

CITY OF DE PERE

PROJECT

21-11

AMERICAN BOULEVARD UTILITY AND STREET EXTENSION

BID DATE:

NOVEMBER 18, 2021

@ 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. Bidding documents may be viewed on the QuestCDN website or at the Municipal Service Center, 925 S. Sixth Street, De Pere, WI 54115.

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

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SECTION 00 11 13

OCTOBER 29, 2021 –NOVEMBER 5, 2021

CITY OF DE PERE

ADVERTISEMENT TO BID

PROJECT 21-11

AMERICAN BOULEVARD UTILITY AND STREET EXTENSION

Sealed proposals will be received by the Board of Public Works of the City of De Pere at the Municipal Service Center, 925 South Sixth Street, De Pere, Wisconsin 54115, until 1:00 PM, Thursday, November 18, 2021, at which time they will be publicly opened and read aloud.

Project 21-11 for which proposals are being sought includes the following approximate quantities:

- 2,700 LF New Sanitary Sewer (24-Inch) and Associated Appurtenances
- 550 LF New Sanitary Sewer (8-Inch)
- 2,600 LF New Storm Sewer (12-Inch to 36-Inch) and Associate Appurtenances
- 3,100 LF New Water Main (12-Inch) and Associated Appurtenances
- 46,000 CY Unclassified Excavation
- 15,300 Tons Crushed Aggregate Base Course
- 157,500 SY Restoration

Complete digital project bidding documents are available for viewing and/or downloading at www.QuestCDN.com or may be examined at the office of the Director of Public Works. Digital plan documents may be downloaded for \$15 by inputting Quest project #7763778 on Quest's Project Search page. 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.

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

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

Section 62.15 regarding Public Works.

Section 66.0901(3) regarding Prequalification of Contractor.

Each bidder shall pre-qualify by submitting proof of responsibility on forms furnished by the

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Director of Public Works. Such forms shall be filed with the Director of Public Works no later than 4:00 PM, Monday, November 15, 2021. Prospective bidders who have previously submitted such forms subsequent to January 1, 2021 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 29th day of October 2021.

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

Project 21-11

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

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

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

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

- A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;
- B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

- C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
 - D. Obtain and carefully study (or accept consequences of not doing so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
 - E. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
 - F. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
 - G. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
 - H. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies, that bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
 - I. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.7 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and, procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – SITE AND OTHER AREAS

- 5.1 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in

the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

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

ARTICLE 7 – BID SECURITY

- 7.1 A Bid shall be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price and in the form of a certified check or bank money order or Bid bond (on the form attached) issued by a surety meeting the requirements of the General Conditions. Submittal of a Bid Bond on a form other than the Bid Bond form included in the Bidding Documents may be cause for rejection of Bid.
- 7.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner per the General Conditions.
- 7.3 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 8 – CONTRACT TIMES

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

ARTICLE 9 – LIQUIDATED DAMAGES

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

ARTICLE 10 – SUBSTITUTE AND “OR-EQUAL” ITEMS

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

ARTICLE 11 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

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

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

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

ARTICLE 12 – PREPARATION OF BID

12.1 The Bid form is included with the Bidding documents.

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

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

ARTICLE 13 – BASIS OF BID; COMPARISON OF BIDS

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

ARTICLE 14 – SUBMITTAL OF BID

- 14.1 A Bid shall be submitted no later than date and time prescribed and at place indicated in Advertisement for Bids and shall be enclosed in a plainly marked package with the Project title (and, if applicable, designated portion of the Project for which the Bid is submitted), name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to City of De Pere, Municipal Service Center, 925 South Sixth Street, De Pere, WI 54115. Electronically transmitted Bids will not be accepted.
- 14.2 See Bid Form for a list of documents typically required to be submitted with the Bid.

ARTICLE 15 – MODIFICATION AND WITHDRAWAL OF BID

- 15.1 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 15.2 If within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 16 – OPENING BIDS

- 16.1 Bids will be opened at the time and place indicated in the Advertisement to Bid. The bid opening can also 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://global.gotomeeting.com/join/466580245>

You can also dial in using your phone.

United States (Toll Free): 1 866 899 4679
Access Code: 466-580-245

New to GoToMeeting? Get the app now and be ready when your first meeting starts:
<https://global.gotomeeting.com/install/466580245>

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 21-11

This bid, submitted by the undersigned Bidder to the City of De Pere, in accordance with the Advertisement to Bid, which will be received until 1:00 PM, Thursday November 18, 2021 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: \$_____

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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)

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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

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BID SCHEDULE – UNIT PRICE

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
SANITARY SEWER					
SS-01	Provide 24" PVC (PS115) Sanitary Sewer (Natural Backfill)	LF	2,715	\$ _____	\$ _____
SS-02	Provide 8" PVC Sanitary Sewer (Natural Backfill)	LF	250	\$ _____	\$ _____
SS-03	Provide 8" PVC Sanitary Sewer (Granular Backfill)	LF	310	\$ _____	\$ _____
SS-04	Provide 4' Diameter Outside Drop Sanitary Sewer Manhole (2 Drops)	VF	28	\$ _____	\$ _____
SS-05	Provide 4' Diameter Outside Drop Sanitary Sewer Manhole	VF	140	\$ _____	\$ _____
SS-06	Provide 4' Diameter Sanitary Sewer Manhole	VF	28.5	\$ _____	\$ _____
SS-07	Core Drill Existing Sanitary Manhole and Pour Bench	EA	1	\$ _____	\$ _____
STORM SEWER					
ST-01	Provide 36" PVC, RCP or PP Storm Sewer (Natural Backfill)	LF	195	\$ _____	\$ _____
ST-02	Provide 36" PVC, RCP or PP Storm Sewer (Granular Backfill)	LF	100	\$ _____	\$ _____
ST-03	Provide 38" x 24" RCP Storm Sewer (Natural Backfill)	LF	130	\$ _____	\$ _____
ST-04	Provide 38"X24" RCP Storm Sewer (Granular Backfill)	LF	115	\$ _____	\$ _____
ST-05	Provide 30" PVC, RCP or PP Storm Sewer (Natural Backfill)	LF	90	\$ _____	\$ _____

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STORM SEWER CONTINUED					
ST-06	Provide 30" PVC, RCP or PP Storm Sewer (Granular Backfill)	LF	80	\$ _____	\$ _____
ST-07	Provide 24" PVC, RCP or PP Storm Sewer (Natural Backfill)	LF	60	\$ _____	\$ _____
ST-08	Provide 18" PVC, RCP or PP Storm Sewer (Natural Backfill)	LF	760	\$ _____	\$ _____
ST-09	Provide 18" RCP Class (IV) Storm Sewer (Granular Backfill)	LF	80	\$ _____	\$ _____
ST-10	Provide 18" PVC, RCP or PP Storm Sewer (Granular Backfill)	LF	50	\$ _____	\$ _____
ST-11	Provide 15" RCP Class (IV) Storm Sewer (Granular Backfill)	LF	50	\$ _____	\$ _____
ST-12	Provide 15" PVC, RCP or PP Storm Sewer (Natural Backfill)	LF	375	\$ _____	\$ _____
ST-13	Provide 12" RCP Class (IV) Storm Sewer (Granular Backfill)	LF	145	\$ _____	\$ _____
ST-14	Provide 12" PVC, RCP or PP Storm Sewer (Granular Backfill)	LF	140	\$ _____	\$ _____
ST-15	Provide 12" PVC, RCP or PP Storm Sewer (Natural Backfill)	LF	200	\$ _____	\$ _____
ST-16	Provide 72" Diameter Storm Manhole	VF	7.5	\$ _____	\$ _____
ST-17	Provide 60" Diameter Storm Manhole	VF	16	\$ _____	\$ _____
ST-18	Provide 48" Diameter Storm Manhole	VF	23	\$ _____	\$ _____
ST-19	Provide Type B Inlet	EA	19	\$ _____	\$ _____
ST-20	Provide 12" NYLOPLAST Inlet	EA	1	\$ _____	\$ _____
ST-21	Construct Inlet over Existing Storm Sewer	EA	2	\$ _____	\$ _____

Project 21-11
American Boulevard Utility and Street Extension

City of De Pere

STORM SEWER CONTINUED

ST-22	Connect 38"x24" Storm Sewers (2) to Existing Structure	EA	1	\$ _____	\$ _____
ST-23	Core Drill Existing Structure	EA	3	\$ _____	\$ _____
ST-24	Provide 36" RCP Endwall	EA	2	\$ _____	\$ _____
ST-25	Provide 30" RCP Endwall	EA	3	\$ _____	\$ _____
ST-26	Provide 18" RCP Endwall	EA	2	\$ _____	\$ _____
ST-27	Provide 12" RCP Endwall	EA	3	\$ _____	\$ _____
ST-28	Abandon/Remove Existing Storm Sewer and Associated Appurtenances	LS	1	\$ _____	\$ _____

WATER MAIN

W-01	Provide 12" PVC Water Main - (Natural Backfill)	LF	2,850	\$ _____	\$ _____
W-02	Provide 12" PVC Water Main - (Granular Backfill)	LF	285	\$ _____	\$ _____
W-03	Provide 6" PVC Hydrant Leads (Natural Backfill)	LF	40	\$ _____	\$ _____
W-04	Provide 12" Gate Valve	EA	10	\$ _____	\$ _____
W-05	Provide 6" Gate Valve	EA	8	\$ _____	\$ _____
W-06	Provide Connection to Existing Water Main	EA	3	\$ _____	\$ _____
W-07	Provide Hydrant (7.5' Bury)	EA	1	\$ _____	\$ _____
W-08	Provide Hydrant (7.0' Bury)	EA	7	\$ _____	\$ _____
W-09	Provide Water Main Offset	EA	4	\$ _____	\$ _____

Project 21-11
American Boulevard Utility and Street Extension

City of De Pere

WATER MAIN CONTINUED					
W-10	Provide 1/2 Water Main Offset	EA	1	\$ _____	\$ _____
STREET AND DRAINAGE					
SD-01	Provide Clearing and Grubbing	LS	1	\$ _____	\$ _____
SD-02	Unclassified Excavation (Pond)	CY	38,250	\$ _____	\$ _____
SD-03	Unclassified Excavation (Street)	CY	7,750	\$ _____	\$ _____
SD-04	Unclassified Excavation/ Concrete and Asphaltic Concrete Pavement Removal (STA 27+60 to STA 33+05)	CY	3,200	\$ _____	\$ _____
SD-05	Topsoil Stripping at Fill Site	SY	16,500	\$ _____	\$ _____
SD-06	Topsoil Stripping Behind Curb	SY	11,300	\$ _____	\$ _____
SD-07	Topsoil Stripping and Fill Placement Below Subgrade	SY	2,500	\$ _____	\$ _____
SD-08	Provide 3/4" Crushed Aggregate Base Course	TON	100	\$ _____	\$ _____
SD-09	Provide 1 1/4" Crushed Aggregate Base Course	TON	15,300	\$ _____	\$ _____
SD-10	Erosion Mat Class I Urban - Topsoil and Seed	SY	15,000	\$ _____	\$ _____
SD-11	Landscaping - Topsoil, Temporary Nurse Crop and Mulch	SY	120,000	\$ _____	\$ _____
SD-12	Landscaping – Topsoil, Seed, Fertilizer and Mulch	SY	29,000	\$ _____	\$ _____
SPECIAL CONSTRUCTION					
SC-01	Pipe Foundation Stabilization	CY	100	\$ _____	\$ _____
SC-02	Provide Silt Fence	LF	2,800	\$ _____	\$ _____

Project 21-11
American Boulevard Utility and Street Extension

City of De Pere

SPECIAL CONSTRUCTION CONTINUED					
SC-03	Inlet Protection Type A	EA	4	\$ _____	\$ _____
SC-04	Inlet Protection Type D	EA	25	\$ _____	\$ _____
SC-05	Erosion Bales	EA	50	\$ _____	\$ _____
SC-06	Provide Heavy Rip Rap and Geotextile Fabric (Type HR)	SY	120	\$ _____	\$ _____
SC-07	Provide Medium Rip Rap and Geotextile Fabric (Type HR)	SY	100	\$ _____	\$ _____
SC-08	Tracking Pad	EA	2	\$ _____	\$ _____
SC-09	Adjust Existing Manhole	EA	1	\$ _____	\$ _____
SC-10	Adjust Manhole Remove and Replace Casting (Storm)	EA	3	\$ _____	\$ _____
SC-11	Adjust Manhole Remove and Replace Casting (Sanitary)	EA	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 21-11 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:

<u>ITEM</u>	<u>MATERIAL</u>	<u>SUPPLIER</u>
Valves	N/A	
Hydrants	N/A	
Manholes	Concrete	
Sanitary Sewer	PVC	
Water Main	PVC	
Storm Sewer (RCP) (List Proposed Size)	RCP	
Storm Sewer (PVC) (List Proposed Size)	PVC	
Storm Sewer (PP) (List Proposed Size)	PP	
Aggregate	N/A	

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>
Utility Work		
Street and Pond Excavation		
Aggregate Base Course Placement		
Restoration/Landscaping		

SECTION 00 51 00

NOTICE OF AWARD

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

Project Description: 21-11 American Boulevard Utility and Street Extension

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 October 29, 2021 and November 5, 2021.

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

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

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

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

Dated this ____th day of _____ 2021.

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 21-11 American Boulevard Utility and Street Extension, 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 October 29, 2021 and October 5, 2021.
- (b) Drawings designated for Project 21-11 American Boulevard Utility and Street Extension dated October 29, 2021.
- (c) City of De Pere 2020 Construction Specifications.
- (d) Special Provisions dated October 29, 2021.
- (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: 21-11 AMERICAN BOULEVARD UTILITY AND STREET EXTENSION

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 21-11, 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.

Project 21-11
American Boulevard Utility and Street Extension

City of De Pere

- b. After the expiration of one (1) year following the date on which Contractor ceased work on said CONTRACT.
 - c. Other than in a state court of competent jurisdiction in and for the County or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed or recorded against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

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

In Presence of:

_____ (WITNESS)	_____ (CONTRACTOR)
_____ (WITNESS)	_____ (SURETY)

SECTION 00 61 16

CITY OF DE PERE

PERFORMANCE BOND

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

WHEREAS, Contractor has by written agreement dated _____ (date to be affixed by City), entered into a contract with the City for Project 21-11, 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:		(Date)
	(Contractor)	
Payment of:	\$	
	(Line 8 or other - attach explanation of other amount)	
is recommended by:		(Date)
	(Owner)	

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, 2020 Construction Specifications and these Special Provisions and plans, and the latest edition of the Wisconsin Department of Transportation Standards Specifications for Highway and Structure Construction, where referenced in the City Specifications.
- B. Definitions. Any reference to the “state” or the “department” in said Standard Specifications shall mean the “City of De Pere” for the purposes of this contract.
- C. Industry Standards
 - 1. Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
 - 2. Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
 - 3. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
 - 4. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.

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

1.3 WORK COVERED BY THE CONTRACT DOCUMENTS

A. Project Identification

1. Project Location

- a. American Boulevard from 200 feet southwest of Garroman Drive to 3,050 feet northeast of Garroman Drive.
- b. American Boulevard spot work 1000 feet southwest of Biotech Way.
- c. Garroman Drive from 650 feet northwest of American Boulevard to American Boulevard.
- d. Grading and pond construction in an area bounded by the South City limits, Garrity's Glen Fourth Addition Subdivision, 500 feet south of Biotech Way, and American Boulevard.

2. Work will be performed under the following prime contract:

- a. Project 21-11 – American Boulevard Utility and Street Extension.

B. The Work includes:

1. Sanitary sewer and associated appurtenances.
2. Water main and associated appurtenances.
3. Storm sewer and associated appurtenances.
4. Unclassified excavation (pond and street construction).
5. Crushed aggregate base course placement.
6. Erosion control.
7. Landscape restoration.

1.4 WORK SEQUENCE/SCHEDULE

A. Project shall be completed by July 31, 2022.

1. Utility and crushed aggregate base course placement shall be completed by June 1, 2022.

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

C. Maintain access to ongoing development adjacent to the site 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. Owner will be awarding 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 22-20 American Boulevard Concrete Paving
- B. Private site construction will be occurring immediately east of American Boulevard.

- C. Utility companies may be installing utilities within the utility easement adjacent to the right of way during construction.
- D. 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, (nationalrelo@centurylink.com) (800-871-9244)
- I. Central Brown County Water Authority, Rob Michaelson, (rmichaelson@mpu.org) (920-686-4354)

1.9 MISCELLANEOUS PROVISIONS

- A. Access to the site shall be from American Boulevard. No access of construction equipment shall be allowed off of Garroman Drive without written approval from the Engineer.
- B. If pond grading is completed after the crushed aggregate base course is placed, trucking will not be allowed over aggregate.
- C. Excavation and removal of the existing base course and concrete from STA 27+60 to STA 33+05 is a separate bid item. This work includes excavation for roadway, of aggregate and concrete, and placing fill material. Salvaged aggregate and rubblized concrete will be allowed for reuse as base course.

- D. The Green Bay Metropolitan Sewerage District (GBMSD) will own the sanitary sewer upon completion of the project. Notify GBMSD prior to working on the sanitary sewer. A GBMSD Representative is to be on-site when coring the sanitary sewer manhole.

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-03 |
| 2. Sanitary Sewer Mains (Natural Backfill) | SS-01, SS-02 |
| 3. Sanitary Sewer Manholes | SS-04, SS-05, SS-06 |
| 4. Core Drilling to Existing Sanitary Manhole | SS-07 |
- B. Unit Prices include:
1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all unit price items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but is required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item.
 2. The method of measurement for payment.
 3. The price per unit for payment.

1.2 GENERAL WORK ITEMS

- A. Include with the appropriate Unit Price Item the following work items which are common to the Unit Price Items for sanitary sewer systems.
- B. If there is a specific Unit Price Item for any of the following items, then the work item shall be included with that specific unit price item.
1. Traffic Control.
 2. Sawcutting asphalt and/or concrete.
 3. Removal, hauling and disposal of surface materials including road pavement, curb and gutter, sidewalk, driveways and other pavement surfaces in the trench area and as shown on the drawings.
 4. Dewatering.
 5. Bypass pumping.
 6. Excavation.
 7. Open Trench installation method (unless bid item specifies other method).
 8. Pipe Bedding.
 9. Backfilling and compacting native obtained from the excavation.
 10. Supplying, hauling, backfilling and compacting granular material.
 11. Loading, hauling and disposing of surplus excavated material.

12. Landscaping – turf establishment surface restoration and trees and bushes damaged during construction.
13. Maintenance, protection, replacement and/or repair of facilities not designated for alteration on the Site beyond the limits identified.
14. Site access requirements including temporary aggregate material as required for local traffic access.
15. Bulkhead and abandoned existing sanitary sewer with flowable fill as shown on Drawings.
16. If crossing or undermining of existing public or private utility, then include:
 - a. Maintaining the utility in service.
 - b. Replacing of existing utilities, if damaged.
 - c. Providing support and bedding material.
17. Dust control.
18. Remove and replace existing mailboxes and traffic signs.
19. Restroom facilities.
20. Easement and right-of-way requirements.
21. Construction staking and other survey work not provided by the Engineer.
22. Regulatory requirements.
23. Preconstruction videotaping and video equipment.
24. Quality assurance and quality control testing and inspections.
25. Shop drawings and other submittals.

1.3 SANITARY SEWER MAINS (GRANULAR BACKFILL)

- A. The unit price for Sanitary Sewer Main (Granular Backfill) work includes:
 1. General Work Items of Article 1.2.
 2. Sanitary sewer pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
 3. Excavation, breakdown and removal of abandoned piping inside the trench area, including plugging of existing connections.
 4. Excavation, breakdown and removal of abandoned pipeline structures inside the trench area, including plugging of existing connections.
- B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer from centerline of the manhole to centerline of manhole with no deductions for manholes, sewer services branches and other fittings.
- C. The unit of measurement for payment is linear feet.

1.4 SANITARY SEWER MAINS (NATURAL BACKFILL)

- A. The unit price for Sanitary Sewer Main (Natural Backfill) work includes:
 1. General Work Items of Article 1.2.
 2. Sanitary sewer pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.

3. Excavation, breakdown and removal of abandoned piping inside the trench area, including plugging of existing connections.
 4. Excavation, breakdown and removal of abandoned pipeline structures inside the trench area, including plugging of existing connections
- B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer from centerline of the manhole to centerline of manhole with no deductions for manholes, sewer services branches and other fittings.
- C. The unit of measurement for payment is linear feet.

1.5 SANITARY SEWER 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.

1.6 CORE DRILLING TO EXISTING SANITARY MANHOLE

- A. The unit price for Core Drilling to Existing Sanitary Manhole work includes:
1. General Work Items of Article 1.2.
 2. Core drilling into existing sanitary sewer manhole (where required).
 3. Install A-Lok boot.
 4. Reform and/or form new flow line in existing sanitary manhole.
- B. Measurement for payment will be the actual number complete.
- 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

- | | <u>Bid Item No.</u> |
|--|---|
| A. Section includes: | |
| 1. Storm Sewer Mains (Granular Backfill) | ST-02, ST-04, ST-06, ST-09,
ST-10, ST-11, ST-13, ST-14 |
| 2. Storm Sewer Mains (Natural Backfill) | ST-01, ST-03, ST-05, ST-07,
ST-08, ST-12, ST-15 |
| 3. Storm Sewer Manholes | ST-16, ST-17, ST-18 |
| 4. Catch Basin/Inlets | ST-19, ST-20 |
| 5. Structures Over Existing Storm Sewer | ST-21 |
| 6. Connect to Existing Structure | ST-22 |
| 7. Core Drill Existing Structure | ST-23 |
| 8. Flared End Section | ST-24, ST-25, ST-26, ST-27 |
| 9. Abandon/Remove Existing Storm Sewer and Associated Appurtenances | ST-28 |
| B. Unit Prices include: | |
| 1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all unit price items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but is required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item. | |
| 2. The method of measurement for payment. | |
| 3. The price per unit for payment. | |

1.2 GENERAL WORK ITEMS

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

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

1.3 STORM SEWER MAINS (GRANULAR BACKFILL)

- A. The unit price for Storm Sewer Main (Granular Backfill) work includes:
 1. General Work Items of Article 1.2.
 2. Storm sewer pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
 3. Excavation, breakdown and removal of abandoned piping inside the trench area, including plugging of existing connections.
 4. Excavation, breakdown and removal of abandoned pipeline structures inside the trench area, including plugging of existing connections.
- B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer from centerline of the manhole to centerline of manhole with no deductions for manholes, sewer services branches and other fittings.
- C. The unit of measurement for payment is linear feet.

1.4 STORM SEWER MAINS (NATURAL BACKFILL)

- A. The unit price for Storm Sewer Main (Natural Backfill) work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Storm sewer pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
 - 3. Excavation, breakdown and removal of abandoned piping inside the trench area, including plugging of existing connections.
 - 4. Excavation, breakdown and removal of abandoned pipeline structures inside the trench area, including plugging of existing connections.
- B. Measurement of payment will be the actual horizontal length along the centerline of the installed sewer from centerline of the manhole to centerline of manhole with no deductions for manholes, sewer services branches and other fittings.
- C. The unit of measurement for payment is linear feet.

1.5 STORM SEWER MANHOLES

- A. The unit price for Storm Sewer Manholes work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Precast reinforced concrete components.
 - 3. Joint flexible gasket material.
 - 4. Grout seal between the manhole and structure and the sewer pipe.
 - 5. Adjusting rings and bituminous plastic cement sealant at chimney.
 - 6. Manhole steps.
 - 7. Manhole frame and cover.
 - 8. Bedding material.
 - 9. Sewer pipe stub with connections and watertight plug (where required).
 - 10. Final casting adjustment.
- B. Measurement for payment will be the distance from the invert of the lowest sewer to the top of the frame and cover as set.
- C. The unit of measurement for payment is vertical feet.

1.6 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 CATCH BASIN/INLETS OVER EXISTING STORM SEWER

A. The unit price for Catch Basin/Inlets Over Existing Storm Sewer 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.
12. Remove storm sewer as necessary.
13. Sewer pipe from structure to existing pipe.
14. Reconnect to existing storm sewer.

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

C. The unit of measurement for payment is each.

1.8 CORE DRILLING TO STORM MANHOLE

A. The unit price for Core Drilling to Storm Manhole work includes:

1. General Work Items of Article 1.2.
2. Core drilling into existing storm sewer manhole (where required).
3. Install A-Lok boot.
4. Reform flow line in existing storm manhole.

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

- C. The unit of measurement for payment is each.

1.9 CONNECT TO STORM MANHOLE

- A. The unit price for Connect to Storm Manhole work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Modify/sawcut existing storm sewer manhole opening (where required).
 - 3. Provide concrete/block around the pipe, gasket, and manhole opening to form a sediment tight seal.
 - 4. Reform flow line in existing storm manhole.
- B. Measurement for payment will be the actual number complete.
- C. The unit of measurement for payment is each.

1.10 FLARED END SECTION

- A. The unit price for Flared End Section includes:
 - 1. General Work Items of Article 1.2.
 - 2. Precast concrete components.
 - 3. Anchors to storm sewer pipe.
- B. Measurement for payment will be the actual number installed.
- C. The unit of measurement for payment is each.

1.11 ABANDON/REMOVE STORM SEWER AND APPURTENANCES

- A. The unit price for Abandon/Remove Storm Sewer and Appurtenances work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Excavating.
 - 3. Install bulkheads and abandon storm sewer and/or structures.
 - 4. Removing existing storm sewer and/or structures where in conflict with other utilities.
 - 5. Providing and placing flowable fill.
 - 6. Backfilling and compacting.
 - 7. Removal and disposal as shown on the Drawings.
- B. Measurement for payment will not be made. This includes all of the project area.
- C. The unit of measurement for payment is lump sum.

END OF SECTION

SECTION 01 22 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-02 |
| 2. Water Mains (Natural Backfill) | W-01 |
| 3. Fire Hydrants | W-07, W-08 |
| 4. Hydrant Leads | W-03 |
| 5. Valves | W-04, W-05 |
| 6. Connection to Existing Water Mains | W-06 |
| 7. Water Main Offset | W-09, W10 |
- 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 WATER MAINS (NATURAL BACKFILL)

- A. The unit price for Water Main (Natural Backfill) work includes:
 1. General Work Items of Article 1.2.

2. Water pipe and fittings of material stated in the Unit Price Bid Schedule and installed using the open trench method.
 3. Ductile or cast iron fittings.
 4. Tracer wire.
 5. Polyethylene encasement of ductile iron or cast iron pipe and fittings.
 6. Blocking and joint restraint.
 7. Disinfection of pipelines.
- B. Measurement of payment will be the actual horizontal length along the centerline of the installed water main with no deductions for fittings and valves.
- C. The unit of measurement for payment is linear feet.

1.5 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.

1.6 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.

1.7 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.

1.8 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.

1.9 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.

END OF SECTION

SECTION 01 22 04

MEASUREMENT AND PAYMENT STREET AND DRAINAGE CONSTRUCTION

PART 1 – GENERAL

1.1 SUMMARY

- | | |
|--|---------------------|
| A. Section includes: | <u>Bid Item No.</u> |
| 1. Clearing and grubbing | SD-01 |
| 2. Topsoil and Unclassified Excavation | SD-02, SD-03, SD-04 |
| 3. Topsoil Stripping | SD-05, SD-06, SD-07 |
| 4. Crushed Aggregate Base and Surface Course | SD-08, SD-09 |
| 5. Landscaping – Topsoil, Seed, Fertilize, and Mulch | SD-10, SD-11, SD-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 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 trees, brush, windfalls, logs and other vegetation.
 3. Removing and disposing of roots, stumps, stubs, logs and other timber.
 4. Stripping and stockpiling topsoil.
- B. Measurement for payment will not be made.
- C. The unit of measurement for payment is lump sum.

1.4 TOPSOIL AND UNCLASSIFIED EXCAVATION

- A. The unit price for Topsoil and Unclassified Excavation work includes:
 1. General Work Items of Article 1.2.
 2. Removal of topsoil to depth available.
 3. Hauling and stockpiling topsoil.
 4. Excavation to subgrades shown on the Drawings.
 5. Hauling of unclassified material.
 6. Placing unclassified material in fill areas to subgrades shown on the Drawings and the subgrade required for placement of topsoil.
 7. Compaction of subgrade and fill areas.
 8. Test rolling subgrade.
 9. Excavation of undercut areas for placing topsoil.
 10. Respreading topsoil to final grades shown on the Drawings.
 11. Disposal of surplus topsoil, unclassified material and unsuitable material.
 12. Preparation of disposal site and transportation of material over an Engineer approved haul route from the site including all loading and dumping of material.
 13. Finish grading.
- B. Measurement of payment will not be made unless there is a change in project scope. The estimated quantity represents the computed volume by comparing the triangulated surfaces and will be the basis for payment.
 1. The bid item for unclassified excavation from STA 27+60 to STA 33+05 includes removal of the existing pavement and base course beyond excavation limits. The quantity has been calculated based on the surface area times the average depth.
- C. The unit of measurement for payment is cubic yards.

1.5 TOPSOIL STRIPPING

- A. The unit price for Topsoil Stripping work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Removal of topsoil in fill areas.
 - 3. Hauling and stockpiling topsoil.
 - 4. Placing unclassified material in stripped areas to subgrades shown on the Drawings.
 - 5. Compaction of subgrade and fill areas.
 - 6. Respreading topsoil to final grades shown on the Drawings.
 - 7. Finish grading.
- B. Measurement for payment will be the area of topsoil stripped in the fill areas.
- C. The unit of measurement for payment is square yards.

1.6 CRUSHED AGGREGATE BASE AND SURFACE COURSE

- A. The unit price for Crushed Aggregate Base and Surface Course work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Aggregate material.
 - 3. Preparation of foundation.
 - 4. Placing and compacting to thickness and width shown on the Drawings or specified elsewhere.
 - 5. Maintenance until surface pavement is constructed.
 - 6. Preparation of crushed aggregate base for paving.
 - 7. Adjustment of manholes and valve boxes to proposed finish road grade.
- B. Measurement of payment will be the actual amount of material required and incorporated in the work verified by submitting to the Engineer delivery tickets provided with each load showing the weight measured on a certified scale, type of material, the date delivered and the project name. Aggregates in excess of seven percent (7%) total moisture determined based on the dry mass of the aggregates will have moisture content in excess of seven percent (7%) deducted from the measured weight.
- C. The unit of measurement for payment is tons.

1.7 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 or erosion mat (per bid item).

6. Provide maintenance.
- B. Measurement for payment will be the width and length not greater than fifteen (15) feet beyond the top of either side of ditches outside the right-of-way, the slope intercept along the right of way, or fill limits.
 1. All haul roads shall be approved by the Engineer to be eligible for payment for restoration.
- 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. Silt Fence Erosion Control | SC-02 |
| 3. Erosion Bales | SC-05 |
| 4. Inlet Protection Erosion Control | SC-03, SC-04 |
| 5. Rip Rap Erosion Control | SC-06, SC-07 |
| 6. Tracking Pad | SC-08 |
| 7. Adjust and/or Replace Existing Structure Frame and Casting | SC-09, SC-10, SC-11 |
- 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 SILT FENCE EROSION CONTROL

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

1.5 EROSION BALES

- A. The unit price for Erosion Bales work includes:
 - 1. General Work Items of Article 1.2.
 - 2. Provide straw bales and anchor stakes.
 - 3. Excavate and embed the straw bales.
 - 4. Inspection and maintenance of the installed straw bales.
 - 5. Removal of the straw bales.
 - 6. Finish grading.

7. Topsoil, seeding, fertilizing, and mulching area in the vicinity of the removed erosion bales which does not have established turf.

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

C. The unit of measurement for payment is each.

1.6 INLET PROTECTION EROSION CONTROL

A. The unit price for Inlet Protection Erosion Control work includes:

1. General Work Items of Article 1.2.
2. Provide geotextile and wood materials for type shown on the Drawings.
3. Placing inlet protection system.
4. Inspection and maintenance of the installed inlet protection.
5. Removal of the inlet protection.
6. Cleaning debris buildup around inlet.

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

C. The unit of measurement for payment is each.

1.7 RIP RAP EROSION CONTROL

A. The unit price for Rip Rap Erosion Control work includes:

1. General Work Items of Article 1.2.
2. Provide rip rap material and geotextile fabric.
3. Excavate and place rip rap material.

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

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

1.8 TRACKING PAD

A. The unit price for Tracking Pad work includes:

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

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

C. The unit of measurement for payment is each.

1.9 ADJUST AND/OR REPLACE EXISTING STRUCTURE FRAME CASTING

- A. The unit price for Adjust and/or Replace Existing Structure Frame Casting work includes:
1. General Work Items of Article 1.2.
 2. Provide new castings as required per the bid item.
 3. Removal of the casting and existing adjusting rings from the structure as required.
 4. Providing concrete adjusting rings and a 2 inch rubber riser ring from the WisDOT approved product list.
 5. Bituminous plastic cement sealing the exterior of the adjusting rings and casting.
 6. The ring will be secured to the precast section with a 3 ½ inch wide Kent Seal or equal.
 7. Above the concrete ring attach ¼ inch thru 3 inch thick ring using two $\frac{5}{16}$ 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 existing structures frame casting adjusted and/or replaced.
- C. The unit of measurement for payment is each.

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes:

1. Administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

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

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as recommended by the Engineer and approved by Owner.**
- B. The date for each progress payment should be the 3rd Wednesday of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends the 4th Friday of the Month.**
- C. Use forms provided by Engineer for Applications for Payment. Sample copy of the Application for Payment and Continuation Sheet is included in Section 00 62 76.**
- D. Application Preparation Procedures**
1. When requested by the Contractor, the Engineer will determine the actual quantities and classifications of Unit Price Work performed.
 - a. Preliminary determinations will be reviewed with the Contractor before completing Application for Payment.
 - b. Engineer will complete the Application for Payment based on Engineer's decision on actual quantities and classifications.
 - c. Engineer will submit three original copies of Application for Payment to Contractor for certification of all three original copies.
 - d. Contractor shall submit signed Application for payment to Owner for approval within time frame agreed to at the Preconstruction Conference.
 2. If payment is requested for materials and equipment not incorporated in the Work, then the following shall be submitted with the Application for Payment:
 - a. Evidence that materials and equipment are suitably stored at the site or at another location agreed to in writing.

- b. A bill of sale, invoice, or other documentation warranting that the materials and equipment are free and clear of all liens.
 - c. Evidence that the materials and equipment are covered by property insurance.
- 3. Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of Contractor.
- E. With each Application for Payment, submit waivers of liens from subcontractors and suppliers for the construction period covered by the previous application.
 - 1. Submit partial waivers on each item for amount requested before deduction for retainage on each item.
 - 2. When an application shows completion for an item, submit final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work shall submit waivers.
 - 4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application.
 - 5. Submit waivers of lien on forms executed in a manner acceptable to Owner.
- F. The following administrative actions and submittals shall precede or coincide with submittal of first Application for Payment:
 - 1. List of subcontractors.
 - 2. Schedule of Values (For Lump Sum Work).
 - 3. Contractor's construction schedule.
- G. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including, but not limited, to the following:
 - 1. Evidence of completion of Project closeout requirements.
 - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 - 3. Updated final statement, accounting for final changes to the Contract Sum.
 - 4. Consent of Surety to Final Payment.
 - 5. Final lien waivers as evidence that claims have been settled.
 - 6. Final liquidated damages settlement statement.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 32 33

CONSTRUCTION PHOTOGRAPHS

PART 1 – GENERAL

1.1 SUMMARY

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

1.2 SUBMITTALS

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

1.3 QUALITY ASSURANCE

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

PART 2 – PRODUCTS

PART 3 – EXECUTION

3.1 UTILITY AND STREET CONSTRUCTION SITES

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

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1 – GENERAL

1.1 SUMMARY

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

1.2 SUBMITTAL PROCEDURES

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

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

1.3 CONTRACTOR'S PROGRESS SCHEDULE

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

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

1.4 SCHEDULE OF SHOP DRAWINGS AND SAMPLE SUBMITTALS

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

1.5 SHOP DRAWINGS

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

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

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

1.6 ENGINEER'S ACTION

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

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

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

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

1.2 UNDERGROUND UTILITIES

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

1.3 PROPERTY MONUMENTS

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

1.4 TRAFFIC CONTROL

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

1.5 PERMITS FOR PROJECT

- A. The following permits are being obtained by the Owner:
 - 1. WDNR – Sanitary Sewer
 - 2. WDNR – Water Main
 - 3. WDNR - WRAPP
- B. Any costs associated with violations pertaining to the WRAPP 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 PROVIDE BY THE ENGINEER

- A. General
 - 1. Establish benchmarks for construction as shown on the drawings.
 - 2. Establish control points as shown on the drawings.
- B. Gravity Sewer Systems and Water Distribution Systems
 - 1. Provide construction reference stakes set for pipe construction location at critical changes in horizontal and vertical alignment.

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

C. New Road Construction

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

3.3 ENGINEERING SURVEYS TO BE PROVIDED BY THE CONTRACTOR

A. General

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

B. Gravity Sewer Systems and Water Distribution Systems

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

C. New Road Construction

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

END OF SECTION

SECTION 31 23 00.1

EARTHWORK

PART 1 – GENERAL

1.1 SUMMARY

- A. Work in this section shall include but not be limited to the following:
 - 1. Excavation.
 - 2. Test rolling.
 - 3. Filling and compacting.
 - 4. Backfilling around structures.
 - 5. Disposal of surplus materials.
 - 6. Finish grading.

1.2 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
 - 1. D4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - 2. D1140 Test for Amount of Material in Soils Finer than the No. 200 Sieve
 - 3. D1556 Test for Density of Soil in Place by the Sand-Cone Method
 - 4. D1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Lb (4.54 kg) Rammer and 18 in. (457 mm) Drop
 - 5. D2216 Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures
 - 6. D2922 Test for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
 - 7. D3017 Test for Moisture Content of Soil and Soil-Aggregate by Nuclear Method (Shallow Depth)

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, Submittals:
 - 1. Two (2) copies of testing data of laboratory tests to the owner's representative if material is brought from off site.

1.4 DENSITY TESTING

- A. The Engineer will provide an independent testing laboratory to provide testing services.

B. Anticipated testing schedule as follows:

<u>Fill Utilized For:</u>	<u>Number of Acceptable Tests for Each Class or Fill:</u>
Embankments, dikes or berms	1 test per 600 cubic yards
Structural or controlled fills	1 test per 1,500 square feet, minimum of 1 test per lift
Trench backfill under paved or surfaced areas greater than 15' depth	1 test per 100 feet of trench or any portion thereof, in the lower 1/4, each middle 1/4, and upper 1/4 of backfill
Trench backfill under paved or surfaced areas less than 15' depth	1 test per 100 feet of trench or any portion thereof, in the lower 1/3, middle 1/3, and upper 1/3 of backfill
Lateral trench backfill	1 test per 100 feet of trench with a minimum of 1 test location per trench in the lower 1/3, middle 1/3, and upper 1/3.
Non-structural fills	1 test per 2,000 cubic yards

PART 2 – PRODUCTS

2.1 SOIL MATERIALS

- A. Soil used for borrow, fill, and backfilling shall meet the requirements of soil class as called for on plans or in specifications.
- B. As a minimum, all soil shall meet the requirements of Soil Class G-1.
- C. All soil classes shall be as per Section 31 05 10, Soils and Aggregates for Earthwork.

PART 3 – EXECUTION

3.1 EXCAVATION

- A. Excavation to Correct Grade
 - 1. Excavate site of structures and pavements as follows:
 - a. To elevation shown on the plans.
 - b. To such additional width as necessary for erection and removal of forms, shoring or sheeting, and finishing of walls.
 - 2. Excavation of unsuitable materials.
 - a. Excavate unsuitable soil materials under a proposed structure.
 - b. Excavation shall extend lateral a minimum of 5 feet beyond the building limits plus 1 foot for each foot of cut below the foundation.
 - c. Notify the Owner's project representative prior to proceeding with their removal of unsuitable material.
- B. Borrow Excavation
 - 1. Clear site in accordance with Section, 31 10 00, Site Clearing.
 - 2. Strip and stockpile topsoil.

3. Excavate, haul, place, and compact borrow soil material.
4. Regrade borrow areas as shown on the plans or in an acceptable manner to facilitate proper site drainage.
5. Replace stockpiled topsoil.
6. Surplus topsoil may be utilized in borrow area regarding.
7. Seed and mulch in accordance with Section 32 92 00, Turf and Grasses.

C. Excavation Precautions

1. Excavation slope stability.
 - a. Maintain excavation slope to ensure a stable excavation and prevent caving.
 - b. Provide and erect all timber work, shoring, sheeting, bracing, etc. necessary to prevent caving and displacement of adjacent property.
 - 1) Shoring shall be placed so as not to interfere with building work.
 - 2) Shoring shall be independent of footings.
2. Underpinning existing structures.
 - a. Underpin as necessary to protect existing structures and foundations.
 - b. Furnish all material, labor, and equipment necessary to complete underpinning operations.
3. Dewatering of excavations.
 - a. Contractor shall provide and maintain all equipment necessary to keep excavated areas free of all groundwater, surface water, or precipitation.
 - b. Soil which becomes soft, yielding, or loses support due to inadequate dewatering efforts shall be dealt with as follows:
 - i. Excavate disturbed soil materials for their entire depth.
 - ii. Replace excavated materials with an approved fill material.
4. Protect excavation from freezing.
 - a. Take precautions necessary to prevent frost from entering subgrade soils.
 - b. If subgrade becomes frozen, remove snow, ice, and frozen soil prior to placement of additional fill or finish surfacings.

3.2 FILLING AND COMPACTING

- A. Layer thickness for fill soil shall be as follows:
 1. Layer thickness shall be dependent on the soil classification type, weight, and soil contact pressure of compaction equipment being used.
 2. Layer thickness shall not exceed 8 inches.
- B. Compaction
 1. Compaction method for fill soils shall be appropriate for soil material being compacted and provide sufficient soil contact pressure to thoroughly compact entire lift thickness.
- C. Proper soil moisture contents for compaction shall be maintained in all soils.
 1. Optimum moisture content as determined by Modified (ASTM D1557) Proctor shall be used to determine acceptance moisture contents for soil compaction.

2. Contractor shall scarify and compact existing ground prior to placing fill material.

D. Compaction requirements for all fill soils unless specified elsewhere shall be as follows:

Class 1 -Fills supporting structures.
 - Subgrade under pavements or floors.
 - Backfill under piping and conduits.

Class 2 - Fills which do not support structures.

**COMPACTION REQUIREMENTS FOR
VARIOUS SOIL CLASSES**

Soil Class	Required Compaction (%) of Modified Proctor Density	
	Class 1	Class 2
B-3 through B-4	95	90
C-1 through C-6	95	90
D-1 through D-3, and G-1 and G-2	95	90
E-1	95	90

3.3 TEST ROLLING

A. The following testing services shall be provided:

1. The subgrade condition and elevation shall be checked by the Engineer prior to placement of fill material. The subgrade will be proof rolled using a tandem axle dump truck fully loaded with fill material to the maximum legal weight limit. The fill condition and elevation shall be checked by the Engineer prior to placement of subsequent courses.

