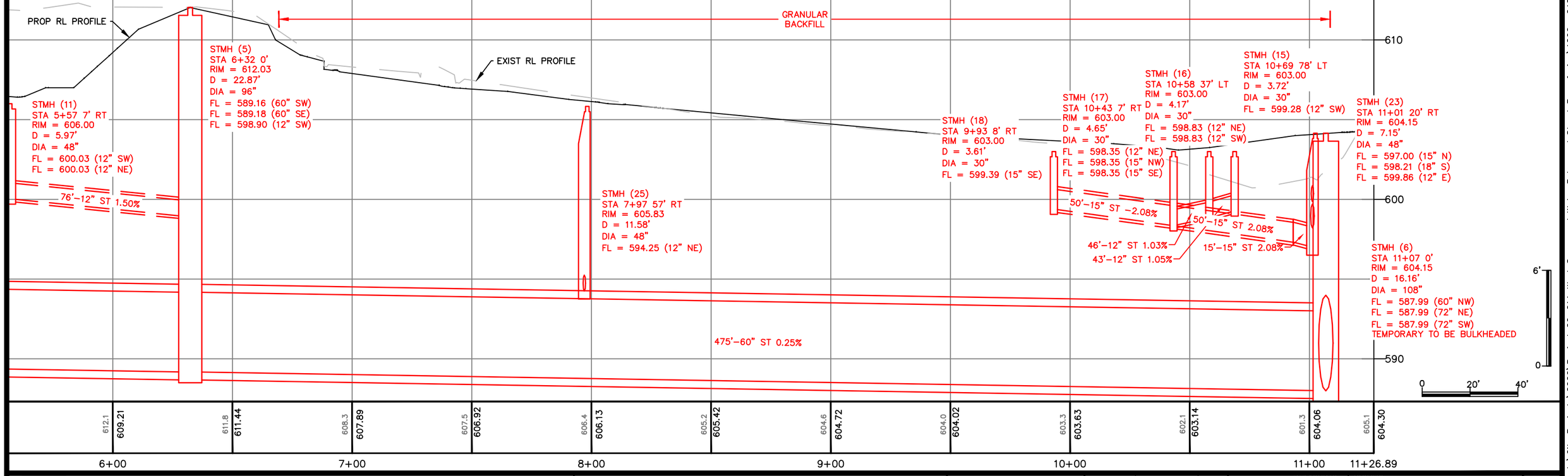
PRIVATE STORM TO BE COMPLETED BY OTHERS

150' NE OF PROPOSED MH REMOVE OBJECT FROM PIPE

CONNECT TO EXIST 72" CMP TO NE. ABANDON 72" CMP TO SW 215' TO MANHOLE

NOTES:

1. VERTICAL SCALE ENLARGED TO ACCOMMODATE SEWER DEPTH.
2. WATER MAIN, STORM INLETS, STORM LEADS, PROPOSED BUILDING AND SITE CUT/FILL TO BE CONSTRUCTED BY OTHERS.
3. PARKING LOT ASPHALT, CONCRETE SIDEWALK, CURB & GUTTER, AND LANDSCAPING RESTORATION TO BE COMPLETED BY OTHERS
4. EXISTING EASEMENT OVER ABANDONED STORM SEWER TO BE VACATED



CITY OF DE PERE	**WEST DE PERE HIGH SCHOOL**
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115	**665 GRANT STREET**
OFFICE 920-339-4061 FAX 920-339-4071	**7+00 TO 11+20**

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING

PROJECT # 20-01A

	BY	DATE
SURVEYED	MAU	11-2019
DRAWN	MAL	12-2010
DESIGNED	POB	11-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C111

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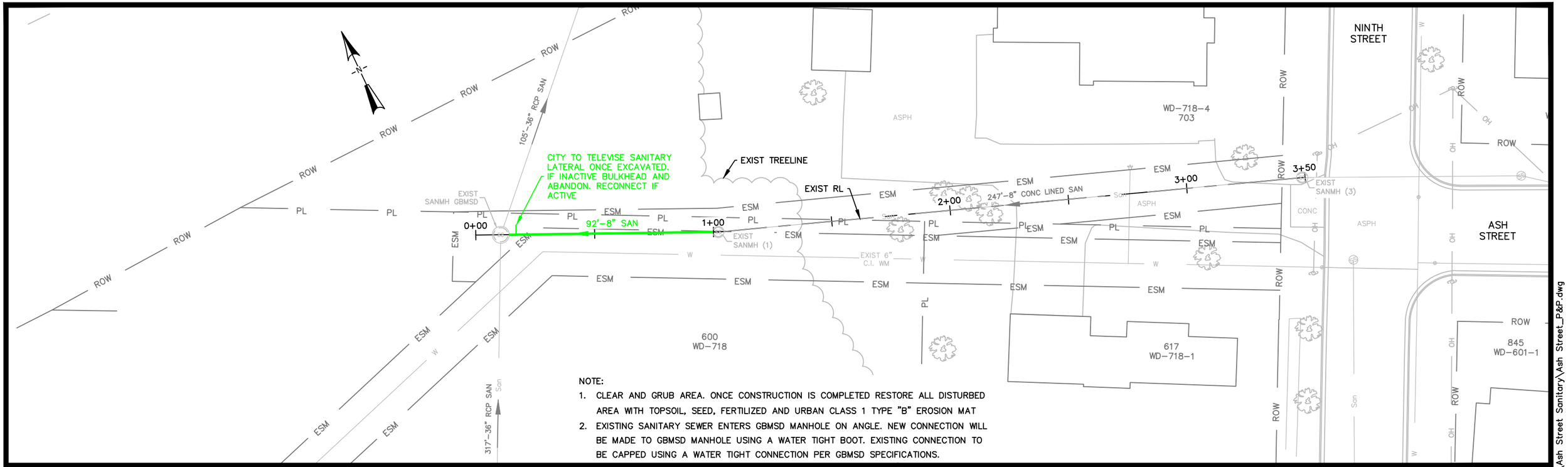

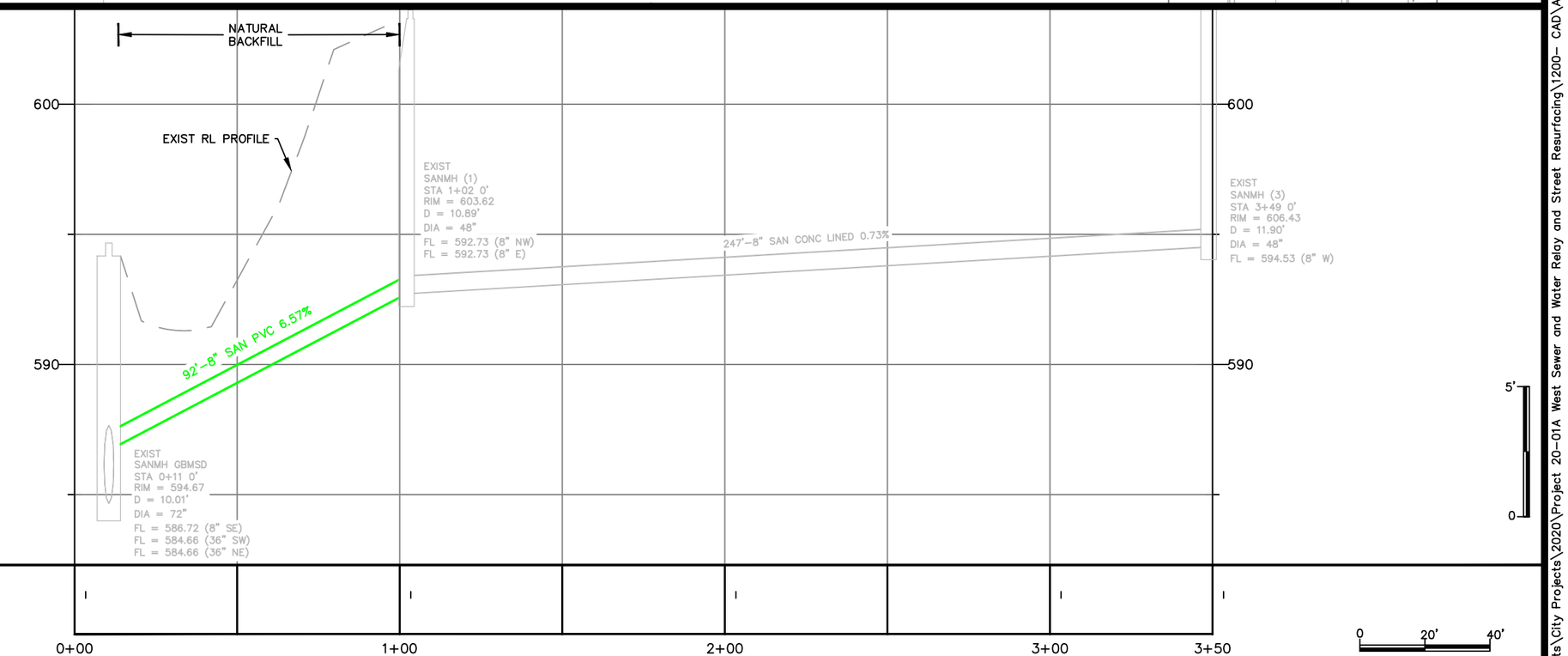

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OFFICE 920-339-4061 FAX 920-339-4071

VACATED ASH STREET
GBMSD INTERCEPTOR TO N.NINTH STREET

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	12-2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C112

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SOUTHBRIDGE RD

PROVIDE ASPHALTIC CONCRETE PAVEMENT PATCH 58-28 S
TYPE 4 LT 1¾" UPPER
TYPE 3 2¼" LOWER LAYER

EXIST RL

146'-8" SAN

CONSTRUCT OUTSIDE DROP
REFORM FLOWLINE

NOTE:
FUTURE DEVELOPMENT STORM SEWER, ASPHALT PAVING, AND CONCRETE WORK BY OTHERS

SEE RIGHT

SEE LEFT

SOUTHBRIDGE RD

PROVIDE TAPPING SADDLE AT EXIST WM
NEW 1" HDPE WATER SERVICE (TYP)

FUTURE STORM BY OTHER

43'-8" SAN

271'-8" SAN

EXIST RL

PROVIDE 4" of 4" SANITARY LATERAL(TYP)

FUTURE SANITARY SERVICE EXTENSION BY OTHERS

FUTURE WATER SERVICE EXTENSION BY OTHERS

FF = 636.00

FF = 636.00

FF = 637.00

FF = 637.50

GRANULAR BACKFILL | NATURAL BACKFILL | GRANULAR BACKFILL | NATURAL BACKFILL

EXIST RL PROFILE

LOWER WATER SERVICE TO MAINTAIN 7' DEPTH (TYP)

INSTALL INSULATION AT WM SADDLE TAP

EXIST 12" PVC WM

146'-8" SAN PVC 0.41%

SANMH (20)
STA 5+20 0'
RIM = 634.91
D = 11.76'
DIA = 48"
FL = 623.15 (8" NE)
FL = 623.46 (8" SE)
FL = 623.15 (8" NW)

CONSTRUCT OUTSIDE DROP
FL = 622.56 (8" S)

EXIST
SANMH (19)
STA 6+68 0' RT
RIM = 635.44
D = 17.16'
DIA = 48"
FL = 618.28 (18" NW & SE)

FL = 619.03 (8" S)

635.6 | 633.2 | 632.5 | 633.6 | 635.0

5+00 | 6+00 | 6+97.36

630 | 620

EXIST RL PROFILE

GRANULAR BACKFILL

18" ST CMP

50'-12" ST

SANMH (21)
STA 13+34 0'
RIM = 636.54
D = 12.00'
DIA = 48"
FL = 624.54 (8" NW)

EXIST 12" PVC WM

271'-8" SAN PVC 0.40%

43'-8" SAN PVC 0.40%

SANMH (22)
STA 10+20 0'
RIM = 635.32
D = 12.00'
DIA = 48"
FL = 623.32 (8" SE)

SANMH (20)
STA 5+20 0'
RIM = 634.91
D = 11.76'
DIA = 48"
FL = 623.15 (8" NE)
FL = 623.46 (8" SE)
FL = 623.15 (8" NW)

EXIST 18" SAN PVC

EXIST 18" SAN PVC

EXIST
SANMH (19)

634.5 | 635.0 | 635.0 | 634.2 | 633.6 | 633.6 | 635.4 | 636.6 | 635.7

10+00 | 11+00 | 12+00 | 13+00 | 13+54.27

630 | 620

0 | 5'

0 | 20' | 40'

CITY OF DE PERE
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SOUTHBRIDGE CONDO DEVELOPMENT
1881 SOUTHBRIDGE ROAD
UTILITY CONSTRUCTION

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	REL	06-2019
DRAWN	REL	06-2019
DESIGNED	BK	08-2019
CHECKED	CK	09-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C113

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NOTES:
1. SITE ACCESS AND CONTRACTOR STORAGE WILL BE FROM RENKENS COURT, NO PARKING ON LAWRENCE DRIVE OR GRANT STREET.

