PROJECT MANUAL & BID DOCUMENTS

FOR:

McNEILL INTERCOUNTY DRAINAGE DISTRICT

PROJECT:

PHASE 2: MAIN OPEN DITCH REPAIRS

LETTING DATE: AUGUST 18, 2026

Owner: Monona & Harrison Counties Joint
Board of Supervisors
610 Iowa Ave
Onawa, Iowa 51040

Engineer: MOR Engineering, PLLC
Caleb Rasmussen, PE
2255 IA-44
Hamlin, Iowa 50117

SECTION 00 0105
CERTIFICATIONS PAGE

TECHNICAL SPECIFICATIONS FOR:

McNEILL INTERCOUNTY DRAINAGE DISTRICT

PHASE 2 MAIN OPEN DITCH REPAIRS



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Caleb Rasmussen, P.E. Date 7/28/2026

License No.: 25734

My License Renewal Date is December 31, 2026

Sections covered by this seal:

All sections Listed in Table of Contents

END OF SECTION

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PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION 00 0110
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STANDARD DETAILS

- DR-101 PIPE CULVERT (BEDDING AND BACKFILL)

Notice of Bid Letting for the Construction of the McNeill Intercounty Drainage District Phase 2 Main Open Ditch Repairs for the McNeill Intercounty Drainage District, and the taking of bids for such construction.

Filling Information

Sealed bids for the work comprising the repair as stated below must be filed before 9:00 am on September 1, 2026, to the McNeill Drainage District in the office of the Monona County Auditor, 610 Iowa Ave, Onawa, Iowa 51040. No faxed or electronic bids will be permitted.

All sealed bids in connection therewith shall be submitted to the Auditor on or before the time herein set for letting. All proposals shall be made on official proposal forms furnished by the Architect/Engineer, and must be enclosed in a separate sealed envelope and plainly identified and addressed to the Auditor of Monona County. If a bid is to be mailed, the bid envelope shall be sealed in a regular mailing envelope. FAX and E-mail Bids will not be accepted. The Owner reserves the right to reject any or all bids and to waive informalities and to hold and consider the bids for 60 days after the date of the bid opening. The contract will be awarded to the lowest, responsive, responsible bidder.

Prebid Meeting

An optional Prebid Meeting will be held at 11:00am on August 24, 2026 in the Drainage Clerks Offices at 610 Iowa Ave, Onawa, Iowa 51040.

Letting Information

Sealed bid proposals will be publicly opened and tabulated during, at 9:30 am on September 1, 2026, in the Board Room of the Monona County Supervisors. The Joint Board of Supervisors, acting as Drainage District Trustees reserves the right to reject any and all bids.

Contract Start and Time of Completion

Work will be allowed to commence as soon as successful execution of the contract and preconstruction meeting is held, as stated in the notice to proceed. All work under the contract must be substantially completed on or before April 2, 2027. Liquidated damages will begin immediately after the Final completion date, April 19, 2027, subject to any changes in the contract period as provided for in these specifications, and granted by the Joint Board of Supervisors acting as Trustees.

Location & Commencement

Project Scope: The work to be let is located in Sections 9, 15, 16, 22, 27, 33, 34 of Franklin Township (T83N R45W) Monona County, Iowa and Section 4 of Sherman Township (T82N, R45W) Monona County, Iowa.

A more detailed description of the kinds and approximate quantities of materials and types of construction for which bids will be received are set forth in the Bidding Documents prepared by MOR Engineering, PLLC, of Hamlin, IA, which, together with the proposed form of contract, have heretofore been approved by the Joint Board of Supervisors, and are now on file for public examination in the office of the Auditor, and are by this reference made part hereof as though fully set out and incorporated herein.

Bid Security

Per Iowa Code 468.35, each proposal shall be accompanied by a bid bond, certified check, cashier's check or certified share draft in a separate sealed envelope, clearly marked “Bid Bond” or Bid Security”, in an amount equal to five percent (5%) of the total amount of the bid proposal.

The successful bidder will be required to furnish a corporate surety bond in an amount equal to one-hundred percent (100%) of the contract price, said bond to be issued by a responsible surety approved by the Owner, and shall guarantee the faithful performance of the contract and the terms and conditions therein contained, the payment for materials used in the project and the maintenance of said improvements in good repair for not less than one (1) year from the time of acceptance of said improvements by the Owner.

Payment

Payment of the cost of said project will be made from such cash funds or drainage warrants of the Owner as may be legally used for said purpose at the discretion of the Owner.

The Owner is exempt from paying Sales and Use Tax and will supply Contractor with an “Iowa Sales Tax Exemption Certificate” and an authorization letter to allow the Contractor to buy equipment and material for the project without paying Sales and Use tax.

Retainage

Contract Retainage is set at 3%. The Contractor will be paid ninety-seven per cent (97%) of the Architect’s/Engineer's estimate of the value of acceptable work completed at the end of the preceding month. Final payment will be made not less than thirty-one (31) days after completion of the work and acceptance by the Owner, subject to the conditions and in accordance with the provisions of Chapter 573 of the Code of Iowa.

Final Payment

No such final payment will be due until the Contractor certifies to Owner the that the materials, labor, and services involved in the final estimate have been paid for in accordance with the requirements stated in the specifications. See Specification 01 7710 for project closeout requirements.

Liquidated Damages

Liquidated Damages are set at $800/day and will begin immediately after the final completion date.

Materials, Works, and Provisions

Items of Work Include:

MOBILIZATION
HEAVY VEGITATIVE CLEARING WITH TREE REMOVAL
WEED MANAGEMENT
DEWATERING
OPEN DITCH EXCAVATION
SPOIL BANK LEVELING, TWO SIDED
SPOIL BANK LEVELING, ONE SIDED
FURNISH & INSTALL ROCK RIPRAP, IA DOT CLASS E
RURAL FERTILIZING & SEEDING
URBAN FERTILIZING & SEEDING
OPEN DITCH FERTILIZING & SEEDING
FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 24" DIA.
FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 18" DIA
REMOVE AND SALVAGE 72" CMP, STA 619+40
REMOVE AND SALVAGE 72" CMP, STA 683+81

By virtue of statutory authority, a preference will be given to products and provisions grown and coal produced within the State of Iowa.

In accordance with Iowa statutes, a resident bidder shall be allowed a preference as against a nonresident bidder from a state or foreign country if that state or foreign country gives or requires any preference to bidders from that state or foreign country, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country. The preference allowed shall be equal to the preference given or required by the state or foreign country in which the nonresident bidder is a resident. In the instance of a resident labor force preference, a nonresident bidder shall apply the same resident labor force preference to a public improvement in this state as would be required in the construction of a public improvement by the state or foreign country in which the nonresident bidder is a resident.

Failure to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed nonresponsive and rejected.

Plans and specifications governing the construction of the proposed improvements have been prepared by the Architect/Engineer. These plans and specifications, and the proceedings of the Joint Board of Supervisors acting as Trustees referring to and defining said repairs, are hereby made a part of this Notice and the proposed contract by reference, and the proposed contract shall be executed to comply therewith.

Copies of said plans and specifications and form of contract are now on file for examination by bidders. Paper copies may also be obtained from MOR Engineering, PLLC (MOR), 2255 IA-44 Hamlin, Iowa, or calling 712-304-1958, upon deposit of One-hundred dollars ($100) which shall be refunded if plans and specifications are returned to MOR, Inc no later than fourteen (14) days following award of project. If the plans and specifications are not returned within the allotted time and in a reusable condition, the

deposit shall be forfeited. Please call ahead to make sure that bidding documents are ready to pick up when you arrive.

Drawings, specifications, and other Bidding Documents may also be obtained online at www.questcdn.com. If you do not already have a free membership, you may sign up for one to gain access to the documents. The QuestCDN eBidDoc number is 10302107. There is no fee to access a pdf copy of the documents online.

Documents are viewable at www.questcdn.com, projects.constructconnect.com, and mononacountyiowa.gov/bid_notices/

Any bidder or equipment supplier whose firm or affiliate is listed in the GSA publication “List of Parties Excluded from Federal Procurement and Non-procurement Programs” will be prohibited from the bidding process. Anyone submitting a bid who is listed in this publication will be determined to be a non-responsive bidder in accordance with 40 CFR Part 31.

Published upon order of the McNeill Intercounty Drainage District.

McNeill Intercounty Drainage District
BY _____
Bo Fox
Chair of the Board, Monona County

ATTEST:
BY _____
Peggy Rolph
Monona County Auditor

SECTION 00 2000
INSTRUCTION TO BIDDERS FOR CONSTRUCTION CONTRACT

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ARTICLE 1 - DEFINED TERMS

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

A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders. Issuing office address:

ARTICLE 2 - BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder register as a plan holder with the Issuing Office at such website, and obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.

2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.

2.05 Electronic Documents

A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.

1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version 2017 or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.05.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in

printed paper versions of the documents, and for Bidder's reliance upon such derived information.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within seven (7) days of Owner's request, the lowest responsible Bidder must submit the following information:

A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.

B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.

C. Bidder's state or other contractor license number, if applicable.

D. Subcontractor and Supplier qualification information.

E. Other required information regarding qualifications.

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4 - PRE-BID CONFERENCE

4.01 A non-mandatory pre-bid conference will be held at 11:00 am on August 24, 2026 at the Monona County Courthouse in the Drainage Clerks Office.

ARTICLE 5 - SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 *Site and Other Areas*

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

5.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:
    a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
    b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
    c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
    d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 *Other Site-related Documents*

A. Aerial drone video is available upon email request made to the engineer of record. Video will be made available by URL link within 24 hours of receipt of request. No physical data carrying device will be used to supply the video footage. Delivered document will be either through webservice or .mp4 file type available to download.

5.04 *Site Visit and Testing by Bidders*

A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.

B. Bidders visiting the Site are required to arrange their own transportation to the Site.

C. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

D. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

E. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

F. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.06 *Other Work at the Site*

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 6 - BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.

B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.

7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:

A. Email c.rasmussen@doMORengineering.com

B. Subject line of email shall include Project Name, as indicated on the front page of the Project Manual.

C. All Requests for Information must be submitted by August 20, 2026 at 10 am. If no addendum is required, all answers will be posted on August 24, 2026 at end of business day.

7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than ten days prior to the date for opening of Bids may not be answered.

7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 08 - BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner's damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Contract or **61** days after the Bid opening, whereupon Bid security furnished by such Bidders will be released. .

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.

9.02 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10 - SUBSTITUTE AND "OR EQUAL" ITEMS

10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by

Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner.

10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 11 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

11.02 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work within 24 hours after Bid opening:

A. All portions of work.

11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a 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.

11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12 - PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

12.02 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.

A. The corporate seal must be affixed and attested by the corporate secretary or an assistant corporate secretary.

12.03 A Bid by a partnership must 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 must be shown.

12.04 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.

12.05 A Bid by an individual must show the Bidder's name and official address.

12.06 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.

12.07 All names must be printed in ink below the signatures.

12.08 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

12.09 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.

12.10 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.

12.11 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13 - BASIS OF BID

13.01 *Unit Price*

A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of 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.

ARTICLE 14 - SUBMITTAL OF BID

14.01 Each prospective bidder is furnished one copy of the Bidding Documents with one separate unbound copy of the Bid Form and Bid Bond. The bidding Documents may be retained by the Bidder. The unbound copy of the Bid Form is to be completed and submitted with the Bid security.