B. Treat areas showing yielding or rutting under test rolling as follows:

1. Replace and/or recompact as necessary to stabilize the area.
2. Retest soil areas replaced or recompact.

3.4 BACKFILLING AROUND STRUCTURES

A. Do not backfill any foundation, wall, or structure prior to inspection by the Engineer.

B. Backfilling under pipes or conduits in areas excavated due to construction.

1. Contractor shall furnish and compact Soil Class A-7 under all piping or conduits.
 - a. Compact fill shall extend from undisturbed earth to grade.
 - b. Place and compact fill in all areas disturbed by construction.

3.5 DISPOSAL OF SURPLUS MATERIALS

- A. The Owner shall have prior claim to all surplus excavated material. If such claim is exercised by the Owner, the material shall be deposited at such points as may be directed by the Engineer at the expense of the Contractor, the haul not to exceed two (2) miles. If Owner does not desire to claim surplus excavated material, the Contractor shall be totally responsible for obtaining a disposal site. No material shall be disposed of in a floodplain, wetland or waterway.

After delivery to any designated location, such material shall be leveled off by the Contractor.

3.6 FINISH GRADING

- A. Grade, trim, and shape subgrade to required grade and section.
1. Adjust slopes by grading so that transition is smooth and gradual.
 2. The crests of cut banks shall be rounded and shaped.
 3. Washouts and ruts shall be refilled, regarded, and properly compacted.
 4. Remove all stones 3 inches or larger from grading limits.
- B. Vertical Grading Tolerances
1. Rough grading tolerance.
 - a. Areas to be topsoiled – rough grade to within 0.2 foot of finish grades.
 2. Areas having paved surfaces (i.e., concrete, asphalt, etc.).
 - a. Maximum allowable variation from correct profile and section shall not be more than ¼-inch in 10 feet.

END OF SECTION

SECTION 33 00 02 SP

PVC PIPE AND FITTINGS - SPECIAL

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Update to this Section of the City of De Pere 2020 Standard Specifications under 2.1.A.1. for Mainline Gravity Sewer and Sewer Services revised b. and addition of c.

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:
 - b. Sizes 18 inch through 48 inch and depths up to 20 feet: ASTM F679, PS46, T-1 minimum cell classification.
 - c. Sizes 18 inch through 48 inch and depths from 20 feet to 40 feet: ASTM F679, PS115, T-1 minimum cell classification.

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 ration, 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 46 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
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

SECTION 33 31 00.1SP

SANITARY SEWER SYSTEMS – GBMSD – SPECIAL

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Green Bay Metropolitan Sewerage District Special Provisions for the 24" sanitary sewer interceptor and manholes.
2. The intent of this Special Provision is to provide additional requirements or modify City of De Pere Department of Public Works 2020 Standard Specifications (City Specification). This section does not replace the City Specifications. In the event of conflicting requirements, this Special Provision shall take precedence over the City Specifications, but is only applicable to the 24" GBMSD sanitary sewer interceptor and manholes.
3. The Special Provisions amend or supplement the City Specifications. All provisions that are not so amended or supplemented remain in full force and effect. The Special Provision is set up to follow the numbering in the City Specification Section 33 31 00. Refer to Section 33 31 00 for sanitary sewer information not covered in this Special Provision.

1.2 REFERENCES

- A. Standard Specifications for Sewer & Water Construction in Wisconsin**

1.3 SUBMITTALS

- A. Quality control test results.**
- B. Product data for external manhole surface sealant**
- C. Table of manufacturer's recommended mandrel sizes for 3% or 5% deflection cases based on diameter and wall thickness of pipe provided for this project.**
- D. Miscellaneous Submittals**
1. Proposed plan for bypassing sewage during construction.
 2. Emergency plan detailing procedures to be followed in event of pump failures, sewer overflows, service backups, and sewage spillage. Maintain copy on site for duration of project.

PART 2 –PRODUCTS

2.1 NON-PRESSURE RATED PIPE

A. Mainline Gravity Sewer and Sewer Services

1. Pipe fittings and repair couplings for the 24" sanitary sewer shall be manufactured and tested in accordance with ASTM F679, PS115, T-1 minimum cell classification.

2.2 MANHOLE

A. Precast Reinforced Concrete Manholes

1. Adjusting Rings

- a. Precast concrete minimum of 4 inches thick EACH
- b. Rubber: Infra-Riser or approved equal
- c. Polypropylene: PRO-RING as manufactured by Cretex Companies
- d. Sealed to manhole structure, casting, and one another by means of sealant recommended by ring manufacturer

2. Joints between components:

- a. Exterior joint collar
 - i. Products:
 - a) EZ Wrap as manufactured by Press-Seal Gasket Corporation
 - b) Or Equal

B. Manhole Steps

1. Do not provide steps for GBMSD manholes. All sanitary manholes for this project are GBMSD manholes.

C. Flexible Connection for Existing Manholes

1. Where an existing manhole is core drilled in the field, the flexible connector shall be Kor-N-Seal, no substitutes

D. Castings

1. Neenah R-1650-LM with Type C cover
2. Provide ball and socket hinge plug with frame and lid
3. Cover shall secure to the frame using three (3) Type E locking devices with flat head hex socket screw with pins
4. No vent holes
5. Cover shall be lettered "GBMSD" in block letters in accordance with GBMSD's standard pattern on file with Neenah Foundry, Inc,
6. Lettering shall be of recessed design

E. Exterior Surface Sealing

1. Moisture-cured urethane
2. Product:
 - a. MC-Tar 100 as manufactured by Wasser Corporation
 - b. Or equal

F. Exterior Manhole Chimney Seal

1. Coal epoxy coating
 - a. Products:
 - i. EZ-Stik #3 Butyl Joint Sealant as manufactured by Press-Seal Gasket Corporation
 - ii. Or equal
2. Polyethylene wrap
 - a. Conforming to Chapter 8.21.0 of the "Standard Specifications for Sewer and Water Construction in Wisconsin"
 - b. 8 mil thickness

2.3 TRACER WIRE

- A. Color: Green

2.4 TRENCH STABILIZATION MATERIALS

- A. Coarse Aggregate
 1. ASTM C33 – Size No.2.
- B. Filter Fabric – porous non-woven fabric with multiple layers of randomly arranged fibers, min 4.0 ounce per square yard (typical)
 1. Manufacturers
 - a. Mirafi 140N by Mirafi, Inc.
 - b. Typar 340I by DuPont
 - c. Supac 5P by Phillips Fibers Corp.
 - d. Propex 4545 by Amoco Fabric Co.
 - e. Or Equal.

PART 3 – EXECUTION

3.1 GRAVITY SEWER INSTALLATION

- A. Manholes
 1. General Installation Requirements
 - a. The maximum amount of adjusting rings is eight inches
 2. Detailed Installation
 - a. Manhole adjusting
 - i. No more than ONE concrete ring (minimum 4-inch) on top of the cone section
 - ii. For manholes in pavement, provide ½-inch through 4-inch rubber or expanded polypropylene tapered rings to match the slope of the pavement
 - iii. The maximum amount of adjusting rings is eight inches
 - b. Provide casting frame and cover as specified in this Special Provision for each manhole

- i. Frame shall bolt down to structure / adjustment rings using three (3) ¾-inch Type 304 stainless steel bolts using every other of the 6 1 1/8-inch anchor bolt holes in the frame.
- 3. Coating Installation
 - a. Exterior Surface Sealing
 - i. Coat exterior surface of manhole in accordance with the manufacturer's written instructions and the following:
 - a) Number of coats: 2
 - b) Minimum coat thickness: 5 mil
 - c) Total minimum thickness: 10 mils
- 4. Sealants
 - a. Joints between components
 - i. All manhole riser section joints shall be constructed with an exterior joint collar, installed according to the manufacturer's recommendations.
 - b. Exterior manhole chimney seal
 - i. Apply the coal epoxy coating a minimum of ¼-inch thick
 - ii. Apply the polyethylene wrap over the entire outside surface of the manhole chimney
 - iii. The exterior manhole chimney seal shall cover all of the adjusting rings and overlap both the manhole cone and manhole frame a minimum of 6 inches.

B. Sewer Services

1. Service Branches:

- a. New Sewers: Install Inserta Tee connectors following manufacturer's instructions.
- b. Contractor shall provide PVC core to Field Engineer.

3.2 TRACER WIRE

- A. The wire shall be placed along the entire length of the sewer pipe and taped to the top of the pipe at 6 ft intervals.
- B. Terminate tracer wire in manholes at joint between manhole cone and first adjustment ring. Cut slot in cone for wire. Provide a minimum of 18 inches of wire inside the manhole.

3.3 FIELD QUALITY CONTROL

A. Sewer testing and televising

- 1. Cleaning and televising required after installation. Televising while sewer is in operation is acceptable
- 2. Lamping not required
- 3. Deflection test shall utilize mandrels sized for 3% allowable deflection when mandrel test is completed within 30 days of installation. If mandrel test is completed after 30 days from installation date, the deflection test shall utilize mandrel sized for 5% allowable deflection.

B. Manhole Testing

1. Test manholes for leaking using Vacuum Testing in accordance with ASTM C1244.
2. Test epoxy coating thickness during application with wet gauge thickness.
 - a. Conform to ASTM D4414
3. Inspect coating with high-voltage holiday system.
 - a. Provide induced holiday to calibrate minimum/maximum voltages to be used.
 - b. Set spark tester at 100 volts/ 1 mil of film thickness.
 - c. Mark detected holidays and repair by abrading coating or barrier surface with grit disk paper or other hand tooling methods.
 - d. Clean holiday areas and hand-apply coating or barrier material until minimum thickness requirements met.
 - e. Measure bond strength of coating, at locations selected by ENGINEER, and in accordance with ASTM D4541.
 - i. Repair areas with bond to concrete strength less than 300 psi.

3.4 TRENCH STABILIZATION

A. Installation

1. Remove unsuitable material from within trenches.
2. Stabilize trench bottom and replace unsuitable materials with Coarse Aggregate.
3. Place geotextile fabric on top of unstable subgrade materials prior to placing coarse aggregate. Sufficient geotextile fabric shall be used to completely enclose foundation materials and pipe

END OF SECTION

SECTION 33 44 13

POLYVINYL CHLORIDE (PVC) SURFACE AREA DRAINS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. PVC pipe for surface area drains.
- B. Product shall be manufactured by NYLOPLAST or an approved equal.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. A536 Standard Specification for ductile iron castings.
 - 2. D1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) Compounds
 - 3. D2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-flow Applications
 - 4. D3139 Specifications for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
 - 5. D3212 Specifications for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
 - 6. F477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
 - 7. F679 Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe Fittings

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 inlet available to the Engineer's Representative for inspection.

- B. Inlet shall be considered defective and will be rejected when:
 - 1. Pitted or cratered.
 - 2. Flaking.
 - 3. Straightness varies more than ½ inch.
 - 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. Inlet Marking shall be as follows:
 - 1. Manufacturer's name, trademark or logo.
 - 2. Nominal size.
 - 3. PVC cell classification.
 - 4. ASTM or AWWA 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. Store gaskets away from excessive exposure to heat, direct sunlight, ozone, oil or grease.
- E. Handle pipe in a manner to prevent impact blows, abrasion damage, gouging or cutting.

PART 2 – PRODUCTS

2.1 INLET

- A. Drain and Fitting
 - 1. Manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the furnished configuration.
 - 2. Connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system.
 - 3. Joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals.
 - 4. Flexible elastomeric seals shall conform to ASTM F477.

5. Pipe bell spigot shall be joined to the inline drain body by use of a swage mechanical joint.
6. Raw material used to manufacture the pipe stock that is used to manufacture the inline drain body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

B. Grates

1. Ductile iron grates for surface drainage inlets for sizes 8", 10", 12", 15", 18", 24", and 30" shall be made specifically for each fitting so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet.
2. Grates for inline drains shall be capable of supporting H-20 wheel loading for traffic areas or H-10 loading for pedestrian areas.
3. 12" and 15" square grates will be hinged to the frame using pins.
4. Metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron. Grates shall be provided painted black.

PART 3 – EXECUTION

3.1 INLETS INSTALLATION

- A. Installation shall conform to Section 33 41 00 for Plastic Pipe.
- B. Backfill material shall be crushed stone or other granular material meeting the requirements of class 32 material as defined in ASTM D2321.
- C. Bedding and backfill for surface drainage inlets shall be placed and compacted uniformly in accordance with ASTM D2321.
- D. Drain basin body will be cut at the time of the final grade.
- E. No brick, stone, or concrete block will be required to set the grate to the final grade height.
- F. For H-20 load rated installations, a concrete ring will be poured under and around the grate and frame.
- G. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

END OF SECTION

APPENDIX A

**GEOTECHNICAL ENGINEERING REPORT
AMERICAN BOULEVARD EXTENSION
BY ECS MIDWEST, LLC**



ECS Midwest, LLC

Geotechnical Engineering Report American Boulevard Extension

American Boulevard
De Pere, Wisconsin

ECS Project No. 59:2582-A

May 6, 2021





ECS MIDWEST, LLC

Geotechnical • Construction Materials • Environmental • Facilities

"Setting the Standard for Service"

May 6, 2021

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-A

Reference: Geotechnical Engineering Report
American Boulevard Extension
American Boulevard
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 the City of De Pere 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

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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
- Boring Logs B-1 through B-3

Appendix C – Supplemental Report Documents

- Important Information about This Geotechnical Engineering Report

EXECUTIVE SUMMARY

This Executive Summary is intended as a very brief overview of the primary geotechnical conditions that are expected to affect design and construction. Information gleaned from this Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- The site has generally adequate subsurface conditions for the proposed roadway construction. 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 roadway 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 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 undesirable 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 at the existing south terminus of American Boulevard in the City of De Pere, Brown County, Wisconsin. Specifically, the project extends from a point located approximately 2,100 feet southwest of the intersection of American Boulevard and Biotech Way to the southwest approximately 2,700 feet. The site location is shown in the following figure and on the Site Location Diagram in Appendix A of this report:



Site Location (approximately outlined in red)

The general site vicinity consists of agricultural land, residential properties, light industrial properties, and commercial properties. The Fox River is located approximately 2,400 feet southeast of the site. The explored site consisted of tilled agricultural cropland.

ECS interpreted site specific topography from the Brown County Planning and Land Services interactive map (<https://browncounty.maps.arcgis.com/>) 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. 635 feet to EL. 638 feet MSL (Mean Sea Level) and generally descend to the northeast 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 1985.

2.2 PROPOSED CONSTRUCTION

ECS understands the proposed project will include the construction of an approximate 1/2-mile length of roadway as an extension to the south end of American Boulevard. It is anticipated the

project will include municipal utility installation and urban street construction. 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.

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

ECS performed the borings on April 20, 2021, using an all-terrain vehicle mounted drill rig. Our exploration procedures are explained in greater detail in Appendix B including the insert titled "Subsurface Exploration Procedures."

Our scope of services included drilling three (3) Standard Penetration Test (SPT) soil borings to a depth of between approximately 32 and 37 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 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 within the alignment are predominantly mapped as Oshkosh silty clay loam (OsA), but also contain portions within the Manawa silty clay loam (McA), Oshkosh silt loam (OnA), and Poygan silty clay loam (Po) series. 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 silty clay loam (OsA) – 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. This soil type is mapped in the areas of Boring 3.
- Manawa silty clay loam (McA) – Drainageways with clayey till and/or calcareous, dense clayey till parent material. These soils are generally somewhat poorly drained, classified as being in Hydrologic Soil Group D, and have a moderate potential for frost action. This soil type is mapped in the areas of Boring 1.

- Oshkosh silt loam (OnA) – 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. This soil type is mapped within the proposed alignment, but at none of the boring locations.
- Poygan silty clay loam (Po) – Landforms consisting of depressions with silty and clayey till parent material. These soils are generally poorly drained, classified as being in Hydrologic Soil Group C/D, and have a high potential for frost action. This soil type is mapped in the areas of Boring 2.

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

GENERALIZED SOIL PROFILE				
Approximate Depth (ft)	Stratum	Description	Range of SPT ⁽¹⁾ N-values (bpf)	Unconfined Compressive Strength, Qp ⁽²⁾ (tsf)
0 – 0.7 (Surface Cover)	N/A	Approximately 3 to 8 inches of topsoil.	N/A	N/A
0.2 – 2½	I	Crop Tillage: firm LEAN CLAY (CL) and FAT CLAY (CH) with organics.	5 – 6	N/A
1 – 37 (End of Borings)	II	Glacial till and Lacustrine: firm to very hard LEAN CLAY (CL), SANDY LEAN CLAY (CL), SILT (ML), SANDY SILT (ML), and dense SILTY SAND (SM). Some of the glacial till also contained boulders.	5 – 50+	1.0 – 6.0+

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.

Because of the limitations of the split-spoon sampler, which has a 1⅝-inch inside diameter, the soil classifications noted on the boring logs may not be representative of the entire soil matrix. For instance, materials larger than the 1⅝-inch inside diameter of the split-spoon sampler cannot be collected and observed directly. Where possible, the drill crew noted the estimated depth of larger diameter materials, such as boulders, based on things such as changes in the observed drilling resistance and auger cuttings.

3.2 GROUNDWATER OBSERVATIONS

The drill crew observed the boreholes for a measurable groundwater level during sampling and at the completion of drilling operations. During drilling, the crew noted a measurable groundwater level in each of the borings at a depth of between approximately 6 and 23 feet below the existing grade. At the completion of drilling, the crew noted a measurable groundwater level at a depth of 5 feet in Boring B-1 and at 15 feet in Boring B-3. The groundwater levels are noted on the boring logs in Appendix B.

Based upon our interpretation of the subsurface data, including water level measurements, in our opinion, the borings likely encountered a perched groundwater level. Perched groundwater is distinguished differently from the water table aquifer as defined below:

“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*

A water table aquifer is distinguished from a perched groundwater table based on the recharge ability of the water table aquifer, which may be limitless but can be lowered temporarily through adequate dewatering techniques such as deep wells and well points. Perched groundwater is often alleviated in excavations by pumping from sump pits and French drains.

In addition, variations in both groundwater types (perched and groundwater table aquifer) can occur because of seasonal variations in precipitation, evaporation, surface water runoff, lateral drainage conditions, construction activities, and other factors. The time of year and the weather history during the advancement of the borings should be considered when estimating groundwater levels at other points in time.

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. 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.

A geotechnical engineer visually classified each collected soil sample from the test borings based on texture and plasticity using ASTM D2488 (AASHTO M145), *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 bracketed text noted on the boring logs after the group symbols indicates the AASHTO Classification. The stratification lines designating the interfaces between earth materials on the 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.

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-1	CL	A-6	175	3,300	F-3	4.2	12
B-2	CL	A-6	175	3,300	F-3	4.2	12
B-3	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 25 to 35 percent for the encountered soils. These values correlate to soil volume expansion factors of 33 to 54 percent. For design purposes we recommend using an average 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. Where standing water develops, either on the pavement surface or within the base course layer, softening of the subgrade and other problems related to the deterioration of the pavement can be expected. The final pavement surface should be shaped or crowned to properly direct surface water to adequate on or off-site storm water drainage infrastructure. In addition, clayey and silty subgrade should be properly sloped to avoid dips or

pockets where water may become trapped. Dips in the clayey or 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.

“Stub” or “finger” drains should be considered where the exposed subgrade consists of clay or silt soils around catch basins and in other low-lying curb and gutter areas of the site. The drains would reduce the potential for shallow perched water to develop within the subgrade soils and aggregate base.

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 pavement placement. However, maintenance of pavement on undocumented fill sites may require additional maintenance and earlier in the life cycle of the pavement. 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, organic crop tillage, and other soft/very loose or poor materials from within the 5-foot expanded pavement limits and 5 feet beyond the toe of engineered fills, where feasible. ECS should be retained to observe and document undesirable surficial materials have been removed prior to the placement of engineered fill or the construction of pavements.

Existing 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 undesirable 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 with overlapping passes of the

vehicle under the observation of ECS. This procedure is intended to assist in identifying localized yielding materials.

Subgrade areas where proof-rolling identifies rutting or deflection exceeding 1 inch should be improved 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 poor materials, and to assist in the evaluation of appropriate remedial actions to stabilize the subgrade.

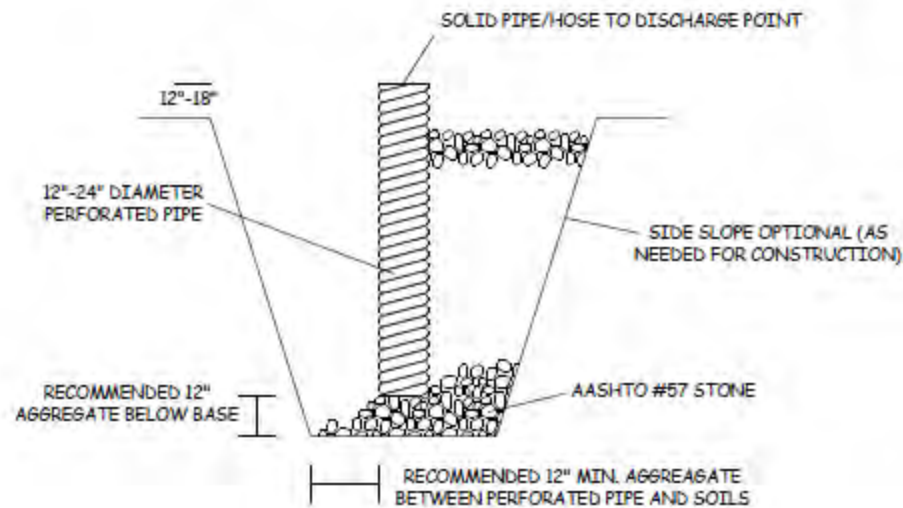
Near surface subgrade soils having a high moisture content and/or those having N-values less than 10 bpf may not pass a proof-roll and may need to be undercut or improved. Some undercutting or repair of unstable subgrade soils should be anticipated during pavement subgrade preparation. If construction will occur during wet times of the year (such as during the spring or fall months), or immediately following extended periods of rain, then seasonal reduction of the near surface soil strength 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. If the contractor believes additional subsurface information is needed to assess dewatering needs, then 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 should 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 all 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. A typical sump pump drain (found in a sump pit or along a French drain) is depicted below. 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.



Sump Pit/Pump Diagram

If water control cannot be maintained with sump pumps, or where excavations extend below the groundwater table/aquifer level, dewatering likely will require installation of a more specialized dewatering system to help maintain the groundwater level below the excavation bottom. A qualified dewatering contractor should be consulted if groundwater cannot be satisfactorily controlled using sump pumps. Lowering the static groundwater level can adversely affect nearby structures, utilities, and other construction. ECS recommends dewatering schemes be reviewed by ECS and a contractor who specializes in this type of work prior to its implementation.

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 work day, 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 Crop Tillage

The borings encountered crop tillage material that extended to a depth of between 1½ and 2½ feet below the existing grade. The crop tillage material generally consisted of firm LEAN CLAY (CL) and FAT CLAY (CH) soil with organics.

Crop tillage has a risk for reduced pavement performance because the soils were previously disturbed and potential variations in the density of this material may exist. The risk also increases where the material contains more than 5 percent organic content. Based primarily on the standard penetration N-values, in our opinion, the risk for reduced pavement performance associated with the crop tillage at this site is generally moderate. However, the risk is expected to be reduced to

low where the existing fill contains less than 5 percent organic content *and* proof-rolling observations indicate rutting, or deflection does not exceed 1 inch.

Crop Tillage Removal from Pavement Areas: ECS recommends removing crop tillage soil from within 2 feet of the finished pavement grade that contains greater than 5 percent organic content or does not meet the proof-rolling requirements outlined above. The removed material should then be replaced with a compacted engineered fill. ECS should be called on to observe and document the undesirable materials have been removed prior to the placement of engineered fill or construction of pavement structures.

5.2.2 Frost Susceptible Soils

The frost susceptible clayey and silty soils encountered in the borings provide a concern for the pavement system. 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 is generally moderate. However, the risk is expected to be high in areas where highly frost susceptible soil having an "A-4" AASHTO designation is present within 3 feet of the finished pavement grade.

ECS recommends consideration be given to removing highly frost susceptible soils having an "A-4" AASHTO designation from within 3 feet of the finished pavement grade if it is encountered during construction. The removed material should then be replaced with a properly compacted engineered fill.

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

ENGINEERED 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: In our opinion, none of the soils encountered in the borings likely meet our recommendations for use as engineered fill. Borrow material from other locations should be further evaluated and tested by ECS prior to its use. Engineered fill should 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. The 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.

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.

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 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.

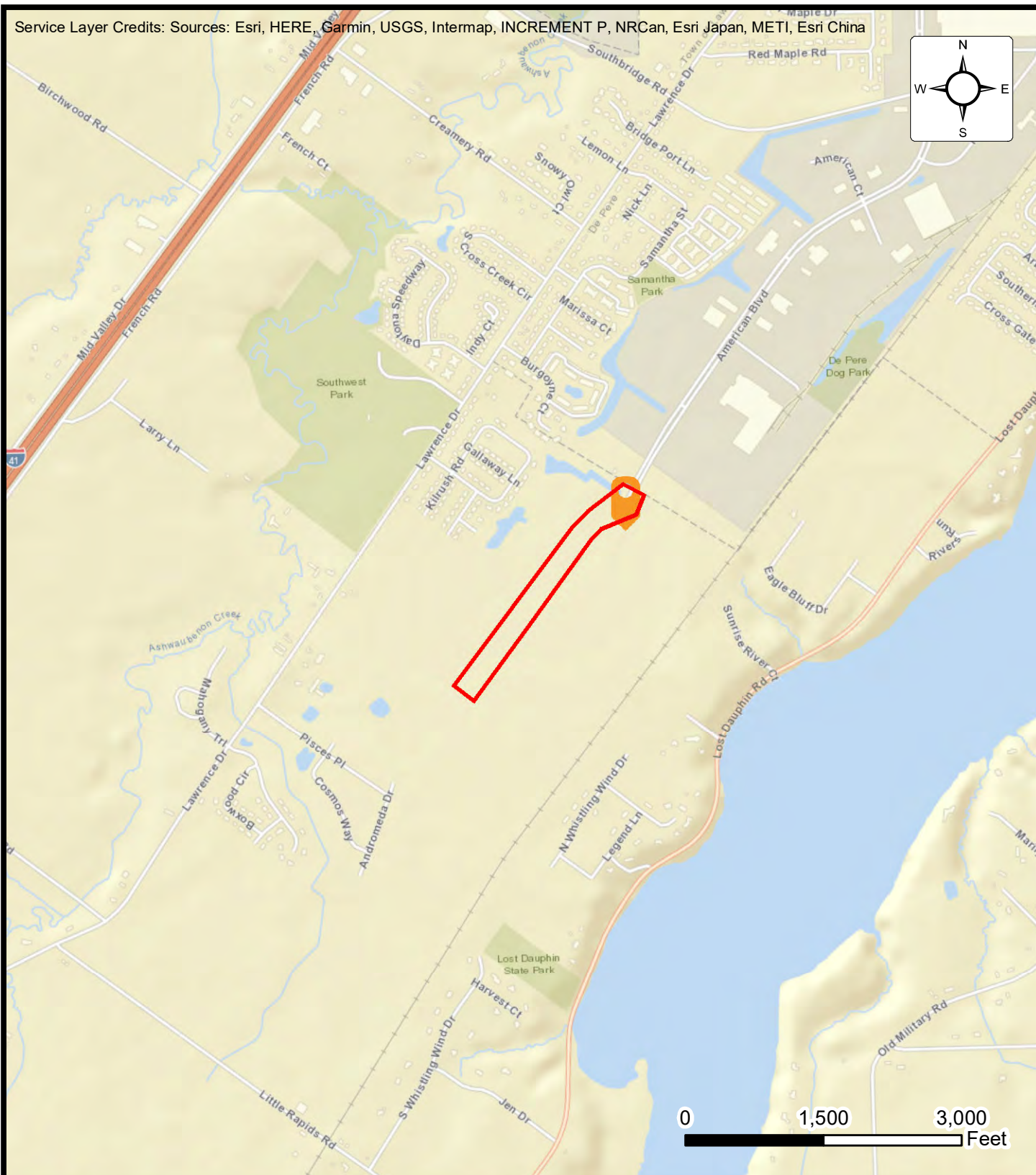
We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations, and quality assurance testing during earthwork and pavement 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



SITE LOCATION DIAGRAM AMERICAN BOULEVARD EXTENSION

AMERICAN BOULEVARD, DE PERE, WISCONSIN

CITY OF DE PERE

ENGINEER
MEK

SCALE
AS NOTED

PROJECT NO.
59:2582-A

SHEET
1 OF 1

DATE
4/9/2021



Legend



Approximate Boring Location



BORING LOCATION DIAGRAM AMERICAN BOULEVARD EXTENSION

AMERICAN BOULEVARD, DE PERE, WISCONSIN

CITY OF DE PERE

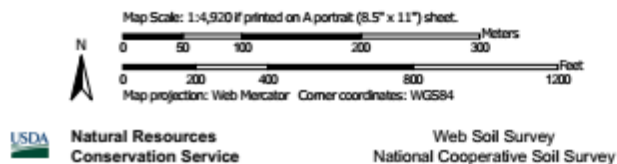
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PROJECT NO.
59:2582-A

SHEET
1 OF 1

DATE
4/9/2021



SOIL SURVEY MAP AMERICAN BOULEVARD EXTENSION

AMERICAN BOULEVARD, DE PERE, WISCONSIN

CITY OF DE PERE

ENGINEER
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AS NOTED

PROJECT NO.
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SHEET
1 OF 1

DATE
4/9/2021

APPENDIX B – Field Operations

Subsurface Exploration Procedure: Standard Penetration Testing (SPT)
Reference Notes for Boring Logs
Boring Logs B-1 through B-3



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 1 $\frac{3}{8}$ -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	3 - 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.





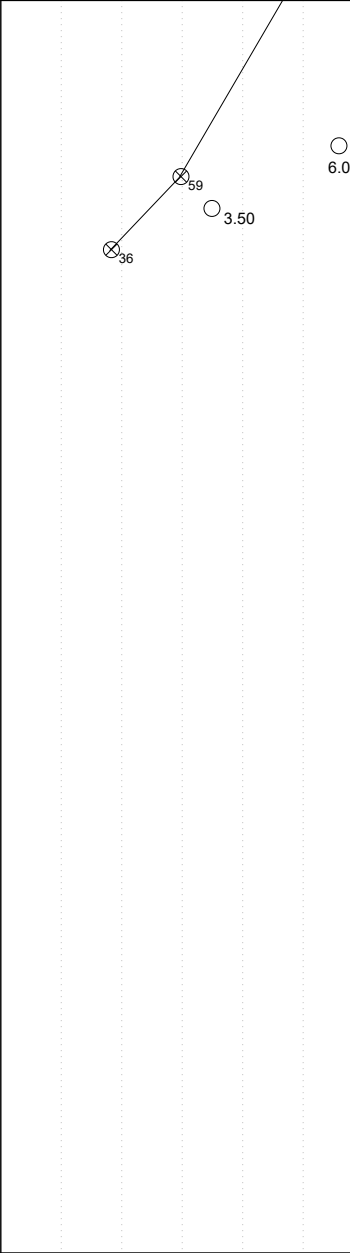

⁷Minor deviation from ASTM D 2488-17 Note 14.





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




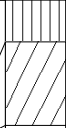

CLIENT: City of De Pere				PROJECT NO.: 59:2582-A		BORING NO.: B-1		SHEET: 1 of 2		
PROJECT NAME: American Boulevard Extension				DRILLER/CONTRACTOR: ECS59 - Crew 1						
SITE LOCATION: American Boulevard, De Pere, Wisconsin 54115										
NORTHING: 211414.7				EASTING: 2458100.5		STATION:		SURFACE ELEVATION: 637.6		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 ————— ● ————— △ ⊗ STANDARD PENETRATION BLOWS/FT ROCK QUALITY DESIGNATION & RECOVERY — RQD — REC ○ CALIBRATED PENETROMETER TON/SF [FINES CONTENT] %	
5	S-1	SS	24	10	(OL) {A-8} Topsoil, ORGANIC CLAY, very dark grayish brown, moist, very soft [4"+/-]			1-2-4-5 (6)	 6	
	S-2	SS	24	18	(CH) {A-7} Crop tillage, FAT CLAY, trace organics, brown with dark grayish brown, moist, firm			3-5-8-10 (13)	 13	
	S-3	SS	24	18	(CL) {A-6} Glacial till, LEAN CLAY WITH SILT SEAMS, reddish brown with gray, moist, very stiff		633	3-3-4-4 (7)	 7	
	S-4	SS	18	0	(CL) {A-6} Glacial till, SANDY LEAN CLAY, brown, wet, firm			5-5-5 (10)	 10	
10	S-5	SS	18	16	[BOULDER encountered at 6']		628	2-3-3 (6)	 6	
	S-6	SS	18	18	(CL) {A-6} Glacial till, LEAN CLAY, brown, wet, stiff to very stiff			2-2-3 (5)	 5	
15	S-7	SS	18	14			623	3-4-6 (10)	 10	
					(ML) {A-4} Lacustrine, SILT WITH CLAY SEAMS AND VARVES, dark grayish brown, wet, very stiff to hard					
20	S-8	SS	18	12			618	5-7-12 (19)	 19	
25	S-9	SS	18	14			613	11-12-15 (27)	 27	
30	S-10	SS	18	16			608	6-7-8 (15)	 15	
CONTINUED ON NEXT PAGE										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL										
 WL (First Encountered)					6.00		BORING STARTED: Apr 20 2021		CAVE IN DEPTH:	
 WL (Completion)					5.00		BORING COMPLETED: Apr 20 2021		HAMMER TYPE: Auto	
 WL (Seasonal High Water)							EQUIPMENT: ATV		LOGGED BY: MEK1	
 WL (Stabilized)							DRILLING METHOD: 3 1/4" HSA 0' to 30' (AH)			
GEOTECHNICAL BOREHOLE LOG										

CLIENT: City of De Pere				PROJECT NO.: 59:2582-A		BORING NO.: B-1		SHEET: 2 of 2		
PROJECT NAME: American Boulevard Extension				DRILLER/CONTRACTOR: ECS59 - Crew 1						
SITE LOCATION: American Boulevard, De Pere, Wisconsin 54115										
NORTHING: 211414.7			EASTING: 2458100.5		STATION:		SURFACE ELEVATION: 637.6			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 ————— ● ————— △ ⊗ STANDARD PENETRATION BLOWS/FT ROCK QUALITY DESIGNATION & RECOVERY — RQD — REC ○ CALIBRATED PENETROMETER TON/SF [FINES CONTENT] %	
	S-11	SS	24	10	(ML) {A-4} Lacustrine, SILT WITH CLAY SEAMS AND VARVES, dark grayish brown, wet, very stiff to hard END OF DRILLING AT 32.0 FT			3-4-6-7 (10)	 10  4.25	
35							603			
40							598			
45							593			
50							588			
55							583			
60							578			
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL										
▽ WL (First Encountered) 6.00					BORING STARTED: Apr 20 2021			CAVE IN DEPTH:		
▼ WL (Completion) 5.00					BORING COMPLETED: Apr 20 2021			HAMMER TYPE: Auto		
▽ WL (Seasonal High Water)					EQUIPMENT: ATV		LOGGED BY: MEK1		DRILLING METHOD: 3 1/4" HSA 0' to 30' (AH)	
▽ WL (Stabilized)										
GEOTECHNICAL BOREHOLE LOG										

CLIENT: City of De Pere				PROJECT NO.: 59:2582-A		BORING NO.: B-2		SHEET: 1 of 2		
PROJECT NAME: American Boulevard Extension				DRILLER/CONTRACTOR: ECS59 - Crew 1						
SITE LOCATION: American Boulevard, De Pere, Wisconsin 54115										
NORTHING: 212365.2				EASTING: 2458770.0		STATION:		SURFACE ELEVATION: 637.1		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 ————— ● ————— △ ⊗ STANDARD PENETRATION BLOWS/FT ROCK QUALITY DESIGNATION & RECOVERY — RQD — REC ○ CALIBRATED PENETROMETER TON/SF [FINES CONTENT] %	
5	S-1	SS	24	18	(OL) {A-8} Topsoil, ORGANIC CLAY, dark brown, moist, soft [8"+/-]		633	2-2-3-4 (5)	⊗ ₅	○ 4.00
	S-2	SS	24	12	(CL) {A-6} Crop tillage, LEAN CLAY WITH SAND, trace gravel and organics, brown, dark brown and grayish brown, moist, firm		633	2-6-8-11 (14)	⊗ ₁₄	○ 4.00
	S-3	SS	24	18	(CL) {A-6} Glacial till, LEAN CLAY WITH SAND AND SILT SEAMS, brown with gray, moist, hard to very stiff		628	3-7-10-12 (17)	⊗ ₁₇	○ 4.00
	S-4	SS	18	18			628	4-6-9 (15)	⊗ ₁₅	○ 5.00
10	S-5	SS	18	14			628	3-4-5 (9)	⊗ ₉	○ 4.50
	S-6	SS	18	18			628	3-4-5 (9)	⊗ ₉	○ 3.00
15	S-7	SS	18	12	(ML) {A-4} Lacustrine, SILT WITH CLAY SEAMS AND VARVES, dark grayish brown with brown, moist, hard		623	5-12-14 (26)	⊗ ₂₆	○ 4.50
							618	7-11-15 (26)	⊗ ₂₆	○ 4.50
20	S-8	SS	18	14			613	10-14-22 (36)	⊗ ₃₆	
	S-9	SS	18	12	(SM) {A-4} Glacial till, SILTY SAND, grayish brown, wet, dense		613			
25							608	14-20-30/4" (50/10")	⊗ _{50/10"}	○ 6.0+
30	S-10	SS	16	12	(ML) {A-4} Lacustrine, SILT WITH CLAY SEAMS, brown, wet to moist, very hard to very stiff		608			
CONTINUED ON NEXT PAGE										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL										
∇ WL (First Encountered) 23.00				BORING STARTED: Apr 20 2021		CAVE IN DEPTH:				
▼ WL (Completion) None				BORING COMPLETED: Apr 20 2021		HAMMER TYPE: Auto				
∇ WL (Seasonal High Water)				EQUIPMENT: ATV		LOGGED BY: MEK1		DRILLING METHOD: 3 1/4" HSA 0' to 35' (AH)		
∇ WL (Stabilized)										
GEOTECHNICAL BOREHOLE LOG										

CLIENT: City of De Pere				PROJECT NO.: 59:2582-A		BORING NO.: B-2		SHEET: 2 of 2			
PROJECT NAME: American Boulevard Extension				DRILLER/CONTRACTOR: ECS59 - Crew 1							
SITE LOCATION: American Boulevard, De Pere, Wisconsin 54115										LOSS OF CIRCULATION 	
NORTHING: 212365.2			EASTING: 2458770.0			STATION:		SURFACE ELEVATION: 637.1		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		
									— RQD		
									— REC		
									○ CALIBRATED PENETROMETER TON/SF (FINES CONTENT) %		
35	S-11	SS	18	18	(ML) {A-4} Lacustrine, SILT WITH CLAY SEAMS, brown, wet to moist, very hard to very stiff		603	17-27-32 (59)			
	S-12	SS	24	24			598	9-15-21-23 (36)			
40	END OF DRILLING AT 37.0 FT						593				
45							588				
50							583				
55							578				
60											
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL											
▽ WL (First Encountered) 23.00				BORING STARTED: Apr 20 2021				CAVE IN DEPTH:			
▼ WL (Completion) None				BORING COMPLETED: Apr 20 2021				HAMMER TYPE: Auto			
▼ WL (Seasonal High Water)				EQUIPMENT: ATV				LOGGED BY: MEK1			
▽ WL (Stabilized)								DRILLING METHOD: 3 1/4" HSA 0' to 35' (AH)			
GEOTECHNICAL BOREHOLE LOG											

CLIENT: City of De Pere				PROJECT NO.: 59:2582-A		BORING NO.: B-3		SHEET: 1 of 2		
PROJECT NAME: American Boulevard Extension				DRILLER/CONTRACTOR: ECS59 - Crew 1						
SITE LOCATION: American Boulevard, De Pere, Wisconsin 54115										
NORTHING: 213142.4				EASTING: 2459383.1		STATION:		SURFACE ELEVATION: 635.7		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 ————— ● ————— △ ⊗ STANDARD PENETRATION BLOWS/FT ROCK QUALITY DESIGNATION & RECOVERY — RQD — REC ○ CALIBRATED PENETROMETER TON/SF [FINES CONTENT] %	
5	S-1	SS	24	7	(OL) {A-8} Topsoil, ORGANIC CLAY, very dark grayish brown, moist, very soft [3"+/-]		631	1-2-3-5 (5)	⊗ ₅	○ 4.50
	S-2	SS	24	18	(CL) {A-6} Crop tillage, LEAN CLAY WITH ORGANICS, dark brown and brown, moist, firm		631	2-3-5-6 (8)	⊗ ₈	○ 1.75
	S-3	SS	24	18	(CL) {A-6} Lacustrine, LEAN CLAY WITH SAND AND SILT SEAMS, brown, moist, hard		631	4-4-5-6 (9)	⊗ ₉	○ 1.50
	S-4	SS	18	18	(CL) {A-6} Lacustrine, SANDY LEAN CLAY, brown, moist, stiff		631	3-3-4 (7)	⊗ ₇	○ 3.00
10	S-5	SS	18	10	(CL) {A-6} Lacustrine, LEAN CLAY, brown, moist to wet, stiff to hard		626	3-5-6 (11)	⊗ ₁₁	○ 3.25
	S-6	SS	18	18			626	4-4-7 (11)	⊗ ₁₁	○ 2.00
15	S-7	SS	18	11			621	5-5-8 (13)	⊗ ₁₃	○ 5.50
							621			
20	S-8	SS	18	14			616	5-9-15 (24)	⊗ ₂₄	
							616			
25	S-9	SS	15	14	(ML) {A-4} Lacustrine, SANDY SILT, brown, wet, very dense	611	15-28-22/3" (50/9")	⊗ _{50/9"}		
						611				
30	S-10	SS	14	12			611	21-31-19/2" (50/8")	⊗ _{50/8"}	
CONTINUED ON NEXT PAGE										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL										
∇ WL (First Encountered) 16.00					BORING STARTED: Apr 20 2021		CAVE IN DEPTH:			
▼ WL (Completion) 15.00					BORING COMPLETED: Apr 20 2021		HAMMER TYPE: Auto			
∇ WL (Seasonal High Water)					EQUIPMENT: ATV		LOGGED BY: MEK1		DRILLING METHOD: 3 1/4" HSA 0' to 31' (AH)	
∇ WL (Stabilized)										
GEOTECHNICAL BOREHOLE LOG										

CLIENT: City of De Pere				PROJECT NO.: 59:2582-A		BORING NO.: B-3		SHEET: 2 of 2		
PROJECT NAME: American Boulevard Extension				DRILLER/CONTRACTOR: ECS59 - Crew 1						
SITE LOCATION: American Boulevard, De Pere, Wisconsin 54115										
NORTHING: 213142.4		EASTING: 2459383.1		STATION:		SURFACE ELEVATION: 635.7		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 ————— ● ————— △ ⊗ STANDARD PENETRATION BLOWS/FT ROCK QUALITY DESIGNATION & RECOVERY — RQD — REC ○ CALIBRATED PENETROMETER TON/SF [FINES CONTENT] %	
	S-11	SS	24	24	(ML) {A-4} Lacustrine, SANDY SILT, brown, wet, very dense (CL) {A-6} Lacustrine, LEAN CLAY, brown, wet, very hard END OF DRILLING AT 33.0 FT			27-28-34-40 (62)	 62 ○ 5.00	
35							601			
40							596			
45							591			
50							586			
55							581			
60										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL										
▽ WL (First Encountered) 16.00					BORING STARTED: Apr 20 2021		CAVE IN DEPTH:			
▼ WL (Completion) 15.00					BORING COMPLETED: Apr 20 2021		HAMMER TYPE: Auto			
▽ WL (Seasonal High Water)					EQUIPMENT: ATV		LOGGED BY: MEK1		DRILLING METHOD: 3 1/4" HSA 0' to 31' (AH)	
▽ 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 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

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

and 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

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

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
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ASSOCIATION

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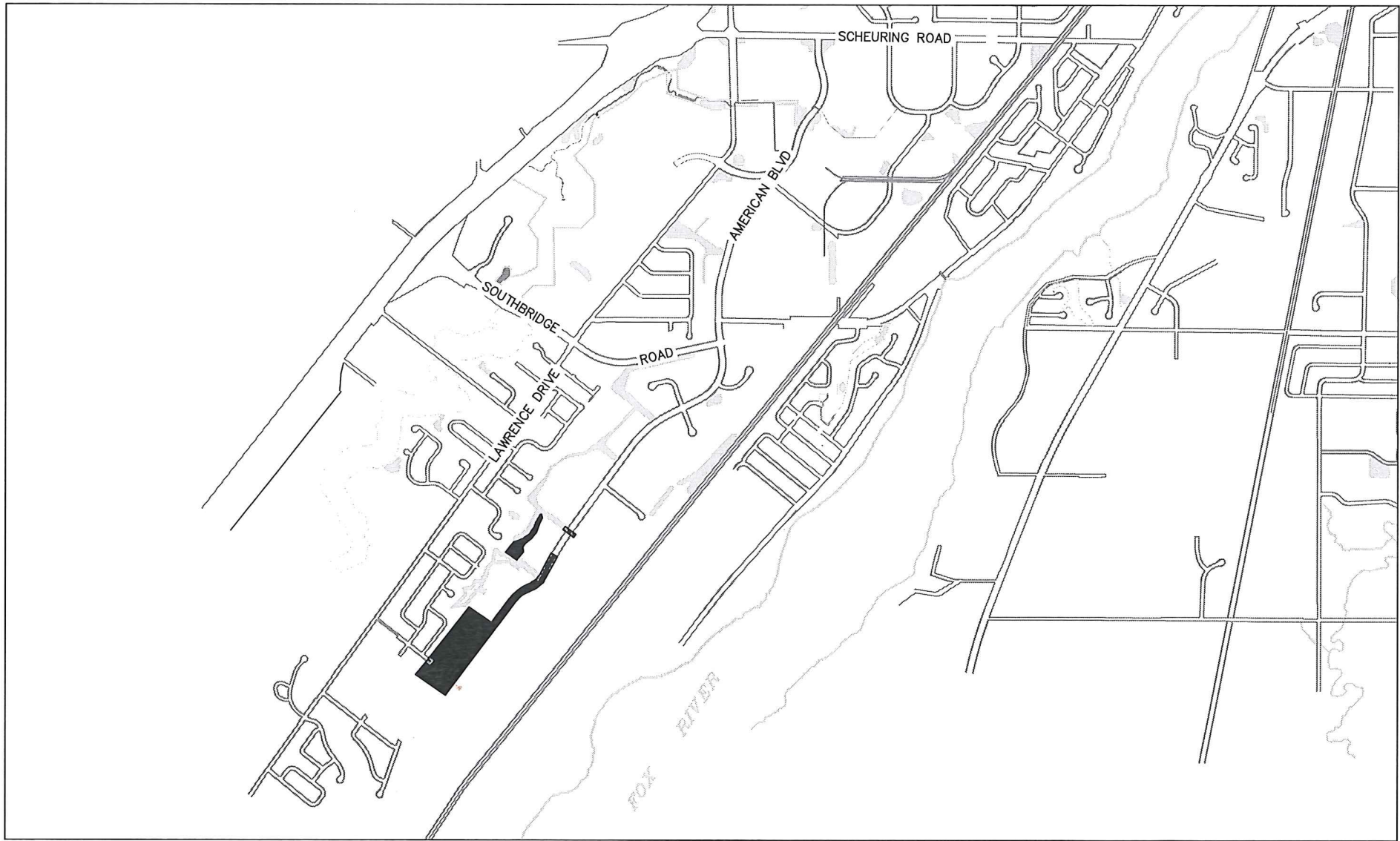
PROJECT# 21-11

AMERICAN BOULEVARD UTILITY AND STREET CONSTRUCTION

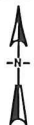
CITY OF DE PERE



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



SITE LOCATION MAP
N.T.S.

