

CITY OF DE PERE

PROJECT

22-02

LEWIS STREET RECONSTRUCTION

BID DATE:

JUNE 1, 2022

@ 1:00 PM

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

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

SECTION 00 01 10

TABLE OF CONTENTS

INTRODUCTORY INFORMATION

<u>Section</u>	<u>Title</u>
00 00 01	PROJECT MANUAL COVER
00 01 10	TABLE OF CONTENTS

PROJECT BID DOCUMENTS

<u>Section</u>	<u>Title</u>
00 11 13	ADVERTISEMENT TO BID
00 21 13	INSTRUCTIONS TO BIDDERS
00 41 13	BID FORM
00 41 43	BID SCHEDULE
00 43 13	BID BOND
00 43 33	PROPOSED PRODUCTS FORM
00 43 36	TABULATION OF SUBCONTRACTORS

CONTRACTING REQUIREMENTS

<u>Section</u>	<u>Title</u>
00 51 00	NOTICE OF AWARD
00 52 13	CONTRACT
00 55 00	NOTICE TO PROCEED
00 61 13	PAYMENT BOND
00 61 16	PERFORMANCE BOND
00 62 76	APPLICATION FOR PAYMENT
00 65 16	CERTIFICATE OF SUBSTANTIAL COMPLETION

DIVISION 1 GENERAL REQUIREMENTS

Section	Title
01 10 00	SUMMARY OF WORK
01 22 01	MEASUREMENT AND PAYMENT SANITARY SEWER
01 22 02	MEASUREMENT AND PAYMENT STORM SEWER
01 22 03	MEASUREMENT AND PAYMENT WATER SYSTEM
01 22 04	MEASUREMENT AND PAYMENT STREET AND DRAINAGE CONSTRUCTION
01 22 05	MEASUREMENT AND PAYMENT SPECIAL CONSTRUCTION
01 29 00	PAYMENT PROCEDURES
01 32 33	CONSTRUCTION PHOTOGRAPHS
01 33 00	SUBMITTALS
01 41 00	REGULATORY REQUIREMENTS
01 71 23	FIELD ENGINEERING

SUPPLEMENTAL SPECIAL PROVISIONS

Section	Title
32 11 26.16	PULVERIZED ASPHALT AND AGGREGATE BASE COURSE
33 00 05	DOUBLE AND TRIPLE WALLED POLYPROPYLENE PIPE

APPENDIX

A.	GEOTECHNICAL ENGINEERING REPORT FOR LEWIS STREET RECONSTRUCTION BY ECS MIDWEST, LLC.
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CITY OF DE PERE 2022 STANDARD SPECIFICATIONS

CONTRACTING REQUIREMENTS

Section	Title
00 70 00	GENERAL CONDITIONS (See City of De Pere 2022 Standard Specifications)
DIVISION 31 –	EARTHWORK (See City of De Pere 2022 Standard Specifications)
DIVISION 32 –	EXTERIOR IMPROVEMENTS (See City of De Pere 2022 Standard Specifications)
DIVISION 33 –	UTILITIES (See City of De Pere 2022 Standard Specifications)

SECTION 00 11 13

MAY 13, 2022 – MAY 20, 2022

CITY OF DE PERE

ADVERTISEMENT TO BID

PROJECT 22-02

LEWIS STREET RECONSTRUCTION

Online bids will be received and accepted for Project 22-02 Lewis Street Reconstruction via the online electronic bidding service through QuestCDN.com, until 1:00 PM, Wednesday, June 1, 2022, at which time they will be publicly accepted, displayed and read aloud.

Project 22-02 for which proposals are being sought includes the following approximate quantities:

- 200 LF New Sanitary Sewer (8-Inch) and Associated Appurtenances
- 1,800 LF New Storm Sewer (8-Inch to 24-Inch) and Associated Appurtenances
- 1,850 LF Relay Water Main (8-Inch) and Associated Appurtenances
- New Storm Sewer Lateral Installation (6-Inch), New and Relay Sanitary Sewer Laterals (4-Inch and 6-Inch), and New and Relay Water Services (1-Inch to 6-Inch)
- 1,570 TONS Asphaltic Concrete Pavement Placement
- 3,700 CY Unclassified Excavation
- 1,600 CY of Asphaltic Concrete Pavement, Concrete Pavement and Concrete Curb and Gutter to be Salvaged, Crushed and Reused
- 2,000 TONS Crushed Aggregate Base Course
- 3,850 LF Slip Form Curb and Gutter
- Replacement Concrete Pavement, Sidewalks and Driveways
- Restoration
- Traffic Control

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 #8145719 on Quest's Project Search page. Project documents must be downloaded from QuestCDN which will add your company to the Planholder List and allow access to vBid online bidding for the submittal of your bid. Bidders will be charged an additional fee of \$30 to submit a bid electronically. The QuestCDN website can also be accessed through the City website at www.deperewi.gov/projects or by pressing the *Projects* icon at the bottom of any City website page. Contact QuestCDN Customer Support at 952-233-1632 or info@questcdn.com for assistance in membership registration, downloading digital project information and vBid online bid submittal questions.

Project 22-02
Lewis Street Reconstruction

City of De Pere

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

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

Section 62.15 regarding Public Works.

Section 66.0901(3) regarding Prequalification of Contractor.

Each bidder shall pre-qualify by submitting proof of responsibility on forms furnished by the Director of Public Works. Such forms shall be filed with the Director of Public Works no later than 4:00 PM, Friday, May 27, 2022. Prospective bidders who have previously submitted such forms subsequent to January 1, 2022 will not be required to separately submit such form for this project.

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

Dated this 13th day of May, 2022.

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

Project 22-02

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 – Lewis Street Reconstruction 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. The fully executed bid bond must be uploaded into QuestCDN. If the bidder elects to furnish bid security other than a bid bond, the bid security must be submitted in a sealed envelope enclosed in a separate package plainly marked on the outside with the notation "BID SECURITY" along with the project number and name and addressed to the Board of Public Works of the City of De Pere, Municipal Service Center, 925 S. Sixth Street, De Pere, WI 54115 **prior to the deadline for submission of bids.**
- 7.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner per the General Conditions.
- 7.3 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 8 – CONTRACT TIMES

- 8.1 The number of days within which, or the dates by which, Milestones are to be achieved and the

Work is to be substantially completed and ready for final payment are set forth in the Bid Form and Summary of Work.

ARTICLE 9 – LIQUIDATED DAMAGES

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

ARTICLE 10 – SUBSTITUTE AND “OR-EQUAL” ITEMS

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

ARTICLE 11 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

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

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

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

ARTICLE 12 – PREPARATION OF BID

12.1 The Bid form is included with the Bidding documents.

12.2 All blanks on the Bid Form shall be completed by printing in ink or by typewrite and the Bid signed in

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

- 12.3 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporations shall be shown below the seal.
- 12.4 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 12.5 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature.
- 12.6 A Bid by an individual shall show the Bidder's name and official address.
- 12.7 A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid Form. The official address of the joint venture shall be shown below the signature.
- 12.8 All names shall be typed or printed in ink below the signatures.
- 12.9 The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 12.10 The address and telephone number for communications regarding the Bid shall be shown.
- 12.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 13 – BASIS OF BID; COMPARISON OF BIDS

- 13.1 Unit Price
 - A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid Schedule.
 - B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accord with the General Conditions.
 - C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in

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

ARTICLE 14 – SUBMITTAL OF BID

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

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

ARTICLE 15 – MODIFICATION AND WITHDRAWAL OF BID

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

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

ARTICLE 16 – OPENING BIDS

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

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

<https://meet.goto.com/419837389>

You can also dial in using your phone.
United States (Toll Free): 1 877 309 2073
Access Code: 419-837-389

Get the app now and be ready when your first meeting starts: <https://meet.goto.com/install>

ARTICLE 17 – BIDS REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 18 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.1 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 18.2 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 18.3 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 18.4 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Supplier, and other individuals or entities proposed for those portions of the Work for which the identify of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 18.5 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 18.6 Bidder agrees to waive any claim it has or may have against the Owner and the respective employees arising out of or in connection with the administration, evaluation or recommendation of any Bid.
- 18.7 If the Contract is to be awarded, Owner will award the Contract to the lowest responsible responsive Bidder whose Bid is in the best interests of the Project.

ARTICLE 19 – CONTRACT SECURITY AND INSURANCE

- 19.1 The General Conditions set forth Owner's requirements as to performance and payment bonds and

insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds and a certificate of insurance.

ARTICLE 20 – SIGNING OF AGREEMENT

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

END OF SECTION

SECTION 00 41 13

CITY OF DE PERE

BID FORM

PROJECT 22-02

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, Wednesday, June 1, 2022 is to furnish and deliver all materials, and to perform and do all work on the project designated per Section 01 10 00 Summary of Work.

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

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

Addendum No.

Addendum Date

BASIS OF BID:

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

As stated in the attached Unit Price Bid Schedule.

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

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

TOTAL BID PRICE: \$_____

Project 22-02
Lewis Street Reconstruction

City of De Pere

ATTACHMENTS TO THIS BID

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

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

BID SUBMITTAL

This Bid is submitted by _____ of _____,

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

Bidder, if Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____

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

Name (typed or printed): _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

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

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

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____

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

Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____

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

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____

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

Name (typed or printed): _____

Title: _____

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

Bidder's Business Address _____

Phone No. _____ Fax No. _____

E-mail _____

SUBMITTED on _____, 20__.

State Contractor License No. _____ (if applicable)

SECTION 00 41 43

CITY OF DE PERE

PROJECT 22-02

BID SCHEDULE – UNIT PRICE

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
SANITARY SEWER					
SS-01	Provide 8" PVC Sanitary Sewer	LF	200	\$	\$
SS-02	Remove and Relay 6" or 4" PVC Sanitary Lateral	LF	250	\$	\$
SS-03	Provide 6" PVC Sanitary Sewer Lateral	LF	60	\$	\$
SS-04	Provide 4" PVC Sanitary Sewer Lateral	LF	130	\$	\$
SS-05	Provide 12"x6" or 12"x4" Sanitary Wye	EA	6	\$	\$
SS-06	Provide 8"x6" Sanitary Wye	EA	1	\$	\$
SS-07	Provide 8"x4" Sanitary Wye	EA	1	\$	\$
SS-08	Provide 6" or 4" Saddle to Existing Sanitary Sewer	EA	5	\$	\$
SS-09	Remove and Replace 4' Diameter Sanitary Sewer Manhole	VF	9	\$	\$
SS-10	Provide 4' Diameter Sanitary Sewer Manhole	VF	10	\$	\$
SS-11	Connect to Existing Sanitary Sewer Pipe	EA	3	\$	\$
SS-12	Dig Down and Cap Existing Sanitary Lateral at Sewer Main	EA	1	\$	\$

Project 22-02
Lewis Street Reconstruction

City of De Pere

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STORM SEWER					
ST-01	Provide 24" RCP (Class III) or PP Storm Sewer	LF	85	\$	\$
ST-02	Provide 21" RCP (Class III) or PP Storm Sewer	LF	420	\$	\$
ST-03	Provide 18" RCP (Class III) or PP Storm Sewer	LF	160	\$	\$
ST-04	Provide 15" PVC, RCP (Class III) or PP Storm Sewer	LF	130	\$	\$
ST-05	Provide 12" PVC or RCP (Class III) Storm Sewer	LF	915	\$	\$
ST-06	Provide 8" PVC Storm Sewer	LF	300	\$	\$
ST-07	Provide 6" PVC Storm Sewer Lateral	LF	525	\$	\$
ST-08	Provide 24"x6" Storm Branch or Inserta Tee	EA	2	\$	\$
ST-09	Provide 21"x6" Storm Branch or Inserta Tee	EA	3	\$	\$
ST-10	Provide 18"x6" Storm Branch or Inserta Tee	EA	2	\$	\$
ST-11	Provide 12"x6" Storm Branch or Inserta Tee	EA	2	\$	\$
ST-12	Provide 8"x6" Storm Branch	EA	4	\$	\$
ST-13	Remove and Replace 4' Diameter Storm Manhole	VF	6	\$	\$
ST-14	Provide 5' Diameter Storm Manhole	VF	8	\$	\$
ST-15	Provide 4' Diameter Storm Manhole	VF	56	\$	\$
ST-16	Provide Type A Catch Basin	EA	2	\$	\$

Project 22-02
Lewis Street Reconstruction

City of De Pere

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STORM SEWER (Continued)					
ST-17	Provide Type B Catch Basin	EA	20	\$	\$
ST-18	Connect to Structure and/or Existing Pipe	EA	10	\$	\$
ST-19	Core Drill Manhole	EA	1	\$	\$
ST-20	Storm Sewer Dig Down and Repair Offset Joint	EA	1	\$	\$
ST-21	Pour Manhole Bench	EA	1	\$	\$
ST-22	Dig Down and Verify Fiber Optic Elevation	EA	1	\$	\$
ST-23	Abandon/Remove Existing Storm Sewer and Appurtenances	LS	1	\$	\$
WATER MAIN					
W-01	Provide 16" PVC Water Main	LF	10	\$	\$
W-02	Provide 8" PVC Water Main	LF	1,850	\$	\$
W-03	Provide 6" PVC Water Main	LF	40	\$	\$
W-04	Provide 6" PVC Hydrant Lead	LF	40	\$	\$
W-05	Provide 4" PVC Water Main	LF	30	\$	\$
W-06	Provide 1" HDPE Water Service Open Cut	LF	375	\$	\$
W-07	Provide 1" Corporation and Curb Stop	EA	13	\$	\$
W-08	Provide 2" Corporation with Plug/Cap and 2" Galvanized Steel Pipe	EA	2	\$	\$

Project 22-02
Lewis Street Reconstruction

City of De Pere

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
WATER MAIN (Continued)					
W-09	Provide 8" Gate Valve	EA	10	\$	\$
W-10	Provide 6" Gate Valve	EA	1	\$	\$
W-11	Provide 4" Gate Valve	EA	1	\$	\$
W-12	Provide Connection to Existing Water Main	EA	12	\$	\$
W-13	Provide Hydrant 6.5' Bury	EA	2	\$	\$
W-14	Provide Hydrant 6.0' Bury	EA	1	\$	\$
W-15	Provide Water Main Offset	EA	1	\$	\$
W-16	Provide ½ Water Main Offset	EA	3	\$	\$
W-17	Dig Down and Abandon Water Service	EA	1	\$	\$
W-18	Abandon/Remove Water Main and Appurtenances	LS	1	\$	\$
STREET AND DRAINAGE					
SD-01	Provide Clearing and Grubbing	ID	6	\$	\$
SD-02	Unclassified Excavation	CY	3,700	\$	\$
SD-03	Provide 1 ¼" Crushed Aggregate Base Course	CY	2,640	\$	\$
SD-04	Provide Asphaltic Concrete Pavement Type 4 LT 58-28 S, 1 3/4" Upper Layer	TON	710	\$	\$
SD-05	Provide Asphaltic Concrete Pavement Type 3 LT 58-28 S, 2 ¼" Lower Layer	TON	910	\$	\$

Project 22-02
Lewis Street Reconstruction

City of De Pere

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STREET AND DRAINAGE (Continued)					
SD-06	Provide 24" Concrete Curb and Gutter (Slip Form)	LF	3,800	\$	\$
SD-07	Provide 24" Integral Curb	LF	55	\$	\$
SD-08	Remove and Replace 9" Concrete Pavement with Integral Curb	SY	55	\$	\$
SD-09	Provide Median Slope Nose	SY	5	\$	\$
SD-10	Provide Raised Median 8" Concrete	SY	10	\$	\$
SD-11	Remove and Replace 8" Concrete Sidewalk and Driveway	SY	290	\$	\$
SD-12	Remove and Replace 6" Concrete Sidewalk, Ramp and Driveway	SY	660	\$	\$
SD-13	Remove and Replace 4" Concrete Sidewalk	SY	250	\$	\$
SD-14	Provide 4" Concrete Sidewalk	SY	700	\$	\$
SD-15	Asphaltic Concrete Pavement Driveways	SY	110	\$	\$
SD-16	Provide #4 Reinforcement Bars for Curb and Sidewalk	LF	1,660	\$	\$
SD-17	Drilled Tie Bars (Existing Sidewalk, Driveway, Curb and Gutter)	EA	235	\$	\$
SD-18	Drilled Tie Bars (Concrete Pavement)	EA	30	\$	\$
SD-19	Provide Detectable Warning Field (Natural Patina)	EA	24	\$	\$
SD-20	Provide Radial Detectable Warning Field (Natural Patina)	EA	5	\$	\$
SD-21	Pavement Marking Crosswalk Lines 24" White Epoxy	LF	60	\$	\$

Project 22-02
Lewis Street Reconstruction

City of De Pere

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
STREET AND DRAINAGE (Continued)					
SD-22	Pavement Marking Stop Lines 18" White Epoxy	LF	20	\$	\$
SD-23	Pavement Marking Crosswalk Lines 6" White Epoxy	LF	75	\$	\$
SD-24	Landscaping – Topsoil, Seed, Fertilizer and Mulch	SY	2,510	\$	\$
SPECIAL CONSTRUCTION					
SC-01	Pipe Foundation Stabilization	CY	100	\$	\$
SC-02	Inlet Protection Type D	EA	37	\$	\$
SC-03	Adjust Manhole	EA	10	\$	\$
SC-04	Rotate Existing Manhole Top and Adjust Casting	EA	2	\$	\$
SC-05	Reconstruct Manhole	VF	4	\$	\$
SC-06	Traffic Control (S. Broadway Lane Closure)	LS	1	\$	\$
TOTAL AMOUNT BID					\$

SECTION 00 43 13

CITY OF DE PERE

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That _____,

as Principal, hereinafter called Principal, and _____,

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

WHEREAS, Principal has made a proposal to the City for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work of Project 22-02 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
Valves		
Hydrants		
Manholes		
Inlets		
Storm Sewer (PVC) <i>List Proposed Size</i>		
Storm Sewer (RCP) <i>List Proposed Size</i>		
Storm Sewer (PP) <i>List Proposed Size</i>		

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.

<u>PORTION OF WORK</u>	<u>BUSINESS NAME</u>	<u>BUSINESS ADDRESS</u>
Concrete Pavement		
Asphaltic Concrete Pavement		
Concrete Driveway and Sidewalk		
Concrete Curb and Gutter		
Utility Work		
Traffic Control		
Landscaping		

SECTION 00 51 00

NOTICE OF AWARD

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

Project Description: 22-02 Lewis Street Reconstruction

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 May 13, 2022 and May 20, 2022.

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

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

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

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

Dated this _____ day of _____ 2022.

DEPARTMENT OF PUBLIC WORKS

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

ACCEPTANCE OF NOTICE

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

_____, this the _____ day of _____, 20____

By: _____

Title: _____

SECTION 00 52 13

CONTRACT

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

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

ARTICLE I - SCOPE OF WORK

The Contractor shall furnish all materials and all equipment and labor necessary, and perform all work shown on the drawings and described in the specifications for the project entitled Project 22-02 Lewis Street Reconstruction, 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 May 13, 2022 and May 20, 2022.
- (b) Drawings designated for Project 22-02 Lewis Street Reconstruction dated May 13, 2022.
- (c) City of De Pere 2022 Construction Specifications.
- (d) Special Provisions dated May 13, 2022.
- (e) Proposal submitted by (Contractor Name) dated Bid Date.
- (f) Addenda No. _____ dated _____

ARTICLE II - TIME OF COMPLETION

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

ARTICLE III - PAYMENT

- (a) The Contract Sum. The City shall pay to the Contractor for the performance of the Contract the amounts determined for the total number of each of the following units of work completed at the unit price stated thereafter. The number of units contained in this schedule is approximate only, and the final payment shall be made for the actual number of units that are incorporated in or made necessary by the work covered by the Contract.
- (b) Progress Payments. The City shall make payments on account of the Contract as follows:
1. On not later than the fourth Friday of every month the Contractor shall present to the City an invoice covering an estimate of the amount and proportionate value of the work done as verified by the City under each item of work that has been completed from the start of the job up to and including the fourth Friday of the preceding month, and the value of the work so completed determined in accordance with the schedule of unit prices for such items, together with such supporting evidence as may be required. This invoice shall also include an allowance for the cost of such materials and equipment required in the permanent work as have been delivered to the site but not as yet incorporated in the work.
 2. On not later than the third week of the following month, the City shall, after deducting previous payments made, pay to the Contractor 95% of the amount of the approved invoice, retaining 5% of the estimate of work done until 50% of the work has been completed. At 50% completion of the work, the previous retainage shall not yet be paid, but further partial payments shall be made in full to the contractor without additional retainage being taken unless the engineer certifies that the work is not proceeding satisfactorily. If the work is not proceeding satisfactorily, additional amounts may be retained. After substantial completion, an amount retained may be paid to the contractor, keeping retained only such amount as is needed for the remaining work.
 3. The Contractor shall notify the City in writing when all work under this Contract has been completed. Upon receipt of such notice the City shall, within a reasonable time, make the final inspection and issue a final certificate stating that the work provided for in this Contract has been completed and is accepted under the terms and conditions thereof, and that the entire balance due the Contractor as noted in said final certificate is due and payable. Before issuance of the final certificate the Contractor shall submit evidence satisfactory to the City that payrolls, material bills, and other indebtedness connected with the work under this Contract have been paid. The City shall make final payment as soon after issuance of the final certificate as practicable.

ARTICLE IV – CONTRACT DOCUMENTS

(a) Contents

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

- e. Specifications as listed in the table of contents of the Project Manual.
 - f. Drawings consisting of ____ sheets with each sheet bearing the following general title: ____ [or] the Drawings listed on attached sheet index.
 - g. Addenda (numbers ____ to ____ inclusive), dated ____.
 - h. Exhibits to this Agreement (enumerated as follows):
 - 1) Contractor's Bid (pages 00 41 13-1 to 00 41 13-3, inclusive).
 - 2) Bid Schedule – Unit Prices (Pages 00 41 43-1 to 00 41 43-, inclusive).
 - 3) Proposed Products Form (Page 00 43 33-1).
 - 4) Tabulation of Subcontractors (page 00 43 36-1).
 - 5) Documentation submitted by Contractor prior to Notice of Award (00 51 00-1).
 - i. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - 1) Notice to Proceed (Page 00 55 00-1).
 - 2) Change Orders.
2. The documents listed in Paragraph (a) Contents, are attached to this Agreement (except as expressly noted otherwise above).
3. There are no Contract Documents other than those listed above in this Article IV.

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

_____ (WITNESS)	_____ (CONTRACTOR)	_____ (SEAL)
_____ (WITNESS)	BY: _____	
	_____ (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: _____ (MAYOR)	BY: _____ (CITY CLERK)

SECTION 00 55 00

NOTICE TO PROCEED

Date: _____

(CONTRACTOR NAME)
(ADDRESS)
(ADDRESS)

Project Description: 22-02 Lewis Street Reconstruction

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

Department of Public Works

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

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by

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

Signature

BY: _____
Printed Name

TITLE: _____

SECTION 00 61 13

CITY OF DE PERE

PAYMENT BOND

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

WHEREAS, Contractor has by written agreement dated _____ (date to be affixed by City) entered into a contract with City for Project 22-02, 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.

Project 22-02
Lewis Street Reconstruction

City of De Pere

- c. Other than in a state court of competent jurisdiction in and for the County or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed or recorded against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

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

In Presence of:

(WITNESS)

(CONTRACTOR)

(WITNESS)

(SURETY)

SECTION 00 61 16

CITY OF DE PERE

PERFORMANCE BOND

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

WHEREAS, Contractor has by written agreement dated _____ (date to be affixed by City), entered into a contract with the City for Project 22-02, 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			1. ORIGINAL CONTRACT PRICE:.....	
Number	Additions	Deductions	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
Total	\$0.00	\$0.00	6. AMOUNT ELIGIBLE TO DATE (Line 4 minus 5).....	\$0.00
NET CHANGE BY CHANGE ORDERS:			7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application).....	\$0.00
			8. AMOUNT DUE THIS APPLICATION (Line 6 minus Line 7).....	\$0.00

CONTRACTOR'S CERTIFICATION

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

By:	Date:

Payment of:

\$
(Line 8 or other - attach explanation of other amount)

is recommended by:

(Contractor) (Date)

Payment of:

\$
(Line 8 or other - attach explanation of other amount)

is recommended by:

(Owner) (Date)

SECTION 00 65 16

CERTIFICATE OF SUBSTANTIAL COMPLETION

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

This [tentative] [definitive] Certificate of Substantial Completion applies to:

☐ All Work under the Contract Documents: ☐ The following specified portions of the Work:

Date of Substantial Completion

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

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

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

☐ Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

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

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

Executed by Engineer

Date

Accepted by Contractor

Date

SECTION 01 10 00

SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

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

1.2 REFERENCES

- A. General Specifications. The work under this contract shall be in accordance with the City of De Pere, 2022 Construction Specifications and these Special Provisions and plans, and the latest edition of the Wisconsin Department of Transportation Standards Specifications for Highway and Structure Construction, where referenced in the City Specifications.
- B. Definitions. Any reference to the “state” or the “department” in said Standard Specifications shall mean the “City of De Pere” for the purposes of this contract.
- C. Industry Standards
 - 1. Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
 - 2. Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
 - 3. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
 - 4. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.

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

1.3 WORK COVERED BY THE CONTRACT DOCUMENTS

A. Project Identification

1. Project Location
 - a. Lewis Street from S. Broadway Street to S. Ontario Street.
2. Work will be performed under the following prime contract:
 - a. Project 22-02 Lewis Street Reconstruction.

B. The Work includes:

1. Sanitary sewer and associated appurtenances relay and new.
2. Storm sewer and associated appurtenances relay and new.
3. Water main and associated appurtenances relay and new.
4. Concrete curb and gutter slip form and spot repairs.
5. Concrete pavement, driveway aprons, and sidewalk removal and repairs.
6. Remove/pulverize existing asphaltic concrete and concrete pavement.
7. Unclassified excavation.
8. Asphaltic concrete paving.
9. Terrace restoration.
10. Erosion control.
11. Traffic control.
12. Tree and stump removal.
13. Pavement marking.

1.4 WORK SEQUENCE/SCHEDULE

- A. Project shall be completed by July 31, 2023.
- B. Due to extended lead times for ordering/obtaining water main appurtenances, an extended completion date of July 31, 2023 has been set with the following deadlines and restrictions:

Date	Description
7/30/2022	Complete the sanitary sewer main extension from S. Wisconsin Street to the east 194 feet and corresponding laterals to coordinate with the De Pere Cultural Foundation Site at 221 S. Broadway Street.
9/30/2022	Relay the water main from S. Broadway Street to S. Michigan Street. Testing can be completed out of the eastern end of the proposed cross at S. Michigan Street. Three water services, one for the De Pere Cultural Foundation Site, one for 335 S. Broadway Street and one for 514 Lewis Street, shall be installed. The existing main will be disconnected at S. Broadway and S. Wisconsin Street as part of the tie-ins. The two valves on N. Michigan Street, north and south of the proposed tee shall remain in the off position through the winter.

- C. If asphaltic concrete paving is anticipated for 2023 the following restrictions will go into effect:
1. All trenches shall be brought to grade with pulverized material. It shall be the contractor's responsibility to maintain these gravel trenches through winter until construction resumes in 2023.
 2. In locations where curb and gutter has been removed for the winter, reflective barrels or delineators shall be placed to warn City snow plow drivers of the impending hazard.
 3. The water main relay and storm sewer relay from S. Michigan Street to S. Ontario Street, water lateral relay, sanitary lateral relay, and storm sewer lateral installation shall be completed in 2023 to prevent excessive curb openings for the City to plow around through the winter.
- D. Topsoil, seed, and mulch shall be completed prior to asphaltic concrete pavement placement.
- E. All utility testing and televising shall be completed prior to asphaltic concrete pavement placement.
- F. Conduct construction activities to maintain access to businesses and residences throughout construction.

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 22-22 Downtown Sidewalk and Street Lighting:
 - a. Installation of sidewalk and street lighting on S. Broadway Street from Lewis Street to S. Wisconsin Street.
 - b. Installation of sidewalk on S. Michigan Street from Lewis Street to the north.
 - 2. Project 22-24 East Alley Reconstructions:
 - a. Reconstruction of the alley from Lewis Street to Charles Street between S. Huron Street and S. Erie Street.
 - b. Reconstruction of the alley from Lewis Street to Charles Street between S. Superior Street and S. Huron Street.
 - c. Reconstruction of the alley from Chicago Street to Lewis Street from S. Huron Street to S. Erie Street.

- 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, Victoria Kassab, (yk352k@att.com) (920-202-4002)
- C. Wisconsin Public Service, Bob Laskowski, (rtlaskowski@wisconsinpublicservice.com) (920-617-2775)
- D. Charter, Vince Albin, (vince.albin@charter.com) (920-378-0444)
- E. Nsight, Rick Vincent, (rick.vincent@nsight.com) (920-617-7316)
- F. TDS Metrocom, Steve Jakubiec, (steve.jakubiec@tdstelecom.com) (920-882-4166)
- G. Net-Lec (Mi-Tech Services), Dennis Lafave, (dlafave@mi-tech.us) (920-619-9774)
- H. CenturyLink, Relocation Team, (relocations@lumen.com) (800-871-9244)
- I. Central Brown County Water Authority, Rob Michaelson, (rmichaelson@mpu.org) (920-686-4354)

1.9 MISCELLANEOUS PROVISIONS

- A. Notification to Residents – notify individually all residents and businesses 2-weeks prior to the start of operations, giving an estimated time that vehicle movement will be limited or prohibited. Property owners shall be notified 24-hours prior to closing a drive.
- B. Ingress and egress to the site of work for the delivery of materials, hauling of excavation, daily construction activities and all vehicular traffic shall be from S. Broadway Street (STH 32-57) or S. Ontario Street via George Street (CTH G).
- C. Utility installation shall be completed from existing paved or gravel surfaces and/or new gravel surfaces. All gravel surfaces will need to be maintained if the existing asphalt is removed at the beginning of the project and if rutting, pumping, or failures occur. During street excavation, all exposed subgrade shall be graded and covered with crushed aggregate base course at the end of each day.
- D. Salvaged pulverized asphaltic concrete pavement, recycled crushed concrete, and/or virgin asphaltic concrete pavement will be allowed for the base course on the project per the plans.

Pulverized asphaltic concrete pavement shall be placed on the bottom of the crushed aggregate base course. Pulverizing the asphaltic concrete pavement shall be accomplished by milling or crushing and mixing with crushed concrete or aggregate to conform to the requirements of Section 32 11 26.16.

1. See soil boring report for existing asphalt, concrete and aggregate thicknesses.

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: | <u>Bid Item No.</u> |
| 1. Sanitary Sewer Mains (Granular Backfill) | SS-01 |
| 2. Sanitary Sewer Laterals | SS-02, SS-03 & SS-04 |
| 3. Sanitary Sewer Service Branches | SS-05, SS-06, SS-07 & SS-08 |
| 4. Sanitary Sewer Manholes | SS-09 & SS-10 |
| 5. Connect to Existing Sanitary Sewer Pipe | SS-11 |
| 6. Dig Down and Cap Existing Sanitary Lateral at Sewer Main | SS-12 |
- 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 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.

1.5 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.

1.6 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.

1.7 CONNECT TO EXISTING SANITARY SEWER PIPE

A. The unit price for Reconnect 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 watertight connection seal.
3. Backfilling and compacting.

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

C. The unit of measurement for payment is each.

1.8 DIG DOWN AND CAP EXISTING SANITARY LATERAL AT SEWER MAIN

A. The unit price for Dig Down and Cap Existing Sanitary Lateral at Sewer Main work includes:

1. General Work Items of Article 1.2.
2. Excavate down to existing sanitary sewer lateral to expose the existing lateral.
3. Sanitary sewer service branches of same material strength or better than sanitary sewer main pipe.
4. Capping of inactive lateral.
5. 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:
- | | <u>Bid Item No.</u> |
|---|---|
| 1. Storm Sewer Mains (Granular Backfill) | ST-01, ST-02, ST-03, ST-04, ST-05 & ST-06 |
| 2. Storm Sewer Laterals | ST-07 |
| 3. Storm Sewer Service Branches | ST-08, ST-09, ST-10, ST-11 & ST-12 |
| 4. Storm Sewer Manholes | ST-13, ST-14 & ST-15 |
| 5. Catch Basin/Inlets | ST-16 & ST-17 |
| 6. Connect to Structure and/or Existing Pipe | ST-18 |
| 7. Core Drill Manhole | ST-19 |
| 8. Storm Sewer Dig Down and Repair Offset Joint | ST-20 |
| 9. Pour Manhole Bench | ST-21 |
| 10. Dig Down and Verify Fiber Optic Elevation | ST-22 |
| 11. Abandon/Remove Existing Storm Sewer and Appurtenances | 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 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 3' – 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.

1.5 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.

1.6 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.

1.7 CATCH BASIN/INLETS

A. The unit price for Catch Basin/Inlets work includes:

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

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

C. The unit of measurement for payment is each.

1.7 CONNECT TO STRUCTURE AND/OR EXISTING PIPE

A. The unit price for Connect to Structure and/or Existing Pipe work includes:

1. General Work Items of Article 1.2.
2. Storm sewer pipe the same material strength or better than sewer main.
3. Provide Fernco with stainless steel sheer bands and connection watertight seal. (Where Applicable).
4. Blocking and mortaring.
5. Backfilling and compaction.

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

C. The unit of measurement for payment is each.

1.8 CORE DRILL MANHOLE

A. The unit price for Core Drill Manhole work includes:

1. General Work Items of Article 1.2.

2. Core drilling into existing storm sewer manhole.
3. Install a-lok boot or mortar connection.
4. Reform flow line in existing storm manhole.

B. Measurement for payment will be the actual number of core drills completed.

C. The unit of measurement for payment is each.

1.9 STORM SEWER DIG DOWN AND REPAIR OFFSET JOINT

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 storm sewer line for repairs.
4. Sawing existing storm sewer.
5. Hoisting and haunching of storm sewer pipe (if applicable).
6. Connection to existing storm sewer.
7. Repairing offset joints where present.

B. Measurement for payment will be the actual number of offset joints repaired.

C. The unit of measurement for payment is each.

1.10 POUR MANHOLE BENCH

A. The unit price for Pour Manhole Bench Work includes:

1. General work items of Article 1.2.
2. Sand fill and Class "B" concrete floor and flow line.

B. Measurement for payment will be the actual number of manhole benches poured.

C. The unit of measurement for payment is each.

1.11 DIG DOWN AND VERIFY FIBER OPTIC ELEVATION

A. The unit price for Dig Down and Verify Fiber Optic Elevation work includes:

1. General Work Items of Article 1.2.
2. Excavate down to existing fiber optic line to expose the existing utility to verify if the line is in conflict with plan grades and elevations.
3. City staff shoot the elevation of the fiber optic line.
4. Backfilling and compacting.

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 AND APPURTENANCES

A. The unit price for Abandon/Remove Storm Sewer and Appurtenances work includes:

1. General Work Items of Article 1.2.
2. Excavating
3. Install bulkheads and abandon storm sewer line.
4. Removing existing storm sewer 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 03

MEASUREMENT AND PAYMENT WATER SYSTEM

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes:
- | | <u>Bid Item No.</u> |
|---|-------------------------|
| 1. Water Mains (Granular Backfill) | W-01, W-02, W-03 & W-05 |
| 2. Hydrant Leads | W-04 |
| 3. Water Services | W-06 |
| 4. Corporation and Curb Stop | W-07 |
| 5. 2" Corporation with Plug or Saddle and Galvanized Pipe | W-08 |
| 6. Valves | W-09, W-10 & W-11 |
| 7. Connection to Existing Water Mains | W-12 |
| 8. Fire Hydrants | W-13 & W-14 |
| 9. Water Main Offset | W-15 & W-16 |
| 10. Dig Down and Abandon Water Service | W-17 |
| 11. Abandon/Remove Water Main and Appurtenances | W-18 |
- B. Unit Prices include:
1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all unit price items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but is required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item.
 2. The method of measurement for payment.
 3. The price per unit for payment.

1.2 GENERAL WORK ITEMS

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

1.4 HYDRANTS LEADS

- A. The unit price for Hydrants Leads work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Pipe and fittings of material stated in the Unit Price Bid Schedule.
 - 3. Blocking and joint restraints.
 - 4. Tracer wire.
 - 5. Disinfection of pipeline.
- B. Measurement for payment will be the actual horizontal length along the centerline of the installed from the centerline of the water main to the centerline of the hydrant with no deductions for fittings and valves.
- C. The unit of measurement for payment is linear feet.

1.5 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.

1.6 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.

1.7 2-INCH CORPORATION WITH PLUG OR SADDLE AND GALVANIZED PIPE

- A. The unit price for 2-Inch Corporation with Plug or Saddle and Galvanized Pipe work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Provide and install 2-inch corporation with plug or saddle (where required) with 2-inch galvanized pipe.
 - 3. 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

1.8 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.

1.9 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.

1.10 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.

1.11 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.

1.12 DIG DOWN AND ABANDON WATER SERVICE

- A. The unit price for Dig Down and Abandon Water Service work includes:
1. General Work Items of Article 1.2.
 2. Excavate down to existing water main and corporation for water service to be abandoned.
 3. Removal of corporation valve.
 4. Installation of solid sleeve over curb stop hole on existing PVC water main.
 5. Backfilling and compacting.
- B. Measurement for payment will be the actual number completed.
- C. The unit of measurement for payment is each.

1.13 ABANDON / REMOVE WATER MAIN AND APPURTENANCES

- 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

- | | <u>Bid Item No.</u> |
|--|-----------------------------|
| A. Section includes: | |
| 1. Clearing and grubbing | SD-01 |
| 2. Unclassified Excavation | SD-02 |
| 3. Crushed Aggregate Base and Surface Course | SD-03 |
| 4. Asphaltic Concrete Pavement | SD-04 & SD-05 |
| 5. Portland Cement Concrete Curb and Gutter | SD-06 & SD-07 |
| 6. Portland Cement Concrete Pavement | SD-08, SD-09 & SD-10 |
| 7. Portland Cement Concrete Driveway and Sidewalk | SD-11, SD-12, SD-13 & SD-14 |
| 8. Asphaltic Concrete Pavement Driveway | SD-15 |
| 9. Deformed Reinforcement Bars | SD-16 |
| 10. Drilling Tie Bars | SD-17 & SD-18 |
| 11. Detectable Warning Field Natural | SD-19 & SD-20 |
| 12. Pavement Marking Epoxy Lines | SD-21, SD-22 & SD-23 |
| 13. Landscaping – Topsoil, Seed, Fertilize, and Mulch | SD-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 street and drainage systems.
- B. If there is a specific Unit Price Item for any of the following items, then the work item shall be included with that specific unit price item.
1. Traffic Control.
 2. Sawcutting asphalt and/or concrete.
 3. Removal, hauling and disposal of surface materials including road pavement, curb and gutter, sidewalk, driveways and other pavement surfaces in the trench area and as shown on the drawings.

4. Maintenance, protection, replacement and/or repair of facilities not designated for alteration on the Site.
5. Site access requirements including temporary aggregate material as required for local traffic access.
6. Dust control.
7. Remove and replace existing mailboxes and traffic signs.
8. Restroom facilities.
9. Construction staking and other survey work not provided by the Engineer.
10. Regulatory requirements.
11. Quality assurance and quality control testing and inspections.
12. Final casting and valve box adjustment.
13. Shop drawings and other submittals.

1.3 CLEARING AND GRUBBING

- A. The unit price for Clearing and Grubbing work includes:
 1. General Work Items of Article 1.2.
 2. Cutting and disposing of tree.
 3. Grinding down of tree stump to a depth of one (1') foot.
 4. Removing and disposing of roots and stump grindings.
- B. Measurement and payment will be by the tree diameter in inches. The tree diameter will be determined by measuring the tree's trunk circumference approximately 4-1/2 feet above the existing ground level, but above the ground swell, and dividing by three. Diameters will be rounded to the nearest inch.
- C. The unit of measurement for payment in inch diameter.

1.4 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 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 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.
 1. Salvaged pulverized asphaltic concrete pavement, recycled crushed concrete, and/or virgin asphaltic concrete pavement will be allowed for the base course on the project per the plans. Pulverized asphaltic concrete pavement shall be placed on the bottom of the crushed aggregate base course. Pulverizing the asphaltic concrete pavement shall be accomplished by milling or crushing and mixing with crushed concrete or aggregate to conform to the requirements of Section 32 11 26.16.
- C. The unit of measurement for payment is cubic yards.

1.6 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.

1.7 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.

1.8 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.

1.9 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.

1.10 ASPHALTIC CONCRETE PAVEMENT DRIVEWAY

- A. The unit price for Asphaltic Concrete Pavement Driveway work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Asphaltic concrete mixture, tack coat and other required materials.
 - 3. Surface preparation.
 - 4. Grading subgrade where required.
 - 5. Asphaltic concrete placement and compaction to thickness specified on plans.
 - 6. Tack coat between asphaltic concrete pavement courses.
- B. Measurement for payment will be the average horizontal length and width of asphaltic concrete pavement placed.
- C. The unit of measurement for payment is square yards.

1.11 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.

1.12 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.

1.13 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.

1.14 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 for payment will be by the linear foot, calculated 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.

1.15 LANDSCAPING- TOPSOIL, SEED, FERTILIZE AND MULCH

- A. The unit price for Landscaping- Topsoil, Seed, Fertilize, and Mulch 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.
 - 6. 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.

END OF SECTION

SECTION 01 22 05

MEASUREMENT AND PAYMENT SPECIAL CONSTRUCTION

PART 1 – GENERAL

1.1 SUMMARY

- | | |
|---|---------------------|
| A. Section includes: | <u>Bid Item No.</u> |
| 1. Pipe Foundation Stabilization | SC-01 |
| 2. Inlet Protection Erosion Control | SC-02 |
| 3. Adjusting Existing Structure Frame and Casting | SC-03 & SC-04 |
| 4. Manhole Reconstruct | SC-05 |
| 5. Traffic Control | SC-06 |
- 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 plus 1:1 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 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.

1.5 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. Removal of the casting and existing adjusting rings from the structure as required.
 - 3. Rotating the flat top or manhole cone section to the location indicated on the plans (where applicable).
 - 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 $\frac{1}{4}$ inch thru 3 inch thick ring using two $\frac{5}{16}$ 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.

1.6 MANHOLE RECONSTRUCT

A. The unit price for Manhole Reconstruct 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, existing adjusting rings and sections of structure.
4. Providing precast cone section for manholes.
5. Providing concrete adjusting rings and a 2 inch rubber riser ring from the WisDOT approved product list.
6. Bituminous plastic cement sealing the exterior of the adjusting rings and casting.
7. The ring will be secured to the precast section with a 3 $\frac{1}{2}$ inch wide Kent Seal or equal.
8. Above the concrete ring attach $\frac{1}{4}$ inch thru 3 inch thick ring using two $\frac{5}{16}$ inch bead above and below the ring of sealant type as recommended by the rubber manufacturer.
9. Initial and final adjustment.
10. Backfilling and compacting.

B. Measurement for payment will be the actual number of structure reconstructed.

C. The unit of measurement for payment is each.

1.7 TRAFFIC CONTROL

A. The unit price for Traffic Control work includes:

1. General Work Items of Article 1.2.
2. Providing, installing, maintain, and removing the Traffic Control signing and barricades as shown on the plans and per the MUTCD.
3. Traffic Detour, including covering signs when not in use.
4. Flaggers per the MUTCD.
5. Temporary traffic control signals (activated) per the MUTCD.
6. Sidewalk closure.

B. Measurement for payment will not be made.

1. This item applies to the specific bid items 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 preceded by final waivers from every entity involved with performance of the Work covered by the application.
 5. Submit waivers of lien on forms executed in a manner acceptable to Owner.
- F. The following administrative actions and submittals shall precede or coincide with submittal of first Application for Payment:
 1. List of subcontractors.
 2. Schedule of Values (For Lump Sum Work).
 3. Contractor's construction schedule.
- G. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including, but not limited, to the following:
 1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. Consent of Surety to Final Payment.
 5. Final lien waivers as evidence that claims have been settled.
 6. Final liquidated damages settlement statement.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 32 33

CONSTRUCTION PHOTOGRAPHS

PART 1 – GENERAL

1.1 SUMMARY

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

1.2 SUBMITTALS

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

1.3 QUALITY ASSURANCE

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

PART 2 – PRODUCTS

PART 3 – EXECUTION

3.1 UTILITY AND STREET CONSTRUCTION SITES

- A. Prior to start of construction provide sufficient photographs to adequately show the existing facilities and conditions within and adjacent to the construction Site to serve as a guide for final restoration including:
 - 1. Roads including shoulders and/or curb and gutter.
 - 2. Sidewalks, parking areas, and driveways.
 - 3. Utility structures.
 - 4. Landscaping including signs, plantings, walls, fences, trees, shrubbery, etc.
 - 5. Mailboxes.
 - 6. Drainage facilities including culverts, inlets, ditches.
 - 7. Building structures.
- B. During construction provide sufficient photographs (a minimum of one per 100 feet of installed utility) to adequately show construction means, methods, and Site conditions including:
 - 1. Crossings of other utilities.
 - 2. Exposure of existing structures.
 - 3. Soil conditions.