STA 0+00
1–12"X12" TAPPING TEE AND VALVE

STA 0+06
1–11.25° BEND

INSTALL CAP W/ 2" CORP AND 2" HDPE PIPE ON NEW MW TO BLOW OFF AIR AND PRESSURE TEST AGAINST

DIRECTIONAL DRILL LIMITS

6' 12" PVC WM(TEE–BEND)

175' 12" PVC WM(BEND–TEE)

PROP SW BY OTHERS

369' 12" PVC WM(TEE–BEND)

PROP RL

10' 12" PVC WM(BEND–EXIST)

EXIST RL

0+00 1+00 2+00 3+00 5+00 5+60

EXIST CB (6) 6) 95'–30" RCP ST
EXIST STMH (5) 76'–27" RCP ST
EXIST STMH (10) 107'–27" RCP ST
EXIST STMH (16)
EXIST CB (19) 20'–15" PVC ST
185'–24" RCP ST
EXIST STMH (17) 133'–24" RCP ST
43'–15" PVC ST
55'–15" PVC ST
26'–15" PVC ST
EXIST CB (11)
EXIST CB (4)
338'–12" RCP SAN
EXIST 12" PVC WM
EXIST STMH (1)
59'–12" PVC ST
82'–15" PVC ST
EXIST SANMH (13)
38'–15" PVC ST
EXIST CB (3)
EXIST CB (2)
BURIED EXIST VALVE
EXIST 12" C.I. WM
GRANT STREET
WD–D0208 1218
WD–D0210 1216
CONC
ROW
ESM
PL

STA 00+11–01+32
121' DIRECTIONAL DRILL 12" PVC WM

STA 1+36
1–PROVIDE 1/2 12" WATER MAIN OFFSET

STA 2+83
1–12"X6" TEE
8'–6" PVC WM
1–6" VALVE
1–HYDRANT 7.0' BURY CAP
COLOR CLASS–AA BLUE

STA 3+38
WM DEFLECTION

ABANDON WM

STA 5+50
1–22.5° BEND

STA 5+56
1–12"GATE VALVE

STA 5+60
1–CONNECTION TO EXISTING WM

NATURAL BACKFILL

EXIST RL PROFILE

EXIST CB (2) STA 0+36 58' RT RIM = 613.36 D = 5.78' FL = 607.58 (12" SW) FL = 607.58 (15" N) FL = 607.58 (12" E)

EXIST CB (3) STA 0+73 58' RT RIM = 613.43 D = 6.23' FL = 607.20 (15" S) FL = 607.20 (15" NW) FL = 607.20 (15" E)

EXIST SANMH (13) STA 0+87 41' RT RIM = 613.95 D = 12.08' DIA = 48" FL = 601.87 (12" SW) FL = 601.87 (12" E)

EXIST CB (4) STA 1+16 13' LT RIM = 611.99 D = 5.63' FL = 606.36 (15" SE) FL = 606.36 (15" NW)

EXIST STMH (5) STA 1+61 44' LT RIM = 613.16 D = 7.90' DIA = 48" FL = 605.82 (15" SE) FL = 607.56 (15" SW) FL = 605.32 (27" N) FL = 605.26 (30" W)

EXIST STMH (10) STA 2+36 44' LT RIM = 613.67 D = 8.20' DIA = 48" FL = 605.47 (27" S) FL = 608.47 (15" E) FL = 605.47 (27" N)

EXIST STMH (17) STA 5+25 31' LT RIM = 615.13 D = 8.95' DIA = 48" FL = 606.18 (24" S) FL = 606.18 (24" N)

59'–12" ST PVC 4.09%
38'–15" ST PVC 1.01%
82'–15" ST PVC 1.02%
55'–15" ST PVC 0.99%
76'–27" ST RCP –0.20%
107'–27" ST RCP –0.21%
185'–24" ST RCP –0.21%
133'–24" ST RCP –0.20%
338'–12" SAN RCP 0.17%

STA. 0+00 VERIFY ELEVATION

MAINTAIN 0.5' SEPARATION

MAINTAIN 1.5' SEPARATION STA. 1+08 T.O.P. 604.97

STA. 2+49 T.O.P. 609.34

STA. 2+83 T.O.P. 610.58

PROP. 12" PVC WM

STA. 4+44 T.O.P. 610.40

STA. 4+95 T.O.P. 609.77

STA. 5+50 T.O.P. 609.16

STA. 5+60 VERIFY ELEVATION

CENTRAL BROWN COUNTY WATER AUTHORITY 30" W.M.

610
600

615.7 613.5 612.8 614.6 615.0 615.4 616.8 617.4 617.3 617.0 616.2 615.2 615.2

0+00 1+00 2+00 3+00 4+00 5+00 5+60

0 20' 40'

5' 0

DE PERE

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

LAWRENCE DR WATER MAIN RELOCATION
GRANT ST TO 500' N OF GRANT ST

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20–01A

	BY	DATE
SURVEYED	MAL/BKK	11–2019
DRAWN	MAL	11–2019
DESIGNED	MAL	11–2019
CHECKED	CKK	11–2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C114

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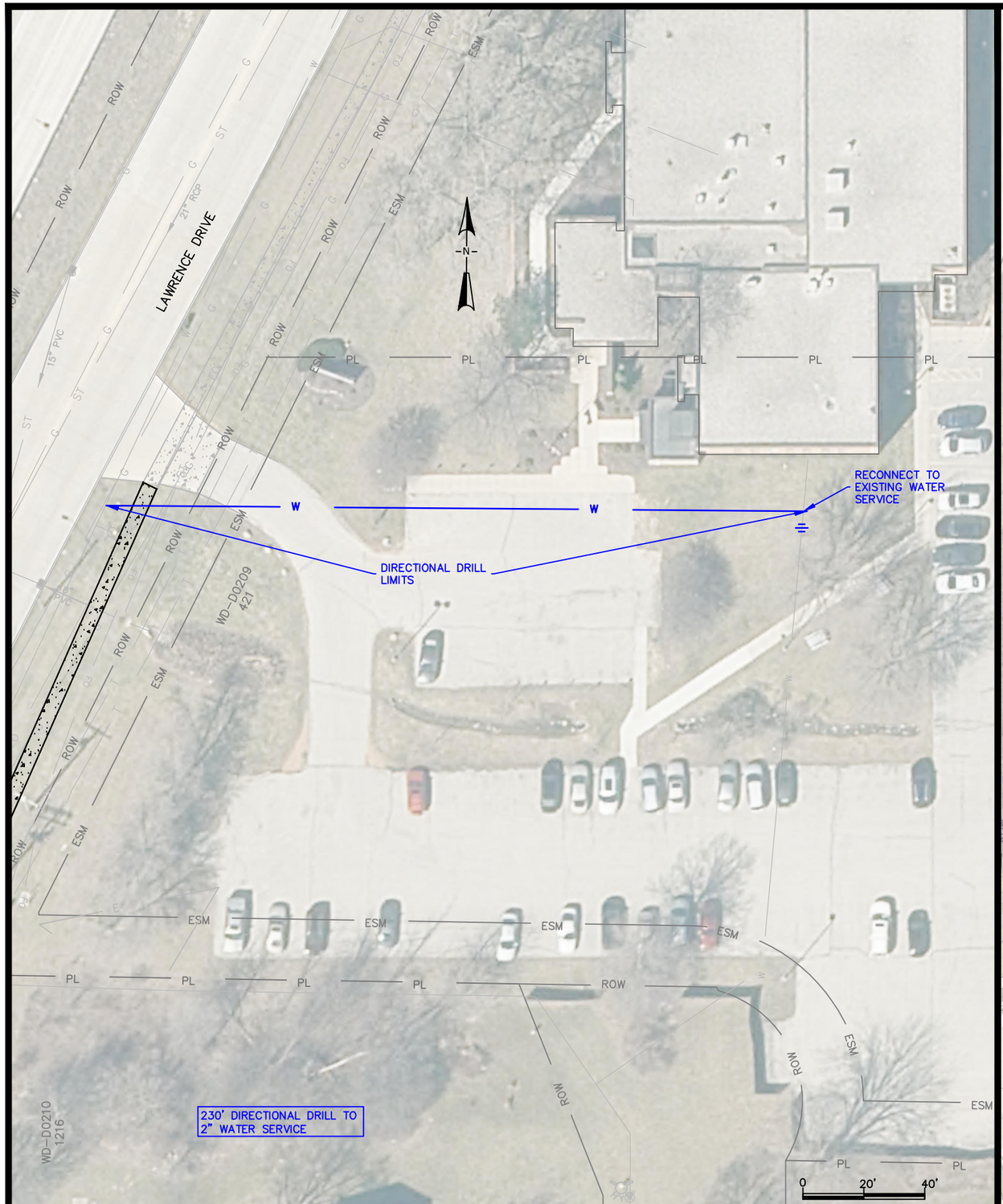

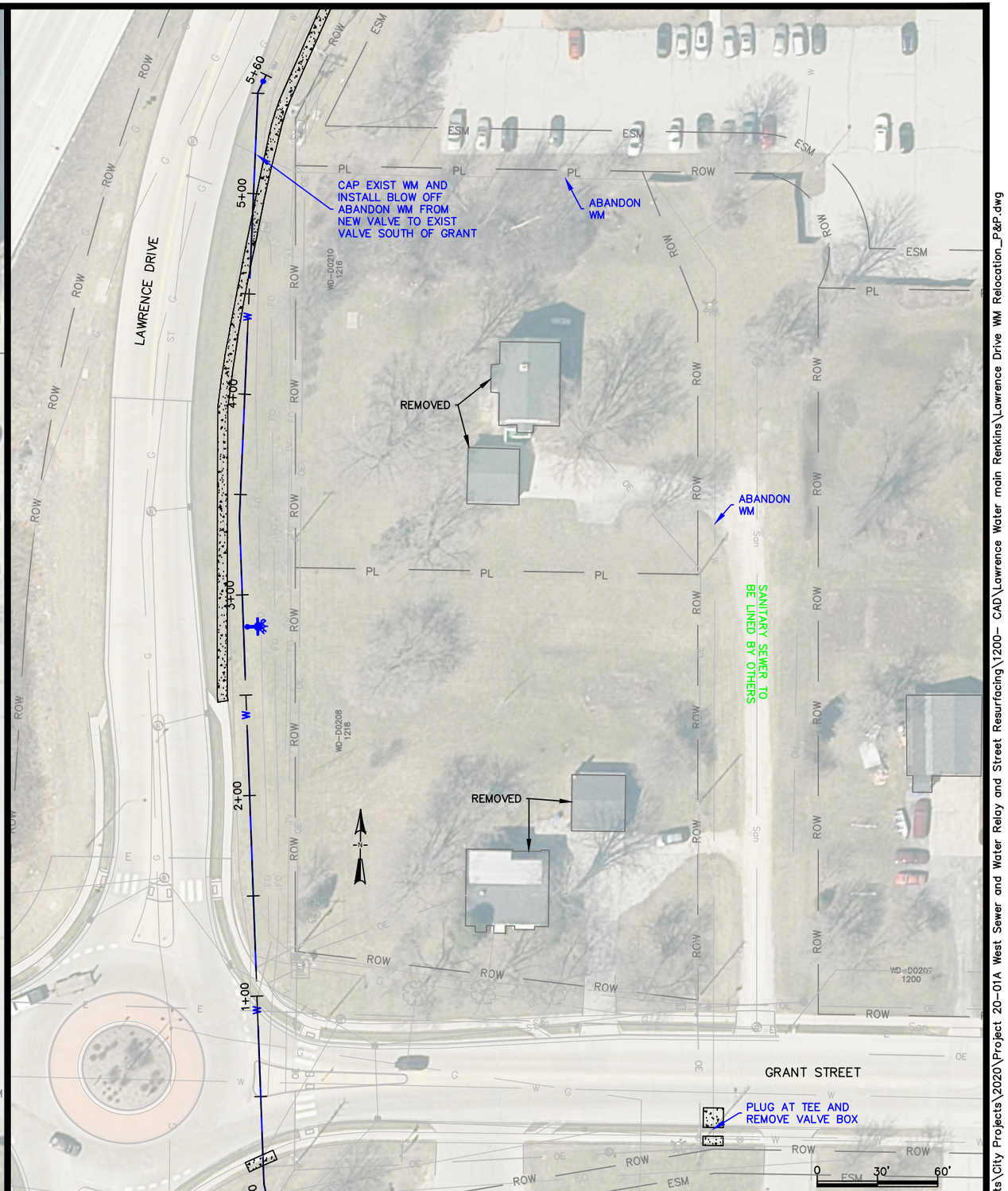

CITY OF DE PERE

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

421 LAWRENCE DRIVE/ 1218 GRANT STREET
GRANT ST TO 500' N OF GRANT ST

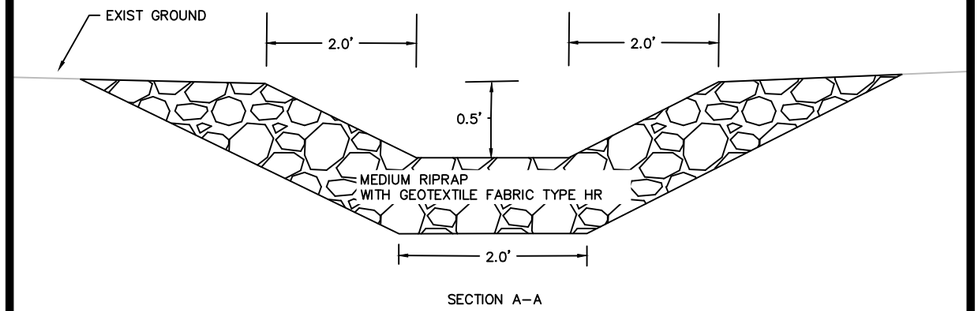
NAME: SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL/BKK	11-2019
DRAWN	MAL	11-2019
DESIGNED	MAL	11-2019
CHECKED	CKK	11-2019

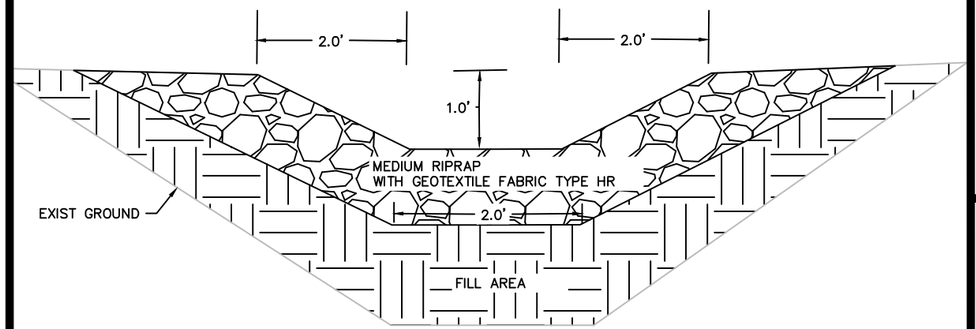
REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C115

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\Lawrence Water main Renkins\Lawrence Drive WM Relocation_P&P.dwg