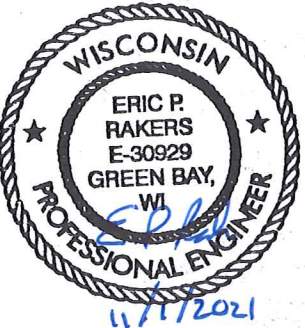


SHEET NO.	DESCRIPTION
G001	TITLE SHEET
G002	STANDARD ABBREVIATION & SYMBOLS
G003-G004	TYPICAL SECTIONS
C101 - C105	AMERICAN BLVD SANITARY AND WATER PLAN AND PROFILE SHEETS
C106	GARROMAN DRIVE SANITARY AND WATER PLAN AND PROFILE SHEETS
C107 - C113	AMERICAN BLVD STORM AND STREET PLAN AND PROFILE SHEETS
C114	GARROMAN DRIVE STORM AND STREET PLAN AND PROFILE SHEETS
C301 - C319	AMERICAN BLVD CROSS SECTIONS
C320 - C322	GARROMAN DRIVE CROSS SECTIONS
C401 - C402	AMERICAN AND GARROMAN ALIGNMENT AND BENCHMARKS
C403 - C404	AMERICAN CUL-DE-SAC AND INTERSECTION GRADES
C405 - C408	DETENTION POND AND BERM AREA GRADING PLAN
C409	AMERICAN AND GARROMAN DEMOLITION PLAN
C410 - C414	EROSION CONTROL PLAN
C415 - C416	FINAL RESTORATION PLAN
C501 - C503	CONSTRUCTION DETAILS

CITY OF DE PERE
BOARD OF PUBLIC WORKS

11/1/2021	<i>E.P. Rakers</i>
DATE	CITY ENGINEER
11/1/21	<i>James M. Boyd</i>
DATE	CITY ADMINISTRATOR
11/1/21	<i>Joe J. Boyd</i>
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	STA	STATION
FE	FIELD ENTRANCE	STD	STANDARD
FERT	FERTILIZER	STH	STATE HIGHWAY TRUNK
FIN GR	FINISHED GRADE	STM	STORM
FL	FLOWLINE	STP	SEWAGE TREATMENT PLANT
FO	FIBER OPTIC	STRUCT	STRUCTURE OR STRUCTURAL
FOW	FRONT OF SIDEWALK	SW	SOUTHWEST
FT	FOOT	TAN	TANGENT
FTG	FOOTING	T	TOWN (T WHEN USED FOR TELEPHONE LINE)
G	GAS	TEL	TELEPHONE
GV	GAS VALVE	TEMP	TEMPORARY
GW	GUY WIRE	TLE	TEMPORARY LIMITED EASEMENT
HDPE	HIGH DENSITY POLYETHYLENE	TOC	TOP OF CURB
HR	HANDICAP RAMP	TOW	TOP OF WATER
HSE	HOUSE	TRANS	TRANSITION
HT	HEIGHT	TYP	TYPICAL
HYD	HYDRANT	UG	UNDERGROUND
I	INTERSECTION ANGLE	USH	US HIGHWAY
ICS	INTERNAL CHIMNEY SEAL	VC	VERTICAL CURVE
ID	INSIDE DIAMETER	VERT	VERTICAL
IN	INCH	VOL	VOLUME
INL	INLET	VPC	VERTICAL POINT OF CURVATURE
INTERS	INTERSECTION	VPI	VERTICAL POINT OF INTERSECTION
INV	INVERT	VPRC	VERTICAL POINT OF REVERSE CURVE
IP	IRON PIPE OR PIN	VPT	VERTICAL POINT OF TANGENCY
JCT	JUNCTION	W	WEST
L	LENGTH (OF CURVE)	WB	WESTBOUND
LC	LONG CHORD OF CURVE	WM	WATERMAIN
LP	LIGHTPOLE	WSO	WATER SHUTOFF VALVE
LS	LIFT STATION OR LUMP SUM	WTP	WATER TREATMENT PLANT
LT	LEFT	WV	WATER VALVE
MAINT	MAINTENANCE	WWTP	WASTE WATER TREATMENT PLANT
MATL	MATERIAL	YD	YARD
MB	MAILBOX		
MH	MANHOLE		
MP	MARKER POST		

MAPPING & TOPOGRAPHY SYMBOLOGY

DESCRIPTION	SYMBOL	
	EXISTING	PROPOSED
BENCHMARK		
BUSH		
CATCH BASIN		
CABLE TV BOX		
CONTROL POINT		
ELECTRICAL BOX		
EROSION CONTROL - INELT		
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		

MAPPING & TOPOGRAPHY SYMBOLOGY

DESCRIPTION	SYMBOL	
	PLAN	
EXISTING SANITARY SEWER LINE	<div>(SIZE AND MATERIAL) San</div>	
PROPOSED SANITARY SEWER LINE	<div>100'-8" PVC SAN San</div>	
EXISTING STORM SEWER LINE	<div>(SIZE AND MATERIAL) ST</div>	
PROPOSED STORM SEWER LINE	<div>100'-8" PVC STM ST</div>	
EXISTING WATER MAIN LINE	<div>(SIZE AND MATERIAL) W</div>	
PROPOSED WATER MAIN LINE	<div>100'-8" PVC WM (TEE-BEND) W</div>	
EXISTING ELECTRICAL LINE	<div>E</div>	
EXISTING GAS MAIN LINE	<div>G</div>	
EXISTING TELEPHONE LINE	<div>T</div>	
EXISTING CABLE TV LINE	<div>TV</div>	
EXISTING SANITARY LATERAL	<div>San</div>	
EXISTING WATER SERVICE	<div>W</div>	
RIGHT OF WAY	<div>ROW</div>	
PROPERTY LINE	<div>PL</div>	
EASEMENT	<div>ESM</div>	
SILT FENCE EROSION CONTROL	<div></div>	
EXISTING FIBER OPTIC	<div>FO</div>	
EXISTING MAJOR CONTOUR	<div>615</div>	
EXISTING MINOR CONTOUR	<div>612</div>	
PROPOSED MAJOR CONTOUR	<div>615</div>	
PROPOSED MINOR CONTOUR	<div>612</div>	

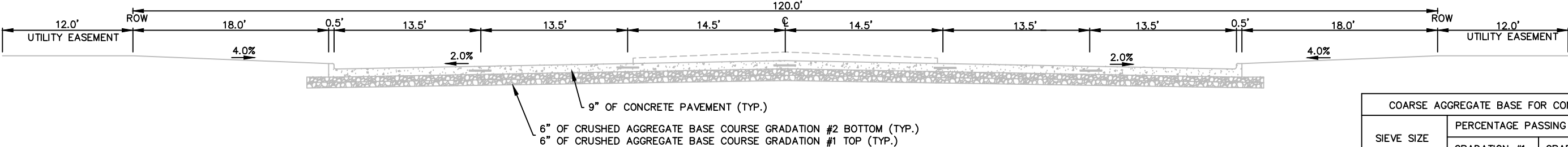
PROFILE	
EXISTING SANITARY SEWER LINE	<div>(SIZE AND MATERIAL)</div>
PROPOSED SANITARY SEWER LINE	<div>100'-8" PVC SAN @ 0.40%</div>
EXISTING STORM SEWER LINE	<div>(SIZE AND MATERIAL)</div>
PROPOSED STORM SEWER LINE	<div>100'-8" PVC STM @ 1.0%</div>
EXISTING WATER MAIN LINE	<div>(SIZE AND MATERIAL)</div>
PROPOSED WATER MAIN LINE	<div>PROPOSE 8" PVC WM</div>

PATCH SYMBOLS

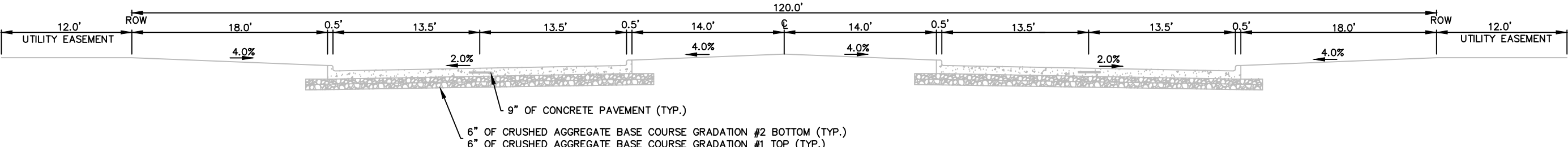
ASPHALTIC CONCRETE PAVEMENT		CRUSHED AGGREGATE BASE COURSE	
PORTLAND CEMENT CONCRETE			

GENERAL CONSTRUCTION NOTES:

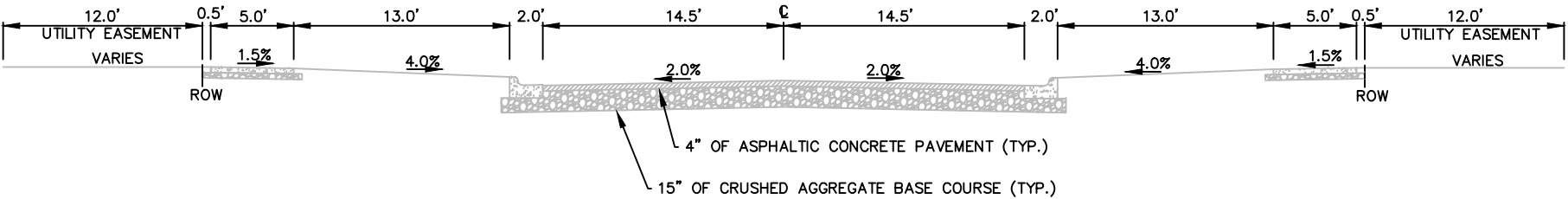
- ALL ELEVATIONS ARE REFERENCED TO NAVD 88.
- THE WORK UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE CITY OF DE PERE, CURRENT CONSTRUCTION SPECIFICATIONS AND THESE SPECIAL PROVISIONS AND PLANS, AND THE LATEST ADDITION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS FOR HIGHWAY 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.



COARSE AGGREGATE BASE FOR CONCRETE		
SIEVE SIZE	PERCENTAGE PASSING BY WEIGHT	
	GRADATION #1	GRADATION #2
2 INCH	—	100
1-1/2 INCH	—	90-100
1 INCH	100	20-55
3/4 INCH	90-100	0-15
3/8 INCH	20-55	0-5
NO. 4	0-10	—
NO. 8	0-5	—



AMERICAN BLVD EXISTING TYPICAL SECTIONS



GARROMAN DRIVE EXISTING TYPICAL SECTION



CITY OF DE PERE

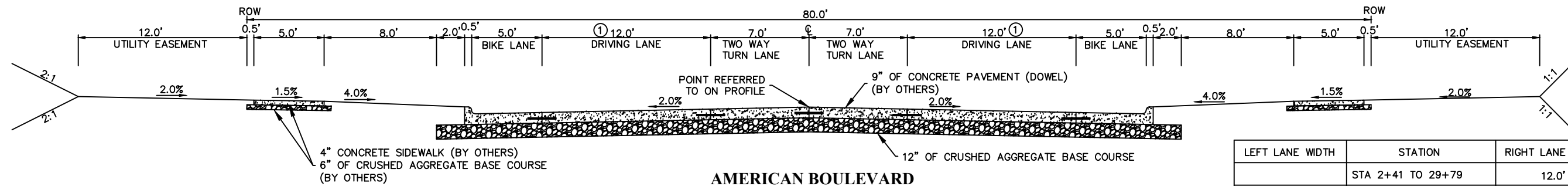
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

AMERICAN BLVD AND GARROMAN DR
EXISTING TYPICAL SECTIONS

NAME: AMERICAN BOULEVARD
UTILITY AND STREET
CONSTRUCTION
PROJECT # 21-11

NO.	DATE	BY	REMARKS
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DRAWN	SRL	02-2021	
DESIGNED	SRL	02-2021	
CHECKED	EPR	02-2021	

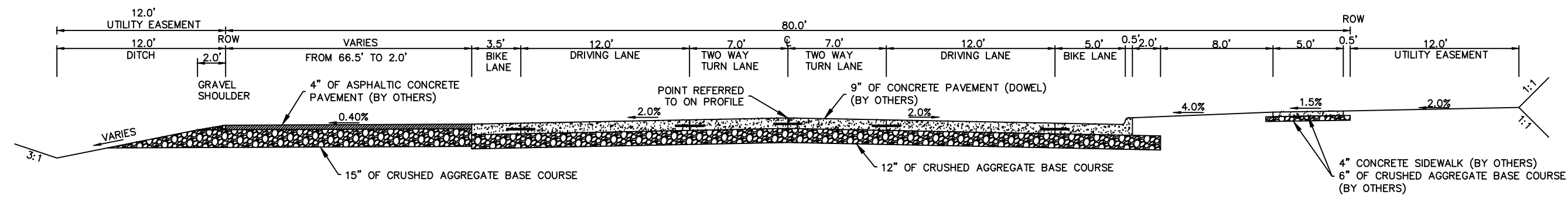
REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS



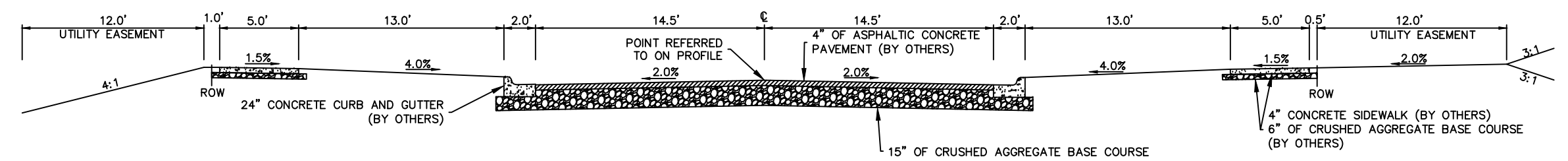
AMERICAN BOULEVARD
TYPICAL SECTIONS
STA 2+41 TO STA 33+04

LEFT LANE WIDTH	STATION	RIGHT LANE WIDTH
	STA 2+41 TO 29+79	12.0'
12.0'	STA 2+41 TO 30+04	
	STA 29+79 TO 33+03.7	12.0'-29.5'
12.0'-29.5'	STA 30+61.5 TO 33+04.8	

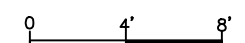
NOTE:
 EXCAVATION LIMITS VARY FROM STA 27+60 TO STA 33+04
 TO INCLUDE THE REMOVAL OF EXISTING PAVED SURFACE AND
 CRUSHED AGGREGATE BASE COURSE. SEE DEMOLITION PLAN.



AMERICAN BOULEVARD
TYPICAL SECTIONS
STA 1+21 TO STA 2+41



GARROMAN DRIVE
TYPICAL SECTIONS STA 58+00 TO STA 62+97



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

**AMERICAN BOULEVARD
 AND GARROMAN DRIVE
 TYPICAL SECTIONS**

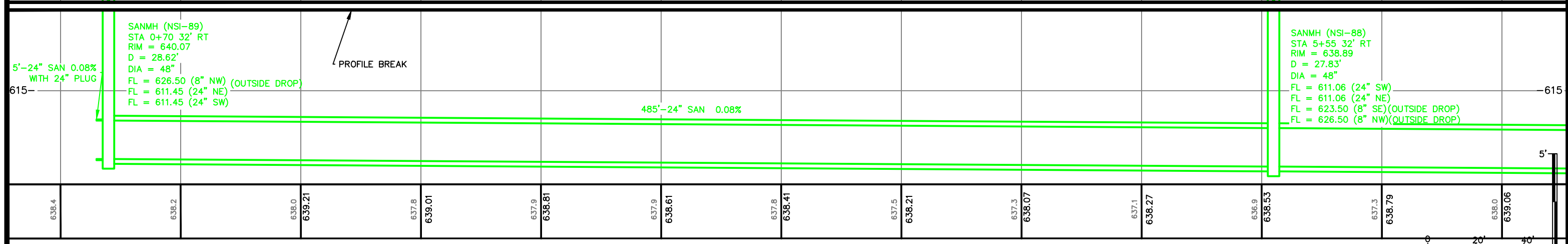
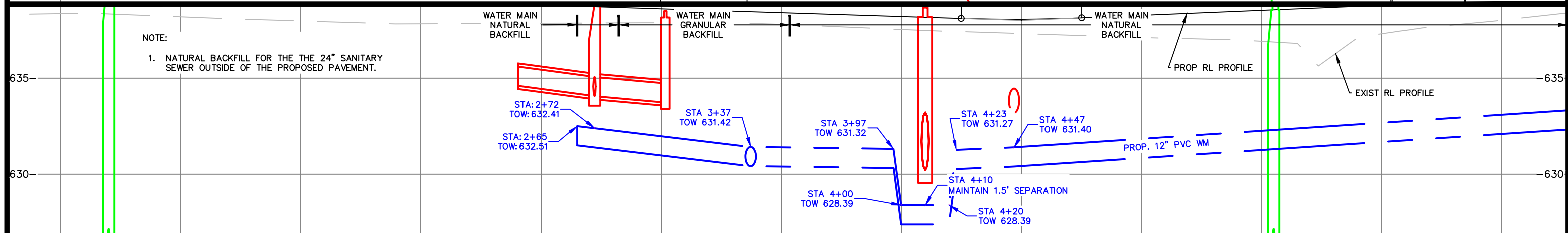
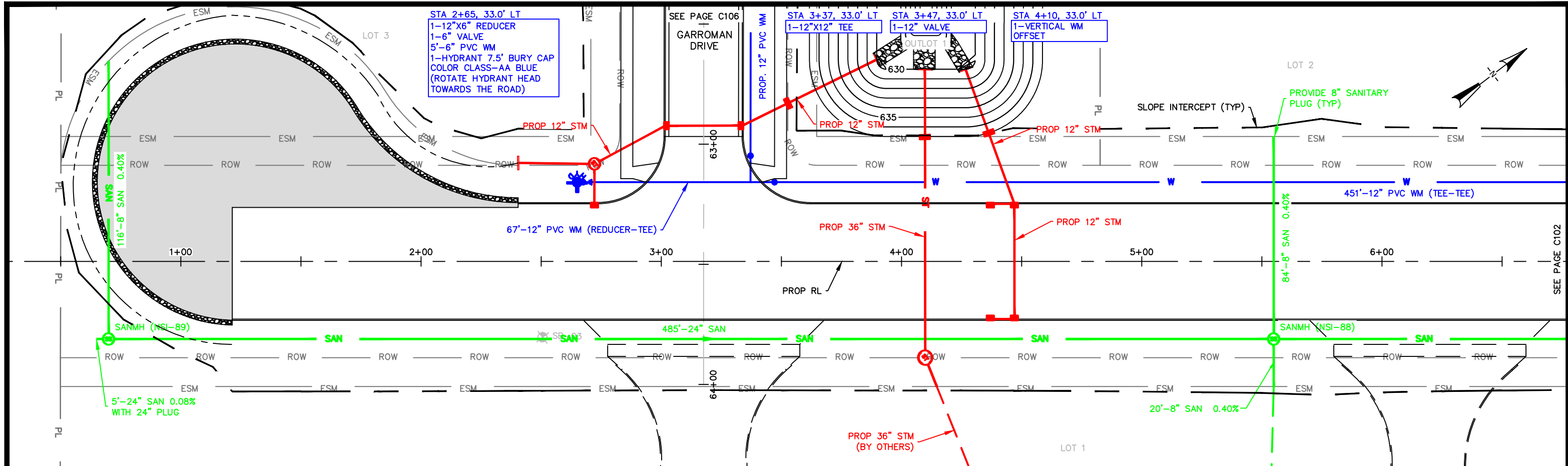
NAME: AMERICAN BOULEVARD
 UTILITY AND STREET
 CONSTRUCTION
 PROJECT # 21-11

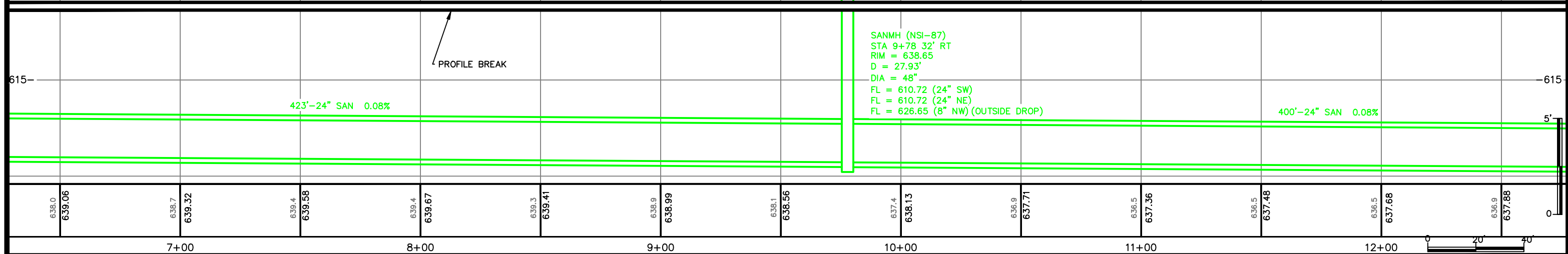
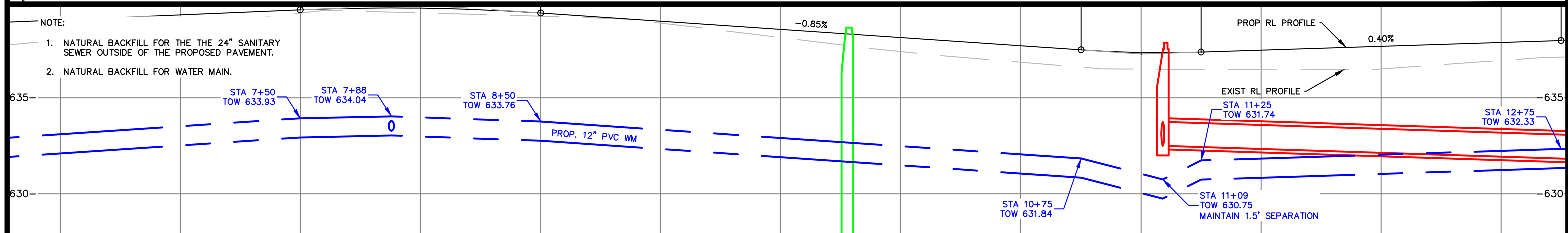
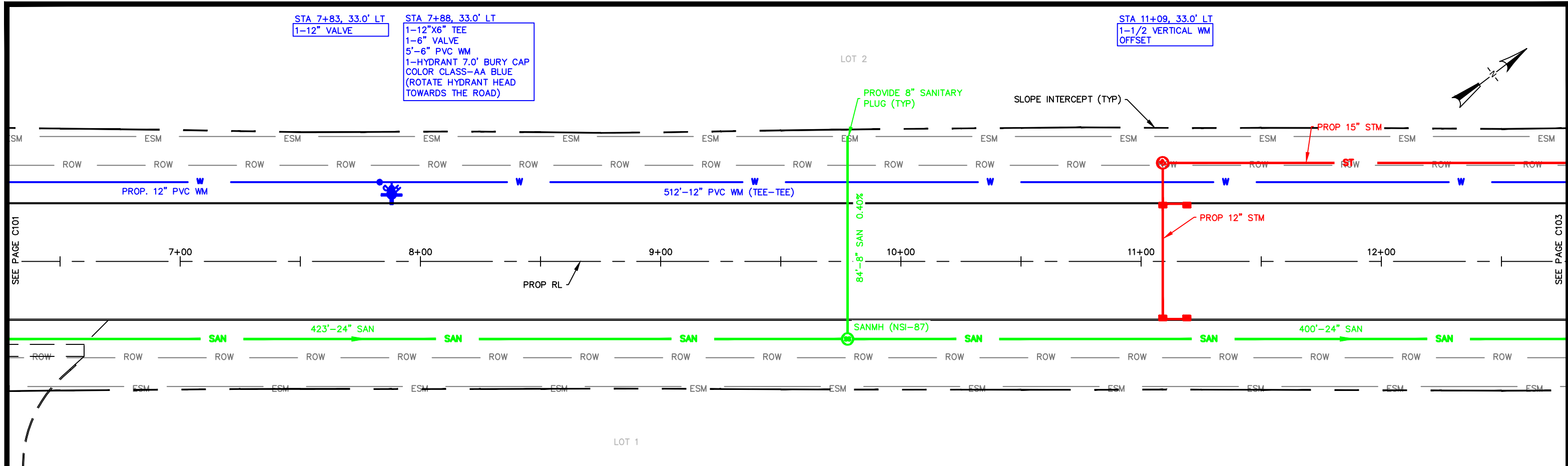
BY
 SURVEYED XXX 10-2010
 DRAWN SRL 02-2021
 DESIGNED SRL 02-2021
 CHECKED EPR 02-2021

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

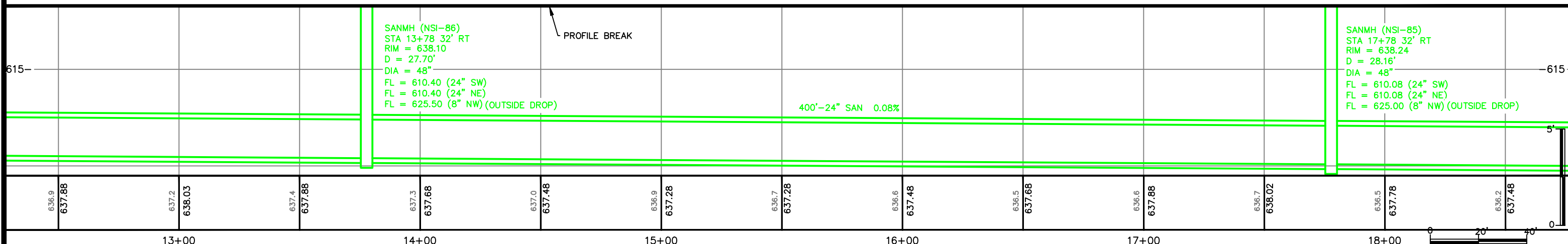
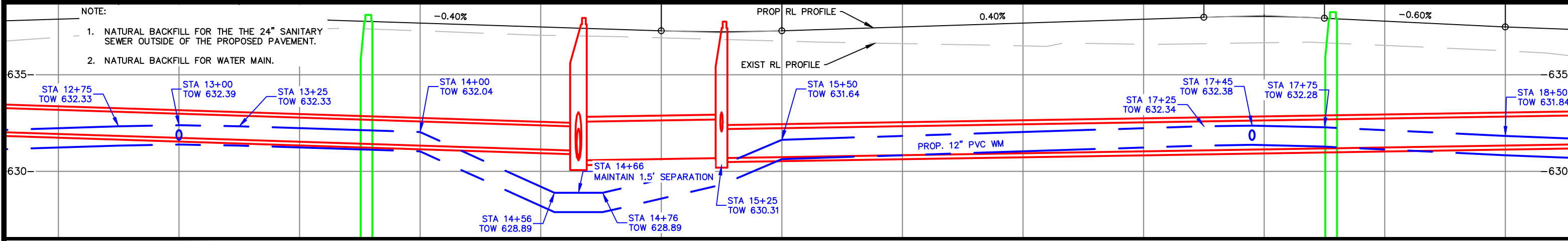
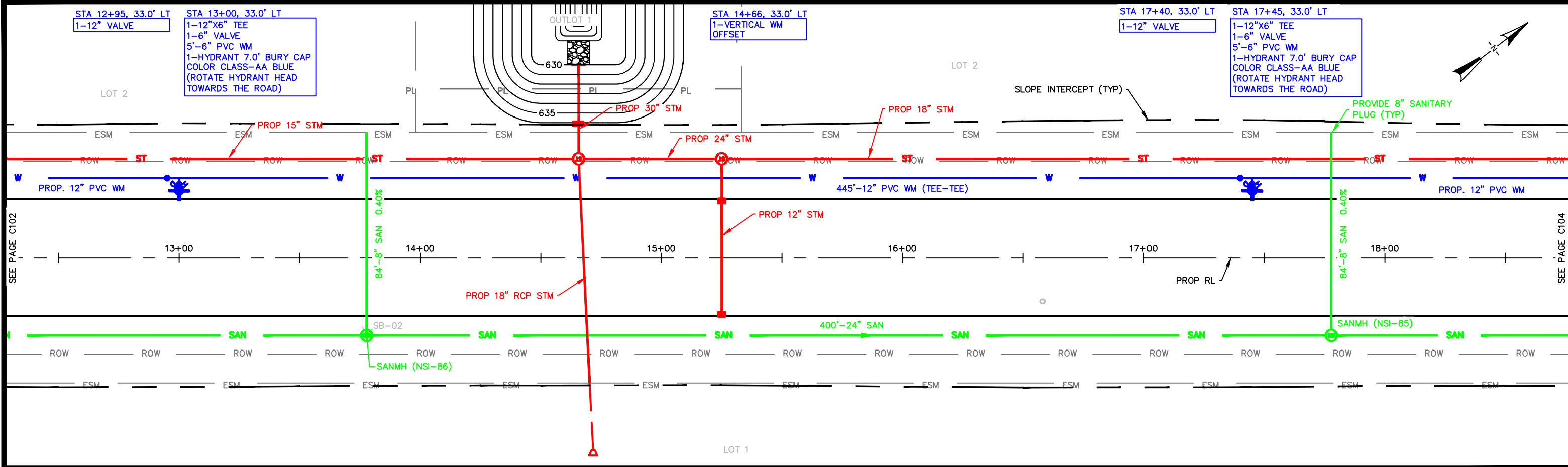
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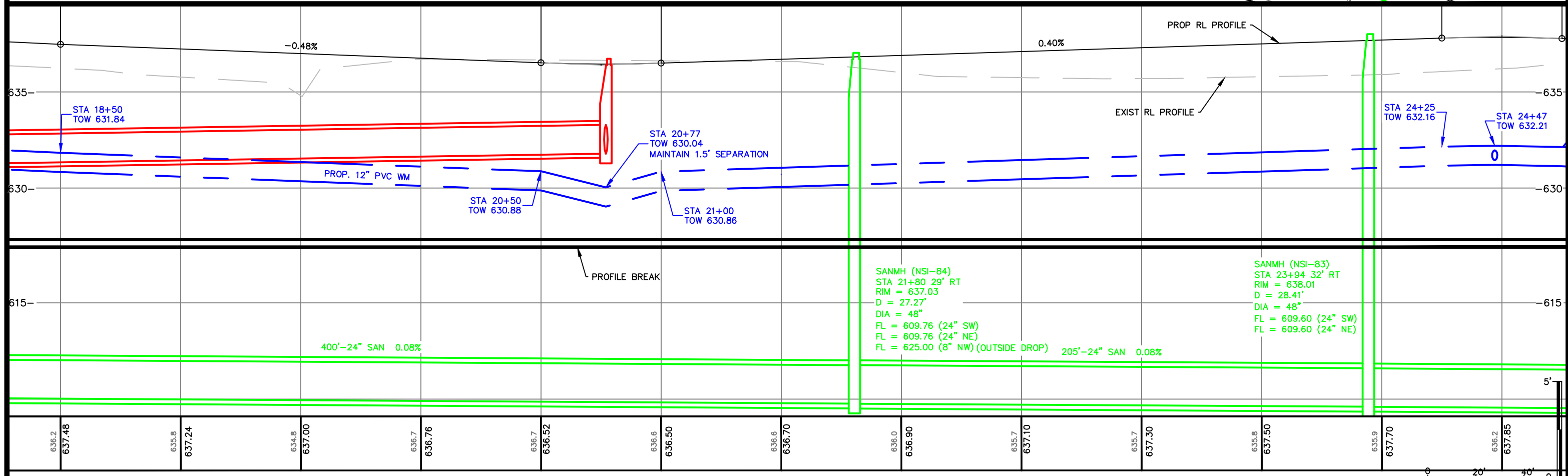
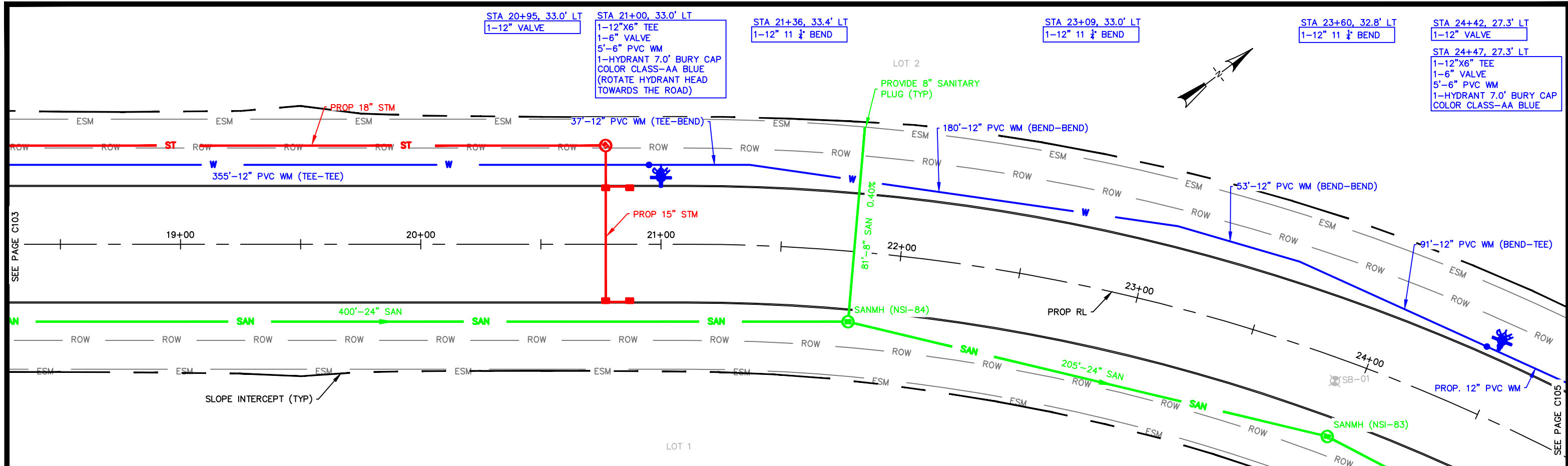
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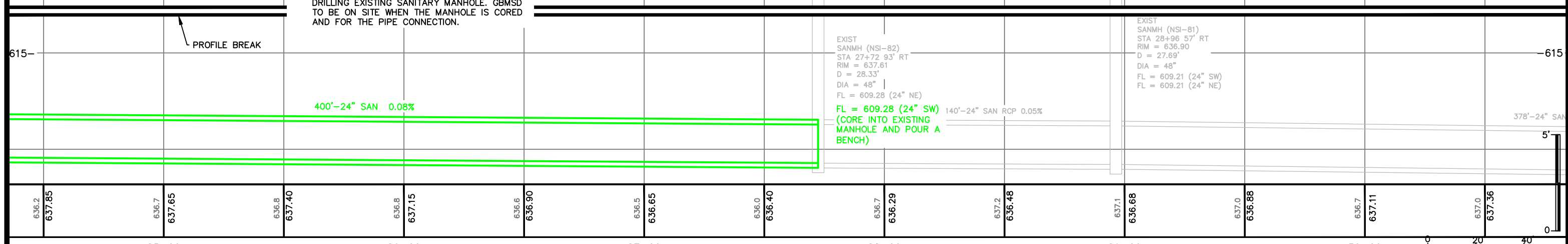
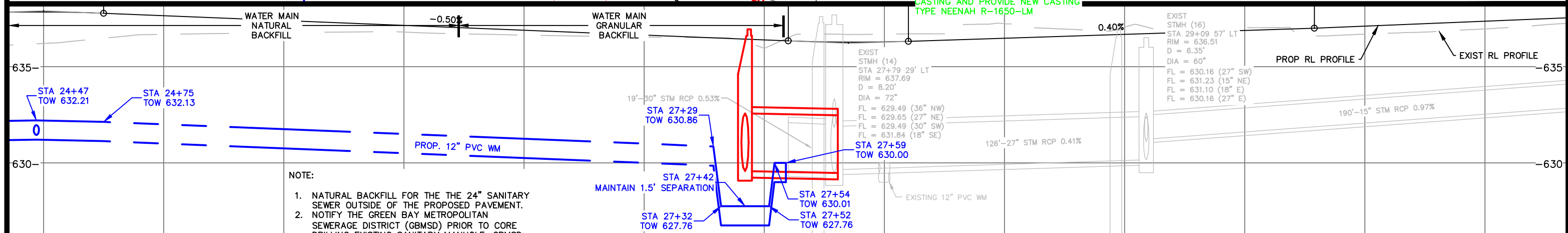
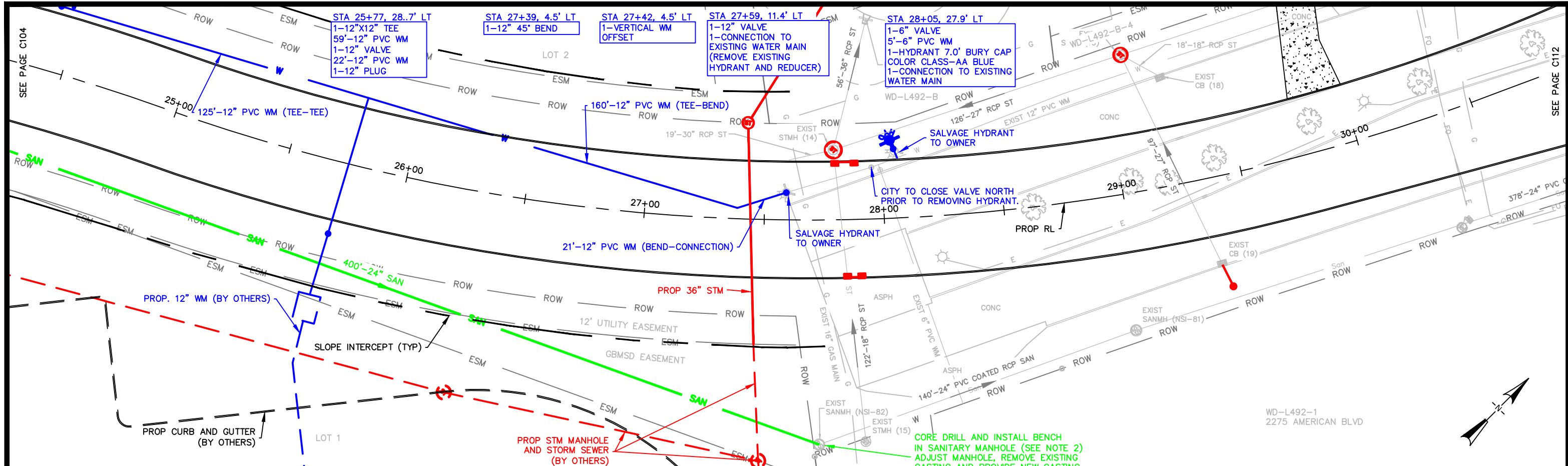