14.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and shall be enclosed in an opaquesealed envelope plainly marked with the notation "BID ENCLOSED", the project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), and the name and address of Bidder. The bid shall be accompanied by the Bid security and other required documents in a separate sealed envelope plainly marked with the notation "BID SECURITY", the project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), and the name and address of Bidder.

ARTICLE 15 - MODIFICATION AND WITHDRAWAL OF BID

15.01 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.

15.02 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, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

15.03 A Bid may not be modified or withdrawn following the date and time for the opening of Bids.

ARTICLE 16 - OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, 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

18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared unacceptable.

B. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.

C. Failure to provide security deposit, bonding or insurance requirements may, at the discretion of Owner, be cause to invalidate the bid.

18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.

18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.

18.05 *Evaluation of Bids*

A. In evaluating Bids, Owner will consider whether 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.

B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19 - BONDS AND INSURANCE

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20 - SIGNING OF AGREEMENT

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 21 - SALES AND USE TAXES

21.01 Owner is exempt from Iowa state sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes must not be included in the Bid. Refer to Paragraph SC-7.10 of the Supplementary Conditions for additional information.

ARTICLE 22 - CONTRACTS TO BE ASSIGNED

ARTICLE 23 - FEDERAL REQUIREMENTS

23.01 Federal requirements in Article 19 of the Supplementary Conditions apply to this Contract.

END OF SECTION

SECTION 00 4100
BID FORM FOR CONSTRUCTION CONTRACT

THE TERMS USED IN THIS BID WITH INITIAL CAPITAL LETTERS HAVE THE MEANINGS STATED IN THE INSTRUCTIONS TO BIDDERS, THE GENERAL CONDITIONS, AND THE SUPPLEMENTARY CONDITIONS.

ARTICLE 1 - OWNER AND BIDDER

1.01 This Bid is submitted to: McNeill Intercounty Drainage District, C/O Monona County Auditor, 610 Iowa Avenue, Onawa, Iowa 51040

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - ATTACHMENTS TO THIS BID

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

A. Required Bid security;

B. Bidders Proof of Responsibility Form;

C. List of Proposed Subcontractors;

D. List of Available Equipment;

E. List of References

ARTICLE 3 - BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Unit Price Bids*

A. Bidder will perform the following Work at the indicated unit prices:

BASE BID					
Item No.	**Description**	**Unit**	**Estimated Quantity**	**Bid Unit Price**	**Bid Amount**
1	MOBILIZATION	LS	1		
2	HEAVY VEGETATIVE CLEARING WITH TREE REMOVAL	AC	3.5		
3	WEED MANAGEMENT	LS	1		
4	DEWATERING	LS	1		
5	OPEN DITCH EXCAVATION	CY	143,504		
6	SPOIL BANK LEVELING (TWO SIDES)	STA	342.4		
7	SPOIL BANK LEVELING (ONE SIDE)	STA	12.4		
8	FURNISH & INSTALL RIPRAP, IA DOT CLASS E	TN	1,050		
9	RURAL FERTILIZING & SEEDING	AC	3.5		
10	RURAL FERTILIZING & SEEDING	AC	3.0		
11	OPEN DITCH FERTILIZING & SEEDING	STA	345.8		
12	FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 24" DIA.	LF	242		
13	FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 18" DIA.	LF	3,219		
14	REMOVE AND SALVAGE 72" CMP, STA 619+40	EA	1		
15	REMOVE AND SALVAGE 72" CMP, STA 683+81	EA	1		
Total of All Unit Price Bid Items					

B. Bidder acknowledges that:
   1. each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item,
   2. estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents, and
   3. Contract will be awarded to the lowest responsible Bidder.

ARTICLE 4 BASIS OF BID—COST-PLUS FEE

4.01 N/A

ARTICLE 5 - PRICE-PLUS-TIME BID

5.01 N/A

ARTICLE 6 - TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated and special damages.

ARTICLE 7 - BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

7.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 35 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 8 - BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:
   1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
   2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
   3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
   4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
   5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
   6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
   7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:
1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
    a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
    b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
    c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
    d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:
Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Phone:: _____

Email: _____

Address: _____

_____

_____

Bidder's Contractor License No: (if applicable):	_____

END OF SECTION

Bidder Status Form

To be completed by all bidders — Part A

Please answer "Yes" or "No" for each of the following:

☐ Yes ☐ No My company is authorized to transact business in Iowa.
(To help you determine if your company is authorized, please review the worksheet on the next page).

☐ Yes ☐ No My company has an office to transact business in Iowa.

☐ Yes ☐ No My company's office in Iowa is suitable for more than receiving mail, telephone calls, and email.

☐ Yes ☐ No My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.

☐ Yes ☐ No My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.

If you answered "No" to one or more questions above, your company is a nonresident bidder. Please complete Parts C and D of this form.

To be completed by resident bidders — Part B

My company has maintained offices in Iowa during the past 3 years at the following addresses:

Dates: _____ /_____ /_____ to _____ /_____ /_____ Address: _____

City, State, Zip: _____

Dates: _____ /_____ /_____ to _____ /_____ /_____ Address: _____

City, State, Zip: _____

Dates: _____ /_____ /_____ to _____ /_____ /_____ Address: _____

You may attach additional sheet(s) if needed. City, State, Zip: _____

To be completed by non-resident bidders — Part C

1. Name of home state or foreign country reported to the Iowa Secretary of State:

_____

2. Does your company's home state or foreign country offer preferences to resident bidders, resident labor force preferences or any other type of preference to bidders or laborers? ☐ Yes ☐ No

3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

_____

_____

You may attach additional sheet(s) if needed.

To be completed by all bidders — Part D

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

Signed Name: _____ Signature: _____

Firm Name: _____ Date: _____

Email Address: _____ Phone Number: _____

This form has been approved by the Department of Administrative Services Director.

Worksheet: Authorization to Transact Business

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

☐ Yes ☐ No My business is currently registered as a contractor with the Iowa Division of Labor.

☐ Yes ☐ No My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.

☐ Yes ☐ No My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.

☐ Yes ☐ No My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.

☐ Yes ☐ No My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.

☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.

☐ Yes ☐ No My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.

☐ Yes ☐ No My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.

☐ Yes ☐ No My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.

☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.

☐ Yes ☐ No My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

BID BOND (PENAL SUM FORM)

Bidder Name: **[Full formal name of Bidder]** Address *(principal place of business)*: **[Address of Bidder's principal place of business]**	**Surety** Name: **[Full formal name of Surety]** Address *(principal place of business)*: **[Address of Surety's principal place of business]**
Owner Name: **[Full formal name of Owner]** Address *(principal place of business)*: **[Address of Owner's principal place of business]**	**Bid** Project *(name and location)*: **[Owner project/contract name, and location of the project]** Bid Due Date: **[Enter date bid is due]**
Bond Penal Sum: **[Amount]** Date of Bond: **[Date]**	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder _____ *(Full formal name of Bidder)* By: _____ *(Signature)* Name: _____ *(Printed or typed)* Title: _____ Attest: _____ *(Signature)* Name: _____ *(Printed or typed)* Title:	Surety _____ *(Full formal name of Surety) (corporate seal)* By: _____ *(Signature) (Attach Power of Attorney)* Name: _____ *(Printed or typed)* Title: _____ Attest: _____ *(Signature)* Name: _____ *(Printed or typed)* Title:
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

EJCDC® C-430, Bid Bond (Penal Sum Form).
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1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
    3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
    3.2. All Bids are rejected by Owner, or
    3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

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SECTION 00 5100
NOTICE OF AWARD

Date of Issuance: Date
Owner: McNeill Intercounty Drainage District
Owner's Project No: _____
Engineer: _____
Engineer's Project No: _____
Project: McNeill Intercounty Drainage District Phase 2 Main Open Ditch Repairs
Contract Name: McNeill Intercounty Drainage District Phase 2 Main Open Ditch Repairs
Bidder: _____
Bidder's Address: Bidder street address, city, state, zip
You are notified that Owner has accepted your Bid dated MM-dd-yyyyfor the above Contract, and that you are the Successful Bidder and are awarded a Contract for:
Describe Work, alternates, or section of Work awarded
The Contract Price of the awarded Contract is $_____. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.
3 unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.
X _____Drawings will be delivered separately from the other Contract Documents.
You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner number of copies sent counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): N/A

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.
Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.
Owner: McNeill Intercounty Drainage District

By (signature): _____
Name (printed): _____
Title: _____
Copy: Engineer
END OF SECTION

SECTION 00 5200
AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between McNeill Intercounty Drainage District ("Owner") and Contractor ("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1 - WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE 2 MAIN OPEN DITCH REPAIRS

PROJECT SCOPE: [THE WORK TO BE LET IS LOCATED IN SECTIONS 9, 15, 16, 22, 27, 33, 34 OF FRANKLIN TOWNSHIP (T83N R45W) MONONA COUNTY, IOWA AND SECTION 4 OF SHERMAN TOWNSHIP (T82N, R45W) MONONA COUNTY, IOWA.]

ARTICLE 2 - THE PROJECT

3.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE 2 MAIN OPEN DITCH REPAIRS

ARTICLE 3 - ENGINEER

4.01 The Owner has retained _____("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

4.02 The part of the Project that pertains to the Work has been designed by Engineer.

ARTICLE 4 - CONTRACT TIMES

5.01 *Time is of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

5.02 *Contract Times: Dates*

A. The Work will be substantially complete on or before Substantial Completion Date, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before December 15th 2026.

5.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
   1. *Substantial Completion:* Contractor shall pay Owner $250 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

ARTICLE 5 - CONTRACT PRICE

6.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 - PAYMENT PROCEDURES

7.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

7.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the 5th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
    a. 90 percent of the value of the Work completed (with the balance being retainage).
    b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

7.03 *Final Payment*

A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the Supplementary Conditions.

7.04 Payments in accordance with Paragraphs 6.02 and 6.03 above shall be in cashable and/or stamped interest bearing Drainage Warrants drawn in favor of Contractor on the drainage fund of the Drainage District and or in Drainage Improvement Certificates.

A. Drainage Warrants

1. Drainage Warrants, if stamped "not paid for want of funds", shall bear interest at a rate fixed by the Owner not to exceed the maximum set by law in accordance with Chapter 468 of the Code of Iowa, as amended.

B. Improvement Certificates

1. Owner may issue Drainage Improvement Certificates payable to bearer or Contractor in payment or part payment of the Work. Owner may require Contractor or bearer to exchange outstanding Drainage Warrants at face value, together with accrued interest, for Drainage Improvement Certificates. Each of such certificates shall state the amount of one or more drainage assessments or part thereof made against property in the district, designating it and the owner thereof liable for the payment of such assessments. Said certificates shall be negotiable and transfer the bearer all right and interest in and to the tax in every such assessment of part thereof described in such certificates, and shall authorize such bearer to collect and receive every assessment embraced in said certificate by or through any of the methods provided by law for their collection as the same mature. Such certificates shall bear interest at a rate fixed by Owner not exceeding the maximum set by law in accordance with Chapter 468 of the Code of Iowa, as amended; interest payable annually; and shall be paid by the taxpayer to the County Treasurer, who Shall receipt for the same and cause the amount to be credited on the certificates issued therefore.

7.05 *Interest*

A. All amounts not paid when due as provided in Paragraph 15.01.E.3 of the General Provisions shall bear interest at the same rate as the stamped drainage warrants used in payment. If stamped drainage warrants are not used in payment, then the rate shall be 3 percent plus the Wall Street Journal prime rate on the Effective Date of the Agreement.