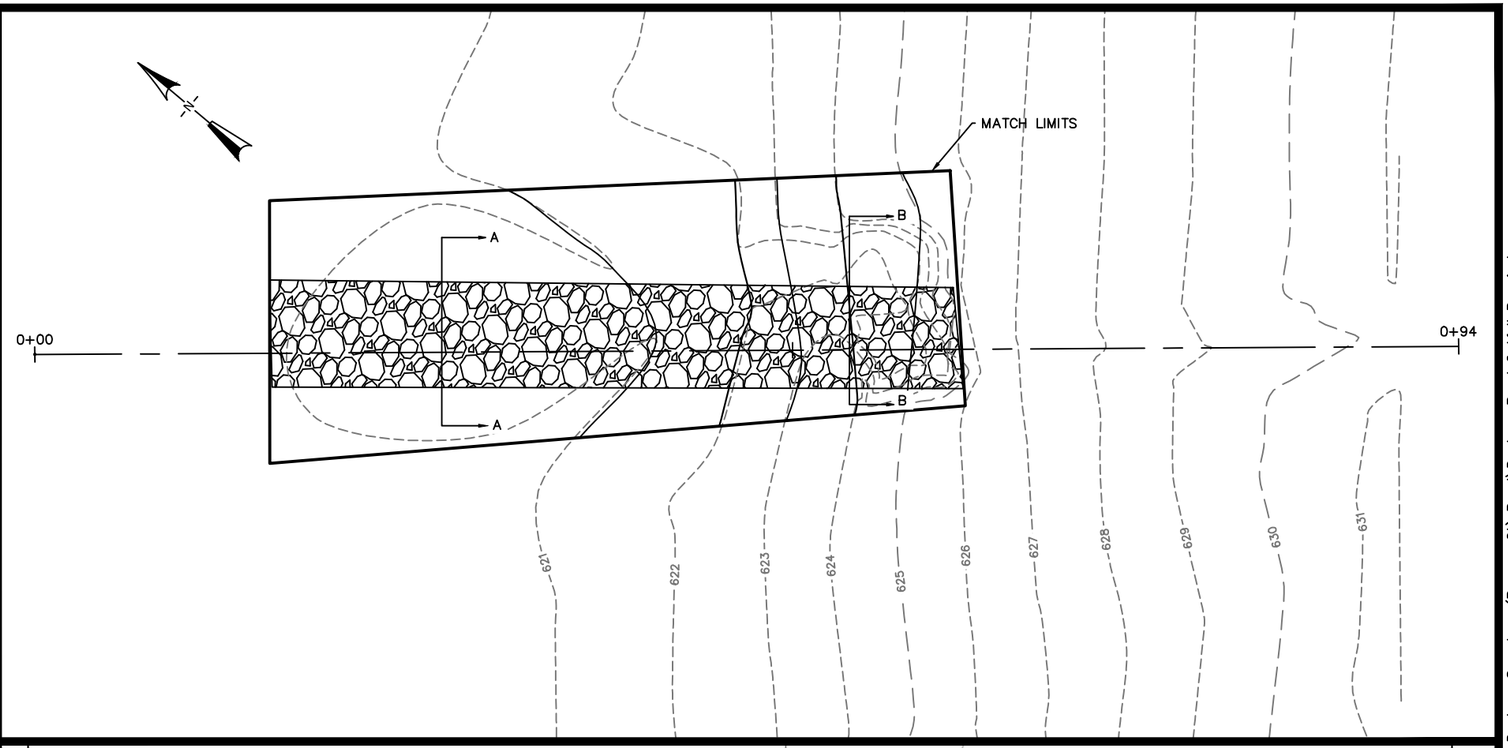


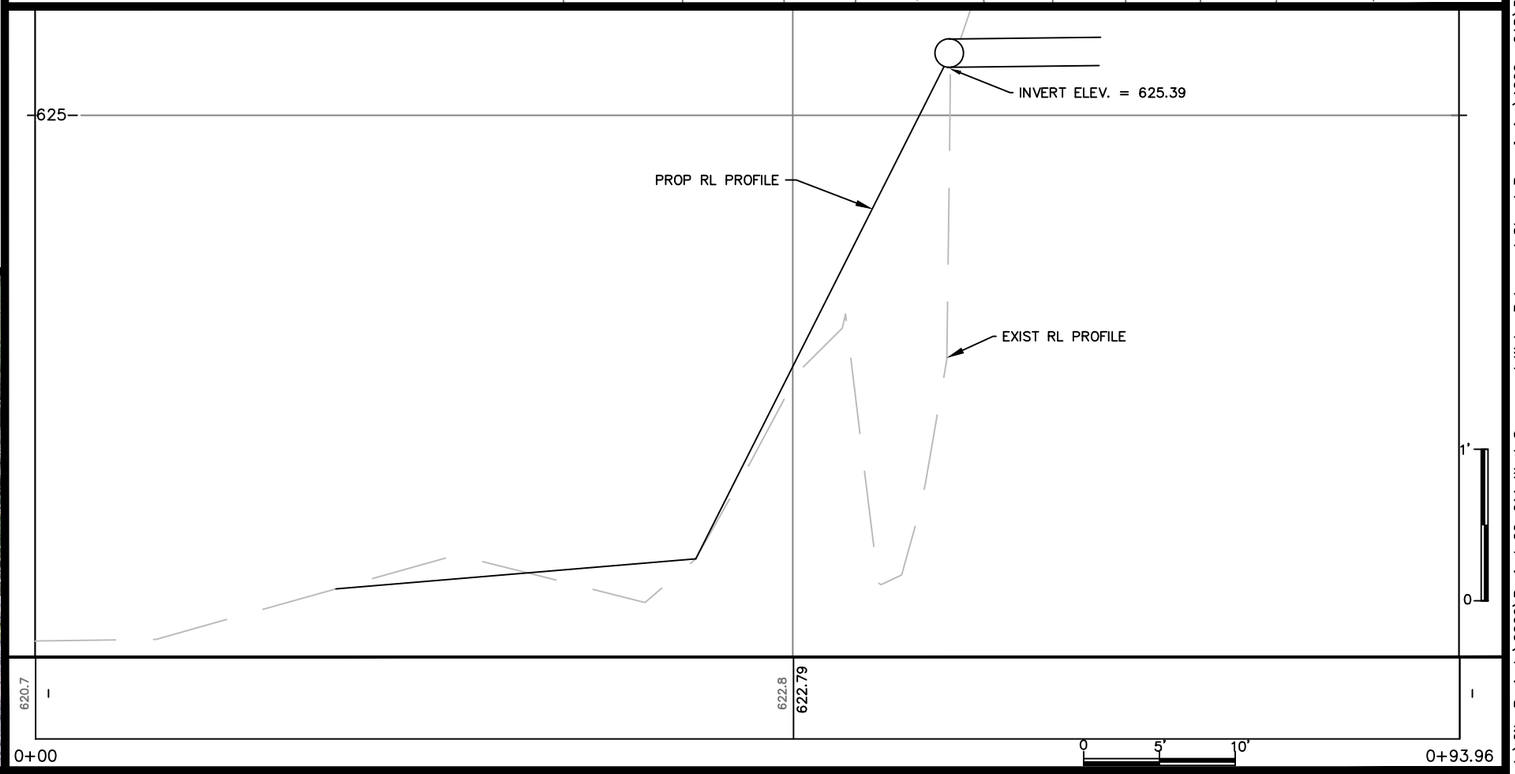
SECTION A–A



SECTION B–B

1. USE ANY CUT MATERIAL FOR BOTTOM 12" OF SECTION.
2. DEPTH AND WIDTH VARIES TO MATCH EXISTING GROUND.
3. GRADE TO MATCH EXISTING TOE OF SLOPE.





DE PERE

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

DAYTONA SPEEDWAY (POCONO CT) POND
WEST OUTFALL TO ASHWAUBENON CREEK

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20–01A

	BY	DATE
SURVEYED	JML	06–2019
DRAWN	JML	06–2019
DESIGNED	JML	06–2019
CHECKED	EPR	06–2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C116

X:\ENG\Projects\City Projects\2020\Project 20–01A West Sewer and Water Relay and Street Resurfacing\1200– CAD\Daytona Speedway (Pocono Ct) Pond\Daytona Pond Outfall Repair.dwg

STA 62+53, 22.4' LT
1-REMOVE PLUG
1-CONNECTION TO EXISTING WATER MAIN

STA 63+31, 13.0' LT
1-12" 45° BEND

5'-12" PVC WM (TEE-PLUG)

STA 64+29, 29.7' LT
1-12"X6" TEE
10'-6" PVC WM
1-6" VALVE
1-HYDRANT (7.5 BURY)
CAP COLOR CLASS -AA
LIGHT BLUE

STA 64+34, 30.6' LT
1-12"X8" REDUCER
1-8" PLUG

VALVE TO BE PLACED BY OTHERS AFTER THE REDUCER

3'-8" PVC SAN STUB WITH PLUG

SANMH (2)

STORM SEWER TO BE EXTENDED BY OTHERS

98'-12" PVC WM (BEND-TEE)

74'-12" PVC WM (EXIST.-BEND)

205'-8" SAN

8'

64+00

64+75

PROP RL

PROPOSED BUILDING

EXIST. 12" PVC WM

62+25

63+00

ASPH

CONC

GRVL

NO SANITARY LATERAL OR WATER SERVICE PROVIDED

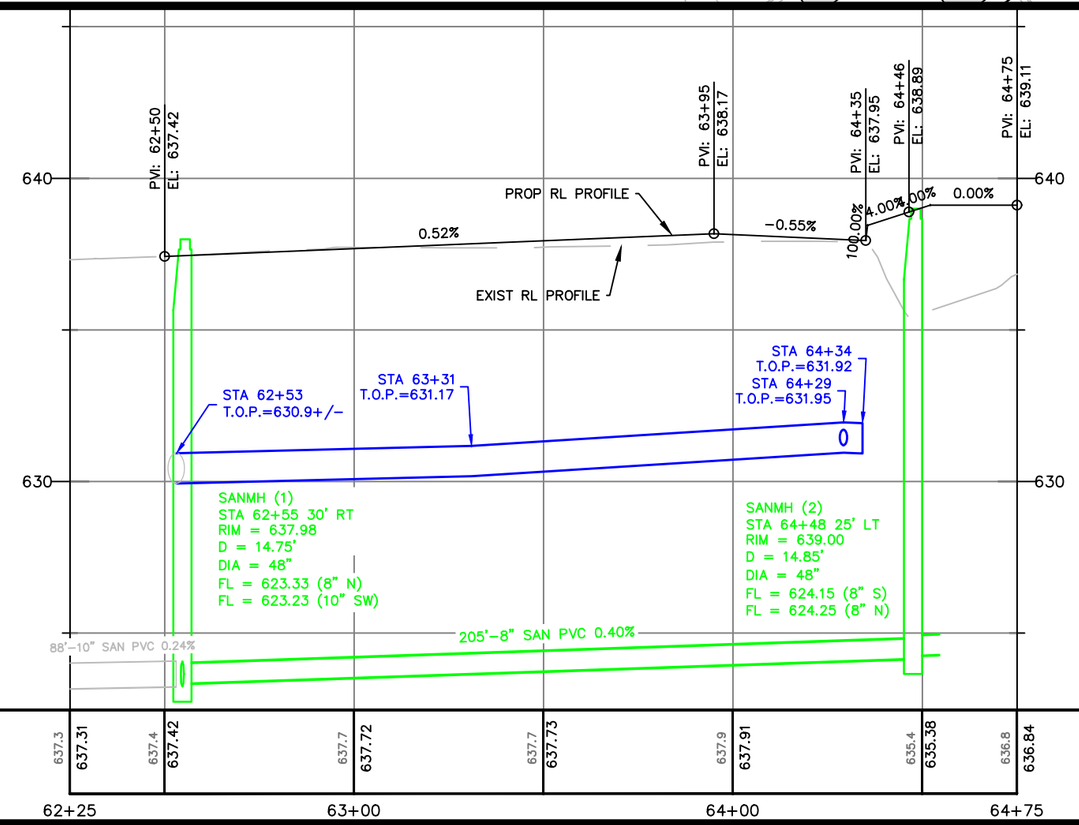
EXIST SANMH (3)

88'-10" PVC SAN

260'-10" PVC SAN

SANMH (1)

WD-D0033
LOT 2
57-CSM-255



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INNOVATION COURT
CUL DE SAC

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAU	9-2019
DRAWN	SRL	11-2019
DESIGNED	SRL	11-2019
CHECKED	EPR	11-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C117