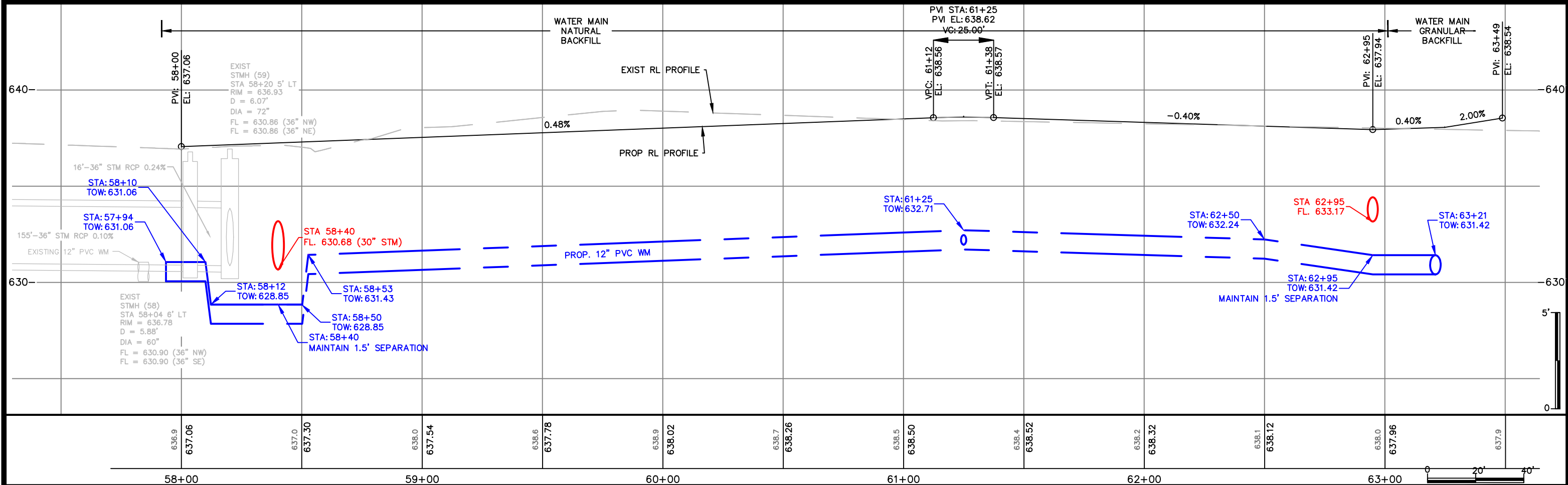
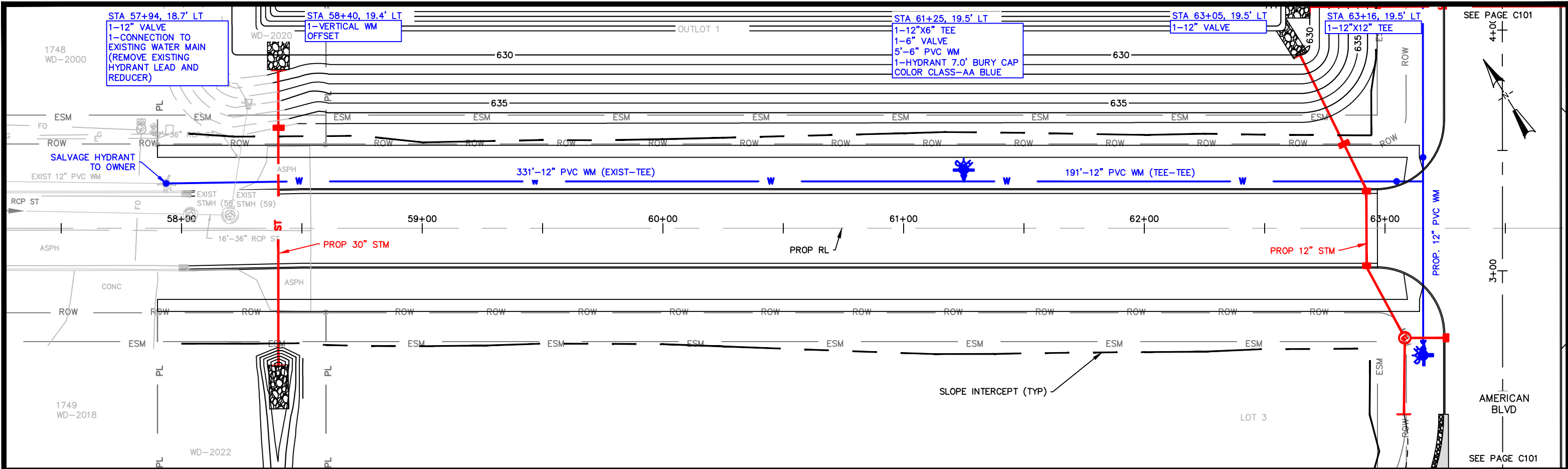


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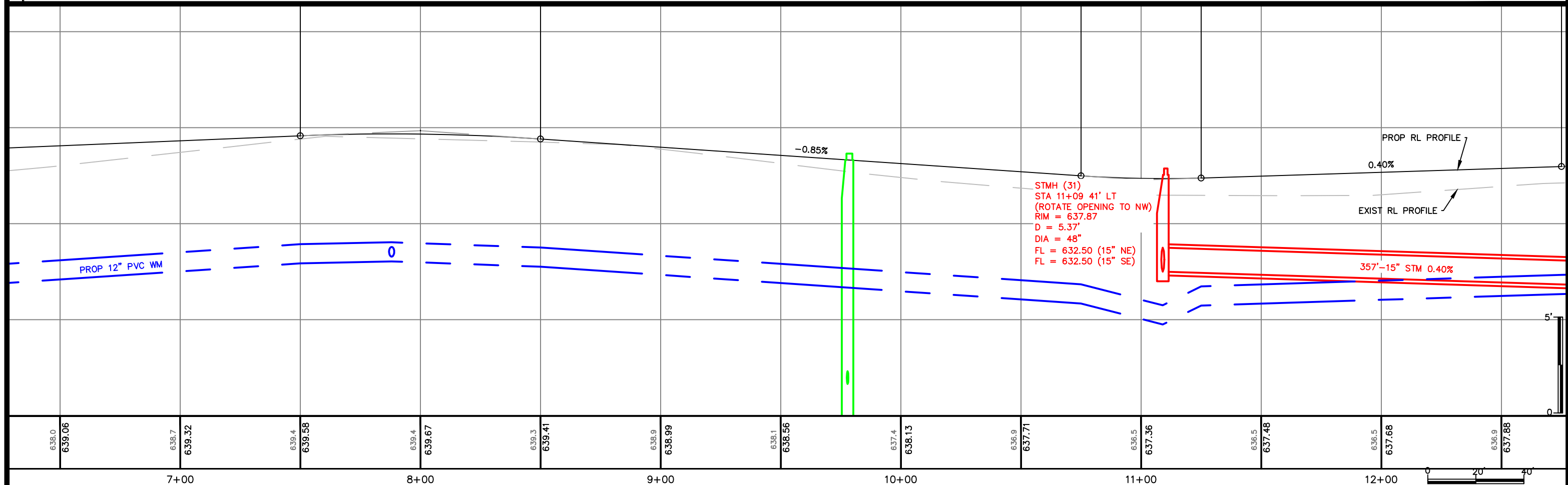
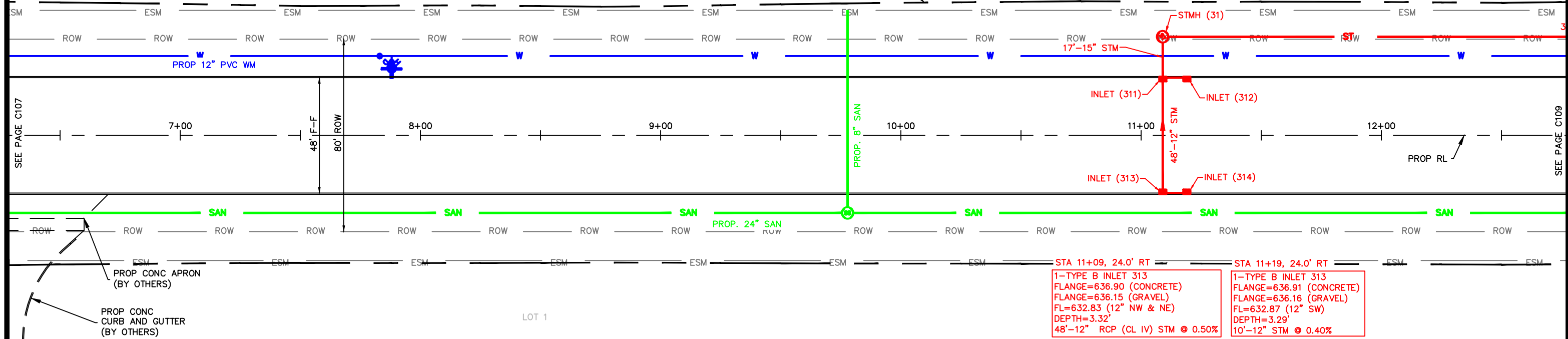


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1. ADJUST GUTTER FLOWLINE TO INLET ELEVATION TO MAINTAIN 0.40% SLOPE IN FLOWLINE.
2. CONSTRUCT INLETS 9 INCHES LOW TO DRAIN ROAD BASE PRIOR TO CONCRETE PAVING.
3. NATURAL BACKFILL STORM SEWER IN THE TERRACE AND GRANULAR BACKFILL IN THE STREET.

1-TYPE B INLET 311
FLANGE=636.90 (CONCRETE)
FLANGE=636.15 (GRAVEL)
FL=632.59 (15" NW)
FL=632.59 (12" NE, & SE)
DEPTH=3.56'
17'-15" STM @ 0.50%

1-TYPE B INLET 312
FLANGE=636.91 (CONCRETE)
FLANGE=636.16 (GRAVEL)
FL=632.63 (12" SW)
DEPTH=3.53'
10'-12" STM @ 0.40%



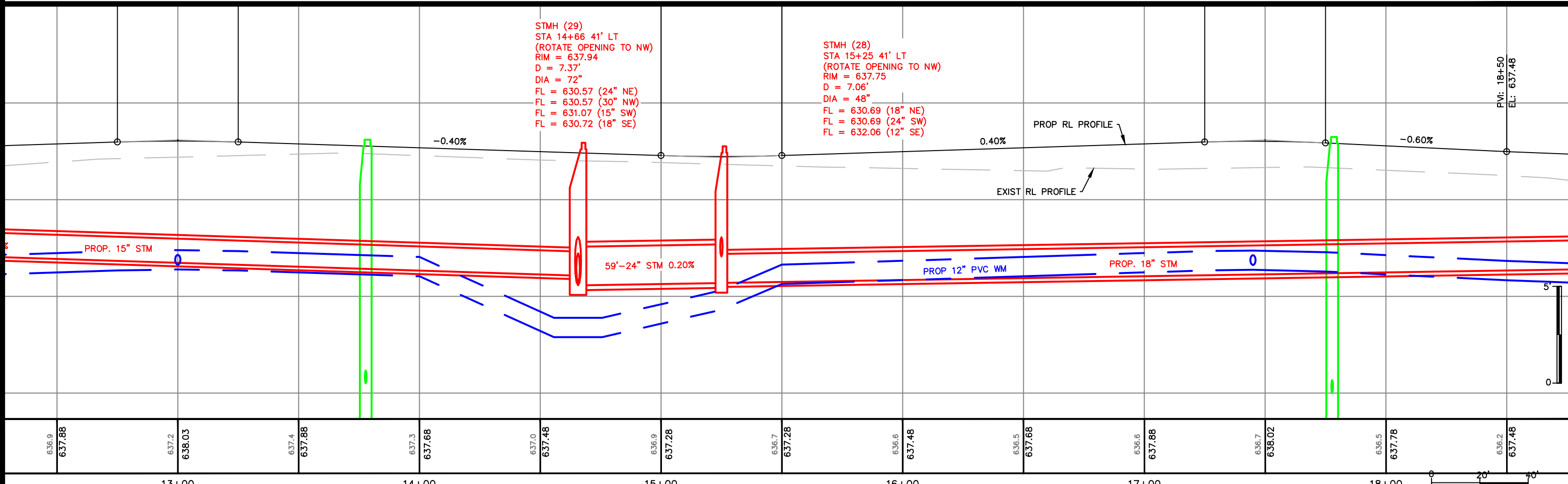
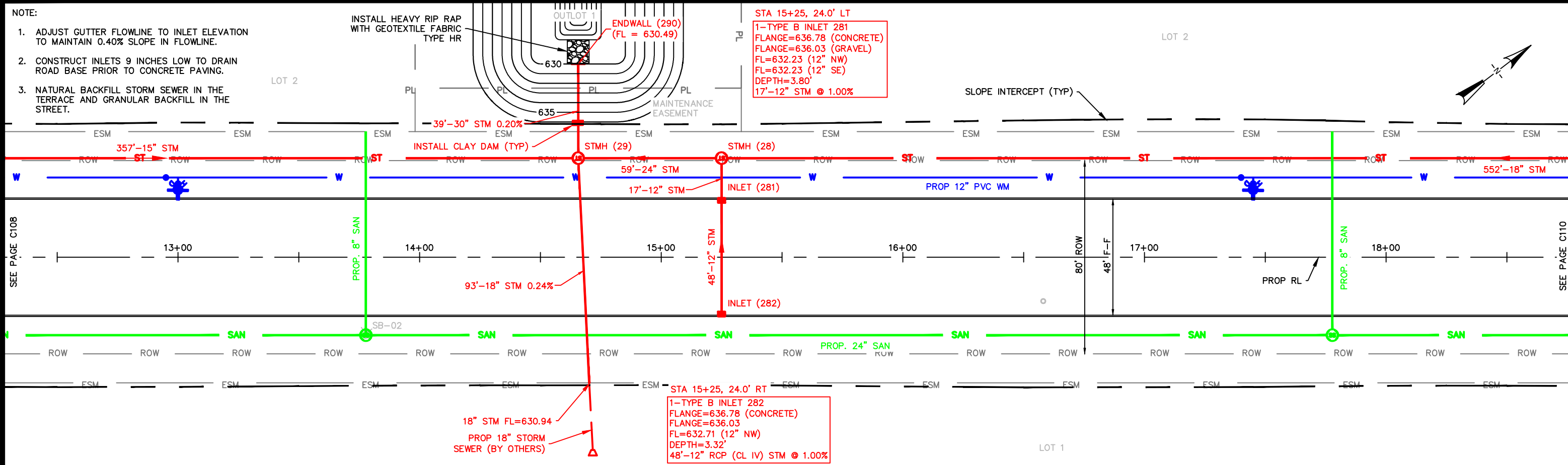
ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

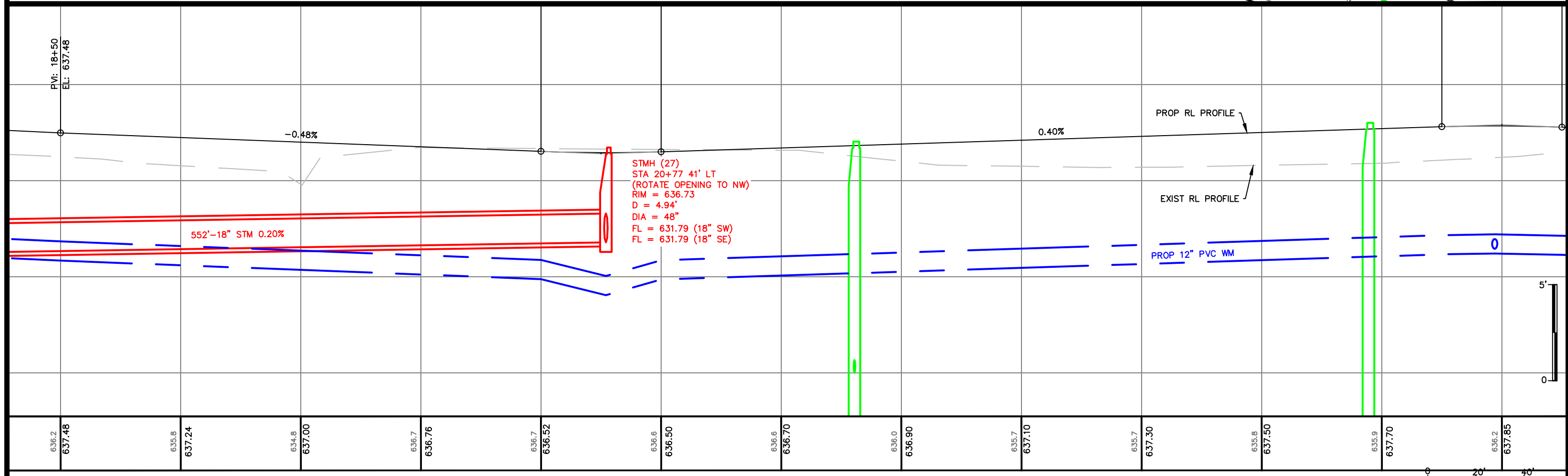
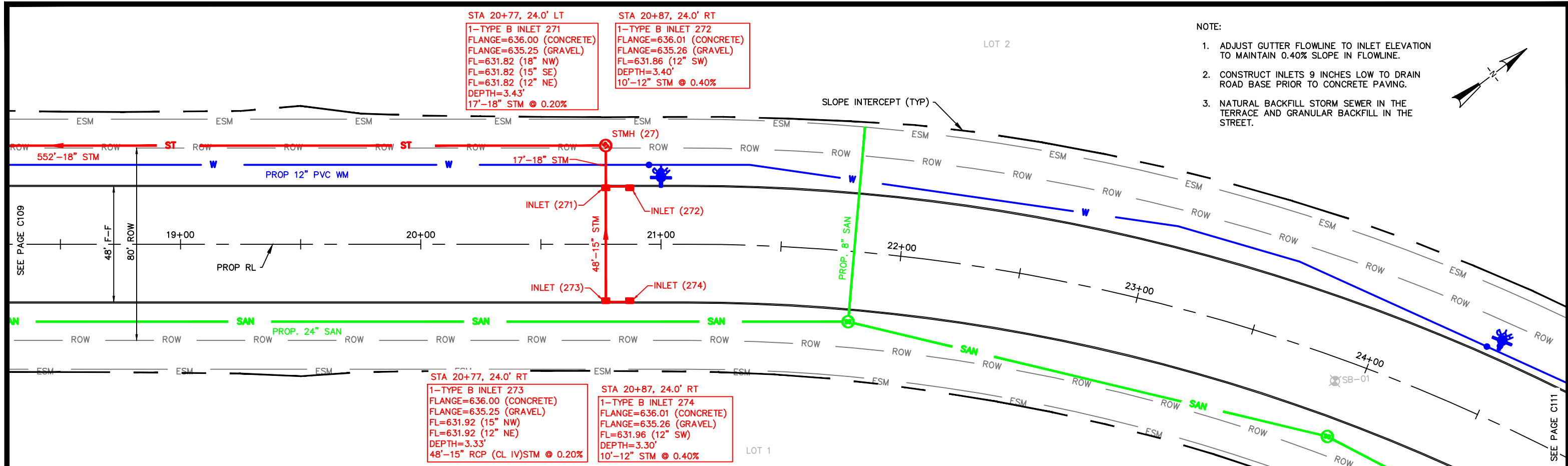
NAME:	AMERICAN BLVD UTILITY AND STREET EXTENSION
PROJECT #	21-11

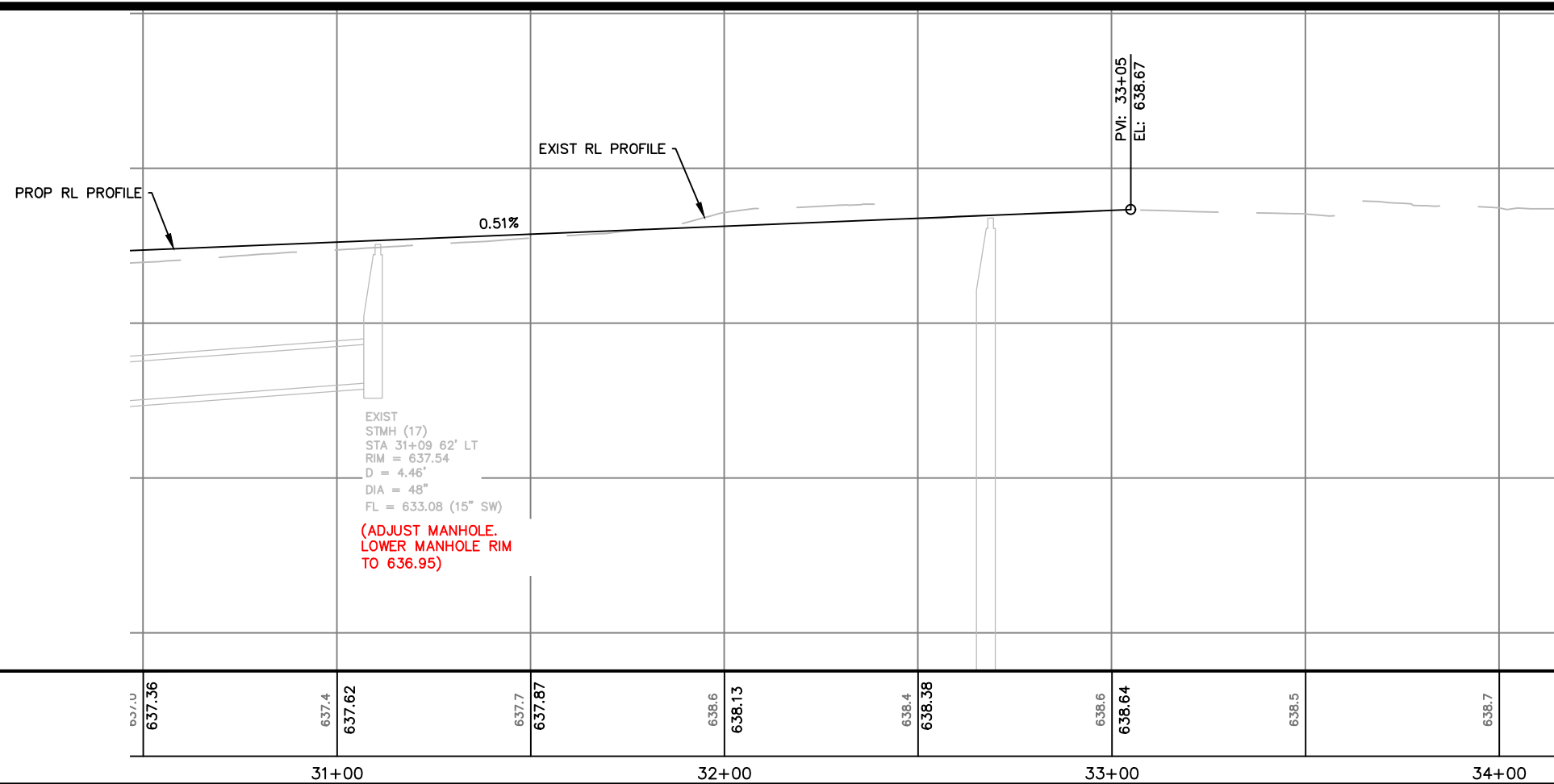
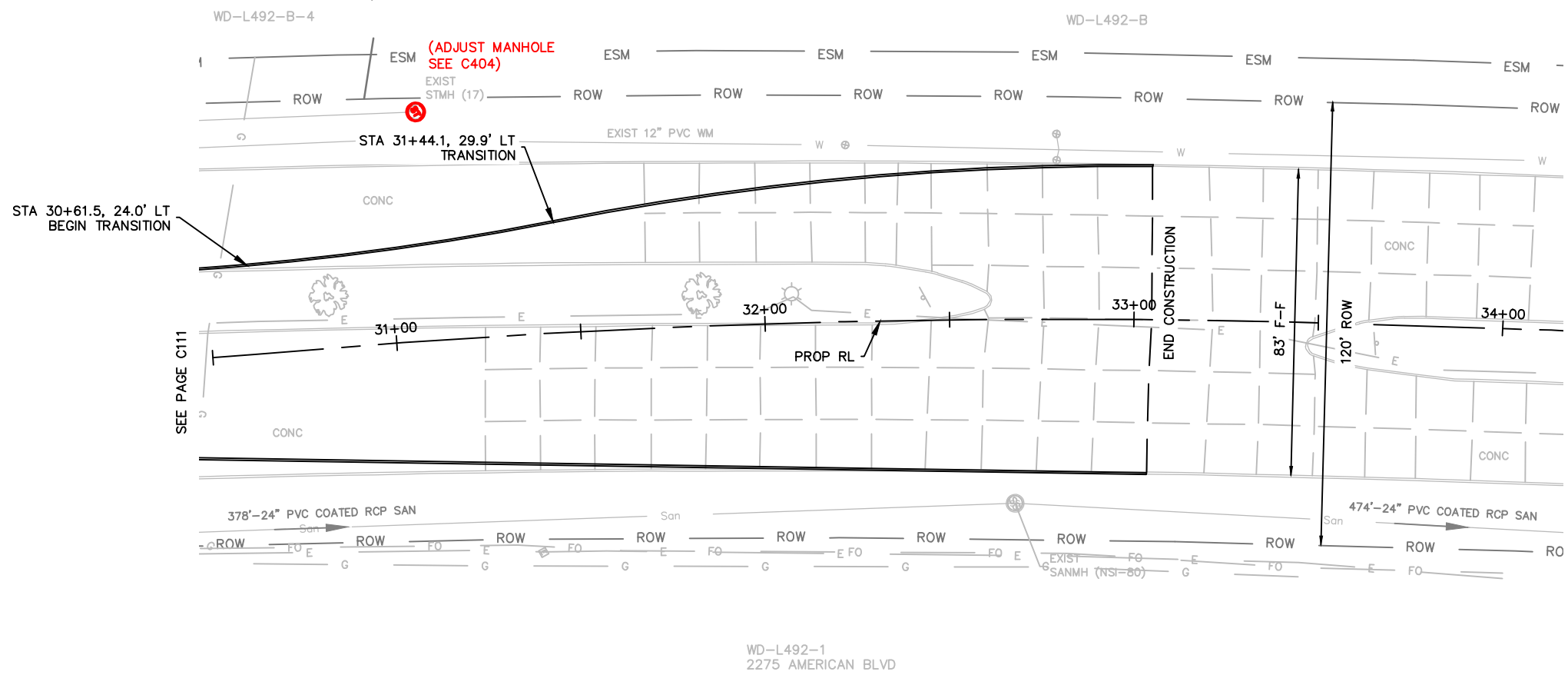
		BY	DATE	REVISIONS / ISSUES			
				NO.	DATE	BY	REMARKS
SURVEYED	REL	03-2021					
DRAWN	SRL	05-2021					
DESIGNED	SRL	05-2021					
CHECKED	FBR	05-2021					

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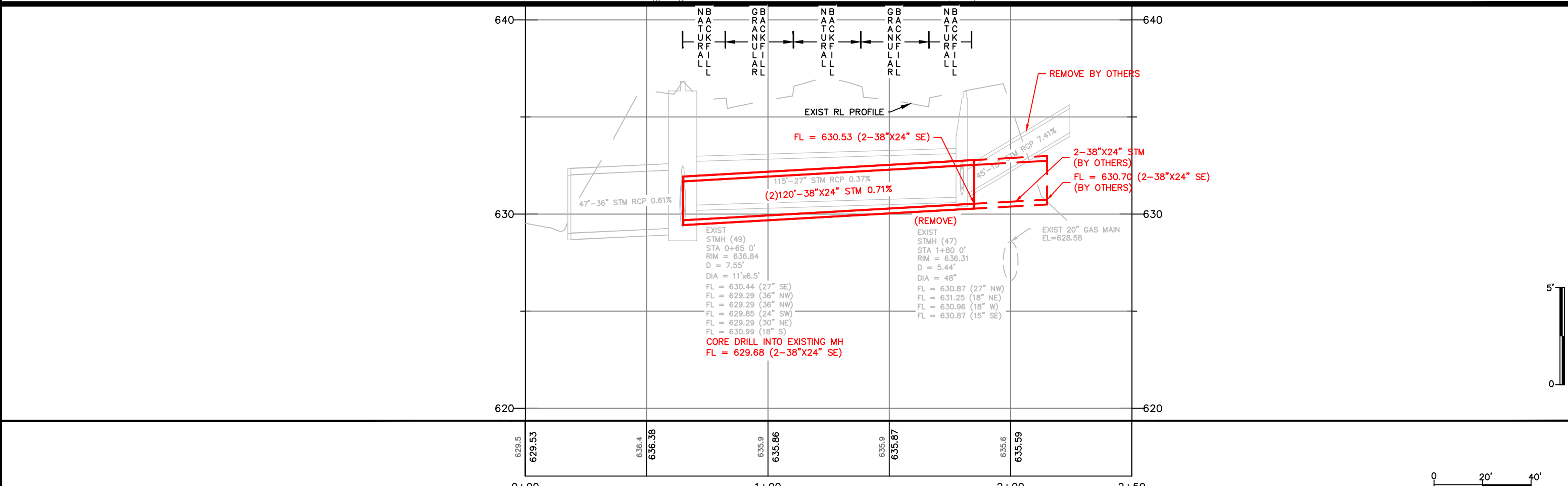
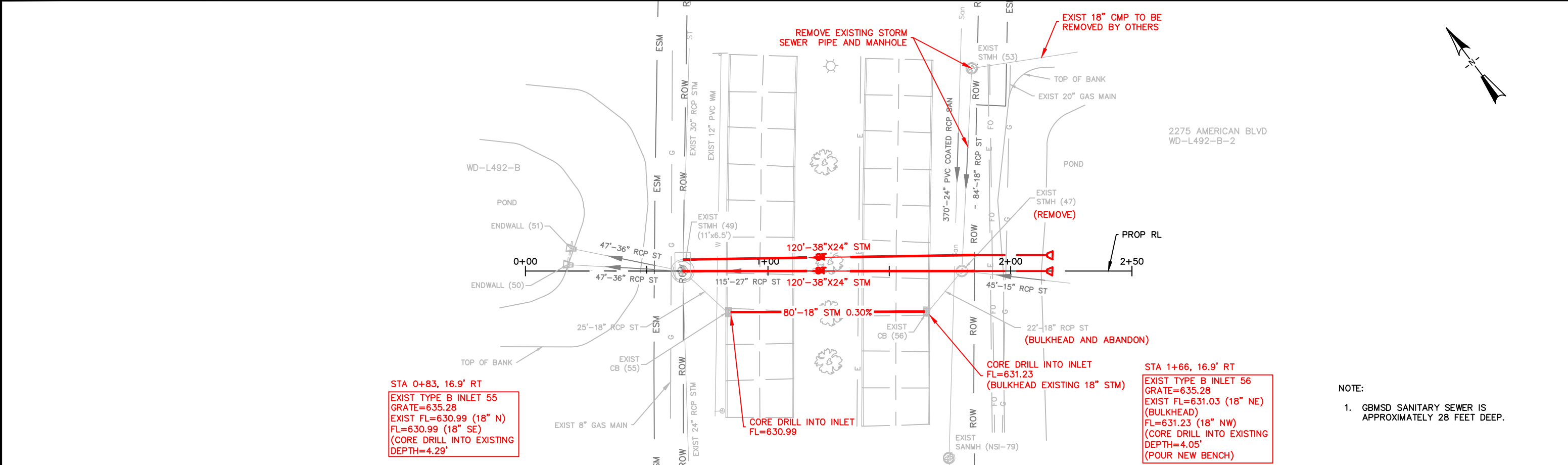
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ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

AMERICAN BOULEVARD
2750' NE/O GARROMAN TO 3050' NE/O GARROMAN
STORM SEWER AND STREET

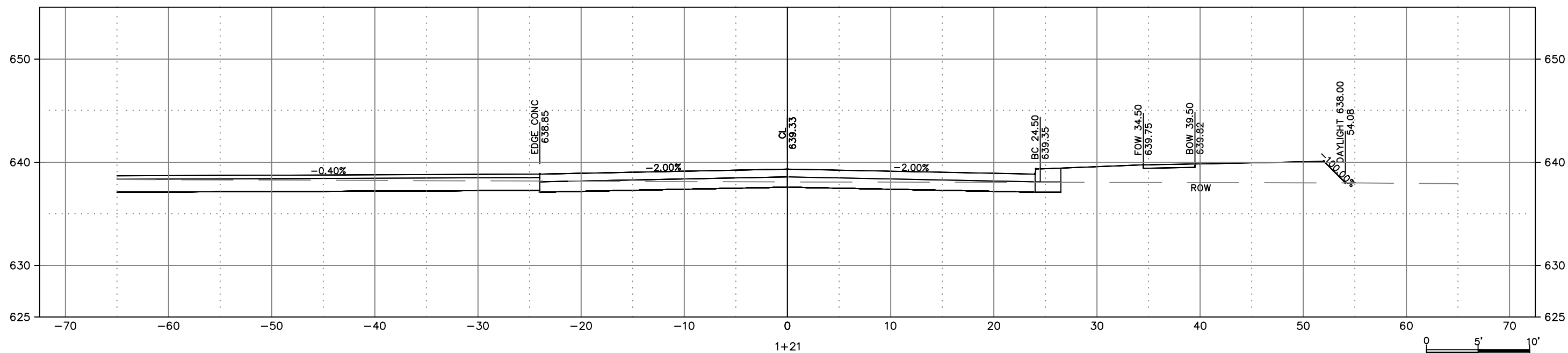
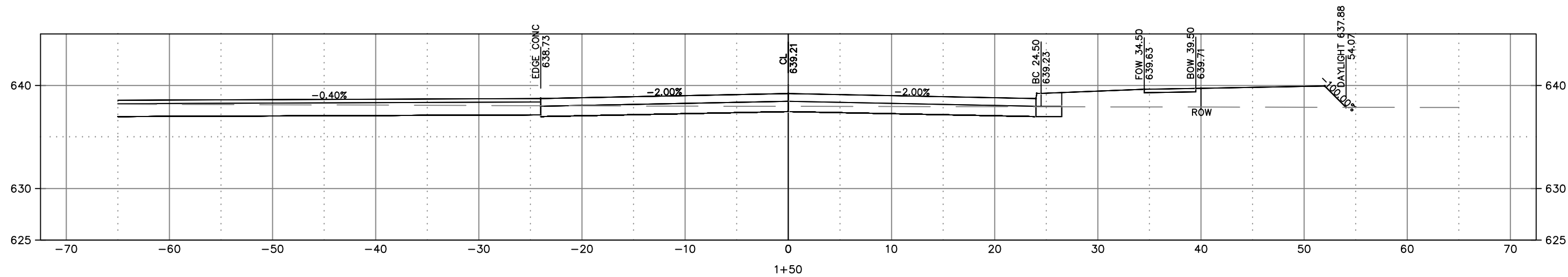
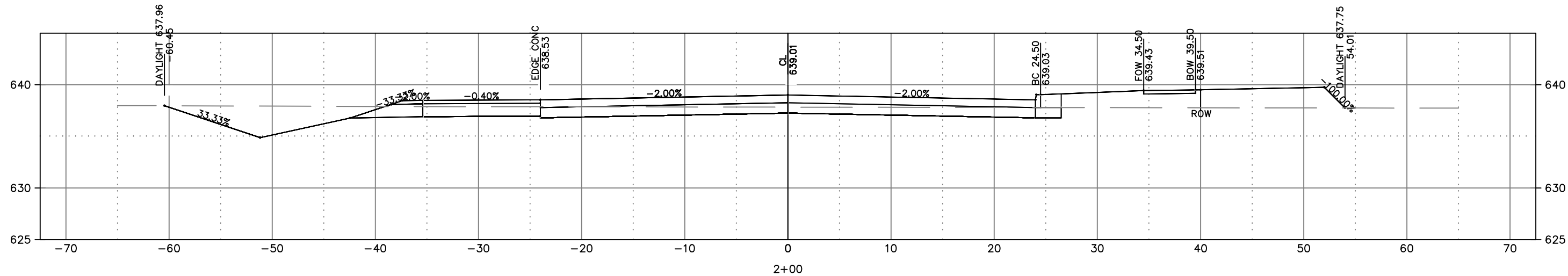
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UTILITY AND STREET
EXTENSION
PROJECT # 21-11

	BY	DATE
SURVEYED	REL	03-2021
DRAWN	SRL	05-2021
DESIGNED	SRL	05-2021
CHECKED	EPR	05-2021

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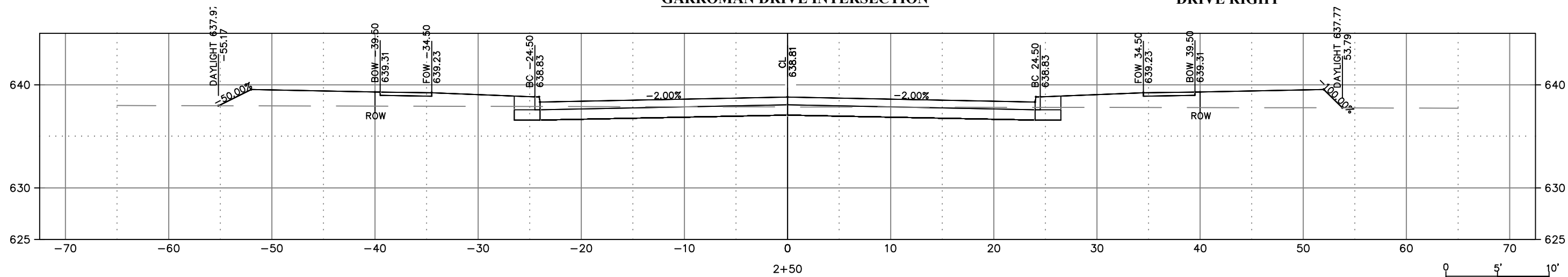
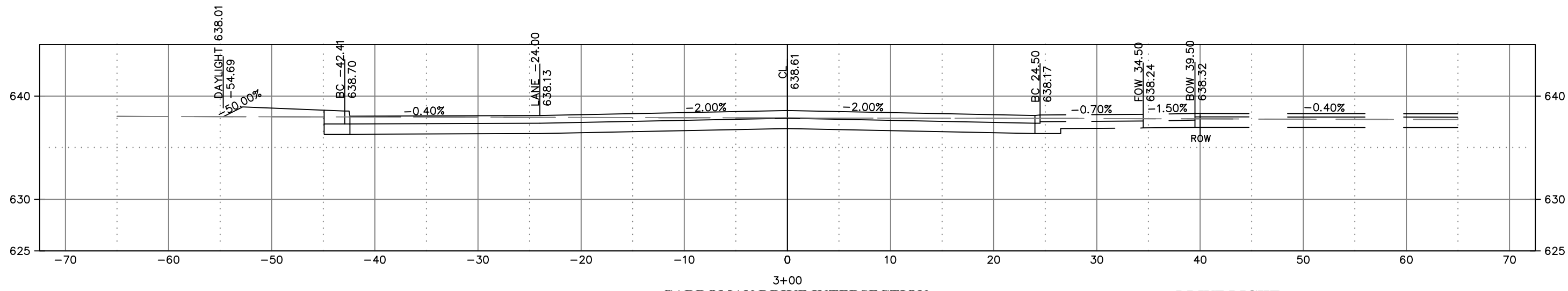
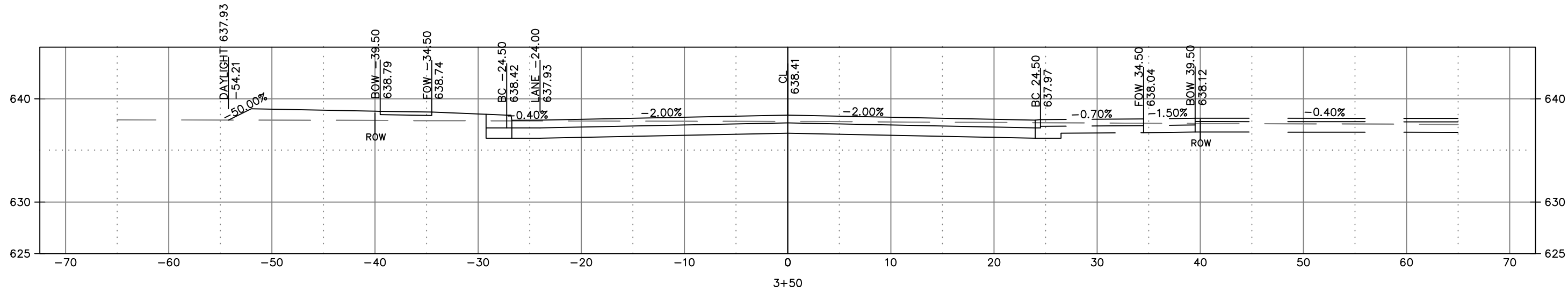
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AMERICAN BOULEVARD
CROSS SECTIONS