ARTICLE 7 - CONTRACT DOCUMENTS

8.01 *Contents*

A. The Contract Documents consist of all of the following:
   1. This Agreement.
   2. Instructions to Bidders
   3. Bid Form
   4. Bid Bond
   5. Notice of Award
   6. Certificate of Substantial Completion
   7. Bonds:
      a. Performance bond (together with power of attorney).
      b. Payment bond (together with power of attorney).
   8. General Conditions (not attached but incorporated by reference and provided in the Project Manual).
   9. Supplementary Conditions (not attached but incorporated by reference and provided in the Project Manual).
   10. Specifications as listed in the table of contents of the project manual (not attached but incorporated by reference and provided in the Project Manual).
   11. Drawings (not attached but incorporated by reference) consisting of number sheets with each sheet bearing the following general title: McNeill Intercounty Drainage District Phase 2 Main Open Ditch Repairs.
   12. Addenda (numbers number to number, inclusive).
   13. Exhibits to this Agreement (not attached but incoroporated by reference) (enumerated as follows):
      a. Notice to Bidders
      b. Contractor’s Bid
      c. Bidder Status Form
      d. House File 2622-G. (Contractors' Exempt Purchases of Equipment, Supplies and Building Material)
      e. Iowa Sales Tax Exemption Certificate.
   14. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
      a. Work Change Directives.
      b. Change Orders.
      c. Warranty Bond, if any.

B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8 - REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

9.01 *Contractor’s Representations*

A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:

1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

9.02 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
   1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
   2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
   3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

9.03 *Standard General Conditions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary Conditions.

9.04 *Other Provision*

A. This agreement is prepared in accordance with Chapter 468 of the 2023 Code of Iowa, as amended. Owner and Contractor agree that in the event the provisions of this Agreement do not comply with requirements of Chapter 468 of the 2023 Code of Iowa, as amended, the provisions of the latter shall prevail.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on indicate date on which Contract (which is the Effective Date of the Contract).

Owner: McNeill Intercounty Drainage District		Contractor: Contractor	
(typed or printed name of organization)		(typed or printed name of organization)	
By:		By:	
	(individual's signature)		(individual's signature)
Date:		Date:	
	(date signed)		(date signed)
Name:		Name:	
	(typed or printed)		(typed or printed)
Title:		Title:	
	(typed or printed)		(typed or printed)
		(If Type of Entity is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)	
Attest:		Attest:	
	(individual's signature)		(individual's signature)
Title:		Title:	
	(typed or printed)		(typed or printed)
Address for giving notices:		Address for giving notices:	
C/O Monona County Auditor, 610 Iowa Avenue, Onawa, Iowa 51040			
Designated Representative:		Designated Representative:	
Name:		Name:	
	(typed or printed)		(typed or printed)
Title:		Title:	
	(typed or printed)		(typed or printed)
Address:		Address:	
Phone:		Phone:	
Email:		Email:	
(If Type of Entity is a corporation, attach evidence of authority to sign. If Type of Entity is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)		License No.: (where applicable) State:	

END OF SECTION

SECTION 00 6100
PERFORMANCE BOND

PERFORMANCE BOND

Contractor Name: Contractor Address (principal place of business): Contractor Address City, State	**Surety** Name: Surety Name Address (principal place of business): Surety Street Address City, State
Owner Name: McNeill Intercounty Drainage District Mailing address (principal place of business): C/O Monona County Auditor, 610 Iowa Avenue, Onawa, Iowa 51040	**Contract** Description (name and location): McNeill Intercounty Drainage District Phase 2 Main Open Ditch Repairs Monona County, Iowa Contract Price: Effective Date of Contract: Contract effective date
Bond Bond Amount: Bond Amount Date of Bond: Date of Bond *(Date of Bond cannot be earlier than Effective Date of Contract)*	
Modification to this Bond form: Describe Modification or enter "None"	
Contractor as Principal Contractor *(Full formal name of Contractor)*	Surety Surety *(Full formal name of Surety) (corporate seal)*

By: *(Signature)* Name: *(Printed or typed)* Title: Title Attest: *(Signature)* Name: *(Printed or typed)* Title:	By: *(Signature) (Attach Power of Attorney)* Name: *(Printed or typed)* Title: Title Attest: *(Signature)* Name: *(Printed or typed)* Title:
Notes: (1) Provide supplemental execution by any additional parties, such as joint ventures. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
   - 3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
   - 3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
   - 3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
    5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
    5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
    5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
    5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
        5.4.1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
        5.4.2. Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
    7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
    7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
    7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
14. Definitions
    14.1 *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
    14.2 *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
    14.3 *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
    14.4 *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
    14.5 Contract Documents—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: None

END OF SECTION

SECTION 00 6150
PAYMENT BOND

Contractor Name: Contractor Address (principal place of business): Bidder Address	**Surety** Name: Surety Name Address (principal place of business): Surety Address
Owner Name: McNeill Intercounty Drainage District Mailing Address (principal place of business): C/O Monona County Auditor, 610 Iowa Avenue, Onawa, Iowa 51040	**Contract** Description (name and location): McNeill Intercounty Drainage District Phase 2 Main Open Ditch Repairs Monona County, Iowa Contract Price: 0 Effective Date of Contract: _____
Bond Bond Amount: _____ Date of Bond: _____ (Date of Bond cannot be earlier than Effective Date of Contract)	
Modification to this Bond form: Enter "None" or See Paragraph 9 for modifications	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set fourth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal Contractor By: (signature)	Surety (Full formal name of Surety) (corporate seal) By: (signature) (Attach Power of Attorney)

Name: (printed or typed) Title: Attest: (signature) Name: (printed or typed) Title:	Name: (printed or typed) Title: Attest: (signature) Name: (printed or typed) Title:
Notes: (1) Provide supplemental execution by any additional parties, such as joint ventures. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
   5.1 Claimants who do not have a direct contract with the Contractor
      A. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done

or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

B. have sent a Claim to the Surety (at the address described in Paragraph 13).

5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
   7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
   7.2 Pay or arrange for payment of any undisputed amounts.
   7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the

Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions

16.1 *Claim*—A written statement by the Claimant including at a minimum:

A. The name of the Claimant;
B. The name of the person for whom the labor was done, or materials or equipment furnished;
C. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
D. A brief description of the labor, materials, or equipment furnished;
E. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
F. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
G. The total amount of previous payments received by the Claimant; and
H. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

18. Modifications to this Bond are as follows: None

END OF SECTION

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:
Engineer:
Contractor:
Project:
Contract Name:

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

This ☐ Preliminary ☐ Final Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

[Describe the portion of the work for which Certificate of Substantial Completion is issued]

Date of Substantial Completion: **[Enter date, as determined by Engineer]**

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. 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.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities: ☐ None ☐ As follows:

[List amendments to Owner's Responsibilities]

Amendments to Contractor's Responsibilities: ☐ None ☐ As follows:

[List amendments to Contractor's Responsibilities]

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

[List attachments such as punch list; other documents]

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.

Engineer

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

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Contractor's Application for Payment

Owner:		**Owner's Project No.:**	
Engineer:		**Engineer's Project No.:**	
Contractor:		**Contractor's Project No.:**	
Project:			
Contract:			
Contract Type:	**Completion Date**	**Final Completion:**	April 19, 2026
Application No.:		**Application Date:**	
Application Period:	**From**	**to**	

1. Original Contract Price		$ -
2. Net change by Change Orders		$ -
3. Current Contract Price (Line 1 + Line 2)		$ -
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)		$ -
5. Retainage		
a. 3% X $ -	Work Completed	$ -
b. 3% X $ -	Stored Materials	$ -
c. Total Retainage (Line 5.a + Line 5.b)		$ -
6. Amount eligible to date (Line 4 - Line 5.c)		$ -
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application		$ -
9. Balance to finish, including retainage (Line 3 - Line 4)		$ -

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:
(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;
(2) Title to 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 the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor:

Signature: **Date:**

Recommended by Engineer		**Approved by Owner**	
By:		**By:**	
Title:		**Title:**	
Date:		**Date:**	
Approved by Funding Agency			
By:		**By:**	
Title:		**Title:**	
Date:		**Date:**	

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Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner: _____ **Owner's Project No.:** _____
Engineer: _____ **Engineer's Project No.:** _____
Contractor: _____ **Contractor's Project No.:** _____
Project: _____
Contract: _____

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I	J	K	L
		Contract Information				Work Completed					
Bid Item No.	Description	Item Quantity	Units	Unit Price ($)	Value of Bid Item (C X E) ($)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) ($)	Materials Currently Stored (not in G) ($)	Work Completed and Materials Stored to Date (H + I) ($)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) ($)
Original Contract											
					-		-		-		-
					-		-		-		-
					-		-		-		-
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					-		-		-		-
				Original Contract Totals	$ -		$ -	$ -	$ -		$ -

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Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner: _____ **Owner's Project No.:** _____
Engineer: _____ **Engineer's Project No.:** _____
Contractor: _____ **Contractor's Project No.:** _____
Project: _____
Contract: _____

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I	J	K	L
		Contract Information				Work Completed					
Bid Item No.	Description	Item Quantity	Units	Unit Price ($)	Value of Bid Item (C X E) ($)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) ($)	Materials Currently Stored (not in G) ($)	Work Completed and Materials Stored to Date (H + I) ($)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) ($)
Change Orders											
					-		-		-		-
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				Change Order Totals	$ -		$ -	$ -	$ -		$ -
Original Contract and Change Orders											
				Project Totals	$ -		$ -	$ -	$ -		$ -

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Stored Materials Summary

Contractor's Application for Payment

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

Application No.: _____ **Application Period:** **From** _____ **to** _____ **Application Date:** _____

A	B	C	D	E	F	G	H	I	J	K	L	M
						Materials Stored			Incorporated in Work			
Item No. (Lump Sum Tab) or Bid Item No. (Unit Price Tab)	Supplier Invoice No.	Submittal No. (with Specification Section No.)	Description of Materials or Equipment Stored	Storage Location	Application No. When Materials Placed in Storage	Previous Amount Stored ($)	Amount Stored this Period ($)	Amount Stored to Date (G+H) ($)	Amount Previously Incorporated in the Work ($)	Amount Incorporated in the Work this Period ($)	Total Amount Incorporated in the Work (J+K) ($)	Materials Remaining in Storage (I-L) ($)
								-			-	-
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								-			-	-
					Totals	$ -	$ -	$ -	$ -	$ -	$ -	$ -

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CHANGE ORDER NO.: 1

Owner: Owner's Project No.:
Engineer: Engineer's Project No.:
Contractor: Contractor's Project No.:
Project:
Contract Name:
Date Issued: Effective Date of Change Order:

The Contract is modified as follows upon execution of this Change Order:
Description:

Attachments:

Change in Contract Price	Change in Contract Times
Original Contract Price:	Original Contract Times: Substantial Completion: Ready for final payment:
[Increase][Decrease] from previously approved Change Orders No. 1 to No.	**[Increase][Decrease]** from previously approved Change Orders No. 1 to No. Substantial Completion: Ready for final payment:
Contract Price prior to this Change Order: $0.00	Contract Times prior to this Change Order: Substantial Completion: Ready for final payment:
[Increase][Decrease] of this Change Order:	**[Increase][Decrease]** of this Change Order: Substantial Completion: Ready for final payment:
Contract Price incorporating this Change Order: $0.00	Contract Times with all approved Change Orders: Substantial Completion: Ready for final payment:

Recommend by Engineer

By:

Title:

Date:

Accepted By Contractor

By:

Title:

Date:

Authorized by Owner

By:

Title:

Date:

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					Amount	
Number	Item	Unit	Quantity	Unit Price	Increase	Decrease

TOTALS	$0.00	$0.00
NET CHANGE IN CONTRACT PRICE	$0.00	
INCREASE (DECREASE) IN CONTRACT TIME, days		

Justification For Changes:

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DIVISION 01

GENERAL

REQUIREMENTS

SECTION 01 2210
MEASUREMENTS AND PAYMENT

SECTION 1: DRAINAGE DISTRICT IMPROVEMENTS

1.0.1 BID ITEM NO. 1: MOBILIZATION

1. See Specification 01 7113 for Partial and Full payment details.

1.0.2 BID ITEM NO. 2: DEWATERING

A. Measure per completed job.
B. Includes all labor, tools, material and equipment required to remove excess surface water, and to perform necessary excavation, installation of dewatering structures, backfilling, shaping and miscellaneous associated work as required to complete the work and provide drainage, per specification 31 2319.
C. Includes monitoring and observation of the dewatering structures and removal of temporary works to allow flow to follow its natural drainage course during rain events.
D. Partial Payment: Percentage of lump sum for completed job bid according to the work complete as determined by the Engineer

1.0.3 BID ITEM NO. 3: CLEARING AND GRUBBING AND TREE REMOVAL

A. Measure per completed job. Minimal brush and trees are to be cleared throughout the project. Heavy tree removal areas noted on the plans. Contractor is to make his own field review and determinations.
B. Item consists of contractor providing all labor, tools and equipment required to clear, grub and dispose of all trees, within the right-of-way of the District or as indicated on the plans per specification 31 1100.
C. Payment: Percentage of lump sum for completed job bid according to the work completed as determined by the Engineer.

1.0.4 BID ITEM NO. 4: WEED MANAGEMENT

A. Measure per completed job.
B. Includes labor, tools, and equipment necessary for the completion of work during construction through contract Final Completion.
C. Payment: To be paid by percent complete through an assumed 28 week construction period including winter shut down.

1.0.5 BID ITEM NO. 5: OPEN DITCH EXCAVATION

A. Measure in cubic yards; measured by average end area method using cross sections taken for the preparation of the plans. The Material Table shown in the plans is indicative of drone survey. Volume has been computed through culverts and bridges.
B. Includes, per specification 31 2335; providing all labor, tools, materials and equipment required to excavate and deposit spoil, excavate and deposit beaver dams and silt/sand bars, shape and slope open ditch, remove spoil from culverts and bridges, construct access roads and repair overbank washouts.
C. No additional measurements will be made. The quantity of excavation on the contract bid form represents the final quantity.
D. Includes removal and disposal of fence remnants classified as rubbish.
E. Payment: Unit price per cubic yard excavated based upon the plan Material Table.

1.0.6 BID ITEM NO. 6 AND 7: SPOIL BANK LEVELING, TWO-SIDED AND ONE-SIDED

A. Measure in 100 feet stations along open ditch centerline with no deduction for public road right-of-way, intersecting open ditches or drains, private crossings or similar. Newly excavated spoil material on one or both sides included.
B. Includes providing all labor, tools, materials and equipment required to level, slope, shape, till and finish existing and newly excavated spoil to plan requirements. Also includes the cleanup of trash, rocks, rubble, etc. exposed during excavation and leveling operations.
C. Includes construction of temporary field entrances and dikes along the alignment of the

ditch; except furnishing and installing culverts. Necessary leveling of spoil to comply with specified cross section included.

D. Payment: Unit price per station completed as measured in the field. For partial leveling, a portion of the contract price may be approved for payment.

1.0.7 BID ITEM NO. 8: RIP RAP, IDOT CLASS D/E

A. Measure per ton of specified materials furnished and installed as verified by weigh tickets, rounded to the nearest hundredth of a ton.

B. Includes furnishing material and all labor, tools and equipment necessary for the placement of the rock riprap at the locations directed by the Engineer. See Section 31 3700 for gradation.

C. Includes furnishing and installing bedding materials as indicated on the plans. Includes excavation and shaping of slope/toe failures that may occur during construction, lateral ditch let downs, and culvert outlet protection.

D. Subsidiary to this item is all necessary excavation for placement of riprap.

E. Payment: Unit price per ton placed.

1.0.8 BID ITEM NO. 9 & 10: RURAL & URBAN FERTILIZING & SEEDING

A. Measure per acre to the nearest tenth of an acre of successfully prepped, fertilized, and seeded.

B. Includes furnishing specified fertilizer blend and seed mixes, bags, tags, germination tests and inoculates per specification 32 9220.

C. Payment: Unit price per acre with established seeding completed per specification 32 9220. Will only be paid once seed tags are provided to engineer.

1.0.9 BID ITEM NO. 11: OPEN DITCH FERTILIZING AND SEEDING:

A. Measure in 100 foot stations, to the nearest tenth of a station, of disturbed open ditch banks on both sides along centerline of the open ditch with no deduction for public road right-of-way, intersecting open ditches or drains, private crossings or similar items. Also includes seeding all road right-of-way and lateral ditches disturbed during completion of this work.

B. Includes furnishing specified fertilizer blend and seed mixes, bags, tags, germination tests and inoculates per specification 32 9221.

C. Includes seeding to be completed daily, per SUDAS 9010 2.02 E Type 5

D. Includes providing all labor, tools, materials and equipment required to secure, store, mix and apply the specified fertilizer and seed at the application rates specified in Section 329221.

E. Includes seeding for all lateral ditches where rip rap letdowns are installed, one (1)

F. Payment: Unit price per station with established seeding completed per specification 32 9221. Will only be paid once seed tags are provided to engineer.

1.0.10 BID ITEM NO. 12 & 13: CORRUGATED METAL SURFACE DRAIN, ALL DIAMETERS

A. Measure in lineal feet along centerline of newly furnished pipe. Fractions of feet disregarded.

B. Includes all labor, tools, material and equipment required to remove and dispose of any existing pipe or tile to be replaced, and to perform necessary trench excavation, installation of new pipe with coupling bands, backfilling, shaping and miscellaneous associated work as required to complete the work and provide drainage per specification 33 4114.

C. This item pertains only to new pipes used in surface drain installations. Coupling bands joining two new pipe sections salvaging and installing existing and/or new animal guards and flapgates are subsidiary to this item.

D. Payment: Unit price per linear foot installed.

1.0.11 BID ITEM NO. 14 & 15: REMOVE AND SALVAGE EXISTING CMP

A. Measure per each CMP removed.
B. Includes all labor, tools and equipment required to uncover, excavate, disassemble, remove, and salvage the 72” diameter field crossing culverts. This pipe and its appurtenances are to be removed and salvaged.
C. Payment: Unit price for each CMP removed and salvaged. Excessive damage to the pipe will result in payment deduction equivalent to new equivalent material delivered to the job site.

END OF SECTION

SECTION 01 3000.01
SHOP DRAWING SUBMITTAL FORM

ENGINEER'S PROJECT

PROJECT NAME: McNeill Intercounty Drainage District Phase 2 Main Open Ditch Repairs phase 2 main open ditch repairs

DIVISION NUMBER: _____SHOP DRAWING #:

DIVISION NAME: _____DATE:_

ITEM:_____

SUBCONTRACTOR OR SUPPLIER APPROVAL:	**GENERAL CONTRACTOR APPROVAL:**
ARCHITECT / ENGINEER REVIEW:	**OTHER REVIEWS AND COMMENTS:**

END OF SECTION

SECTION 01 3000.02
REQUIREMENTS FOR ELECTRONICALLY SUBMITTED SHOP DRAWINGS:

REQUIREMENTS

1.1.1 The Contractor shall fill out and include the submittal cover sheet included in the specification book.

1.1.2 The shop drawings are to be reviewed by the Contractor before submitting. All field required verifications and missing information shall be completed and duly noted on the drawings. The Contractor shall review them and verify that the products submitted are acceptable per the specifications. The Contractor shall then affix their stamp on the submittal cover sheet. Contractor must review – No pass through drawings are permitted.

1.1.3 The Contractor shall prepare a PDF document so that all sheets of the submittal are one document. Only ONE section per submittal is permitted. If the Contractor elects to use transmittal sheets they shall be a separate attachment.

1.1.4 Scans shall be in color. All pages shall be oriented correctly. Actual sheets sizes for the submittal shall be 8 ½ X 11 or 11 X 17 whenever possible. All print and details must be legible at those sizes. Larger file sheets such as 24 X 36 sheet size shall be identified in the email.

1.1.5 The email subject line shall list the five digit project number first followed by the project name. Then section number and brief description of the submittal contents shall follow the submittal number.

A. Example: 12345 Blue Earth County Ditch No. 00 – 4510: Pipe Product Data Sub #01

1.1.6 The PDF file or attachment shall be named as follow.

A. Example: 12345 Blue Earth County Ditch No. 00 – 4510: Pipe Product Data Sub #01.pdf

1.1.7 The Engineer will review the drawings, make notes as required on the drawings and stamp them. The PDF file shall then be renamed by adding the action required such as REVIEWED, FURNISH AS CORRECTED, REVISE AND RESUBMIT or REJECTED.

A. Example: 12345 Blue Earth County Ditch No. 00 – 4510: Pipe Product Data Sub #01-REVIEWED.pdf

1.1.8 The Engineer shall then use the original email and attach the reviewed drawings and forward back to the Contractor. The email that they are attached to will be considered the transmittal. Any notes in the body of the email form the Engineer shall be considered as written on the sheets of the PDF file.

1.1.9 No hard copies will be sent by the Engineer.

A. Note: Hard copies will be required to be included in the project close out submittals.

END OF SECTION

SECTION 01 4000
JOB AND QUALITY CONTROL

PART 1 - GENERAL

SCOPE

1.1.1 This Section outlines the responsibility for job and quality control on the project.

1.1.2 Said job and/or quality control shall not relieve the Contractor of his responsibility to furnish materials and workmanship in accordance with the plans and specifications.

1.1.3 Materials and workmanship not meeting the required standards are to be removed and replaced at Contractor's expense including all subsequent testing except where modified herein.

1.1.4 In all areas where the Contractor is responsible for testing it will be performed by an independent testing laboratory, approved by the Engineer and paid for by the Contractor.

1.1.5 Each entity responsible for job and quality control shall perform all tasks in accordance with local rules and regulations, these or referenced specifications and other recognized technical societies, organizations or bodies having relation to the respective materials and work being inspected and tested.

SUBMITTALS

1.2.1 For each and every test required to be made as a part of the work covered by here specifications; or ordered by the Engineer, Owner or Contractor; or supplementary testing that may be required as specified herein, at least one copy shall be distributed to the Engineer, the Contractor, the Owner and any governmental agency providing all or part of the project funding.

1.2.2 Each report shall state all details of each test to indicate satisfactory compliance with requirements of the Contract Documents. Also state in report any and all unsatisfactory conditions or failure to comply with requirements of the Contract Documents. This requirement is in addition to reporting immediately to the Contractor and the Engineer all items of unsatisfactory conditions and failure to comply with the requirements of the Contract Documents.

REQUIREMENTS OF CONTRACTOR

1.3.1 Staking: when construction staking is set forth as the Contractor's responsibility:

A. Provide any and all additional staking beyond the line and grade established by Engineer.
B. Utilize own forces or those of an outside survey organization.