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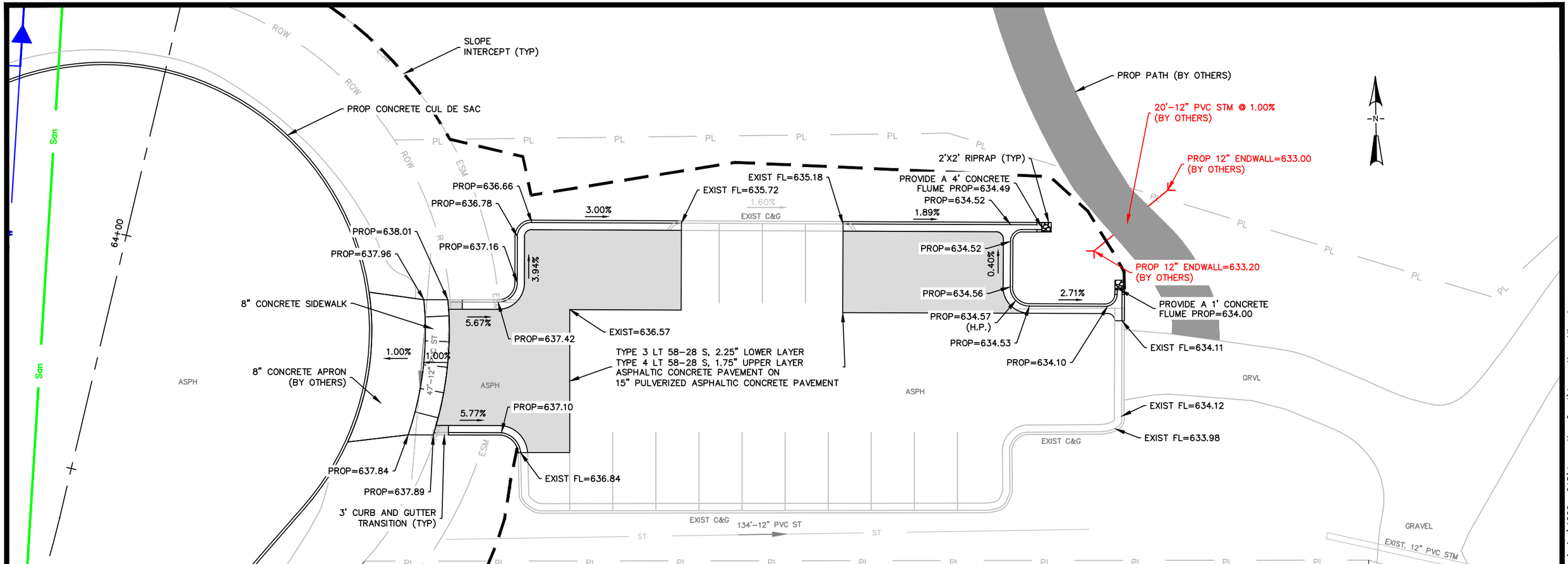
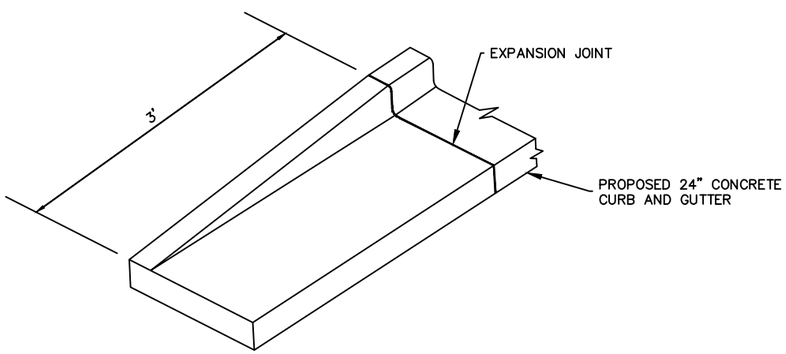
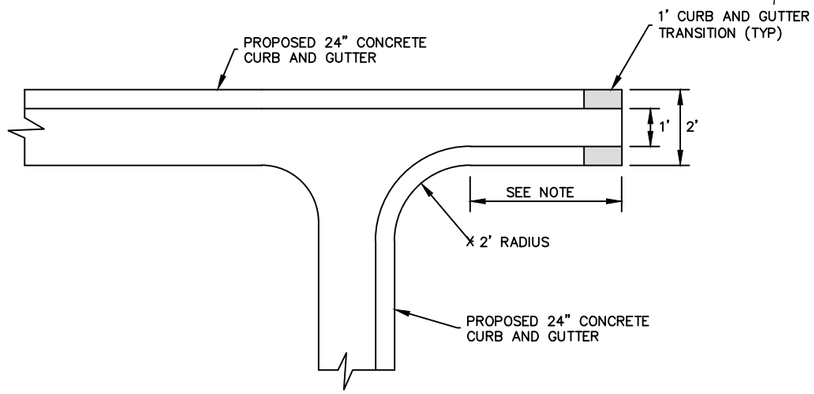




3' CURB AND GUTTER TRANSITION DETAIL



CONCRETE FLUME DETAIL

0 10' 20'

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INNOVATION COURT
PARKING LOT

NAME:
WEST SEWER & WATER RELAY
AND STREET RESURFACING

PROJECT #
20-01A

	BY	DATE
SURVEYED	MAU	9-2019
DRAWN	SRL	11-2019
DESIGNED	SRL	11-2019
CHECKED	EPR	11-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO.
C401

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\Innovation Court\Innovation-Align.dwg

PROP CONCRETE CUL DE SAC

PROP PATH "BY OTHERS"

PROVIDE 4" EPOXY WHITE LINE (TYP)

PARKING STALLS (9' X 16.5') (TYP)

EXIST C&G

HANDICAP PARKING SIGN(BY OTHERS)

PROVIDE 4" EPOXY WHITE LINE (TYP.)

PARKING STALLS (9' X 16.5') (TYP)

HANDICAP PARKING SIGN(BY OTHERS)

47'-12" PVC ST

134'-12" PVC ST

EXIST. 12" PVC STM

ASPH

GRAVEL

San

ROW

ESM

PL

ST

64+00

8'

N

0 10' 20'

CITY OF DE PERE	INNOVATION COURT PARKING LOT PAVEMENT MARKING	NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115		PROJECT # 20-01A
OFFICE 920-339-4061 FAX 920-339-4071		

	BY	DATE
SURVEYED	MAU	9-2019
DRAWN	SRL	11-2019
DESIGNED	SRL	11-2019
CHECKED	EPR	11-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C402

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200-Align\1200- CAD\Innovation Court\Innovation-Align.dwg

REMOVE CURB AND GUTTER
UNCLASSIFIED EXCAVATION
REMOVE ASPHALT

PROP CONCRETE CUL DE SAC

PROP PATH "BY OTHERS"

REMOVE EXISTING PAINT STRIPING

SAWCUT LINE

SAWCUT LINE

REMOVE EXISTING 12" PVC STORM

ABANDON EXISTING 12" PVC STORM

EXIST. 12" PVC STM

EXIST C&G

47'-12" PVC ST

134'-12" PVC ST

ASPH

GRAVEL

64+00

8'

San

ROW

ESM

PL

ST

0 10' 20'

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

INNOVATION COURT
PARKING LOT
DEMOLITION PLAN

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAU	9-2019
DRAWN	SRL	11-2019
DESIGNED	SRL	11-2019
CHECKED	EPR	11-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C403

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200-Engineering\1200- CAD\Innovation Court\Innovation-Align.dwg

NOTE:
FUTURE DEVELOPMENT
STORM SEWER, ASPHALT PAVING,
AND CONCRETE WORK BY OTHERS

INSTALL SEDIMENT EROSION CONTROL LOGS

INSTALL SEDIMENT EROSION CONTROL LOGS

INSTALL TRACKING PAD

INSTALL SEDIMENT EROSION CONTROL LOGS

INSTALL EROSION MAT URBAN CLASS 1 TYPE A (TYP)

SOUTHBRIDGE RD

ASPHALT

GRAVEL

1880 WD-L183-3-3

6+97

6+00

5+00

10+00

11+00

12+00

13+00

13+54

146'-8" SAN

43'-8" SAN

271'-8" SAN

EXIST RL

WD-1831 UNIT 1

WD-1832 UNIT 2

WD-1833 UNIT 3

WD-1834 UNIT 4

WD-1835 UNIT 5

WD-1836 UNIT 6

WD-1837 UNIT 7

WD-1838 UNIT 8

FF = 636.00

FF = 636.00

FF = 637.00

FF = 637.50

12" PVC WM

#514

0 20' 40'

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\Southbridge Condos\ALIGN-SAN_PP.dwg

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SOUTHBRIDGE CONDO DEVELOPMENT
1881 SOUTHBRIDGE ROAD
EROSION CONTROL

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	REL	06-2019
DRAWN	REL	06-2019
DESIGNED	BK	08-2019
CHECKED	CK	09-2019

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C404

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SOUTHBRIDGE CONDO DEVELOPMENT
DETOUR PLAN

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01

	BY	DATE
SURVEYED	REL	06-2019
DRAWN	REL	06-2019
DESIGNED	BK	08-2019
CHECKED	CK	09-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C405

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

EIGHTH STREET
EIGHTH STREET AND MAIN AVENUE
TRAFFIC CONTROL

NAME:
WEST SEWER & WATER RELAY AND STREET RESURFACING

PROJECT # 20-01A

	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C406

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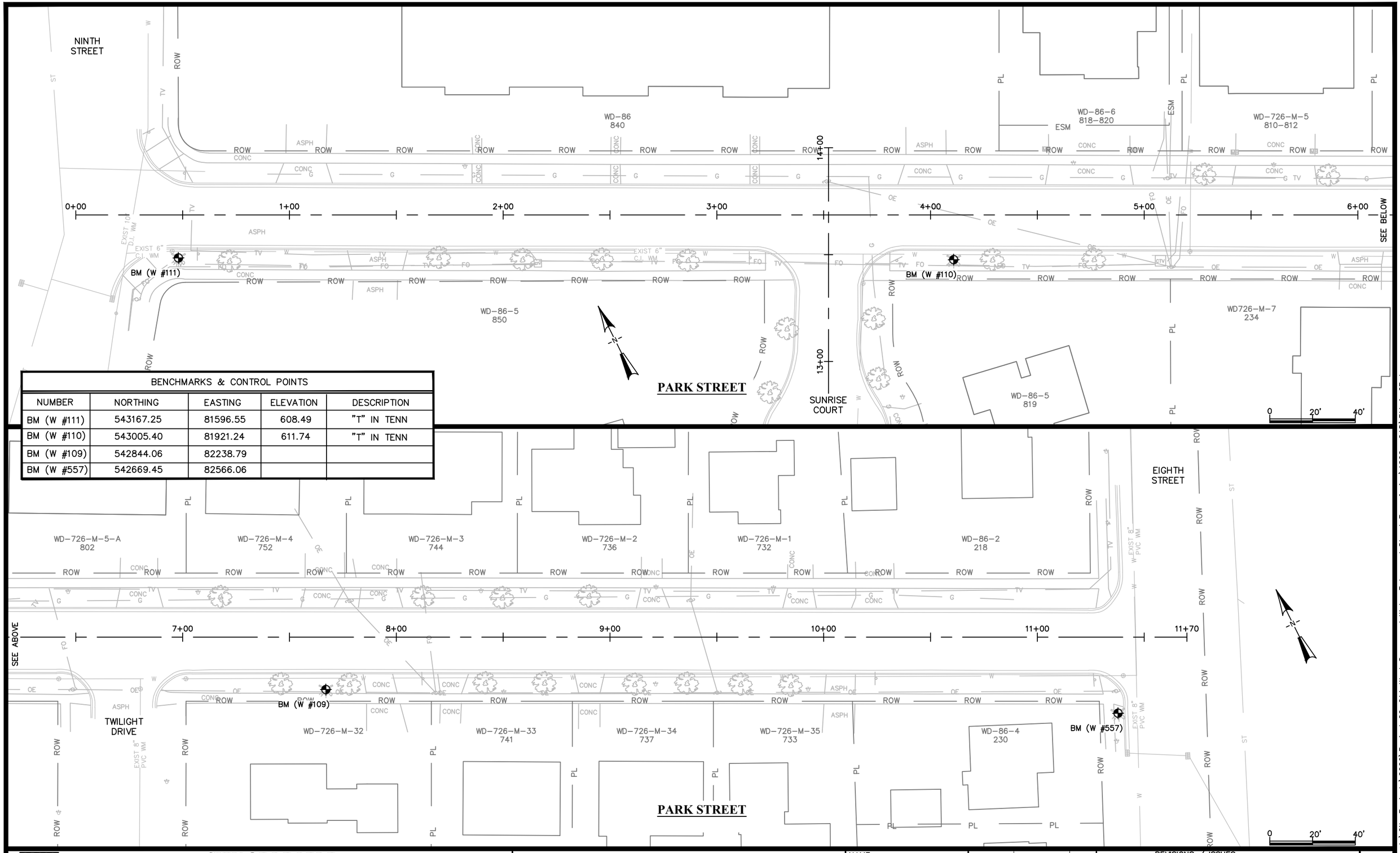

BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #111)	543167.25	81596.55	608.49	"T" IN TENN
BM (W #110)	543005.40	81921.24	611.74	"T" IN TENN
BM (W #109)	542844.06	82238.79		
BM (W #557)	542669.45	82566.06		

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BENCHMARKS & CONTROL POINTS

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C407

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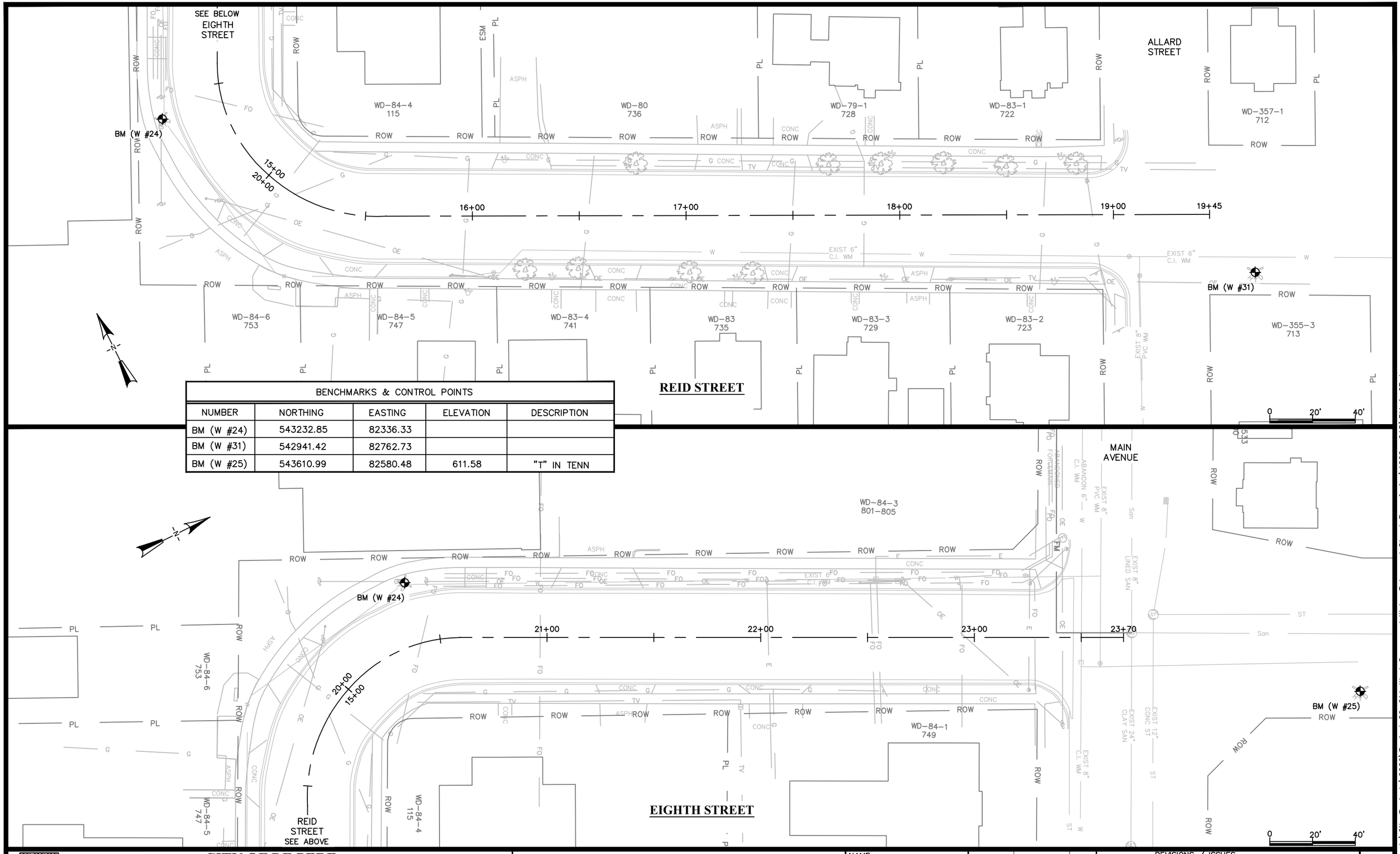

BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #24)	543232.85	82336.33		
BM (W #31)	542941.42	82762.73		
BM (W #25)	543610.99	82580.48	611.58	"T" IN TENN

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BENCHMARKS & CONTROL POINTS

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C408

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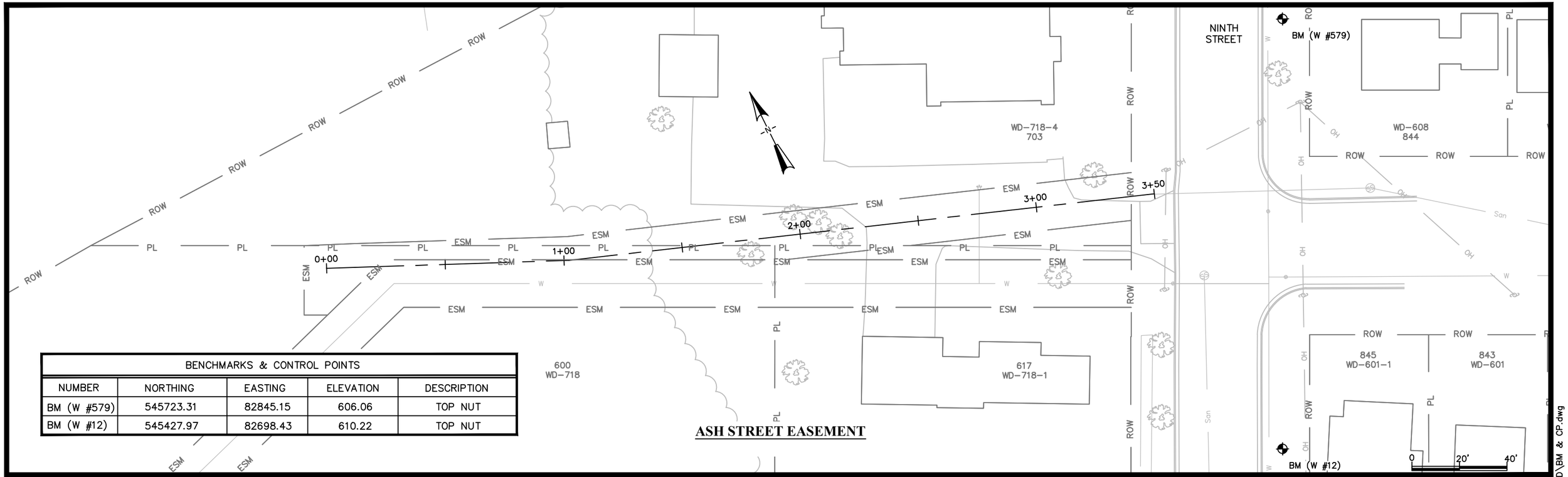
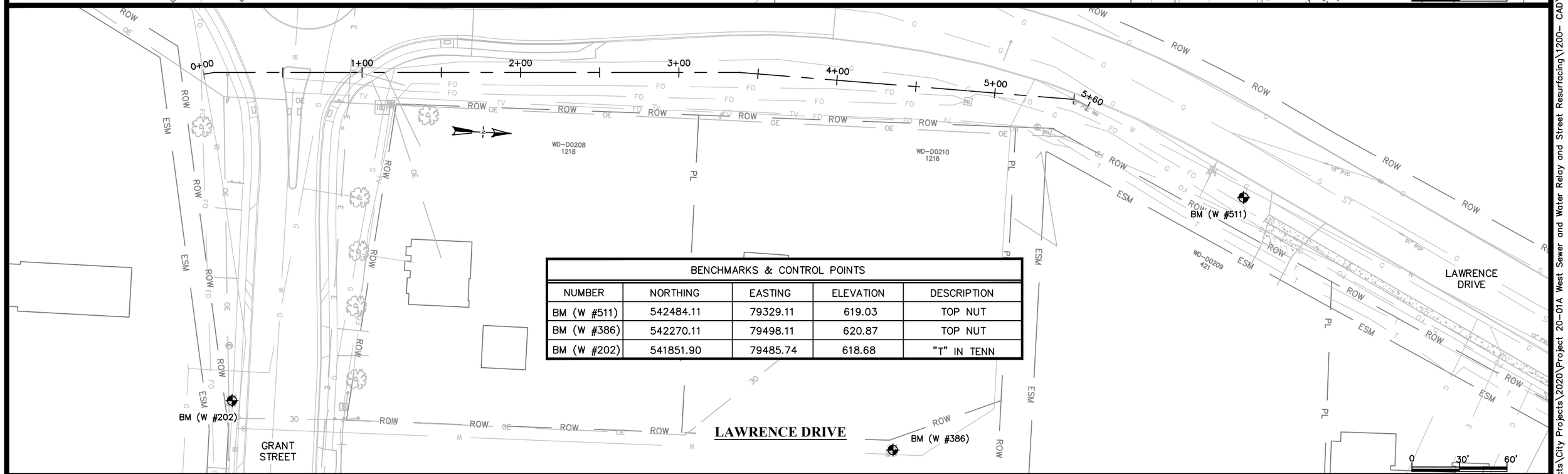


BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #579)	545723.31	82845.15	606.06	TOP NUT
BM (W #12)	545427.97	82698.43	610.22	TOP NUT



BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #511)	542484.11	79329.11	619.03	TOP NUT
BM (W #386)	542270.11	79498.11	620.87	TOP NUT
BM (W #202)	541851.90	79485.74	618.68	"T" IN TENN

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BENCHMARKS & CONTROL POINTS

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C409

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\BM & CP.dwg

BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #512)	541912.84	82442.63		
BM (W #161)	541918.19	82862.88		
BM (#12173)	541422.07	83269.49	609.88	TAG BOLT
CP (#130)	541817.49	82436.49	612.37	CP NL
CP (#125)	541655.04	82805.01	608.01	CP NL

BM (W #512)

BM (W #161)

ROW

GRANT STREET

803 WD-115-1

751 WD-115-2

747 WD-115-3

743 WD-115-8

737 WD-115-4

731 WD-115-5

719-721 WD-115-9

713-715 WD-115

665 WD-105

CP (#130)

CP (#125)

BM (#12173)

805 WD-115-2-A

WD-115-3-1

WD-115-8

WD-864

PL

ESM

0+00

1+00

2+00

3+00

4+00

5+00

6+00

7+00

8+00

9+00

10+00

11+00

11+27

N

0 30' 60'

WEST DE PERE H.S. STORM SEWER

DE PERE

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ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115

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BENCHMARKS & CONTROL POINTS

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING

PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C410

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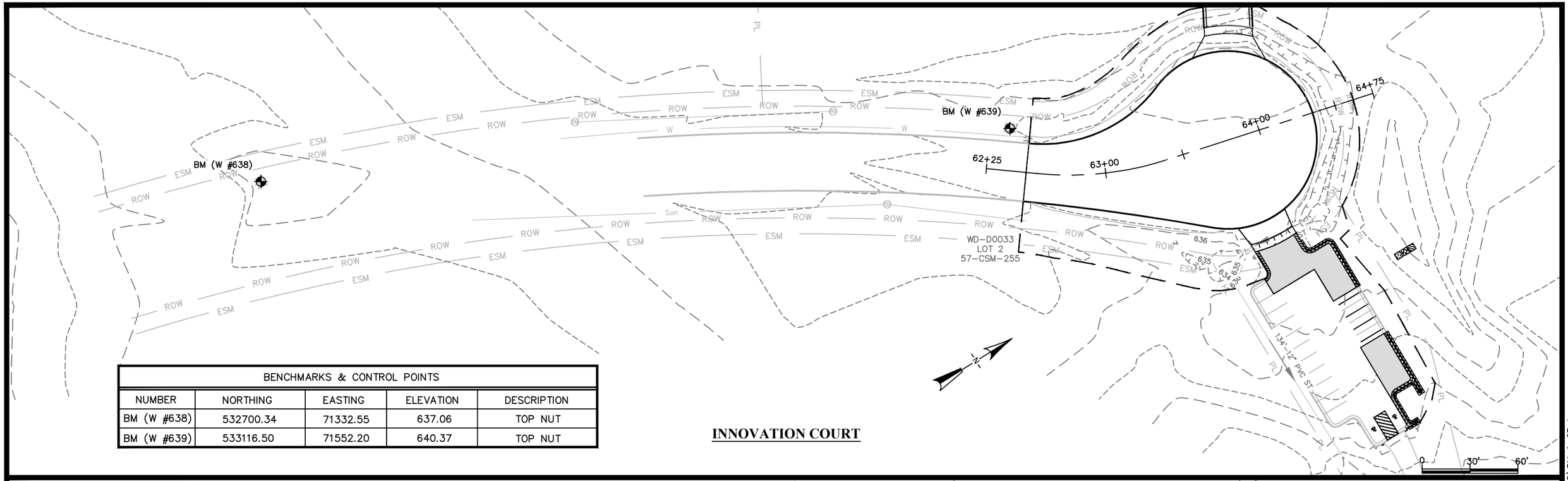
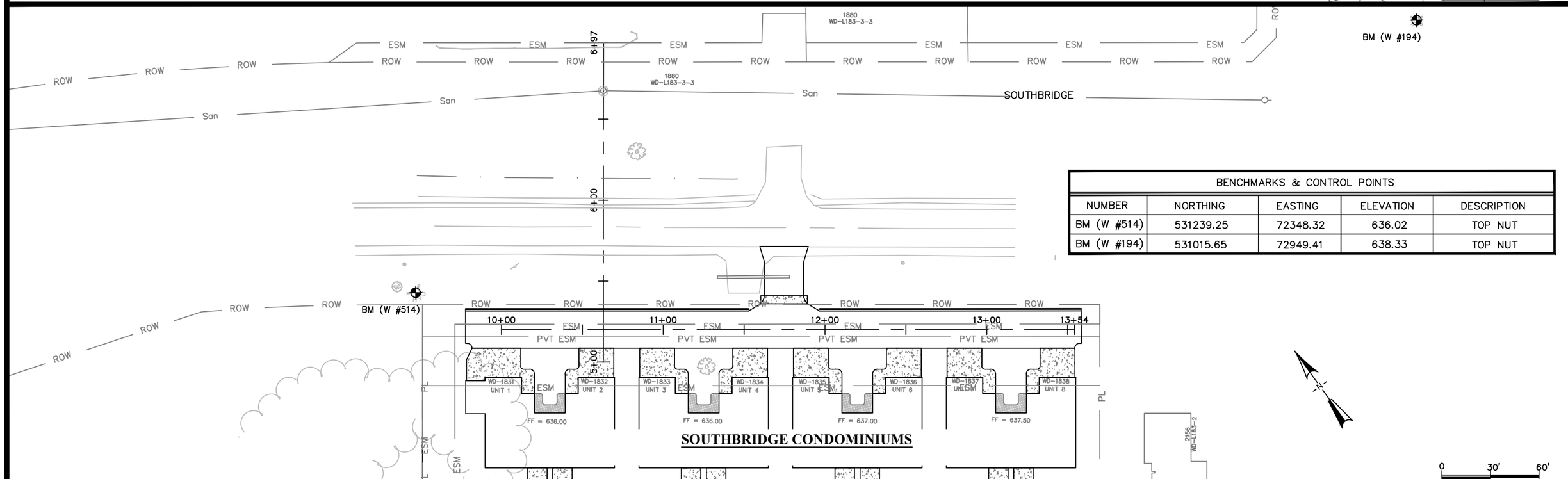


BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #638)	532700.34	71332.55	637.06	TOP NUT
BM (W #639)	533116.50	71552.20	640.37	TOP NUT



BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #514)	531239.25	72348.32	636.02	TOP NUT
BM (W #194)	531015.65	72949.41	638.33	TOP NUT

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

BENCHMARKS & CONTROL POINTS

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED	MAL	2019
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C411