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			REMARKS	



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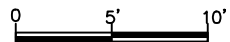
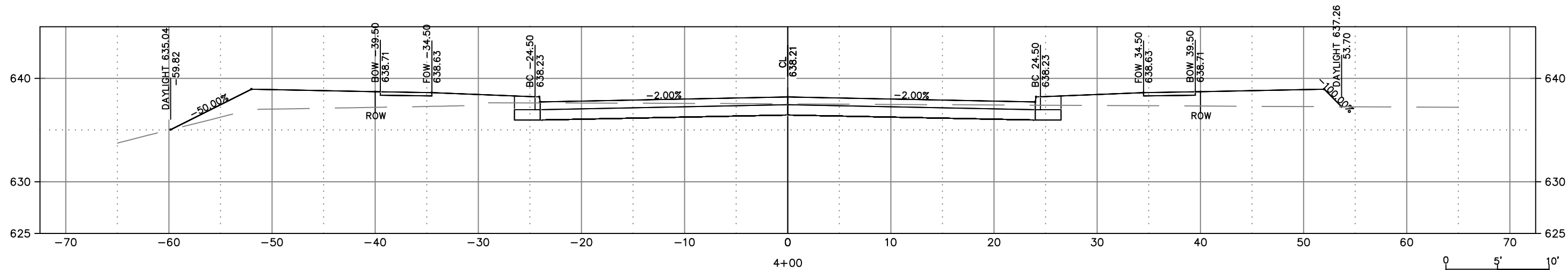
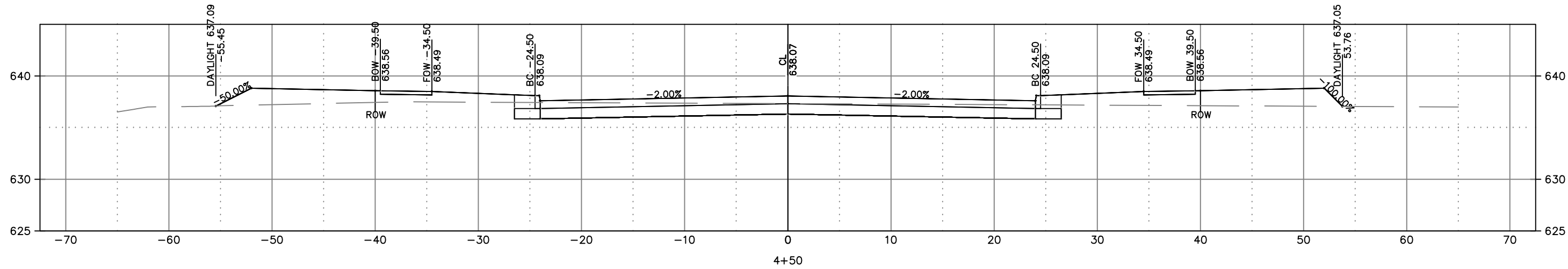
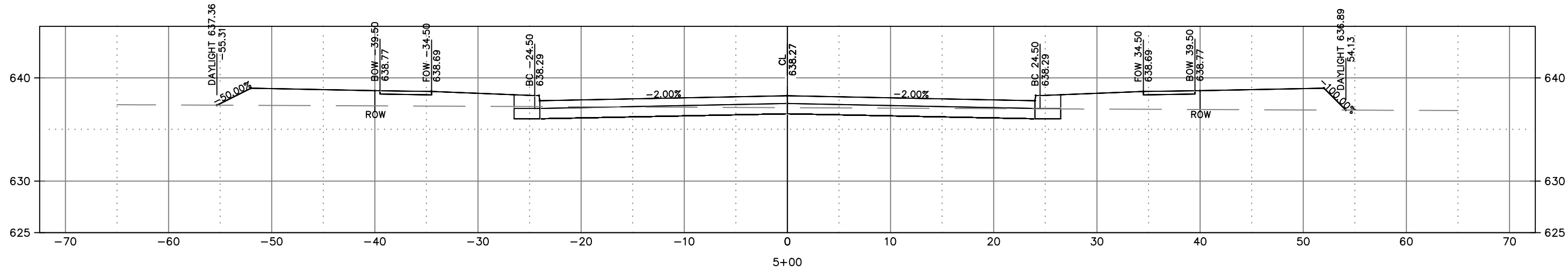
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CROSS SECTIONS**

NAME: AMERICAN BLVD
UTILITY AND STREET
EXTENSION
PROJECT # 21-11

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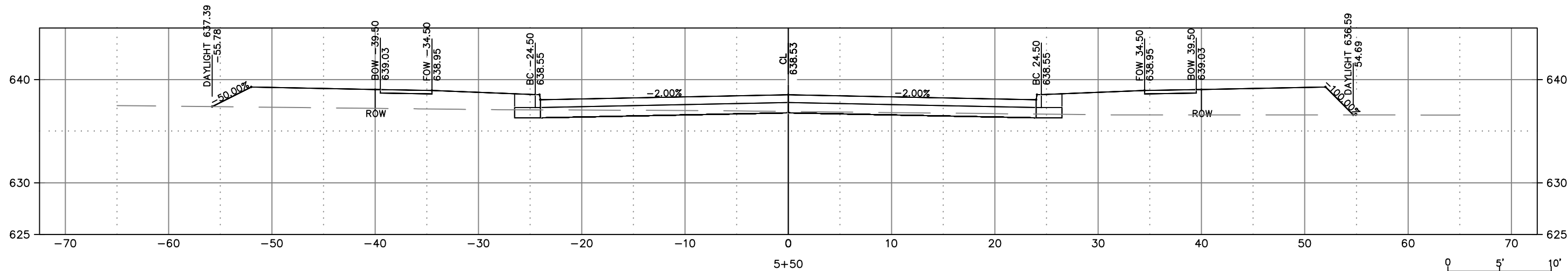
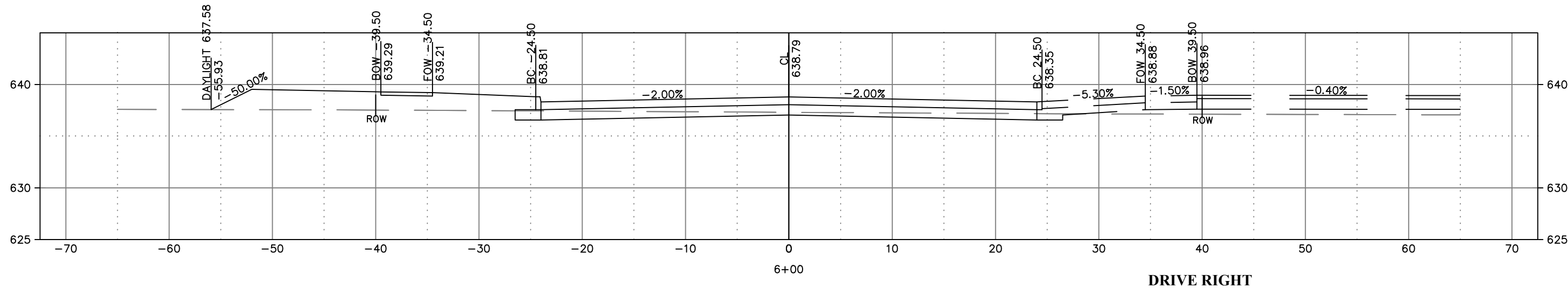
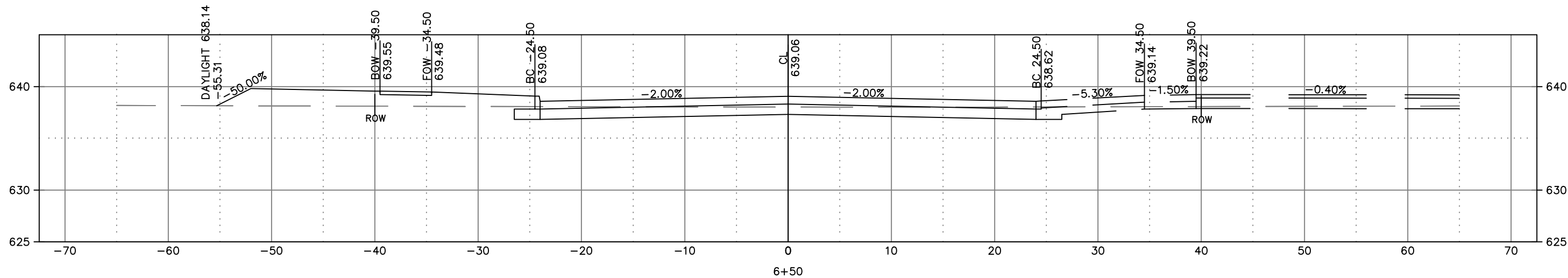
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AMERICAN BOULEVARD CROSS SECTIONS

NAME: AMERICAN BLVD
UTILITY AND STREET
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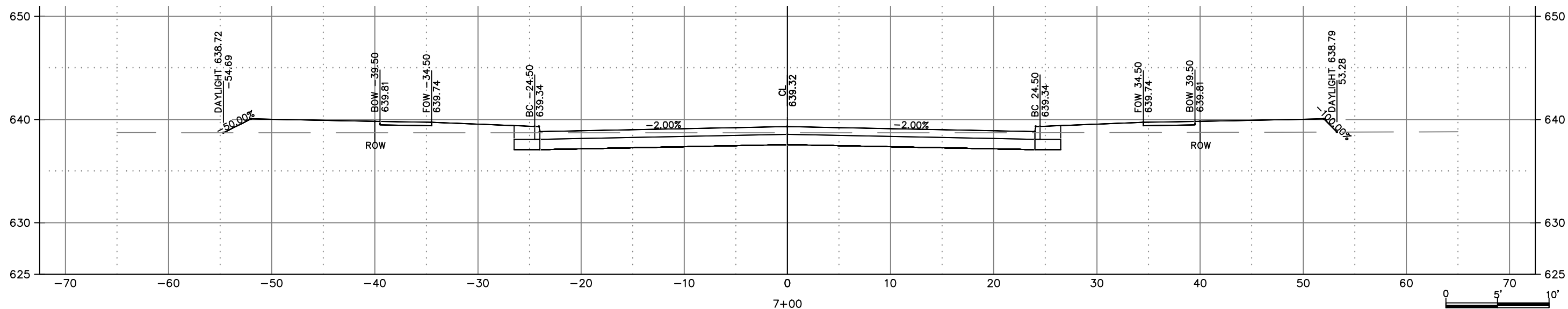
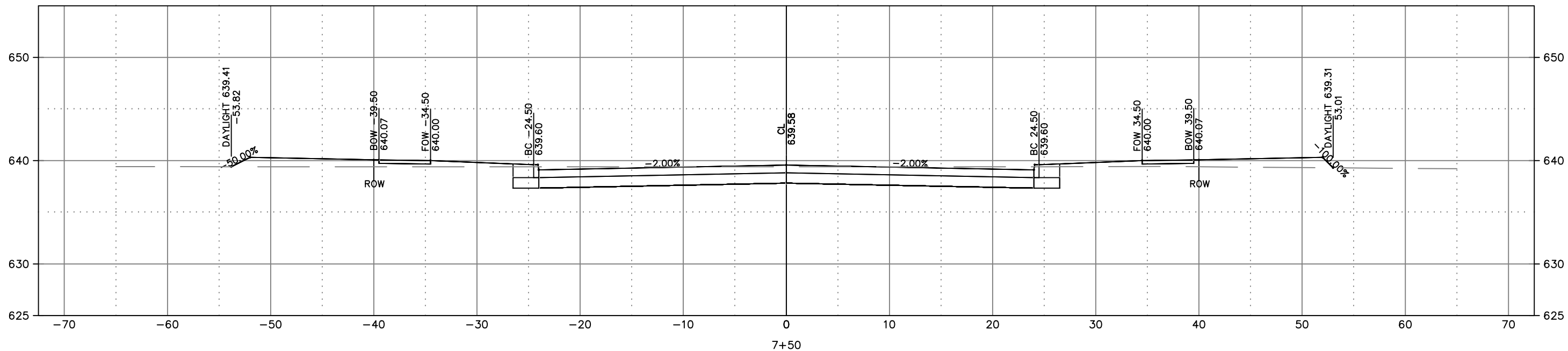
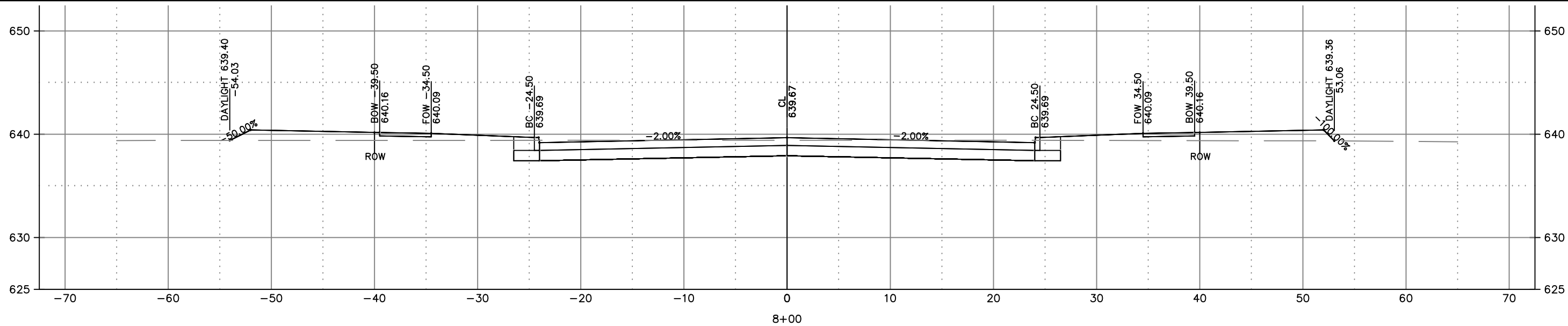
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AMERICAN BOULVARD
CROSS SECTIONS

NAME: AMERICAN BLVD
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			BY	REMARKS
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AMERICAN BOULEVARD CROSS SECTIONS

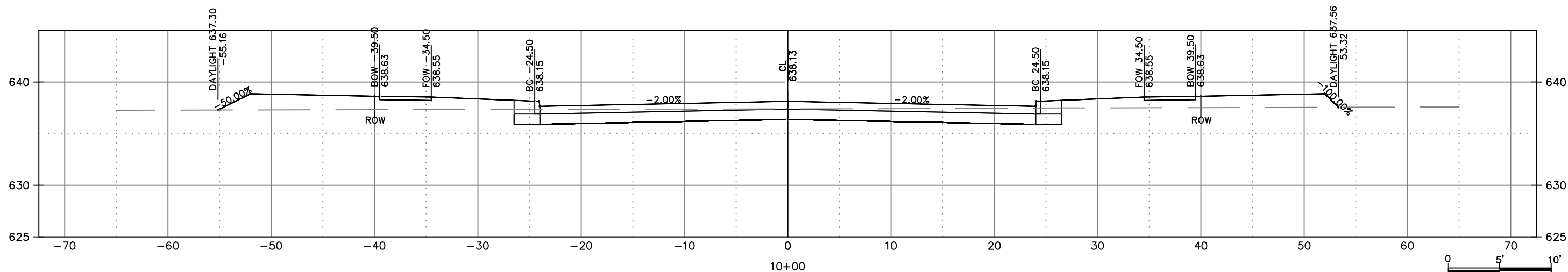
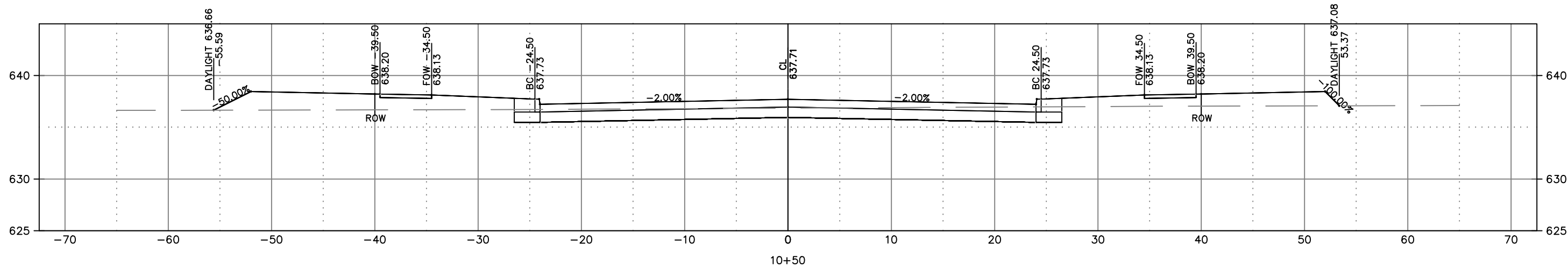
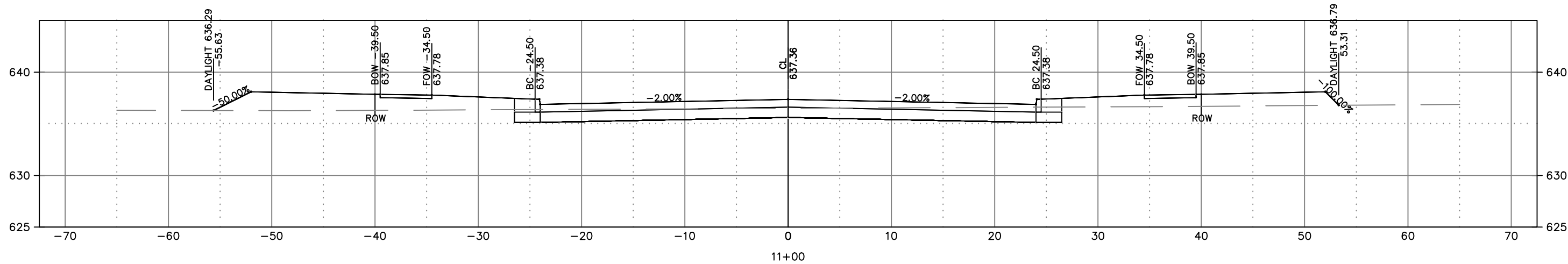
NAME: AMERICAN BLVD
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0 5' 10'

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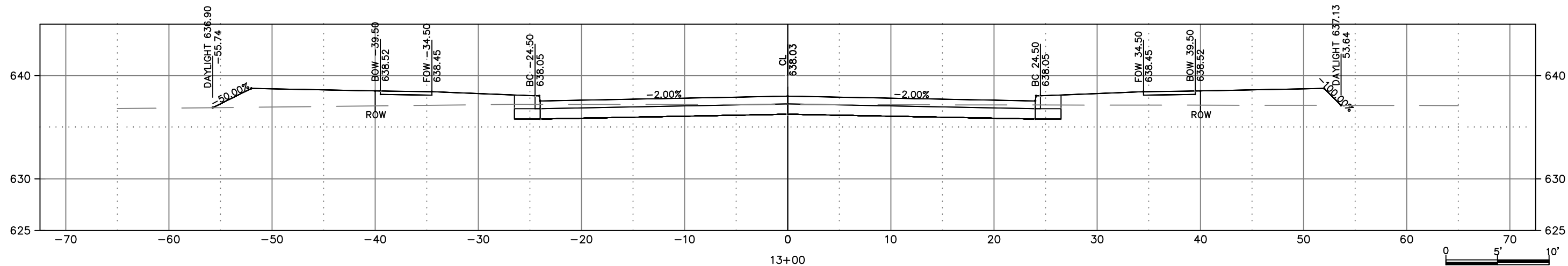
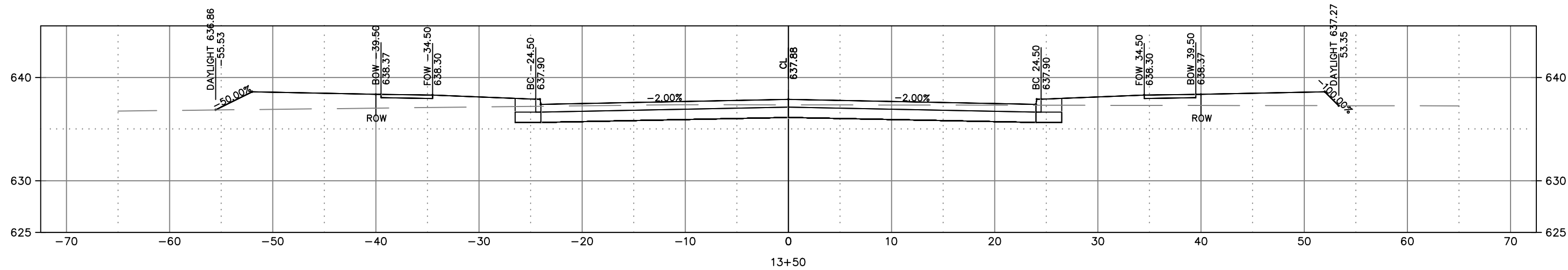
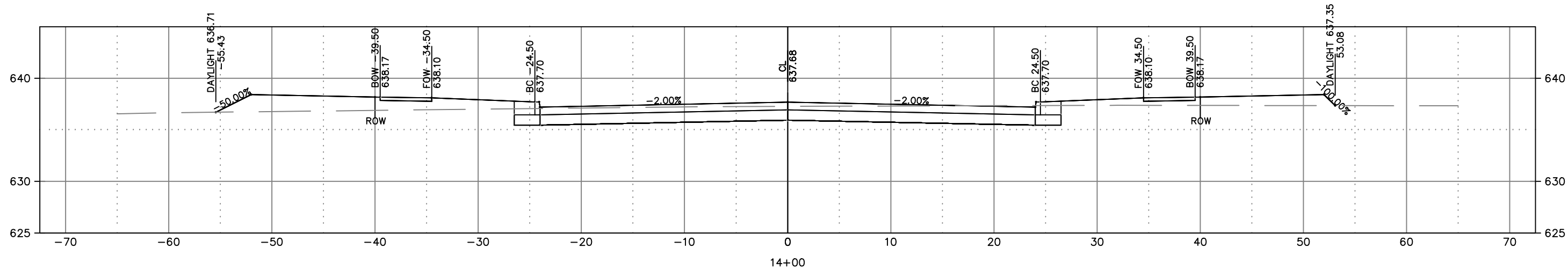
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AMERICAN BOULEVARD CROSS SECTIONS

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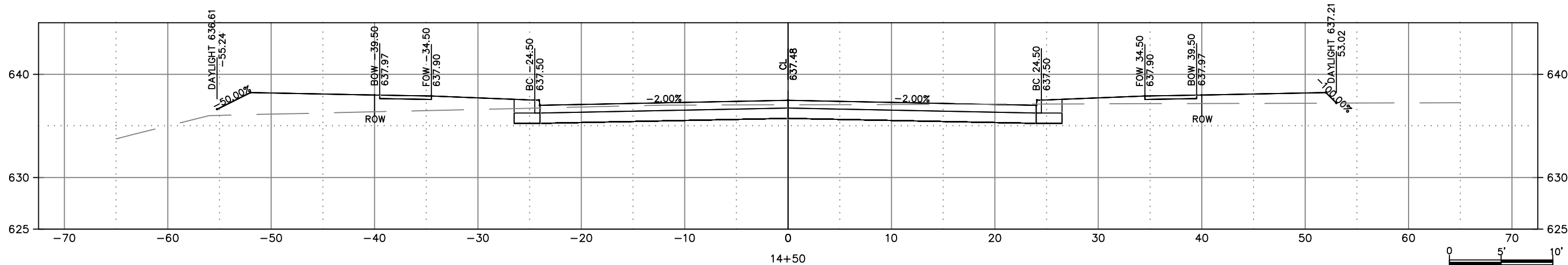
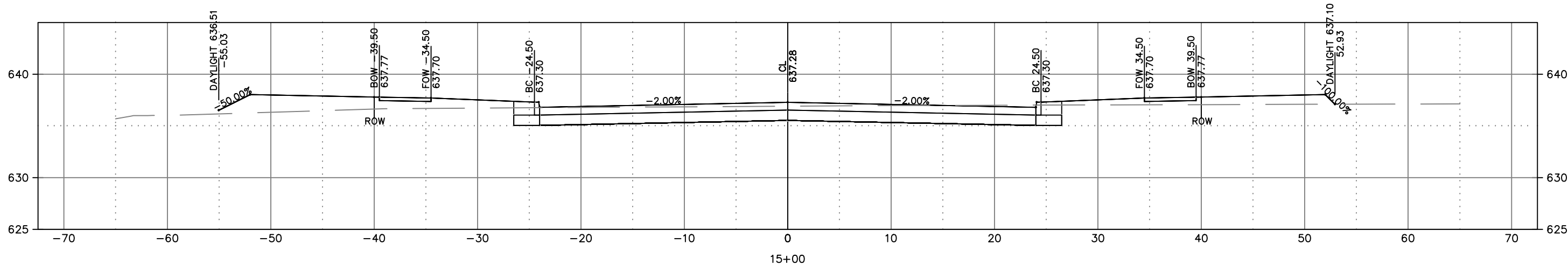
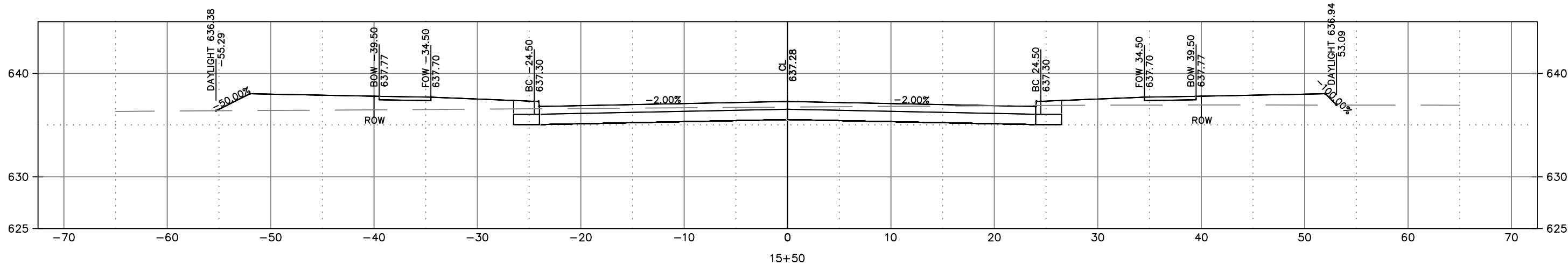
AMERICAN BOULVARD CROSS SECTIONS

NAME: AMERICAN BLVD
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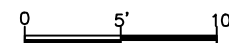
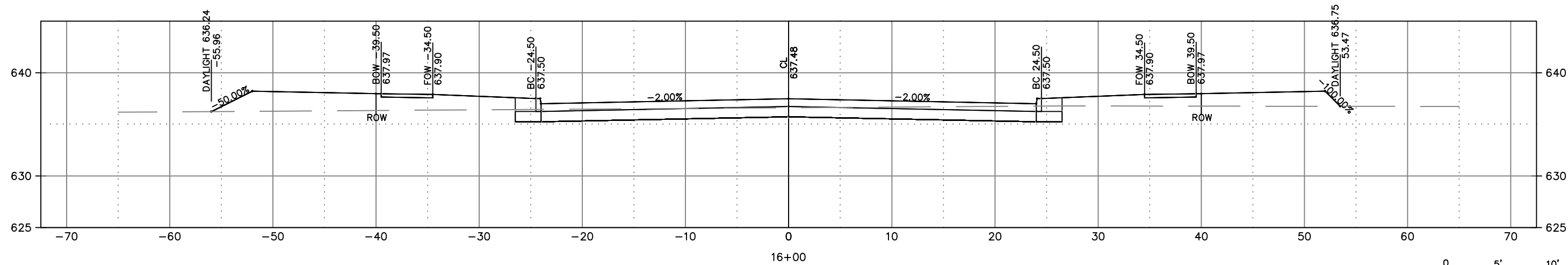
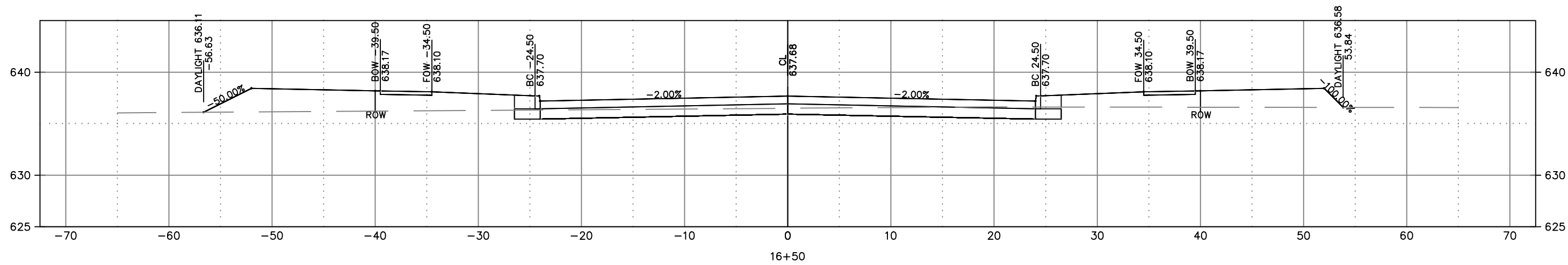
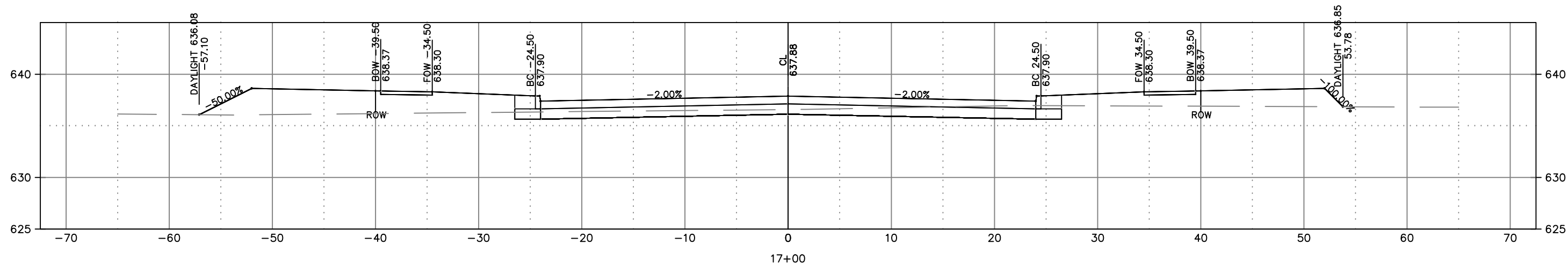
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AMERICAN BOULEVARD
CROSS SECTIONS

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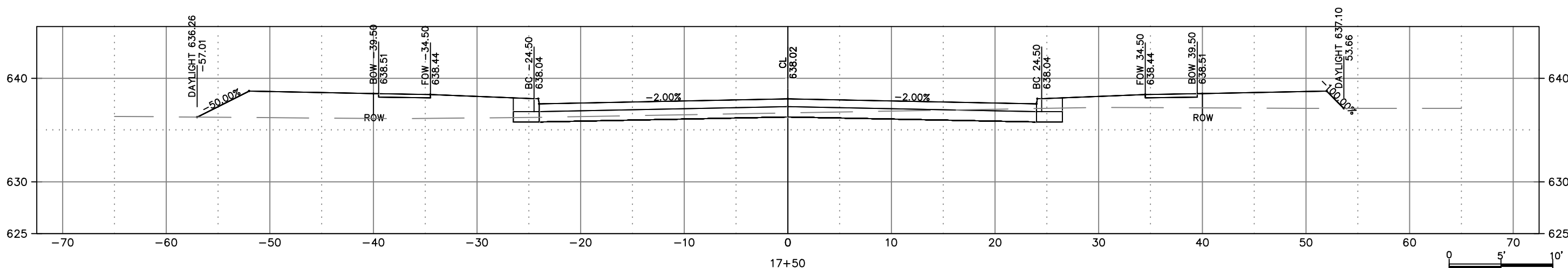
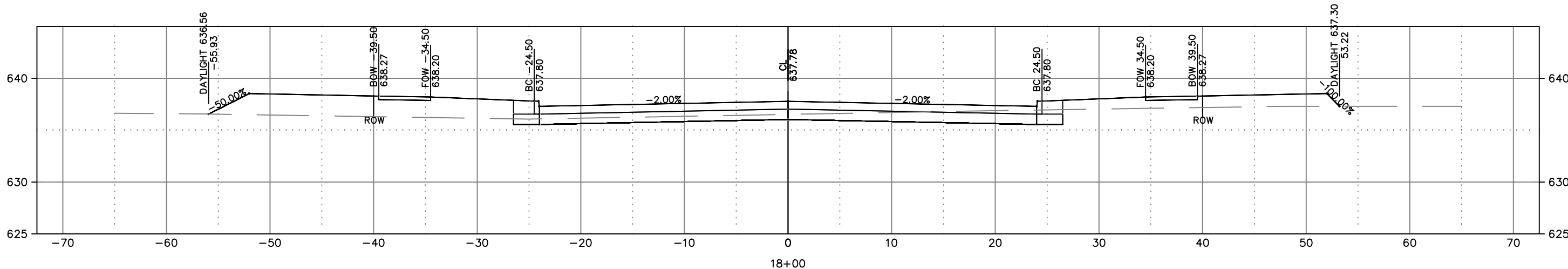
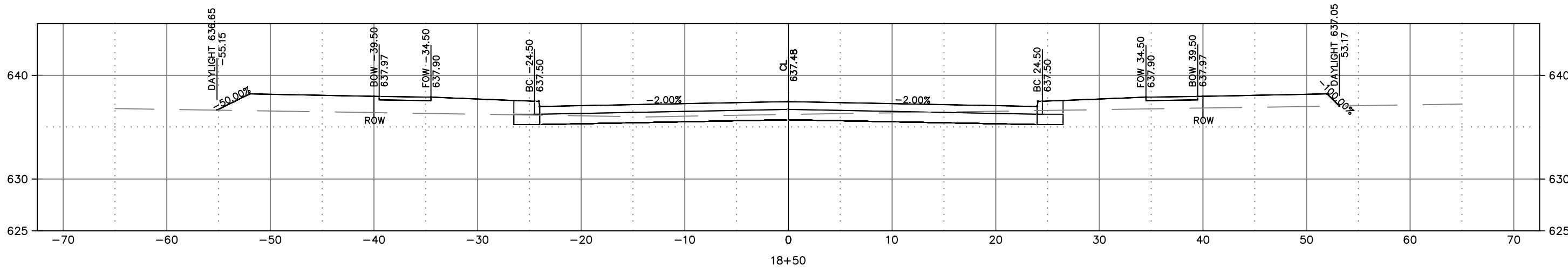
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AMERICAN BOULEVARD
CROSS SECTIONS

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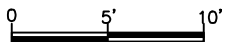
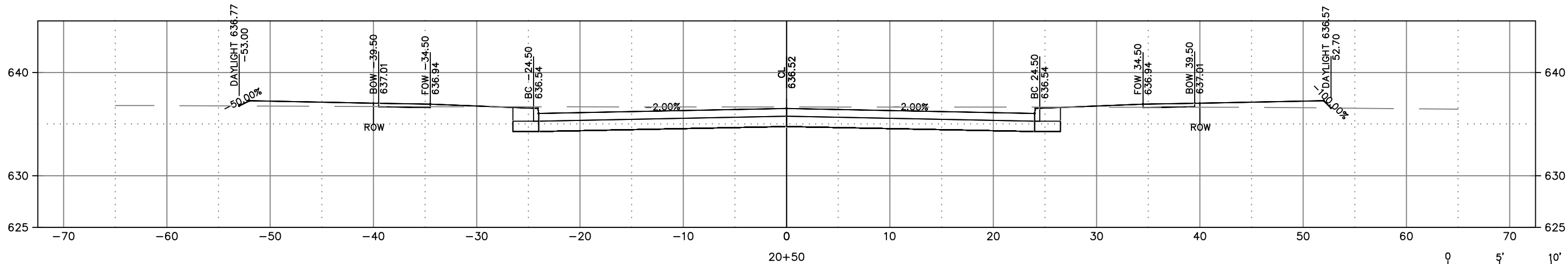
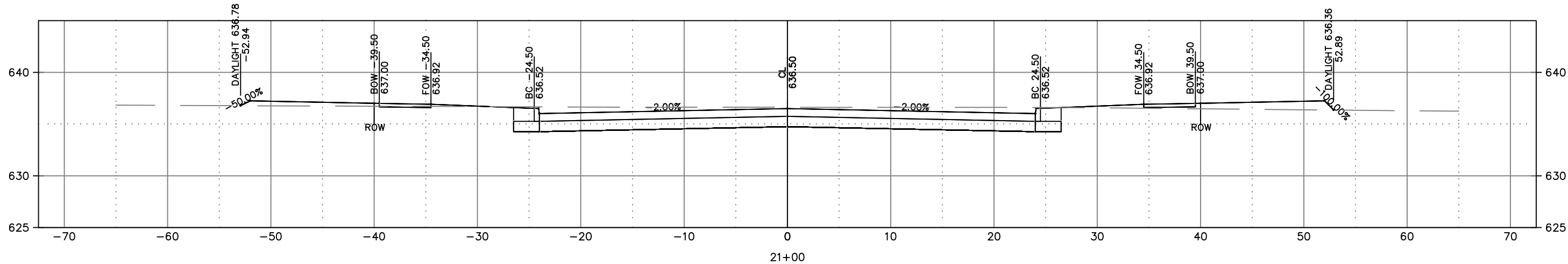
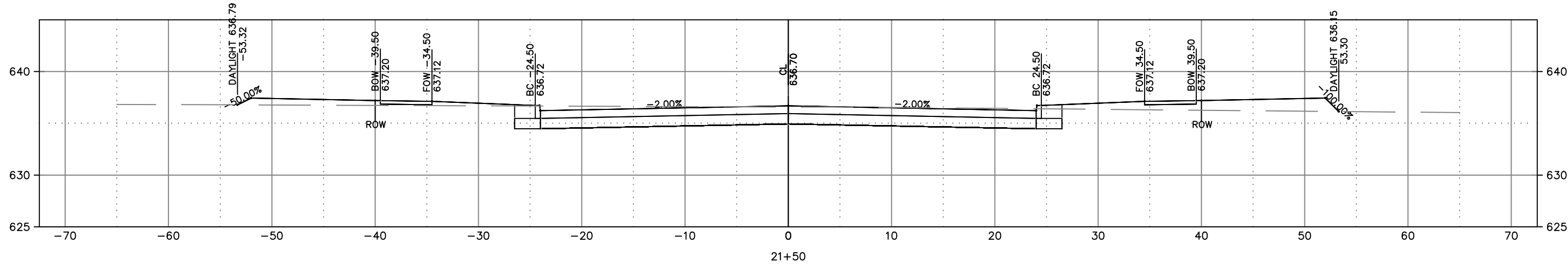
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AMERICAN BOULEVARD
CROSS SECTIONS

NAME: AMERICAN BLVD
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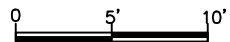
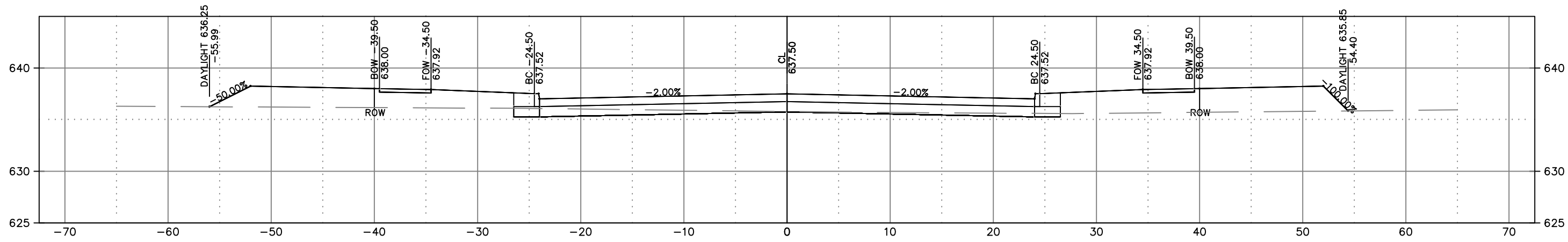
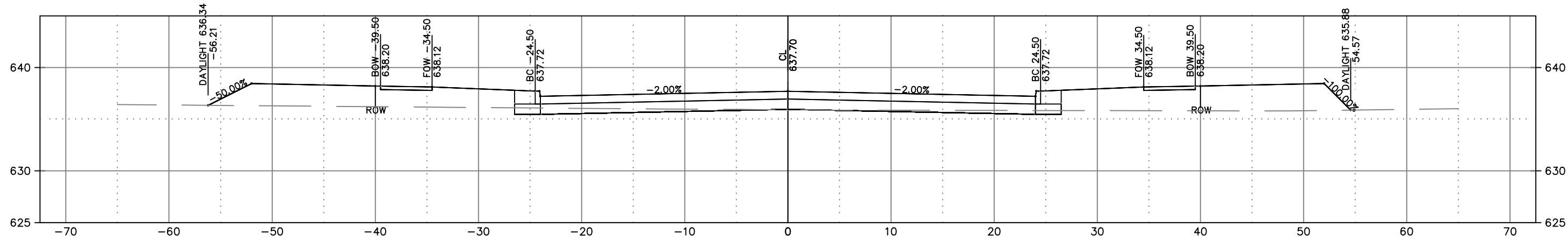
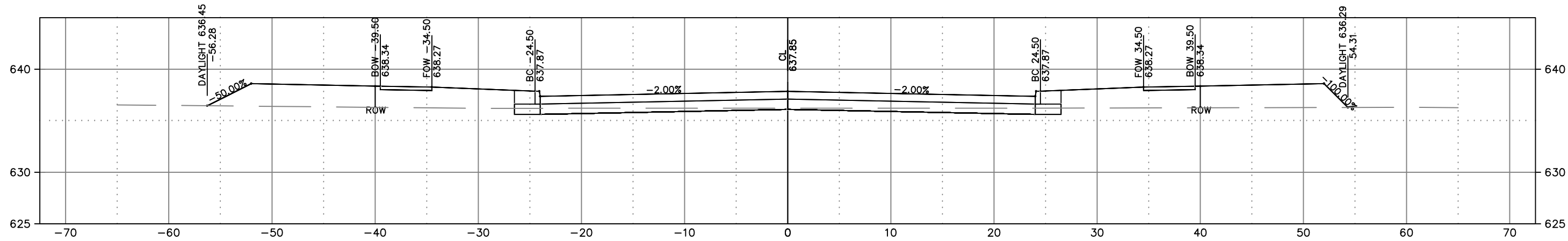
CITY OF DE PERE