1.3.2 Testing: when testing is set forth as the Contractor's responsibility:

A. Secure the services of an approved, independent testing laboratory.
B. Deliver to the Laboratory adequate quantities of representative samples of materials proposed for use which are required to be tested.
C. Advise Laboratory and Engineer sufficiently in advance of construction operations to allow Laboratory to complete any required check-tests and assign personnel and testing as specified.
D. Provide adequate facilities for safe storage and proper curing of test samples on project site.
E. Furnish such nominal labor as is required to assist Laboratory personnel in obtaining and handling samples at the site.

AUTHORITY AND DUTIES OF LABORATORY PERSONNEL

1.4.1 Laboratory personnel shall test materials, assemblies, specimens, and work performed including design mixes, methods and techniques as specified and report to Engineer the progress thereof.

1.4.2 If the material furnished and/or work performed fails to meet requirement of Contract Documents, laboratory personnel shall promptly notify the Contractor and Engineer of such failure.

1.4.3 Laboratory technicians do not act as foremen, or perform other duties for Contractor. Work will be checked as it progresses, but failure to detect any defective work or materials shall not, in any way, prevent later rejection when such defect is discovered.

1.4.4 The testing laboratory is not authorized to revoke, alter, relax, enlarge or release any requirement of the Contract Documents, or to approve or accept any portion of the work.

PART 2 - MATERIALS (SPECIFIED IN THEIR RESPECTIVE SECTIONS)

PART 3 - EXECUTION

STAKING

3.1.1 Cost of and responsibility for staking will be by the Owner.

3.1.2 Staking will be provided by the Engineer.

PROJECT OBSERVATION

3.2.1 Cost of and responsibility for project observation will be by the Owner, if provided.

3.2.2 Project observation will be provided by the Engineer, if requested.

TESTING

3.3.1 Cost of and responsibility for testing will be by the Contractor.

3.3.2 Testing will be provided by the Contractor through an independent testing laboratory.

3.3.3 Testing requirements are as follows:

Section	Title	Test	Responsibility of
Testing Not Required for the Project			

END OF SECTION

SECTION 01 4500
QUALITY REQUIREMENTS FOR DRAINAGE PROJECTS

PART 1 GENERAL

SUMMARY

1.1.1 This Section includes administrative and procedural requirements for quality assurance and quality control.

1.1.2 Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

A. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.

B. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.1.3 See Divisions 02 through 49 Sections for specific test and inspection requirements.

DEFINITIONS

1.2.1 Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

1.2.2 Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.

1.2.3 Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples [Approved mockups establish the standard by which the Work will be judged.]

1.2.4 Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

1.2.5 Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

1.2.6 Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

1.2.7 Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

1.2.8 Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

1.2.9 Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.2.10 Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

A. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name,

such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

1.2.11 Experienced: When used with an entity, "experienced" means having successfully completed a minimum of [one] previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

CONFLICTING REQUIREMENTS

1.3.1 General: 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. Refer uncertainties and requirements that are different, but apparently equal, to Engineer for a decision before proceeding.

1.3.2 Minimum Quantity or Quality Levels: 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. Refer uncertainties to Engineer for a decision before proceeding.

SUBMITTALS

1.4.1 Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.4.2 Reports: Prepare and submit certified written reports that include the following:

A. Date of issue.
B. Project title and number.
C. Name, address, and telephone number of testing agency.
D. Dates and locations of samples and tests or inspections.
E. Names of individuals making tests and inspections.
F. Description of the Work and test and inspection method.
G. Identification of product and Specification Section.
H. Complete test or inspection data.
I. Test and inspection results and an interpretation of test results.
J. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
K. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
L. Name and signature of laboratory inspector.
M. Recommendations on retesting and reinspecting.

1.4.3 Permits, Licenses, and Certificates: For Owner's and Engineer’s records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

QUALITY ASSURANCE

1.5.1 General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

1.5.2 Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

1.5.3 Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

1.5.4 Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

1.5.5 Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

1.5.6 Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

A. Requirement for specialists shall not supersede building codes and regulations governing the Work.

1.5.7 Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

A. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
B. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

1.5.8 Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.5.9 Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

A. Build mockups in location and of size indicated or, if not indicated, as directed by Engineer.
B. Notify Engineer [seven] days in advance of dates and times when mockups will be constructed.
C. Demonstrate the proposed range of aesthetic effects and workmanship.
D. Obtain Engineer's approval of mockups before starting work, fabrication, or construction.
E. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
F. Demolish and remove mockups when directed, unless otherwise indicated.

1.5.10 Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 49.

QUALITY CONTROL

1.6.1 Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

A. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
B. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

1.6.2 Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

A. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

1. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

B. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

C. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

D. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

E. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

1.6.3 Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

1.6.4 Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

1.6.5 Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

A. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

B. Determine the location from which test samples will be taken and in which in-situ tests are conducted.

C. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

D. Submit a certified written report of each test, inspection, and similar quality-control service for each and every test required to be made as a part of the work covered by these specifications; or ordered by the Engineer, Owner, or Contractor; or supplementary testing that may be required as specified herein. At least one copy of each report shall be distributed to each of the Engineer, the Contractor, the Owner, and any governmental agency providing all or part of the project funding.

E. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

F. Do not perform any duties of Contractor.

1.6.6 Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

A. Access to the Work.

B. Incidental labor and facilities necessary to facilitate tests and inspections.

C. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.

D. Facilities for storage and field curing of test samples.

E. Delivery of samples to testing agencies.

F. Preliminary design mix proposed for use for material mixes that require control by testing agency.

G. Security and protection for samples and for testing and inspecting equipment at Project site.

1.6.7 Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

A. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.6.8 Requirements of Contractor:

A. Staking: when construction staking is set forth as the Contractor’s responsibility.

1. Provide any and all additional staking beyond the line and grade established by the Engineer.
2. Utilize own forces or those of an outside survey organization.

SPECIAL TESTS AND INSPECTIONS

1.7.1 Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1.7.2 Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:

A. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
B. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
C. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
D. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
E. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
F. Retesting and reinspecting corrected work.

PART 2 PRODUCTS (NOT USED, SPECIFIED IN THEIR RESPECTIVE SECTIONS)

PART 3 EXECUTION

STAKING

3.1.1 Cost of and responsibility for staking will be by the Owner.

3.1.2 Staking will be provided by the Engineer.

PROJECT OBSERVATION

3.2.1 Cost of and responsibility for project observation will be by the Owner, if provided.

3.2.2 Project observation will be provided by the Engineer, if requested.

TESTING

3.3.1 Cost of and responsibility for testing will be by the Contractor.

3.3.2 Testing will be provided by the Contractor through an independent testing laboratory.

3.3.3 Testing requirements are as follows:

Section	Title	Test	Responsibility of
Testing is Not Required for this Project			

REPAIR AND PROTECTION

3.4.1 General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

A. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
B. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."

3.4.2 Protect construction exposed by or for quality-control service activities.

3.4.3 Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

3.4.4 Materials and workmanship not meeting the required standards are to be removed and replaced at Contractor’s expense including all subsequent testing except where modified herein.

END OF SECTION

SECTION 01 71 13

MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.01 SCOPE

A. The work shall consist of the mobilization and demobilization of Contractor's forces and equipment necessary for performing the work required under the contract.

B. This work shall not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract.

C. Mobilization shall not be considered as work in fulfilling the contract requirement for commencement of work.

D. The work shall consist of providing all required contract bonding and insurance required under the contract.

1.02 UNIT PRICES - MEASUREMENT AND PAYMENT

A. No measurement will be made.

B. Mobilization: A lump sum amount that includes all items described in this section. The costs for insurance and bonds may be included in Mobilization if a separate bid item for insurance and bonds is not provided.

1. The partial payment for any Mobilization item will be limited to an amount not to exceed 10 percent (10%) of the total amount bid, including mobilization, for the group in which the Mobilization occurs. In the event the lump sum bid for "Mobilization" exceeds 10 percent (10%) of the total group amount; the difference (remainder) will not be paid until Owner has accepted the Project.

2. Subject to the limitations stated in Paragraph 1 of this subsection, when the contract documents provide a separate bid item for Mobilization, progress payments for mobilization shall be made as follows:

a. When 5 percent (5%) of the original contract sum for the contract or a specific Group has been earned, excluding Mobilization, the first 25 percent (25%) of the contract or that Group's Mobilization amount will be paid, subject to the limitations stated in Paragraph 1 of this subsection

b. When 10 percent (10%) of the original contract sum for the contract or a specific Group has been earned, excluding Mobilization, the second 25 percent 25% (bringing the total payments to 50%) of the contract or that Group's Mobilization amount will be paid, subject to the limitations stated in Paragraph 1 of this subsection.

c. When 50 percent (50%) of the original contract sum for the contractor or a specific Group has been earned, excluding Mobilization, the second 50 percent 50% (bringing the total payments to 100%) of the contract or

that Group's Mobilization amount will be paid, subject to the limitations stated in Paragraph 1 of this subsection.

d. Upon completion of all work on the project required by the contract, and acceptance by Owner, full payment will be made for mobilization, including any amount not paid as a progress payment.

3. When "Mobilization" is not shown as a separate pay item in the bid form, the work described in this section shall be considered incidental and subsidiary to all other items of work within the contract for which direct payment is made and no separate payments will be made for Mobilization.

C. Insurance and Bonds: A lump sum amount that includes the costs of Contract Bond(s) and all insurance premiums.

1. Payment for any Insurance and Bonds bid item will be allowed following contract execution and Owner will pay up to 100 percent (100%) of the bid item for that Group's Insurance and Bonds amount.

2. When "Insurance and Bonds" is not shown as a separate pay item, it shall be included in the "Mobilization" bid item. If neither "Insurance and Bonds" or "Mobilization" are shown as separate bid items, the work described in this section shall be considered subsidiary to other pay items in the contract.

1.03 EQUIPMENT AND MATERIALS

A. Mobilization shall include all activities and costs for transportation of personnel, equipment and operating supplies to the site; establishment of offices, buildings and other necessary facilities for Contractor's operations at the site; and premiums paid for performance and payment bonds, including coinsurance and reinsurance agreements as applicable.

B. Demobilization shall include all activities and costs for transportation of personnel, equipment and supplies not included in the contract from the site, including the disassembly, removal and site cleanup of offices, buildings and other facilities assembled on the site for this contract. No separate payment will be made for demobilization.

C. This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted or added items of work for which Contractor is entitled to an adjustment in contract price, compensation for such costs shall be included in the price adjustment for the item or items or work changed or added.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 7329
CUTTING AND PATCHING

PART 1 GENERAL

SUMMARY

1.1.1 This Section includes procedural requirements for cutting and patching.

1.1.2 See Division 2 through 49 for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

DESCRIPTION

1.2.1 Execute cutting and patching of work required to:

- A. Make several parts fit properly.
- B. Uncover work to provide for installation of ill-timed work.
- C. Remove and replace defective work.
- D. Remove and replace work not conforming to requirements of Contract Documents.
- E. Remove samples of installed work as specified for testing.
- F. Install specified work in existing construction.

1.2.2 Additional Requirements:

- A. Upon written instructions of Engineer:
  1. Uncover work to provide for Engineer's observation of covered work.
  2. Remove samples of installed materials for testing.
  3. Remove work to provide for alteration of existing work.

1.2.3 Do not endanger any work by cutting or altering work or any part of it.

1.2.4 Existing Work of Another Contractor

- A. Do not cut or alter work of another Contractor without written consent of Engineer.