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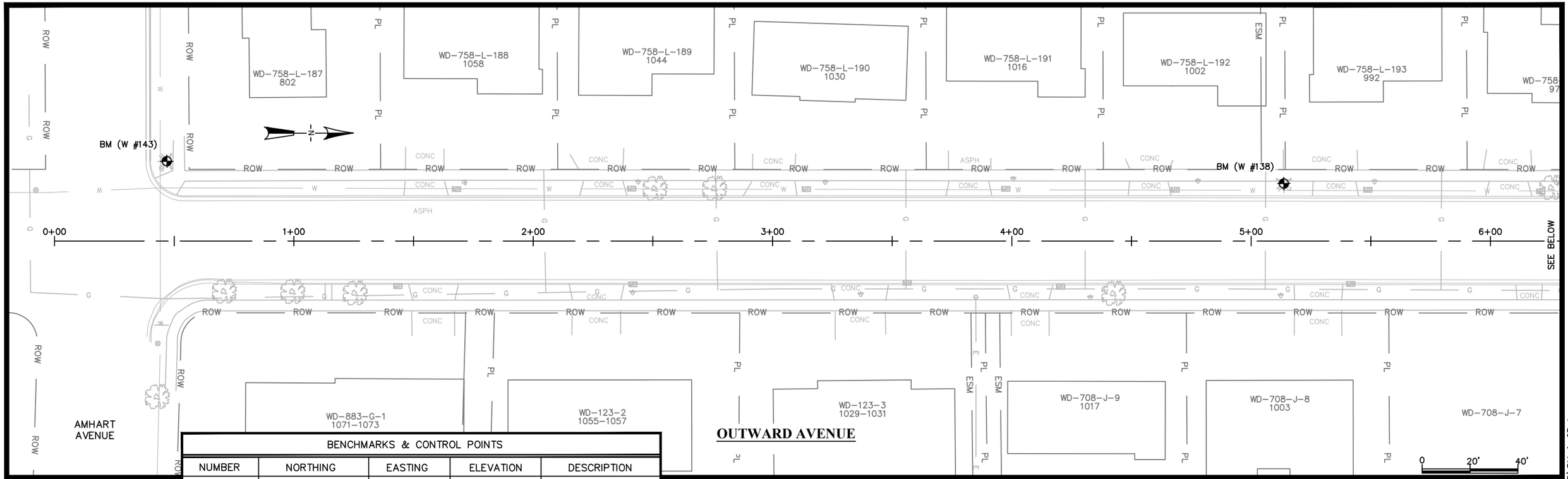

BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #143)	539397.71	82331.92	612.27	"T" IN TENN
BM (W #138)	539864.39	82341.54	612.83	"T" IN TENN
BM (W #396)	540556.53	82345.45	605.61	TOP NUT

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BENCHMARKS & CONTROL POINTS

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
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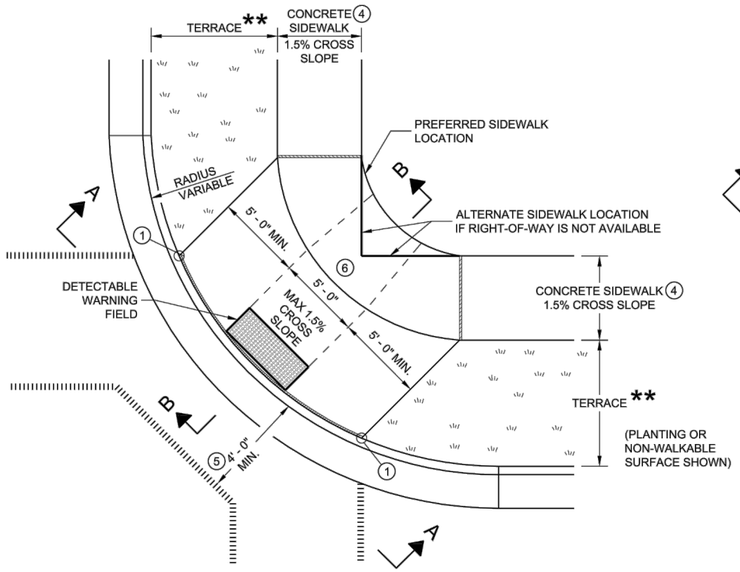
DRAWN	MAL	12-2019
DESIGNED	MAL	12-2019
CHECKED	CKK	12-2019

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO. C412

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\BM & CP.dwg

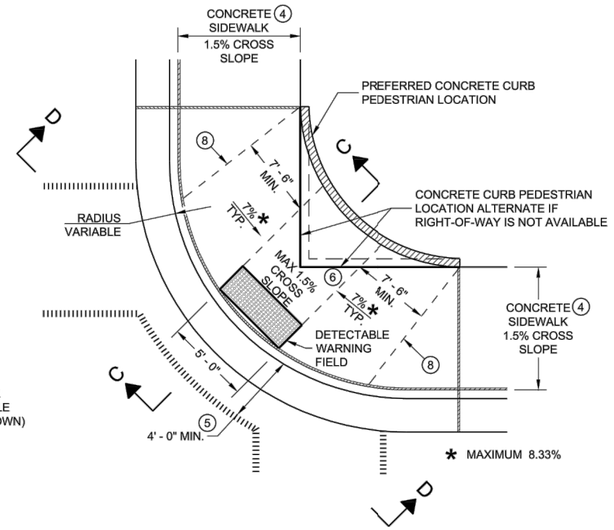
SDD 08D05-a: Curb Ramps Types 1 and 1-A



PLAN VIEW

CURB RAMP TYPE 1

(CENTER OF CORNER RADIUS)



PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FILED SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

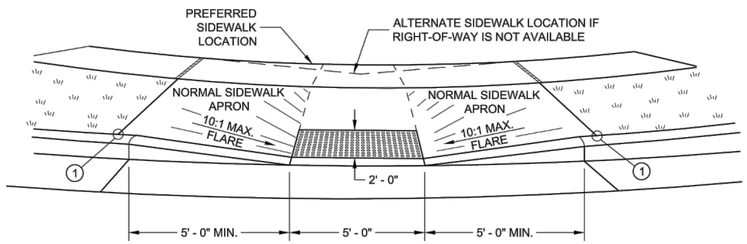
(3) MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

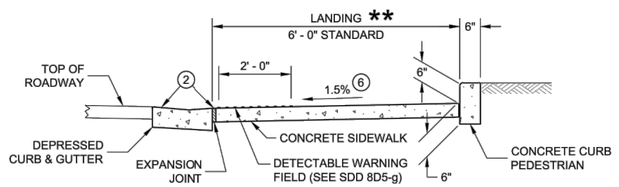
(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.



VIEW A - A FOR TYPE 1

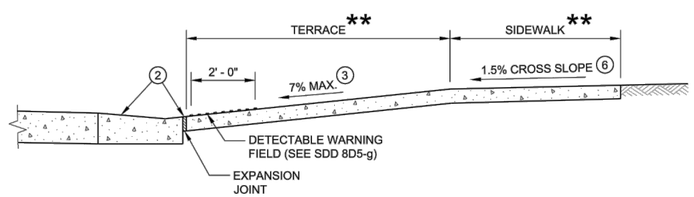


SECTION C - C FOR TYPE 1 - A

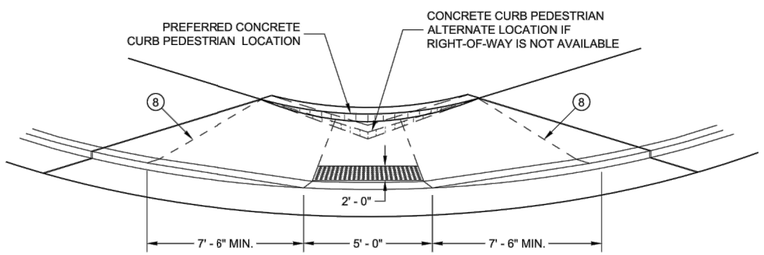
LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B - B FOR TYPE 1



VIEW D - D FOR TYPE 1 - A

CURB RAMPS TYPE 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D05 - 20a

SDD 08D05 - 20a

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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

CONSTRUCTION DETAILS
CURB RAMPS

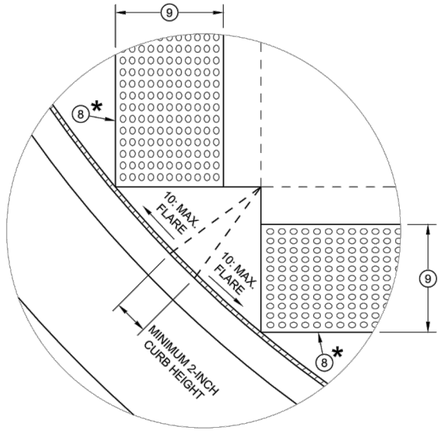
NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

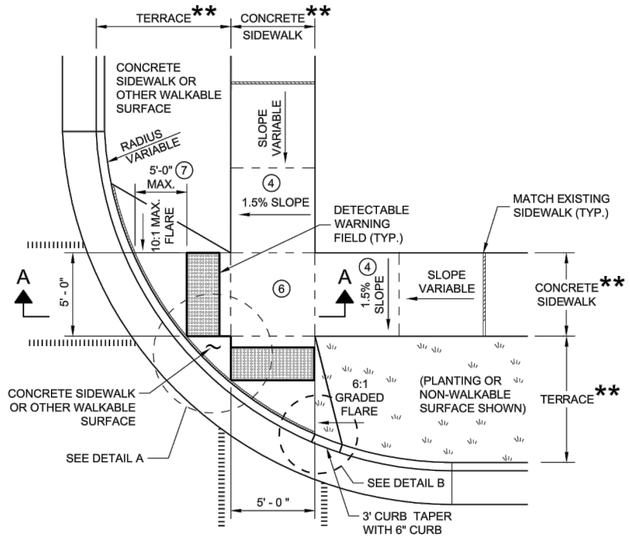
REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C501

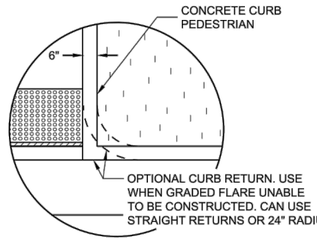
SDD 08D05-b Curb Ramps Types 2 and 3



DETAIL A



PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)



DETAIL B

PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼ - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.

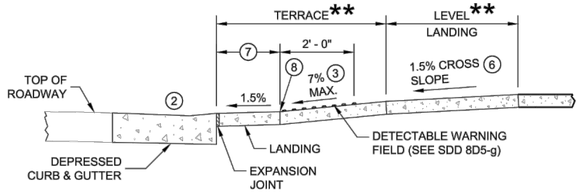
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.



SECTION A - A FOR TYPE 2

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

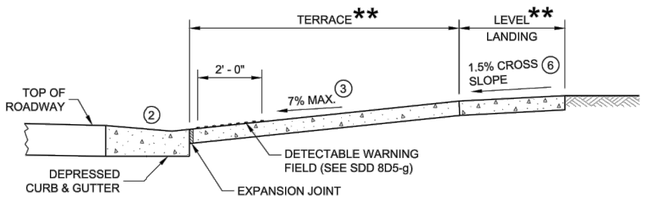
** WIDTH SHOWN ELSEWHERE IN THE PLANS

LEGEND

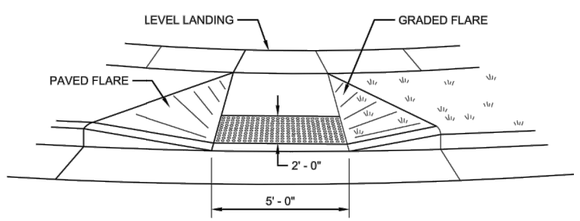
½" EXPANSION JOINT SIDEWALK

CONTRACTION JOINT SIDEWALK

PAVEMENT MARKING CROSSWALK (WHITE)



SECTION B - B FOR TYPE 3



VIEW C - C FOR TYPE 3

CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
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SDD 08D05 - 20b

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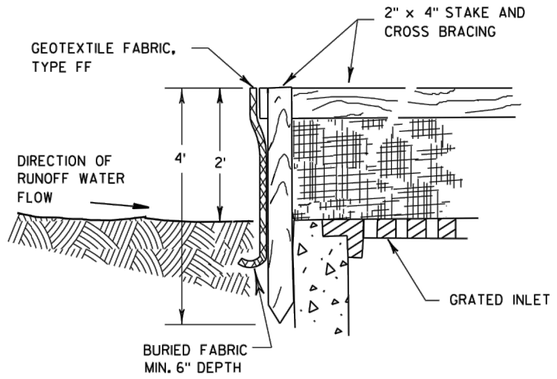
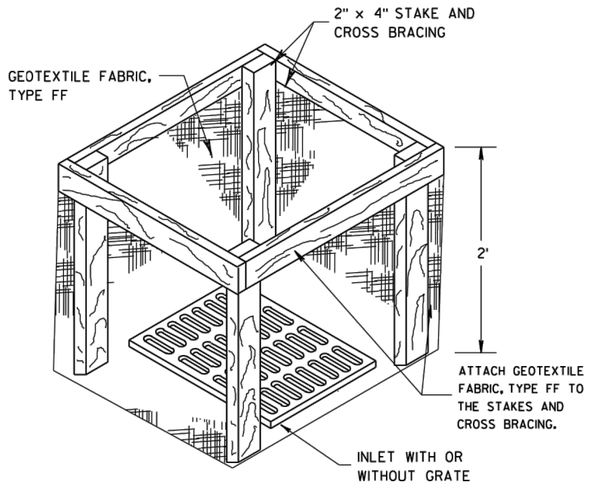
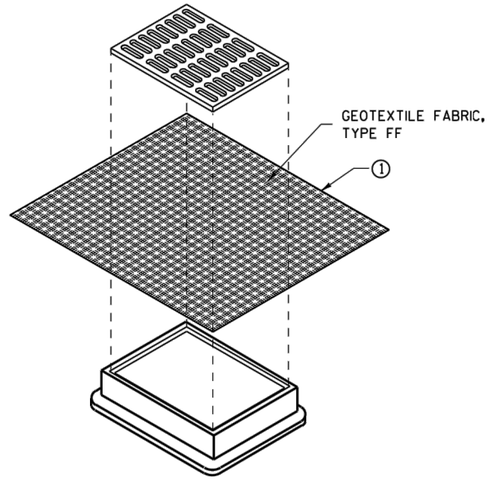
SDD 8e10 Inlet Protection Type A, B, C and D