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

AMERICAN BOULVARD CROSS SECTIONS

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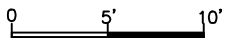
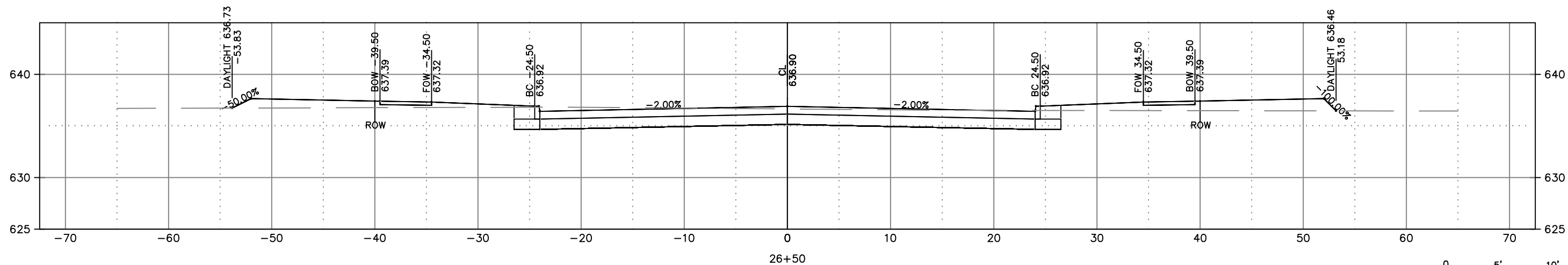
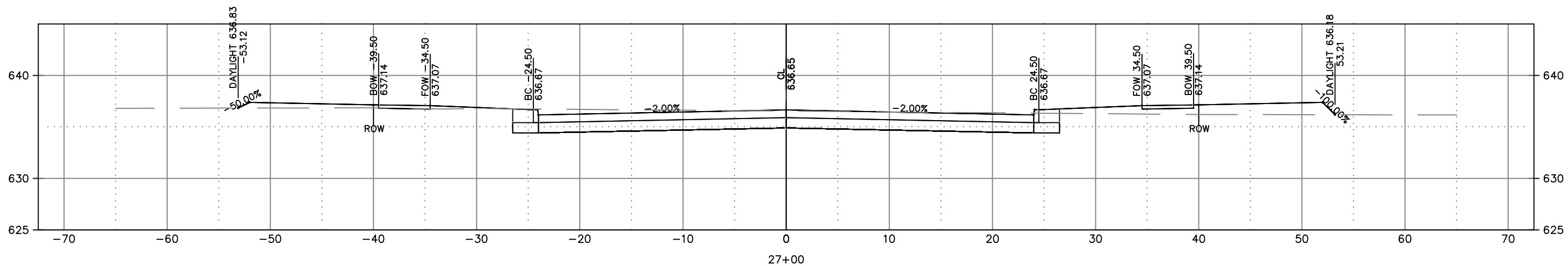
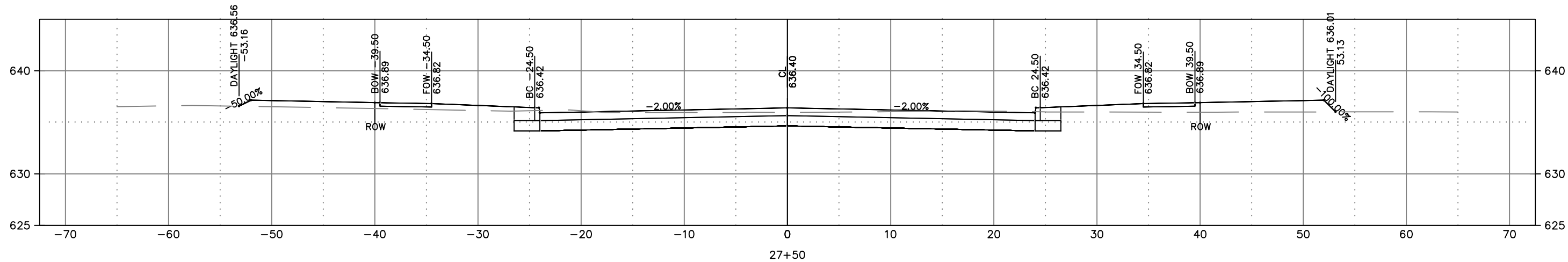
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AMERICAN BOULEVARD CROSS SECTIONS

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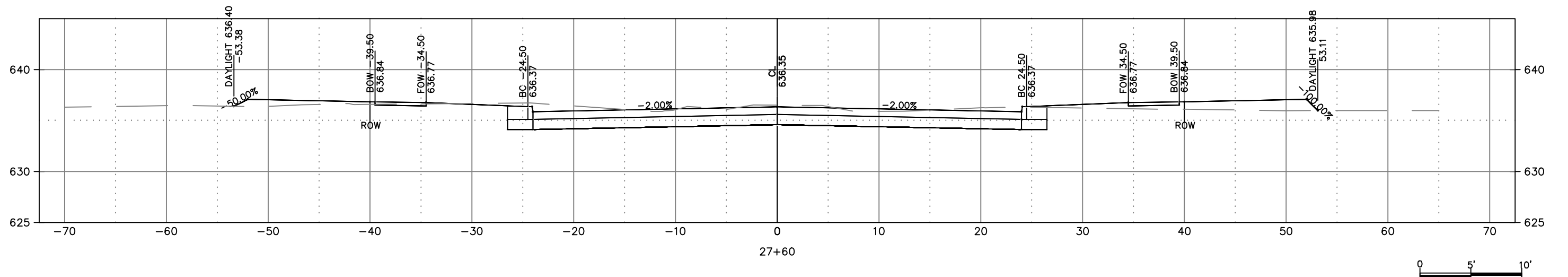
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AMERICAN BOULVARD
CROSS SECTIONS

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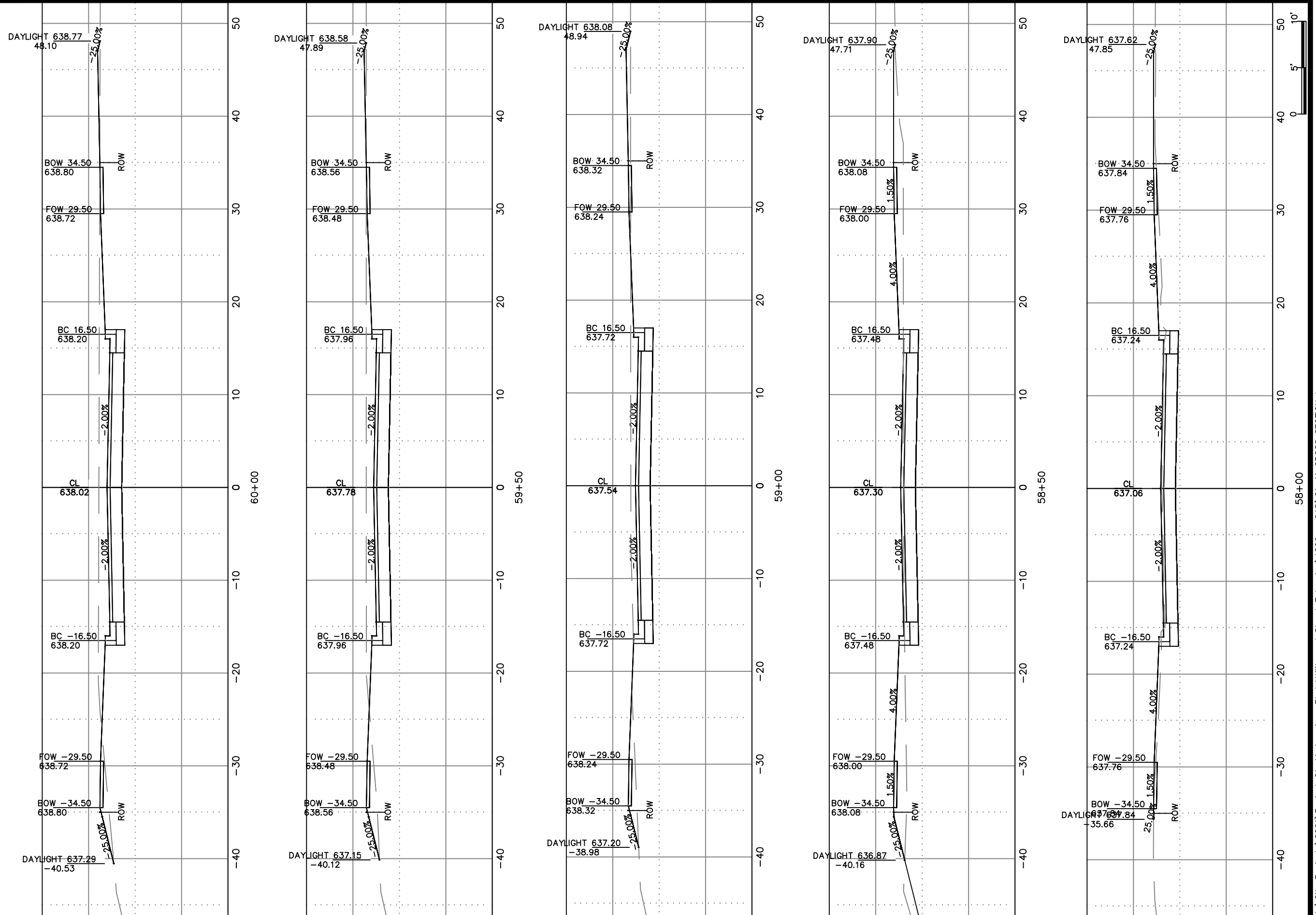
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**AMERICAN BOULEVARD
CROSS SECTIONS**

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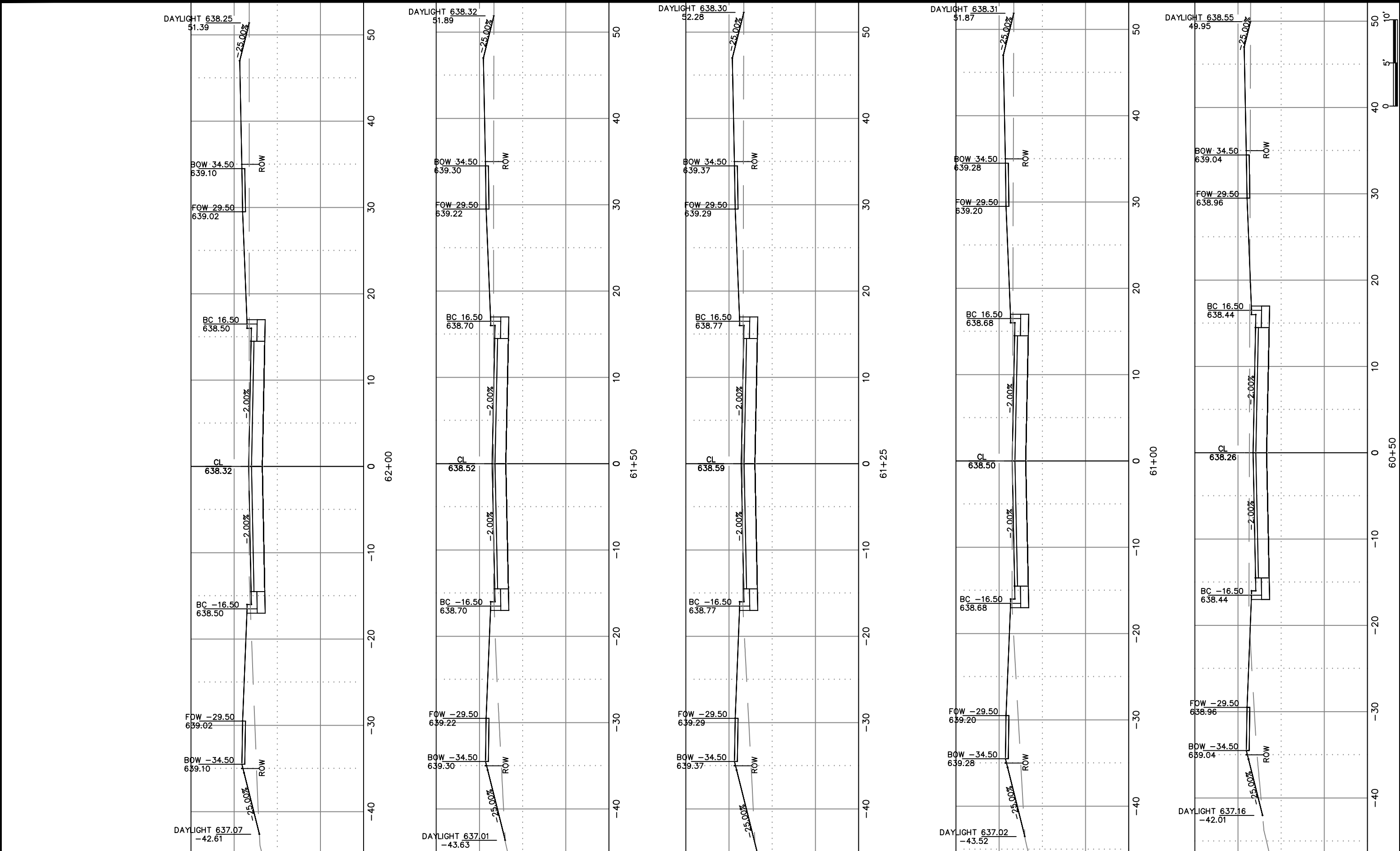
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GARROMAN DRIVE
CROSS SECTIONS

NAME: AMERICAN BLVD
UTILITY AND STREET
EXTENSION
PROJECT # 21-11

DATE	BY
03-2021	REL
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09-2021	SRL
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ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
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**GARROMAN DRIVE
CROSS SECTIONS**

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UTILITY AND STREET
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PROJECT # 21-11

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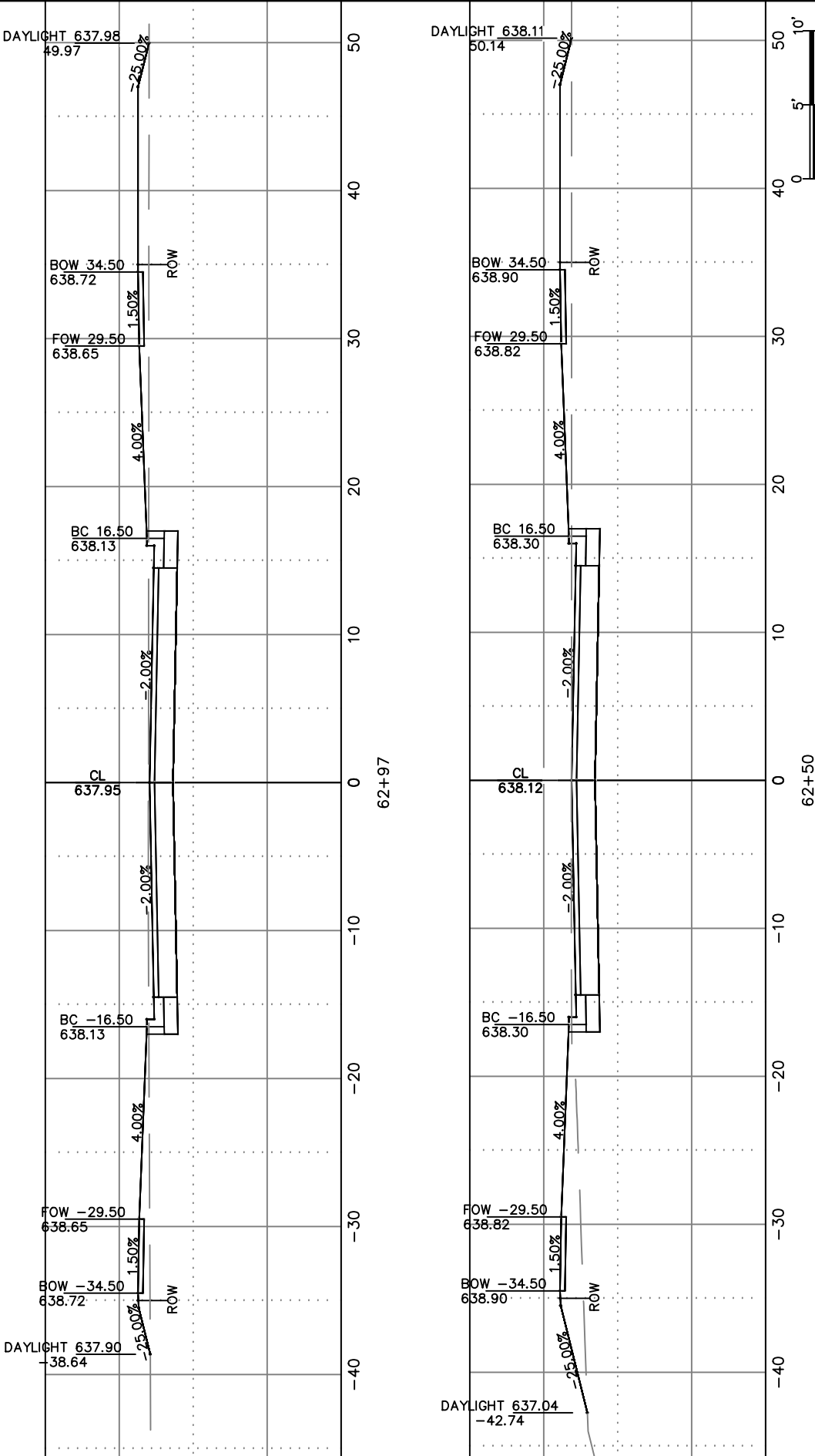
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NAME: AMERICAN BLVD
UTILITY AND STREET
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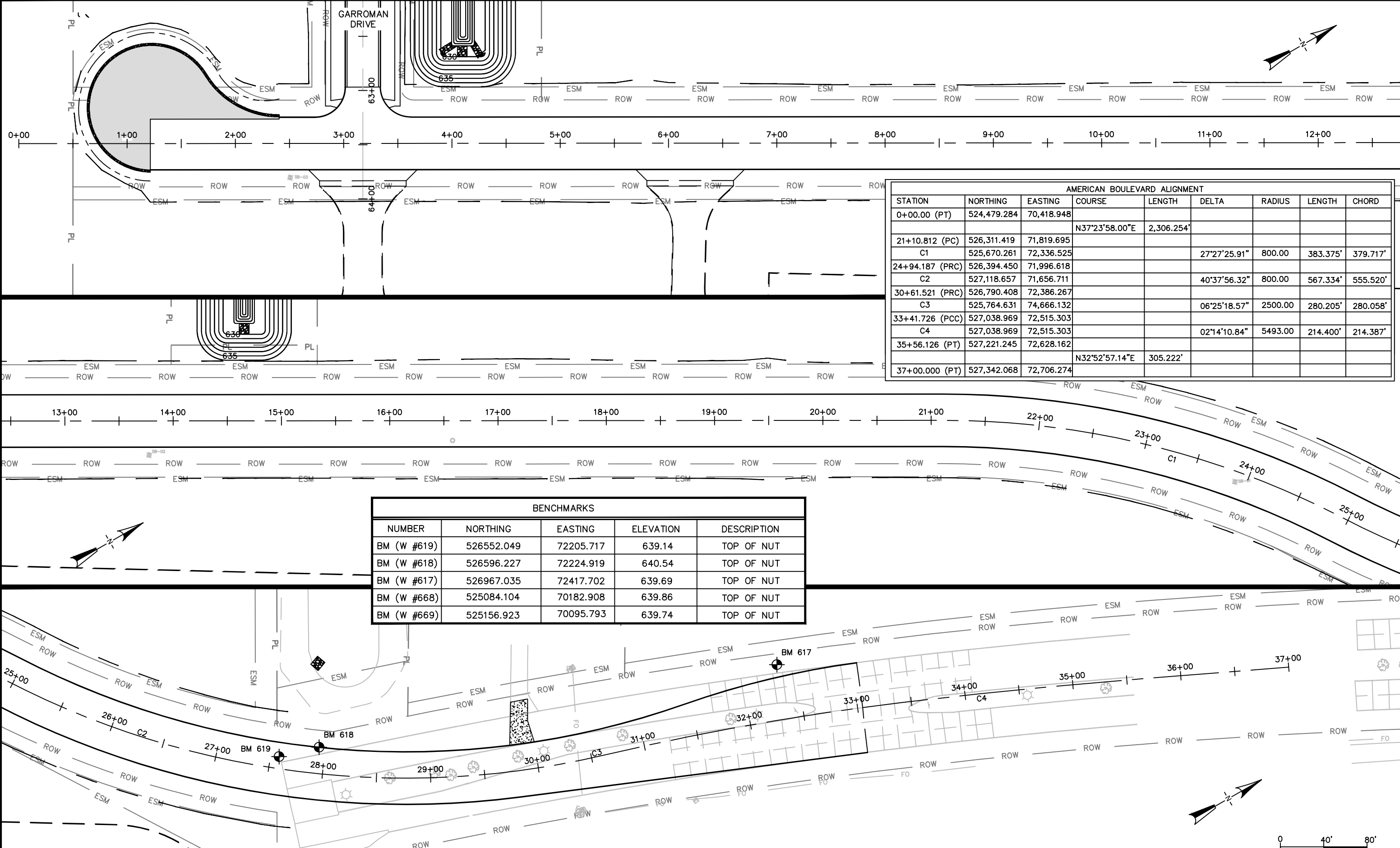
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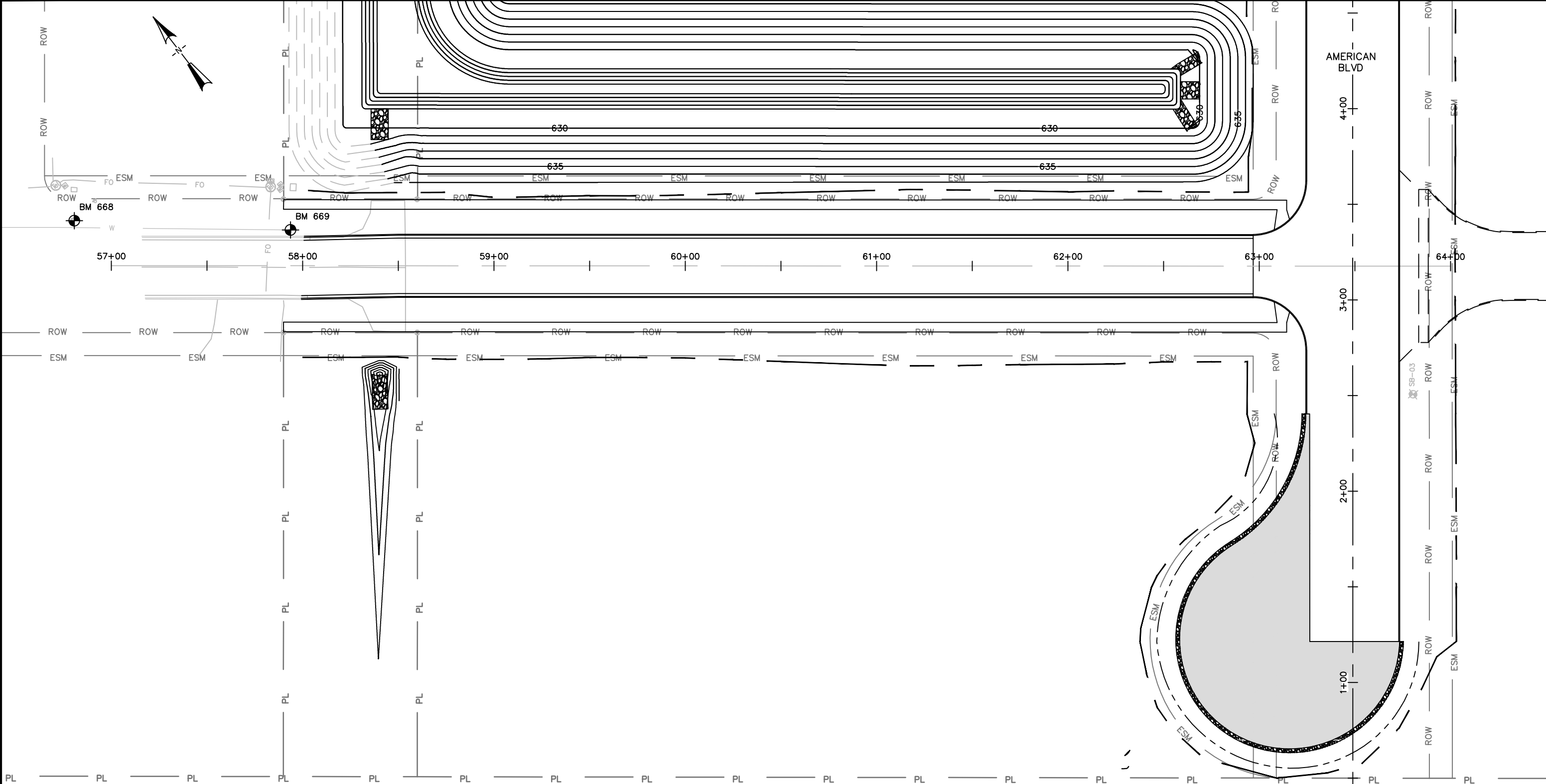
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AMERICAN BOULEVARD ALIGNMENT								
STATION	NORTHING	EASTING	COURSE	LENGTH	DELTA	RADIUS	LENGTH	CHORD
0+00.00 (PT)	524,479.284	70,418.948	N37°23'58.00"E	2,306.254'				
21+10.812 (PC)	526,311.419	71,819.695						
C1	525,670.261	72,336.525			27°27'25.91"	800.00	383.375'	379.717'
24+94.187 (PRC)	526,394.450	71,996.618						
C2	527,118.657	71,656.711			40°37'56.32"	800.00	567.334'	555.520'
30+61.521 (PRC)	526,790.408	72,386.267						
C3	525,764.631	74,666.132			06°25'18.57"	2500.00	280.205'	280.058'
33+41.726 (PCC)	527,038.969	72,515.303						
C4	527,038.969	72,515.303			02°14'10.84"	5493.00	214.400'	214.387'
35+56.126 (PT)	527,221.245	72,628.162	N32°52'57.14"E	305.222'				
37+00.000 (PT)	527,342.068	72,706.274						

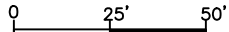
BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #619)	526552.049	72205.717	639.14	TOP OF NUT
BM (W #618)	526596.227	72224.919	640.54	TOP OF NUT
BM (W #617)	526967.035	72417.702	639.69	TOP OF NUT
BM (W #668)	525084.104	70182.908	639.86	TOP OF NUT
BM (W #669)	525156.923	70095.793	639.74	TOP OF NUT

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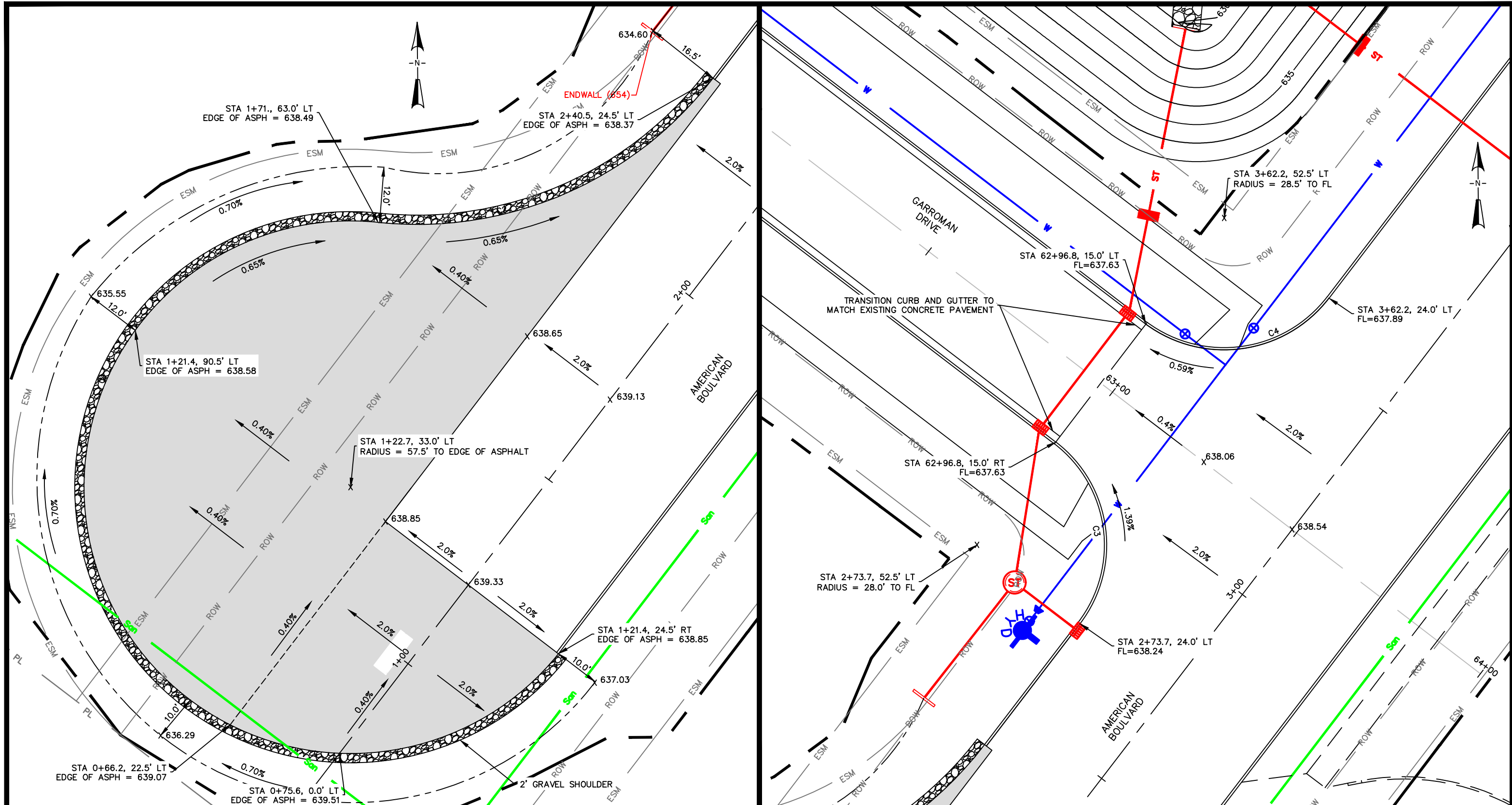


GARROMAN DRIVE ALIGNMENT				
STATION	NORTHING	EASTING	COURSE	LENGTH
57+00.00 (PT)	525,126.086	70,096.753	S52°33'26.60"E	700.00'
64+00.00 (PT)	524,700.510	70,652.527		

BENCHMARKS				
NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM (W #619)	526552.049	72205.717	639.14	TOP OF NUT
BM (W #618)	526596.227	72224.919	640.54	TOP OF NUT
BM (W #617)	526967.035	72417.702	639.69	TOP OF NUT
BM (W #668)	525084.104	70182.908	639.86	TOP OF NUT
BM (W #669)	525156.923	70095.793	639.74	TOP OF NUT

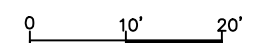


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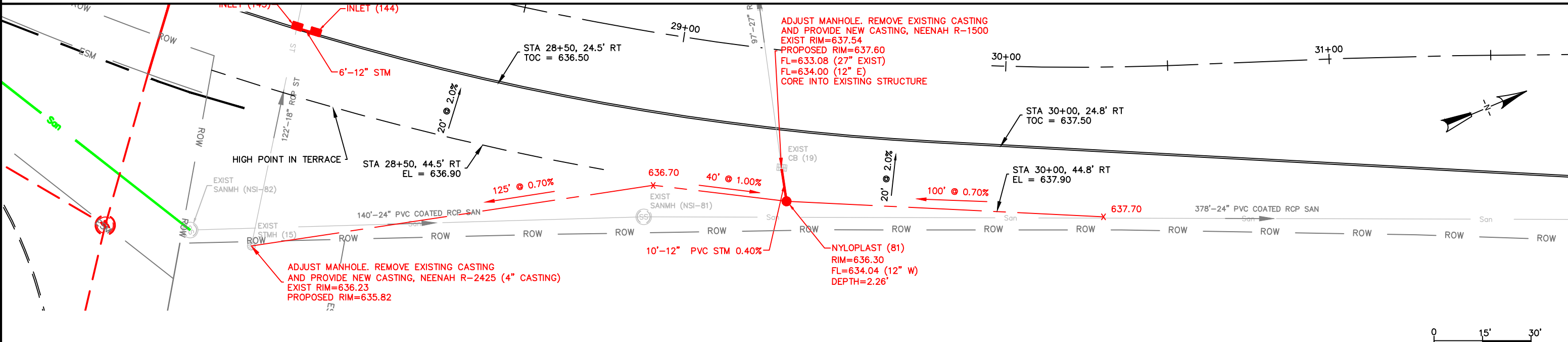
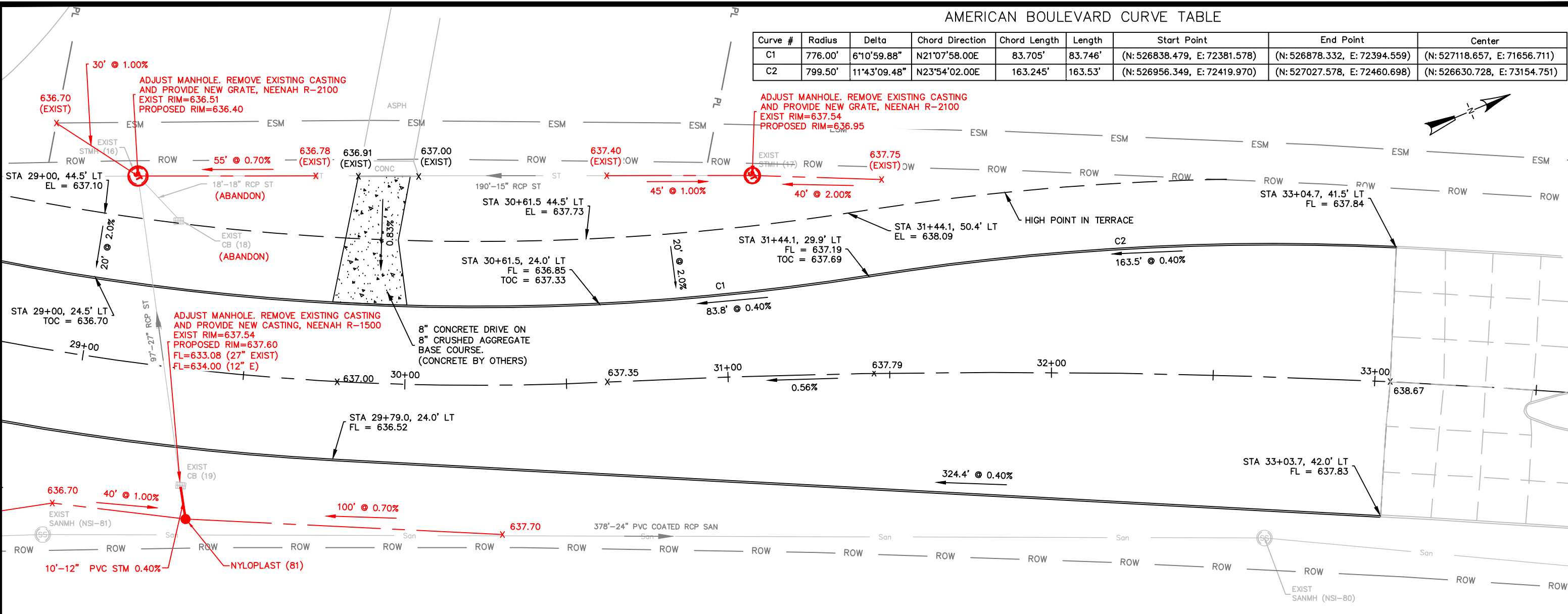
AMERICAN BOULEVARD CURVE TABLE

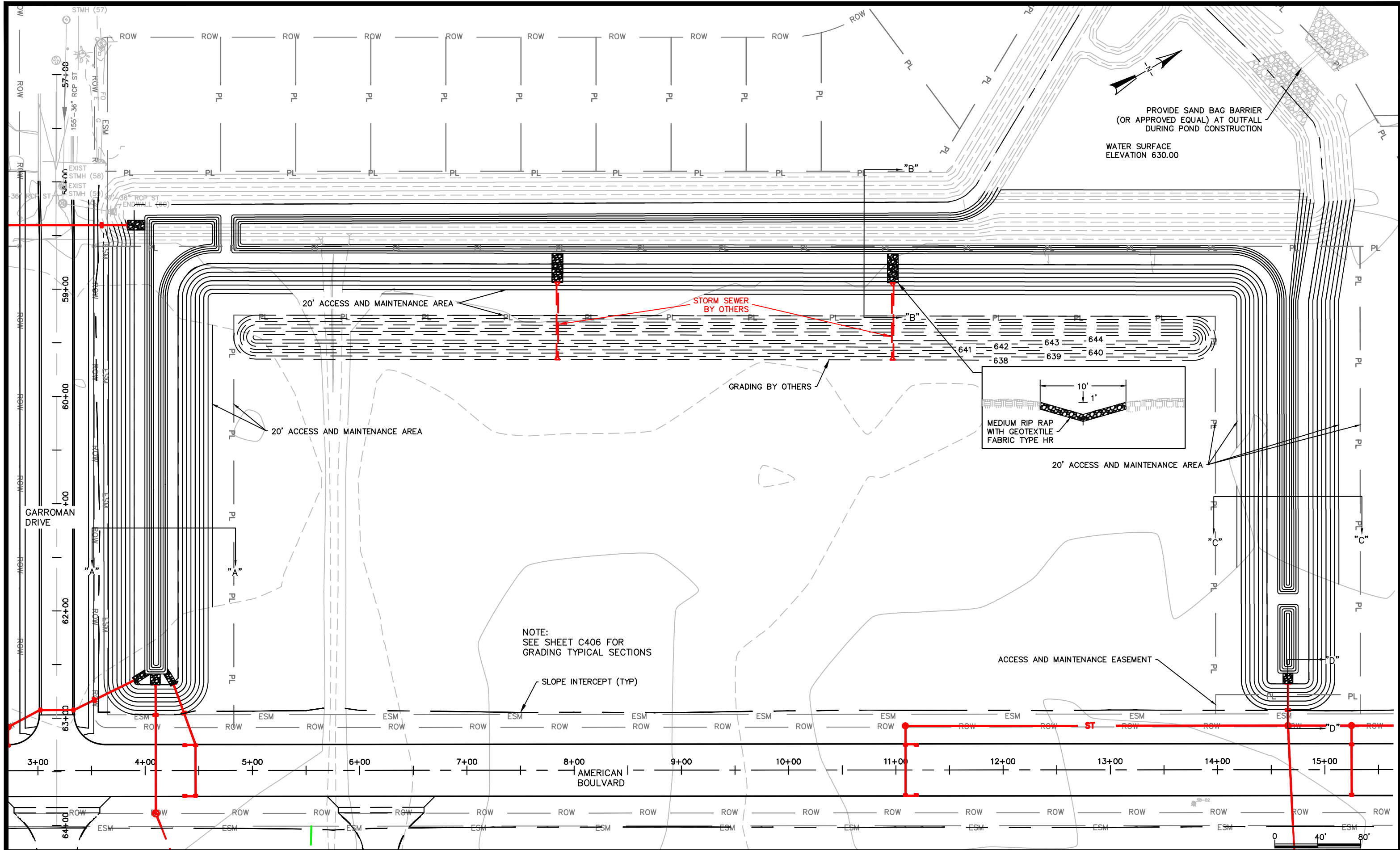
Curve #	Radius	Delta	Chord Direction	Chord Length	Length	Start Point	End Point	Center
C1	57.5'	237°14'12.12"			238.082'	(N: 524654.012, E: 70473.239)	(N: 524560.870, E: 70512.160)	(N: 524596.82, E: 70467.290)
C2	80.5'	58°32'37.32"	N66°40'17.00E	78.722'	82.253'	(N: 524654.012, E: 70473.239)	(N: 524685.190, E: 70545.530)	(N: 524734.080, E: 70481.580)
C3	28.0'	89°57'24.84"	S07°34'44.00E	39.583'	43.961'	(N: 524750.520, E: 70560.890)	(N: 524711.290, E: 70566.110)	(N: 524728.290, E: 70543.870)
C4	28.5'	89°00'36.00"	S81°54'16.00W	39.962'	44.282'	(N: 524775.970, E: 70580.310)	(N: 524781.590, E: 70619.870)	(N: 524798.900, E: 70597.230)



AMERICAN BOULEVARD CURVE TABLE

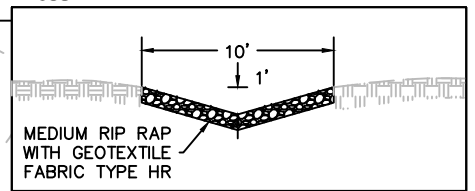
Curve #	Radius	Delta	Chord Direction	Chord Length	Length	Start Point	End Point	Center
C1	776.00'	6°10'59.88"	N21°07'58.00E	83.705'	83.746'	(N: 526838.479, E: 72381.578)	(N: 526878.332, E: 72394.559)	(N: 527118.657, E: 71656.711)
C2	799.50'	11°43'09.48"	N23°54'02.00E	163.245'	163.53'	(N: 526956.349, E: 72419.970)	(N: 527027.578, E: 72460.698)	(N: 526630.728, E: 73154.751)