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for submittals:
 - 1. Progress Schedule.
 - 2. Schedule of Shop Drawings and Sample Submittals.
 - 3. Shop Drawings.
- B. Failure to meet Submittal requirements to the satisfaction of the Engineer will constitute unsatisfactory performance of the work in accordance with the Contract Documents, therefore, the Engineer may recommend to the Owner that all or a portion of payments requested during the corresponding pay period be withheld until these requirements are met.

1.2 SUBMITTAL PROCEDURES

- A. Coordination: Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
 - 3. To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals.
 - a. Allow two weeks for initial submittal.
 - b. Allow two weeks for reprocessing each submittal.
 - c. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
 - 1. Assign a reference number to each submittal and re-submittal.
 - 2. Provide a space approximately four (4) by five (5) inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 - 3. Include the following information on the label for processing and recording action taken.

- a. Project name.
 - b. Date.
 - c. Name and address of the Engineer.
 - d. Name and address of the Contractor.
 - e. Name and address of the subcontractor.
 - f. Name and address of the supplier.
 - g. Name of the manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
 4. Each submittal shall be stamped by the Contractor indicating that submittal was reviewed for conformance with the Contract Documents. The Engineer will not accept unstamped submittals.
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal to the Engineer. The Engineer will not accept submittals received from sources other than the Contractor.
1. On the transmittal, record relevant information and requests for Engineer action. On a form, or separate sheet, record deviations from Contract Document requirements, including variations, limitations, and justifications. Include Contractor's certification that information complies with Contract Document requirements.

1.3 CONTRACTOR'S PROGRESS SCHEDULE

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

- j. Sequencing of major construction activities.
 - k. Milestones and completion dates.
- B. Distribution: Following response to the initial submittal, print and distribute copies of the revised construction schedule to the Engineer, Subcontractors, and other parties required to comply with scheduled dates. When revisions are made, distribute to the same parties. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.
- D. Punch List: Prepare and submit to the Engineer within ten (10) days after substantial completion a detailed progress schedule for outstanding work and punch list items.

1.4 SCHEDULE OF SHOP DRAWINGS AND SAMPLE SUBMITTALS

- A. Submit four (4) hard copies or electronic copies of preliminary submittal schedule in accordance with the General Conditions of the Contract and as follows:
- 1. Coordinate submittal schedule with the subcontractors, Schedule of Values, and of products as well as the Contractor's Progress Schedule.
 - 2. Prepare the schedule in chronological order. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category (Shop Drawings, Product Data, or Samples).
 - d. Name of the subcontractor.
 - e. Description of the part of the work covered.
 - f. Scheduled date for the Engineer's final release or approval.
- B. Distribution: Following response to the initial submittal, print and distribute copies of the revised construction schedule to the Engineer, Subcontractors, and other parties required to comply with scheduled dates. Post copies in the field office. When revisions are made, distribute to the same parties. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SHOP DRAWINGS

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

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

- B. Collect product data into a single submittal for each element of construction of system. Product data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
 - 1. Mark each copy to show actual product to be provided. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
- C. Do not use shop drawings without an appropriate final stamp indicating action taken.
- D. Submittals: Submit four (4) copies of each required submittal. The Engineer will retain two (2) copies, and return the others to the Contractor marked with action taken and corrections or modifications required.
- E. Distribution: Furnish copies of reviewed submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms. Maintain one copy at the project site for reference.
 - 1. Do not proceed with installation until a copy of the Shop drawing is in the Installer's possession.
 - 2. Do not permit use of unmarked copies of the Shop Drawing in connection with construction.

1.6 ENGINEER'S ACTION

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

3. "Amend and Resubmit": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Amend and Resubmit" at the Project Site or elsewhere where work is in progress.
 4. "Rejected – See Remarks": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Rejected and Resubmit" at the Project Site or elsewhere where work is in progress.
- B. Unsolicited Submittals: The Engineer will return unsolicited submittals to the sender without action.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

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

1.2 UNDERGROUND UTILITIES

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

1.3 PROPERTY MONUMENTS

- A. Protect iron pipe monuments from movement.
- B. The cost of replacement of any monuments moved or destroyed during construction shall be the Contractor's responsibility.
- C. Perpetuation of destroyed or moved monuments shall be performed in accordance with state statutes by a registered land surveyor.

1.4 TRAFFIC CONTROL

- A. Provide traffic control facilities including barricades, signs, lights, warning devices, pavement markings, flaggers, etc.
- B. Construct and use traffic control facilities in accordance with the U.S. D. O. T. Federal Highway Administration's Manual on Uniform Traffic Control Devices for Streets and Highways.
- C. Maintain traffic control devices as required to properly safeguard the public travel through final completion, including during periods of suspension of work.

1.5 PERMITS FOR PROJECT

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

1. Sanitary Sewer Extension – Wisconsin Department of Natural Resources
2. Water Main Extension – Wisconsin Department of Natural Resources
3. Storm Water Notice of Intent – Wisconsin Department of Natural Resources
4. Lane Closure Permit – Wisconsin Department of Transportation

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

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

PART 1 – GENERAL

1.1 SUMMARY

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

1.2 SUBMITTALS

- A. None

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 PREPARATION

- A. Investigate and verify the existence and location of site improvements, utilities, and other existing facilities.
- B. Before construction, verify 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 PROVIDED 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 01 16.10SP

PULVERIZE ASPHALT PAVEMENTS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Cold Recycling of asphaltic pavements

PART 2 – PRODUCTS

2.1 EQUIPMENT

- A. Crushing Equipment
 - 1. Crushing equipment may be an in-place crusher or a central crusher.
 - 2. In-place crusher:
 - a. Provide a self-propelled machine designed and built for reduction in size of old pavement material in-place.
 - b. Provide a rotary reduction machine, having positive depth and control adjustments in increments of ½ inch and capable of reducing material to at least 6 inches thick.
 - c. Provide a totally enclosed drum to prevent discharge of any loosened material on adjacent areas.
- B. Compaction
 - 1. Provide a vibratory roller capable of exerting a minimum total force of 450 lbs. per linear inch of roller drum.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Clean the pavement surfaces of excessive dirt, clay or other foreign material immediately prior to milling the pavement.
- B. Saw cut pavement at project ends and side roads to provide proper butt joint.

3.2 APPLICATION

- A. Work includes scarifying, pulverizing, crushing, redistributing, blending, shaping, rolling and compacting of recrushed aggregate material to proper elevation and slope.
- B. Protect from damage manholes, valve boxes, and any other items in the roadway.

END OF SECTION

SECTION 33 00 05

DOUBLE AND TRIPLE WALLED POLYPROPYLENE PIPE

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Double walled polypropylene pipe for mainline gravity storm sewer.
 - 2. Triple walled polypropylene pipe for mainline gravity storm sewer.
- B. The products described are not installed under this Section.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. D3212 Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
 - 2. F477 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
 - 3. F2736 Standard Specification for 6 to 27 in. (152 To 762 mm) Polypropylene (PP) Corrugated Single Wall Pipe And Double Wall Pipe
 - 4. F2764 Standard Specification for 30 to 60 in. [750 to 1500 mm] Polypropylene (PP) Triple Wall Pipe and Fittings for Non-Pressure Sanitary Sewer Applications

1.3 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 twelve 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. Pipe stiffness designation, dimension ratio, or schedule size and pressure class.
4. ASTM specification designation.
5. Production date.

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. For onsite gasket installation on pipe, store gaskets away from excessive exposure to heat, direct sunlight, ozone, oil or grease.
- E. For gaskets installed on the pipe offsite, keep the protective wrap on gaskets until installation.
- 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.

PART 2 – PRODUCTS

2.1 NON-PRESSURE RATED PIPE

A. Mainline Gravity Sewer and Sewer Services

1. Pipe fittings and repair couplings shall be manufactured and tested in accordance with the following standards:
 - a. Sizes 8 inch through 27 inch and depths up to 20 feet: ASTM F2736, PSM SDR-35 PVC
 - b. Sizes 30 inch through 60 inch and depths up to 20 feet: ASTM F2764, PS46 PVC, T-1 minimum cell classification
2. Pipe shall have a minimum pipe stiffness of 40 PSI.

3. Minimum height of cover to the top of pipe to the existing elevation or proposed finished elevation (whichever is less) shall be two feet.
4. Elastomeric Gaskets: Conform with ASTM F477
5. Elastomeric Joints: Conform with ASTM D3212
6. Solvent Weld Joints: Not permitted.

B. Sewer Services

1. 4" and 6" pipe shall be Schedule 40 PVC and conform to section 33 00 02, Polyvinyl Chloride (PVC) Pipe and Fittings.
2. Branch laterals shall be designed to accept SDR 35.

2.2 DEFLECTION TEST REQUIREMENTS

- A.** Deflection testing procedures shall conform to Section 01 45 23 10, Testing and Inspection of Pipeline and Appurtenances.

- B.** The following table shall be used for the mandrel setting for Polypropylene Pipe:

Table 1
SaniTite HP Recommended Mandrel Settings

Pipe Type	Pipe Diameter (Inches)	Minimum Inside Diameter (Inches)	Inside Diameter With 5% Deflection (Inches)
Dual Wall	12	11.90	11.31
	15	14.85	14.11
	18	17.93	17.03
	21	20.79	19.75
	24	23.90	22.71
	30	29.79	28.30
	36	35.64	33.86
Triple Wall	30	29.62	28.14
	36	35.40	33.63
	42	41.31	39.24
	48	47.31	44.94
	60	59.30	56.34

END OF SECTION

EXHIBIT A

**GEOTECHNICAL ENGINEERING REPORT
LEWIS STREET RECONSTRUCTION**



ECS Midwest, LLC

Geotechnical Engineering Report Lewis Street Reconstruction

Lewis Street, De Pere, Wisconsin

ECS Project No. 59:2582-C

January 21, 2022





ECS MIDWEST, LLC

Geotechnical • Construction Materials • Environmental • Facilities

"Setting the Standard for Service"

January 21, 2022

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

ECS Project No. 59:2582-C

Reference: Geotechnical Engineering Report
Lewis Street Reconstruction
Lewis Street
De Pere, Wisconsin

Mr. Rakers:

ECS Midwest, LLC (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our agreed to scope of work. This report presents our understanding of the geotechnical aspects of the project along with 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 you during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations to verify subsurface conditions assumed for this report. Should you have questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Midwest, LLC

Yadi Pineda
Asst. Staff Project Manager
ypineda@ecslimited.com



Matthew Meyer, P.E.
Principal Engineer
mmeyer@ecslimited.com

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	2
2.0 PROJECT INFORMATION	3
2.1 Project Location/Current Site Use/Past Site Use	3
2.2 Proposed Construction.....	4
3.0 FIELD EXPLORATION AND LABORATORY TESTING	4
3.1 Subsurface Characterization	4
3.2 Groundwater Observations.....	5
3.3 Laboratory Services	6
4.0 DESIGN RECOMMENDATIONS	6
4.1 Pavement Design Considerations.....	6
5.0 SITE CONSTRUCTION RECOMMENDATIONS	9
5.1 Subgrade Preparation	9
5.1.1 Stripping and Initial Site Preparation.....	9
5.1.2 Proof-rolling.....	9
5.1.3 Site Temporary Dewatering.....	10
5.2 Earthwork Operations	11
5.2.1 Frost Susceptible Soils	11
5.2.2 Existing/Previous Construction Considerations.....	12
5.2.3 Engineered Fill	12
5.3 Utility Installations	13
5.3.1 Excavation Safety.....	14
6.0 CLOSING.....	15

APPENDICES

Appendix A – Drawings & Reports

- Site Location Diagram
- Boring Location Diagram
- Soil Survey Map

Appendix B – Field Operations

- Subsurface Exploration Procedure: Standard Penetration Testing (SPT)
- Reference Notes for Boring Logs
- AASHTO Soil Classification System
- Boring Logs B-01 and B-02

Appendix C – Supplemental Report Documents

- Important Information about this Geotechnical Engineering Report

EXECUTIVE SUMMARY

The following summarizes the main findings of the exploration, particularly those that may have a cost impact on the planned development. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- In the opinion of ECS, the site has generally adequate subsurface conditions for the proposed roadway reconstruction. After the removal of undesirable surface materials and cutting to the proposed subgrade, the pavement subgrade should be thoroughly proof-rolled and observed by ECS to document isolated soft/very loose soil areas.
- Excavation Below Subgrade (EBS) should be performed to remove soils containing more than 5 percent organic content or where proof-rolling operations indicate rutting, or deflections exceed 1 inch. In addition, we recommend providing EBS for frost concerns if the exposed subgrade during construction contains highly frost susceptible soil having an "A-4" AASHTO designation. The *Subgrade Preparation* and *Earthwork Operations* Sections of this report contain additional information regarding our recommended pavement subgrade preparations. The *Pavement Design Considerations* Section of this report contains our recommended pavement design parameters.
- The site has generally adequate subsurface conditions for the proposed municipal utility construction. The *Utility Installations* Section of this report contains additional general information concerning utility subgrade preparation and installation.

1.0 INTRODUCTION

ECS prepared this report for the purpose of providing the results of our subsurface exploration and laboratory testing, site characterization, engineering analysis, and geotechnical recommendations for the design and construction of pavements and utility infrastructure for the proposed subdivision construction. The recommendations developed for this report are based on project information supplied by the City of De Pere.

ECS provided services in accordance with the Agreement For Consulting Services Between The City Of De Pere And ECS Midwest, LLC (2021 Soil Boring), dated March 9, 2021.

This report contains the procedures and results of our subsurface exploration and laboratory testing programs, review of existing site conditions, engineering analyses, and recommendations for the design and construction of the project.

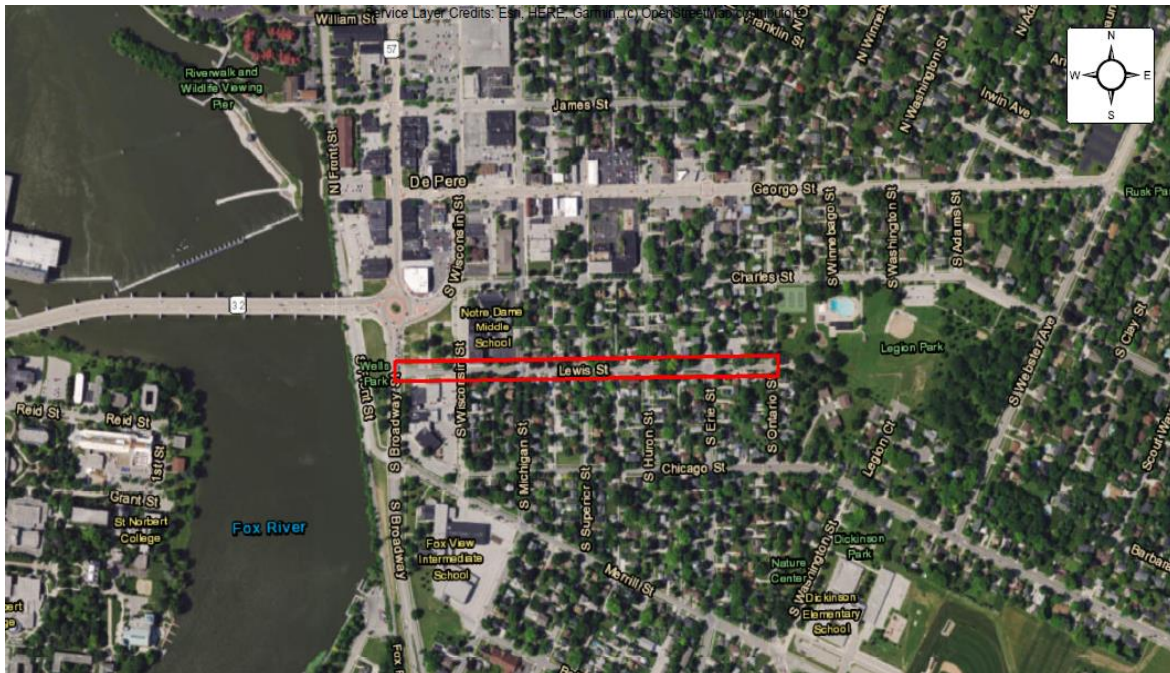
The report includes the following items.

- A brief review and description of our field and laboratory test procedures and results.
- A review of the observed surface topographical features and site conditions.
- A review of area and site geologic conditions.
- A review of subsurface soil/rock stratigraphy with pertinent available physical properties.
- Final test boring logs.
- Recommendations for pavements including subgrade preparation and the American Association of State Highway Transportation Officials (AASHTO) pavement design parameters following the Wisconsin Department of Transportation (WisDOT) Facilities Design Manual (FDM) guidelines.
- Recommendations for site preparation and construction of compacted fills, including an evaluation of on-site soils for use as compacted fills and identification of potentially unsuitable soils and/or soils exhibiting excessive moisture at the time of sampling.
- General recommendations for utility construction.
- Recommendations for additional testing and/or consultation that might be required to complete the geotechnical assessment and related geotechnical engineering for this project.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION/CURRENT SITE USE/PAST SITE USE

The project site is located on Lewis Street from South Broadway Street and extends approximately 0.35 Miles to the east to South Ontario Street in the City of De Pere, Brown County, Wisconsin. The site location is shown in the figure below and on the Site Location Diagram in Appendix A of this report.



Site Location (approximately outlined in red)

The site vicinity generally consists of residential properties. The Fox River is located approximately 250 feet west of the site. The street currently contains an asphalt paved two-lane cross section with at-grade intersections to adjacent streets and driveways.

ECS interpreted site specific topography from the Brown County Planning and Land Services interactive map <https://browncounty.maps.arcgis.com/apps/> to estimate the existing site grade elevations. According to the Brown County online map, we anticipate the existing site grade elevations range from approximately EL. 605 feet to EL. 614 feet MSL (Mean Sea Level) and generally descend to the west across the site.

ECS visually reviewed historical aerial photographs of the subject site available on Google Earth. The aerial photographs indicated the project site use has remained relatively unchanged from its current use since at least 1992.

2.2 PROPOSED CONSTRUCTION

ECS understand the proposed construction will include the reconstruction of approximately 0.35 miles of Lewis street between South Broadway Street and South Ontario Street. We anticipate the proposed vertical profile will be located within 2 feet (+/-) of the existing grade. Further, we anticipate consideration will be given to the use of a bituminous or Portland cement concrete pavement section.

Where the borings encounter subsurface conditions that might be detrimental to the support of the proposed construction. This report assumes the owner is willing to accept a low to moderate risk for reduced pavement performance, and a low risk for utility settlement exceeding 1 inch.

If ECS' understanding of the project or assumptions concerning the owner's acceptable risk level is not correct or the design changes, please contact ECS so that we may review these changes and revise our recommendations, as appropriate.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

Our exploration procedures are explained in greater detail in Appendix B including the insert titled "Subsurface Exploration Procedures." Our scope of work included drilling two (2) Standard Penetration Test (SPT) borings to a depth of approximately 10 to 15 feet below the existing grade within the project limits. City of De Pere personnel selected the general boring locations and depths and staked the boring locations at the site. The approximate boring locations are shown on the Boring Location Diagram in Appendix A of this report.

City of De Pere personnel determined the surface elevation at the boring locations. The approximate surface elevation at each boring can be found on the boring logs in Appendix B. We assumed the elevations to be referenced to the North American Vertical Datum of 1988 (NAVD88).

3.1 SUBSURFACE CHARACTERIZATION

According to the University of Wisconsin Extension Geological and Natural History Survey and U.S. Geological Survey, the site of the proposed construction lies above Phanerozoic bedrock of the Ordovician System consisting of sedimentary rocks of Paleozoic Age. The bedrock formation generally lies within the Sinnipee Group (Os), which consists of dolomite with some limestone and shale, and includes Galena, Decorah, and Platteville Formations.

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 near surface soils at the site generally consist of Kewaunee silt loam (KhB) and Manawa silty clay loam (McA). Soil survey mapping of the site vicinity is presented in Appendix A of this report. These soil types are described with the following properties:

- Oshkosh silt loam (OnB) – Glacial lake landforms with parent material consisting of 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.

- **Fill Land**– This component refers to disturbed soils which have been filled or graded. The soil parent materials generally consist of sandy and gravelly outwash and clayey mine spoil or earthy fill. These soils are moderately well drained to somewhat excessively drained and have a low to moderate potential for frost action.

The encountered subsurface conditions in the borings appeared to match published geological mapping. The following sections provide generalized characterizations of the soil strata. For subsurface information at a specific test boring location, refer to the boring logs in Appendix B.

APPROXIMATE SUBSURFACE STRATIGRAPHY				
Approximate Depth to Bottom of Stratum (ft)	Stratum	Description	Ranges of SPT ⁽¹⁾ N-values (bpf)	Unconfined Compressive Strength, Q _p ⁽²⁾ (tsf)
0 – 1.8 (Surface cover)	N/A	Approximate 4 to 5 inches of asphalt pavement, over 5 inches of gravel and 7 inches of concrete.	N/A	N/A
4 – 6	I	Glacial till: very stiff to stiff LEAN CLAY (CL).	7 – 24	1 – 1.5
10 – 15 (End of borings)	II	Lacustrine: very stiff to very soft LEAN CLAY (CL).	2 – 8	0.20 – 2.5

Notes: (1) Standard Penetration Testing.
(2) Estimated from calibrated hand penetrometer.

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.

3.2 GROUNDWATER OBSERVATIONS

The drill crew observed a measurable groundwater level in Boring B-01 during drilling and noted it at a depth of approximately 7.5 feet below the existing grade. However, the drillers did not observe groundwater at the completion of the boring because the use of drilling mud during advancement of the boring often obscures water levels.

Based upon our interpretation of the subsurface data, including water level measurements, in our opinion, the groundwater level within the sand with silt soil strata should be a reasonable indication of the static or "perched" groundwater condition at the time of this exploration program. The definition below can be referenced:

“Perched water is typically of limited quantity, replenished or recharged very slowly. When encountered in an excavation, perched water will typically drain off very quickly, with limited continuous flow or bleeding, unless a source of recharge, such as a leaking utility is present.”

From: *Construction Dewatering and Groundwater Control – New Methods and Applications, 3rd Addition*

Further, 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 boring should be considered when estimating groundwater levels at other points in time.

3.3 LABORATORY SERVICES

ECS 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 based on texture and plasticity using ASTM D2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedures)* as a guide. 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 along with the soil descriptions on the test boring logs. The stratification lines designating the interfaces between earth materials on the logs are approximate; in-situ, the transitions may be gradual.

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.

4.0 DESIGN RECOMMENDATIONS

4.1 PAVEMENT DESIGN CONSIDERATIONS

Subgrade Characteristics: The following pavement design recommendations assume the subgrade consists of generally adequate materials evaluated by ECS, and the subgrade is prepared as recommended in this report.

ECS obtained the values for the Soil Support Value and Design Group Index from the Wisconsin Department of Transportation (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. The following table provides our recommended design values for the first adequate soil strata encountered in the borings.

As footnoted in the table, if more than 2 feet of sub-base fill material is placed below the pavement section, the characteristics of the fill will govern the pavement design:

RECOMMENDED DESIGN VALUES							
Boring Number	Soil Classification		Subgrade Reaction Modulus, K (psi/in) ^(1,2)	Resilient Modulus, M _R (psi) ^(1,2)	Frost Index ^(1,2)	Soil Support Value ^(1,2)	Design Group Index ^(1,2)
	USCS	AASHTO					
B-01	CL	A-6	150	3,000	F-3	4.2	12
B-02	CL	A-6	150	3,000	F-3	4.2	12

Notes:

- (1) 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 adequate 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.

Based on the results of our soil borings, ECS recommends the use of the pavement design parameters noted in the following table:

RECOMMENDED PAVEMENT DESIGN PARAMETERS	
Design Parameter	Recommended Value
Subgrade Reaction Modulus (psi/in)	150
Resilient Modulus (psi)	3,000
Frost Index	F-3
Soil Support Number	4.2
Design Group Index	12

For grading work and drainage design, soil volume shrinkage should be in the range of approximately 25 to 35 percent for the encountered clay soils. These values correlate to soil volume expansion factors of approximately 33 to 54 percent. For design purposes we recommend using an average soil volume shrinkage factor of 30 percent (43 percent expansion factor).

Areas of subgrade stabilization and/or undercut may be required where exposed soils contain more than 5 percent organic content or where proof-rolling during construction indicates rutting or deflection exceeds 1 inch, especially if the subgrade is subjected to construction traffic disturbance or if construction occurs during adverse weather conditions. In addition, we recommend providing Excavation Below Subgrade (EBS) for frost concerns in areas where the exposed subgrade contains highly frost susceptible soil having an "A-4" AASHTO designation. 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.

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. The transition zone should start at the trench walls, and at a depth of 3 feet below the finished pavement grade and rise at a slope of 1-vertical to 3-horizontal as it extends perpendicular to the trench. However, a transition zone is

not necessary where EBS areas are backfilled with soils similarly 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 "1½ 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 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*. 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.

Pavement Drainage: An important consideration with the design and construction of pavements is surface and subsurface drainage. Softening of the subgrade and other problems related to the deterioration of the pavement can be expected where standing water develops, either on the pavement surface or within the base course layer. 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, silty subgrade soils should be properly sloped to avoid dips or pockets where water may become trapped. Dips in the silty 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. Infiltration is surface water that enters the pavement through the joints, pores, or cracks in the pavement, and through shoulders and areas adjacent to pavements from precipitation. Subterranean water is a source of water from a high-water table on the site. Based on the observed groundwater levels in the borings, we consider surface water infiltration to be the main source of water to be considered for pavement design on this project.

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 the pavement. However, maintenance of pavement on undocumented fill sites may require more maintenance and sooner. Failure to perform preventative maintenance may reduce the service life of the pavement and increase the costs for corrective maintenance and full pavement rehabilitation. To help reduce water infiltration through 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.

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 SUBGRADE PREPARATION

5.1.1 Stripping and Initial Site Preparation

The subgrade preparation should consist of stripping vegetation, root mat, topsoil, existing fill, foundations, pavements, and other soft/very loose or unsuitable materials from the 10-foot expanded building limits, 5-foot expanded pavement limits, and 5 feet beyond the toe of engineered fills, where feasible. ECS should be retained to observe and document that topsoil and other potentially unsuitable surficial materials have been removed prior to the placement of engineered fill or construction of structures.

Additionally, we recommend either abandoning or relocating existing utilities outside the proposed building areas. Utilities not reused should be capped-off and removed or properly abandoned in-place in accordance with local codes and ordinances.

5.1.2 Proof-rolling

After the removal of surface materials, cutting to the proposed subgrade, and prior to the placement of engineered fill or other construction materials, the exposed subgrade should be observed by ECS. The exposed subgrade should be proof-rolled with construction equipment having a minimum axle load of 10 tons (e.g., fully loaded tandem-axle dump truck in clayey soils or large smooth drum roller in sandy soils). Proof-rolling should be traversed in two perpendicular directions with overlapping passes of the vehicle under the observation of ECS. This procedure is intended to assist in identifying localized yielding materials.

Where proof-rolling identifies areas of rutting or deflection greater than 1-inch, those areas should be repaired prior to the placement of subsequent engineered fill or other construction materials. Methods of stabilization, such as undercutting, moisture conditioning, or chemical stabilization should be discussed with ECS to identify possible solutions. Test pits may be excavated to explore the shallow subsurface materials to help in determining the cause of the observed unstable materials, and to assist in the evaluation of appropriate remedial actions to stabilize the subgrade.

Some slab areas may be inaccessible to appropriate proof-roll equipment. These areas should be evaluated with hand-operated testing equipment to check the subgrade support characteristics.

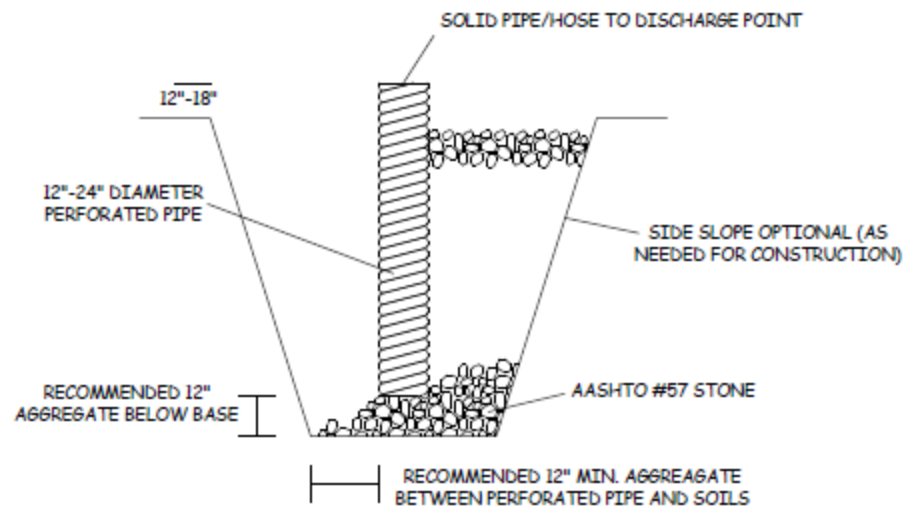
Near surface subgrade soils having a high moisture content and/or those having N-values less than 10 bpf may not pass a proof-roll and may need to be undercut or improved. Some undercutting or repair of unstable subgrade soils should be anticipated during slab and pavement subgrade preparation. If construction 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 may 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.

5.1.3 Site Temporary Dewatering

The contractor should make their own assessment of temporary dewatering needs based upon the limited subsurface groundwater information presented in this report. Soil sampling is not continuous, and thus soil and groundwater conditions may vary between sampling intervals (typically 5 feet). If the contractor believes additional subsurface information is needed to assess dewatering needs, they should obtain such information at their own expense. ECS makes no warranties or guarantees regarding the adequacy of the provided information to determine dewatering requirements; such recommendations are beyond our scope of services.

Dewatering systems are a critical component of many construction projects. Dewatering systems must be selected, designed, and maintained by a qualified and experienced contractor familiar with the geotechnical and other aspects of the project. Failure to properly design and maintain a dewatering system for a given project can result in delayed construction, unnecessary foundation subgrade undercuts, detrimental soil conditions, and localized settlement of nearby infrastructure, foundations, slabs-on-grade, and pavements, etc. Water discharged from site dewatering systems shall be discharged in accordance with local, state, and federal requirements.

Based on the subsurface exploration at this site, as well as our experience on other sites in nearby areas of similar geologic setting, ECS anticipates the construction dewatering at this site will be mainly to remove accumulated surface water and perched water. The typical primary strategy for addressing perched groundwater seeping into excavations is pumping from trench and sump pits with sump pumps. The inlet of the sump pump is placed at the bottom of the corrugated pipe and the discharge end of the sump is directed to an appropriate stormwater drain. A typical sump pump drain (found in a sump pit or along a French drain) is depicted below:



Sump Pit/Pump Diagram

Surface Drainage: The surface soils may be erodible. Therefore, the contractor should provide and maintain good site surface drainage during earthwork operations to maintain the integrity of the surface soils. Erosion and sedimentation controls should be in accordance with sound engineering practices and local requirements. 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 workday, the subgrade soils should be sealed by rolling the surface with a smooth drum roller to reduce infiltration of surface water.

5.2 EARTHWORK OPERATIONS

5.2.1 Frost Susceptible Soils

The frost susceptible clay soils encountered in the borings provide a 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 the frost susceptible soils from within 3 feet of the finished pavement grade. The risk at this site related to the frost susceptible soils would generally be moderate.

Based on our assumption of the owner's acceptable level of risk, ECS anticipates the moderately frost susceptible soil will remain in place below pavements provided the soil meets strength requirements. If the owner is only willing to accept a very low risk for reduced pavement performance, then we recommend removal of the frost susceptible soils from within 3 feet of the finished pavement grade. The removed material should then be replaced with a properly compacted engineered fill.

5.2.2 Existing/Previous Construction Considerations

Extreme care must be taken during earthwork utility installation activities adjacent to existing structures scheduled to remain in place. Vibratory compaction equipment can cause interior and exterior building finishes to crack. Mass or localized undercutting adjacent to existing structures may undermine existing foundations and pavements. Excavation below existing foundations and pavements shall consider appropriate preventative measures, such as shoring and underpinning to help prevent loss of subgrade support. In no case shall excavations extend below adjacent foundations and pavements unless the contractor provides underpinning or other forms of engineered support.

Possible remnants of the previous construction on the site may be present. Site preparation will require complete removal and proper disposal of remnants of previous construction, including pavements, foundations, and underground utilities which are not reused, etc. Disposal of debris should be in accordance with local, state, and federal regulations for the material type. Construction remnants left in-place may cause excavation difficulties for new utilities or other future construction.

5.2.3 Engineered Fill

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 typically include natural moisture content, Atterberg limits, grain-size distribution, and moisture-density relationships (i.e., Proctors) for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications. Alternatively, Proctor data from other accredited laboratories can be submitted if the test results are within the last 90 days.

Engineered Fill Materials: Engineered fill is defined as inorganic soils with the following engineering properties and compaction requirements.

ENGINEERED FILL INDEX PROPERTIES	
Subject	Property
Liquid Limit (LL) and Plasticity Index (PI)	LL < 40, PI < 20
Maximum Particle Size	3 inches
Maximum Fines Content Passing #200 Sieve	20 % by dry weight
Maximum Organic Content	5 % by dry weight

STRUCTURAL FILL COMPACTION REQUIREMENTS	
Subject	Requirement
Compaction Standard	Modified Proctor, ASTM D1557
Required Compaction	95% of Max. Dry Density
Moisture Content	-2 to +3 % points of the soil's optimum value
Loose Thickness	8 inches prior to compaction

On-Site Borrow Suitability: The on-site non-organic LEAN CLAY (CL) may be feasible to use as engineered fill but should be further evaluated and approved by ECS prior to its use. Engineered fill must be free of frozen matter, deleterious materials, or chemicals that may result in the material being classified as “contaminated.” Some conditions at the time of construction, such as wet or freezing weather, may preclude the use of on-site soil, and it may be necessary to use an imported less moisture sensitive or less frost susceptible granular material. Proposed engineered fill materials should be checked by ECS prior to placement.

Fill Placement: 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 frozen or frost-heaved soils should be removed prior to placement of engineered fill or other fill soils and aggregates. Excessively wet soils or aggregates should be scarified, aerated, and moisture conditioned.

Engineered fill placed below foundations and within the foundation influence zone should extend 1 foot beyond the outside edges of the footings and from that point, outward laterally 1 foot for every 2 feet of fill thickness below the footing. If lean concrete is utilized to replace weaker/low bearing soils or unsuitable soils, lateral over-excavation is typically not necessary, but the excavation should be 1 foot wider than the footing (6 inches on each side), and the lean concrete should be allowed to sufficiently harden prior to placement of the foundation concrete. Use of lean mix concrete to limit lateral over-excavation may not be effective in portions of the site where granular soils or soft/very loose soils cause caving of the excavation sidewalls. In addition, we **strongly** recommend ECS document the material exposed in the excavations does not exhibit obvious characteristics that would adversely affect the performance of the foundation system.

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 and Silts). A vibratory steel drum roller should be used for compaction of coarse-grained soils (Sands and Gravels) as well as to help seal compacted surfaces.

5.3 UTILITY INSTALLATIONS

Utility construction should be conducted in accordance with *The Standard Specifications for Sewer and Water Line Construction in Wisconsin*.

Utility Subgrades: ECS expects the soils encountered in our exploration to be generally adequate for support of municipal utility pipes at typical utility depths. The pipe subgrade should be observed and probed for stability by ECS to confirm the encountered materials meet our recommendations. Crop tillage, soft/very loose, organic, or otherwise undesirable materials encountered at the utility pipe subgrade elevation should be removed and replaced with properly 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 and State requirements. ECS recommends granular bedding consist of crushed stone chips in accordance with Table 32 and Chapter 8.43.0 of *The Standard Specifications for Sewer and Water Line Construction in Wisconsin*.

Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the recommendations for engineered fill given in this report. We recommend cover material consist of material in accordance with Table 36 and Chapter 8.43.3 of *The Standard Specifications for Sewer and Water Line Construction in Wisconsin*.

Granular backfill material should consist of material in accordance with Table 37 and Chapter 8.43.4 of *The Standard Specifications for Sewer and Water Line Construction in Wisconsin*. Excavated material in accordance with Chapter 8.43.5 of *The Standard Specifications for Sewer and Water Line Construction in Wisconsin*, and as recommended in the *Earthwork Operations* Section of this report could also be used as backfill.

We do not recommend flood compaction of the backfill, especially within a cohesive soil excavation, where cohesive soils are used as backfill, and/or where a shallow water table exists. Mechanical compaction is recommended and preferred since it generally provides more uniform compaction than flood compaction.

5.3.1 Excavation Safety

The contractor should make and maintain 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.

6.0 CLOSING

ECS has prepared this report to guide the geotechnical-related design and construction aspects of the project. 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 or changes, either because of our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted so we can review our recommendations and provide additional or alternate recommendations that reflect the proposed construction.

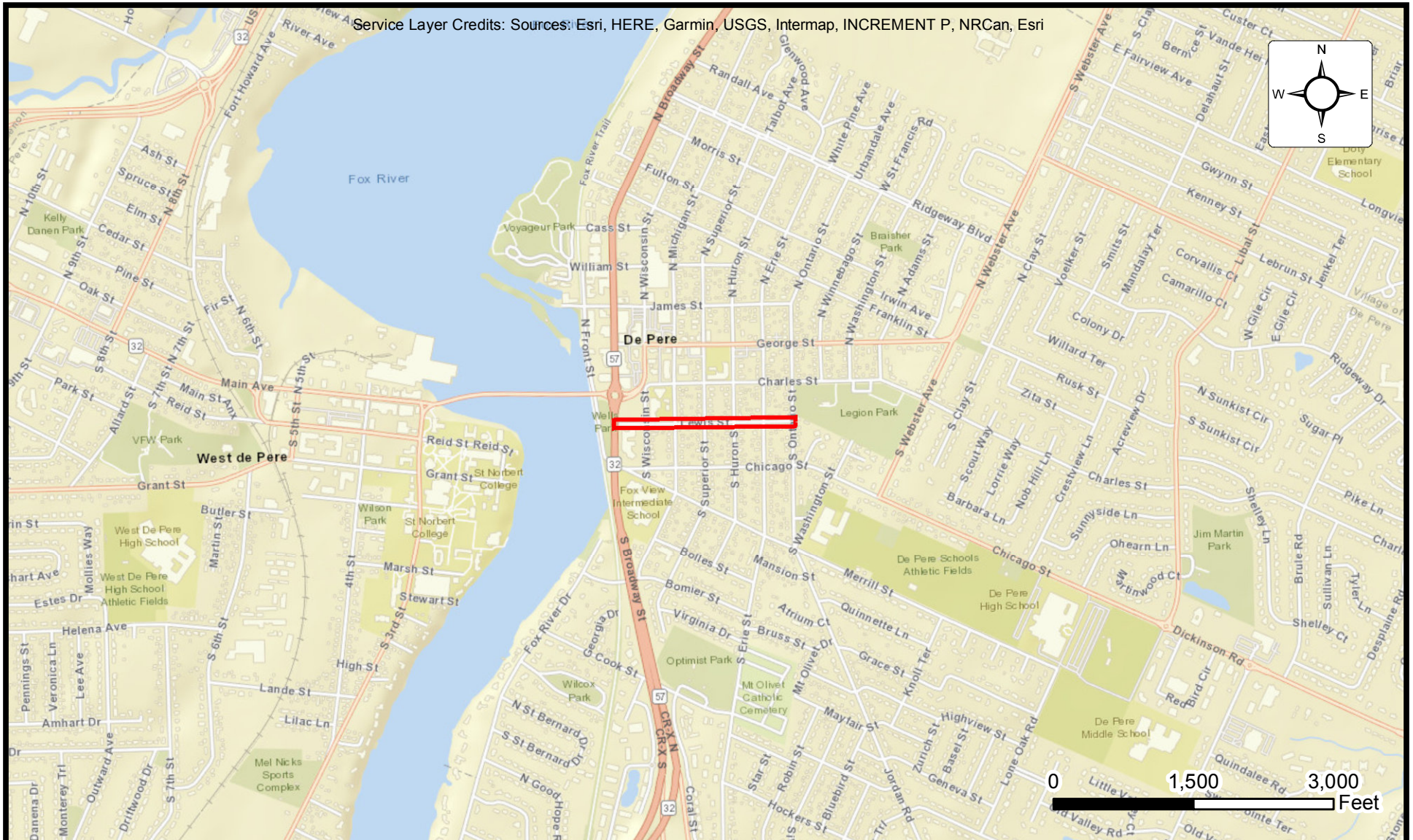
We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations, and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendation should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

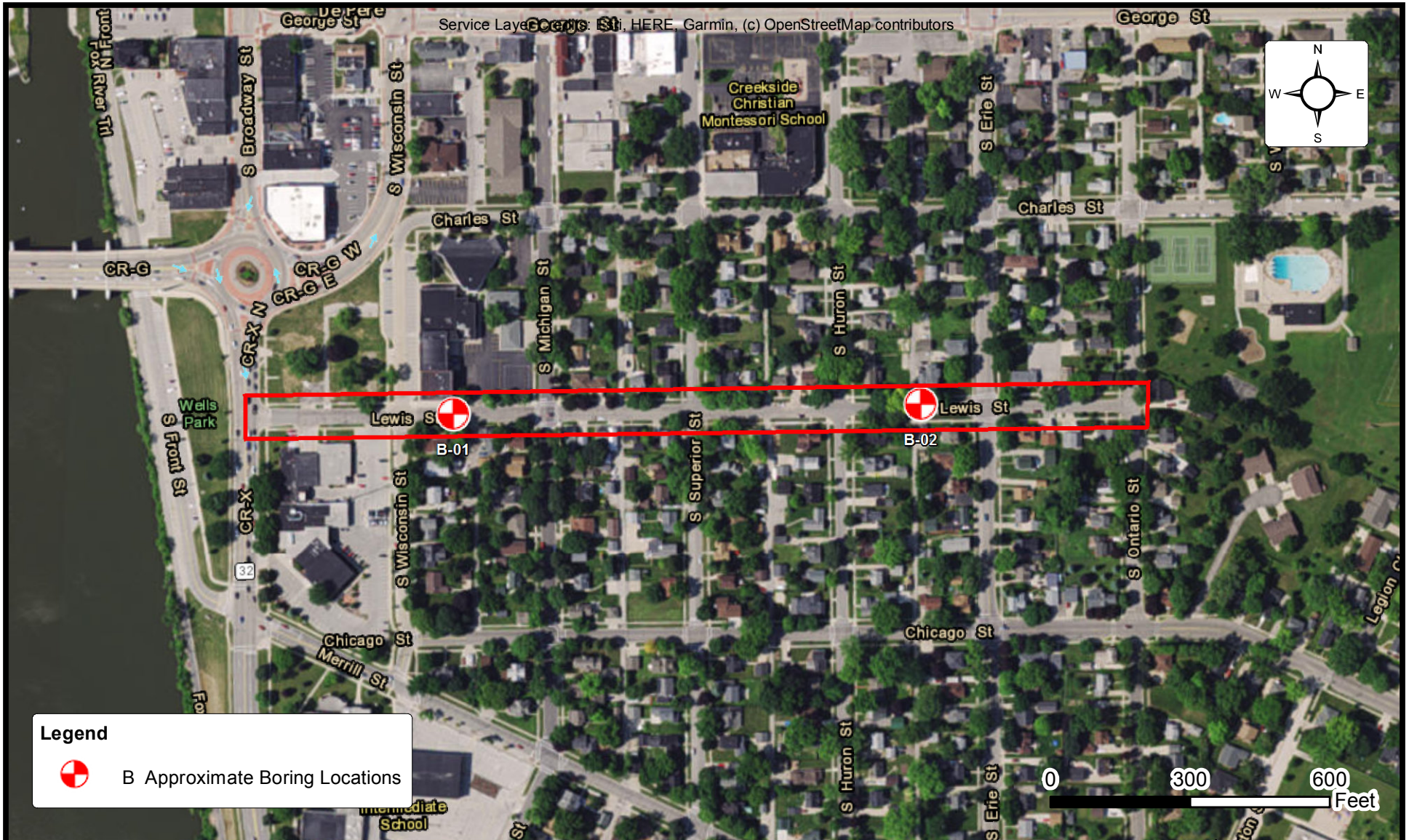
APPENDIX A – Diagrams & Reports

Site Location Diagram
Boring Location Diagram
Soil Survey Map



DE PERE, WISCONSIN
CITY OF DE PERE

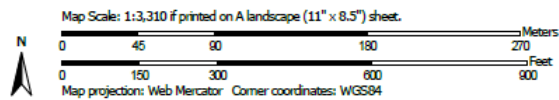
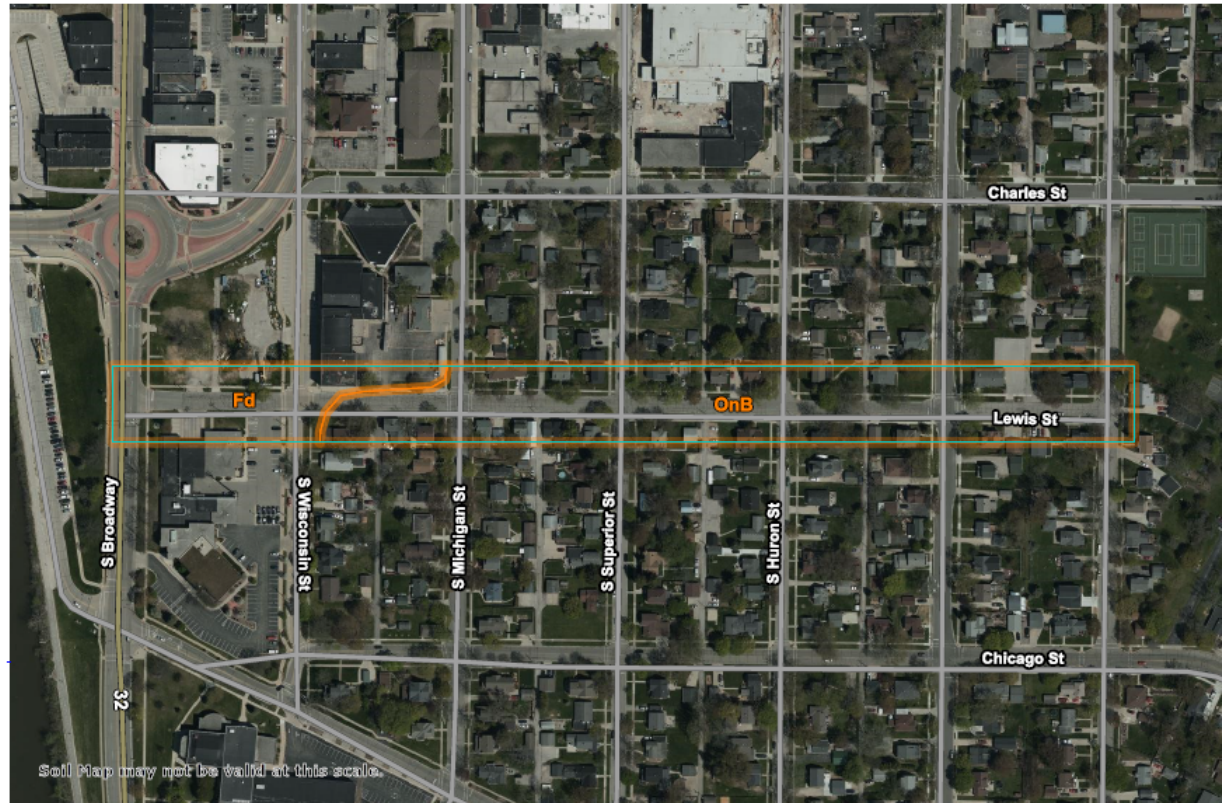
ENGINEER MEK
SCALE AS NOTED
PROJECT NO. 59:2582-C
SHEET 1 OF 1
DATE 12/29/2021



BORING LOCATION DIAGRAM LEWIS STREET

**DE PERE, WISCONSIN
CITY OF DE PERE**

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SHEET 1 OF 1
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Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

12/29/2021



SOIL SURVEY MAP LEWIS STREET

DE PERE, WISCONSIN
CITY OF DE PERE

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PROJECT NO. 59:2582-C
SHEET 1 OF 1
DATE 12/29/2021

APPENDIX B – Field Operations

Subsurface Exploration Procedure: Standard Penetration Testing (SPT)

Reference Notes for Boring Logs

AASHTO Soil Classification System

Boring Logs B-01 and B-02



SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 12 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT test is typically performed for every two to five feet.
- Obtain 1¾-inch diameter soil sample



**Drilling Methods May Vary—* The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.



REFERENCE NOTES FOR BORING LOGS

MATERIAL^{1,2}

	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	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, QP ⁴	SPT ⁵ (BPF)	CONSISTENCY ⁷ (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
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

RELATIVE AMOUNT ⁷	COARSE GRAINED (%) ⁸	FINE GRAINED (%) ⁸
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective (ex: "Silty")	25 - 45	30 - 45

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT ⁵	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

WATER LEVELS⁶

	WL (First Encountered)
	WL (Completion)
	WL (Seasonal High Water)
	WL (Stabilized)

FILL AND ROCK

FILL	POSSIBLE FILL	PROBABLE FILL	ROCK

¹Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

²To 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.