SUBMITTALS

1.3.1 Cutting and Patching Proposal: Submit a proposal describing procedures seven days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

- A. Identification of Project.
- B. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
- C. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in Project's appearance and other significant visual elements.
- D. Products: List products to be used and firms or entities that will perform the Work.
- E. Dates: Indicate when cutting and patching will be performed.
- F. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
- G. Structural Elements and Materials: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
  1. Should conditions of work or schedule indicate a change of materials or methods, submit written recommendation to Engineer. Include conditions indicating change, recommendations for alternative materials or methods, and submittals as required for substitutions.
- H. Cost: Prior to cutting and patching done on instruction of Engineer, submit cost estimate.
- I. Cost Responsibility: Prior to cutting and patching, designate the party responsible for cost of cutting and patching.

J. Engineer’s Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.
K. Engineer’s Observation: Submit written notice to Engineer designating time work will be uncovered to provide for observation.

QUALITY ASSURANCE

1.4.1 Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

1.4.2 Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.

1.4.3 Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.

1.4.4 Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PAYMENT FOR COSTS

1.5.1 Costs caused by ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of Engineer: party responsible for ill-timed, rejected or non-conforming work.

1.5.2 Work done on instructions of Engineer, other than defective or non-conforming work: Owner (by pay item or change order only).

WARRANTY

1.6.1 Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

MATERIALS

2.1.1 General: Comply with requirements specified in other Sections.

2.1.2 In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
A. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 EXECUTION

EXAMINATION

3.1.1 Examine existing conditions under which cutting and patching are to be performed.
A. Compatibility: Before patching, verify compatibility with and suitability of substrates, including elements subject to movement or damage during:
1. Cutting and patching.
2. Excavating and backfilling.
B. Inspect conditions after uncovering work, affecting installation of new products.
C. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

PREPARATION

3.2.1 Temporary Support: Provide temporary support of Work to be cut:

A. Provide shoring, bracing, and support as required to maintain structural integrity of Project.

3.2.2 Protection:

A. Protect in-place construction during cutting and patching to prevent damage.

B. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Provide protection for other portions of Project.

3.2.3 Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.2.4 Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

PERFORMANCE

3.3.1 General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

A. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

3.3.2 Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

A. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

B. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

C. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

D. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.

1. Execute by methods which will prevent damage to other work and will prevent settlement.

E. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

F. Proceed with patching after construction operations requiring cutting are complete.

3.3.3 Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

A. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

B. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3.3.4 Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

SECTION 01 7710
DRAINAGE DISTRICT PROJECTS CLOSEOUT PROCEDURES

PART 1 GENERAL

SUMMARY

1.1.1 This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

A. Inspection procedures.
B. Warranties.
C. Final cleaning.

1.1.2 See Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.

1.1.3 See Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

APPLICABLE LAWS

1.2.1 The Drainage Laws of the State of Iowa, Specifically, Chapter 468 of the Code of Iowa, as amended, shall govern the project closeout procedure.

SUBSTANTIAL COMPLETION

1.3.1 Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, within seven days the Engineer will either proceed with inspection together with Owner’s representative or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1.3.2 Should Engineer consider that work is not complete:

A. Engineer shall notify Contractor in writing stating reasons.
B. Contractor shall complete work and send second written notice to Engineer certifying that project, or designated portion of project, is complete.
C. Engineer will reinspect work.
D. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
    1. Should Engineer be required to perform second inspection because of failure of work to comply with original certifications of Contractor, Owner will compensate Engineer for additional services and deduct amount paid from final payment to Contractor.
E. Results of completed inspection will form the basis of requirements for Final Completion.

FINAL COMPLETION

1.4.1 Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

A. Submit a Final Application for Payment.
B. Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
C. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

1.4.2 Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

1.4.3 Contractor shall prepare and submit project record documents as required, and guarantees and bonds specified in General Conditions.

1.4.4 Inspection: Submit a written request for final inspection for acceptance. On receipt of request, within seven days the Engineer will either proceed with inspection together with Owner's representative or notify Contractor of unfulfilled requirements. Engineer will certify completion to owner after inspection or will notify Contractor of construction that must be completed or corrected before certification will be issued.

1.4.5 Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4.6 Substantially Complete: Should Engineer consider that work is substantially complete:

A. Engineer shall prepare an amended list of items to be completed or corrected as determined by the inspection.

B. Engineer will prepare and issue a Certificate of Substantial Completion containing:

1. Date of substantial completion.
2. Amended list of items to be completed or corrected.
3. Time schedule to complete or correct work.
4. Time and date Owner will assume possession of work or designated portion thereof.
5. Signatures of:
    a. Engineer.
    b. Contractor.
    c. Owner.

1.4.7 Evidence of Payments and Release of Liens: Contractor shall prepare and submit the following documents before final payment is made:

A. Contractor's release or waiver of liens.

B. Separate releases of waivers of liens for subcontractors, suppliers and others with lien rights against property of Owner together with list of those parties.

C. All submittals shall be duly executed before delivery to Engineer.

1.4.8 Final Application for Payment:

A. Contractor shall submit final application including retainage in accordance with requirements of General and Supplementary Conditions.

B. Owner shall schedule Completion Hearing in concurrence with IAC468.101. At this hearing the Owner's review for acceptance and Contractor's final payment will be determined and made as per the General and Supplemental Conditions.

1.4.9 Post-Construction Inspection:

A. Prior to expiration of one year from date of substantial completion, the Owner may request the Engineer to make visual inspection of project to determine whether correction of work is required in accordance with provisions of General Conditions.

B. For guarantees beyond one year, Engineer will make inspections at request of Owner after notification to Contractor.

C. Engineer will promptly notify Contractor in writing of any observed deficiencies.

WARRANTIES

1.5.1 Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

1.5.2 Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

A. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

B. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

C. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

1.5.3 Provide additional copies of each warranty to include in operation and maintenance manuals.

END OF SECTION

SECTION 01 7839
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

SUMMARY

1.1.1 This Section includes administrative and procedural requirements for Project Record Documents, including the following:
   A. Record Drawings, including Shop Drawings.
   B. Record Specifications, including Change Orders.
   C. Record Product Data and Record Field Tests.

1.1.2 See Divisions 02 through 49 Sections for specific requirements for Project Record Documents of the Work in those Sections.

SUBMITTALS

1.2.1 Record Drawings: Comply with the following:
   A. Number of Copies: Submit one (1) set of marked-up Record Prints.

1.2.2 Record Specifications: Submit one (1) copy of Project's Specifications, including addenda and contract modifications.

1.2.3 Record Product Data: Submit one (1) copy of each Product Data submittal.

1.2.4 Record Field Tests: Submit one (1) copy of each test result required by the specifications.

PART 2 PRODUCTS

RECORD DRAWINGS

2.1.1 Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
   A. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
      1. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
      2. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
   B. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
   C. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
   D. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

2.1.2 Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
   A. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
   B. Identification: As follows:
      1. Project Name and Project Number.
      2. Date.
      3. Designation "PROJECT RECORD DRAWINGS".
      4. Name and Address of Contractor.

RECORD SPECIFICATIONS

2.2.1 Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

A. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
B. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
C. Record the name of manufacturer, supplier, installer, and other information necessary to provide a record of selections made.
D. Note related Change Orders and Record Drawings where applicable.

RECORD PRODUCT DATA

2.3.1 Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

A. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
B. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
C. Note related Change Orders and Record Drawings where applicable.

FIELD TESTS AND MISCELLANEOUS RECORD SUBMITTALS

2.4.1 Assemble field tests and miscellaneous records required by other Specification Sections for record keeping and submittal in connection with actual performance of the Work. Bind or file field tests and miscellaneous records and identify each, ready for continued use and reference.

PART 3 EXECUTION

RECORDING AND MAINTENANCE

3.1.1 Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

3.1.2 Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer’s reference during normal working hours.

END OF SECTION

DIVISION 31

EARTHWORK

SECTION 31 1100
CLEARING AND GRUBBING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Work to provide all labor, materials, tools, and equipment necessary or incidental to clear, grub, and remove trees, brush, stumps, roots, and other vegetation indicated in the Contract Documents, or directed by Engineer, including proper disposal of such, and protection of items to remain.

1.02 DEFINITIONS

A. Heavy Vegetative Clearing = Clear all shrubs, brush, and small vegetation (less than 6 inches in diameter)

B. Tree Removal = Remove single tree, greater than 6 inches in diameter

C. Heavy Vegetative Clearing with Tree Removal = Clearing of all shrubs, brush, small vegetation with tree removal, regardless of diameter of tree.

D. Grubbing = Removal or grinding of tree stumps, roots, shrub and brush.

1.03 PRICE AND PAYMENT PROCUDURES

A. Heavy Vegetative Clearing

1. Heavy Vegetative Clearing shall be paid for by the acre as measured by the Engineer and shall include (as incidental) but not limited to;

   a. Cutting of brush, shrubs, small vegetation

   b. Burning, bury, or removal of cleared material

B. Tree Removal

1. Tree Removal shall be paid for by the each occurrence as measured by the Engineer and shall include (as incidental) but not limited to;

   a. Cutting down of tree

   b. Mulching of tree

   c. Burning, bury, or removal of cleared material

C. Heavy Vegetative Clearing with Tree Removal

1. Heavy Vegetative Clearing with Tree Removal shall be paid for by the acre as measured by the Engineer and shall include (as incidental) but not limited to;

   a. Cutting of brush, shrubs, small vegetation

   b. Cutting down of tree

c. Mulching of tree

d. Burning, bury, or removal of cleared material

D. Grubbing

1. Grubbing is required for all items listed in A-C above.

2. Measurement will not be made and costs shall be incidental to each bid item. Such items of work include (as incidental), but are not limited to;

a. Removing tree stump and roots

b. Removing of shrubs and brush

c. Grinding of stump

1.04 REFERENCE SPECIFICATIONS

A. Section 31 2316 - EXCAVATION

1.05 QUALITY ASSURANCE

A. Clearing Firm: Company specializing in the type of work required.

1.06 SITE CONDITIONS

A. Existing underground utilities, as shown on the drawings, are located in accordance with available data but locations may vary and cannot be guaranteed. The exact location shall be determined by the Contractor as work proceeds. Excavation work shall be done carefully so as to avoid damaging existing work.

B. Contractor shall provide for protection, temporary removal and replacement, or relocation of said obstructions as required for the performances of the work required in these contract documents. No extra payment will be made for this work.

1.07 TOLERANCE

A. Contractor shall perform the Work within the following tolerances unless approved by the Engineer;

1. Maximum Mulching Diameter = 4-inches

PART 2 PRODUCTS

2.01 MATERIALS

A. Fill Material: As specified in Section 31 2316 - EXCAVATION

PART 3 EXECUTION

3.01 PREPARATION

A. Remove trees, shrubs, brush, and stumps in areas to be covered by the Work outlined in the Contract Documents unless otherwise specifically detailed to be protected, preserved, relocated, salvaged, or otherwise saved.

B. Minimize production of dust due to clearing and grubbing operations; do not use water if that will result in ice, flooding, sedimentation of waterways or storm sewers, or other pollution.

C. Coordinate Work with utility companies; notify before starting work and comply with requirements; obtain required permits.

D. Protect existing utilities, structures and other elements that are not to be removed from any damage from the Work.

1. If any utility, structure or other element is damaged, Contractor shall replace at no cost to the Owner.

E. Do not disrupt public utilities without permit from authority having jurisdiction.

F. If noxious weeds are located within the construction limits, follow all requirements of Chapter 317 of the Iowa Code.

1. The state noxious weed list is determined by the Iowa Department of Agriculture and Land Stewardship. The Contractor may visit https://www.legis.iowa.gov/docs/ico/chapter/317.pdf to find information about all existing plant pest quarantines in Iowa.