PROVIDE SAND BAG BARRIER
(OR APPROVED EQUAL) AT OUTFALL
DURING POND CONSTRUCTION

WATER SURFACE
ELEVATION 630.00

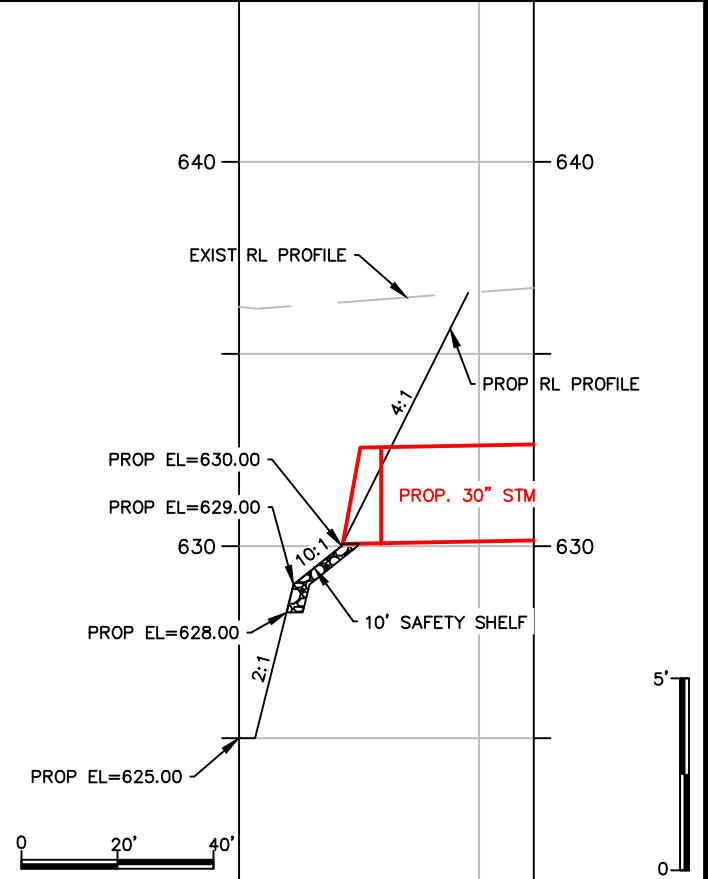
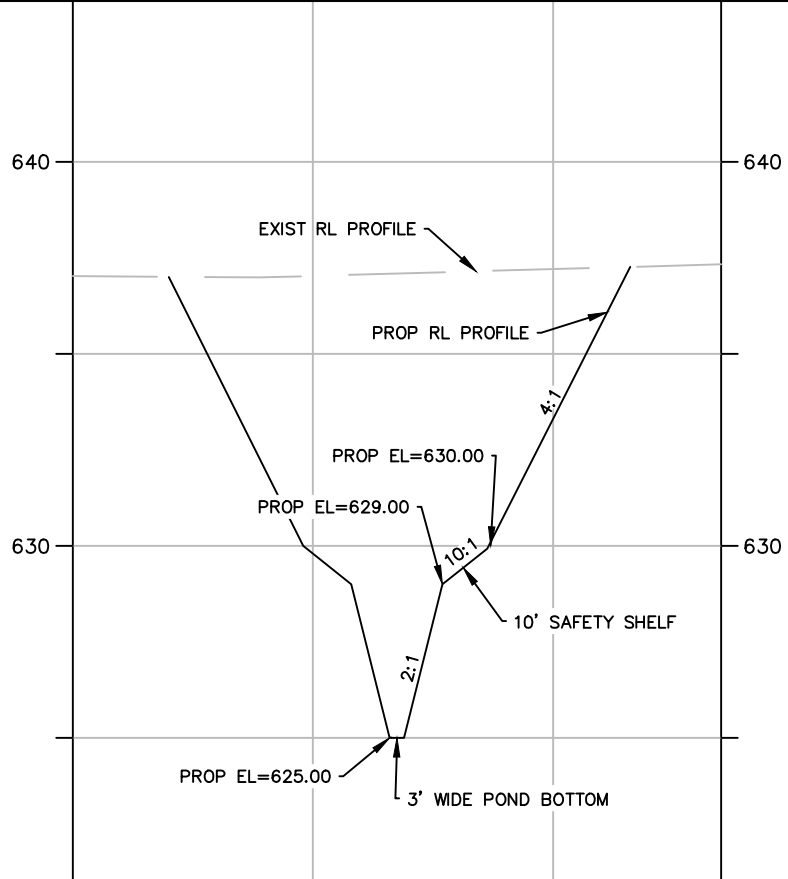
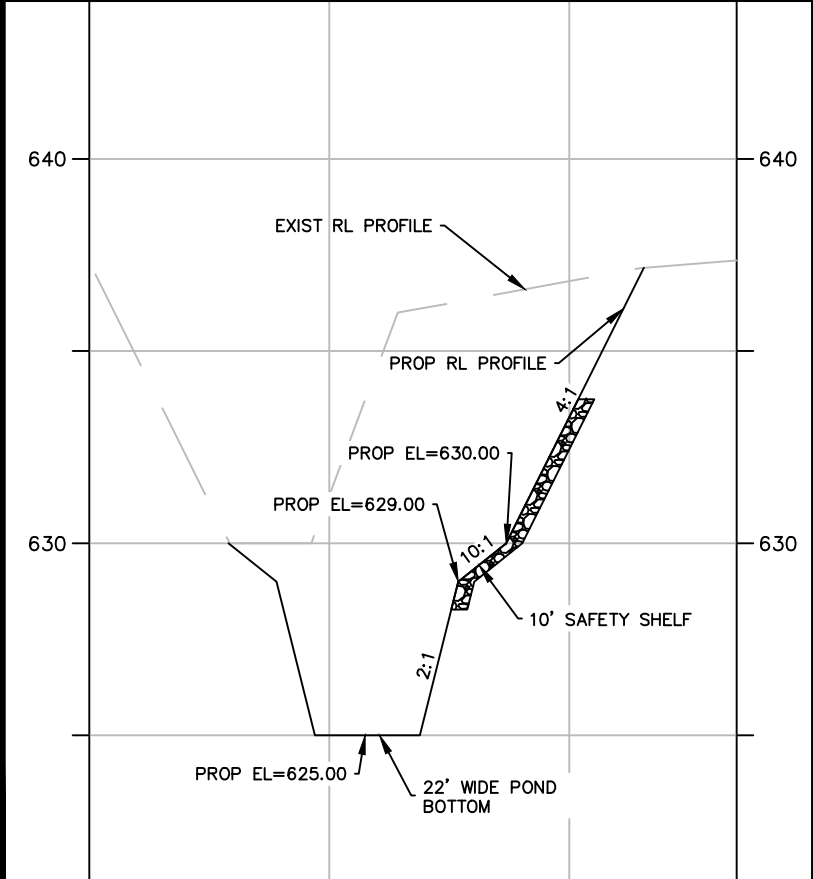
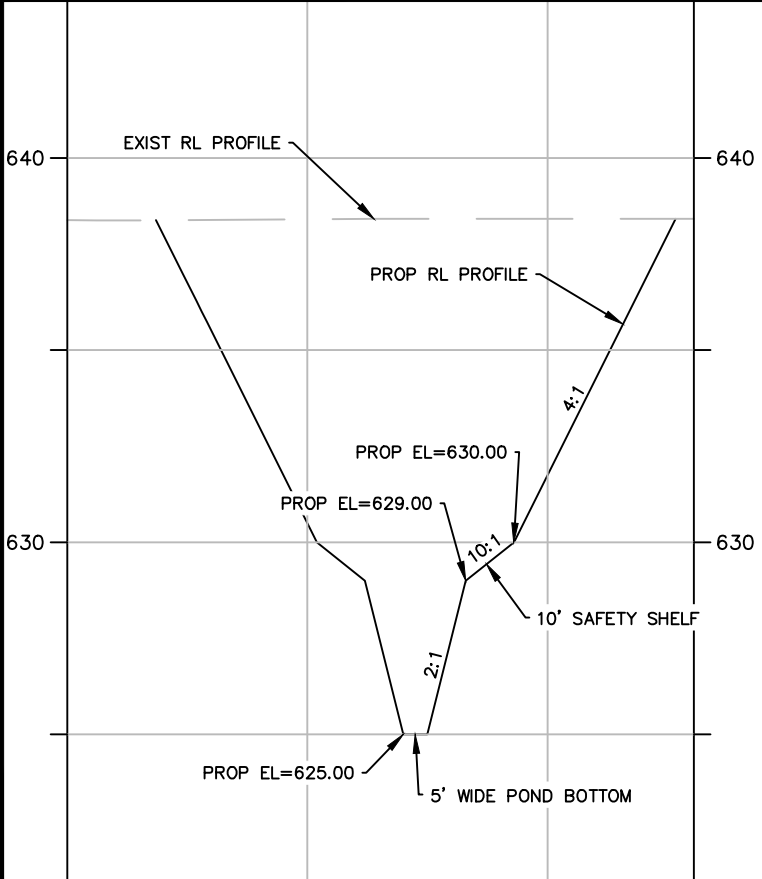
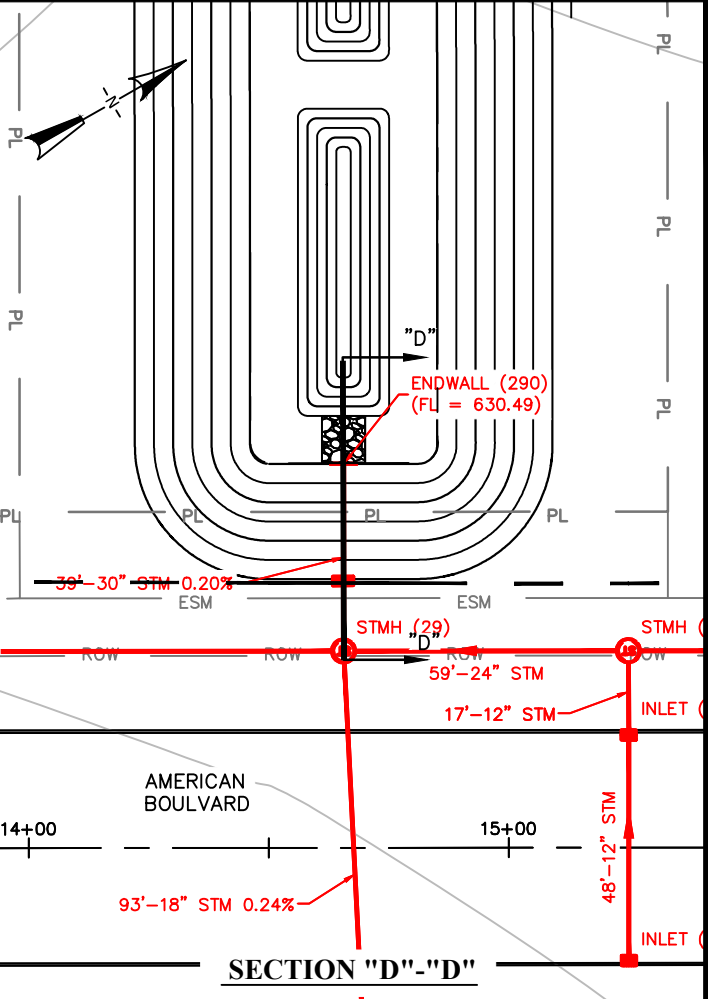
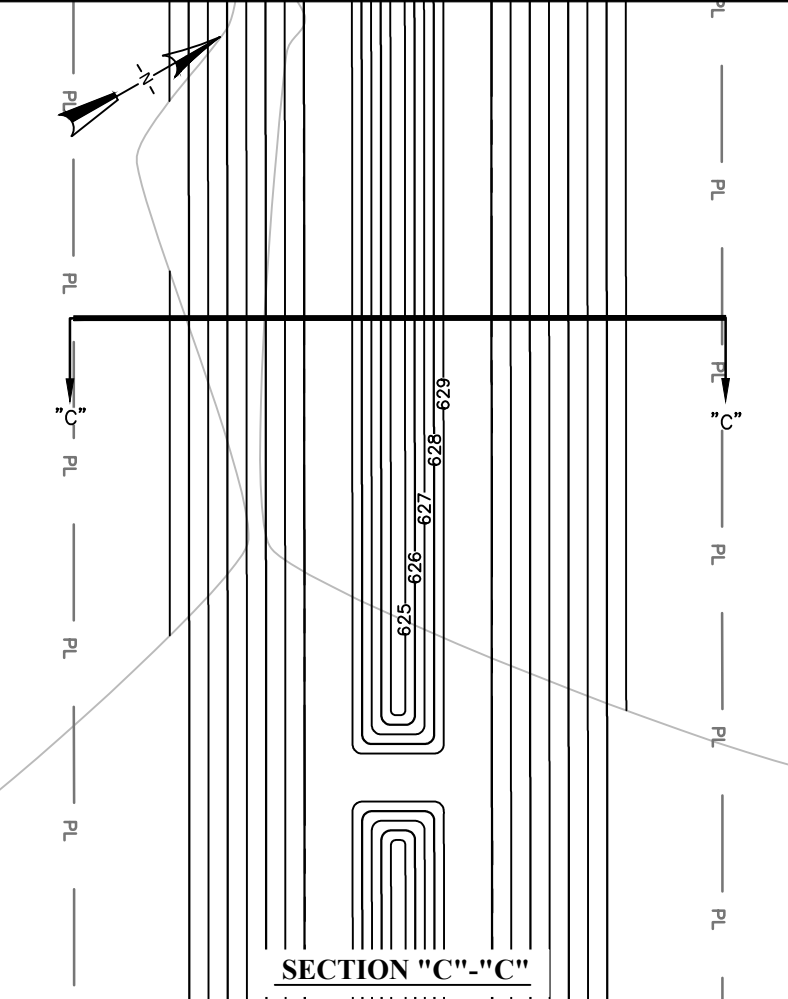
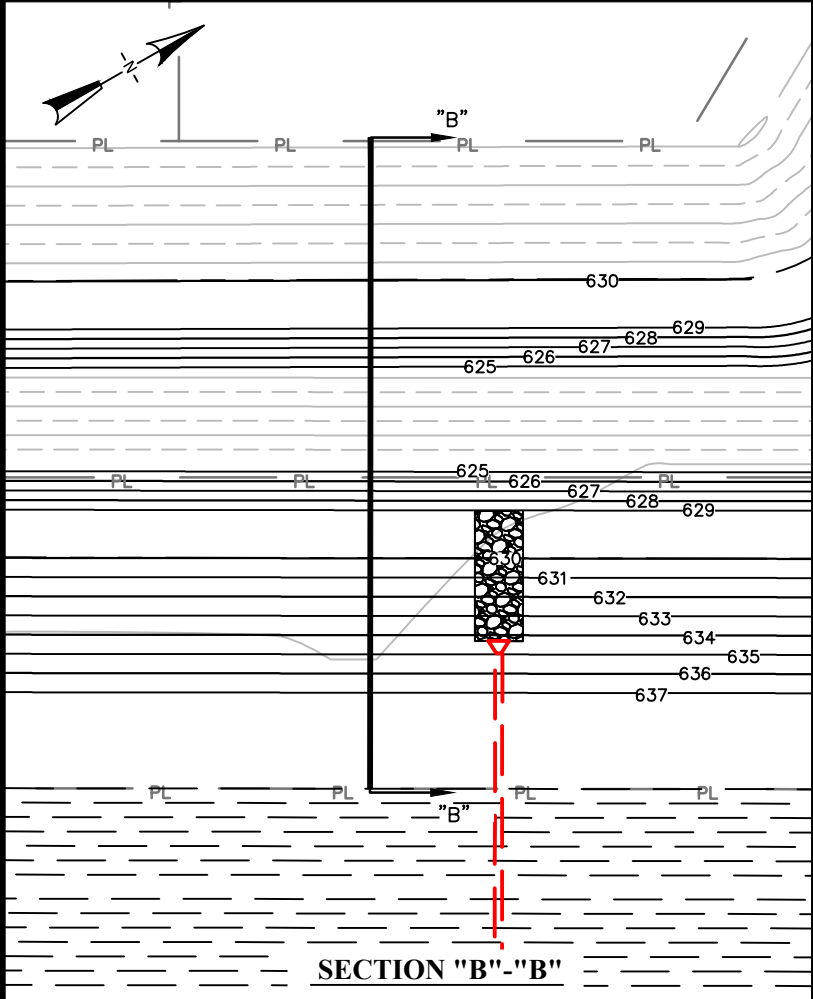
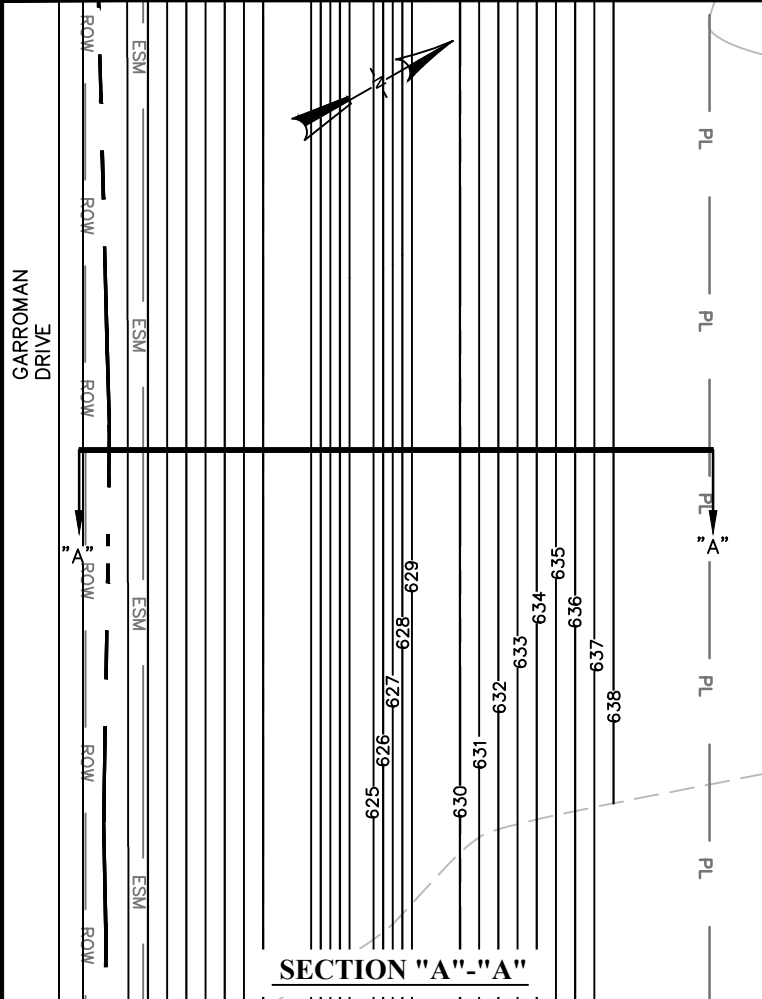


NOTE:
SEE SHEET C406 FOR
GRADING TYPICAL SECTIONS

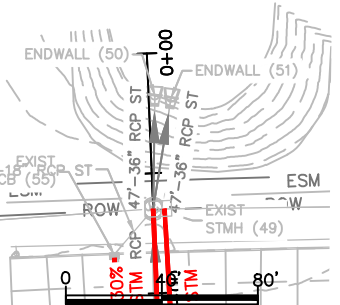
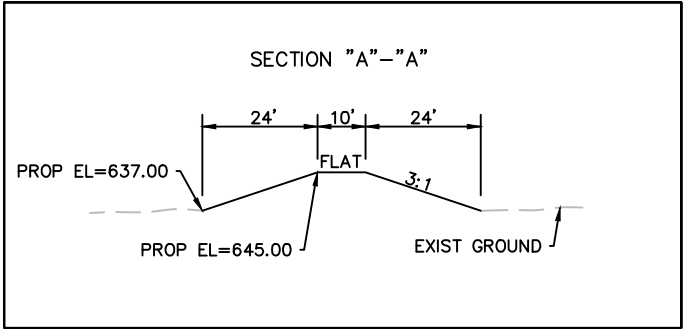
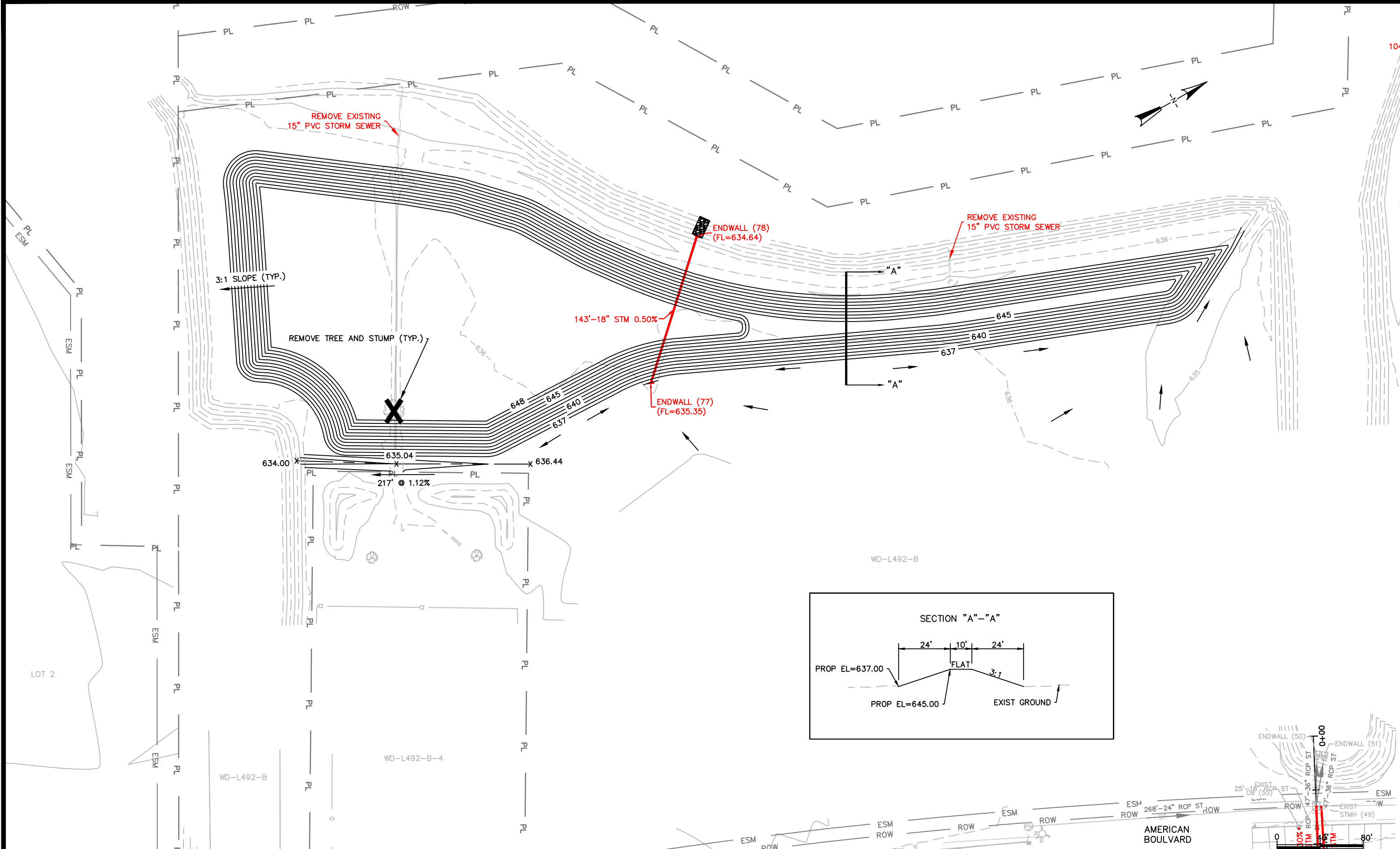
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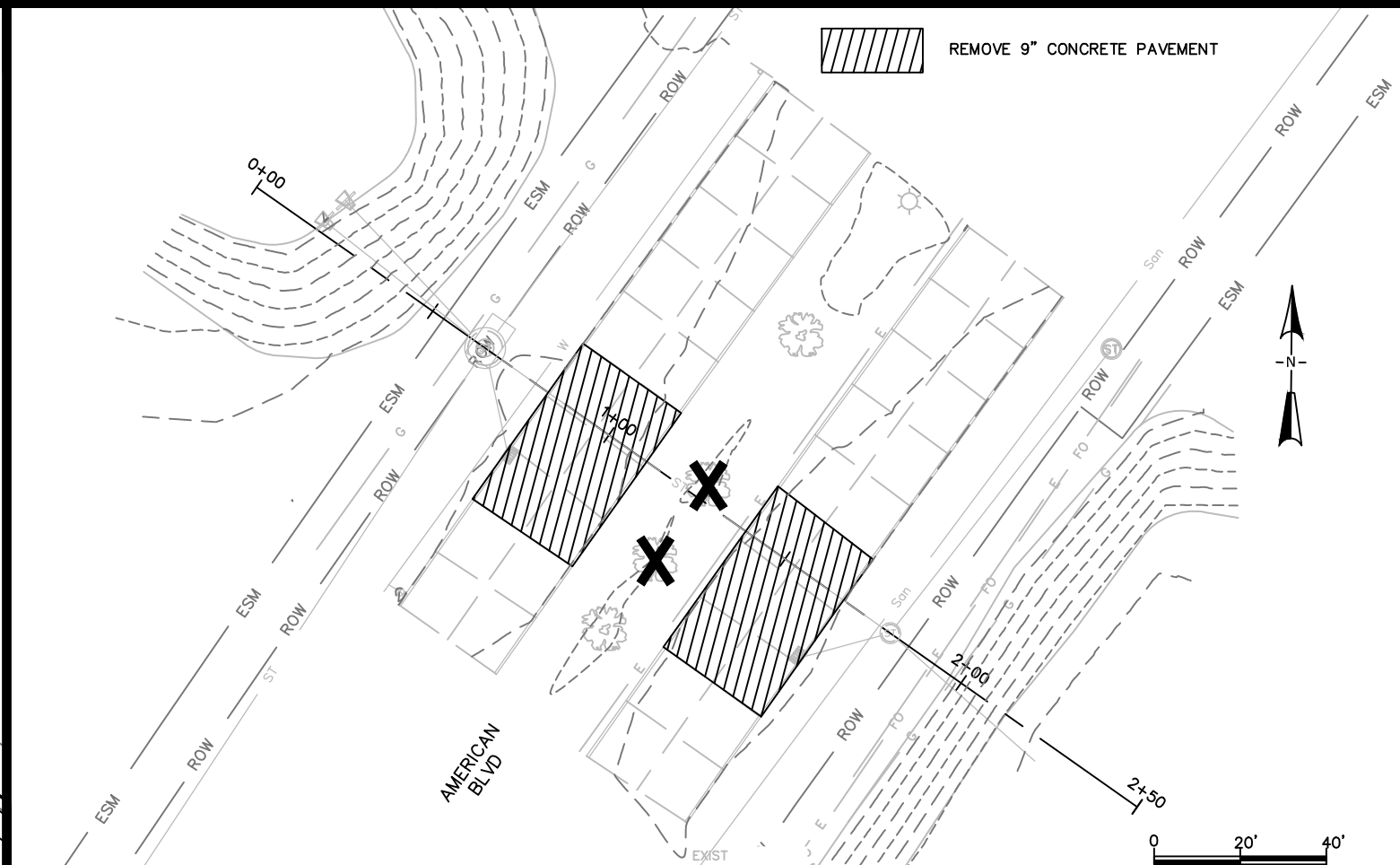
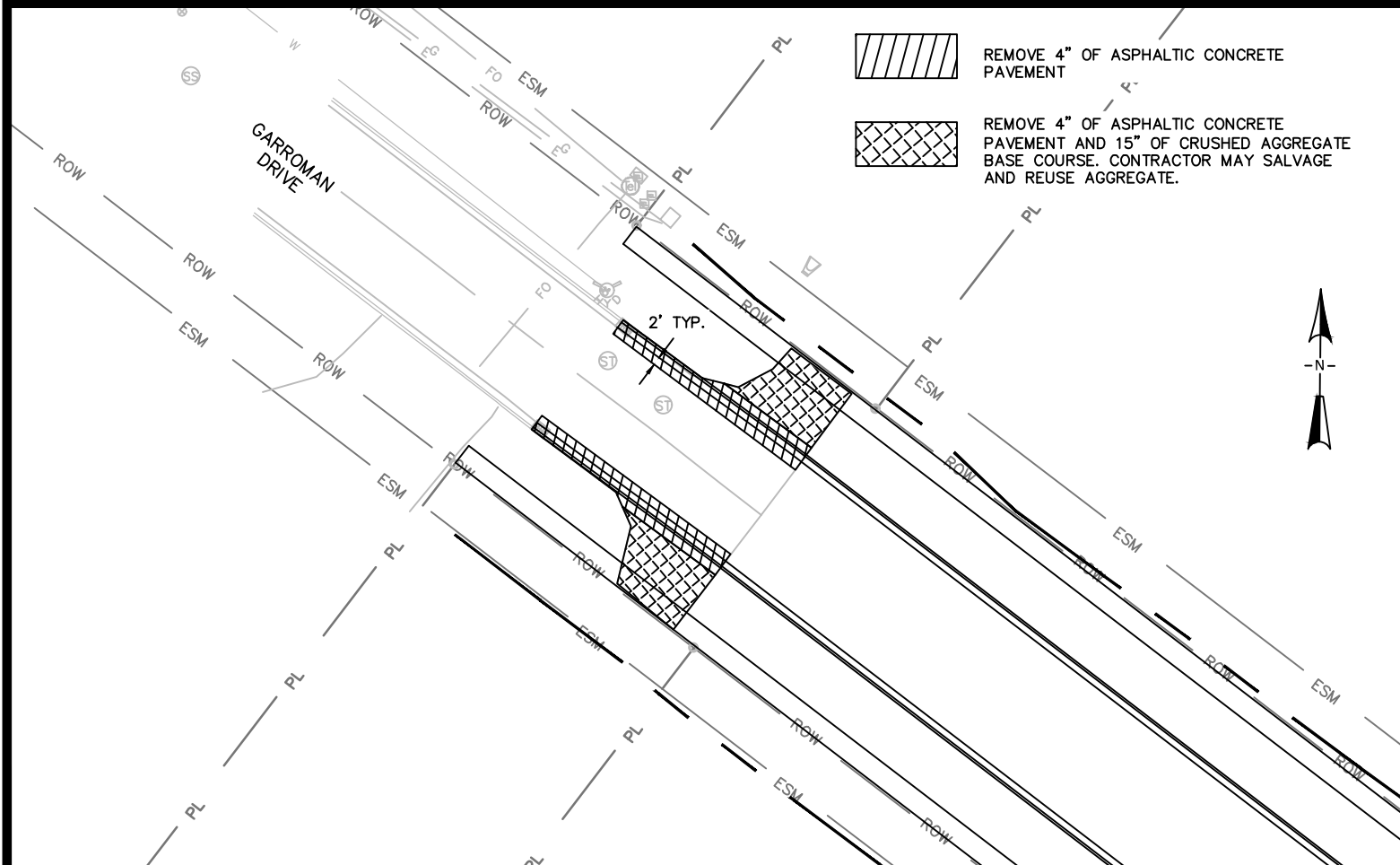
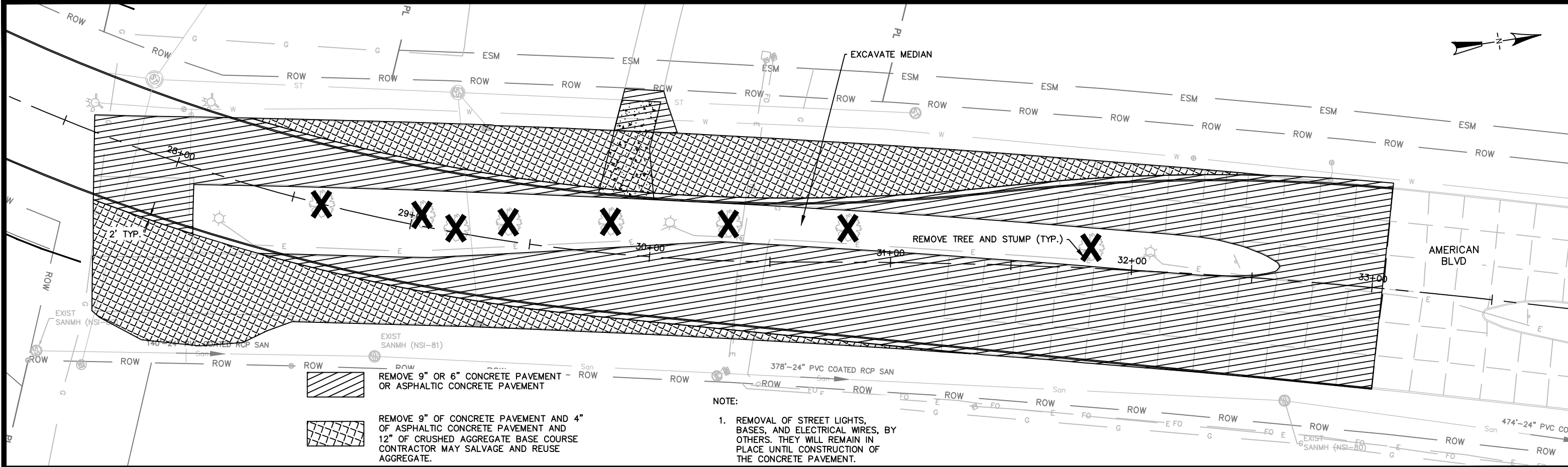
ACCESS AND MAINTENANCE EASEMENT

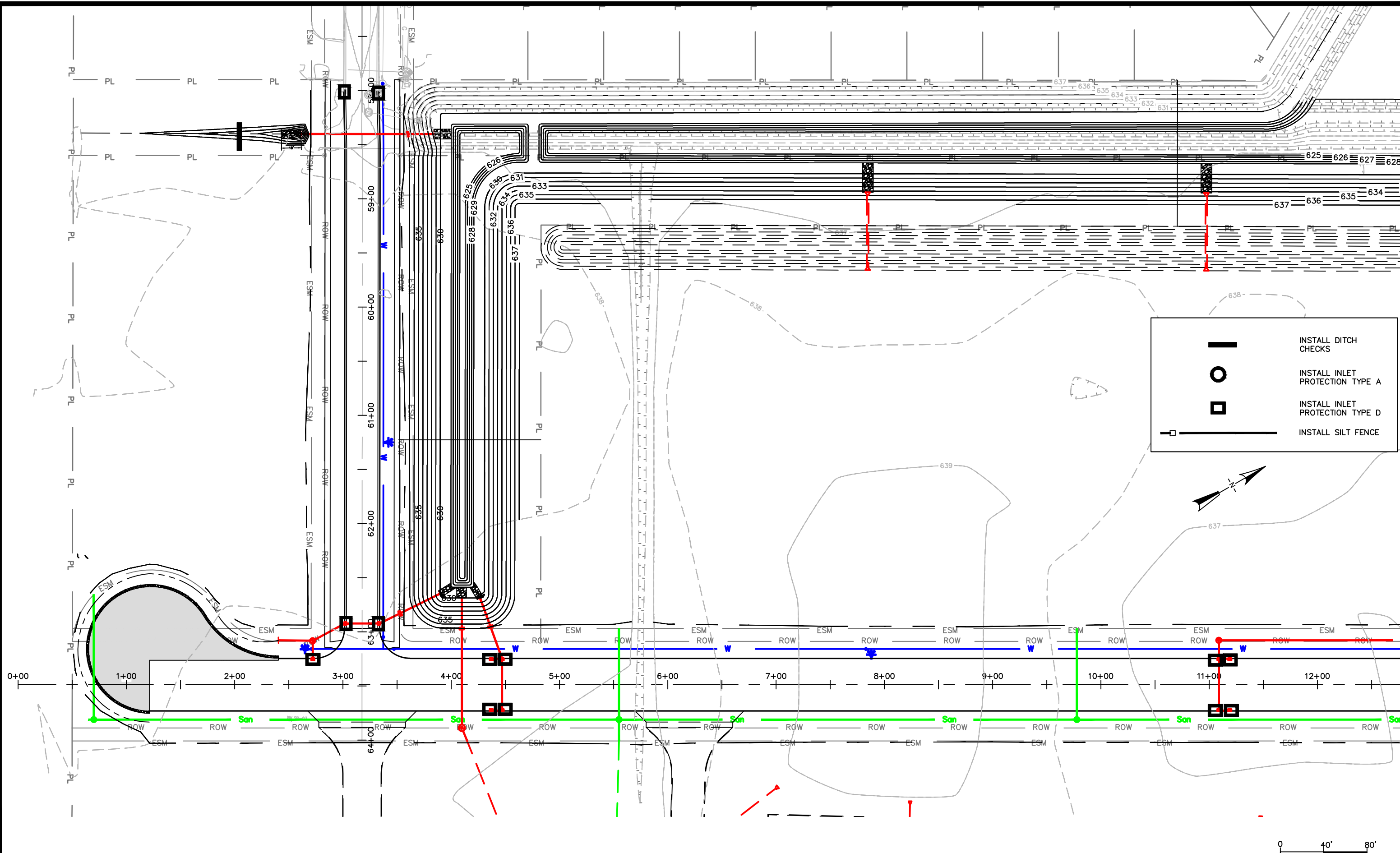
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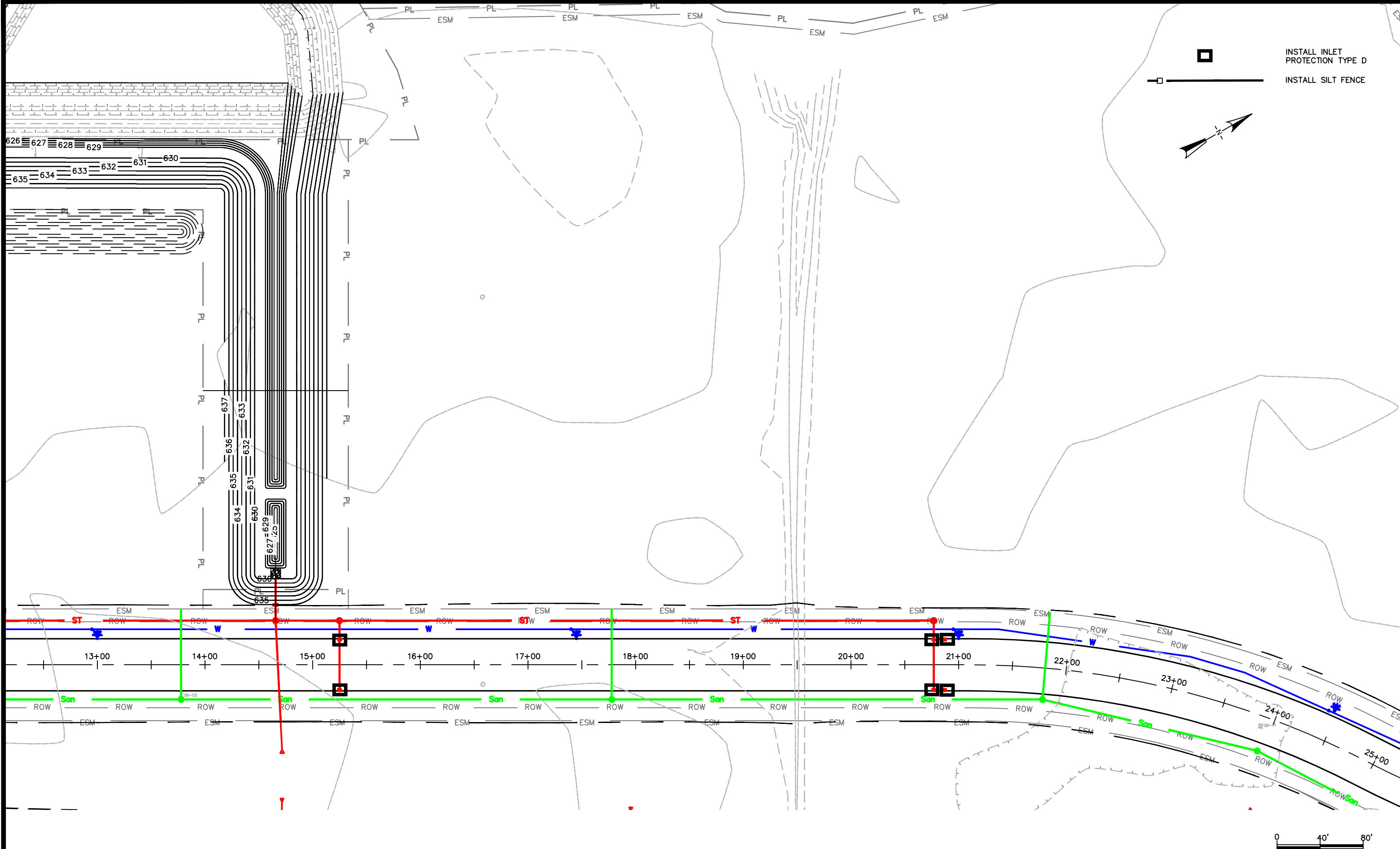


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CITY OF DE PERE

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

AMERICAN BLVD AND GARROMAN DRIVE

EROSION CONTROL PLAN

NAME: AMERICAN BLVD
UTILITY AND STREET
EXTENSION

PROJECT # 21-11

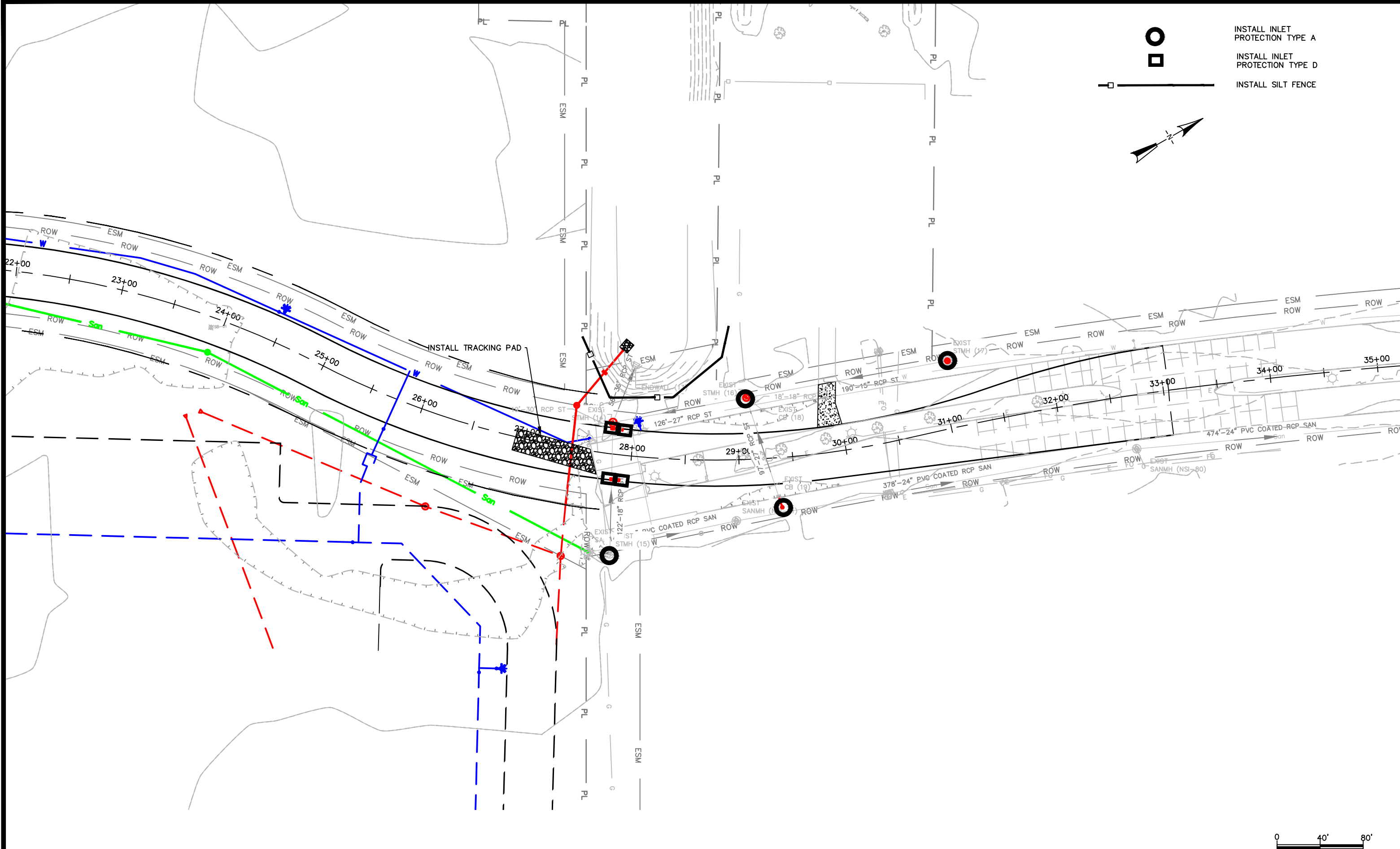
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DRAWN	SRL	08-2021
DESIGNED	SRL	08-2021
CHECKED	EPR	08-2021

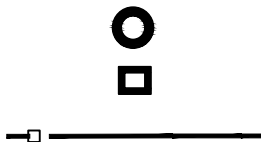
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NO.	DATE	BY	REMARKS

PAGE NO.