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

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

⁵Standard 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). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

⁶The 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.

⁷Minor deviation from ASTM D 2488-17 Note 14.

⁸Percentages are estimated to the nearest 5% per ASTM D 2488-17.










**AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION
OFFICIALS (AASHTO)
SOIL CLASSIFICATION SYSTEM – AASHTO M145**







The AASHTO system of soil classification is based upon the observed field performance of subgrade soils under highway pavements and is widely used by highway engineers. According to this system, soils having approximately the same general load-carrying abilities are grouped together to form seven basic groups which are designated as A-1, A-2, A-3, A-4, A-5, A-6, and A-7. In general, A-1 soils would be the best soils for a highway subgrade support and then each succeeding group being progressively poorer with A-7 soils having the poorest subgrade support. The one exception is the A-3 group which has better drainage characteristics and provides better subgrade support than the A-2 group. The classification system is shown in the table below:

AASHTO Soil Classification System

General Classification	Granular Materials (35% or less passing #200 Sieve)							Silt-Clay Materials (More than 35% passing #200 sieve)			
Group Classification	A-1		A-3	A-2				A-4	A-5	A-6	A-7
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6
Sieve Analysis, Percent Passing											
#10	50 max	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
#40	30 max	50 max	51 max	-----	-----	-----	-----	-----	-----	-----	-----
#200	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
Characteristics of Fraction Passing #40											
Liquid Limit	-----		-----	40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity Index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min ^{[1][2]}
Usual Types of Significant Constituent Materials	Stone Fragments Gravel and Sand		Fine Sand	Silty or Clayey Gravel and Sand				Silty Soils		Clayey Soils	
General Rating as Subgrade	Excellent to Good							Fair to Poor			

Notes: [1] – Plasticity Index of A-7-5 subgroup is equal to or less than Liquid Limit minus 30.
[2] – Plasticity Index of A-7-6 subgroup is greater than Liquid Limit minus 30.

CLIENT: City of De Pere				PROJECT NO.: 59:2582-C		BORING NO.: B-01		SHEET: 1 of 1		
PROJECT NAME: Lewis Street				DRILLER/CONTRACTOR: ECS59 - Crew 1						
SITE LOCATION: Lewis Street, De Pere, Wisconsin 54115										
NORTHING:		EASTING:		STATION:		SURFACE ELEVATION: 610.2		LOSS OF CIRCULATION 		
								BOTTOM OF CASING 		
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	Plastic Limit Water Content Liquid Limit X ————— ● ————— Δ ⊗ STANDARD PENETRATION BLOWS/FT ROCK QUALITY DESIGNATION & RECOVERY — RQD — REC ○ CALIBRATED PENETROMETER TON/SF [FINES CONTENT] %	
					Asphalt Thickness [4"]					
					Concrete Thickness [7"]					
	S-1	SS	18	14	(CL) {A-6} Glacial till, LEAN CLAY, trace gravel, reddish brown, frozen to moist, stiff			12-6-3 (9)	1.00	
	S-2	SS	18	12				5-4-6 (10)	1.50	
5	S-3	SS	24	18	(CL) {A-6} Glacial till, LEAN CLAY WITH SAND, seams of silty clay, reddish brown, moist, stiff		606	3-3-4-5 (7)	1.50	
	S-4	SS	18	18	(CL) {A-6} Lacustrine, LEAN CLAY, trace sand, reddish brown, moist to wet, firm to very soft			3-4-4 (8)	0.50	
10	S-5	SS	18	18			601	1-1-1 (2)	0.20	
	S-6	SS	18	18				1-1-1 (2)	0.20	
	S-7	SS	18	18			596	1-0-1 (1)	0.20	
15					END OF DRILLING AT 15.0 FT					
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL										
 WL (First Encountered)		7.50		BORING STARTED: Jan 11 2021		CAVE IN DEPTH:				
 WL (Completion)		None		BORING COMPLETED: Jan 11 2021		HAMMER TYPE: Auto				
 WL (Seasonal High Water)				EQUIPMENT: Truck		LOGGED BY: YP		DRILLING METHOD: 3 1/4" HSA 0' to 13.5' (AH)		
 WL (Stabilized)										
GEOTECHNICAL BOREHOLE LOG										

CLIENT: City of De Pere				PROJECT NO.: 59:2582-C		BORING NO.: B-02		SHEET: 1 of 1			
PROJECT NAME: Lewis Street				DRILLER/CONTRACTOR: ECS59 - Crew 1							
SITE LOCATION: Lewis Street, De Pere, Wisconsin 54115											
NORTHING: 542423.7				EASTING: 89314.7		STATION:		SURFACE ELEVATION: 612.2		LOSS OF CIRCULATION 	
								BOTTOM OF CASING 			
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	Plastic Limit Water Content Liquid Limit X ————— ● ————— Δ ⊗ STANDARD PENETRATION BLOWS/FT ROCK QUALITY DESIGNATION & RECOVERY — RQD — REC ○ CALIBRATED PENETROMETER TON/SF [FINES CONTENT] %		
					Asphalt Thickness [5"]						
					Gravel Thickness [5"]						
	S-1	SS	18	14	(CL) {A-6} Glacial till, LEAN CLAY, reddish brown and dark brown, frozen to moist, very stiff to stiff			18-18-6 (24)	⊗ ₂₄	○ 1.50	
	S-2	SS	18	5				4-3-3 (6)	⊗ ₆		
5	S-3	SS	24	10	(CL) {A-6} Lacustrine, LEAN CLAY, reddish brown, moist, very stiff to soft.			608	3-2-4-3 (6)	⊗ ₆	○ 2.50
	S-4	SS	18	8					2-3-5 (8)	⊗ ₈	○ 2.50
10	S-5	SS	18	13			603	2-2-3 (5)	⊗ ₅	○ 0.50	
					END OF DRILLING AT 10.0 FT						
15							598				
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
<input checked="" type="checkbox"/> WL (First Encountered) None					BORING STARTED: Jan 11 2022		CAVE IN DEPTH:				
<input checked="" type="checkbox"/> WL (Completion) None					BORING COMPLETED: Jan 11 2022		HAMMER TYPE: Auto				
<input checked="" type="checkbox"/> WL (Seasonal High Water)					EQUIPMENT: Truck		LOGGED BY: YP		DRILLING METHOD: 3 1/4" HSA 0' to 8.5' (AH)		
<input checked="" type="checkbox"/> WL (Stabilized)											
GEOTECHNICAL BOREHOLE LOG											

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 site-wide 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

PROJECT# 22-02

LEWIS STREET RECONSTRUCTION

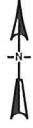
CITY OF DE PERE



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 - G005	TYPICAL SECTIONS
C101 - C111	PLAN AND PROFILE SHEETS
C301 - C313	CROSS SECTIONS
C401 - C402	SURVEY/MAPPING (BENCHMARKS & EROSION CONTROL)
C403 - C404	INTERSECTION DETAILS
C405 - C406	TRAFFIC CONTROL PLANS
C501 - C502	CONSTRUCTION DETAILS
C503	TRAFFIC CONTROL DETAILS

CITY OF DE PERE
BOARD OF PUBLIC WORKS

5/19/2022 *E.P. Rakers*
DATE CITY ENGINEER
5/19/22 *Judith Schmitt Libman*
DATE ASST CITY ADMINISTRATOR / CITY ATTY
5/19/22 *James J. Boyce*
DATE MAYOR

STAMPS:



LIST OF STANDARD ABBREVIATIONS

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

MAPPING & TOPOGRAPHY SYMBOLOGY

DESCRIPTION	SYMBOL	
	EXISTING	PROPOSED
BENCHMARK		
BUSH		
CATCH BASIN/INLET		
CABLE TV BOX		
CONTROL POINT		
ELECTRICAL BOX		
EROSION CONTROL - INLET		
FIELD INLET		
GAS VALVE		
HEDGE		
HYDRANT		
IRON PIPE		
LIGHTPOLE		
MAILBOX		
MANHOLE ELECTRIC		
MANHOLE SANITARY		
MANHOLE STORM		
MONITORING WELL		
POWER POLE		
LIGHT POLE		
SIGN		
SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE		
SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE		
SOIL BORING		
STUMP		
TELEPHONE MANHOLE		
TELEPHONE PEDESTAL		
TREE		
WELL		
WATER SERVICE VALVE		
BUTTERFLY WATER VALVE		
WATER VALVE		

GENERAL CONSTRUCTION NOTES:

- ALL ELEVATIONS ARE REFERENCED TO NAVD 88.
- 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.
- 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.
- 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

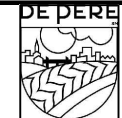
DESCRIPTION	SYMBOL	
	PLAN	
EXISTING SANITARY SEWER LINE	(SIZE AND MATERIAL) San	
PROPOSED SANITARY SEWER LINE	100'-8" PVC SAN San	
EXISTING STORM SEWER LINE	(SIZE AND MATERIAL) ST	
PROPOSED STORM SEWER LINE	100'-8" PVC STM ST	
EXISTING WATER MAIN LINE	(SIZE AND MATERIAL) W	
PROPOSED WATER MAIN LINE	100'-8" 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	
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			



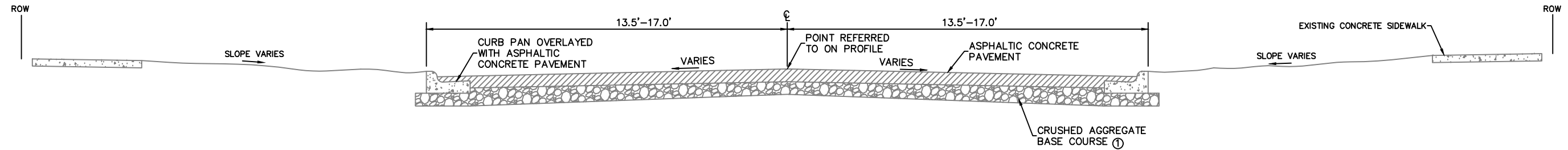
CITY OF DE PERE

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

STANDARD ABBREVIATIONS
AND SYMBOLS

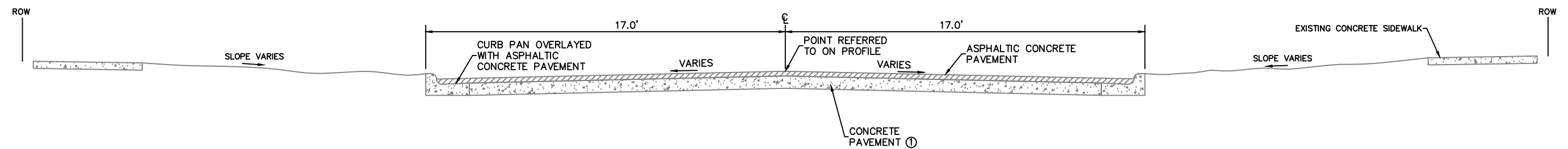
NAME: LEWIS STREET
RECONSTRUCTION
PROJECT # 22-02

BY	DATE	REVISIONS / ISSUES			
		NO.	DATE	BY	REMARKS
SURVEYED					
DRAWN	KAD	01-2022			
DESIGNED					
CHECKED					



EXISTING TYPICAL
STREET SECTION
S. BROADWAY STREET TO S. WISCONSIN STREET
S. HURON STREET TO S. ONTARIO STREET

① NOTE:
SEE SOIL BORING INFORMATION FOR EXISTING
ASPHALT, AGGREGATE BASE, AND SUBSOILS.



EXISTING TYPICAL
STREET SECTION
S. WISCONSIN STREET TO S. HURON STREET

① NOTE:
SEE SOIL BORING INFORMATION FOR EXISTING
ASPHALT, CONCRETE, AND SUBSOILS.



CITY OF DE PERE

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

LEWIS STREET TYPICAL STREET DETAIL

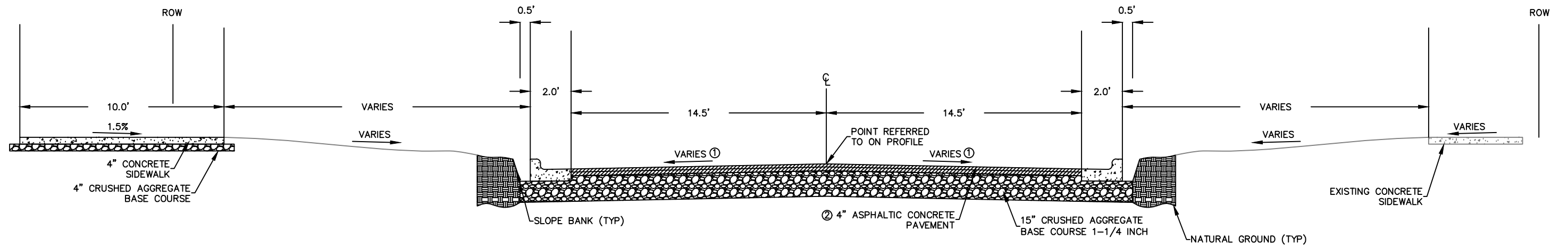
NAME:
LEWIS STREET
RECONSTRUCTION
PROJECT #
22-02

	BY	DATE
SURVEYED		
DRAWN	KAD	4-2022
DESIGNED		
CHECKED	CKK	4-2022

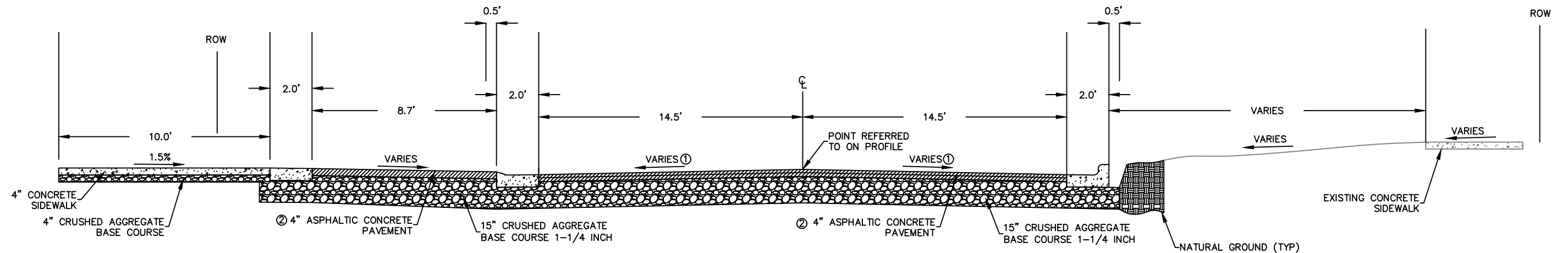
REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE
NO.

G003



PROPOSED TYPICAL
STREET SECTION
(STA 10+97 TO STA 12+01)
(STA 13+84 TO STA 16+58)



PROPOSED TYPICAL
STREET SECTION
(STA 12+01 TO STA 13+84)

NOTES:

① CROSS SLOPE VARIES THROUGH
PROJECT AS FOLLOWS:

LEFT SIDE	RIGHT SIDE
STATION 11+00 TO 11+50 - 2.00% TO 2.50%	STATION 11+00 TO 11+50 - 2.70% TO 1.50%
STATION 11+50 TO 13+11 - 2.50%	STATION 11+50 TO 12+50 - 1.50%
STATION 13+11 TO 13+38 - 2.50% TO 2.76%	STATION 12+50 TO 13+00 - 1.50% TO 1.00%
STATION 13+38 TO 13+50 - 2.76% TO 3.00%	STATION 13+00 TO 13+38 - 1.00%
STATION 13+50 TO 16+50 - 3.00%	STATION 13+38 TO 13+50 - 1.00% TO 2.00%
STATION 16+50 TO 16+77 - 3.00% TO 2.00%	STATION 13+50 TO 14+00 - 2.00% TO 1.53%
	STATION 14+00 TO 14+50 - 1.53% TO 1.00%
	STATION 14+50 TO 16+00 - 1.00%
	STATION 16+00 TO 16+22 - 1.00% TO 1.40%
	STATION 16+22 TO 16+50 - 1.40% TO 3.00%
	STATION 16+50 TO 16+77 - 3.00% TO 1.51%

- ② 4" ASPHALTIC CONCRETE PAVEMENT CONSISTS OF:
2.25" BINDER COURSE: 3 LT 58-28 S
1.75" SURFACE COURSE: 4 LT 58-28 S



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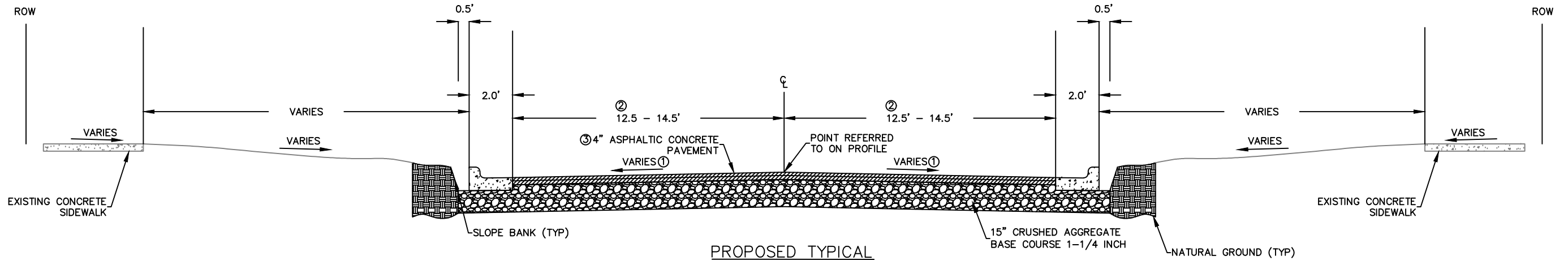
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

LEWIS STREET
TYPICAL STREET DETAIL

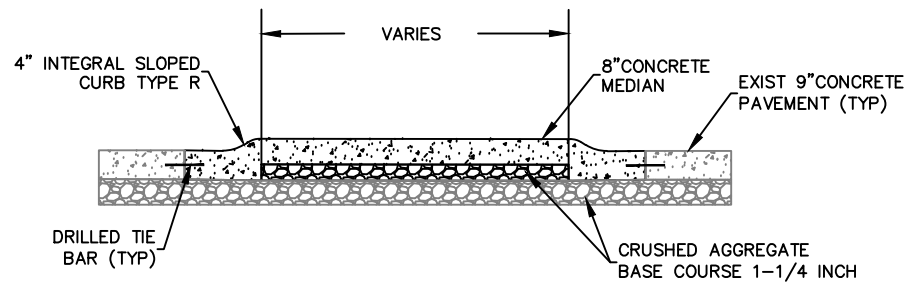
NAME:
LEWIS STREET
RECONSTRUCTION
PROJECT #
22-02

	BY	DATE
SURVEYED		
DRAWN	KAD	4-2022
DESIGNED		
CHECKED	CKK	4-2022

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS



PROPOSED TYPICAL
STREET SECTION
(STA 17+16 TO STA 19+73)
(STA 20+30 TO STA 22+78)
(STA 23+48 TO STA 25+89)
(STA 26+67 TO STA 29+12)



PROPOSED PEDESTRIAN
MEDIAN
(STA 10+68 TO STA 10+97)

NOTES:

① CROSS SLOPE VARIES THROUGH
PROJECT AS FOLLOWS:

LEFT SIDE
STATION 17+00 TO 17+20 - 1.00% TO 3.00%
STATION 17+20 TO 17+50 - 3.00% TO 2.00%
STATION 17+50 TO 17+63 - 2.00% TO 1.00%
STATION 17+63 TO 20+00 - 1.00%
STATION 20+00 TO 20+30 - 1.00% TO 2.00%
STATION 20+30 TO 23+31 - 2.00%
STATION 23+31 TO 23+50 - 2.00% TO 2.50%
STATION 23+50 TO 23+87 - 2.50% TO 3.00%
STATION 23+87 TO 25+85 - 3.00%
STATION 25+85 TO 25+92 - 3.00% TO 2.89%
STATION 25+92 TO 26+00 - 2.89% TO 2.00%
STATION 26+00 TO 26+50 - 2.00%
STATION 26+50 TO 26+70 - 2.00% TO 3.00%
STATION 26+70 TO 29+12 - 3.00%

RIGHT SIDE
STATION 17+00 TO 17+20 - 1.38% TO 2.00%
STATION 17+20 TO 18+44 - 2.00%
STATION 18+44 TO 18+67 - 2.00% TO 3.00%
STATION 18+67 TO 19+70 - 3.00%
STATION 19+70 TO 20+00 - 3.00% TO 1.00%
STATION 20+00 TO 20+30 - 1.00% TO 2.00%
STATION 20+30 TO 23+31 - 2.00%
STATION 23+31 TO 23+50 - 2.00% TO 2.50%
STATION 23+50 TO 23+87 - 2.50% TO 3.00%
STATION 23+87 TO 25+85 - 3.00%
STATION 25+85 TO 25+92 - 3.00% TO 2.88%
STATION 25+92 TO 26+00 - 2.88% TO 2.00%
STATION 26+00 TO 26+70 - 2.00%
STATION 26+70 TO 27+00 - 2.00% TO 1.00%
STATION 27+00 TO 29+12 - 1.00%

② WIDTH CHANGES AS FOLLOWS:

LEFT SIDE
STATION 17+16 TO 19+73 - 14.5'
STATION 20+30 TO 22+78 - 14.5'
STATION 23+48 TO 25+89 - 12.5'
STATION 26+67 TO 29+12 - 12.5'

RIGHT SIDE
STATION 17+16 TO 19+73 - 14.5'
STATION 20+30 TO 22+78 - 14.5'
STATION 23+48 TO 25+89 - 12.5'
STATION 26+67 TO 29+12 - 12.5'

③ 4" ASPHALTIC CONCRETE PAVEMENT CONSISTS OF:
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1.75" SURFACE COURSE: 4 LT 58-28 S



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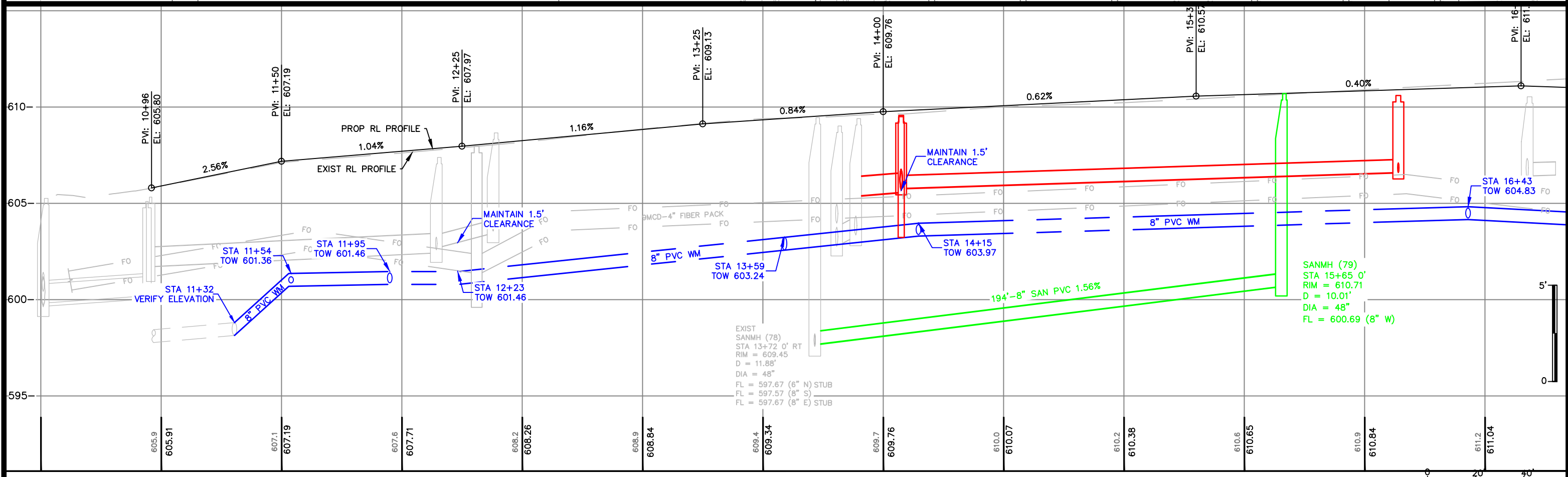
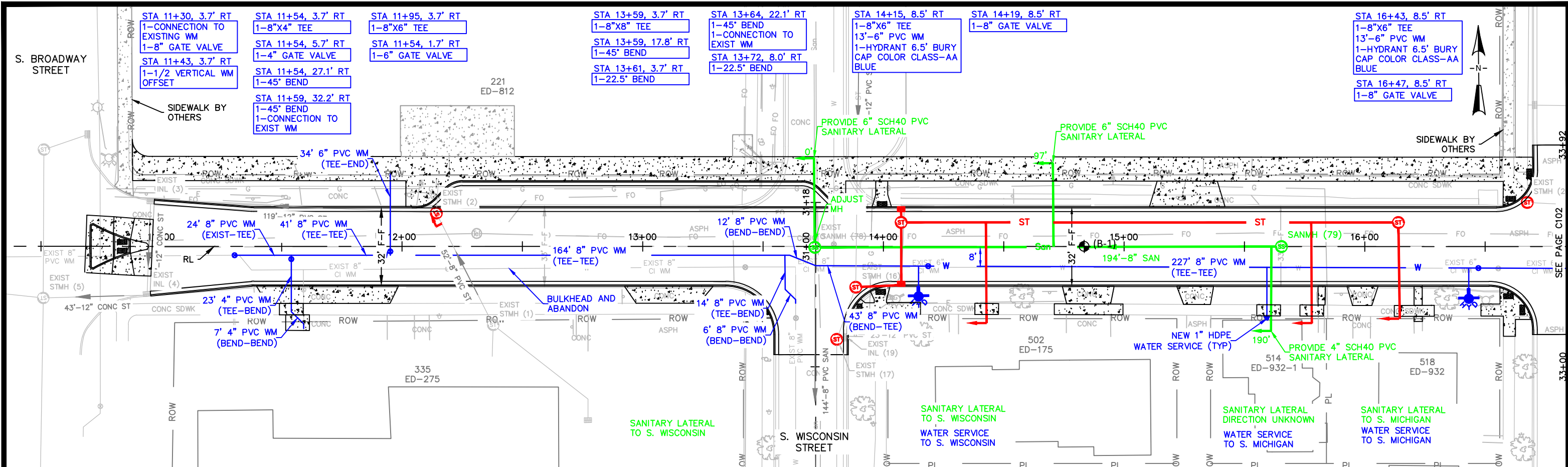
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

LEWIS STREET
TYPICAL STREET DETAIL

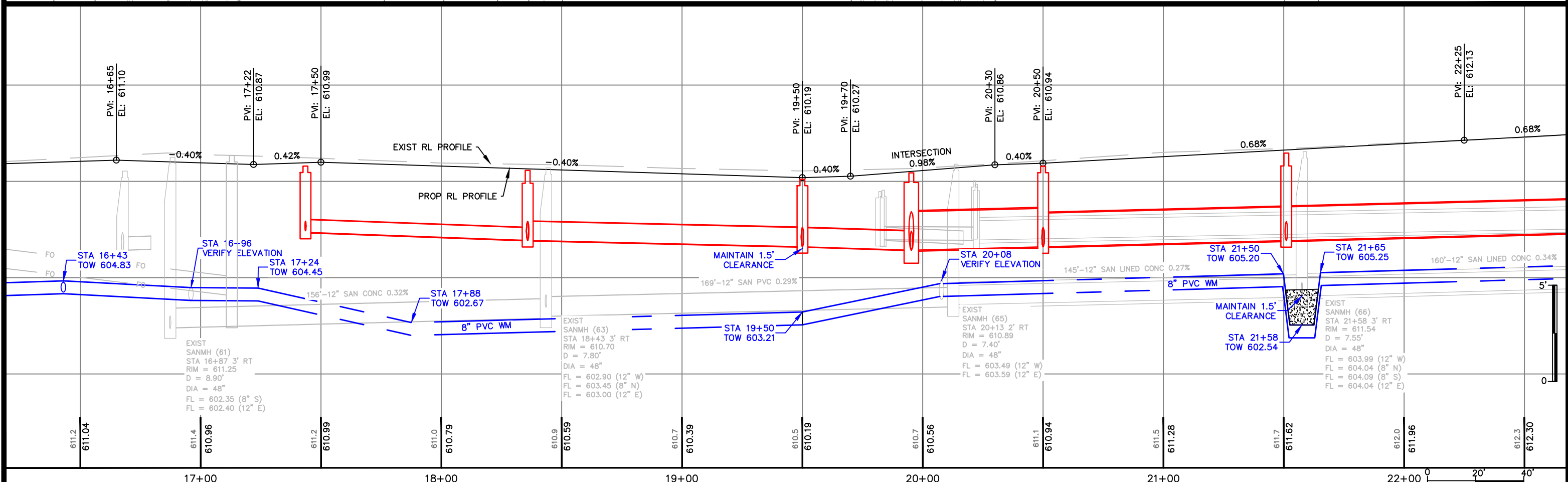
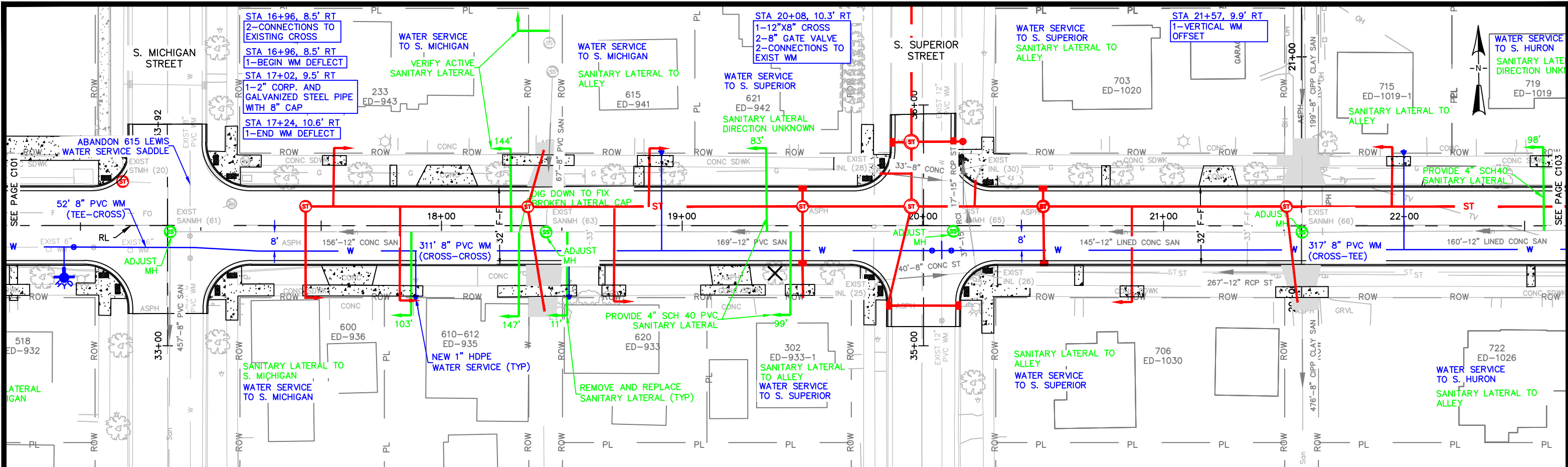
NAME:
LEWIS STREET
RECONSTRUCTION
PROJECT #
22-02

	BY	DATE
SURVEYED		
DRAWN	KAD	4-2022
DESIGNED		
CHECKED	CKK	4-2022

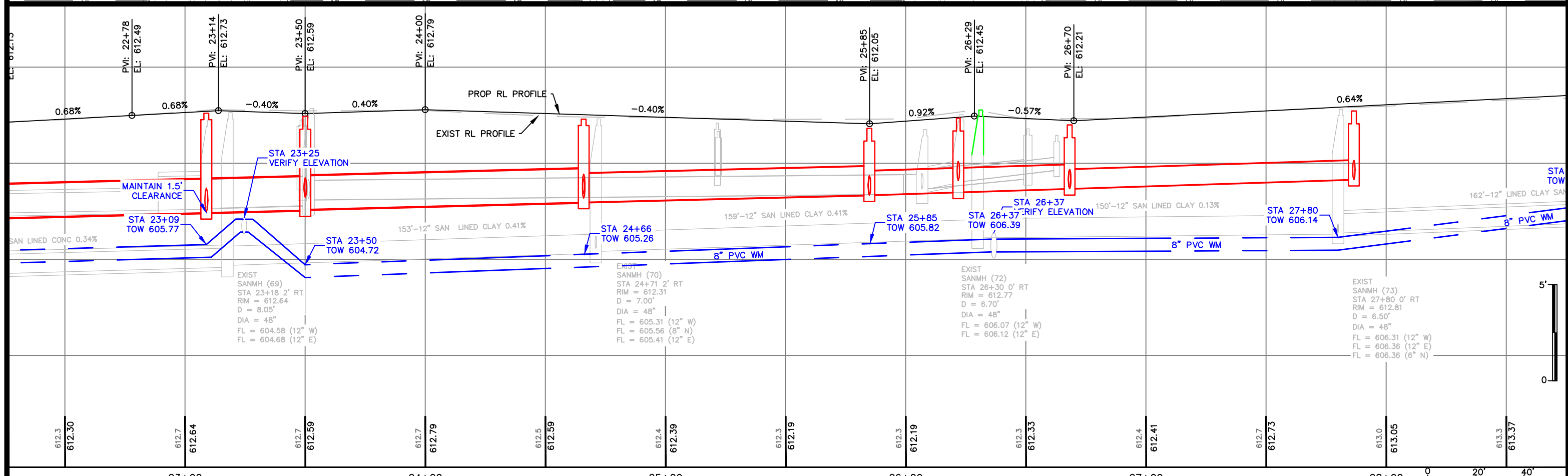
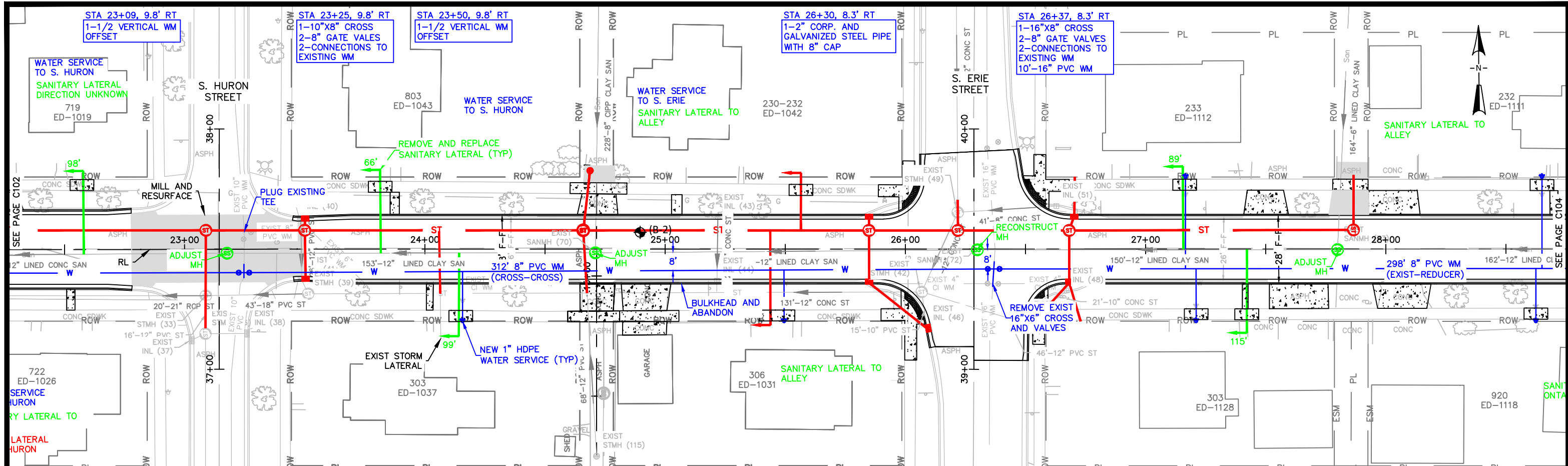
REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS



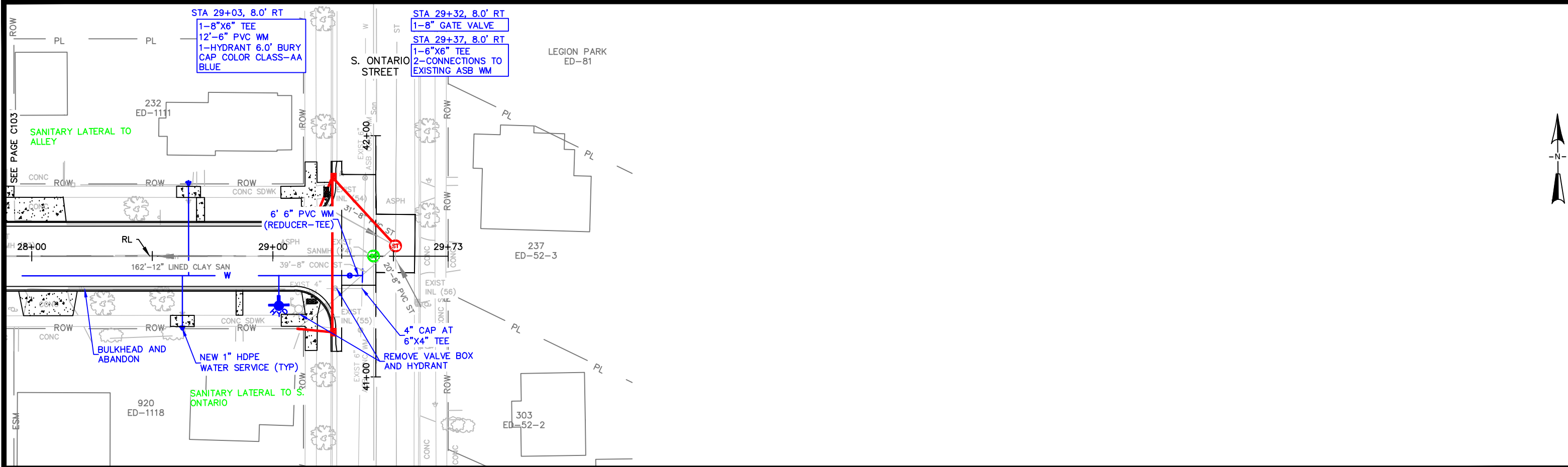
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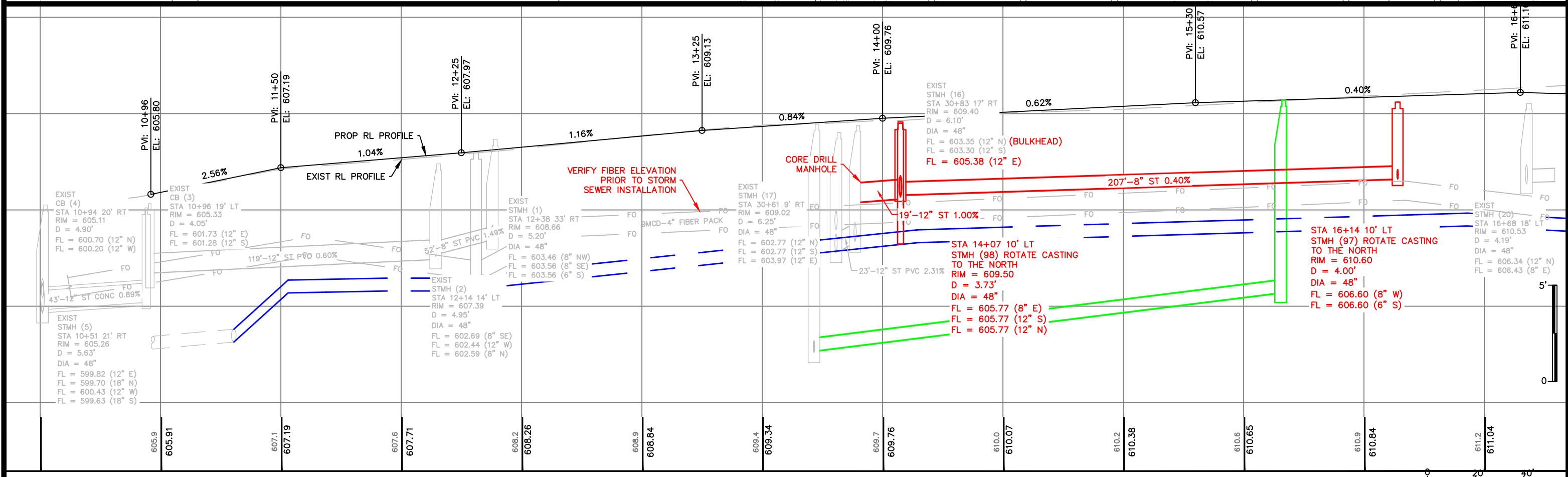
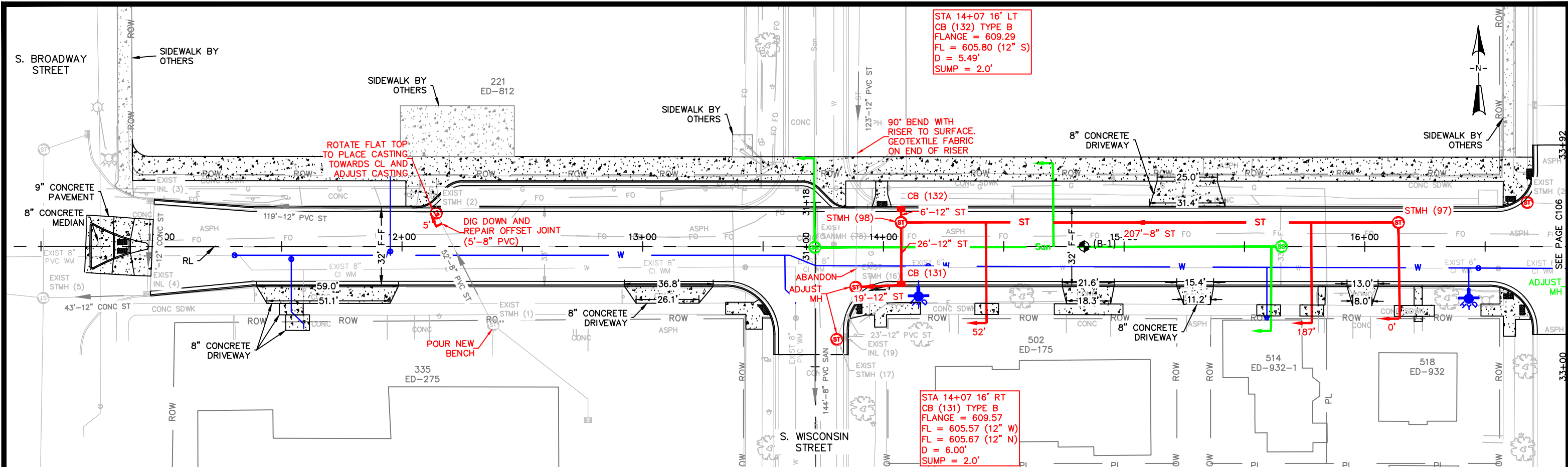