G. The Engineer must verify that all vegetation relocation, if any, has be properly relocated before clearing can commence.

H. Do not remove or damage vegetation beyond limits indicated on drawings.

1. All vegetation within 16.5-feet from top of bank shall be removed unless otherwise specified within drawings.

a. Additional removal outside of 16.5-feet from top of bank may take place with approval from Engineer or private landowner for safe construction practice, and will be paid for per unit price bid.

3.02 GRUBBING

A. Remove and dispose of brush, stumps, roots, and other remains in the areas designated on the plans or as approved by the Engineer to a minimum of 4 inches below ground elevation.

1. Mulching may occur with prior approval from the Engineer. Mulching debris shall not be larger than specified in Part 1.07 of this section and shall be scattered on site so that vegetation can be properly established.

B. Cover area with topsoil for proper seeding.

C. Fill depressions resulting from grubbing with suitable fill material in accordance with Section 31 2316 – EXCAVATION.

3.03 HEAVY VEGETATIVE CLEARING

A. Vegetation may be burned, buried, hauled to a landfill, repurpose as desired, or left on site with permission, except as indicated.

1. Chip, grind, crush, or shred vegetation for mulching, composting, or other purposes; preference should be given to on-site uses.

2. Existing Stumps: Treat as specified for other vegetation removed; or as indicated by Engineer.

B. Grubbing shall commence after clearing of heavy vegetation.

3.04 TREE REMOVAL

A. Trees shall be cut down and burned, buried or hauled to a landfill or repurposed as desired by the Contractor.

1. The Contractor may sell the trees if marketable.

B. Remove all dead trees (standing or down), limbs, and dry brush within construction limits.

C. Grubbing shall commence after tree removal.

3.05 HEAVY VEGETATIVE CLEARING WITH TREE REMOVAL

A. Combine Heavy Vegetative Clearing and Tree Clearing specifications.

3.06 BURNING

A. The Contractor shall apply for a local burning permit, if necessary, before any burning may occur.

B. Burning should adhere to any restrictions stated within the permit.

C. The Contractor shall supply the Engineer with a copy of the burn permit once obtained.

3.07 CLEAN UP

A. Remove any excess mulch chips (exceeding the tolerance in Part 1.09) or branches that were not disposed of from the construction limits.

B. Remove debris, junk, and trash from site and dispose of properly.

C. All hazardous material must be taken to a proper disposal facility at no additional cost to the Owner.

D. Leave site in clean condition, ready for subsequent Work.

E. Clean up wind-blown debris from public and private lands.

END OF SECTION

SECTION 31 22 00

GRADING, EXCAVATION AND EMBANKMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Removal, storage, and placement of topsoil.

B. Rough grading for site improvements.

C. Building, Shaping, Excavation and/or Embankment for:

1. Building volume below grade, footings, pile caps, site structures, box culverts, and general grading and fills.

2. Roadbeds, subgrades, shoulders, bridge approaches and private entrances

3. Slopes, dikes, channels and ditches needed for drainage.

4. Stripping of all unsuitable materials.

5. Obtaining soils from off-site borrow pit.

1.02 REFERENCES

A. State Standard Specifications, latest edition.

B. AASHTO T 180 — Standard Specification for Moisture — Density Relations of Soils Using a 4.54 kg (10-1b) Rammer and a 457 mm (18 inch) Drop: American Association of State Highway and Transportation Officials.

B. ASTM C 136 —Standard Test Method for Sieve Analysis of Fine Coarse Aggregates.

C. ASTM D 698 — Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-Ibf/ft3 (600 kN-m/m3))

D. ASTM D 1556 — Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.

E. ASTM D 1557 —Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-Ibf/ft3))

F. ASTM D 2167 —Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.

G. ASTM D 2487 —Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

H. ASTM D 6938 —Test Methods for In-Place Density and Water Content of Soil and Soil Aggregate by Nuclear Methods (Shallow Depth).

J. ASTM D 4318 —Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.03 UNIT PRICES

A. Topsoil:

1. Work may be considered subsidiary to bid item “Earthwork as Excavation” and/ or “Earthwork as Embankment” or work may be paid for as “Topsoiling” per cubic yard. If paid for by unit price, measurement will be in cubic yards of topsoil stripped, salvaged, supplied (if required), and spread, and will be computed on the basis of a uniform 6 inch finished thickness, or as specified.

2. Includes excavating existing topsoil, stockpiling, scarifying substrate surface, supplying, placing topsoil where required and compacting.

3. The loading, hauling and disposal of surplus material at a site of the contractor's choice is considered subsidiary to excavating existing topsoil.

B. Earthwork as Excavation:

1. Payment may be made by Established Quantity OR per Cubic Yard (CY). If paid for per cubic yard, measurement shall be based on a post construction survey or other agreed upon method of measurement between Engineer and Contractor.

2. If paid by Established Quantity, plan quantity(s) not field measured upon completion of project,

3. The loading, hauling and disposal of surplus material at a site of the contractor's choice is considered subsidiary.

4. Includes excavation, placing where required, compacting soils to the elevations shown in the drawings and water applied to obtain compaction.

C. Earthwork as Embankment:

1. Payment may be made by Established Quantity OR per Cubic Yard (CY). If paid for per cubic yard, measurement shall be based on a post construction survey or other agreed upon method of measurement between Engineer and Contractor.

2. If paid by Established Quantity, plan quantity not field measured upon completion of project.

3. Contractor may be required to furnish borrow material — See plans and or Section 01 10 00 — Special Provisions.

4. No Additional Compensation for:

   a. Additional material required to obtain compaction.

   b. Material placed outside of limit of typical cross section.

   c. Material placed to correct settlement of embankment.

   d. Water applied to obtain compaction.

5. Includes excavation, supplying, placing where required, compacting soils to the elevations shown in the drawings and water applied to obtain compaction.

D. Unsuitable Materials:

1. Includes excavating materials which are determined by Engineer to be unsuitable, loading and removal of unsuitable material from site, and furnish and backfill with materials specified by Engineer.

2. Method of Measurement and Pay Unit: By the cubic yard (measured in place).

1.05 SUBMITTALS

A. Project Record Documents: Contractor shall accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

B. Samples: 60-pound samples of each type of fill. Submit in airtight containers to testing laboratory unless samples are to be acquired by the testing agency

C. Materials Sources: Submit name of imported materials source.

D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used.

E. Compaction density test reports.

1.06 QUALITY ASSURANCE

A. Perform work in accordance with State Standard Specifications, Section 01 40 00 — Quality Requirements and Section 01 10 00 — Special Provisions

1.07 PROJECT CONDITIONS

A. Protect above and below-grade utilities that remain.

B. Protect plants, lawns, rock outcroppings, amenities and other features to remain as a portion of final landscaping.

C. Protect benchmarks, survey control points, existing structure, fences, sidewalks, paving, curbs, batter boards and amenities from excavating equipment and vehicular traffic.

PART 2 - PRODUCTS

2.01 MATERIALS

A. See Section 31 2323 — Fill and Backfill for material specifications.

B. Water required for grading is Contractor's responsibility. The cost of furnishing water will not be a direct pay item, unless specified otherwise, but is to be included in other items for which payment is made.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that survey benchmark and intended elevations for the work are as indicated

3.02 PREPARATION

A. Identify required lines, levels, contours and datum.

B. Stake and flag locations of known utilities.

C. Locate, identify and protect utilities that remain from damage.

D. Notify utility owner to remove and relocate utilities when relocation is required.

E. Implement erosion control plan.

3.03 EXCAVATING

A. Underpin adjacent structures which may be damaged by excavating work.

B. Excavate to accommodate new structures.

c. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.

D. Slope bank of excavations deeper than 3 feet to angle of repose or less until shored.

E. Do not interfere with 45 degree bearing splay of foundations.

F. Cut utility trenches wide enough to allow inspection of installed utilities.

G. Hand trim excavations. Remove loose materials.

H. Remove lumped subsoil, boulders and rock.

I. Correct areas that are over-excavated and load-bearing si‹rfarr's that are disturbed.

J. Grade top perimeter of excavation to prevent surface water from draining into excavation.

K. Remove excavated material that is unsuitable for reuse from site.

L. Remove excess excavated material from site.

3.04 ROUGH GRADING

A. Remove topsoil within the limits of construction (LOC) without mixing with foreign materials and stockpile. Minimum depth of topsoil removal shall be 6 inches unless otherwise noted in the drawings.

B. Do not remove topsoil when wet.

C. Remove subsoil from areas to be further excavated, relandscaped or regraded.

D. Do not remove wet subsoil unless it is subsequently processed to obtain optimum moisture content.

E. When excavating through roots, perform work by hand and cut roots with sharp axe.

F. Benching Slopes: Horizontally bench existing slopes greater than 1 foot vertical rise in 4 feet to key fill material to slope for firm bearing.

G. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

H. EmQlU d LOi1 faction method that achieves the specified density requirements.

I. Employ a placement method that does not disturb or damage other work.

J. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

K. Prewatering, if required, shall be defined and paid for within the Section 01 10 00 Special Provisions.

L. Maintain optimum moisture content of fill materials to attain required compaction density. See Geotechnical Report.

M. Granular Fill: Place and compact materials in equal, continuous layers not exceeding 6 inches compacted depth or as indicated in the Geotechnical Report.

N. Maintain Roadbed in Such Condition That:

1. Roadbed always drains.

2. Side ditches are constructed to avoid damage to embankments by erosion.

3. Slopes are trimmed accurately.

4. Avoid loosening material below or outside of the required slopes, remove all breakage and slides.

5. Excavate side ditches as shown in the drawings.

6. Finished roadway matches the lines, grades and cross sections shown in the drawings.

3.05 SOIL REMOVAL AND STOCKPILING

A. Stockpile topsoil to be reused on site. Remainder to be removed from site and disposed of at a location of the contractor's choice, unless otherwise stated in Section 01 10 00 — Specials Provisions

B. Stockpile subsoil to be reused on site. Remainder to be removed from site and disposed of at a location of the contractor's choice, unless otherwise stated in Section 01 10 00 — Specials Provisions

C. Stockpiles: Use areas designated; protect from erosion.

3.06 FINISH GRADING

A. Before Finish Grading:

1. Verify building and trench backfilling have been inspected.

2. Verify subgrade has been contoured and compacted.

B. Remove debris, roots, branches and stones in excess of 1 inch in size

C. Where topsoil is to be placed, scarify surface to depth of 6 inches.

D. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 6 inches.

E. Place topsoil in areas where seeding, sodding and planting are indicated.

F. Place topsoil to the following compacted thicknesses:

1. Areas to be Seeded with Grass: 6 inches.

2. Areas to be Sodded: 4 inches

3. Shrub Beds: 8 inches.

4. Flower Beds: 2 inches.

5. Planter Boxes: To within 3 inches of box trim.

G. Place topsoil during dry weather.

H. Remove roots, weeds, rocks and foreign material while spreading.

I. Near trees, shrubs and buildings, spread topsoil manually to prevent damage.

J. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.