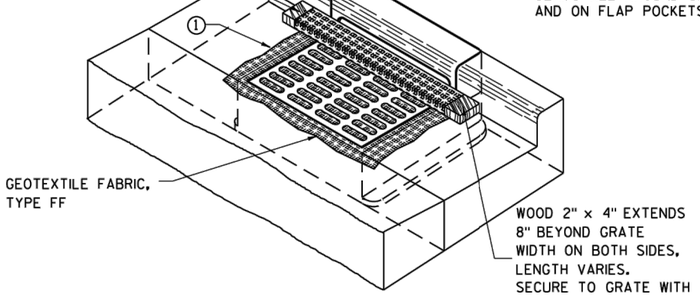


INLET PROTECTION, TYPE A

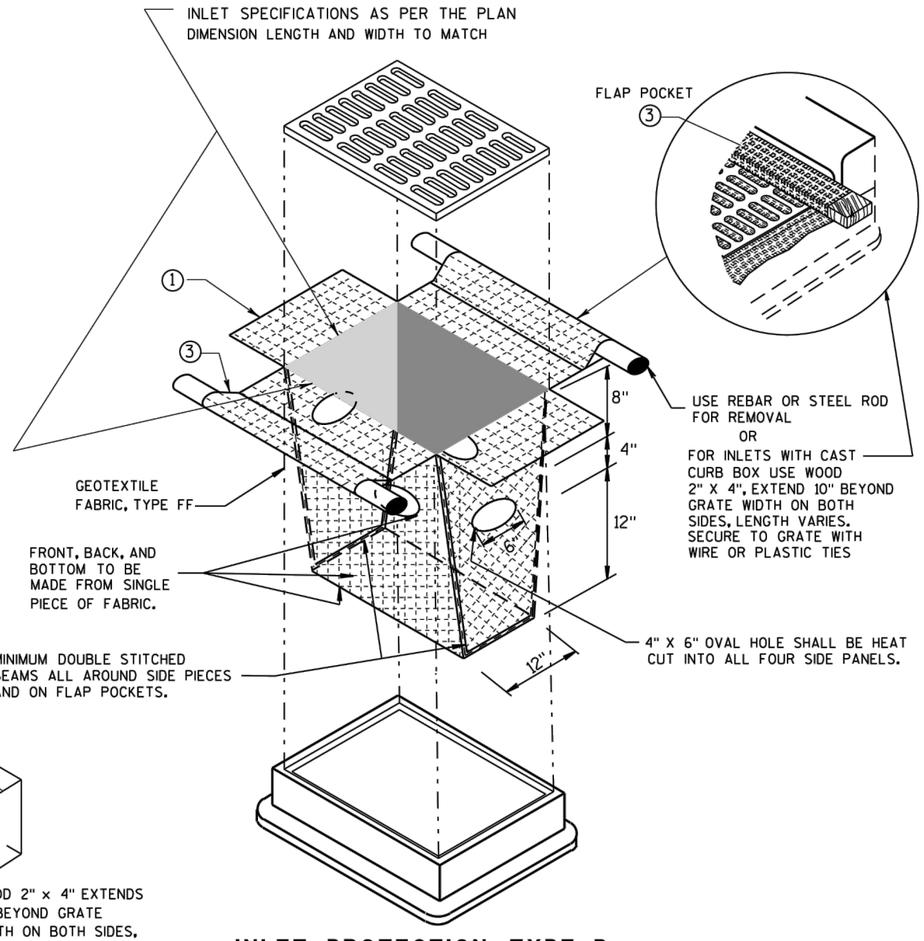


INLET PROTECTION, TYPE B (WITHOUT CURB BOX)

(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 TYPE WITH OR WITHOUT A 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

TYPE 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

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.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" 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 TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10-16-02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

S.D.D. 8 E 10-2

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S.D.D. 8 E 10-2

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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

CONSTRUCTION DETAILS
INLET PROTECTION

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C503

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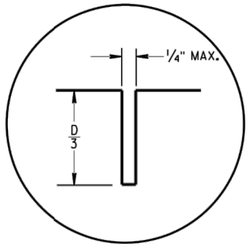
SDD 13c9-b Concrete Pavement Repair and Replacement



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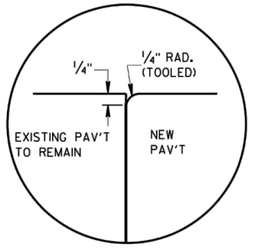


C2

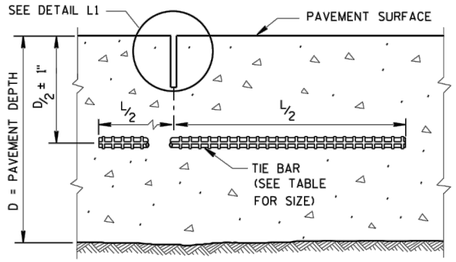
TRANSVERSE JOINTS

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

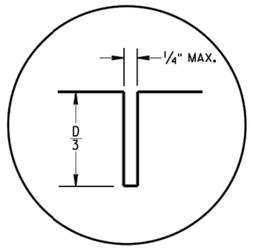
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

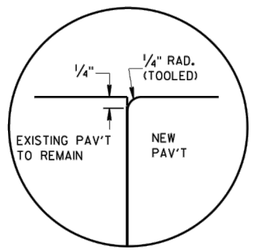
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

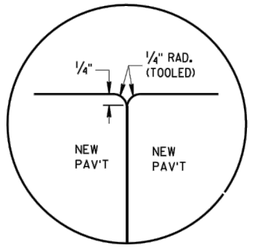
(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



L1

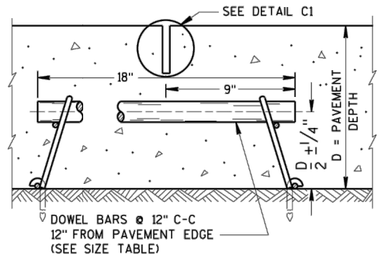


L2



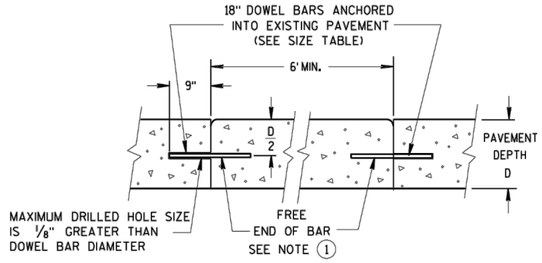
L3

LONGITUDINAL JOINTS

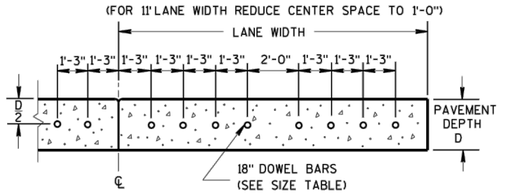


SECTION F-F

CONTRACTION JOINT



SECTION D-D

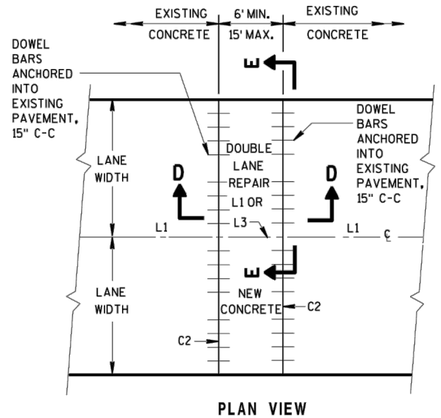


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

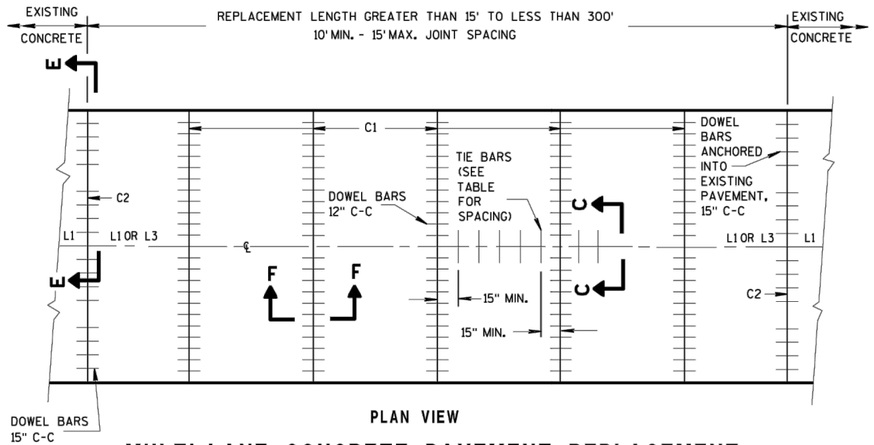
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6",6 ½"	NONE	NONE	12'
7",7 ½"	1"	1"	14'
8",8 ½"	1¼"	1¼"	15'
9",9 ½"	1¼"	1¼"	15'
10" & ABOVE	1½"	1¼"	15'



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 13 C 9-15b

6

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

CONSTRUCTION DETAILS
CONCRETE PAVEMENT

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C504

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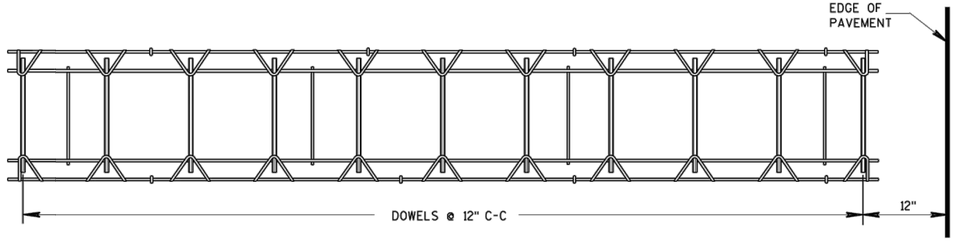
SDD 13c13 Urban Doweled Concrete Pavement



PLAN VIEW

SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6",6 ½"	NONE	12'
7",7 ½"	1"	14'
8",8 ½"	1 ¼"	15'
9",9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE LONGITUDINAL JOINT AND THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

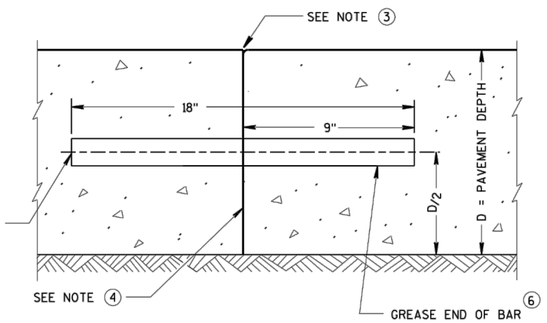
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

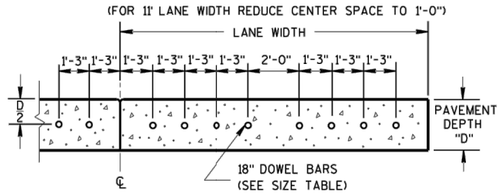
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

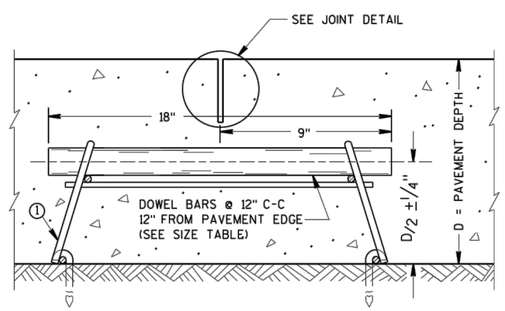
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



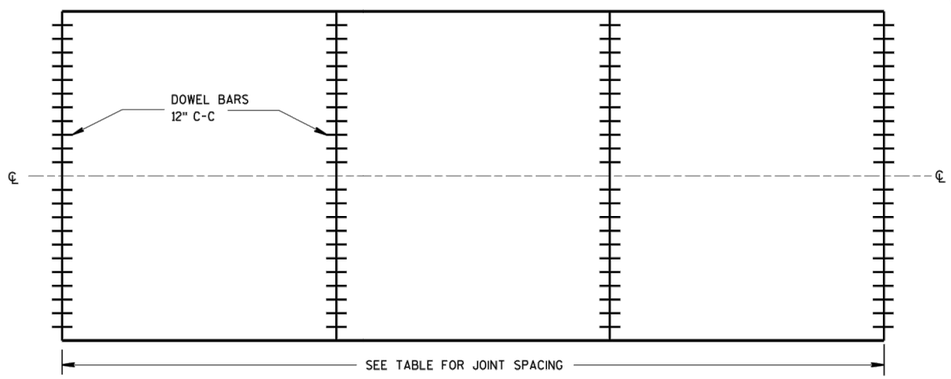
TRANSVERSE CONSTRUCTION JOINT



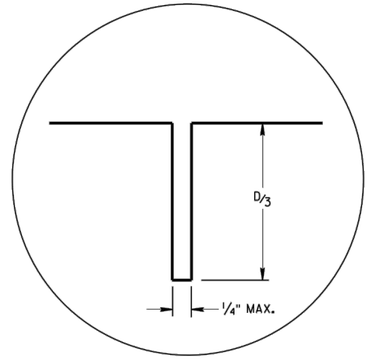
DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