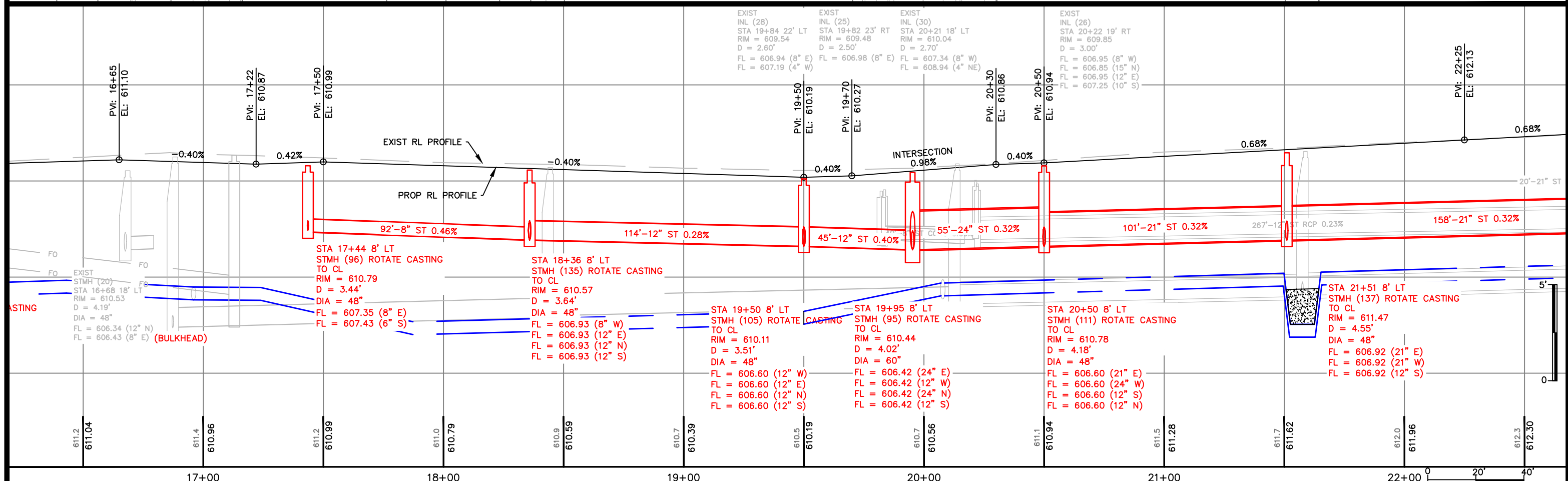
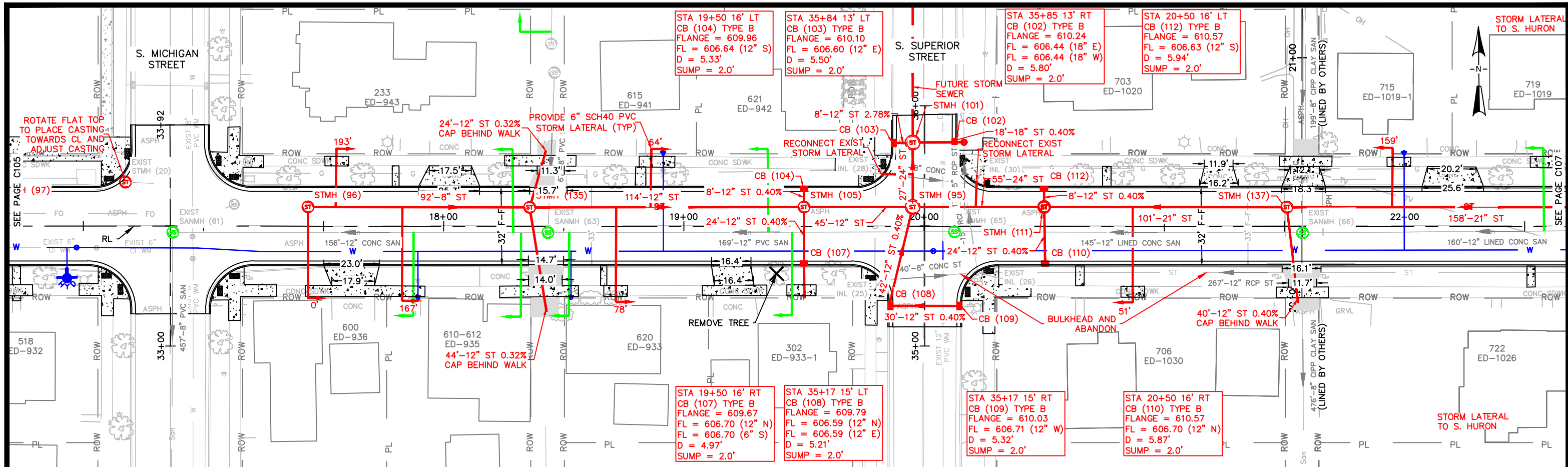
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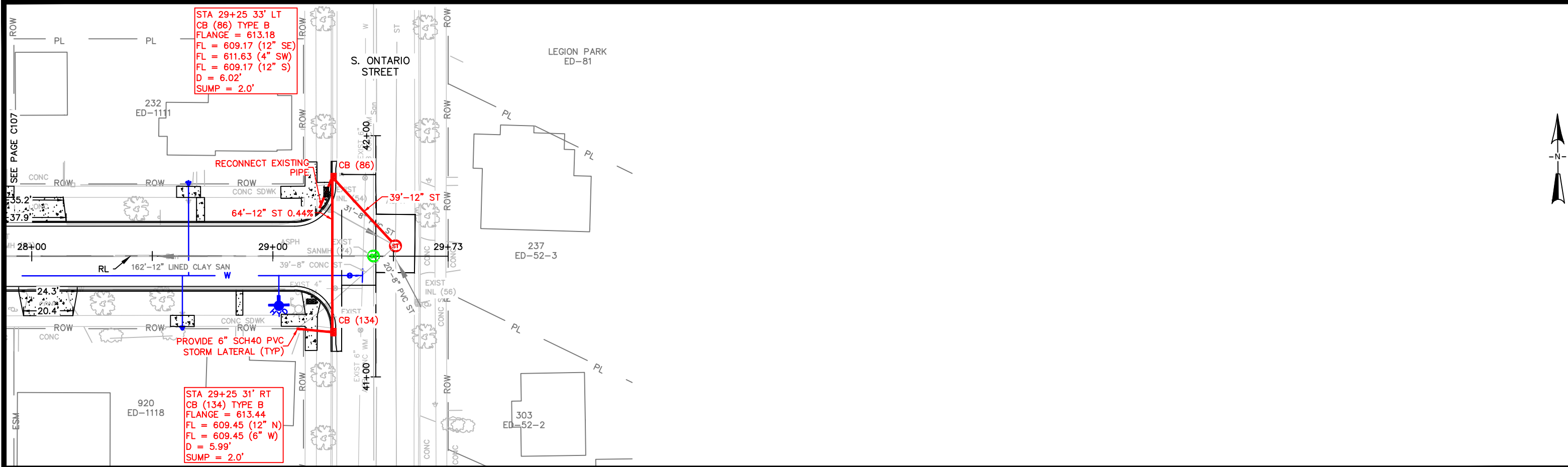


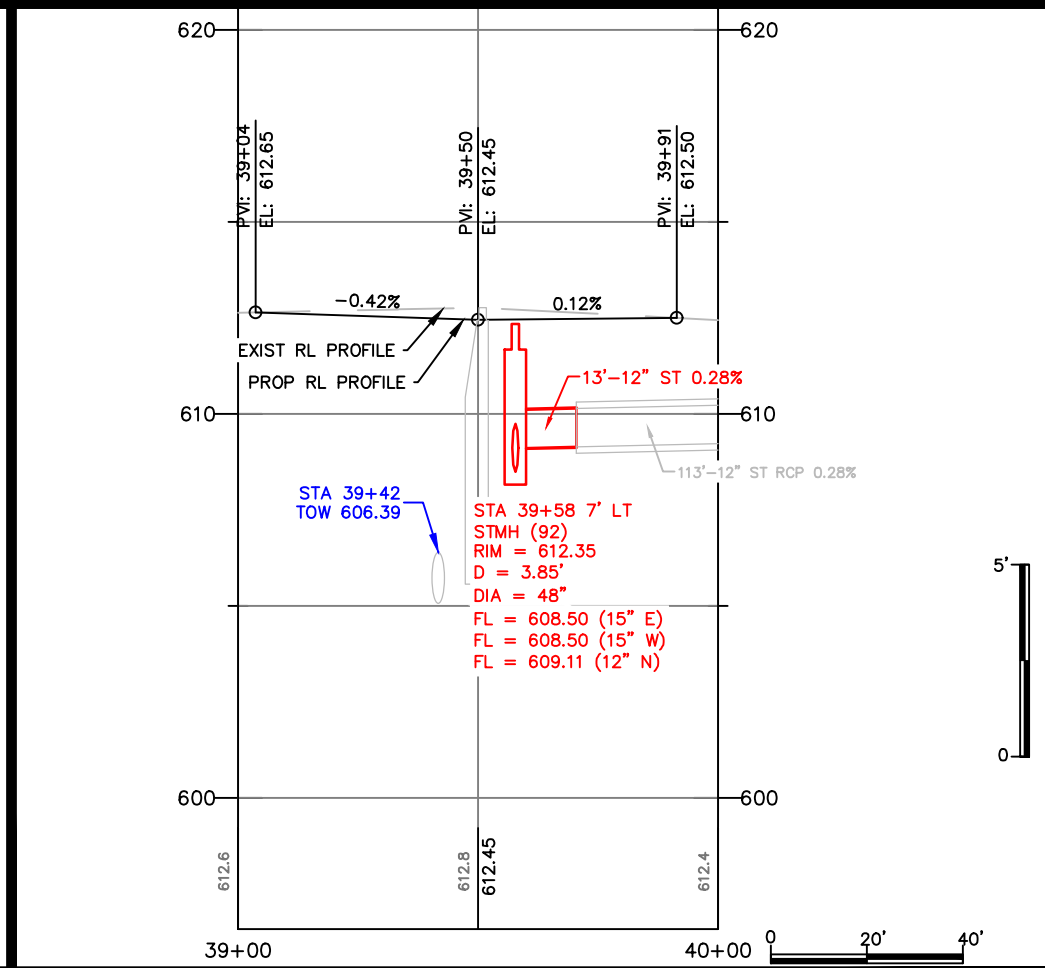
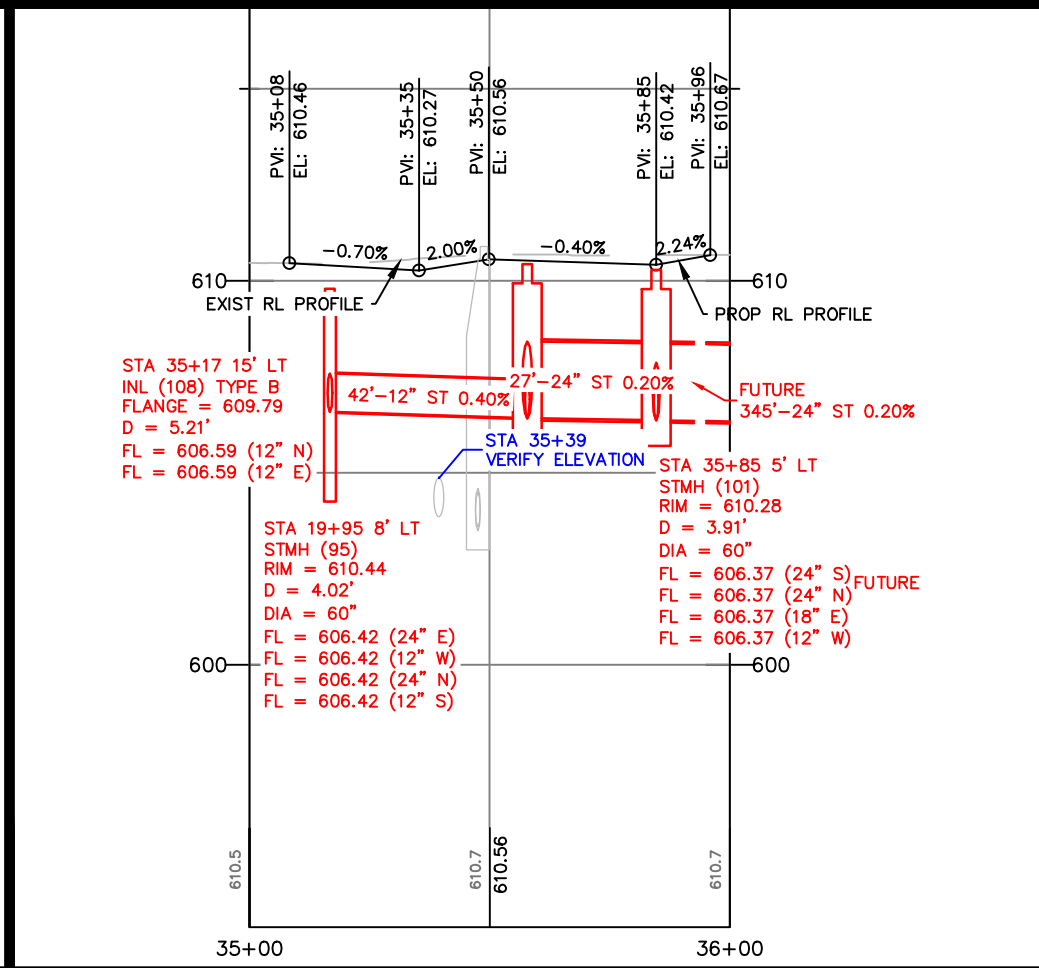
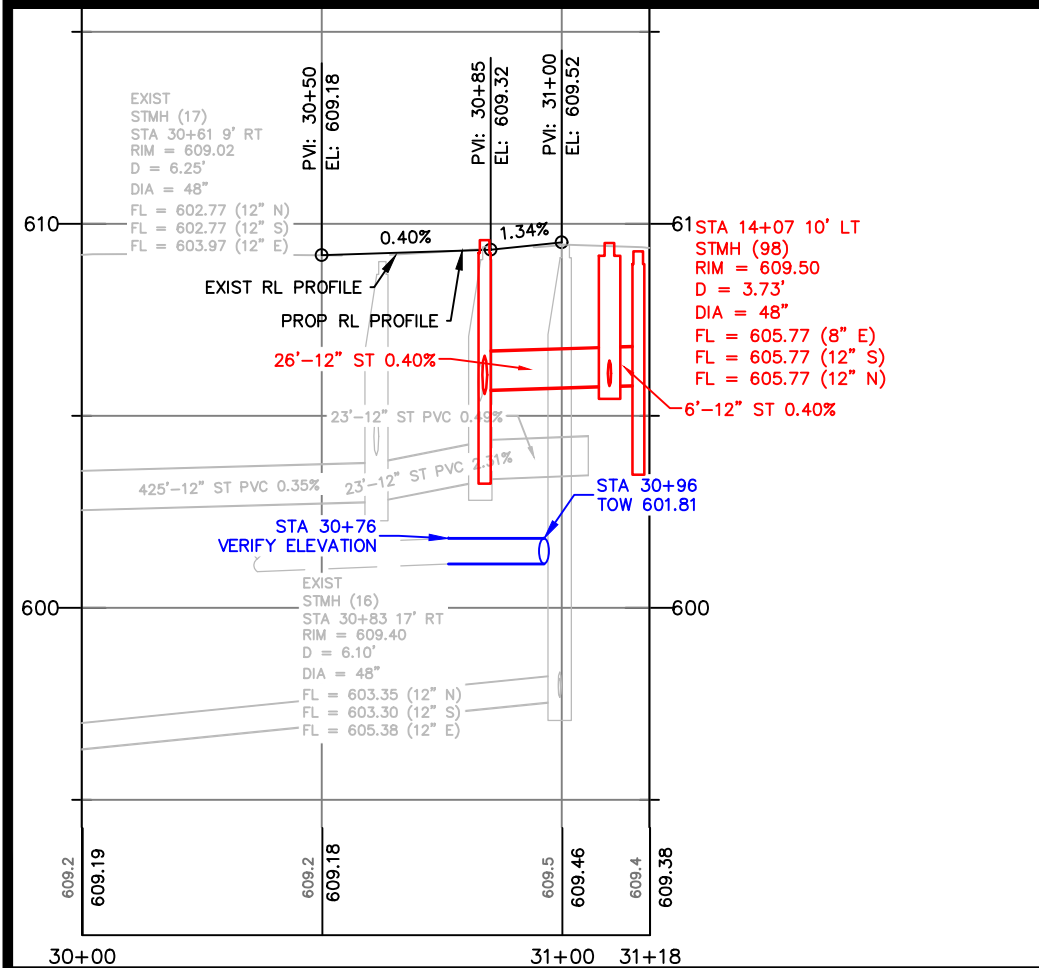
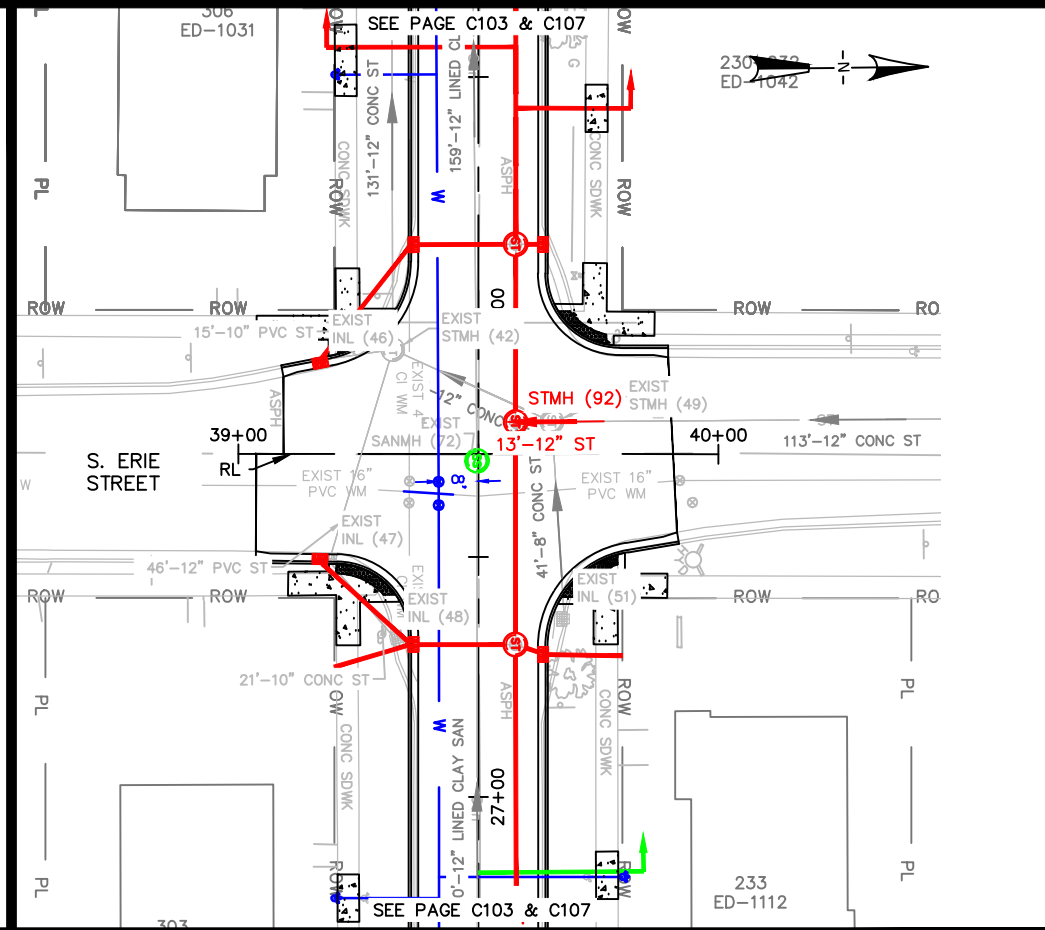
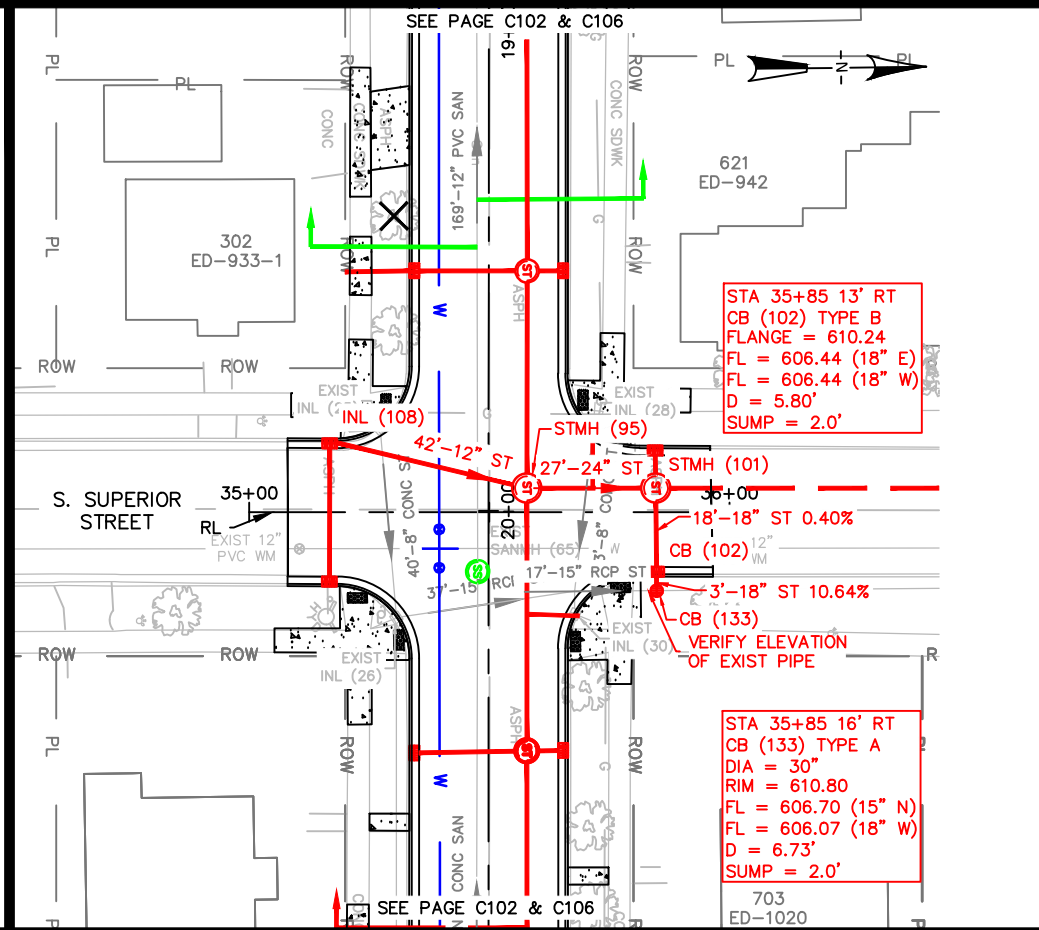
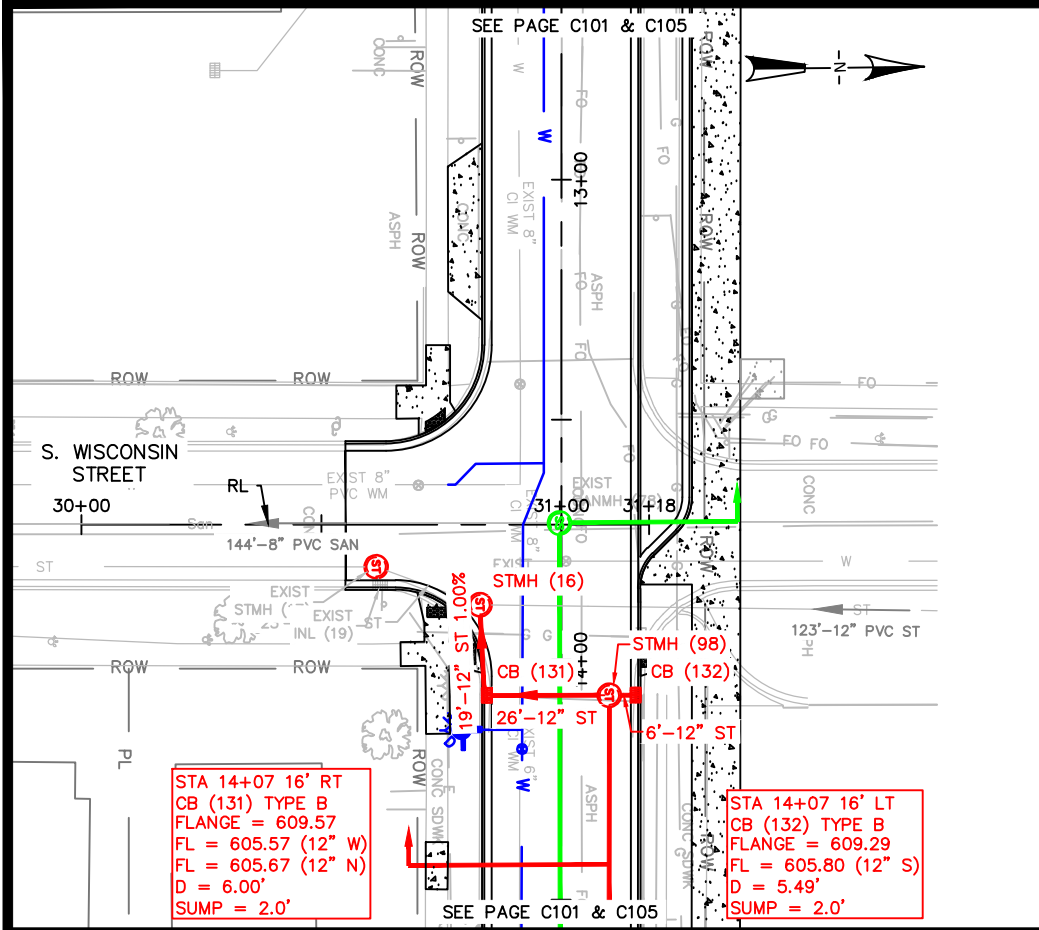
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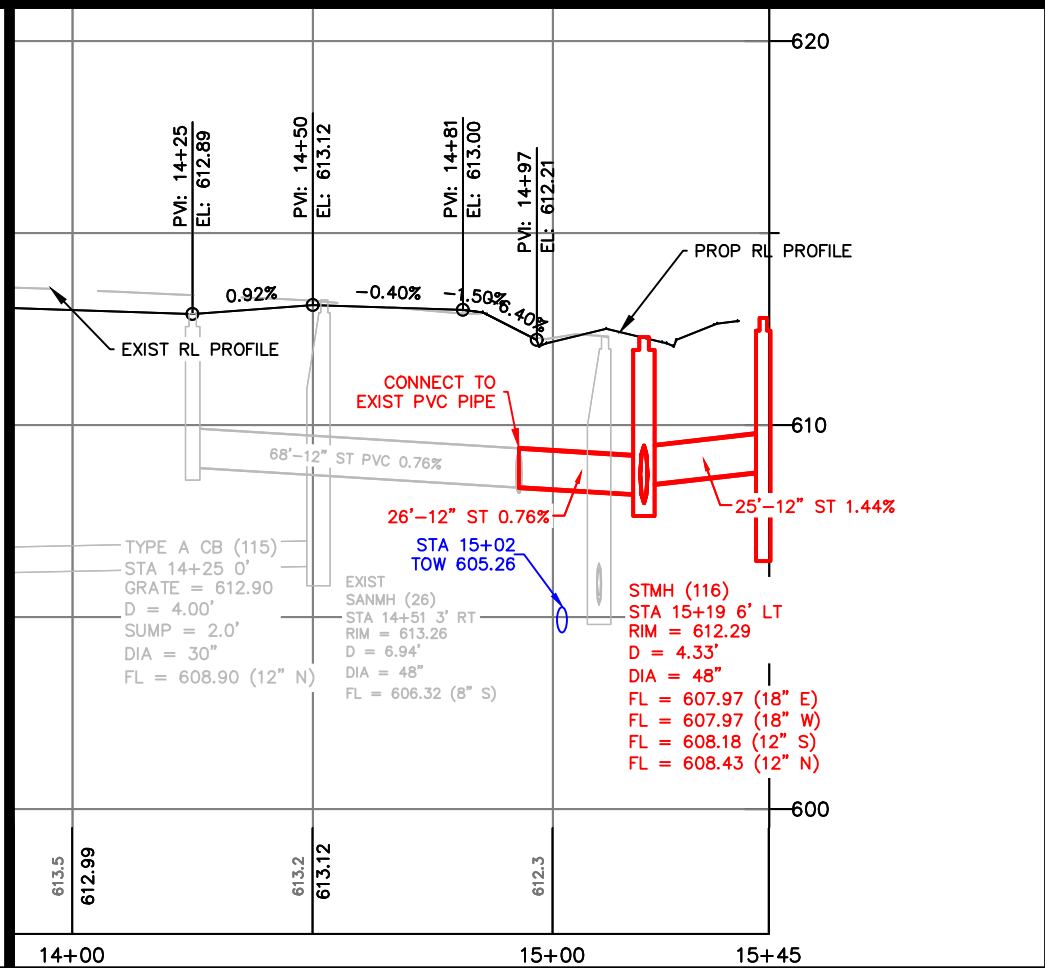
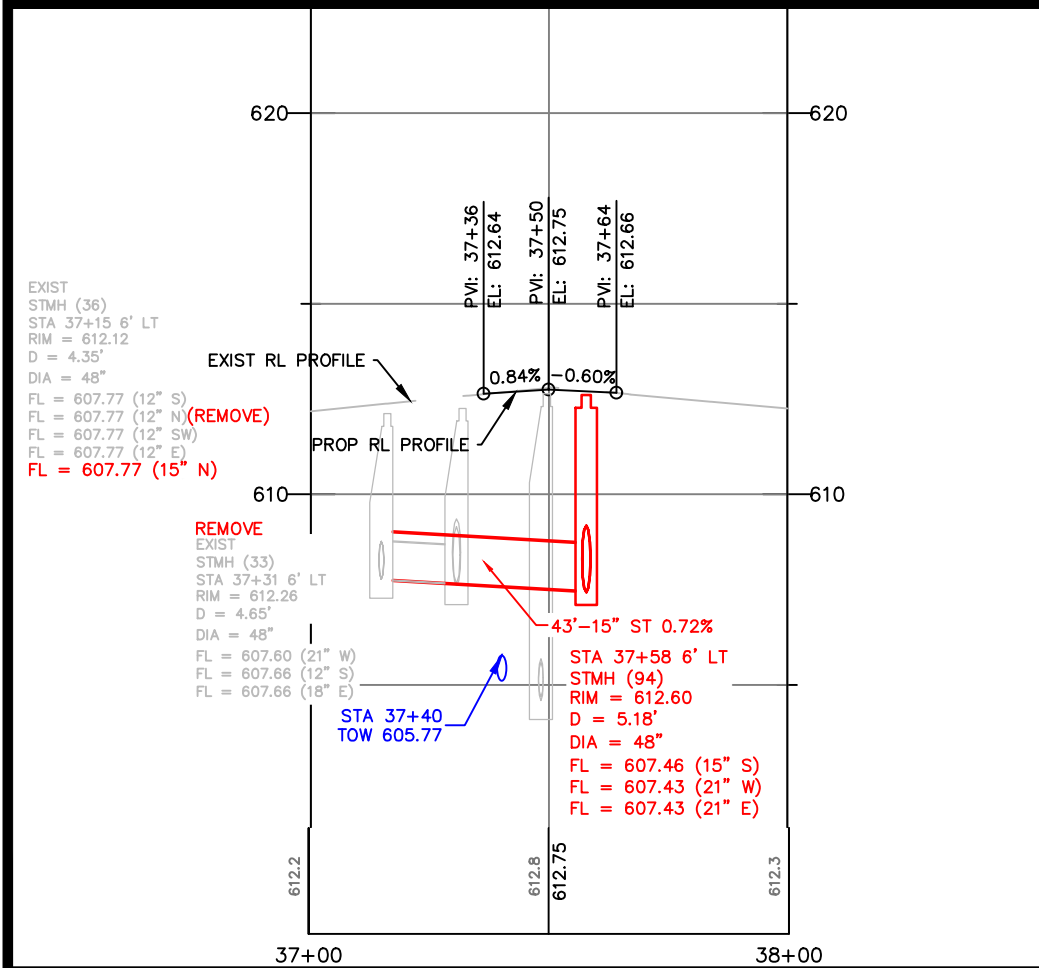
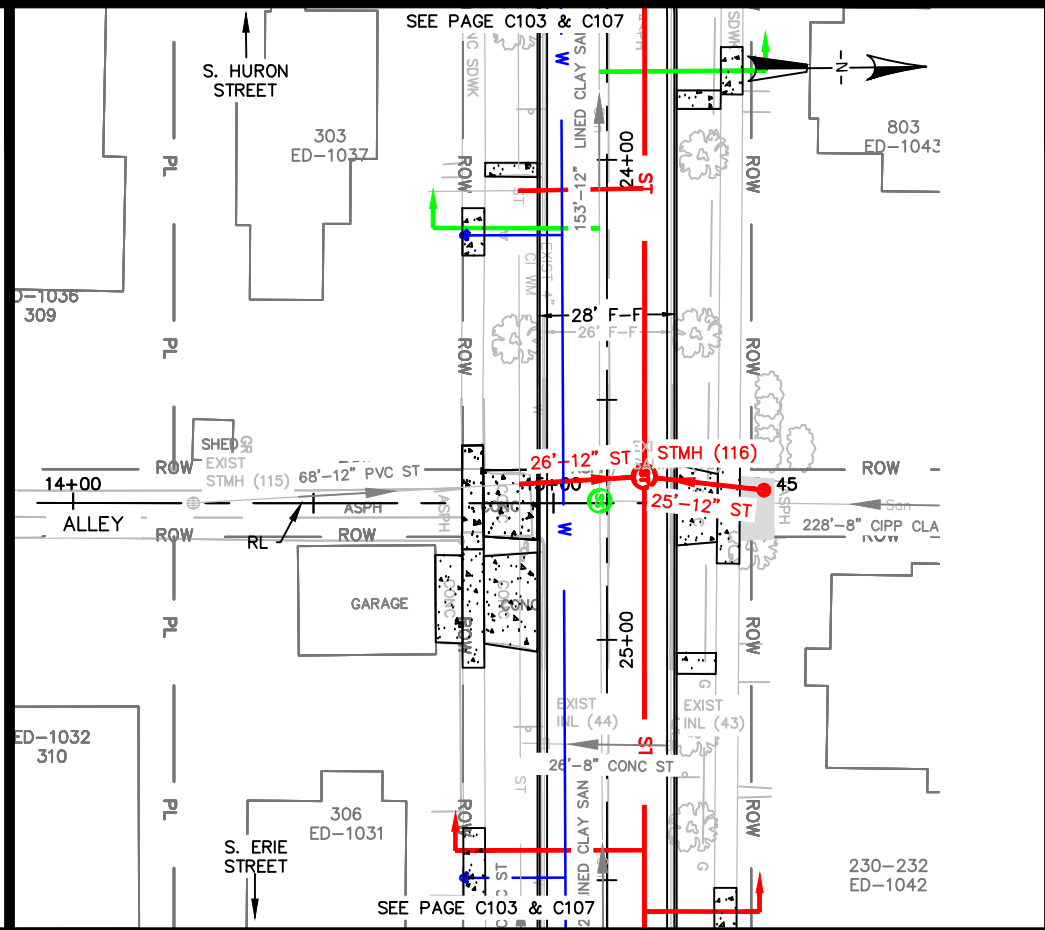
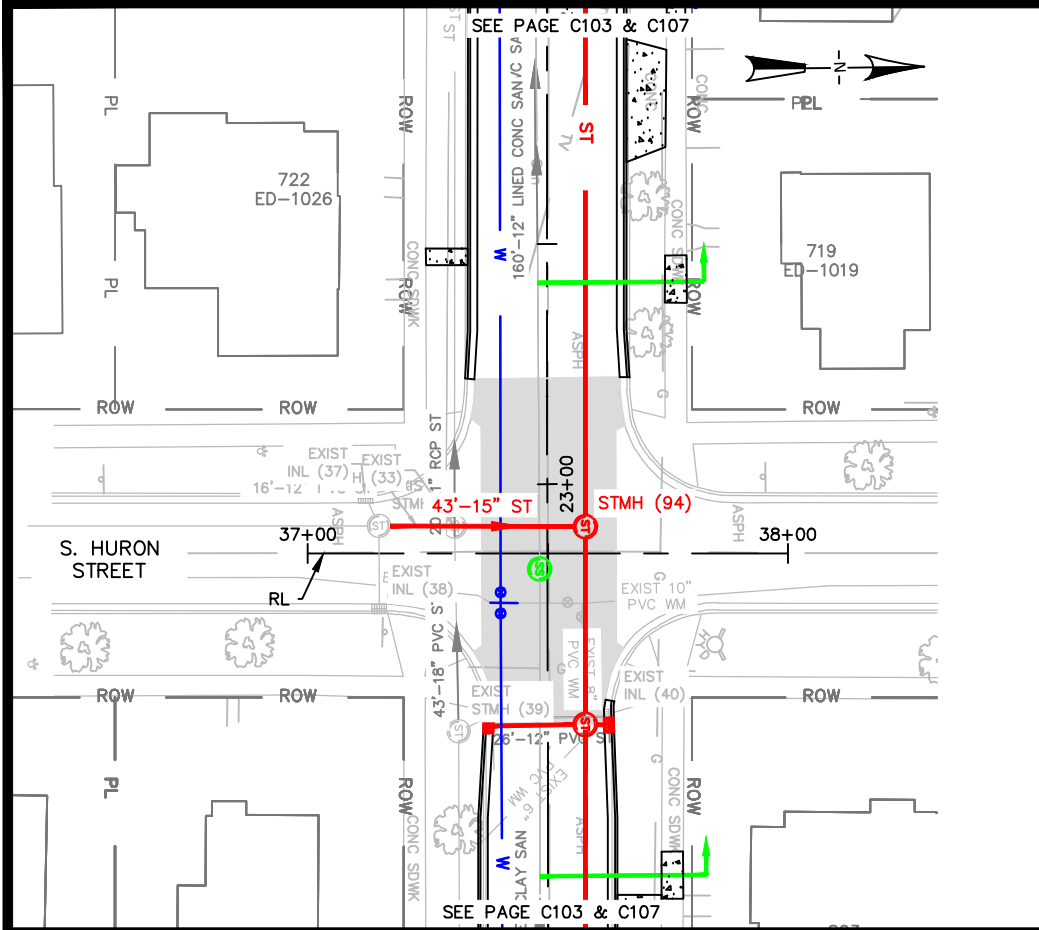


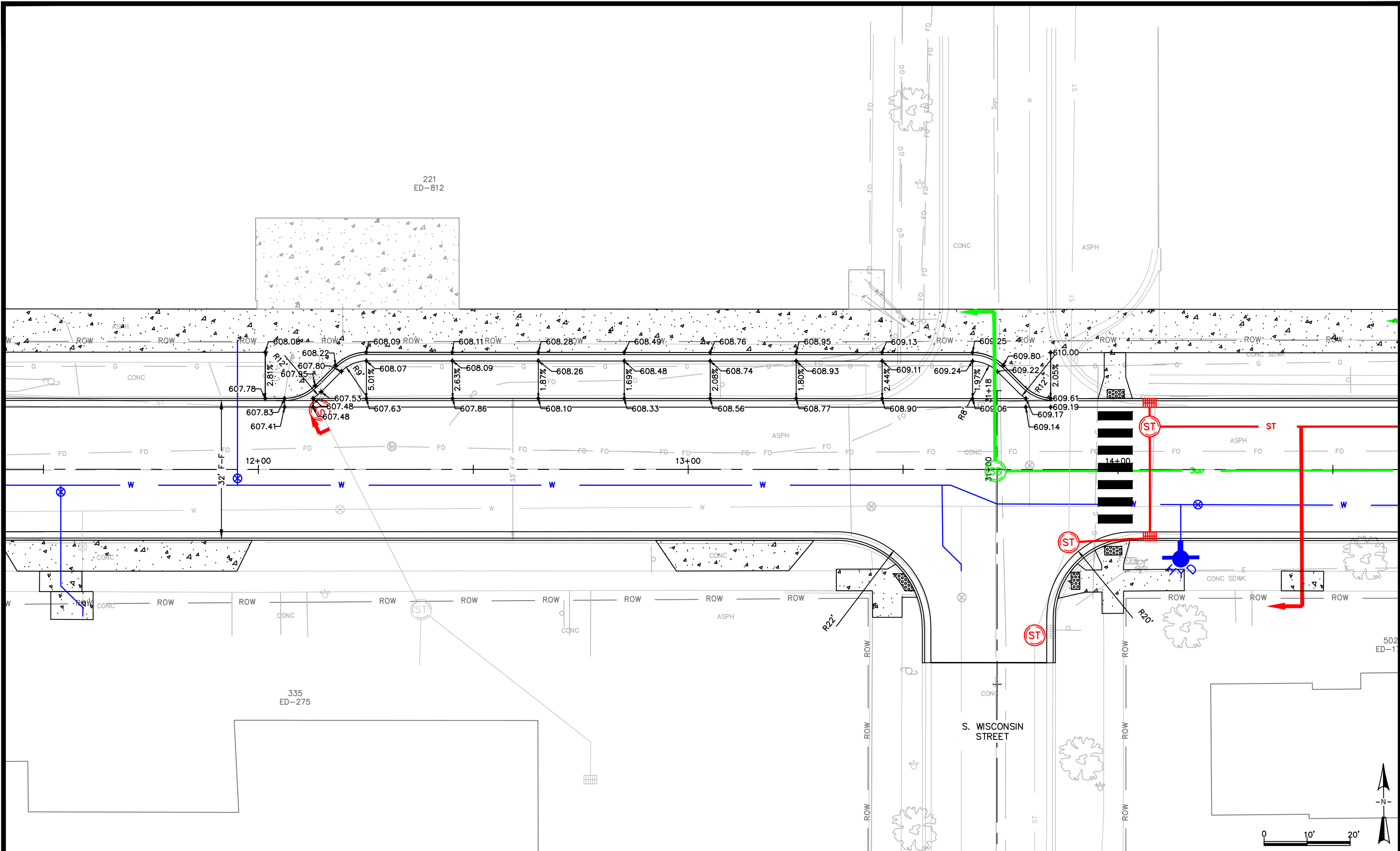














CITY OF DE PERE

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LEWIS STREET
CROSS SECTIONS

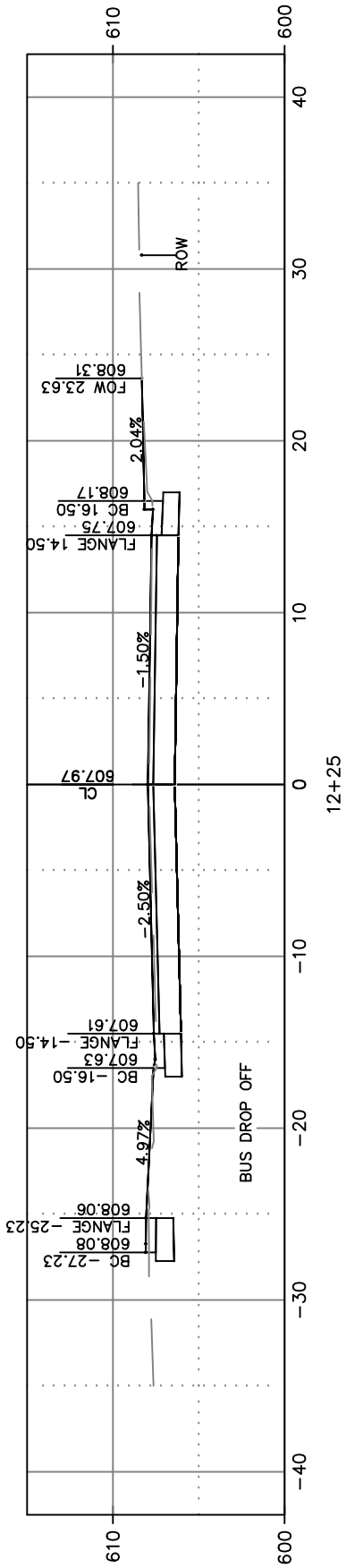
NAME:
LEWIS STREET
RECONSTRUCTION
PROJECT # 22-02

DATE	BY
04-2020	KAD
12-2020	KAD
11-2020	EPR/KAD
04-2022	CKK

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

PAGE NO.