C411

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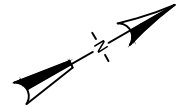


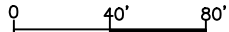


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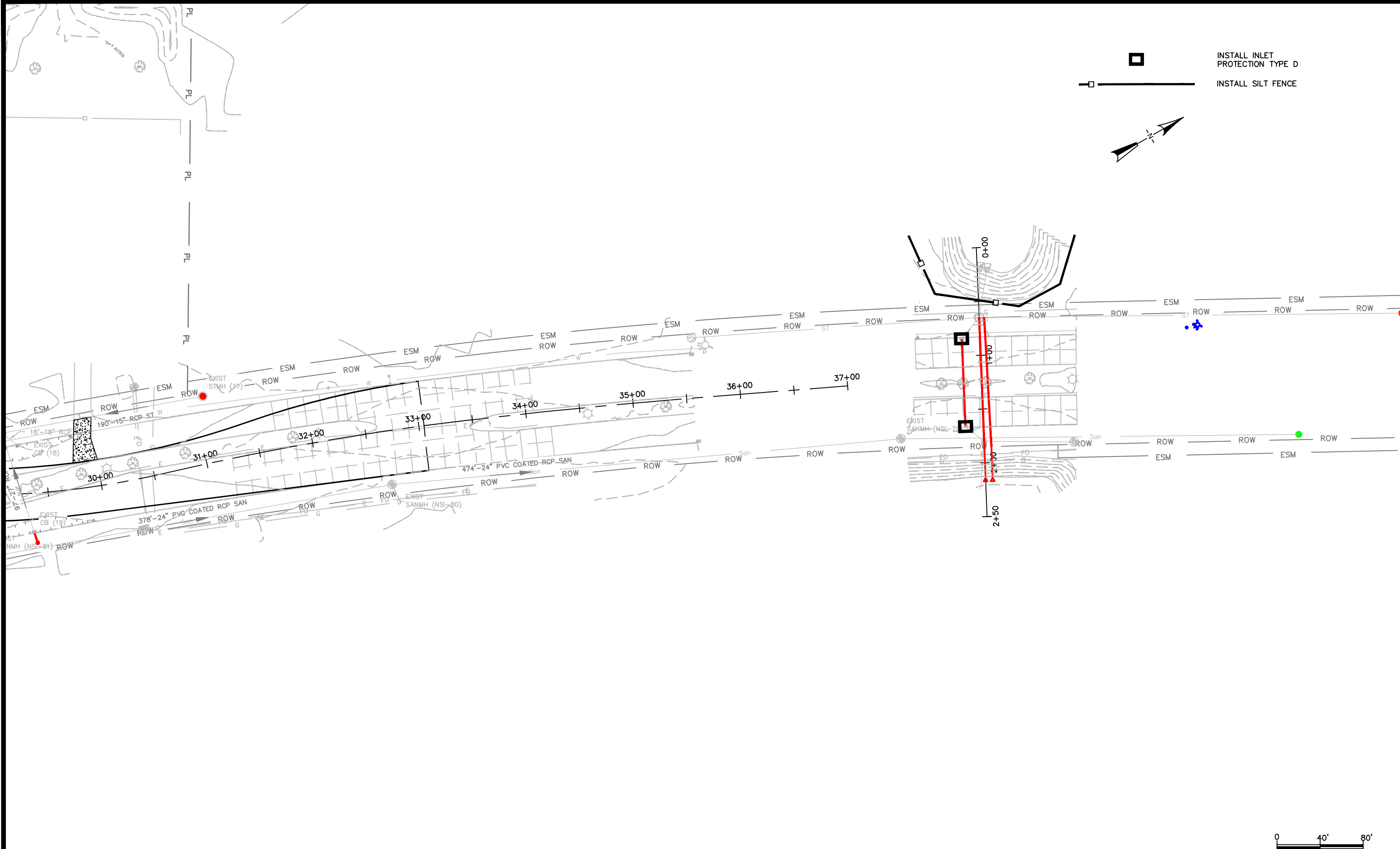
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PROTECTION TYPE D

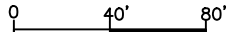
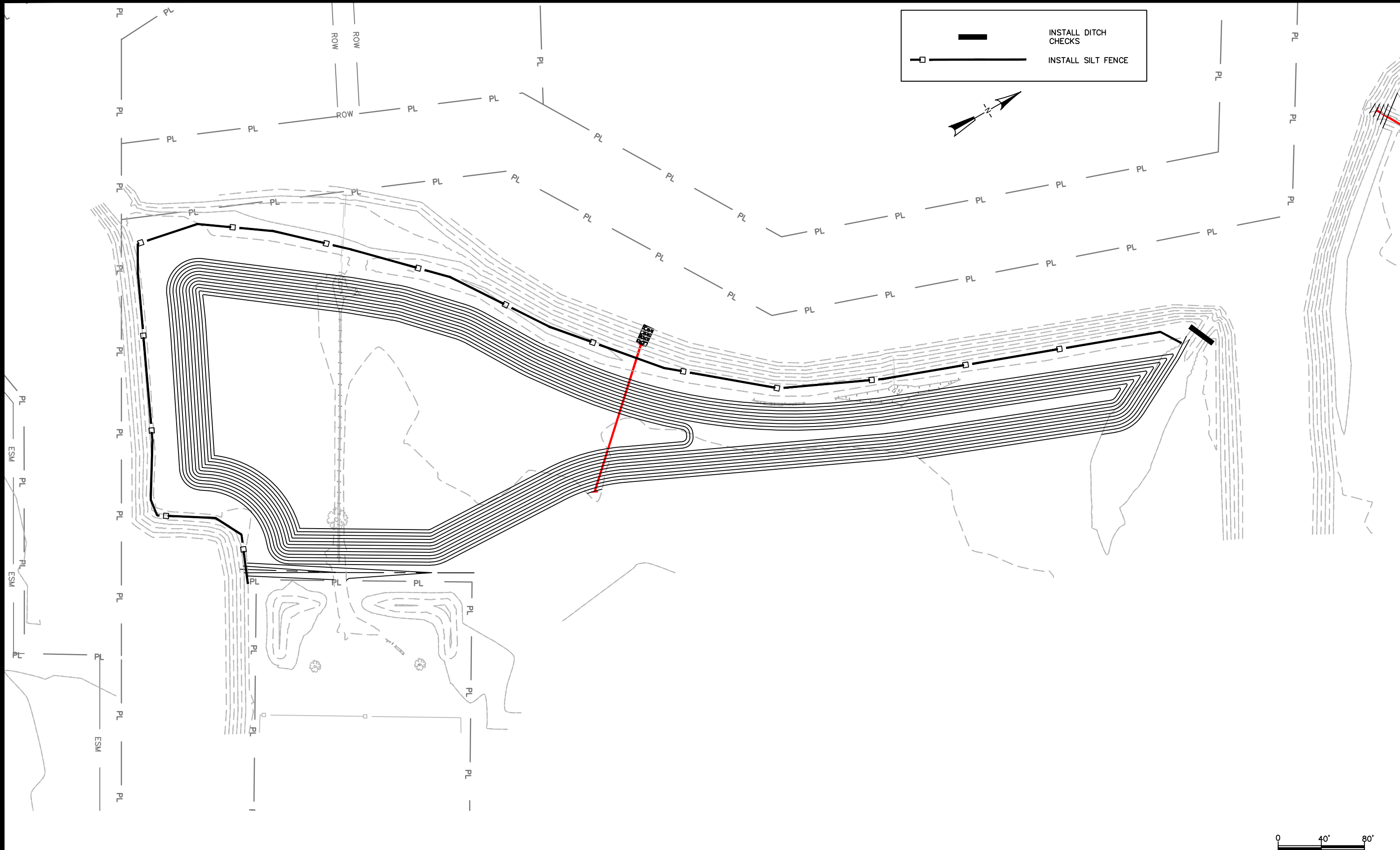
INSTALL SILT FENCE





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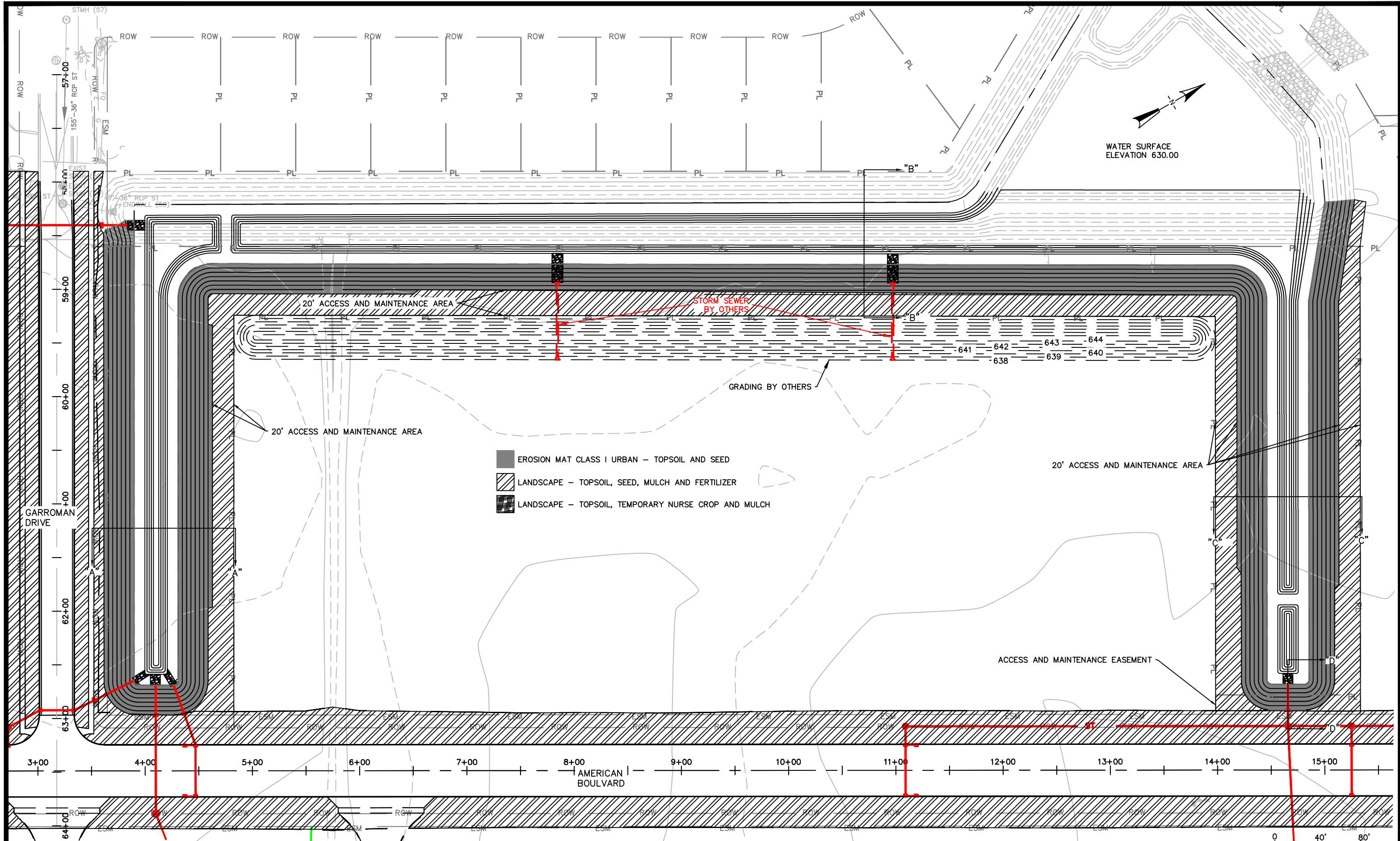
AMERICAN BLVD AND GARROMAN DRIVE
EROSION CONTROL PLAN

NAME: AMERICAN BLVD
UTILITY AND STREET
EXTENSION
PROJECT # 21-11

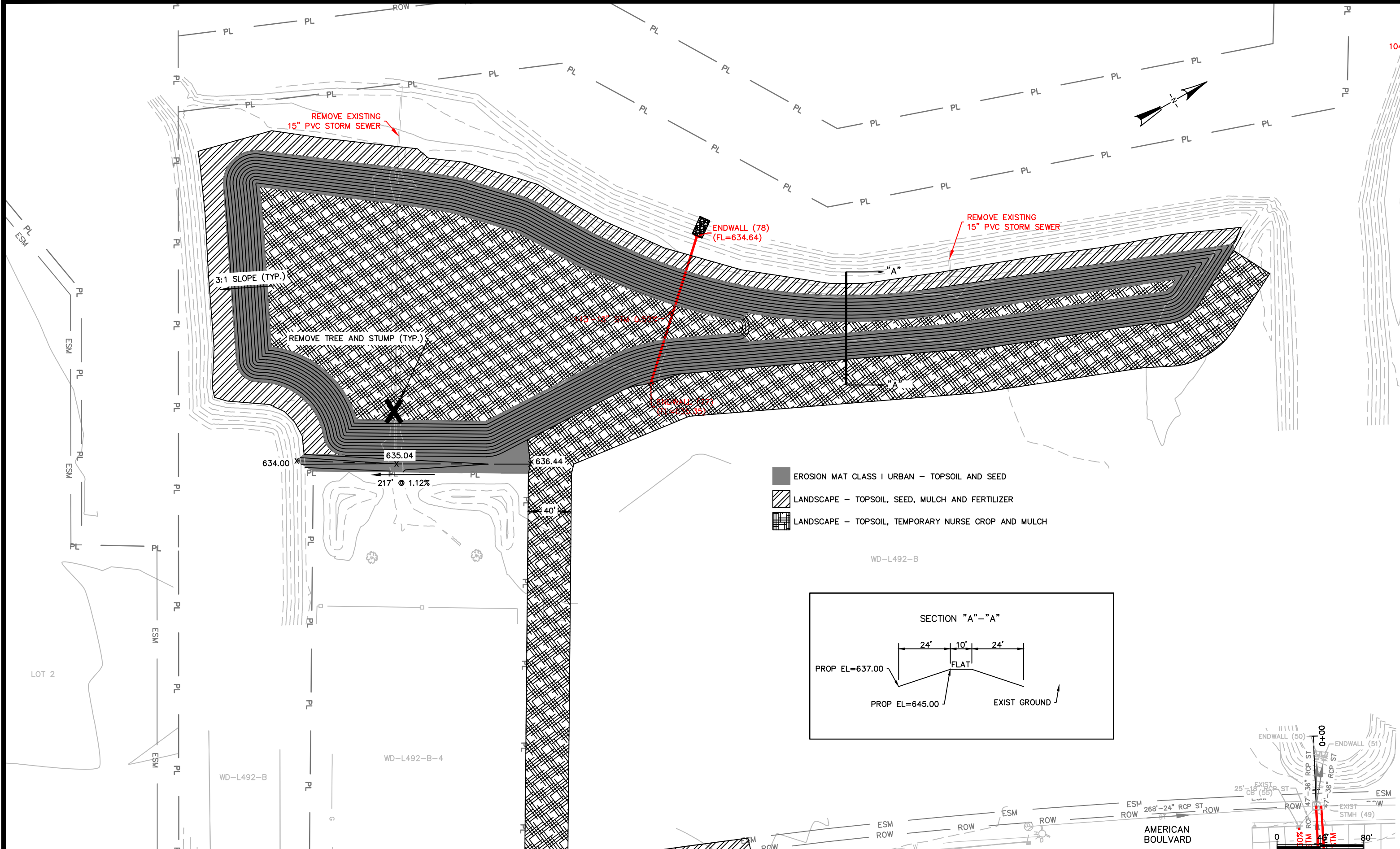
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SURVEYED	REL 03-2021
DRAWN	SRL 08-2021
DESIGNED	SRL 08-2021
CHECKED	EPR 08-2021


REVISIONS / ISSUES			
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AMERICAN BLVD POND EXTENSION
FINAL RESTORATION PLAN

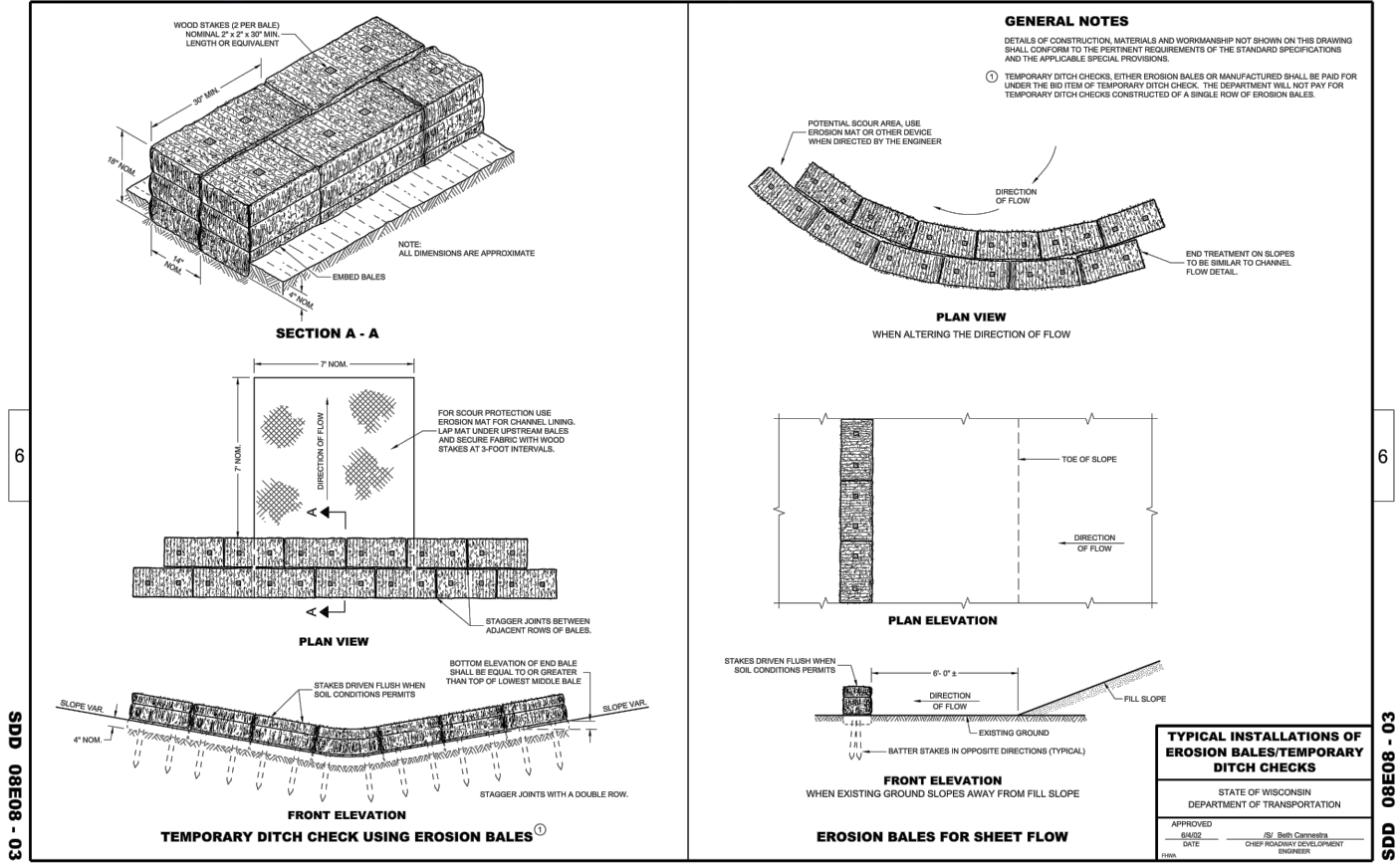
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PROJECT # 21-11		DRAWN: SRL	06-2021
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REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

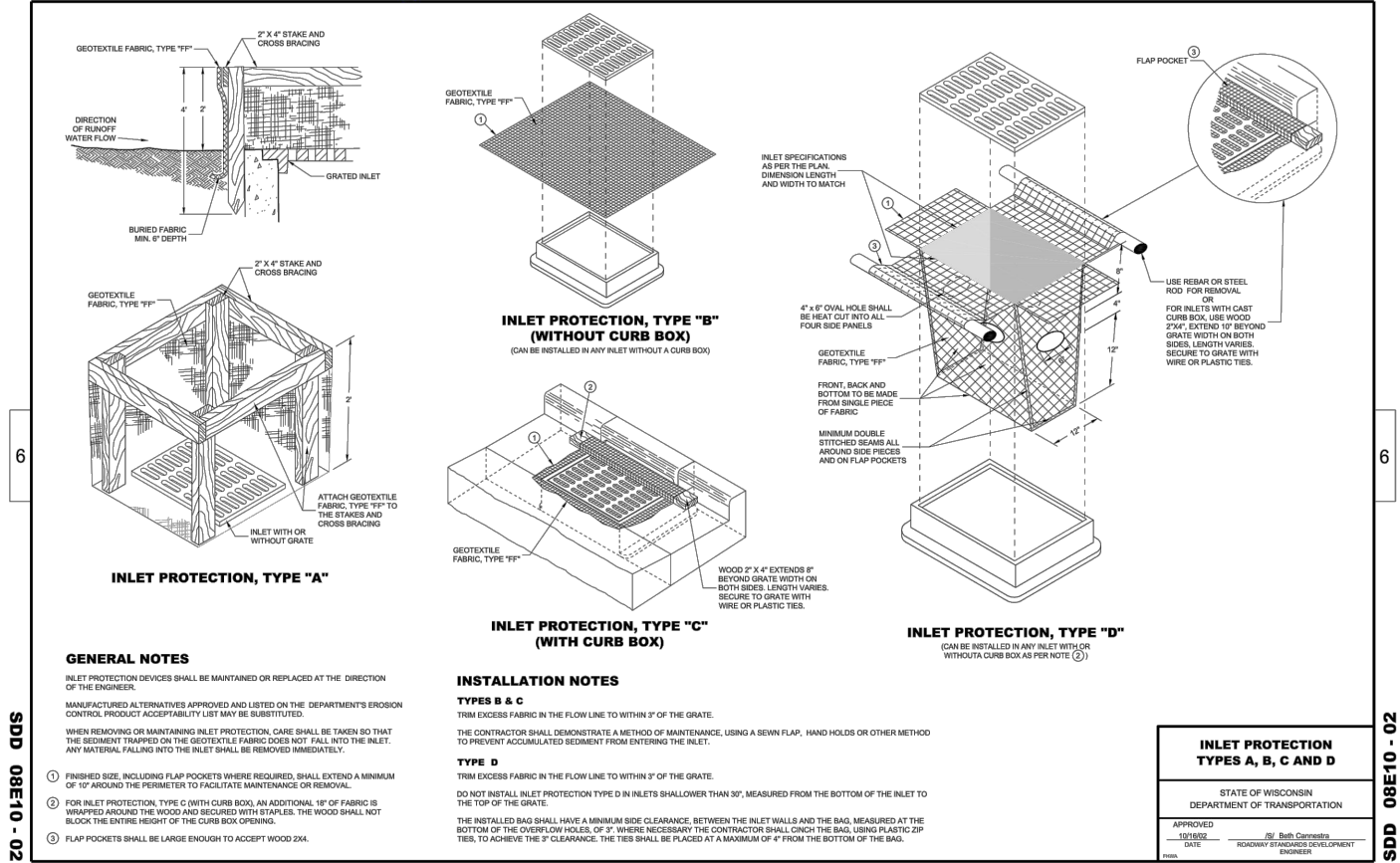
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C416

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SDD 08E08 Typical Installations of Erosion Bales / Temporary Ditch Checks



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



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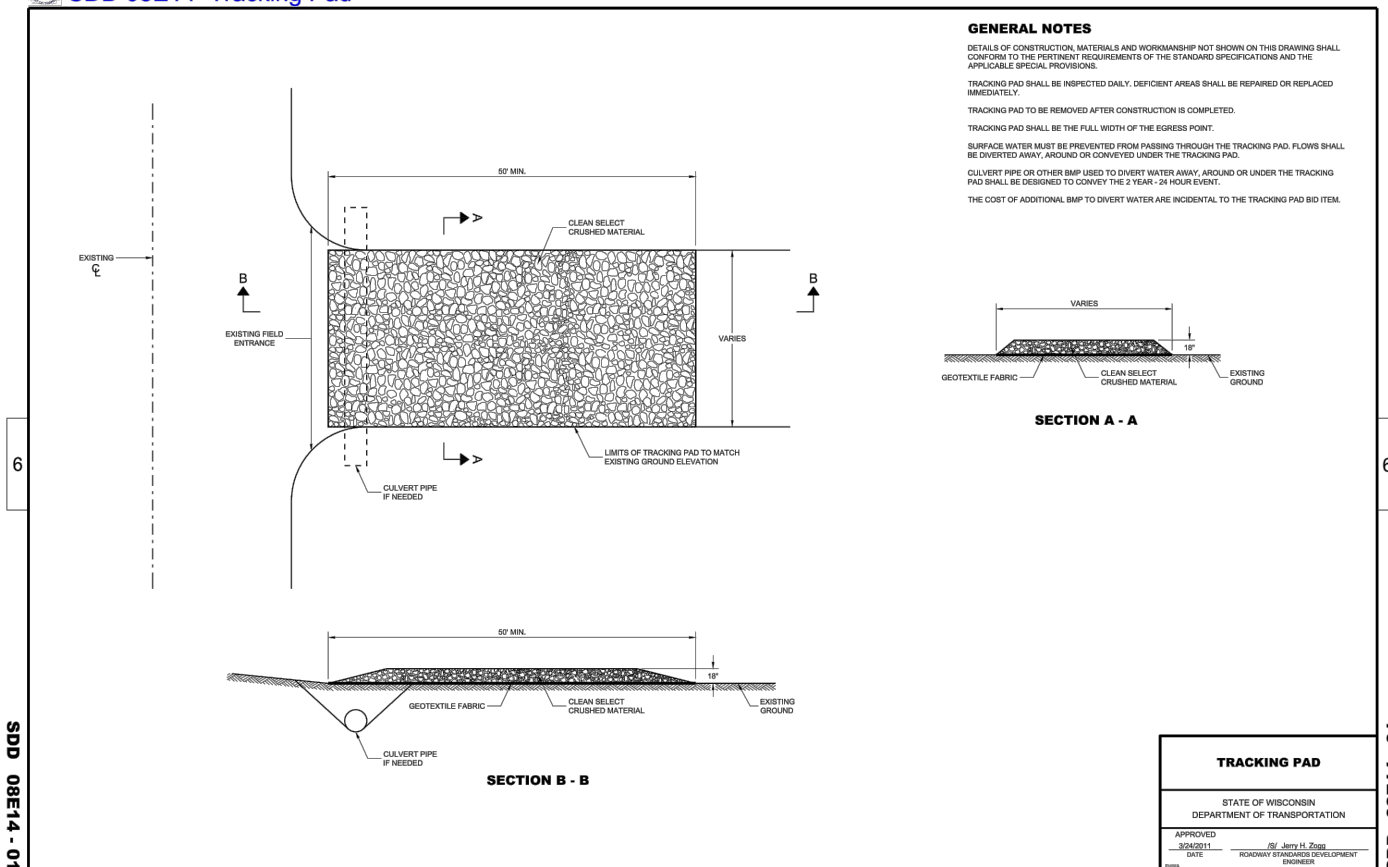
AMERICAN BOULEVARD
CONSTRUCTION DETAILS

NAME: AMERICAN BOULEVARD
UTILITY AND STREET
EXTENSION
PROJECT # 21-11

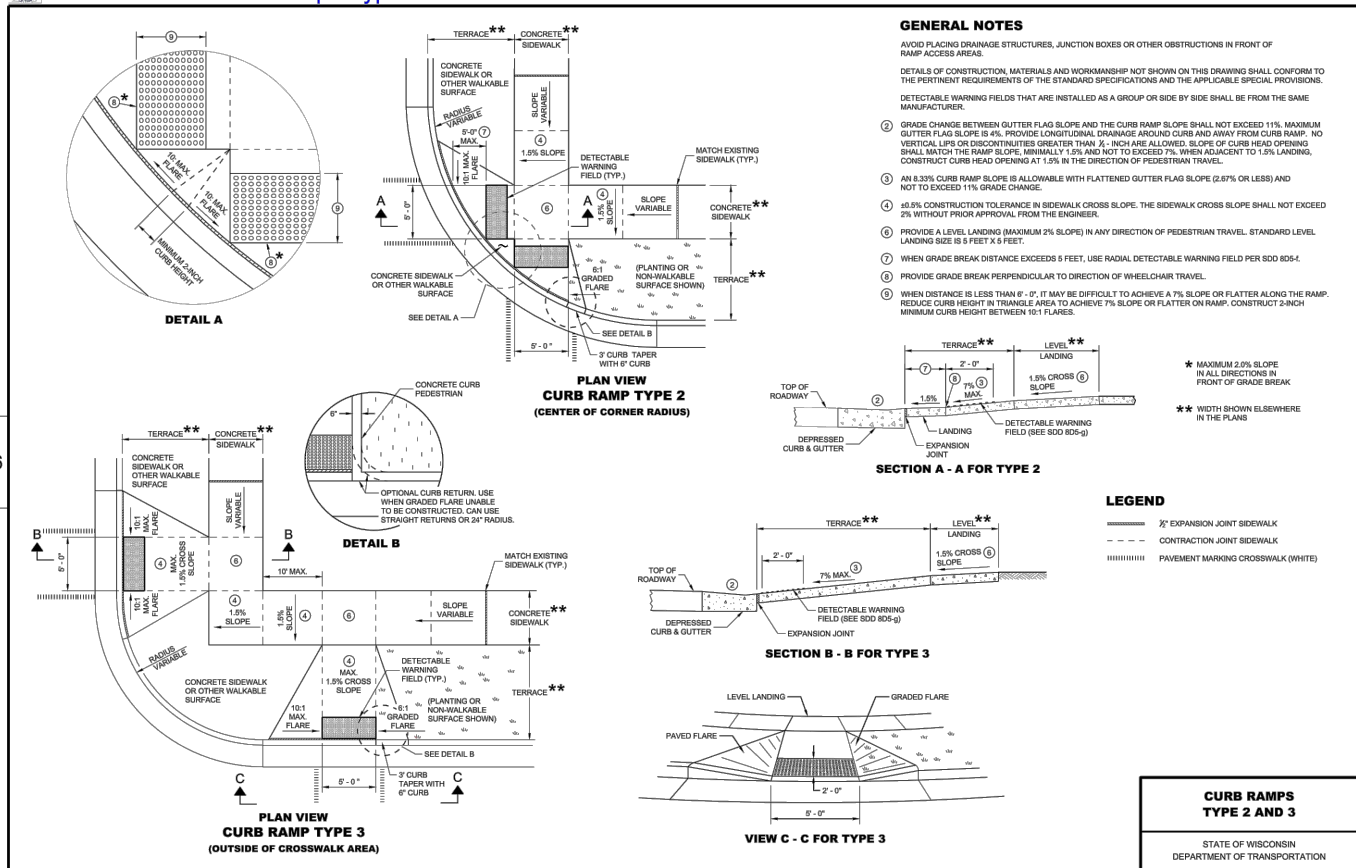
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C501

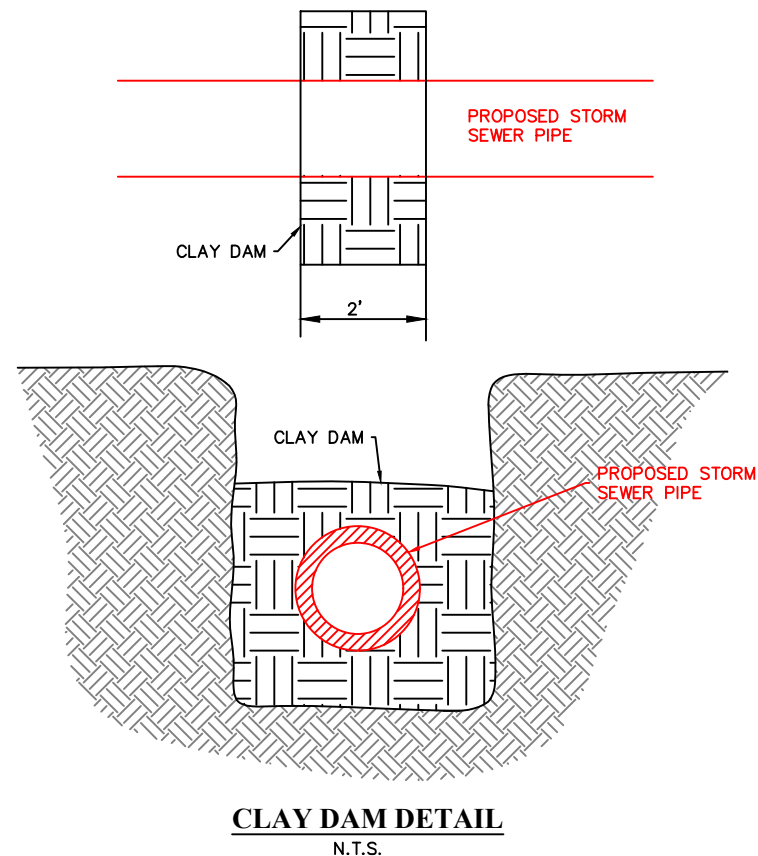
SDD 08E14 Tracking Pad



SDD 08D05-b Curb Ramps Types 2 and 3



FOR INFORMATION ONLY. CONCRETE
RAMPS WILL BE INSTALLED BY OTHERS.



CITY OF DE PERE

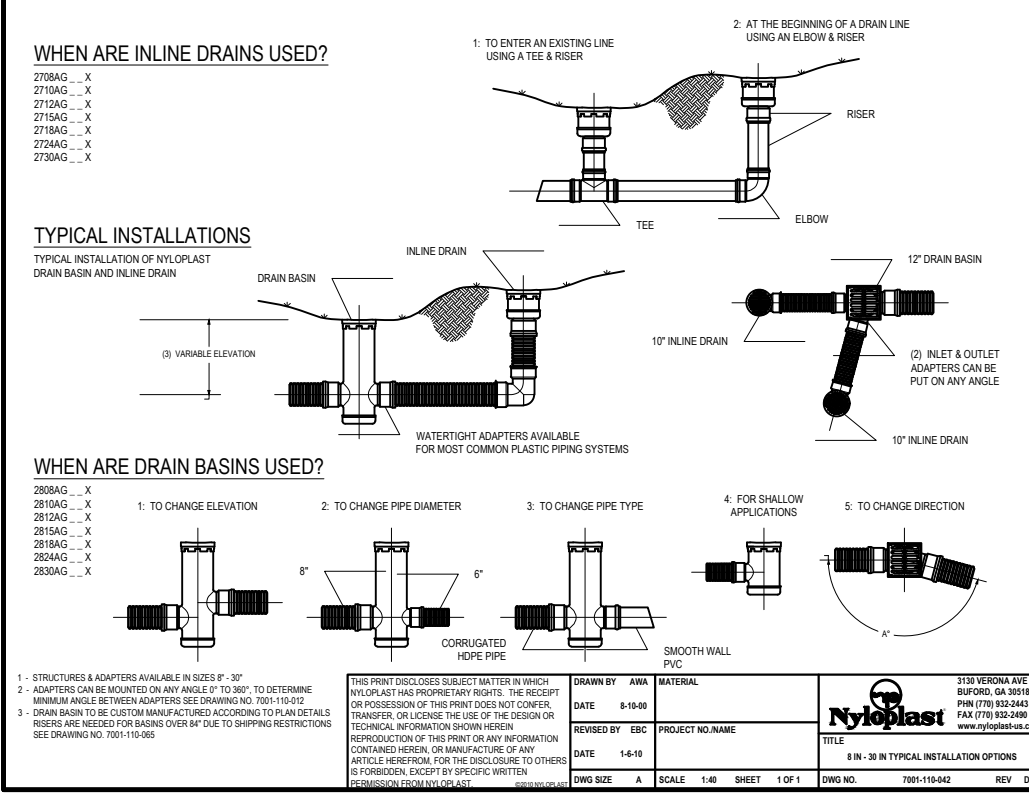
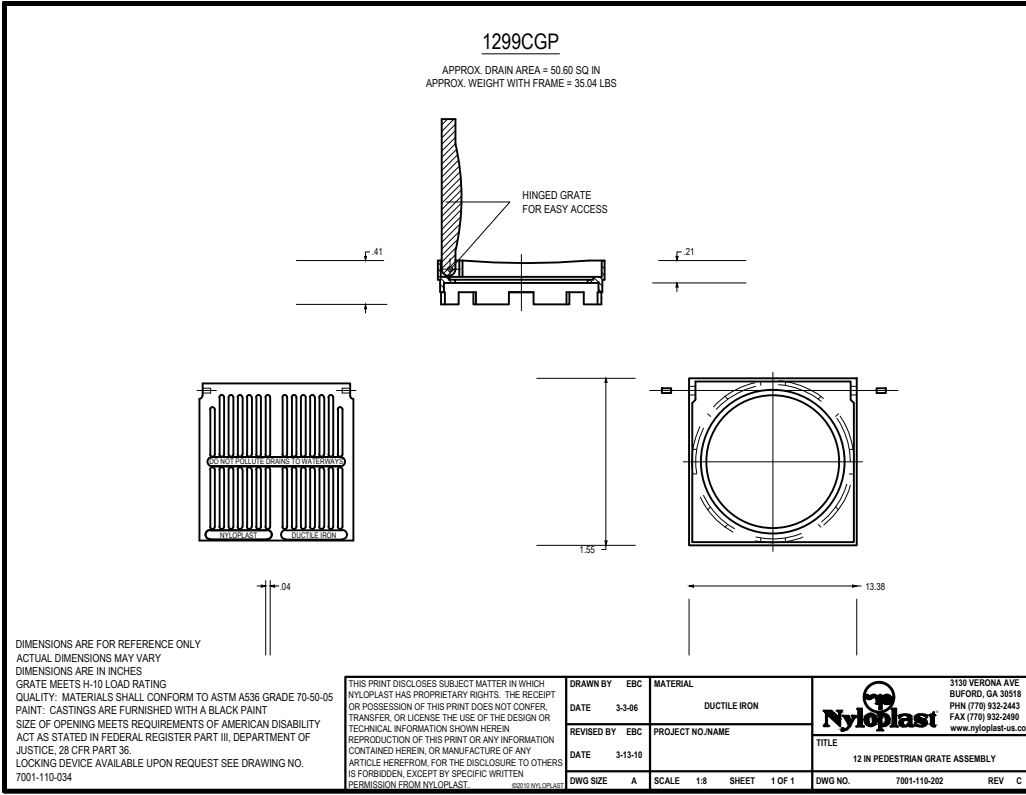
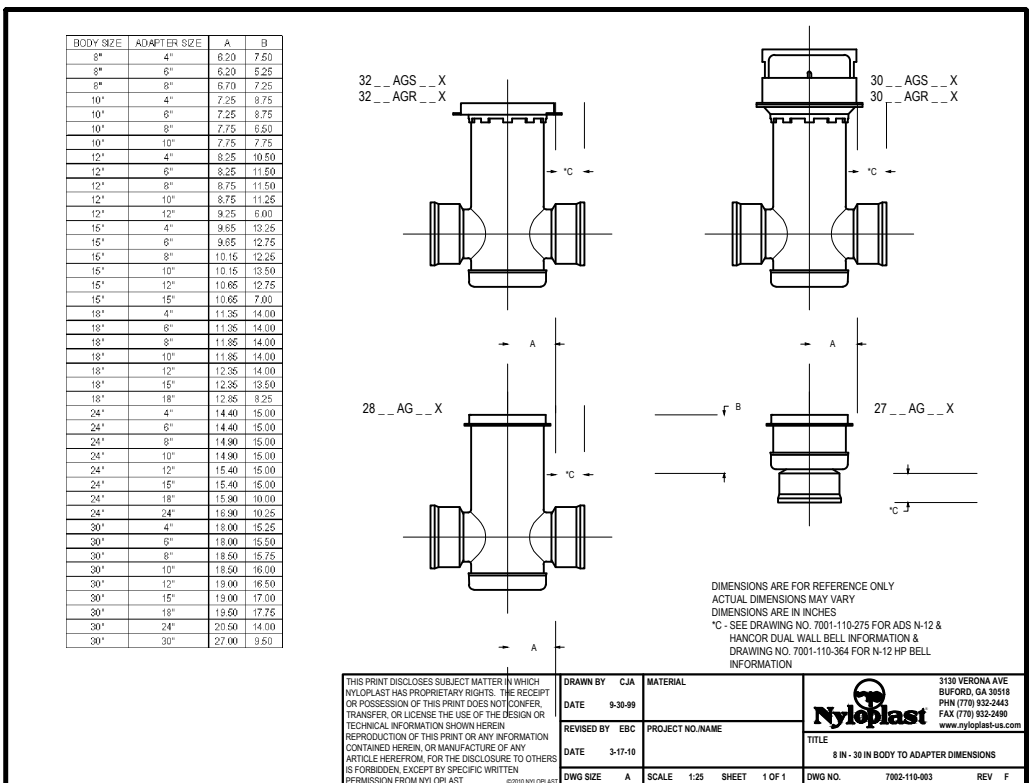
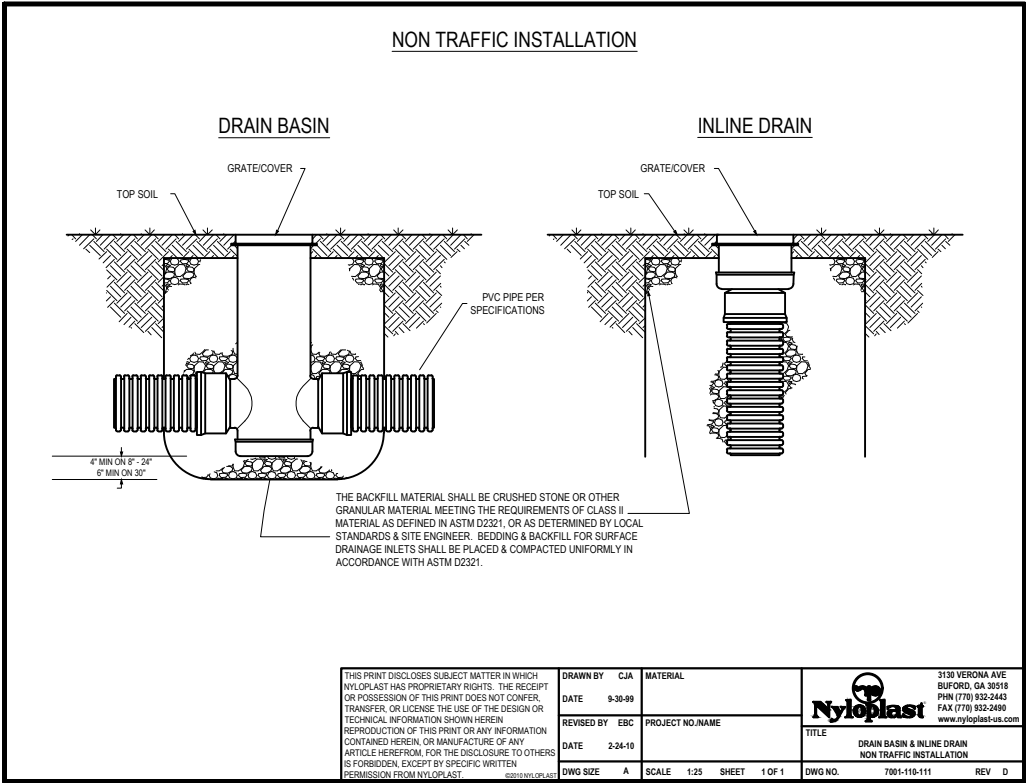
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AMERICAN BOULEVARD
CONSTRUCTION DETAILS

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UTILITY AND STREET
EXTENSION
PROJECT # 21-11

	BY	DATE	REVISIONS / ISSUES		
			NO.	DATE	REMARKS
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DESIGNED	SRL	08-2021			
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