DOWELED CONTRACTION JOINT



CONTRACTION JOINT LOCATIONS



JOINT DETAIL

URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPERVISOR
FHWA

6

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S.D.D. 13 C 13-9

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 DETAILS
CONCRETE PAVEMENT

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C505

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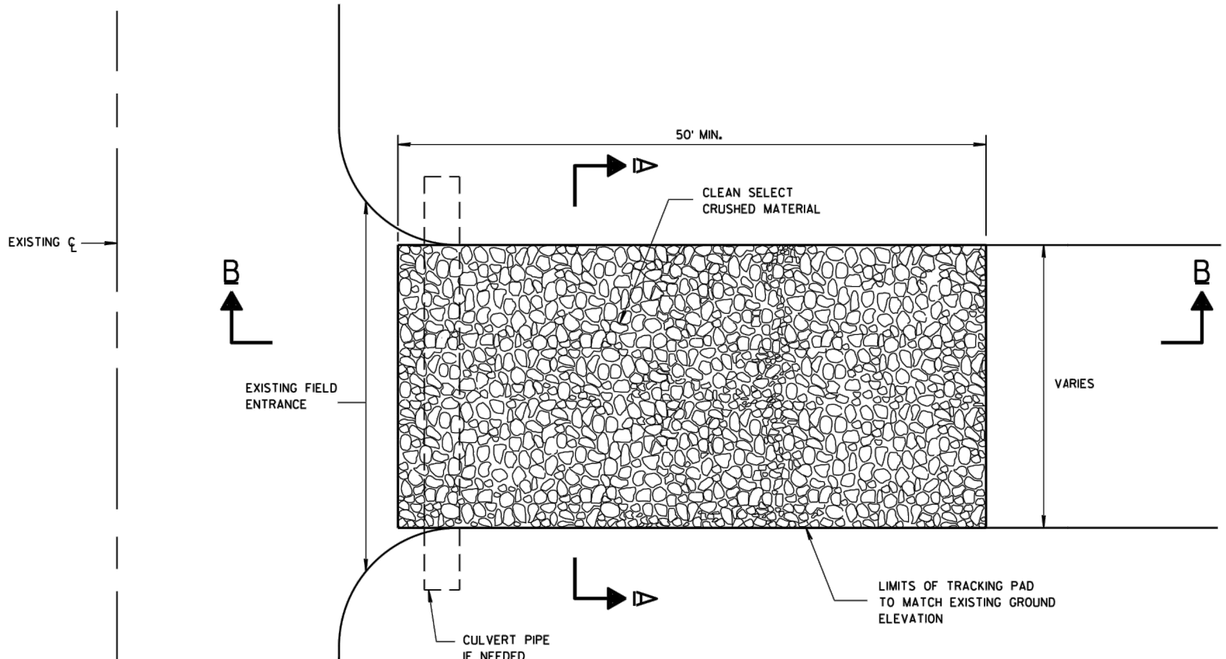
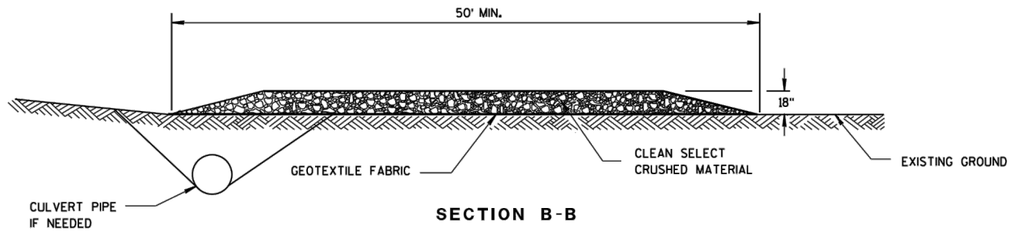
SDD 8e14 Tracking Pad



PLAN VIEW



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.

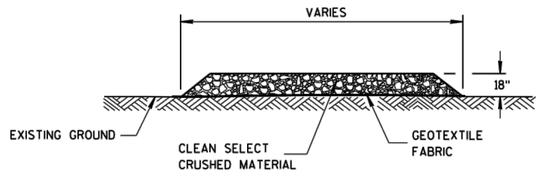
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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.



SECTION A-A

TRACKING PAD

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S.D.D. 8 E 14-1

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-24-2011
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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

CONSTRUCTION DETAILS
TRACKING PAD

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

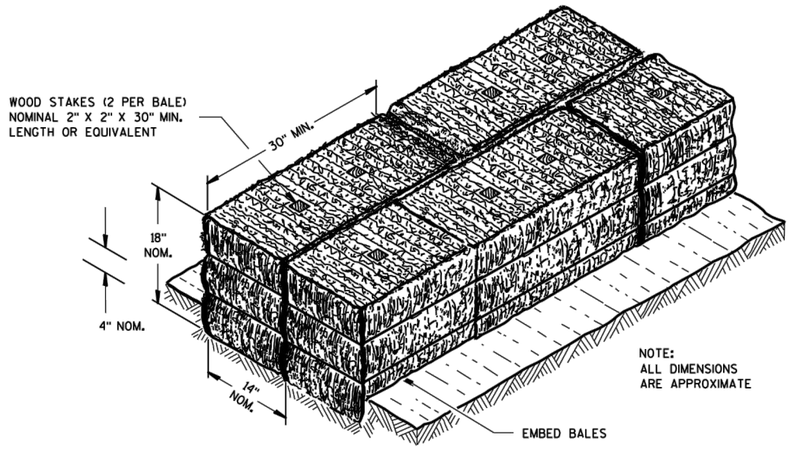
	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

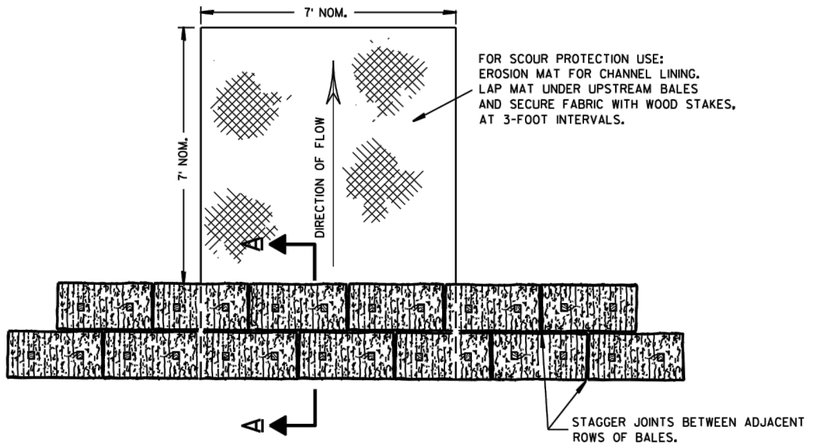
PAGE NO. C506

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\Cons Details.dwg

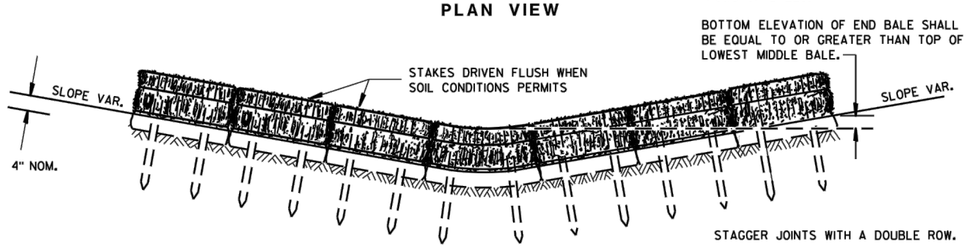
SDD 8e8 Typical Installations of Erosion Bales/Temporary Ditch Checks



SECTION A-A



PLAN VIEW



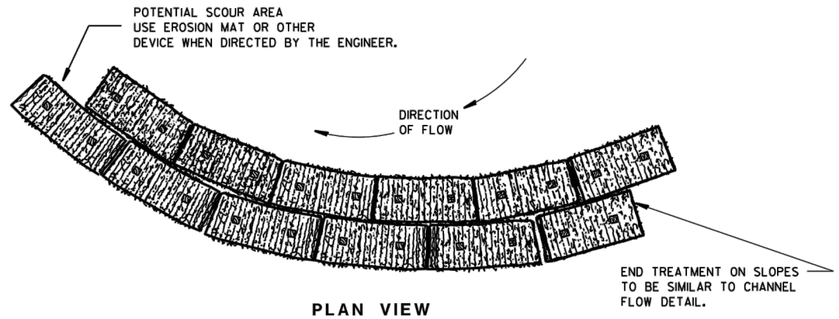
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

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.

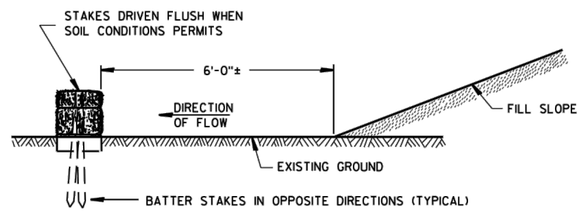
① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.



PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW

PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 8-3

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S.D.D. 8 E 8-3

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 DETAILS
EROSION BALES

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

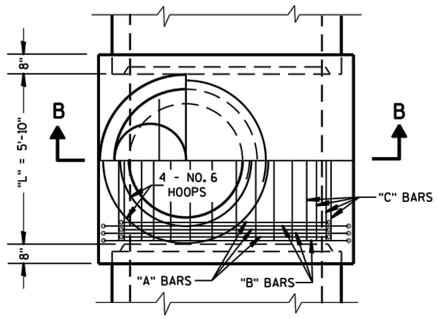
	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

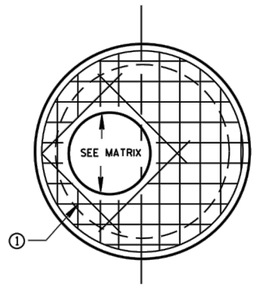
PAGE NO. C507

X:\ENG\Projects\City Projects\2020\Project 20-01A West Sewer and Water Relay and Street Resurfacing\1200- CAD\Cons Details.dwg

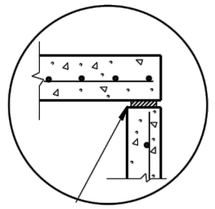
SDD 8b11 Manholes Variable Tee and Special 4-FT Diameter



HALF SECTION A-A

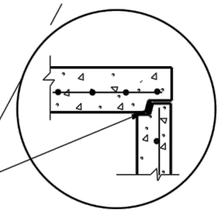


PLAN VIEW PRECAST REINFORCED CONCRETE FLAT SLAB TOP WITH ECCENTRIC OPENING

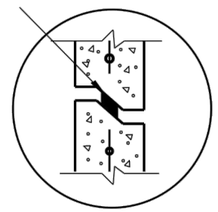


TOP WITH PLAIN END JOINT

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

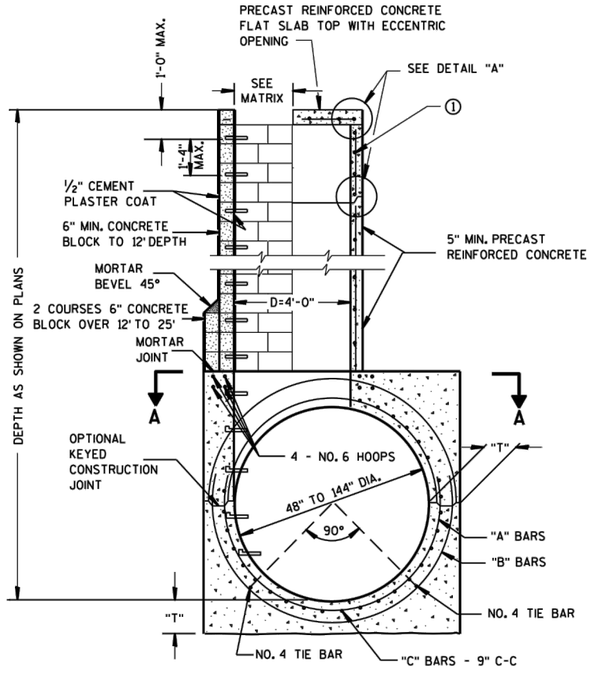


TOP WITH TONGUE AND GROOVE JOINT



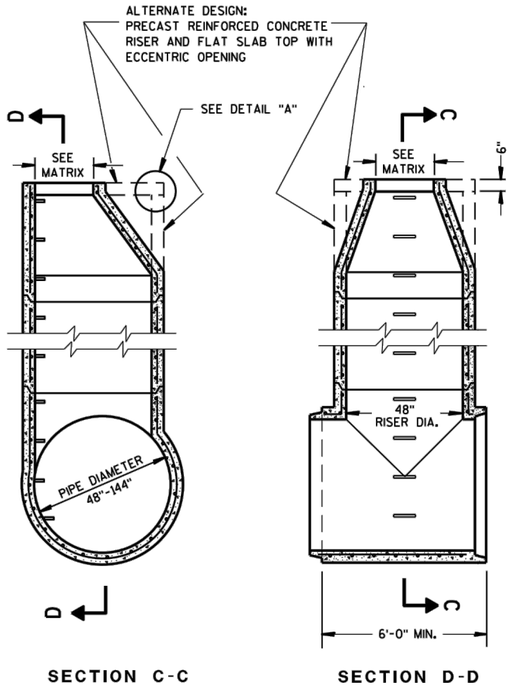
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "A"



SECTION B-B

MANHOLE VARIABLE SPECIAL 4-FT DIAMETER



SECTION C-C SECTION D-D

MANHOLE VARIABLE TEE 4-FT DIAMETER

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 4T-L", "MANHOLES 4S-M", ETC. THE VARIABLE TEE IS DENOTED BY 4T AND THE VARIABLE SPECIAL IS DENOTED BY 4S. THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½ INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE OR CONCRETE BLOCK STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL PRECAST MANHOLES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

① FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE WITH AASHTO M 199.

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

NOTES FOR MANHOLE VARIABLE SPECIAL 4-FT DIAMETER

NOTE: ALL "A", "B", AND "C" BAR STEEL REINFORCING IS THE SAME DIAMETER WHICH VARIES WITH DEPTH.
NO. 5 BARS TO 20' DEPTH
NO. 6 BARS OVER 20' TO 30' DEPTH
NO. 7 BARS OVER 30' TO 40' DEPTH

THE "A" AND "B" BARS MAY BE PLACED IN ONE OR TWO SEGMENTS, AND SHALL LAP 24 BAR DIAMETERS.

"C" BARS SHALL HAVE STANDARD HOOKED ENDS.

NOTE: "T" THROUGHOUT LENGTH "L" SHALL BE 13" FOR PIPE DIAMETER 48" TO 84" AND 15" FOR PIPE DIAMETER GREATER THAN 84".

MANHOLE VARIABLE TEE AND SPECIAL 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA

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S.D.D. 8 B 11-2

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S.D.D. 8 B 11-2

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

CONSTRUCTION DETAILS
MANHOLES VARIABLE TEE AND 4' DIAMETER

NAME: WEST SEWER & WATER RELAY AND STREET RESURFACING
PROJECT # 20-01A

	BY	DATE
SURVEYED		
DRAWN	MAL	01-2020
DESIGNED	MAL	01-2020
CHECKED	CKK	01-2020

REVISIONS / ISSUES NO.	DATE	BY	REMARKS

PAGE NO. C508

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