C301





CITY OF DE PERE

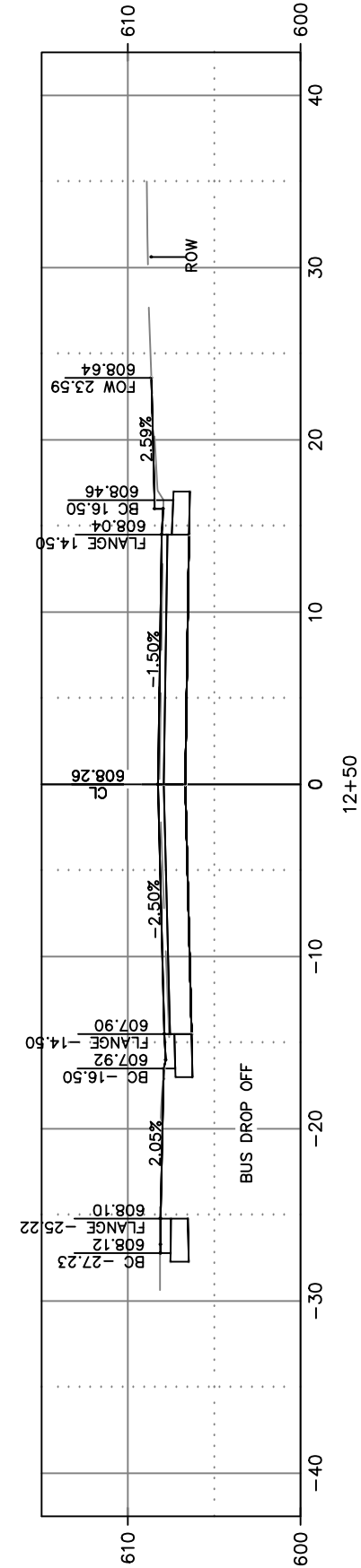
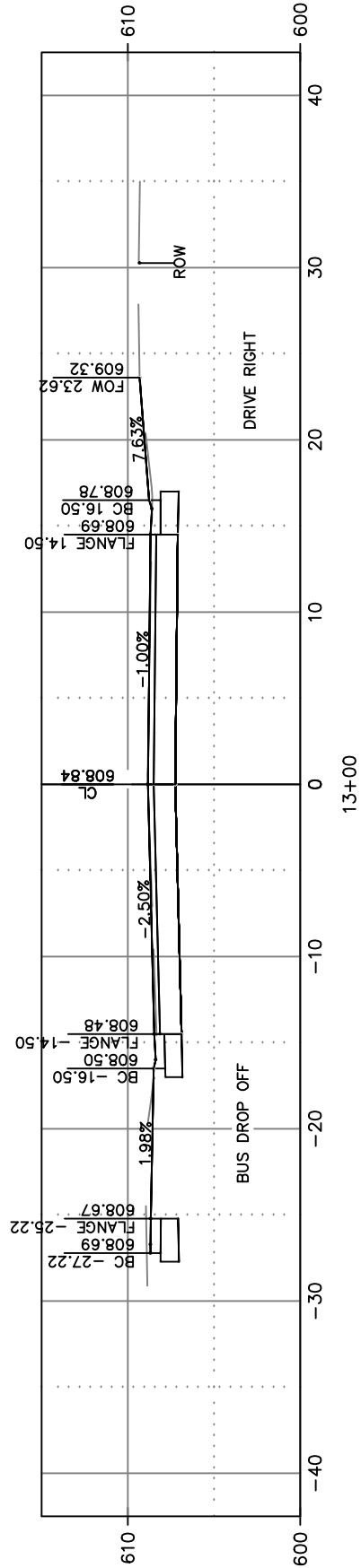
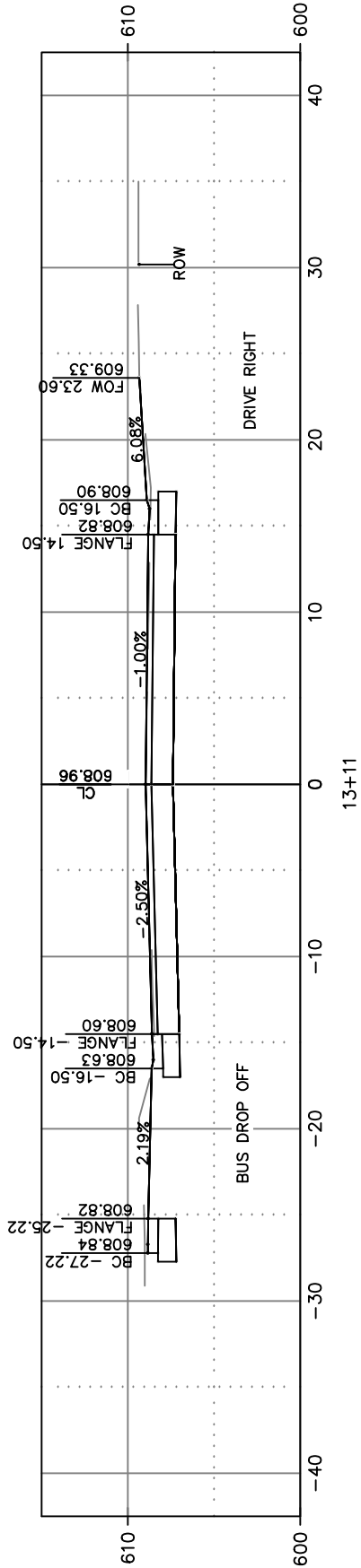
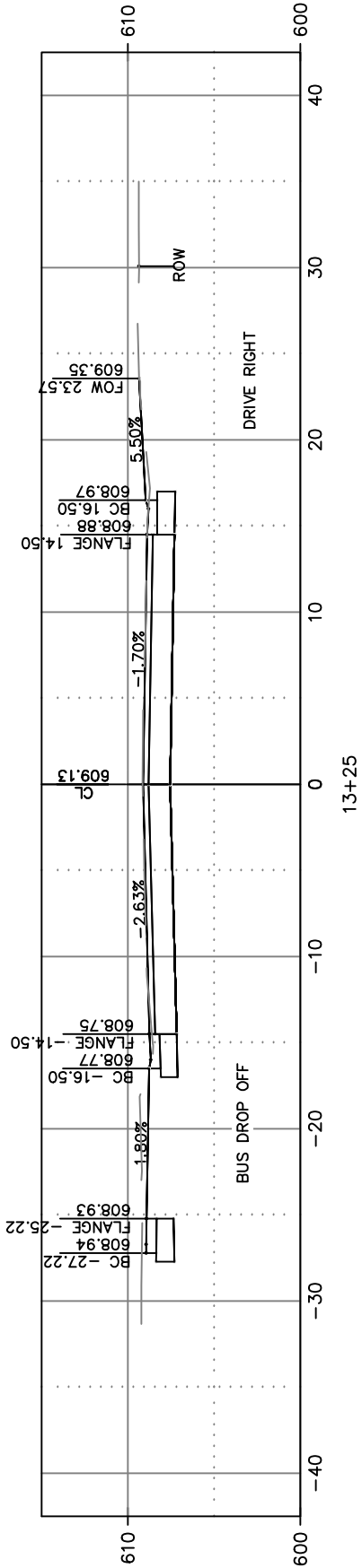
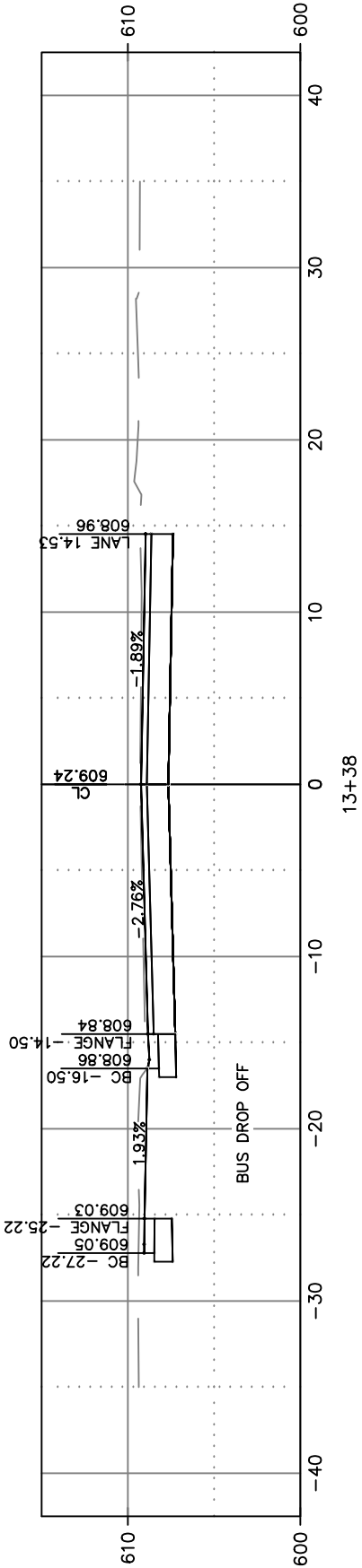
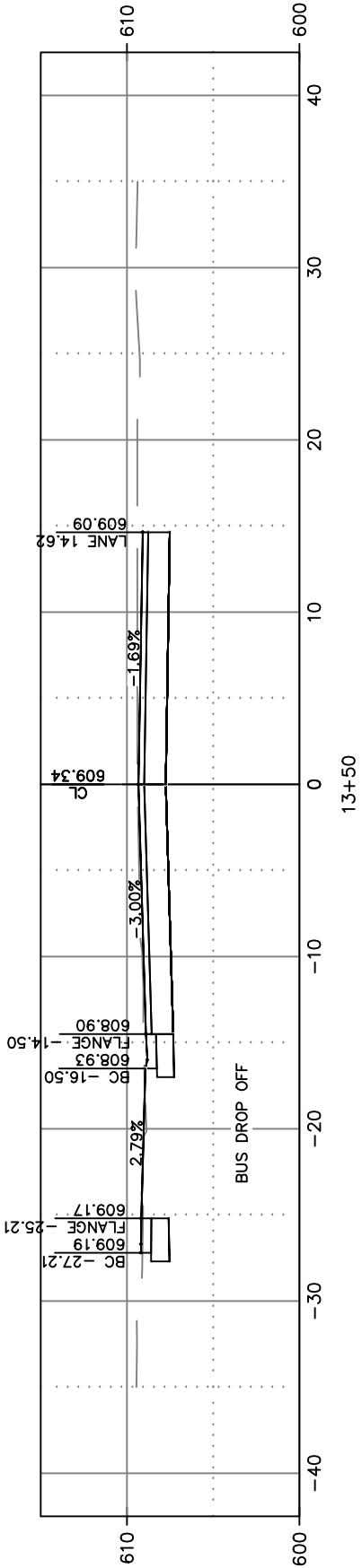
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LEWIS STREET
CROSS SECTIONS

NAME:	LEWIS STREET RECONSTRUCTION
PROJECT #	22-02

	BY	DATE
SURVEYED	KAD	04-2020
DRAWN	KAD	12-2020
DESIGNED	EPR/KAD	11-2020
CHECKED	CKK	04-2022

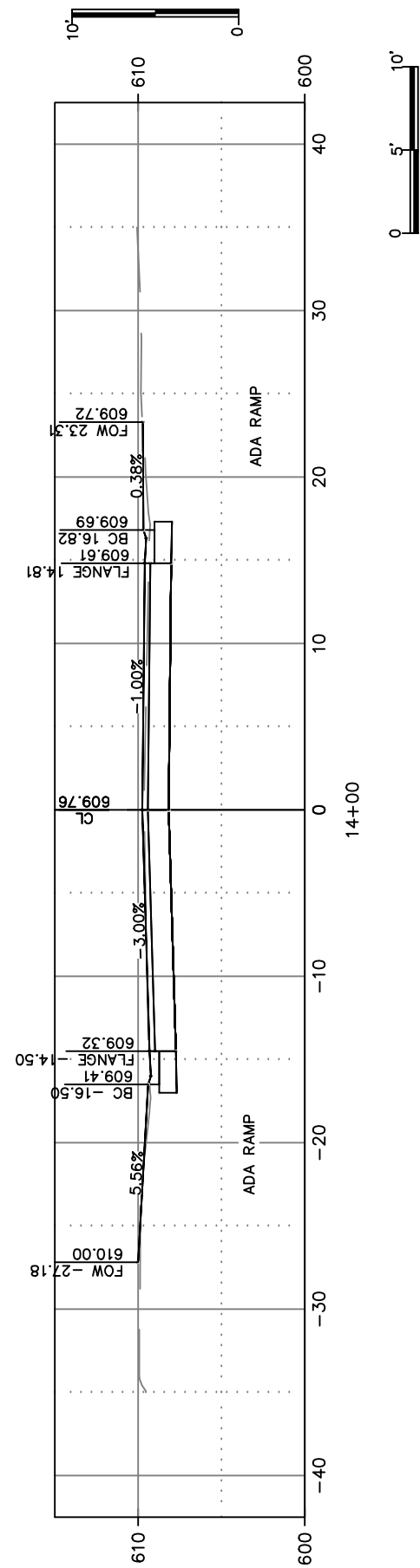
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NO.	DATE	BY	REMARKS





NAME:	LEWIS STREET RECONSTRUCTION
PROJECT #	22-02

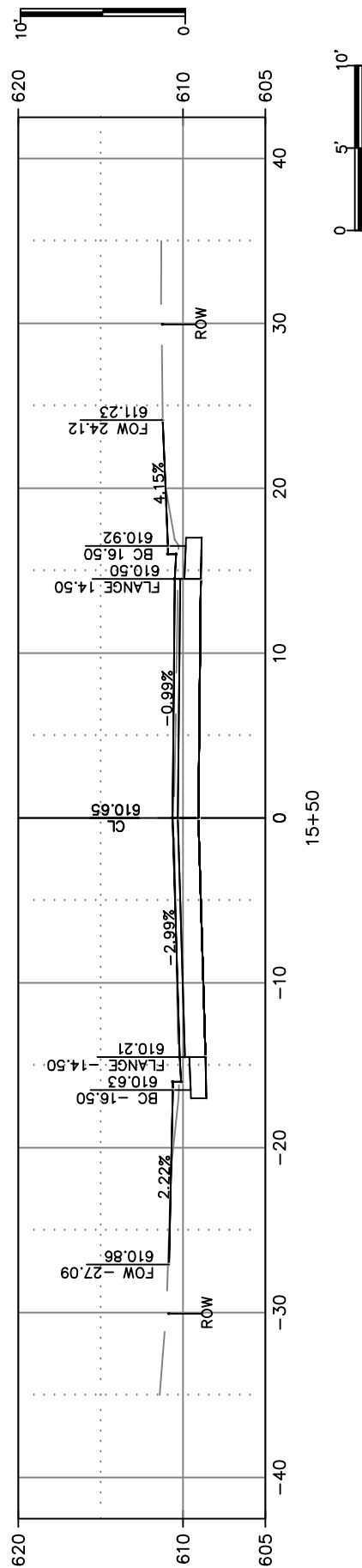
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NAME:	LEWIS STREET RECONSTRUCTION
PROJECT #	22-02

PAGE
NO.
C304





CITY OF DE PERE

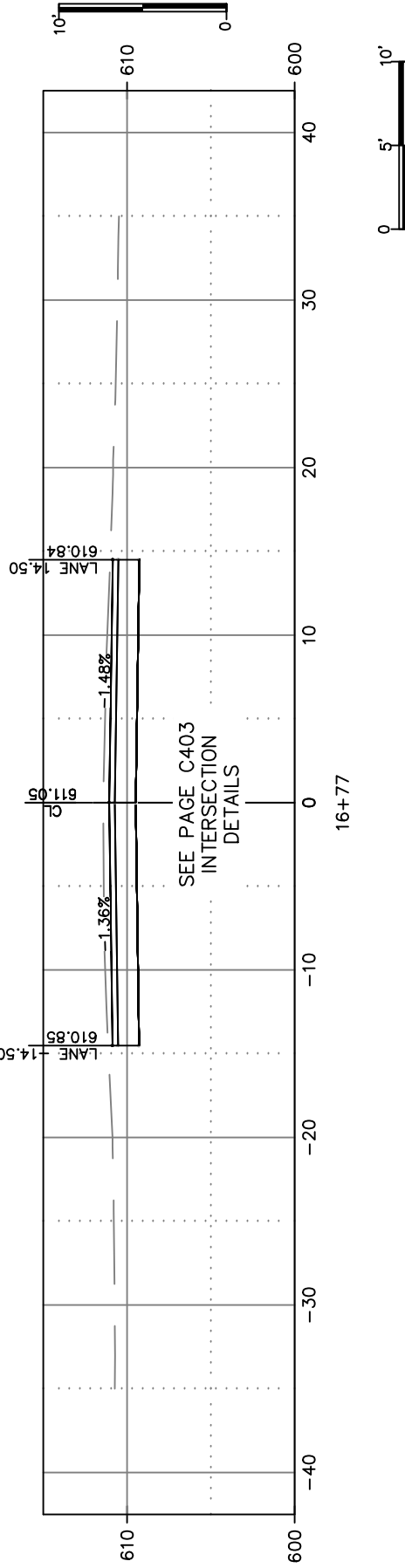
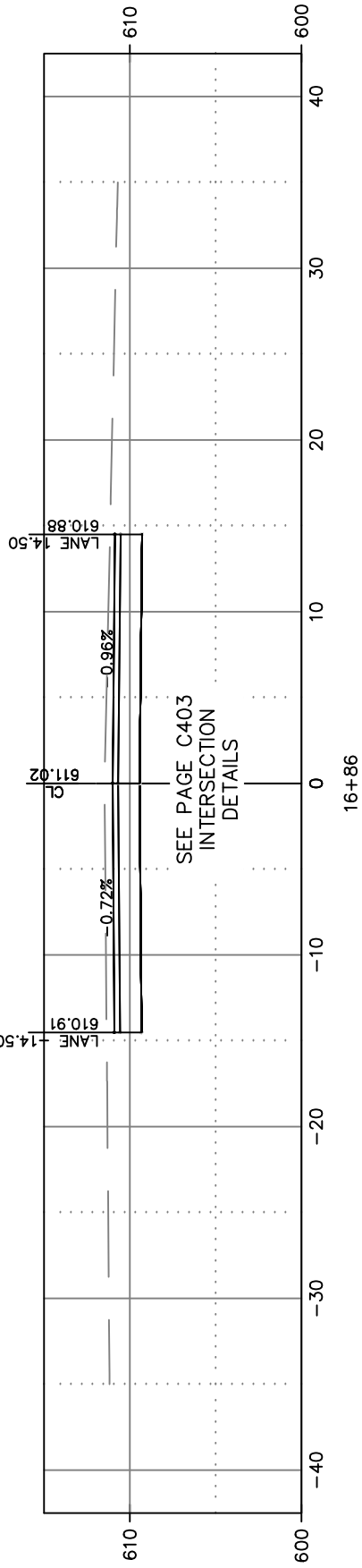
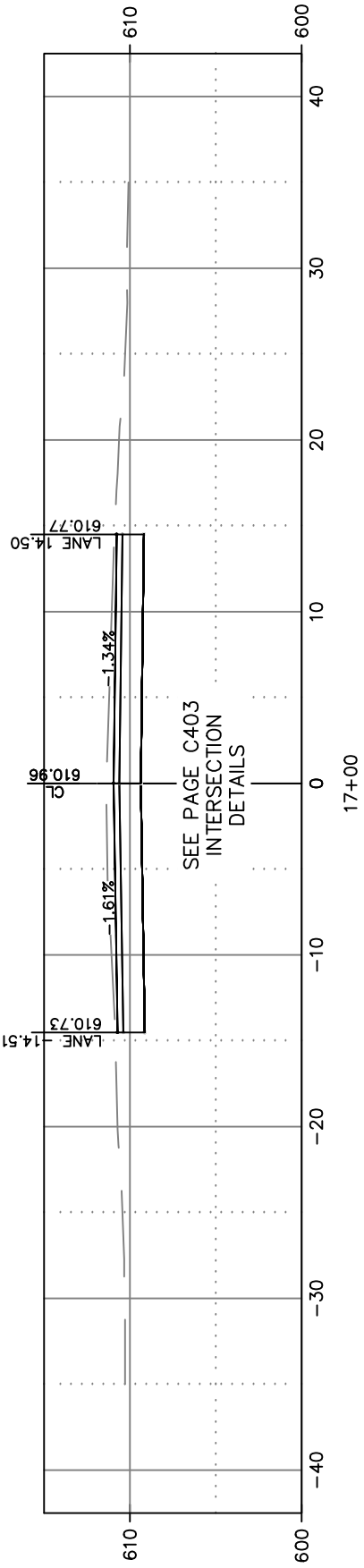
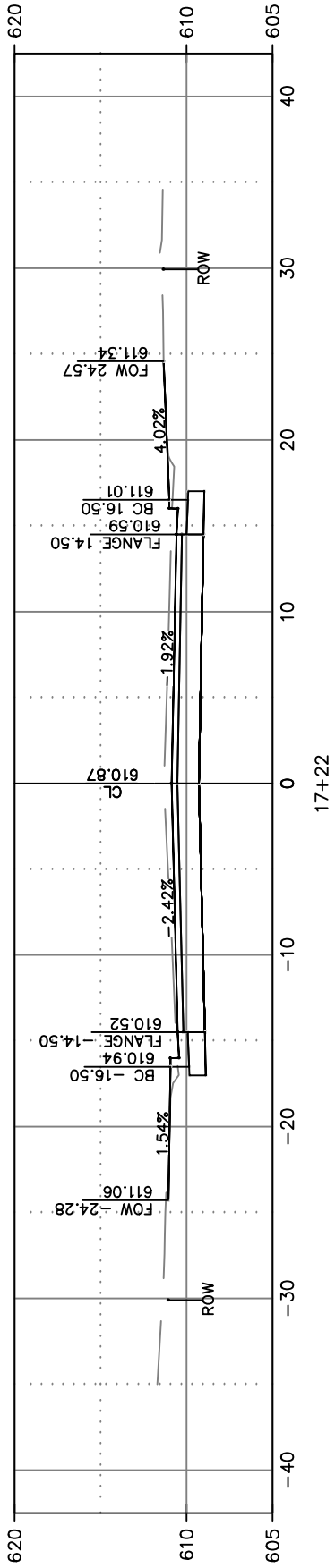
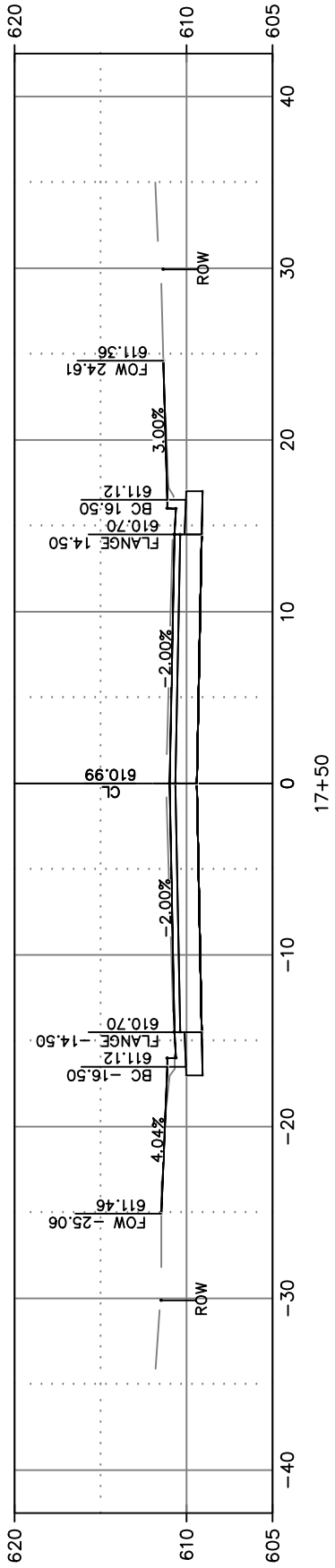
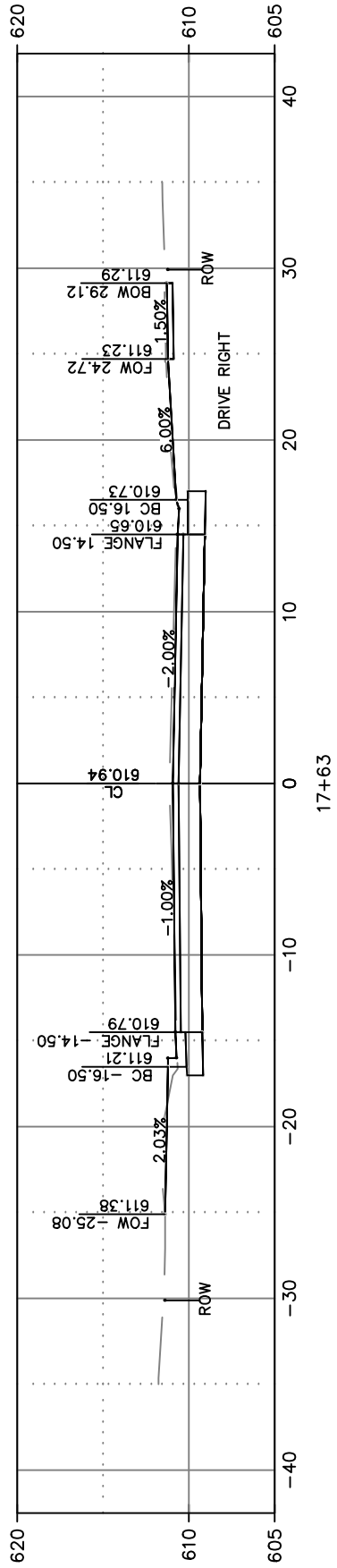
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LEWIS STREET
CROSS SECTIONS

NAME:	LEWIS STREET RECONSTRUCTION
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REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS





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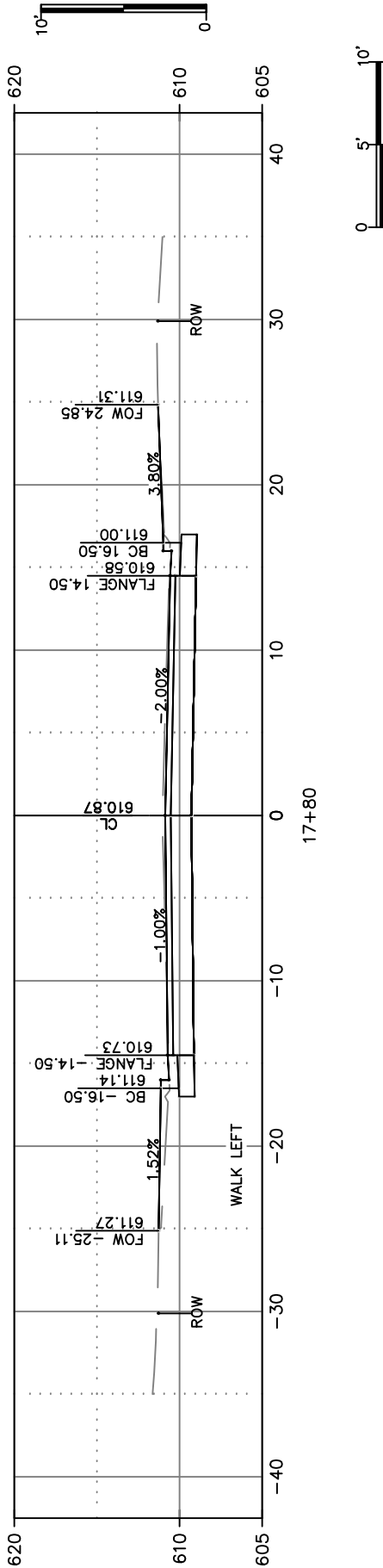
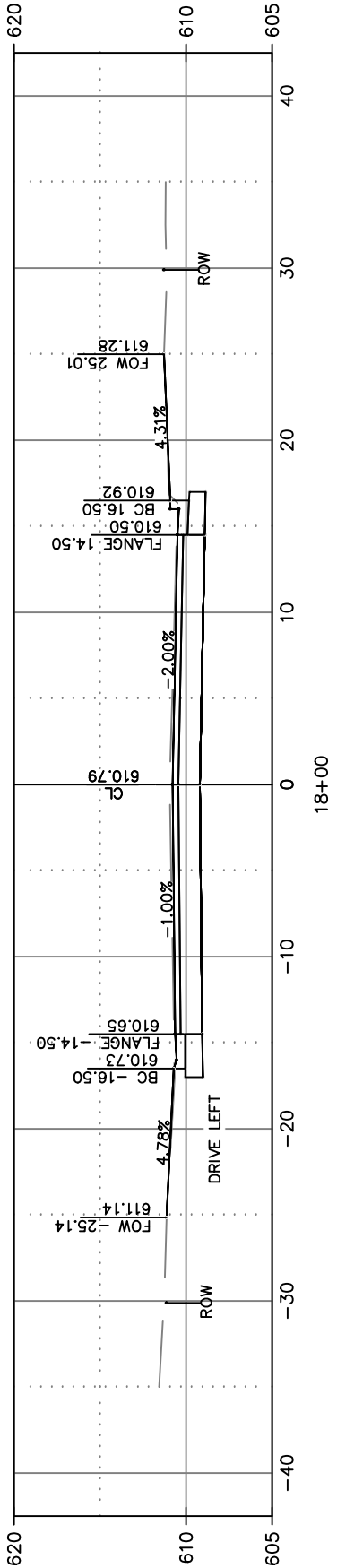
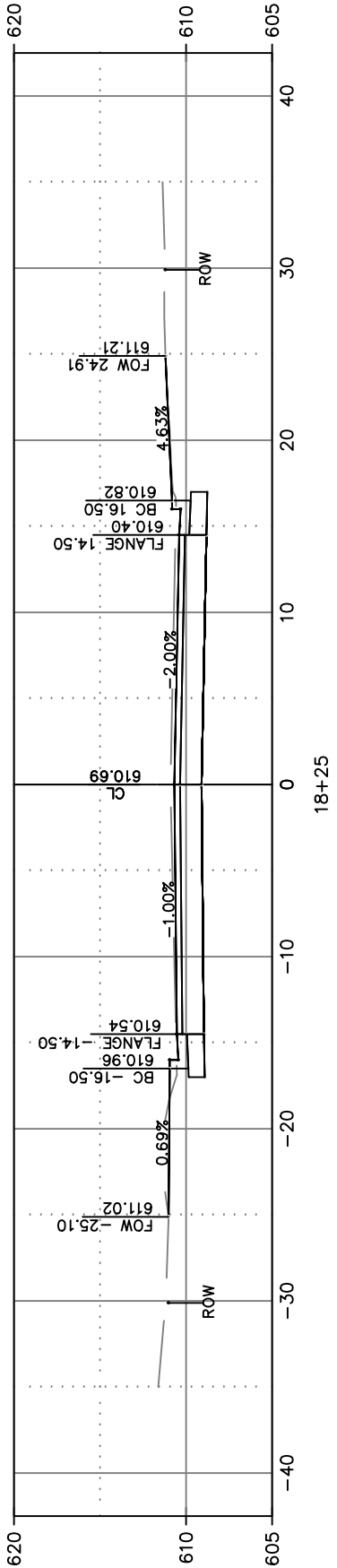
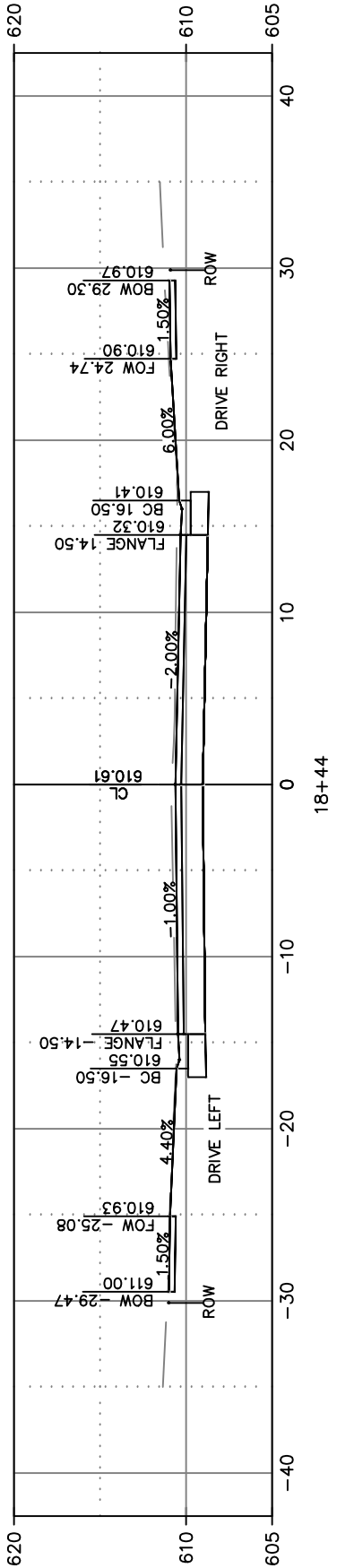
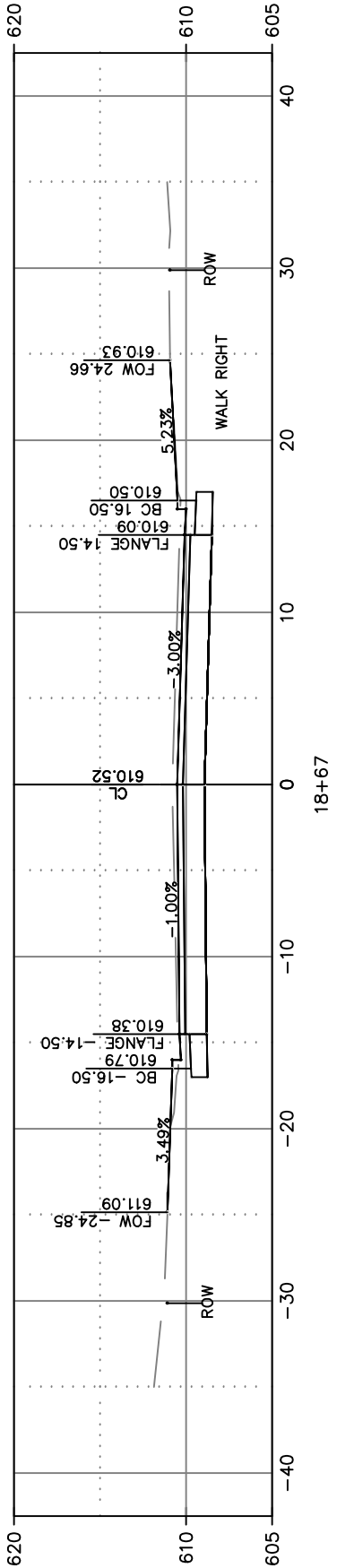
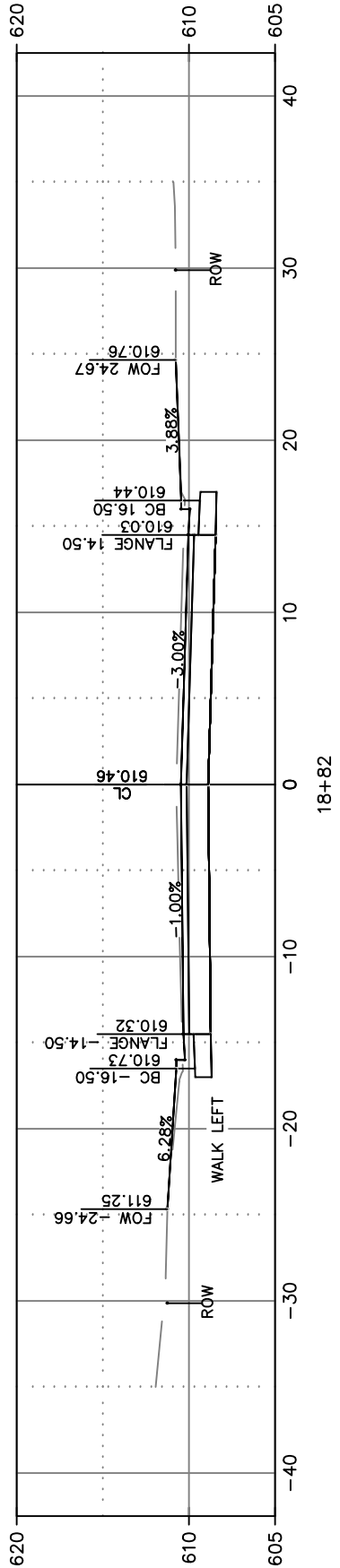
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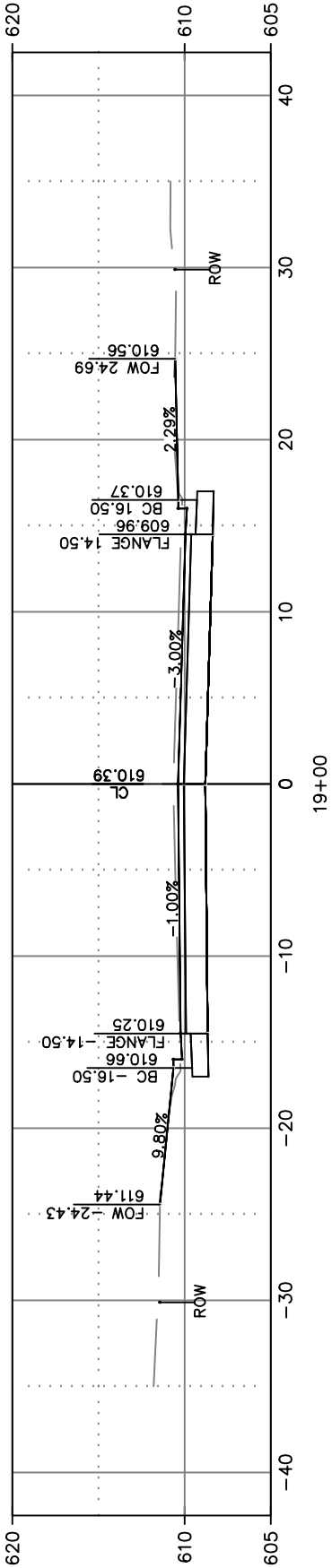
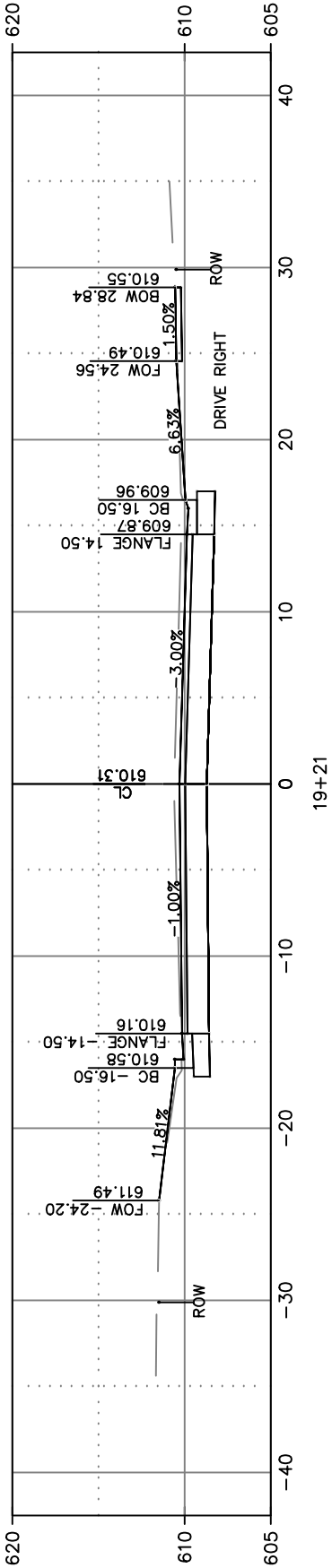
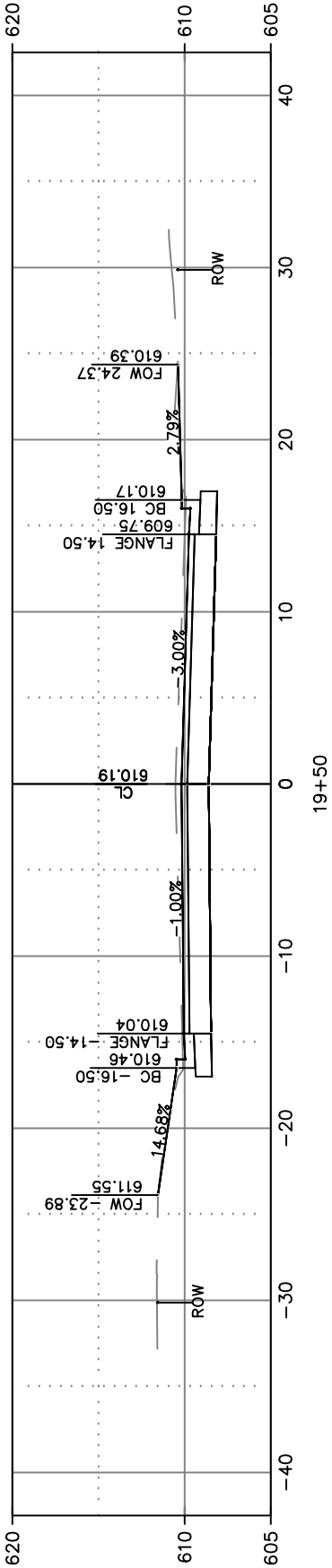
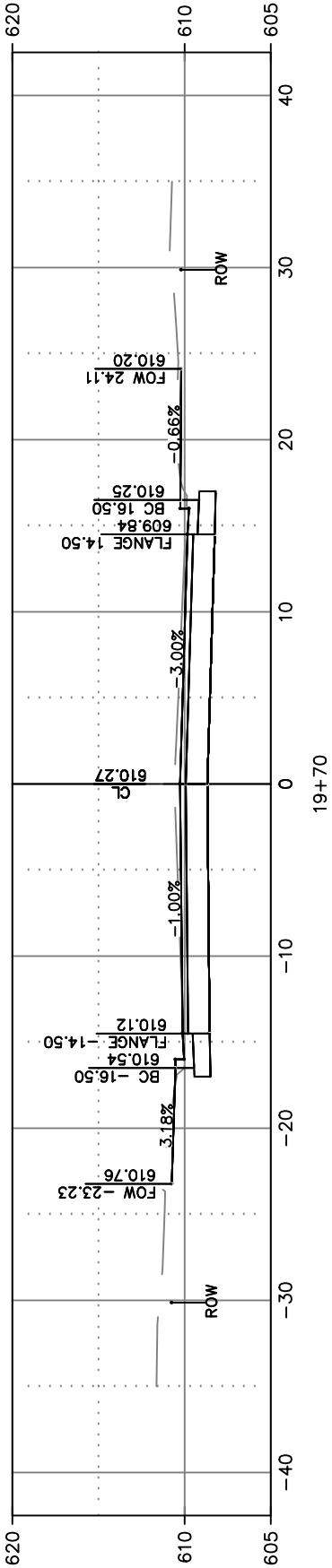
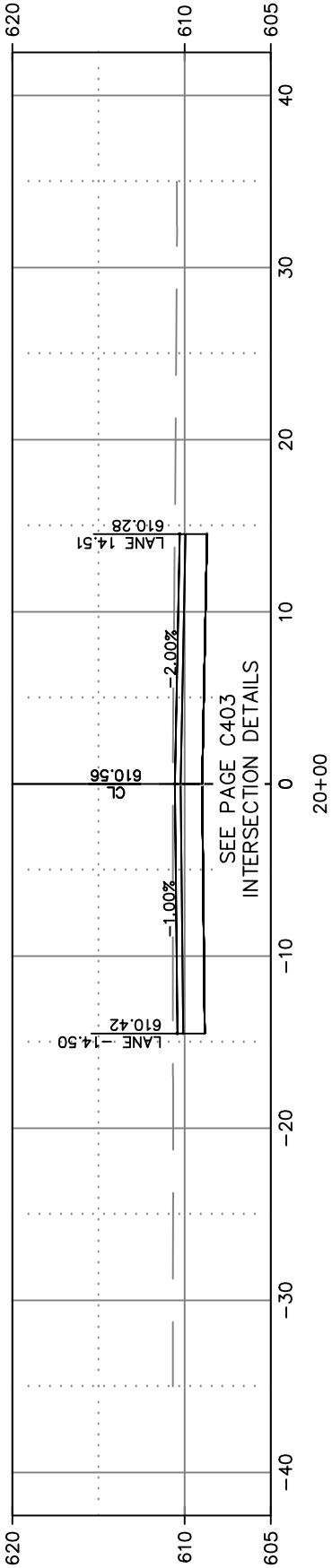
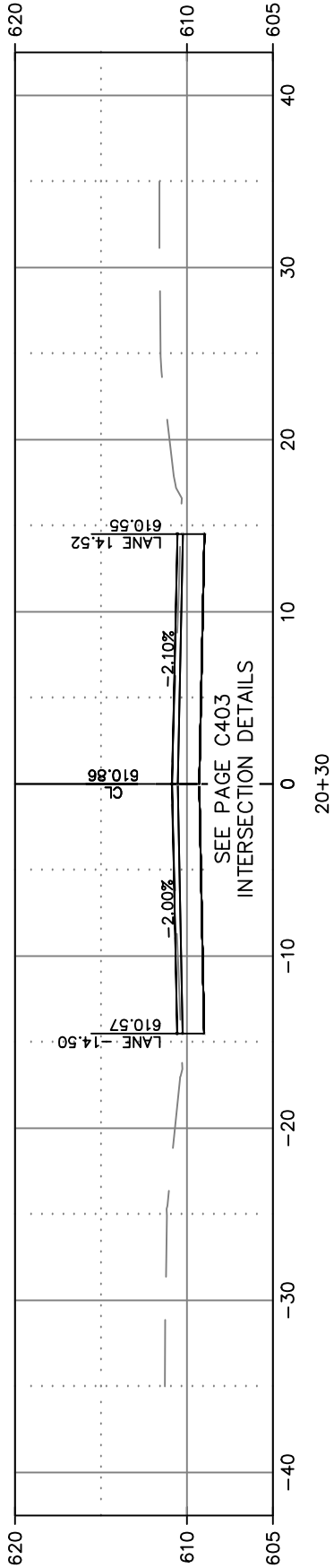
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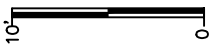
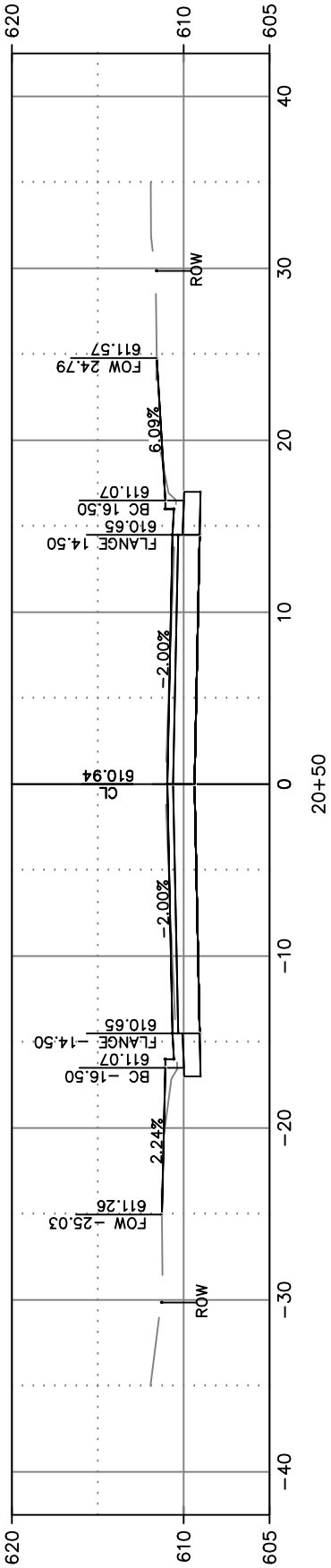
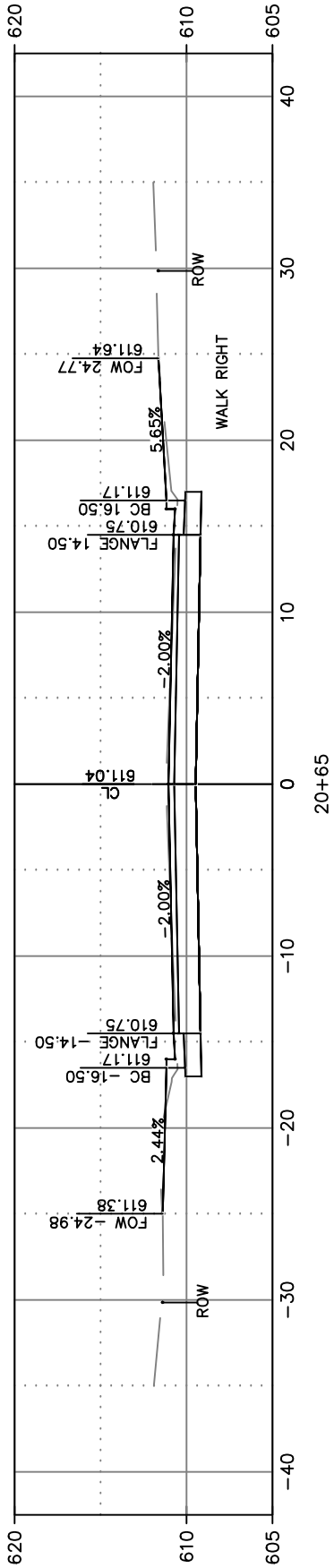
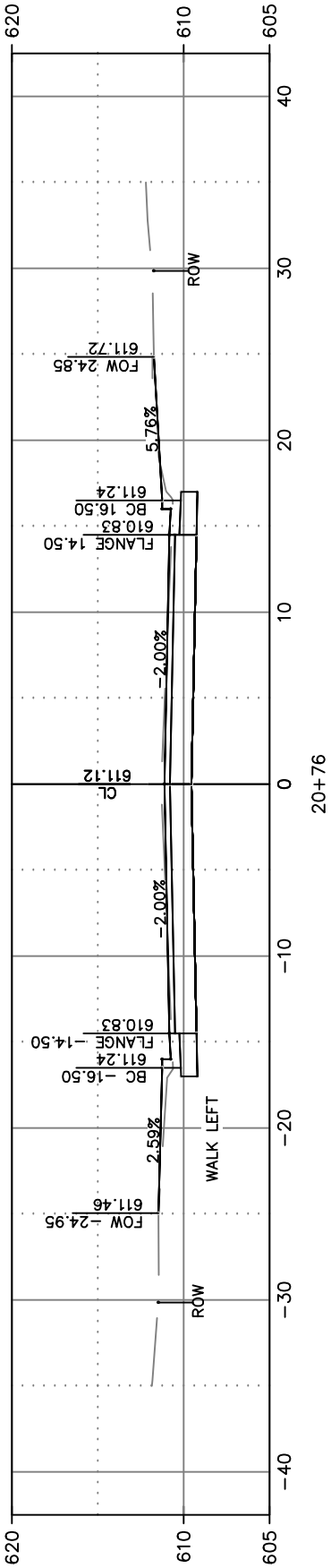
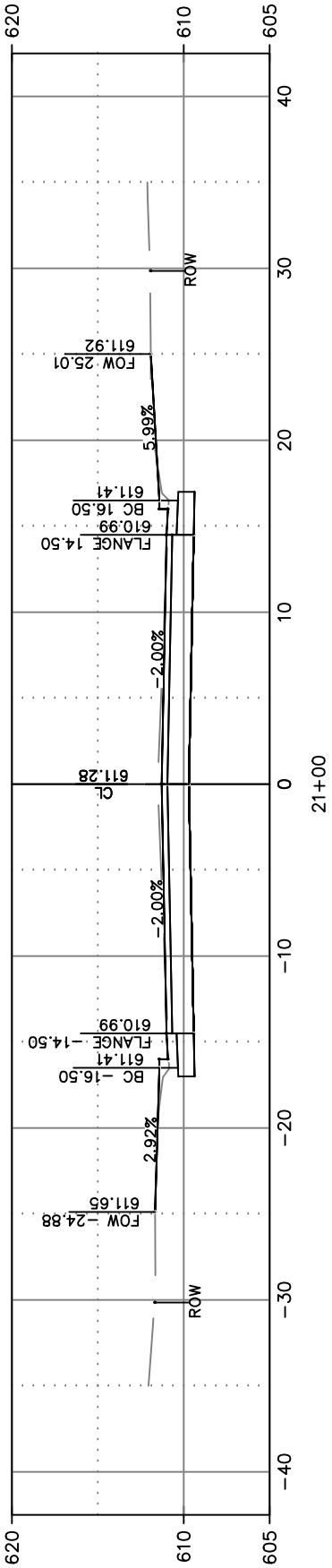
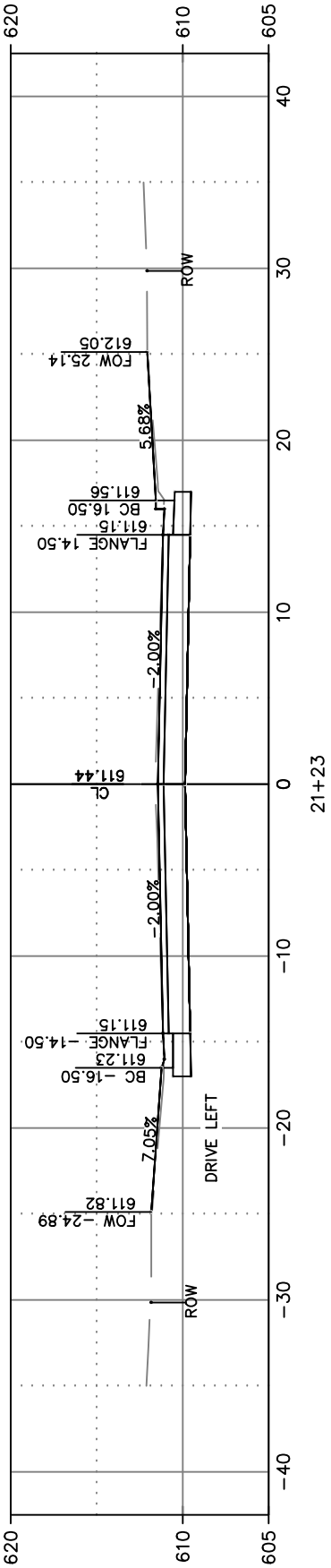
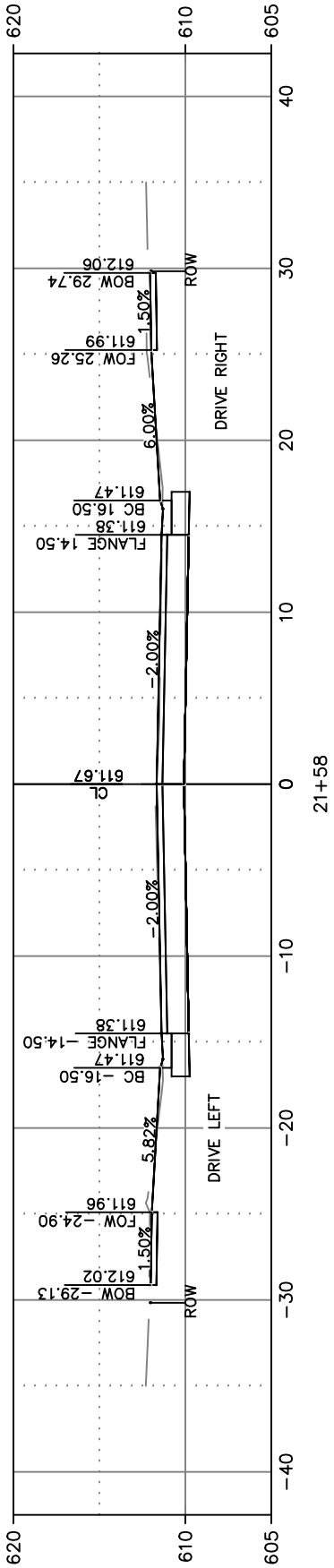
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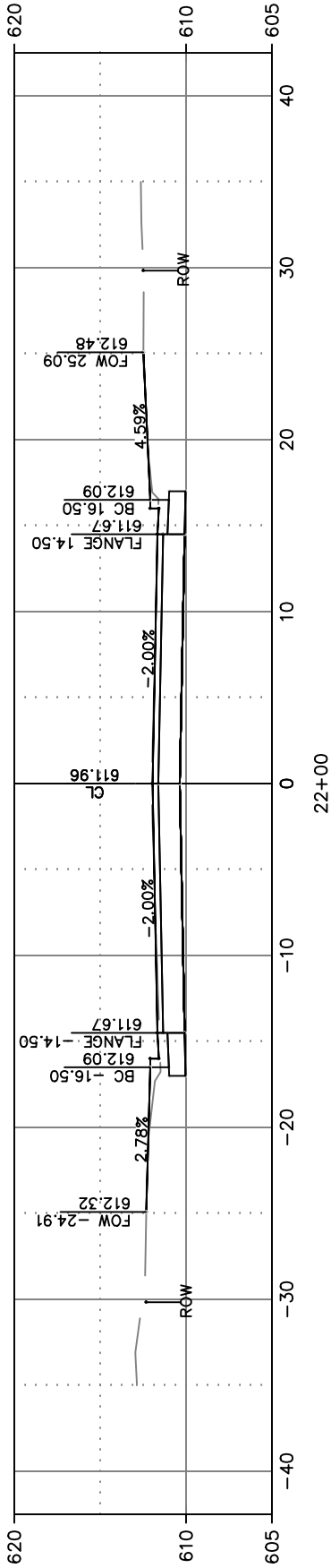
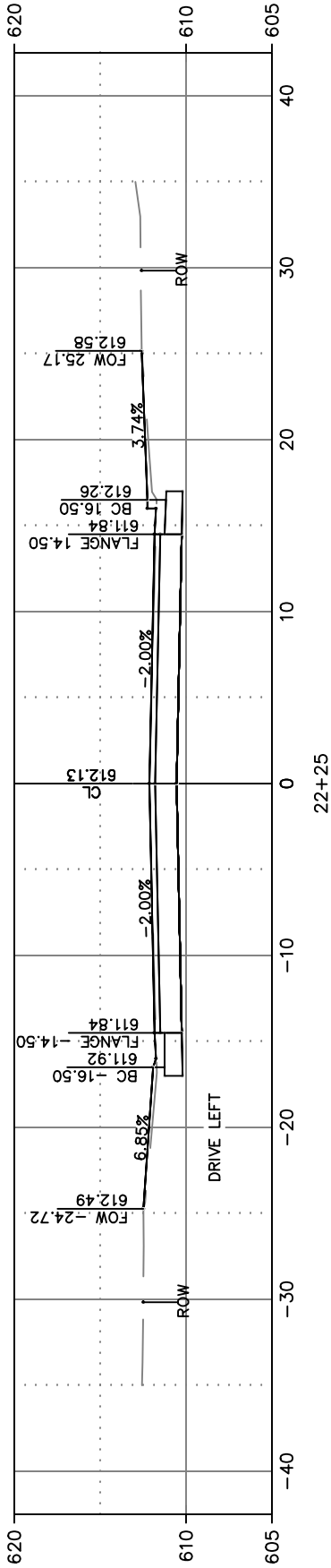
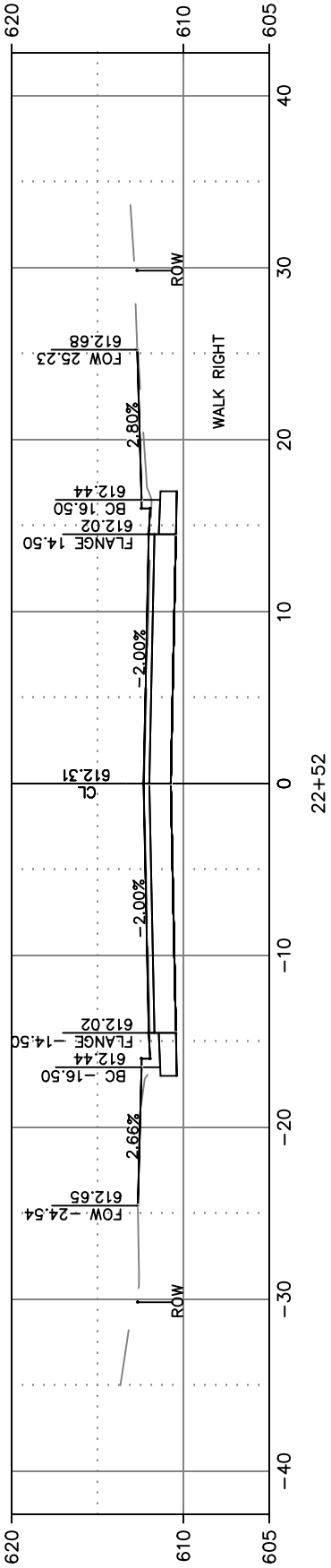
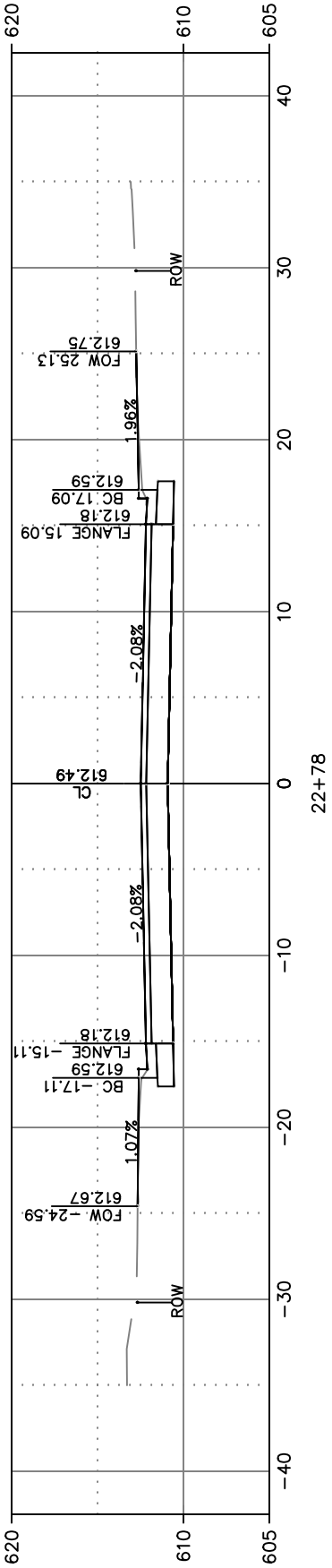
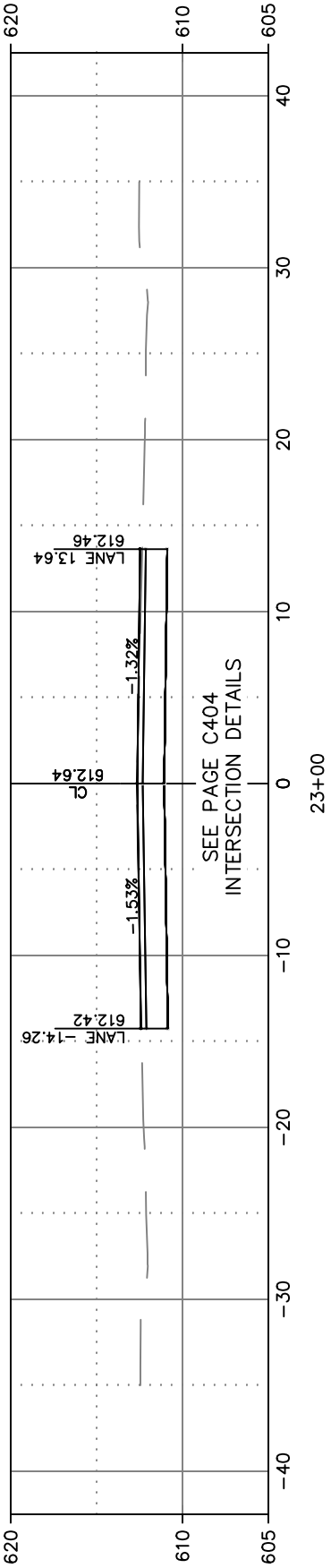
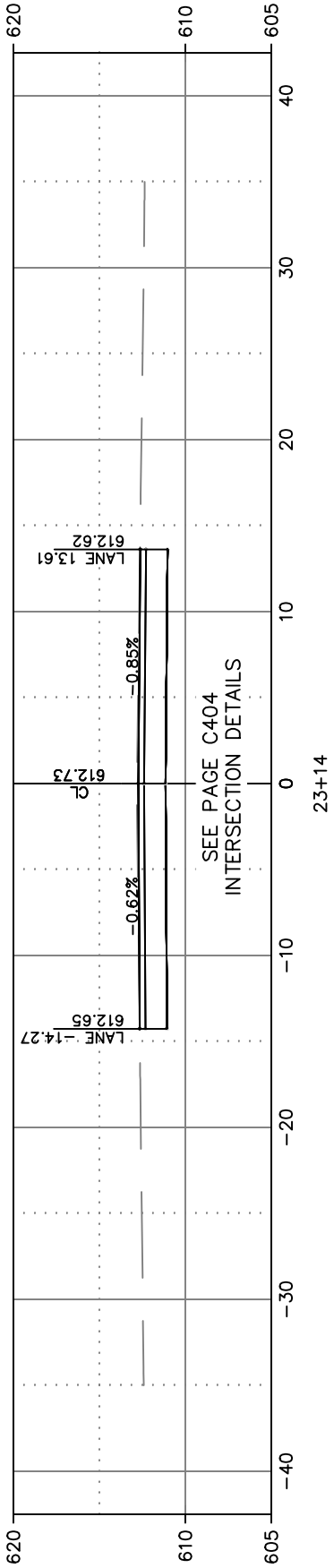
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OFFICE 920-339-4061 FAX 920-339-4071

LEWIS STREET
CROSS SECTIONS

NAME:	LEWIS STREET RECONSTRUCTION
PROJECT #	22-02

SURVEYED	KAD	DATE	04-2020
DRAWN	KAD	DATE	12-2020
DESIGNED	EPR/KAD	DATE	11-2020
CHECKED	CKK	DATE	04-2022

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS





CITY OF DE PERE

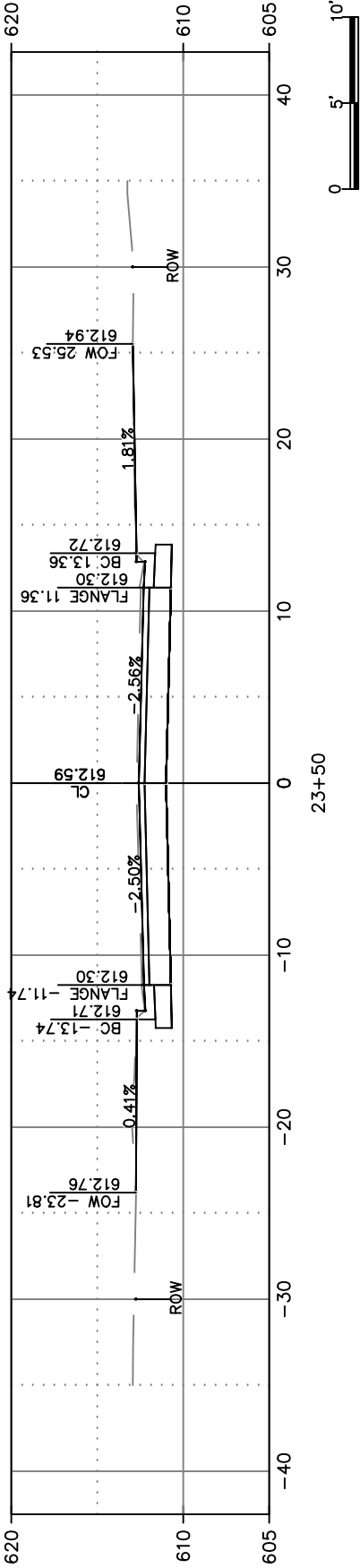
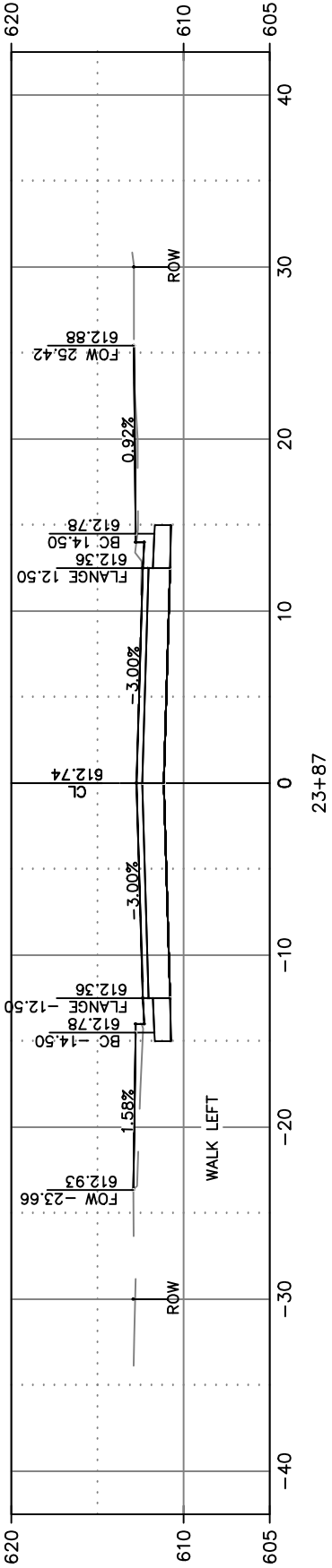
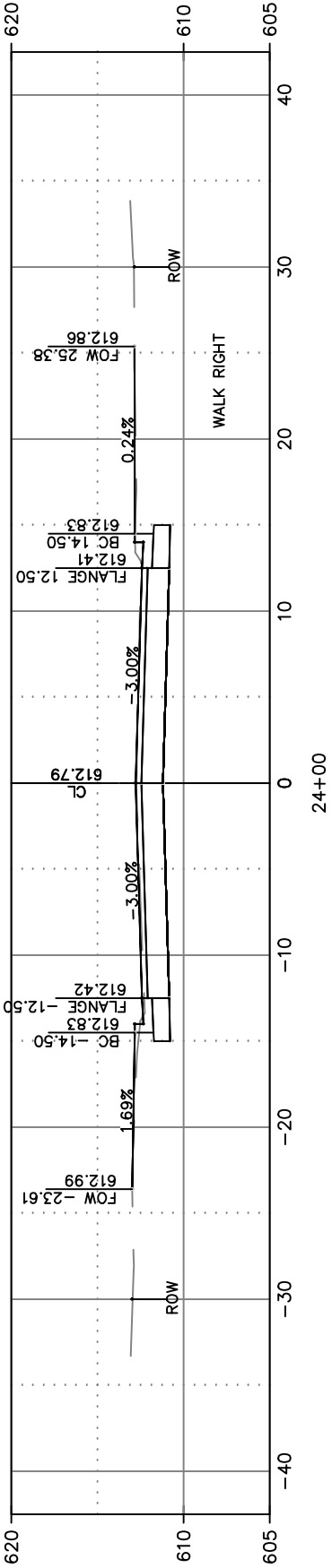
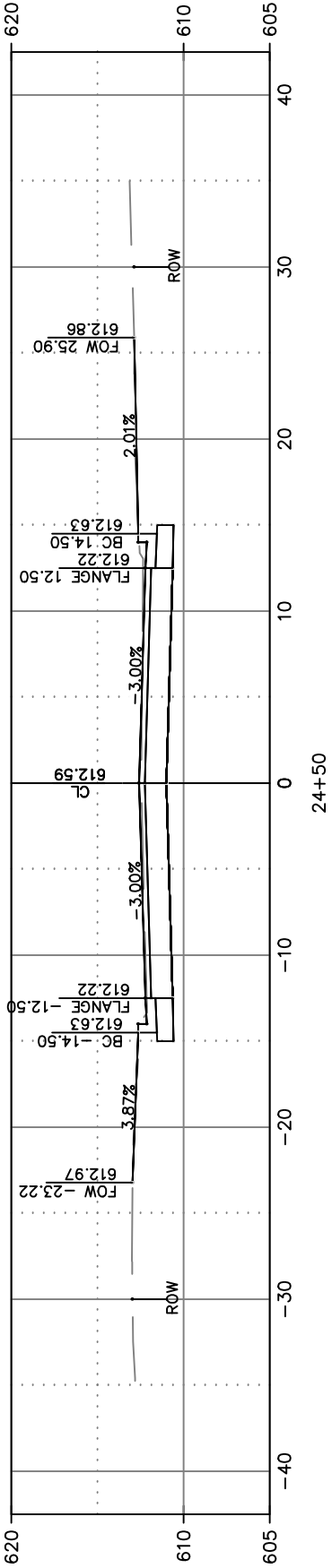
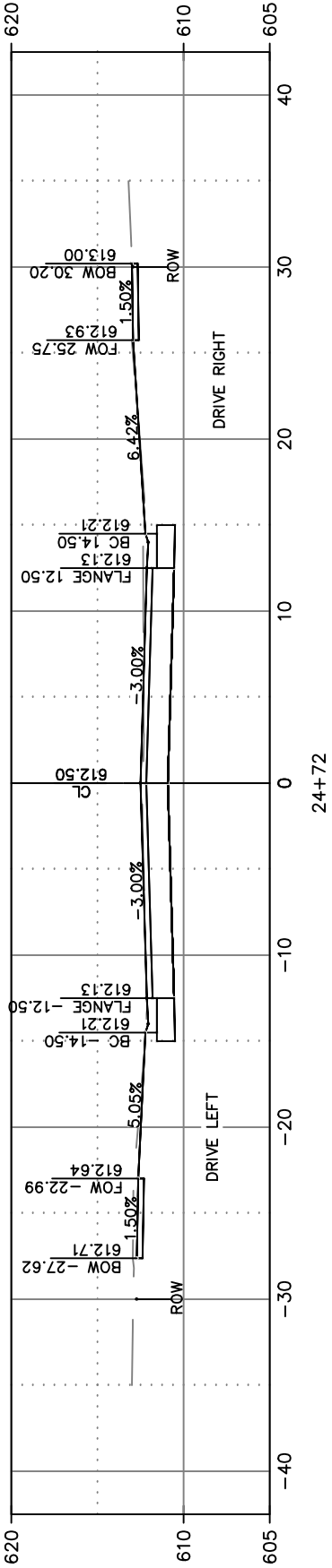
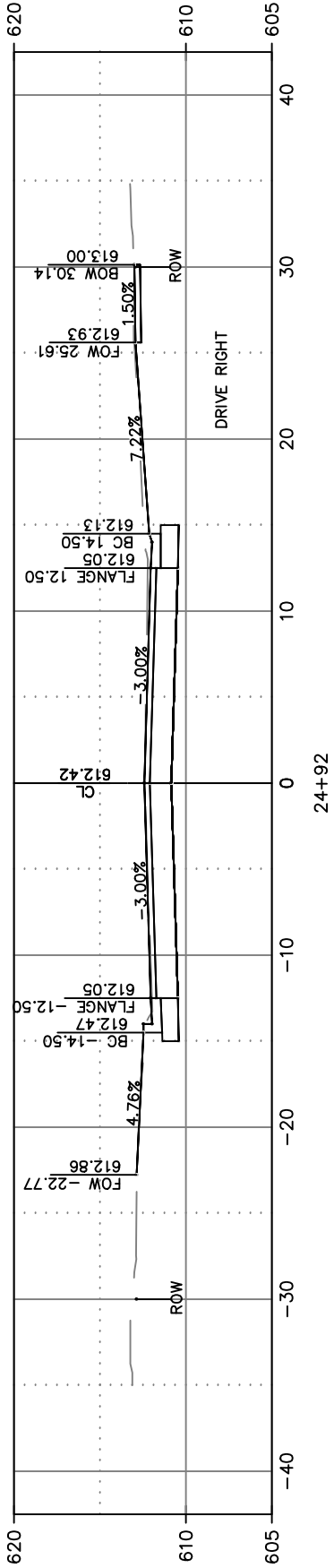
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

LEWIS STREET
CROSS SECTIONS

NAME:	LEWIS STREET RECONSTRUCTION
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REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS





CITY OF DE PERE

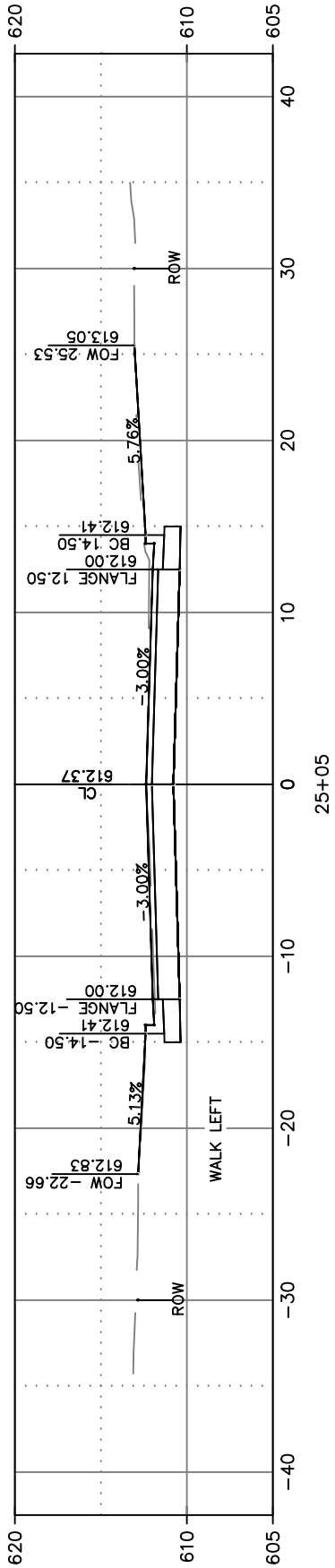
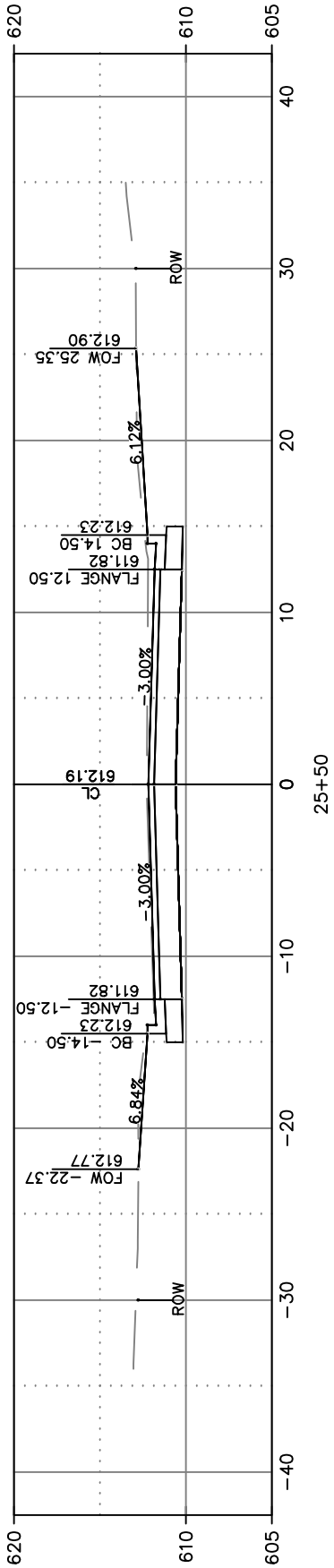
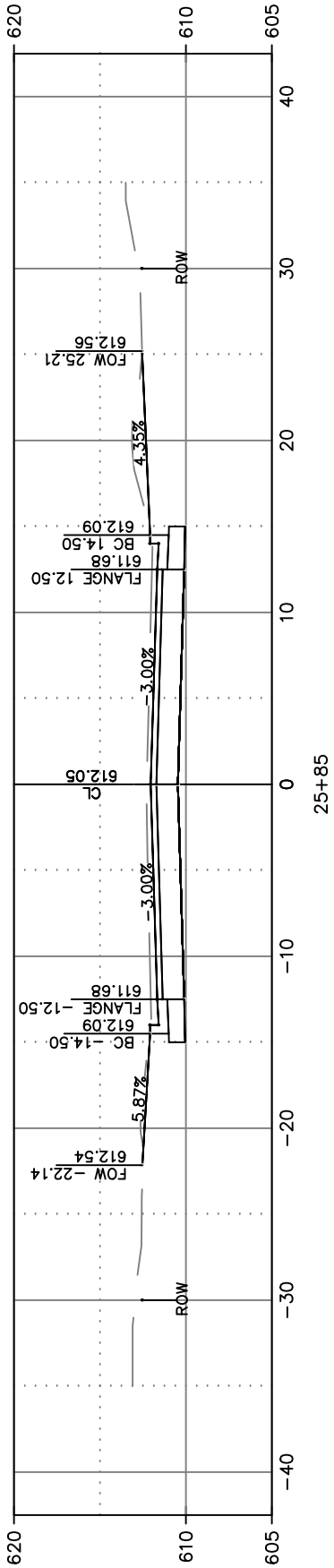
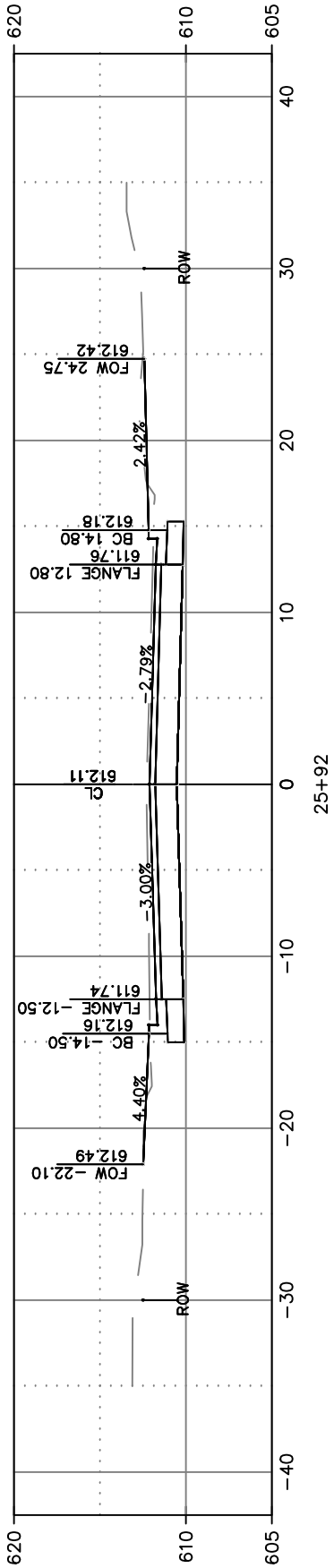
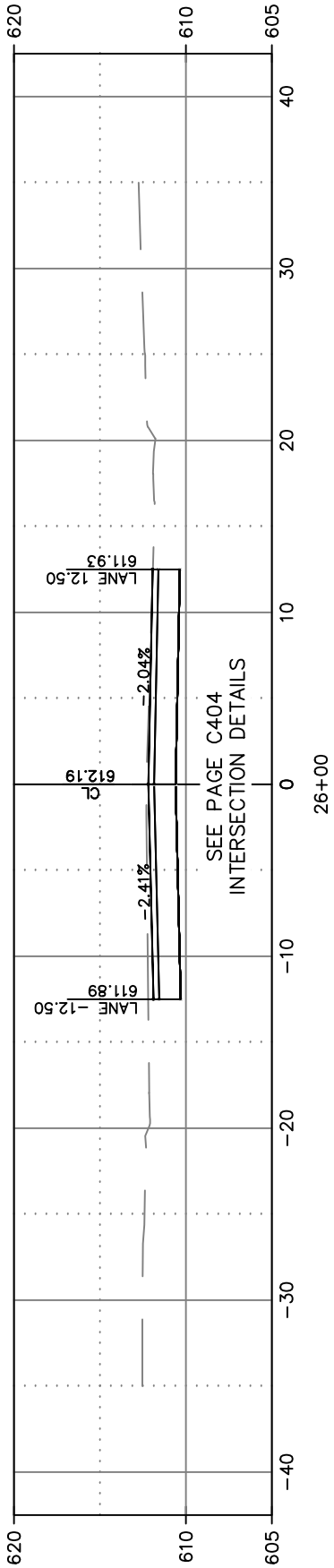
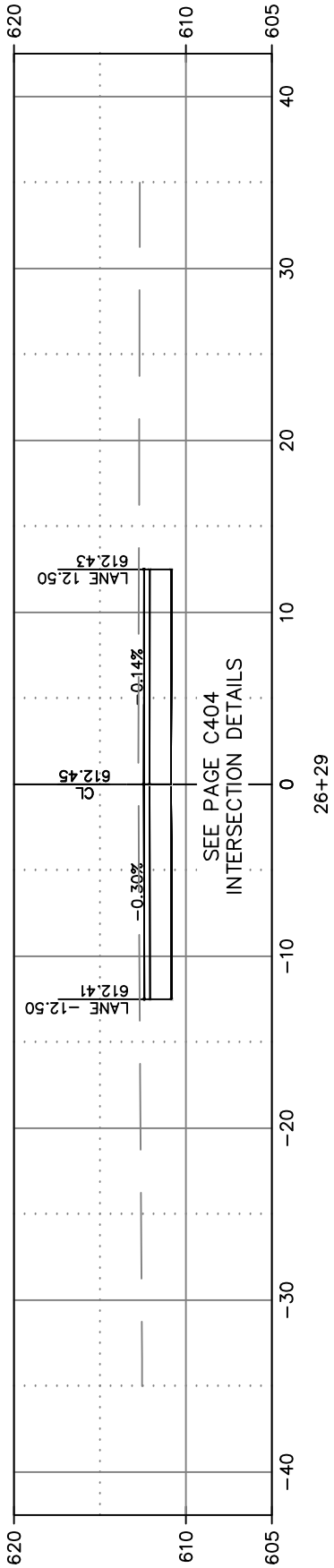
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

LEWIS STREET
CROSS SECTIONS

NAME:	LEWIS STREET RECONSTRUCTION
PROJECT #	22-02

SURVEYED	KAD	DATE	04-2020
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REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS



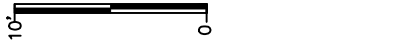
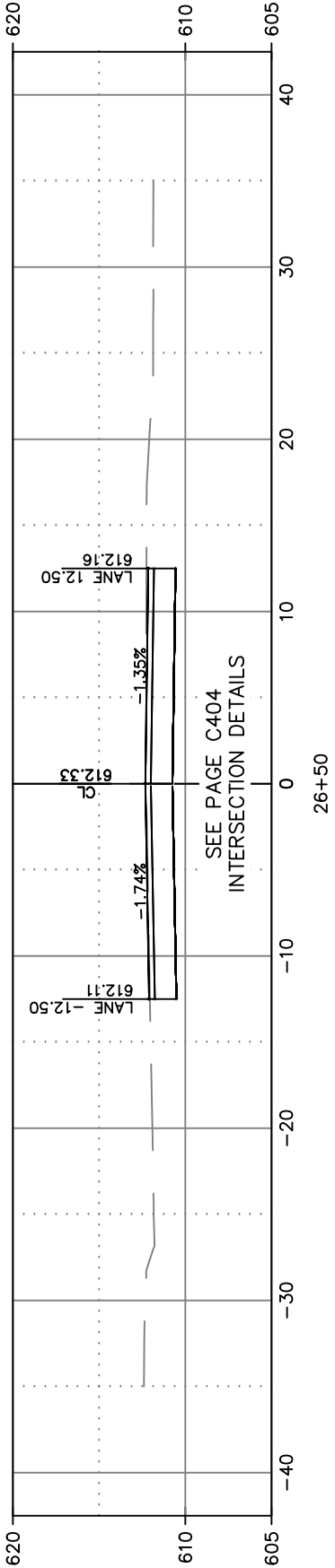
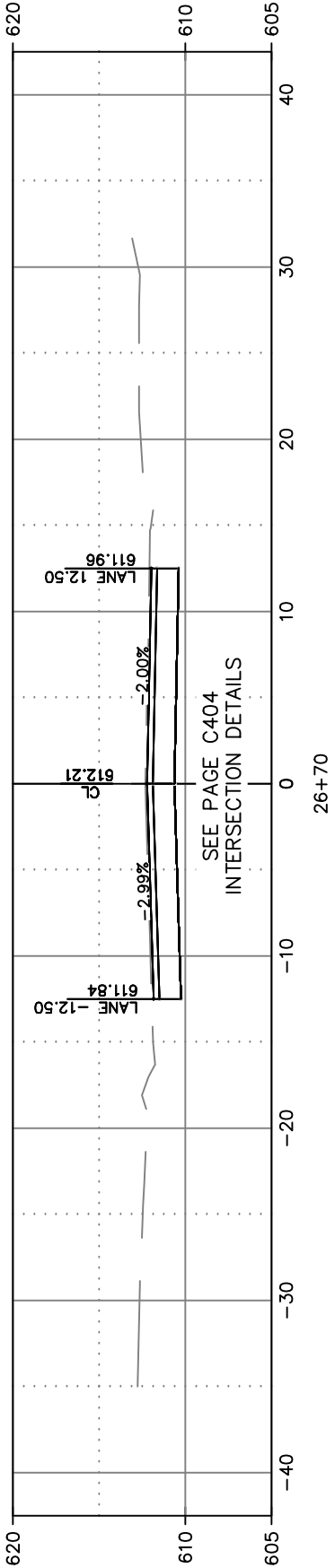
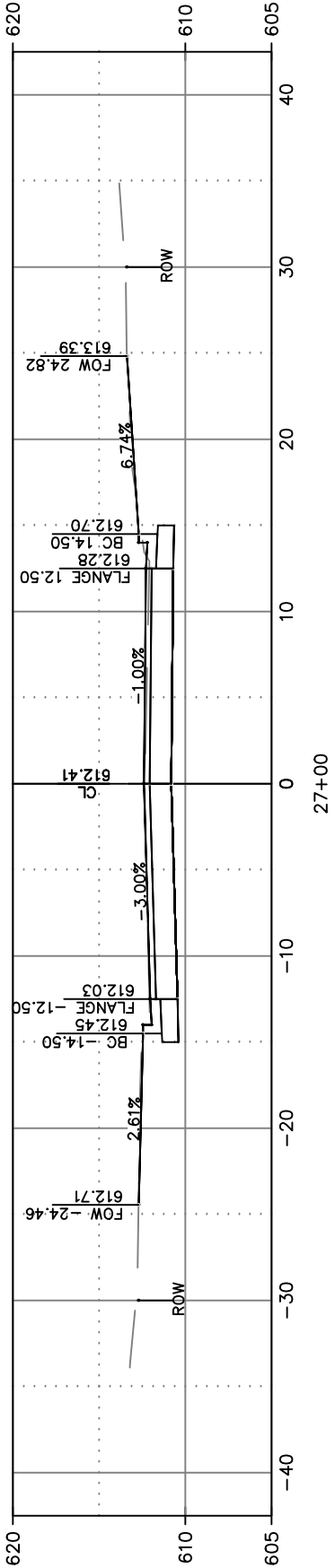
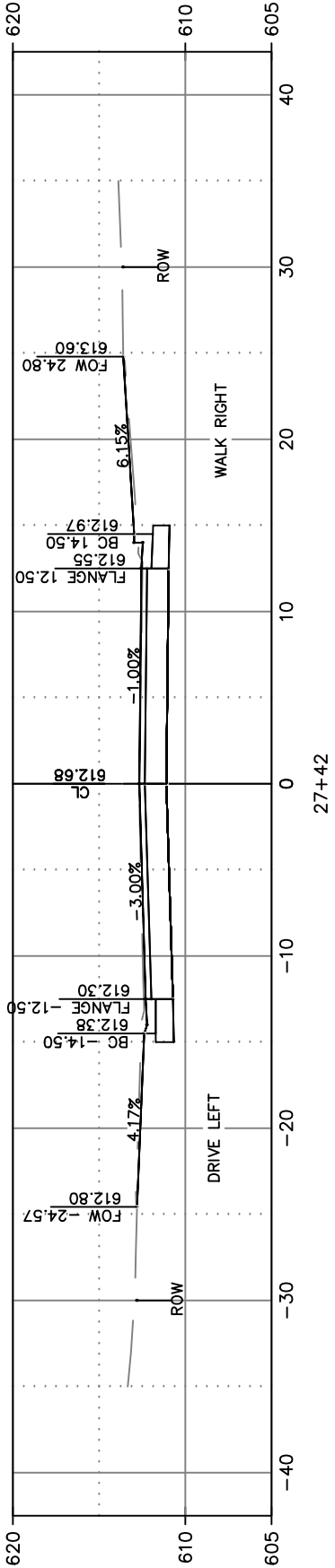
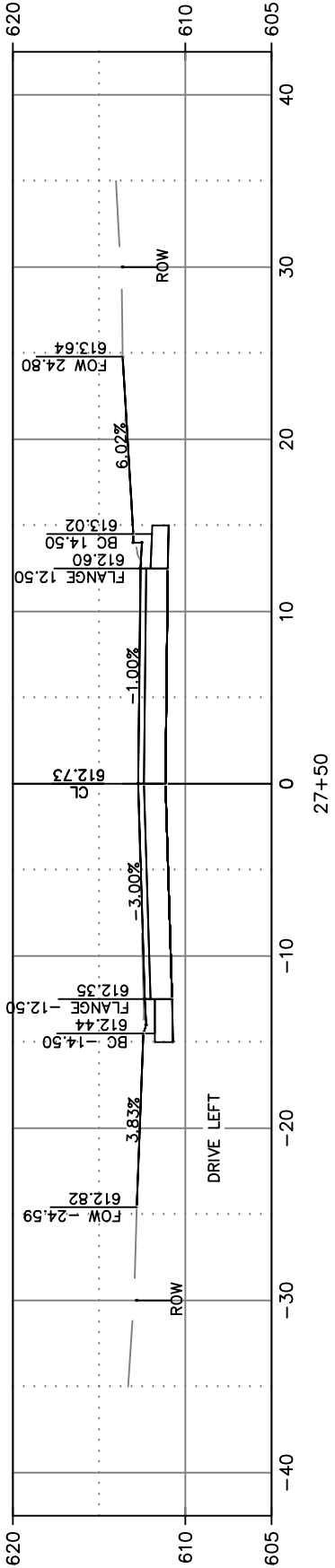
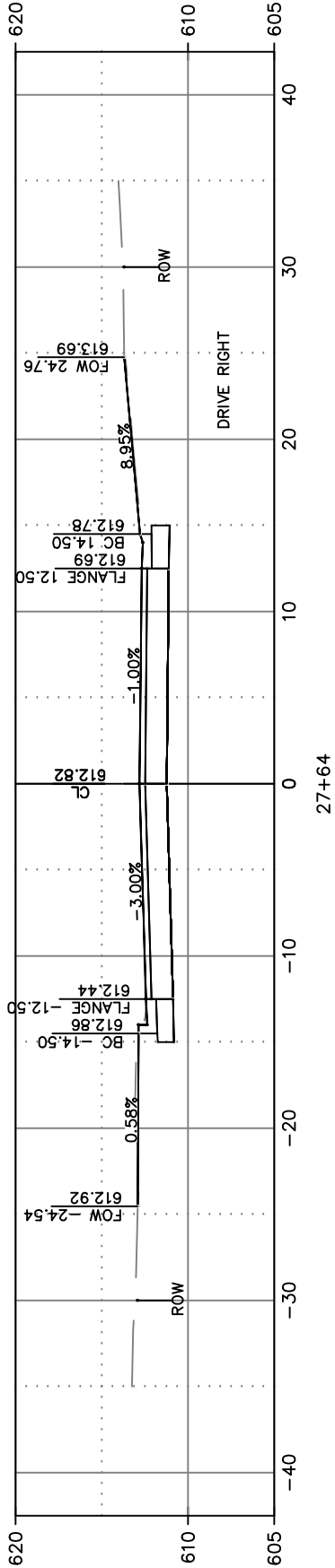


LEWIS STREET
CROSS SECTIONS

NAME:
LEWIS STREET
RECONSTRUCTION
PROJECT # 22-02

	BY	DATE
SURVEYED	KAD	04-2020
DRAWN	KAD	12-2020
DESIGNED	EPR/KAD	11-2020
CHECKED	CKK	04-2022

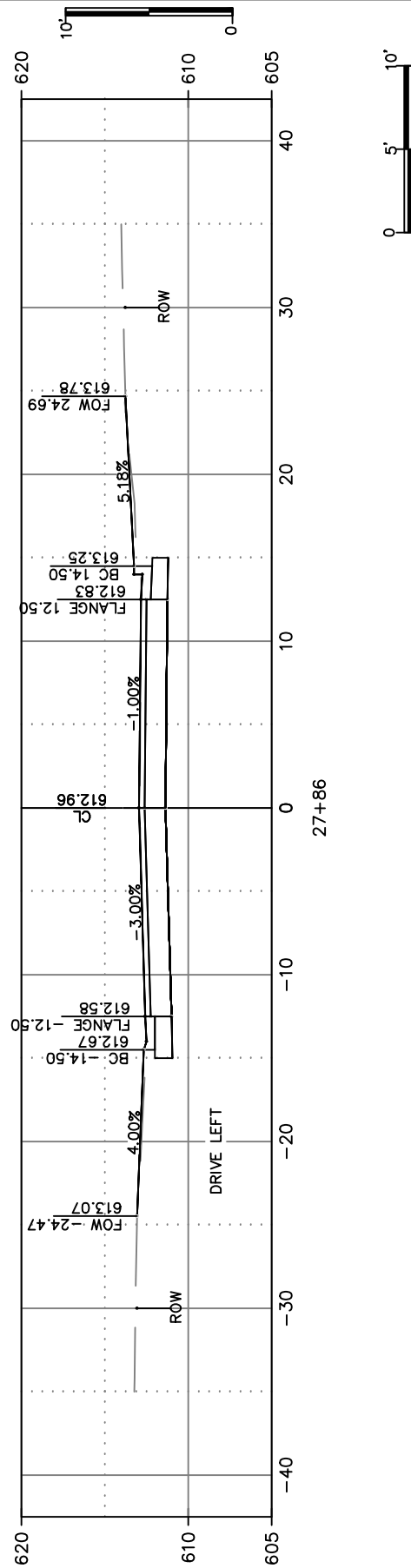
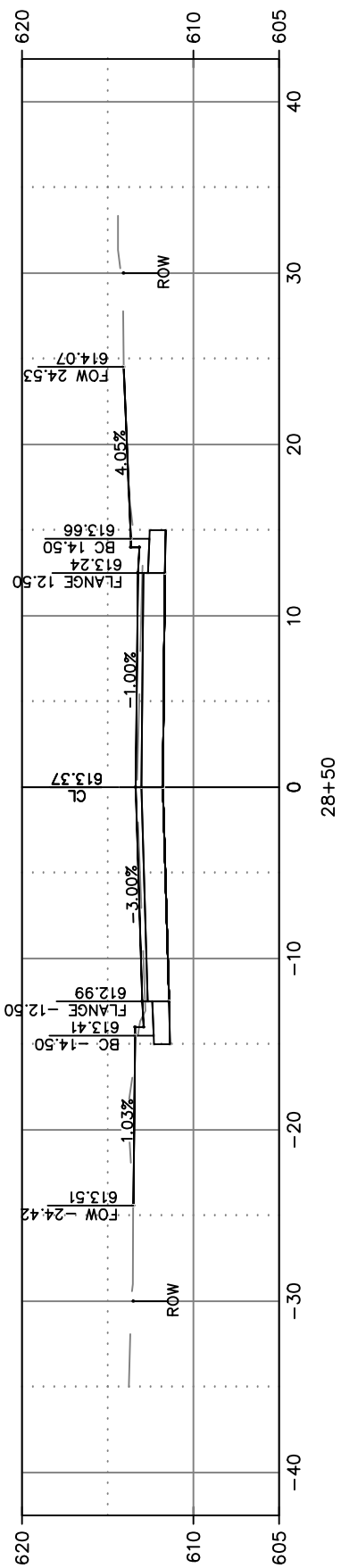
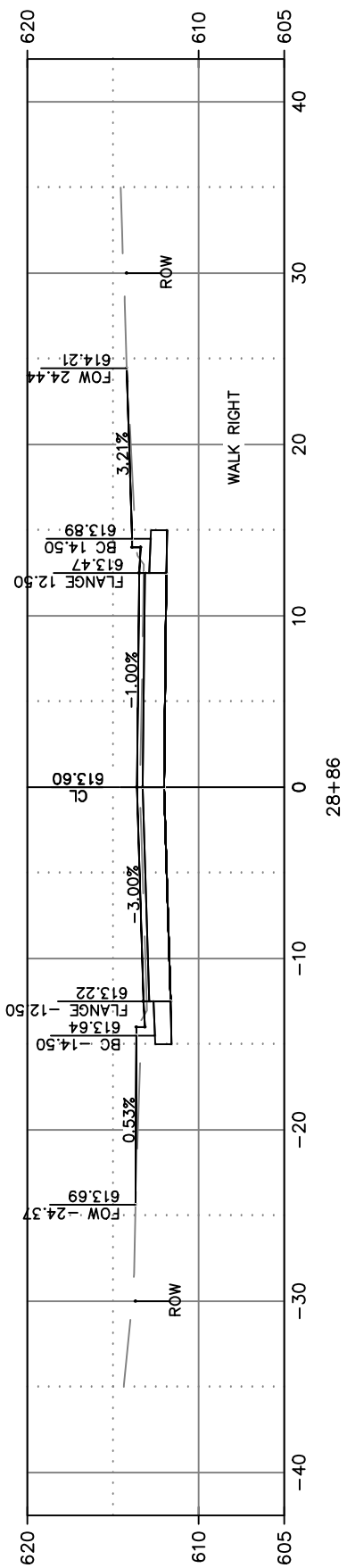
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NO.	DATE	BY	REMARKS

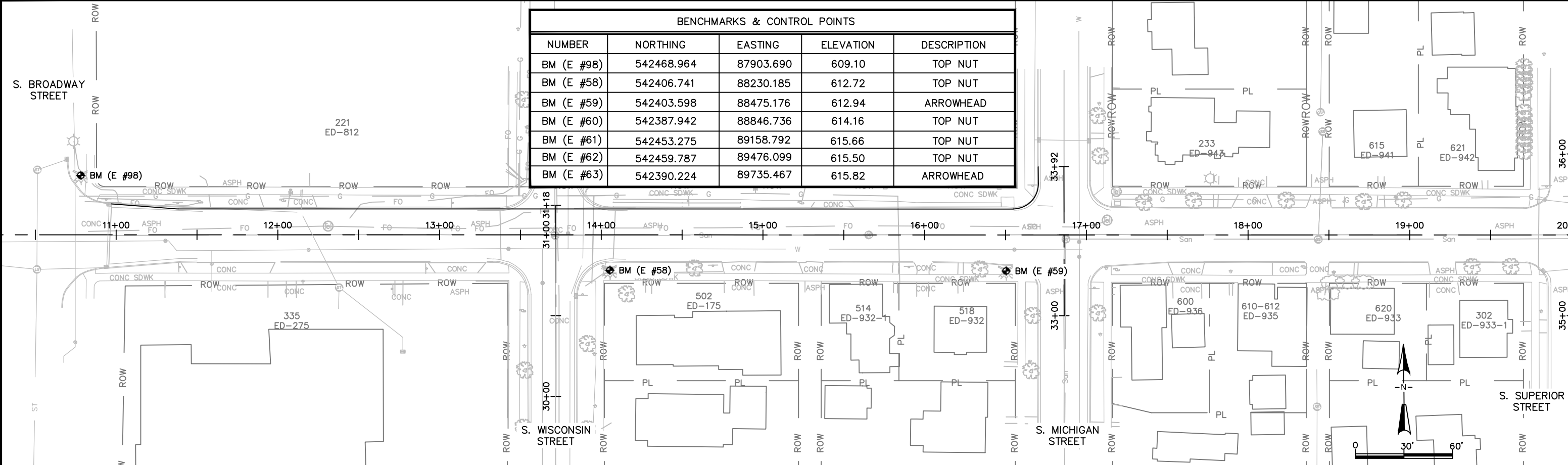




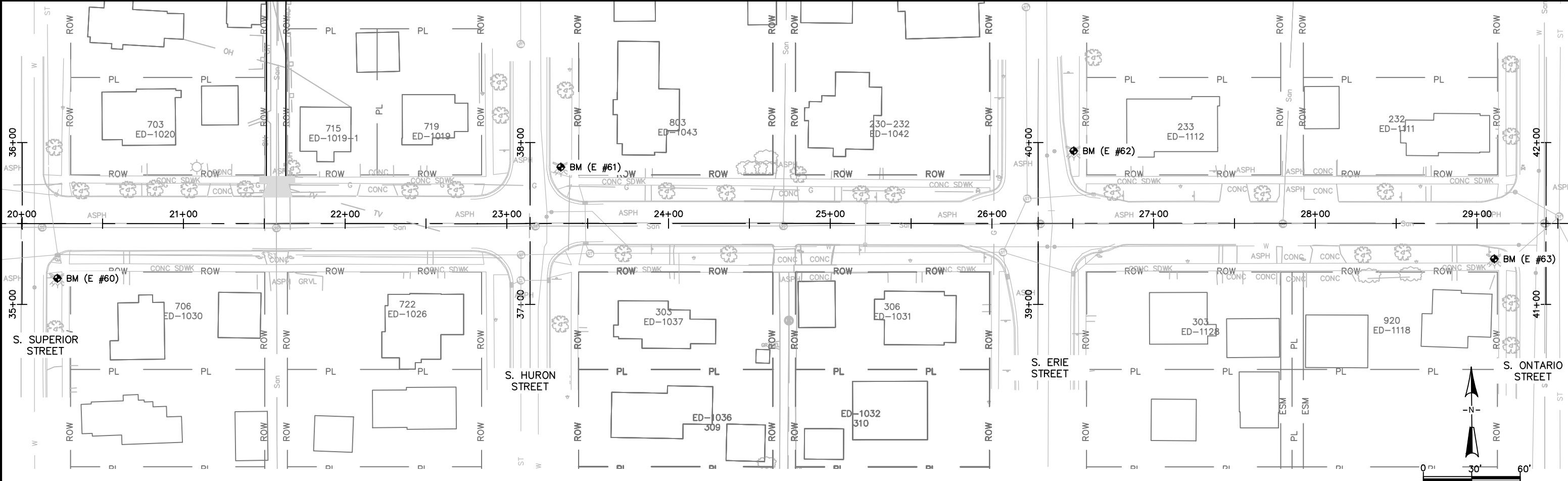
NAME:	LEWIS STREET RECONSTRUCTION
PROJECT #	22-02

PAGE
NO.
C313

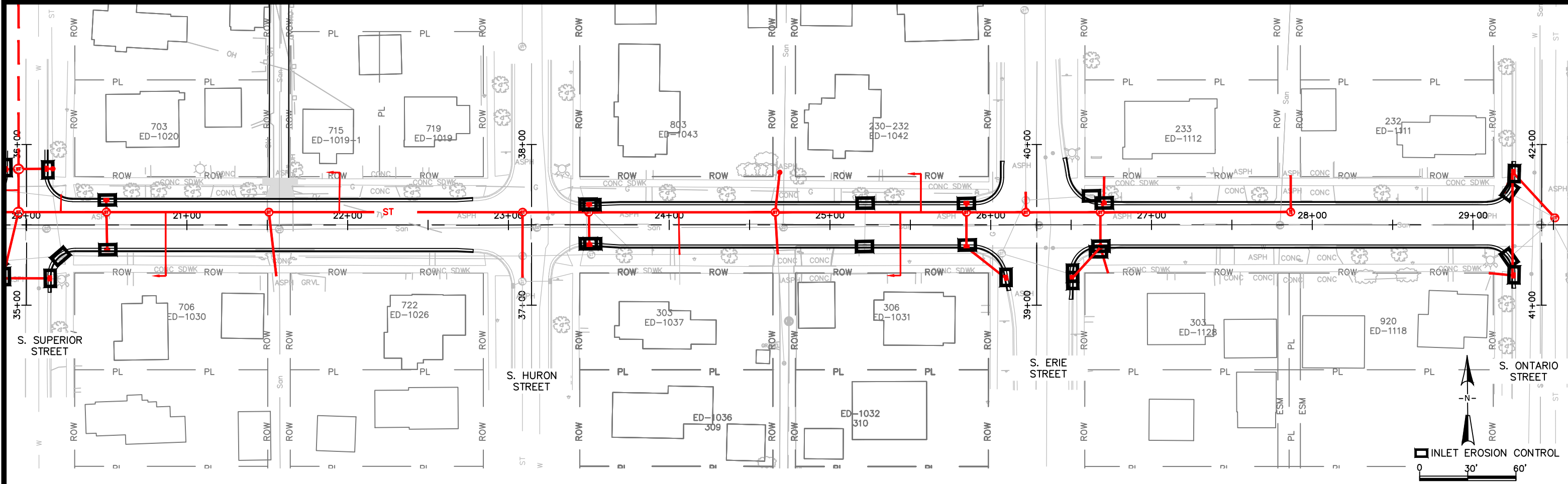
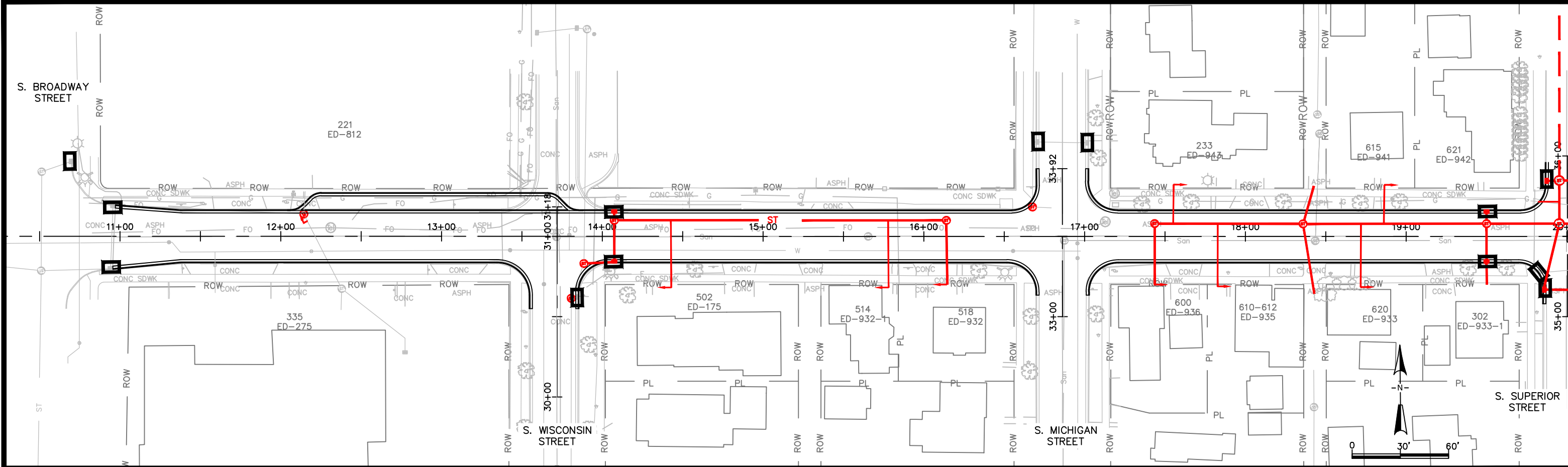




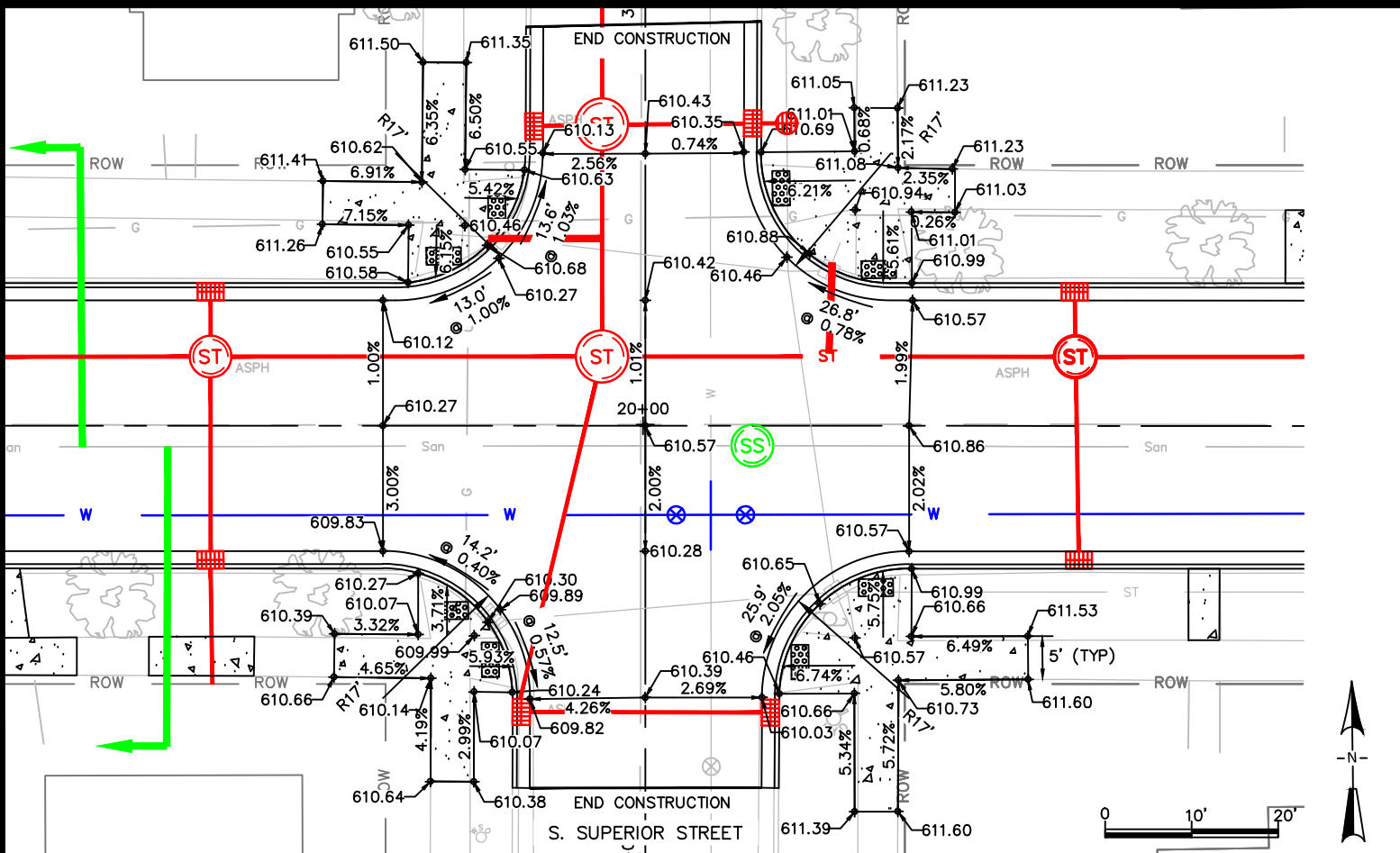
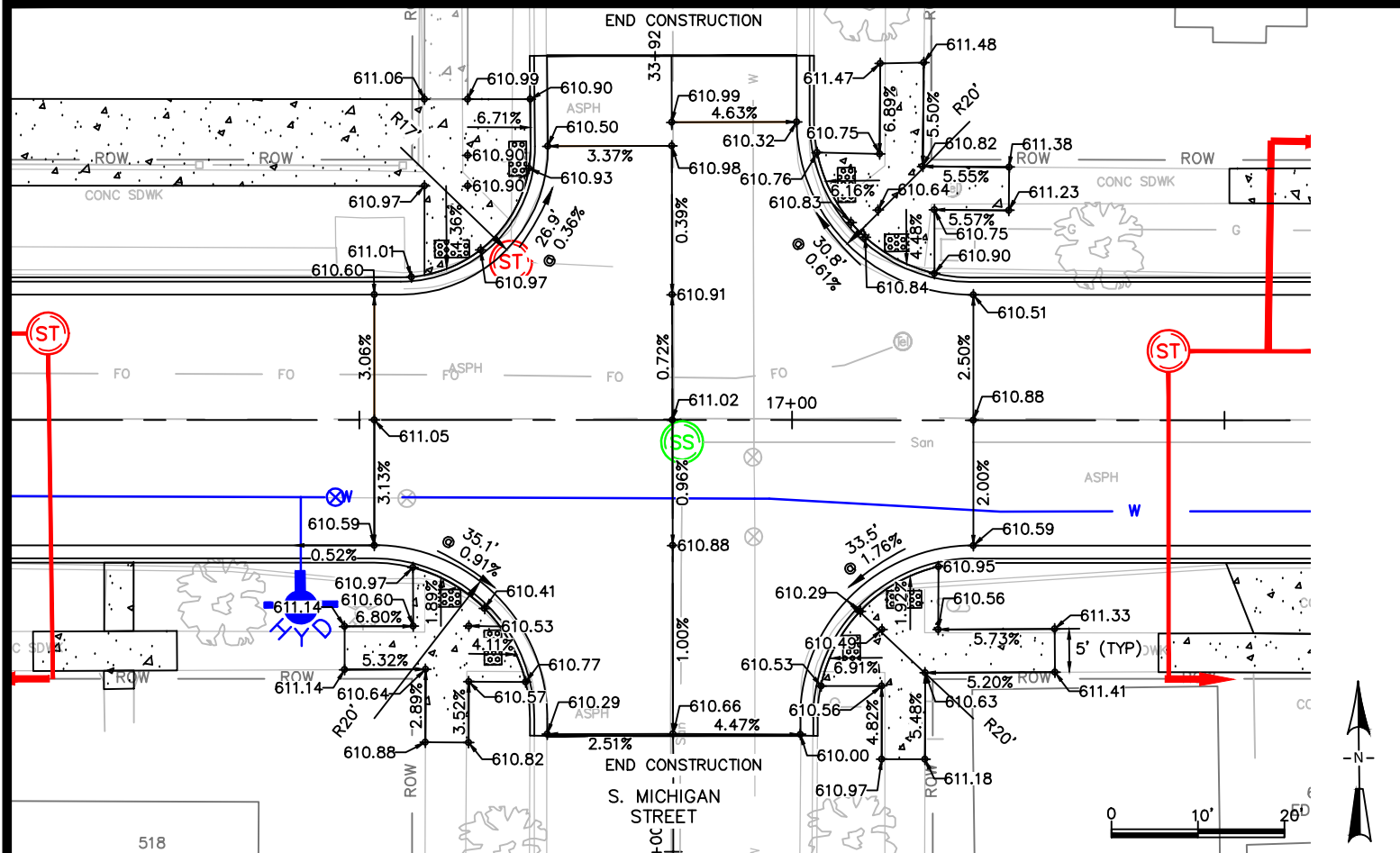
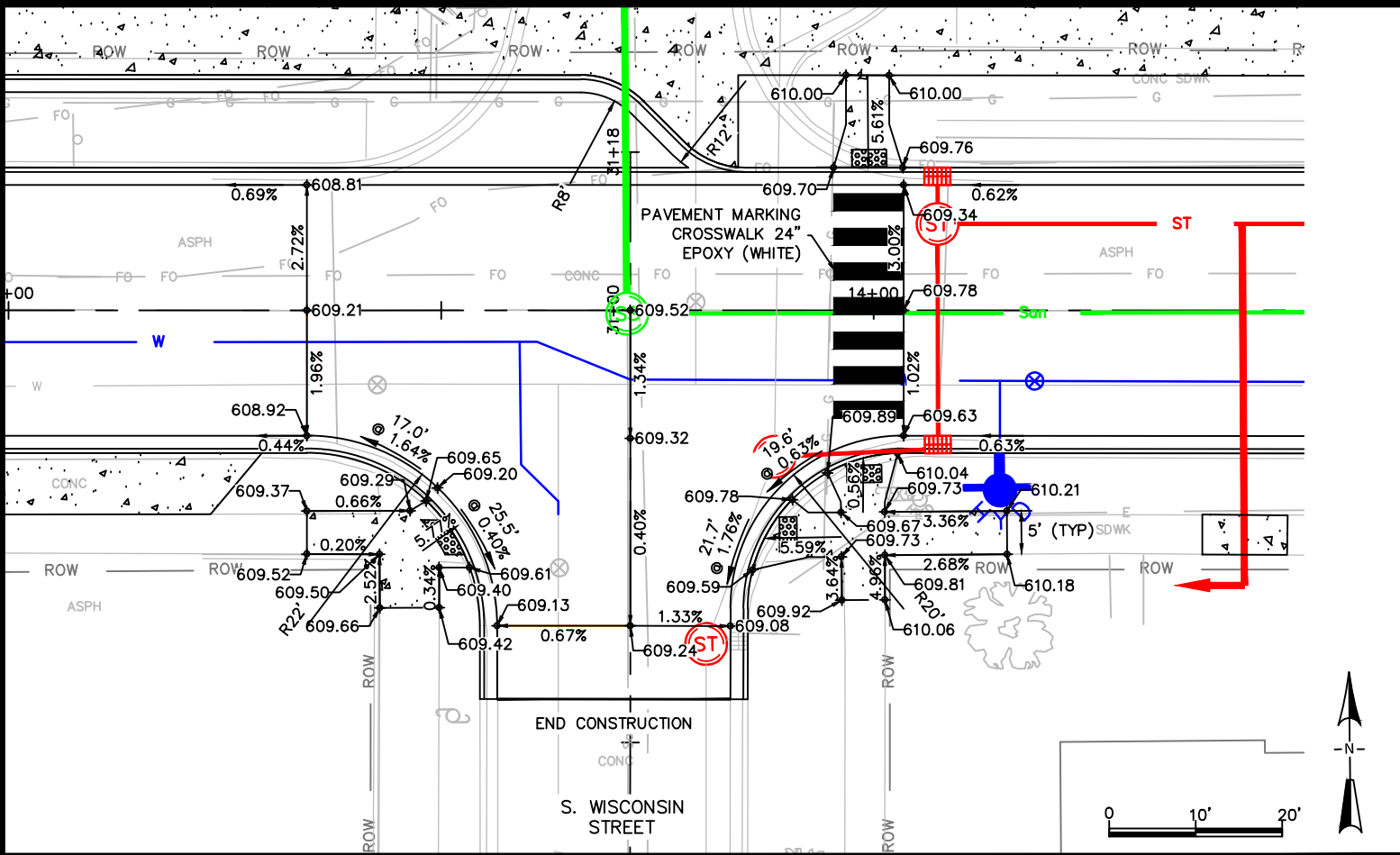
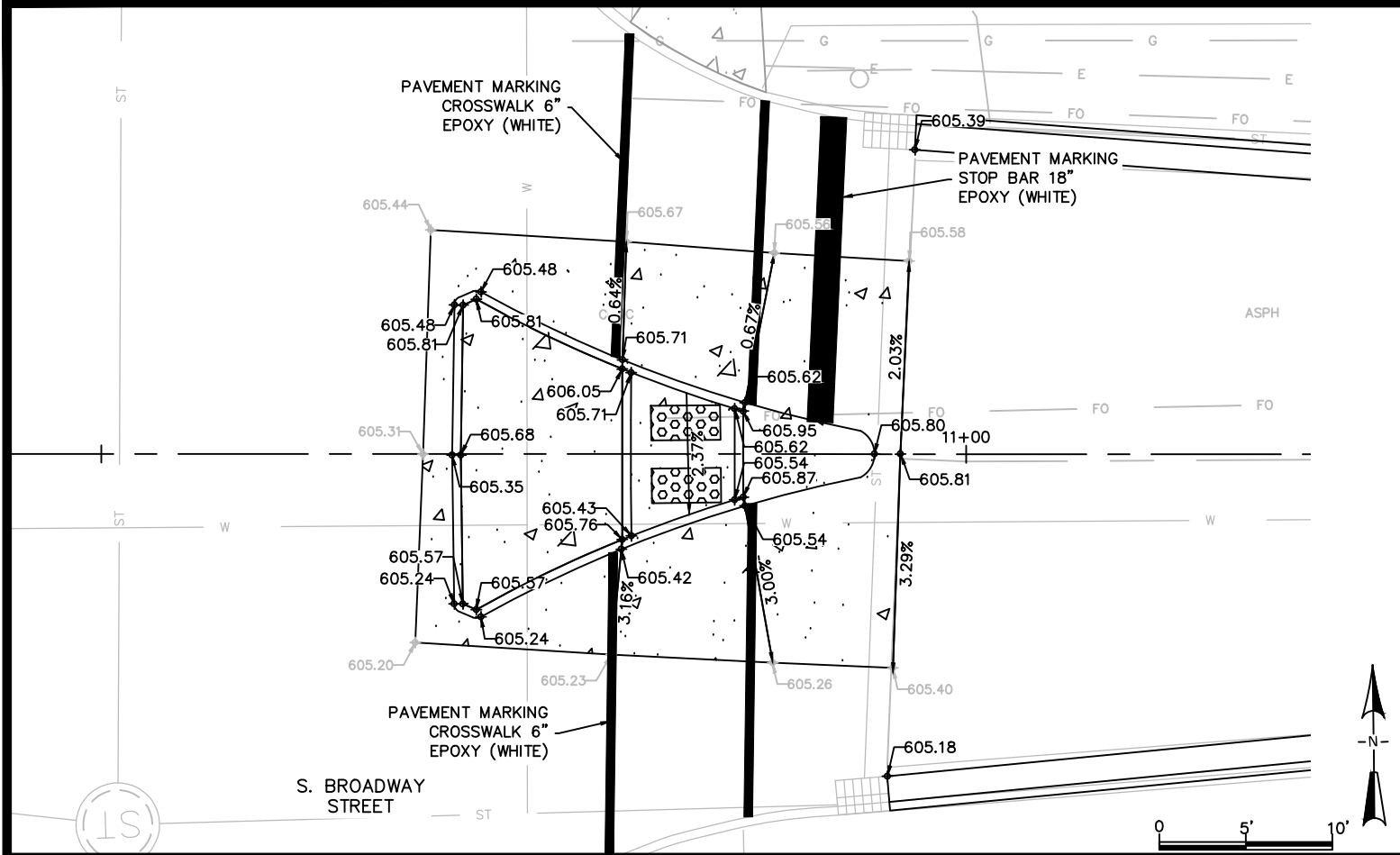
BENCHMARKS & CONTROL POINTS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (E #98)	542468.964	87903.690	609.10	TOP NUT
BM (E #58)	542406.741	88230.185	612.72	TOP NUT
BM (E #59)	542403.598	88475.176	612.94	ARROWHEAD
BM (E #60)	542387.942	88846.736	614.16	TOP NUT
BM (E #61)	542453.275	89158.792	615.66	TOP NUT
BM (E #62)	542459.787	89476.099	615.50	TOP NUT
BM (E #63)	542390.224	89735.467	615.82	ARROWHEAD

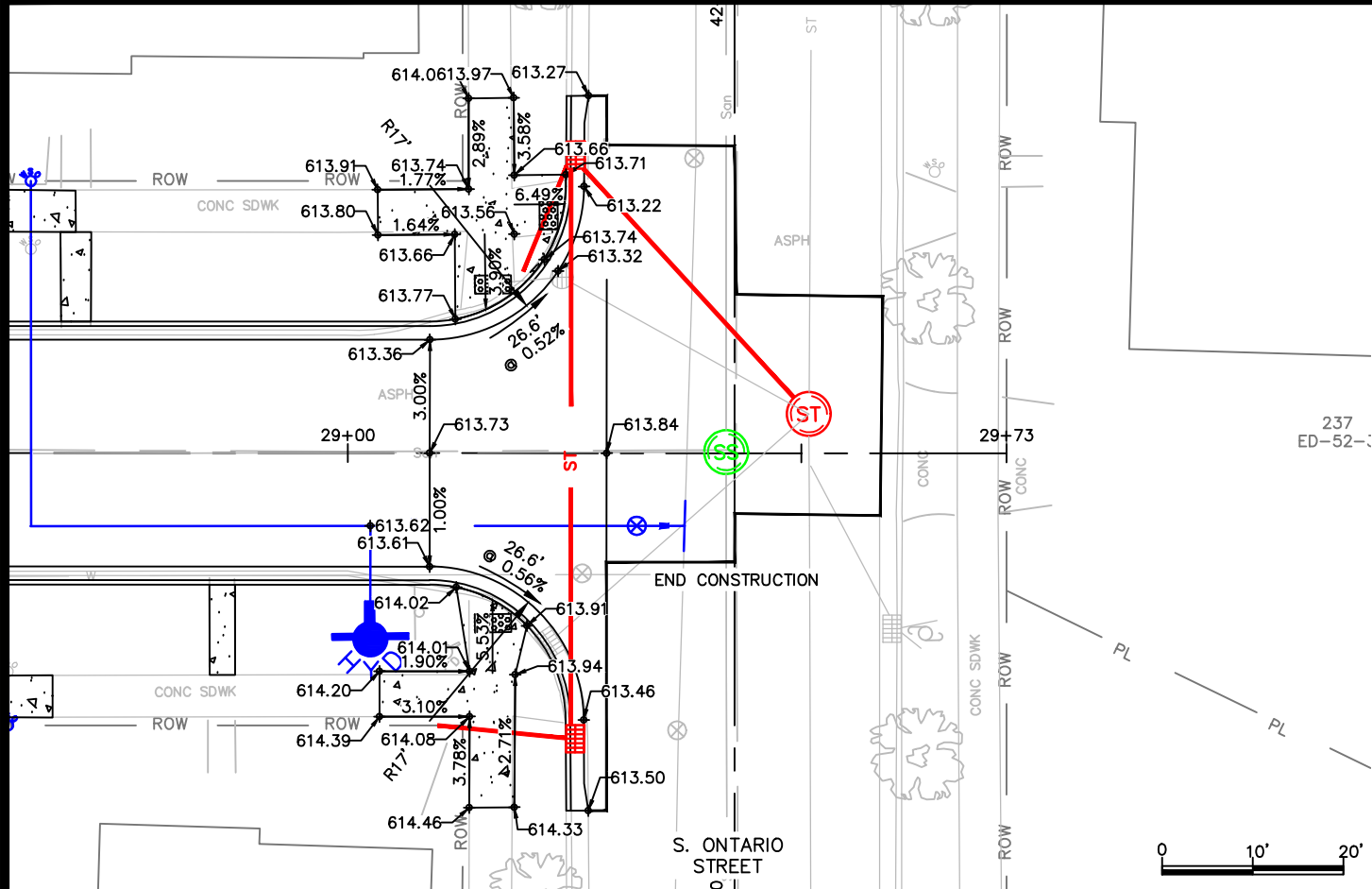
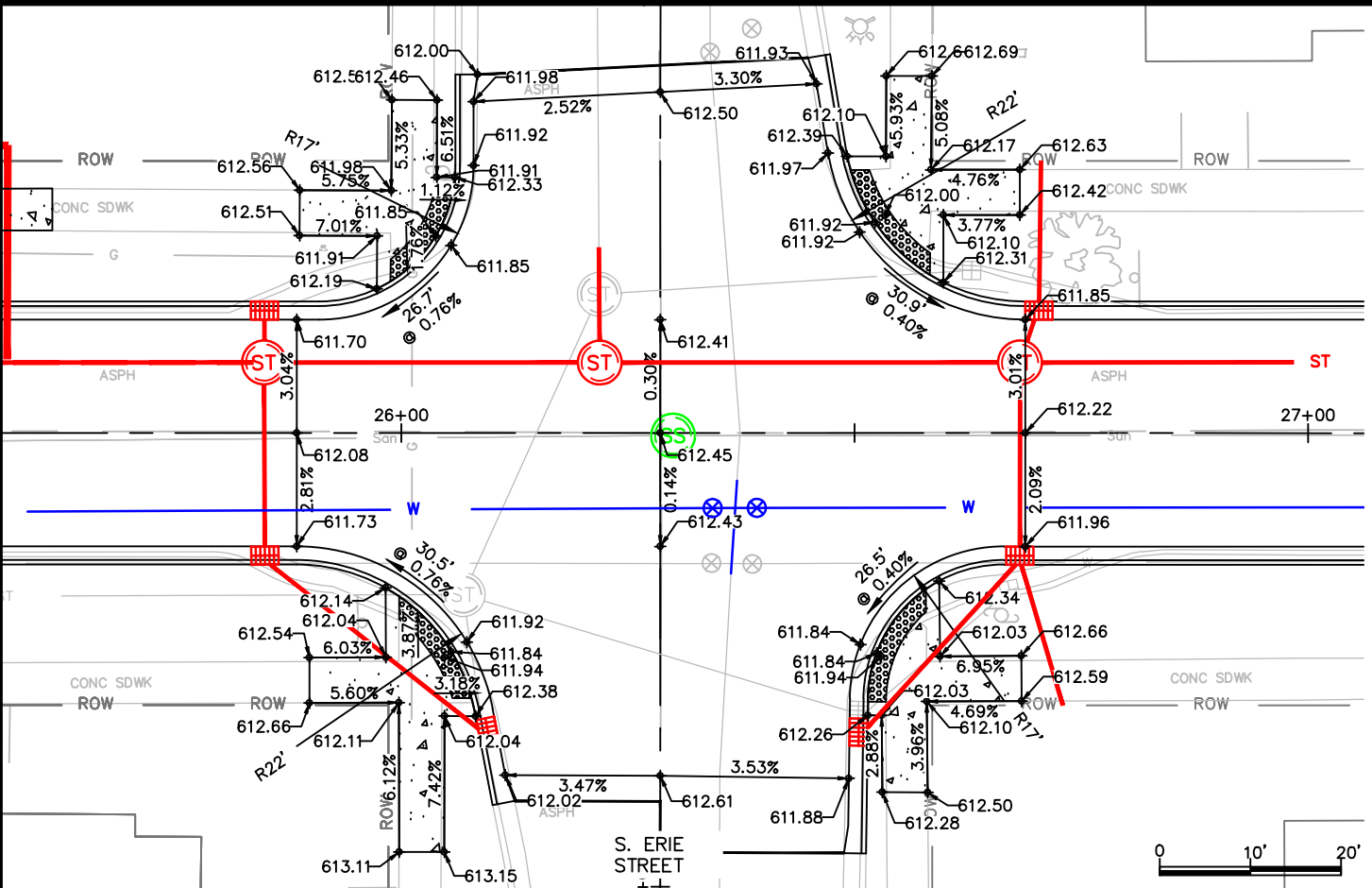
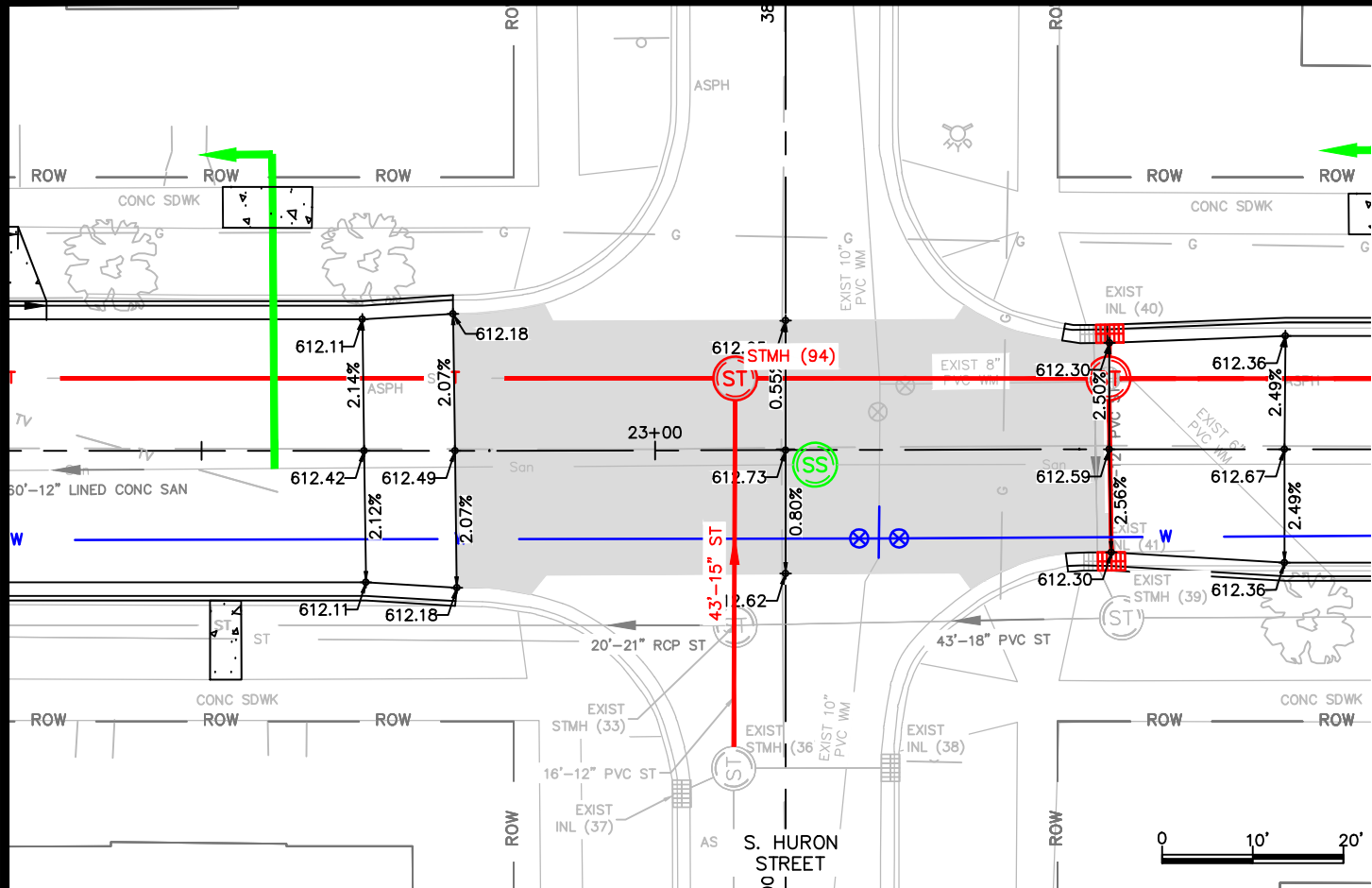


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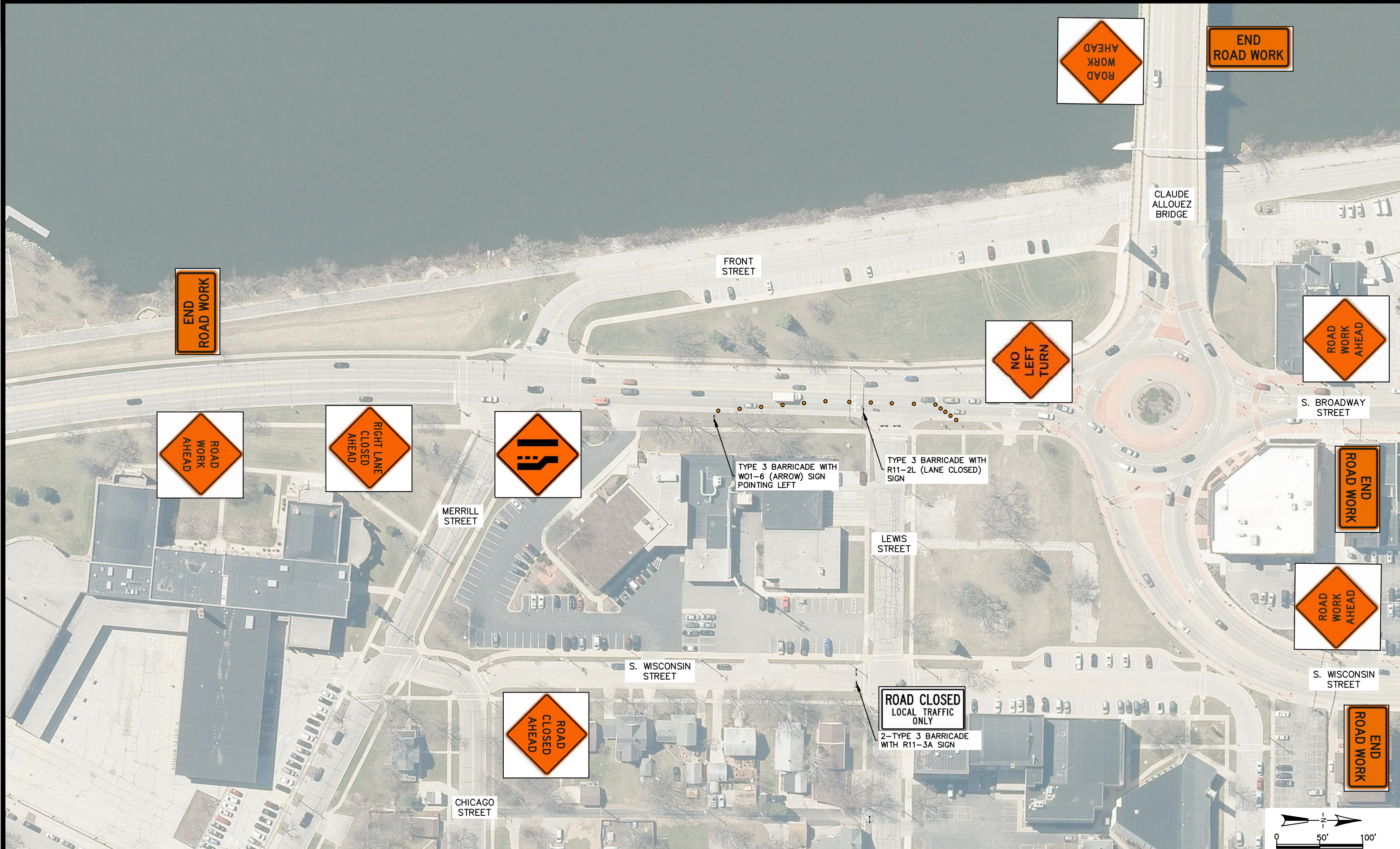


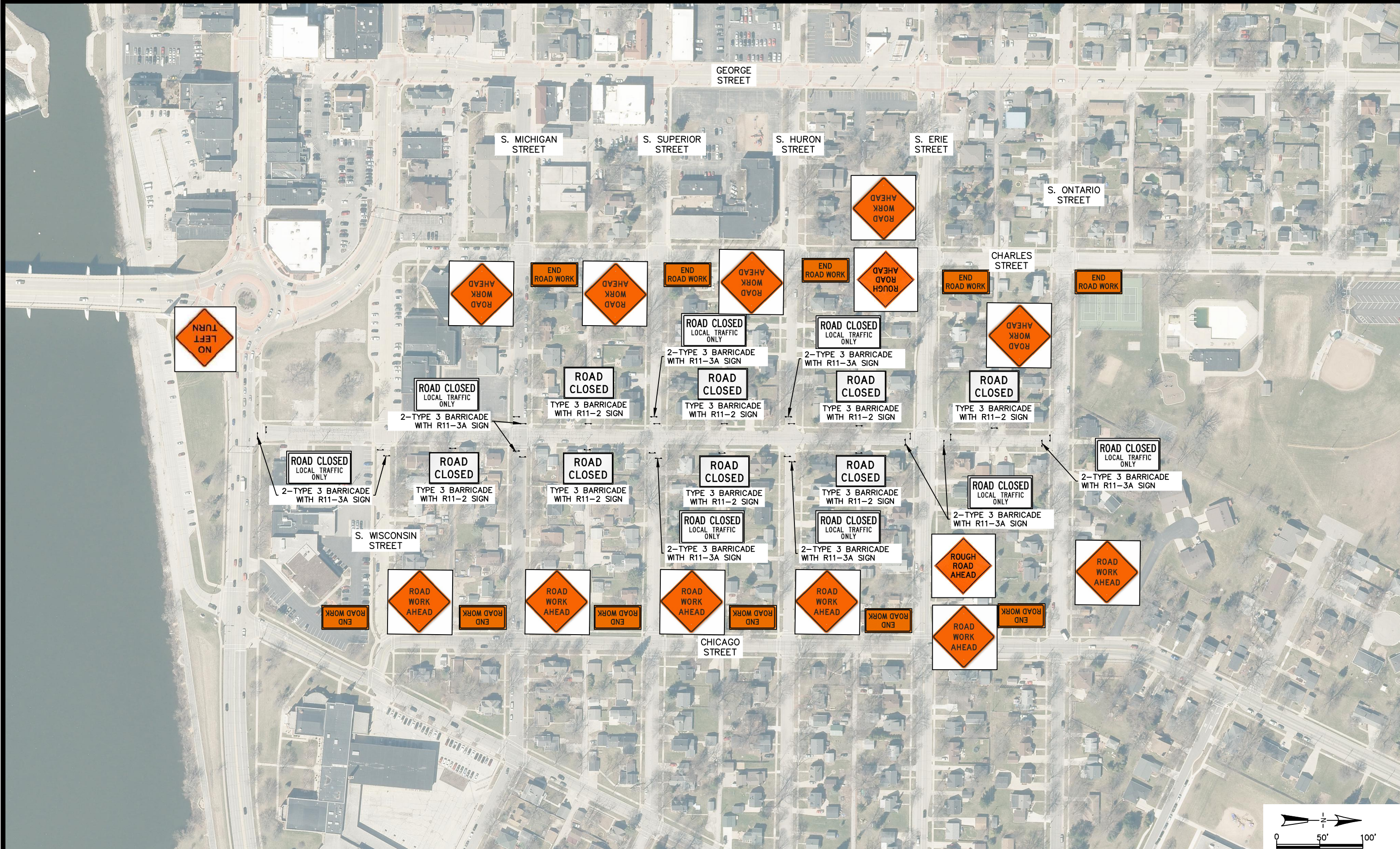
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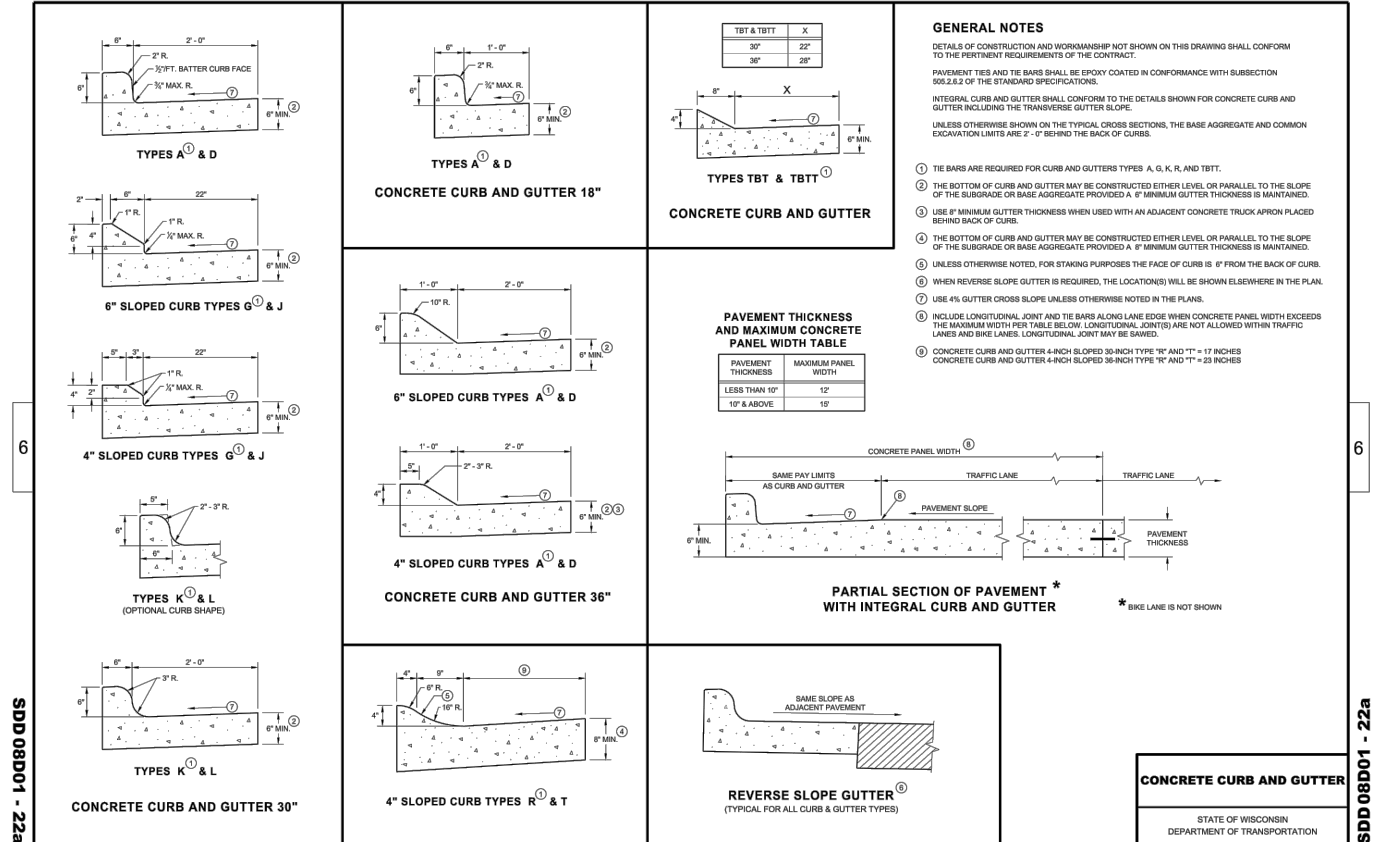


PAVEMENT MARKING QUANTITY TABLE				
LOCATION	TYPE	SIZE	COLOR	QUANTITY
LEWIS ST & BROADWAY ST	EPOXY	6 INCH	WHITE	72 FEET
LEWIS ST & BROADWAY ST	EPOXY	18 INCH	WHITE	18 FEET
LEWIS ST & WISCONSIN ST	EPOXY	24 INCH	WHITE	56 FEET





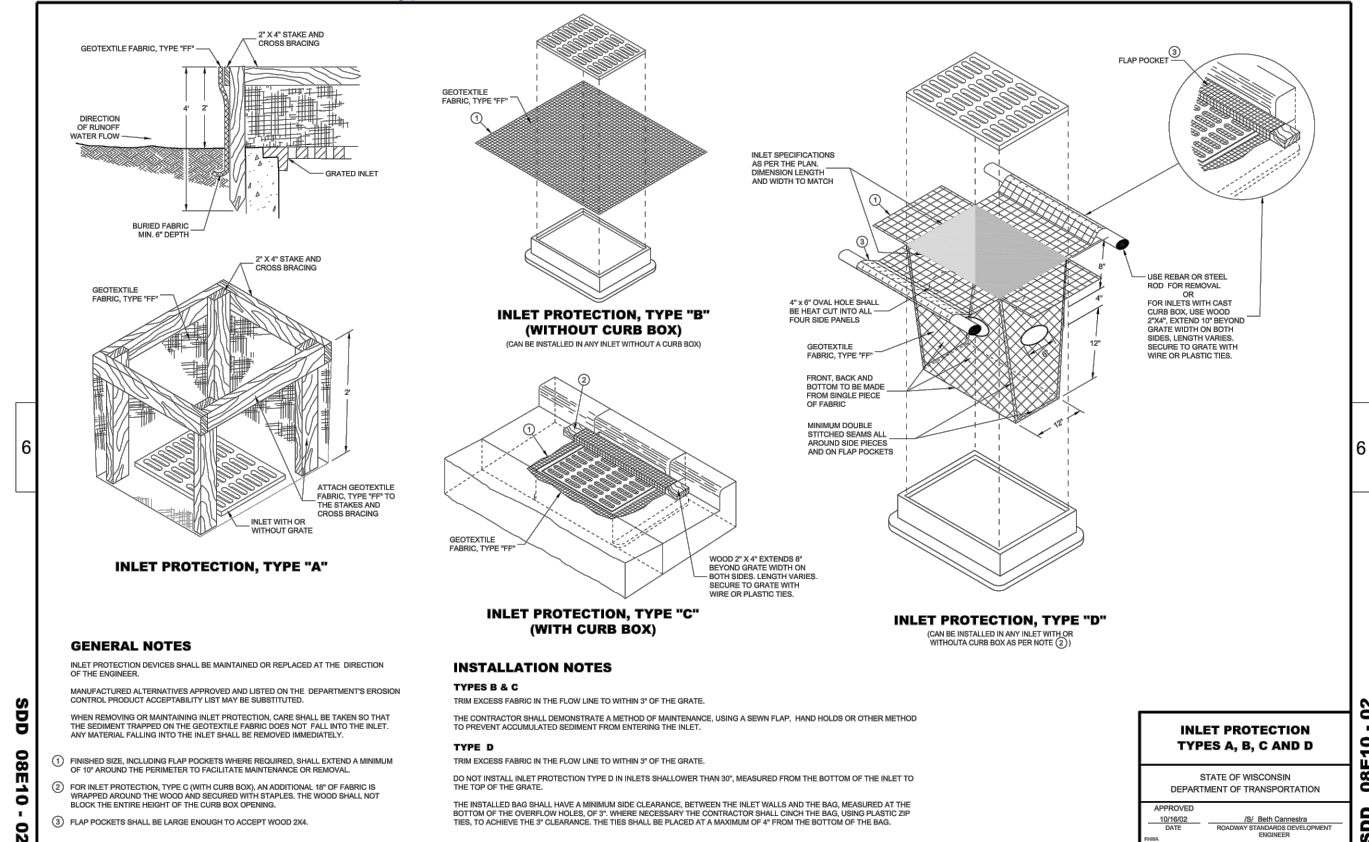
SDD 08D01-a Concrete Curb and Gutter



SDD 08D01 - 22a

SDD 08D01 - 22a

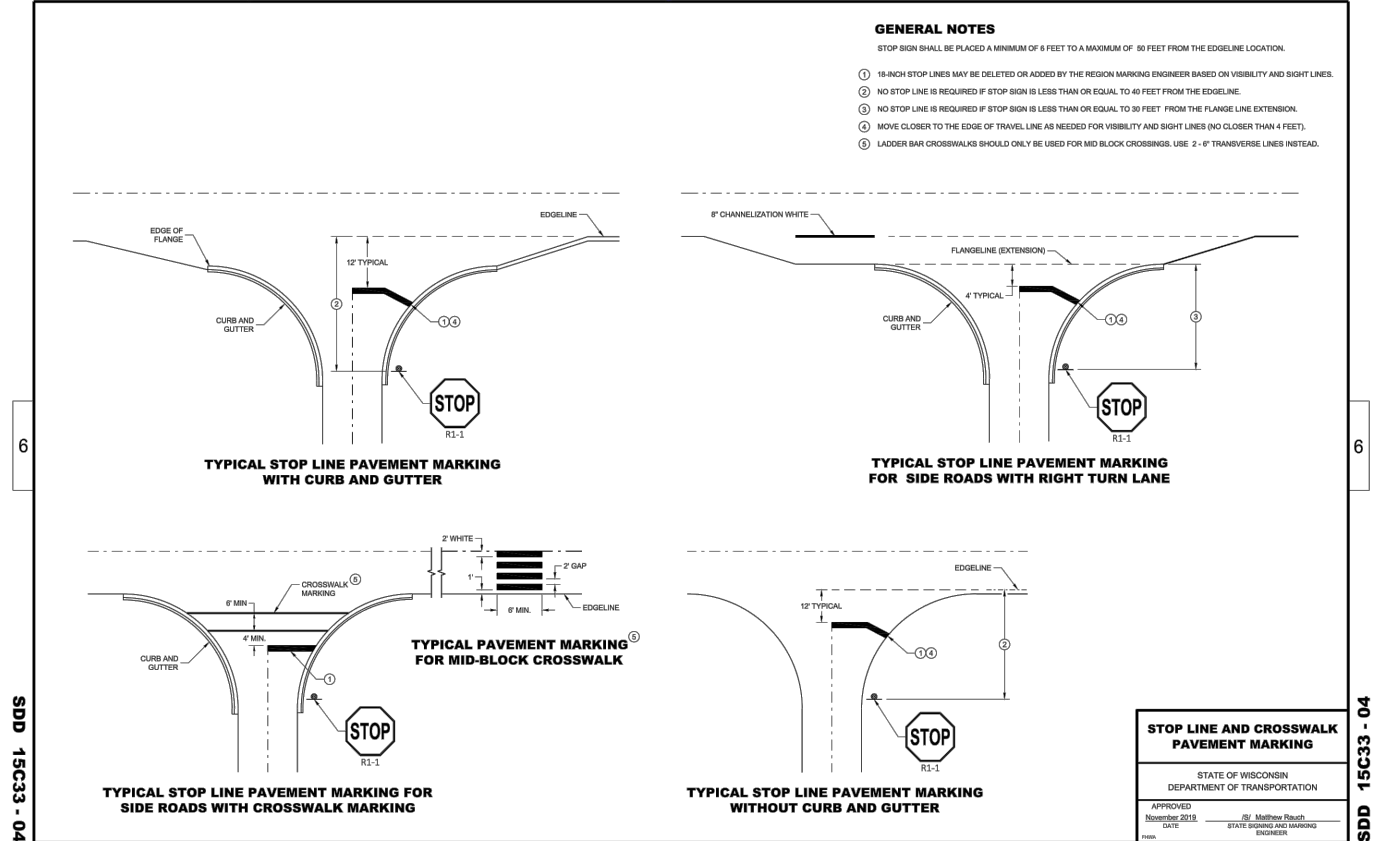
SDD 08E10 Inlet Protection, Types A, B, C and D



SDD 08E10 - 02

SDD 08E10 - 02

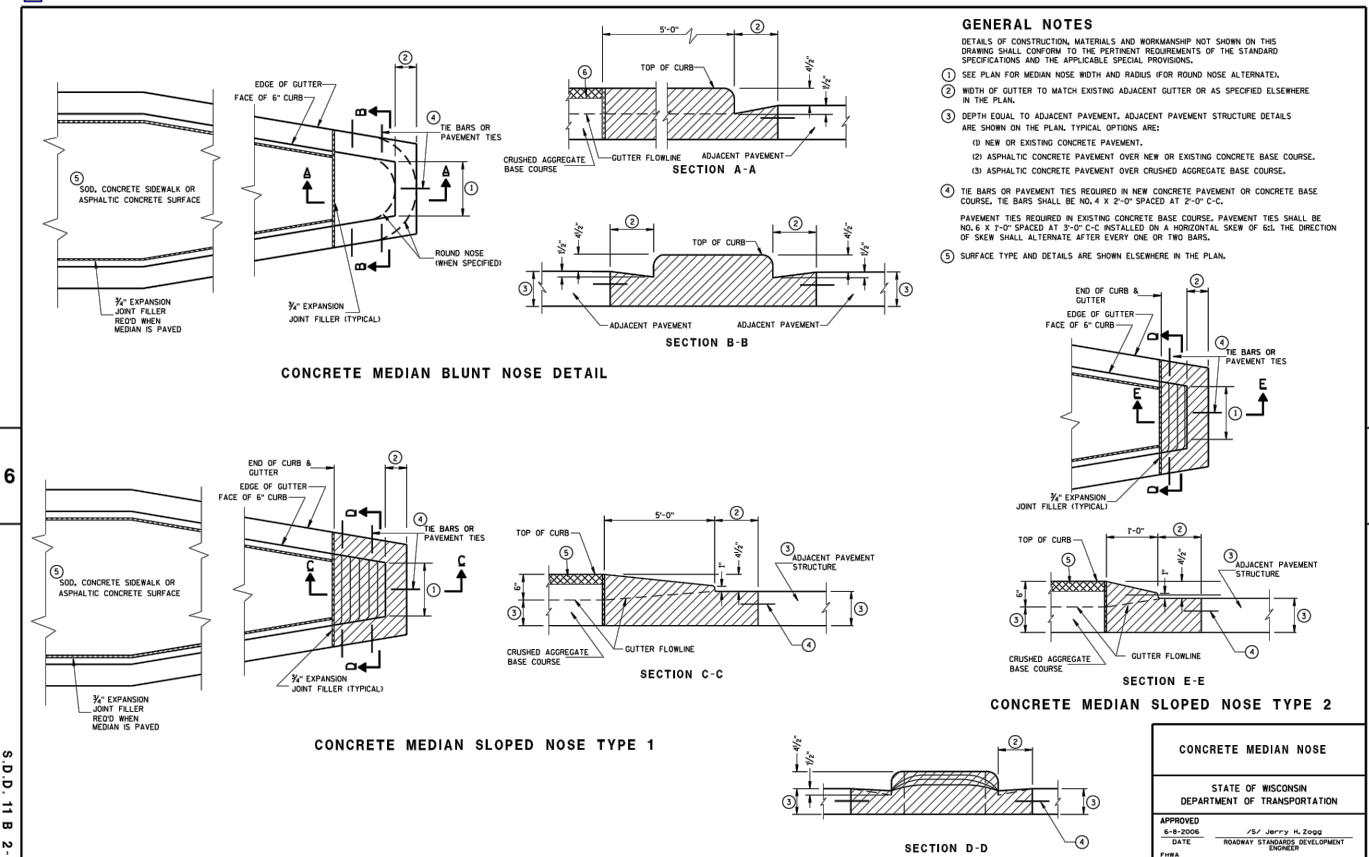
SDD 15C33 Stop Line and Crosswalk Pavement Marking



SDD 15C33 - 04

SDD 15C33 - 04

SDD 11B2 Concrete Median Nose



SDD 11B2 - 2

SDD 11B2 - 2



CITY OF DE PERE

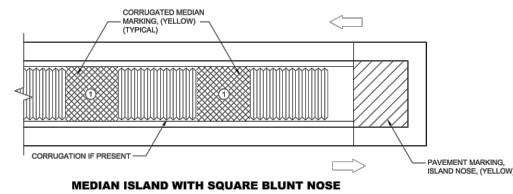
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

LEWIS STREET CONSTRUCTION DETAILS

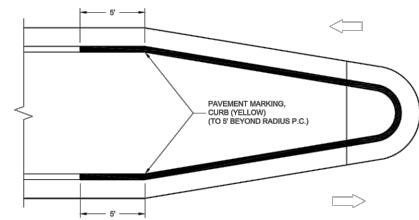
NAME: LEWIS STREET RECONSTRUCTION PROJECT #	22-02	BY KAD	DATE 04-2022	REVISIONS / ISSUES	PAGE NO. C501
SURVEYED		DESIGNED	CKK	04-2022	
CHECKED					

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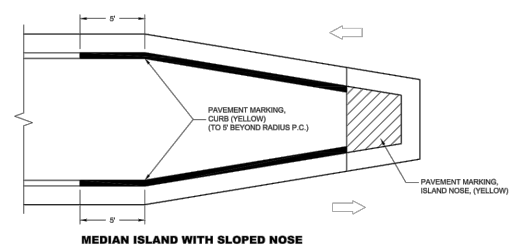
SDD 15C18-b Pavement Markings, Median Island Nose



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

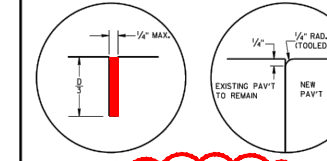
1. APPLY PAVEMENT MARKING TO THE FLAT PORTION OF CORRUGATED MEDIAN.



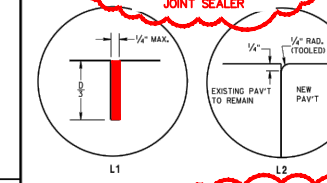
PAVEMENT MARKINGS, MEDIAN ISLAND NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED
February 2012
DATE
BY: Matthew R. Blum
STATE DESIGN AND MARKING
ENGINEER

SDD 13C9-b Concrete Pavement Repair and Replacement



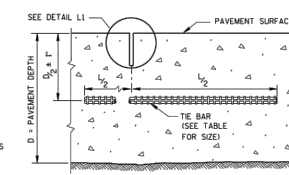
TRANSVERSE JOINTS
HOT POURED ELASTIC
JOINT SEALER



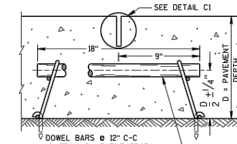
LONGITUDINAL JOINTS
HOT POURED ELASTIC
JOINT SEALER

TIE BAR TABLE			
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
10 1/2" - 15"	NO. 5	36"	36"
> 15"	NO. 4*	30"	24"***

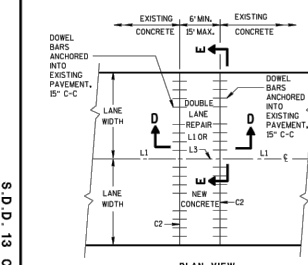
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



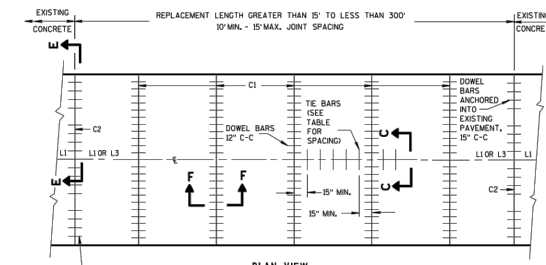
SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT



PLAN VIEW
MULTI-LANE CONCRETE PAVEMENT REPAIR

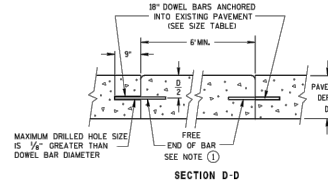


PLAN VIEW
MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

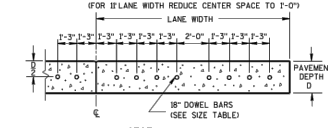
GENERAL NOTES

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 18 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.



SECTION D-D



SECTION E-E
DRILLED DOWEL BAR CONSTRUCTION JOINT

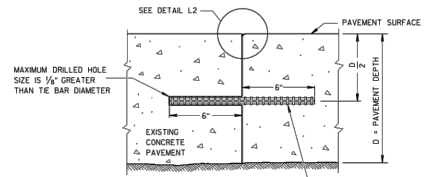
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	JOINT SPACING
5 1/2" - 6 1/2"	NONE	NONE	12"
7" - 7 1/2"	1"	1"	14"
8" - 8 1/2"	1 1/4"	1 1/4"	15"
9" - 9 1/2"	1 1/2"	1 1/2"	15"
10" & ABOVE	1 3/4"	1 3/4"	15"

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

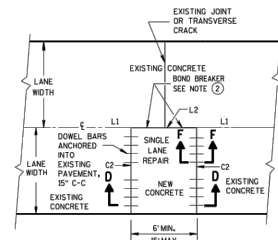
SDD 13C9-c Concrete Pavement Repair and Replacement



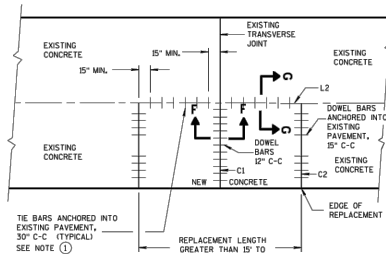
SECTION G-G
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

GENERAL NOTES

1. WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 61 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRILL SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
2. USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
3. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPAIR

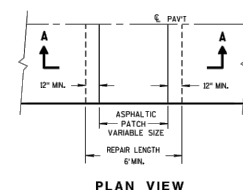


PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT

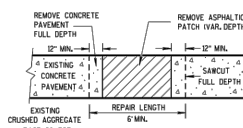
CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED
March 2018
DATE
BY: Peter Kamp, P.E.
PAVEMENT SUPERVISOR

SDD 13C9-a Concrete Pavement Repair and Replacement



PLAN VIEW
HMA PATCH REMOVAL

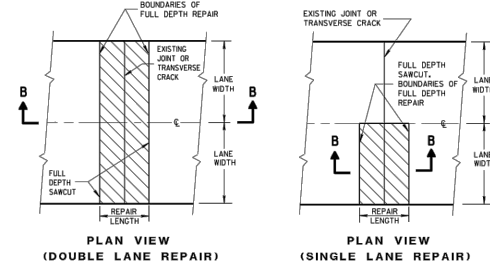


SECTION A-A
HMA PATCH REMOVAL

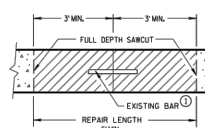
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAD AFTER REPAIRING.

1. DOWEL BARS MUST NOT EXIST.



PLAN VIEW
(DOUBLE LANE REPAIR)
PLAN VIEW
(SINGLE LANE REPAIR)
FULL DEPTH CONCRETE PAVEMENT REMOVAL



SECTION B-B
CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CITY OF DE PERE

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

LEWIS STREET
CONSTRUCTION DETAILS

NAME:
LEWIS STREET
RECONSTRUCTION
PROJECT #
22-02

SURVEYED
DRAWN
DESIGNED
CHECKED
BY
KAD
CKK
DATE
04-2022
04-2022

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

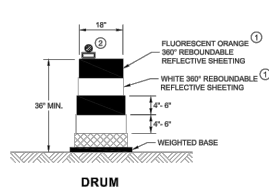
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C502

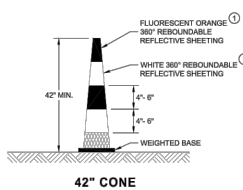
SDD 15C11-b Channelizing Devices, Drums, Cones, Barricades and Vertical Panels

GENERAL NOTES

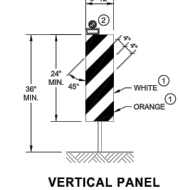
- REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



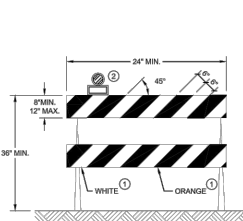
DRUM



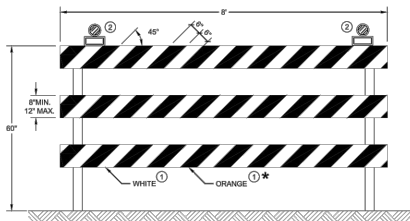
42" CONE
DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS



VERTICAL PANEL
THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE
FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.
★ IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED: May 2021 BY: Andrew Heidtke
DATE: WORK ZONE ENGINEER

SDD 15D20-b Traffic Control, Single Right Lane Closure, Undivided Non-Freeway/Expressway

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH
TYPE "C" STEADY BURN LIGHT
- TYPE II BARRICADE
WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- X - X - X REMOVE PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

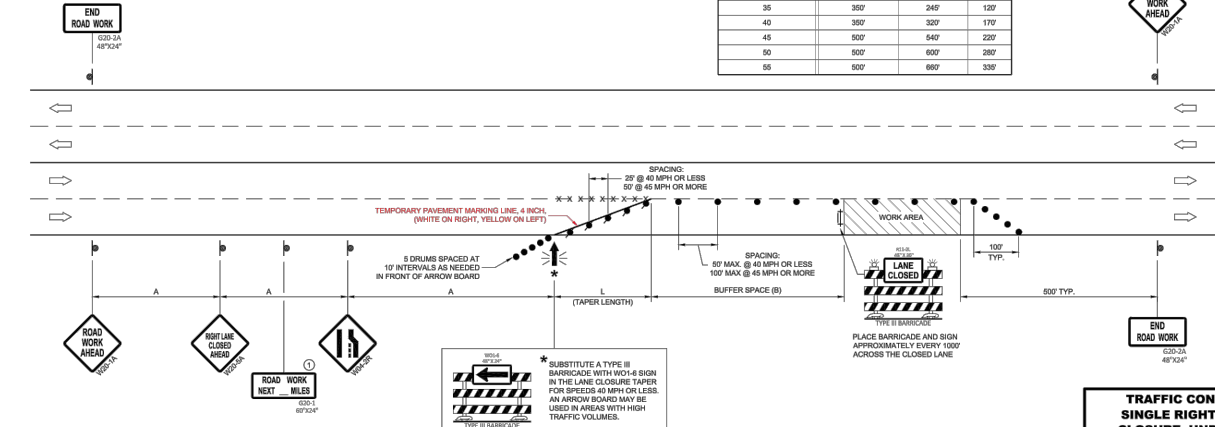
GENERAL NOTES

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN
URBAN AREAS, 36" x 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.
"100" SIGN IS THE SAME AS "10" SIGN EXCEPT THE BACKGROUND IS ORANGE.
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE
REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS
SHALL BE WORKING ON COVERED OR "TOWNE" SIGNS.
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED
IN A CLOSED LANE MAY BE MOUNTED ON TEMPORARY SUPPORTS.
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT
FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO
PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE
W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE
WHERE THESE SIGNS ARE ALREADY PRESENT.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE
IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A
CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 150 FEET IN FRONT OF DRUMS.
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY
REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF
EACH WORKING DAY.
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE
WHEN WORK IS NOT IN PROGRESS.
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

★ OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	300'	240'	120'
40	300'	320'	170'
45	500'	540'	220'
50	500'	600'	280'
55	500'	660'	330'



TRAFFIC CONTROL,
SINGLE RIGHT LANE
CLOSURE, UNDIVIDED
NON-FREEWAY/EXPRESSWAY

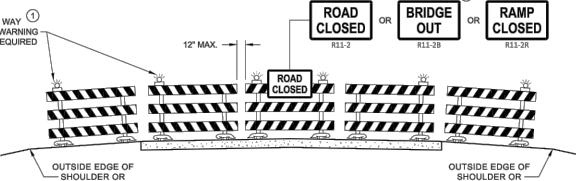
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED: February 2022 BY: Andrew Heidtke
DATE: WORK ZONE ENGINEER

SDD 15C02-b Barricades and Sign for Various Closures

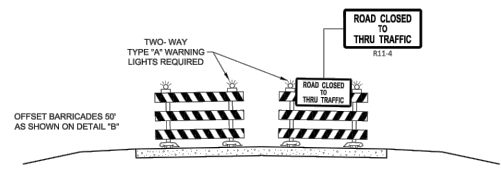
GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT
FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED
OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD
PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON
COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE
SUPPORTS.
ALL TYPE II BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY
SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR
FULL ROAD CLOSURES.
TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.
THE R11-2, R11-3, M4-9, R11-4, AND R10-61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE
THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.
"W" AND "M" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30"
R11-3 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M4-9 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M1-4, M1-5A AND M1-5B SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
M20-1 AND M20-1-1 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
R1-1 SHALL BE 36" X 36"

- TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING
LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF
THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT
SPACING).
- THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON
R11-2 AND R11-3 SIGNS.
- INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE
ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR
ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE
SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE
THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE
SIGNS AS SHOWN.
- EAST CARMINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARMINAL
DIRECTIONS AND ARROWS AS APPROPRIATE.



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

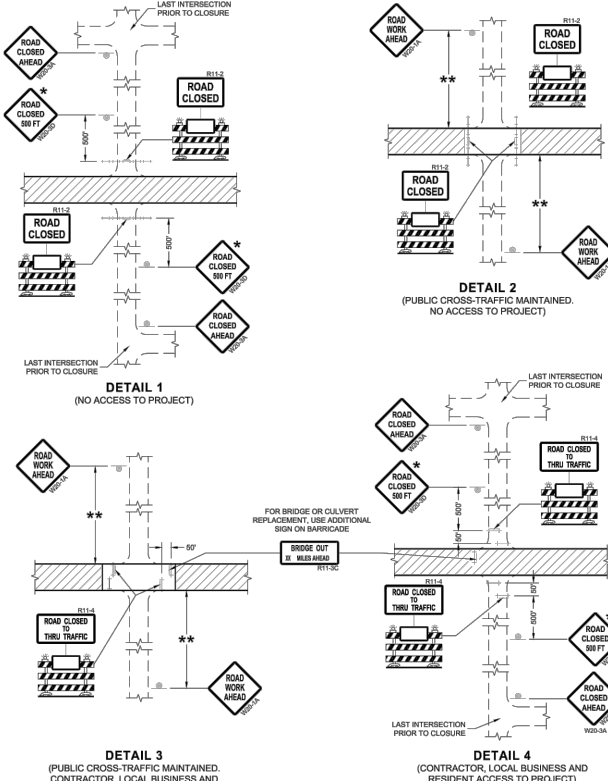
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED: July 2018 BY: Andrew Heidtke
DATE: WORK ZONE ENGINEER

SDD 15C03 Barricades and Signs for Sideroad Closures

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS
AS APPROVED BY THE ENGINEER.
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS
NEEDED AND AS APPROVED BY THE ENGINEER.
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A
DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE
SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.
BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF
THE OPERATION OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE
SUPPORTS.
ALL TYPE II BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN
TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.
TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.
THE R11-2, R11-3, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL
NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30"
R11-3 AND R11-4 SHALL BE 60" X 30".

★ OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
★★ 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.



LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE II BARRICADE
- TYPE II BARRICADE WITH
ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
APPROVED: July 2018 BY: Andrew Heidtke
DATE: WORK ZONE ENGINEER