3.07 HAUL ROUTES

A. Determine haul roads with approval of agency having jurisdiction over proposed roadway.

B. Make condition survey of haul roads prior to use and document with necessary photographs and written descriptions.

C. Keep reasonably free from dirt, dust, mud and other debris from construction operations.

D. Clean a minimum of twice a week.

E. Repair any damaged haul roads to match existing conditions before use.

F. No extra payment shall be made for removals regardless of disposal locations

G. Temporary haul routes (roads) developed by the Contractor shall be completely removed at the completion of the project and the area returned to its original condition. The cost of temporary haul routes shall be incidental to the cost of the project.

3.08 TOLERANCES

A. Top Surface of Finish Grade and/or Subgrade: Plus or minus 0.08 feet from required elevation.

3.09 FIELD QUALITY CONTROL

A. Compaction density testing shall be performed on compacted fill in accordance with ASTM D 1556, ASTM D 2167, or ASTM D 6938.

B. Results shall be evaluated in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 698 "standard proctor", ASTM D 1557 "modified proctor" or AASHTO T 180.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

D. Frequency of Tests:

1. Test randomly.

2. Under Paving, Slabs-on-Grade and Similar Construction, or as directed by Engineer: A minimum of 1 test for each lift of 0 to 2 feet in depth per 100‘ x 100’ area or as determined by Engineer.

E. Proof roll compacted fill at surfaces that will be under slabs on-grade, pavers and paving.

3.10 CLEANING AND PROTECTION

A. Prevent displacement of banks ancl keep loose soil from falling into excavation; maintain soil stability.

B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

C. Remove unused stockpiled topsoil and subsoil. After removing all stockpiles, grade areas to prevent standing water. Maintain drainage away from buildings and structures at a 2 percent grade or as indicated on the drawings.

D. Leave site clean and raked, ready to seed, sod or land seape

END OF SECTION

SECTION 31 2319
DEWATERING

PART 1 GENERAL

SUMMARY

1.1.1 Section includes construction dewatering. Work shall consist of the removal of surface water and ground water as needed to perform the required excavations and construction in accordance with the specifications.

1.1.2 Includes building and maintaining all necessary temporary impounding works, channels, and diversions.

1.1.3 Includes furnishing, installing and operating all necessary pumps, piping and other facilities and equipment.

PERFORMANCE REQUIREMENTS

1.2.1 Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.

SUBMITTALS

1.3.1 Shop Drawings: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of risers, headers, filters, pumps, power units, discharge lines, piezometers, and flow-measuring devices; and means of discharge, control of sediment, and disposal of water.

1.3.2 Delegated-Design Submittal: For dewatering system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

QUALITY ASSURANCE

1.4.1 Regulatory Requirements: Comply with governing notification regulations before beginning dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.4.2 Preinstallation: Provide Engineer with necessary drawings and submittals before beginning dewatering.

PROJECT CONDITIONS

1.5.1 Accept site in condition existing during Contract time frame.

1.5.2 Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

A. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 PRODUCTS (AS NEEDED TO COMPLETE WORK)

PART 3 EXECUTION

INSTALLATION AND OPERATION

3.1.1 Provide temporary grading to facilitate dewatering and control of surface water.

A. Unless otherwise specified, diverted surface water shall discharge on the owner’s property into the same natural drainageway in which construction site is located.

3.1.2 Foundations, trenches, footings, basins, and other structure excavations shall be dewatered and kept free of standing water or excessively muddy conditions as needed for proper execution of the construction work.

3.1.3 Contractor shall maintain the borrow areas in drainable condition or otherwise provide for timely and effective removal of surface and ground waters that accumulate within the borrow areas from any source.

3.1.4 Monitor dewatering systems continuously.

3.1.5 Protect and maintain temporary erosion and sedimentation controls, which are specified in Division 31 Section "Site Clearing" during dewatering operations.

A. Removal of water from the construction site, including borrow areas shall be accomplished in such a manner that erosion and the transmission of sediment and other pollutants are minimized.

3.1.6 Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.

A. Space well points or wells at intervals required to provide sufficient dewatering.

3.1.7 Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.

3.1.8 Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.

A. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.

3.1.9 Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.

A. Maintain piezometric water level a minimum of 24 inches below surface of excavation.

3.1.10 Provide standby equipment on site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to Owner.

3.1.11 Dewatering shall not be preformed during rain events. Contractor shall remove dewatering systems to allow flow to follow its natural drainage course during rain events.

REMOVAL OF TEMPORARY WORKS

3.2.1 Remove dewatering system from Project site on completion of dewatering or level and grade them to the extent required to present a slightly appearance and to prevent any obstruction of the flow of water or any other interference with the operations of or access to the permanent works. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.

END OF SECTION

SECTION 31 2334

TRENCH EXCAVATION AND BACKFILL FOR AGRICULTURAL DRAIN TILE

PART 1 GENERAL

1.01 GENERAL DESCRIPTION OF WORK

A. Excavation, shoring, dewatering, pipe bedding, trench backfill, compaction, grading and cleanup of all pipeline trenching for the project.

B. All work must be done in accordance with these specifications and the safety requirements of the State and OSHA Standards.

C. Work within limits provided by Owner as noted on plans.

PART 2 PRODUCTS

2.01 PIPE BEDDING AND BACKFILL

A. Determination of source of materials for bedding and backfill shall be responsibility of Contractor, but use of such materials shall be subject to approval of Engineer.

B. Pipe Bedding shall be granular (crushed stone or rounded gravel) material, gradation of which shall fall within following limits:

U.S. Standard Sieve Size	Percent Passing By Weight
1" (25.4 mm)	100
3/4" (19.0 mm)	95 (minimum)
#4 (4.75 mm)	5 (maximum)

2.02 SPECIAL SAND BACKFILL

A. Use pit run sand or fine aggregate with at least 90% passing #4 sieve and no more than 10% passing the #200 sieve.

2.03 CRADLING ROCK

A. Use crushed rock or stone with 70-100% passing 1 1/2" sieve and no more than 50% passing 1" sieve.

2.04 FILTER FABRIC

A. As shown on plans.

PART 3 EXECUTION

3.01 GENERAL

A. Excavate to design grades and alignment as staked by Engineer.

B. Trench excavation and backfill is incidental to drain tile installation.

C. Plan grade may be adjusted ±1.5 feet to satisfy unforeseen construction problems. No additional compensation will be made for this adjustment.

D. Protection of Existing Utilities:
   1. Notify all utilities of location and schedule of work.
   2. Locations and elevations of utilities shown on plans are to be considered approximate only. Notify utility and Engineer of conflicts between existing and proposed facilities.
   3. Repair, relay or replace existing utilities damaged, destroyed or disrupted during work. Unless specified otherwise, replacement will be at the Contractor's expense.

3.02 FENCING

A. Fences crossing or paralleling construction operations on drainage district right-of-way.
   1. Remove fence doing as little damage as possible to fence.
   2. Secure permission from landowner for method of removal.
   3. Replace fence using fence material removed or provide new material of like kind.
   4. Fence removal and replacement incidental to tile construction.

3.03 ROCKS

A. Remove rocks, stones and boulders from ditch excavation.

B. Dispose of rocks, stones and boulders in ditch only after pipe is covered by two feet of backfill.

C. Removal and disposal incidental to tile construction.

3.04 EXCAVATION AND TRENCHING

A. General:
   1. Method of excavation at Contractor's option.
   2. Place spoil where most convenient for backfilling trench or as directed by Engineer.
   3. Stockpile and replace topsoil to a minimum of 8" for surface restoration.

B. Trench characteristics:
   1. Depth: as indicated for pipe installation to lines and grades required for proper allowance for thickness of pipe and type of bedding specified or indicated.
   2. Width: outside diameter of pipe plus 12" unless otherwise noted on plans.
   3. Trench walls must be vertical below top of pipe and may be vertical or sloped above pipe to conform to excavating codes.
   4. Trench bottom shall be free of large stones and other foreign material.

3.05 SOFT SPONGY OR UNSTABLE MATERIAL

A. Stop work and notify Engineer.

B. Perform remedial work as directed.

C. If material is judged unsuitable and removal is authorized, remove and replace with trench stabilizing material as directed by Engineer.

3.06 TRENCH BACKFILL

A. Use earth materials from excavated areas free from large stone, clods, organic matter, rubbish, frozen materials or other foreign materials.

B. Initial Backfill:
   1. Blind pipe only until grade check by Engineer is complete.
   2. Carry out in an orderly fashion after authorization to cover pipe has been given.
   3. Allow no more than 300' of trench to be open at one time.
   4. Do not backfill until concrete or mortar has sufficiently cured.
   5. Record location of connections and appurtenances before backfilling.
   6. Place by hand and hand tamp to not less than 12" above top of pipe.
   7. Backfill simultaneously on both sides of pipe to prevent displacement.

C. Subsequent Backfill:
   1. Backfill consistent with progress of work.
   2. Work backfilling equipment to prevent displacement of tile and to compact ditch as much as possible.
   3. Mound excess excavation above trench surface.
   4. Rework areas of settlement at Engineer's direction. Complete remedial measures immediately.

END OF SECTION

:SECTION 31 2335

OPEN DITCH EXCAVATION AND SPOIL BANK LEVELING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. Open Ditch Excavation: Includes sloping, shaping, removal and disposal of material from open ditch and surface channels to reconstruct ditch bottom and side slopes.

B. Spoil Bank Leveling: Includes disposal, leveling, shaping and cleanup of excavated spoil to conform to plan requirements.

C. Includes removal and disposal of fence as directed by Engineer.

D. Includes repair of over bank washouts as noted on the plans or directed by the Engineer.

1.02 ALIGNMENT DESCRIPTION

A. Follow approximate centerline of existing open ditch or as staked and directed by Engineer.

1.03 LIMITS OF OPERATION

A. Excavation to begin at the lower end and proceed upstream, unless otherwise noted on the plans or directed by the Engineer.

B. Deposit no spoil within public road right-of-way, unless noted on the plans or directed by the Engineer.

C. Notify and comply with all requirements of County Engineer with regard to safety measures, roadway protection and repair and cleanup for all work within county road right-of-way.

D. Remove only fence within the work limits that directly interferes with the work.

E. Protect all items to be salvaged and/or saved as indicated on plans or directed by the Engineer.

1.04 PROCEDURES AT BRIDGES

A. Private Bridges:
   1. Unless noted for removal and disposal on the plans or directed by the Engineer, save all private bridges.
   2. Bridge deck may be removed and replaced to facilitate necessary excavation at Contractor option and expense.
   3. Contractor will not be held responsible for damage to structure due to design grade line being below existing footings.

B. County or State Road Bridges:
   1. Remove sediment in a manner approved by the Engineer and appropriate county or state government entities.

C. To avoid over excavation under all bridges, do not excavate more than 0.5 feet below design grade or as directed by the Engineer.

1.05 FENCE REMOVAL

A. At the time of Notice of Award, the Engineer will notify all landowners with property within the work limits, of their opportunity to remove fences that interfere with the work.

B. Contractor shall give the Engineer a ten (10) day notice before he removes any livestock fence that interferes with his work.

C. Having been given proper notice, Contractor shall remove all fence not removed by the landowner and shall be paid a fair and equitable price for fence

D. For quantity determination purposes only, a fence shall be define as a barrier consisting of at least three barbed wires or woven wire fastened to posts set no more than 33 feet apart or any other substantial barrier determined by the Engineer to be a fence. Removal of all other barriers shall be considered rubbish and incidental to clearing and grubbing operations under Section 311004 – Open Ditch Clearing, Grubbing and Chemical Treatment.

E. Landowner shall be responsible for replacing fences.

PART 2 PRODUCTS

2.01 MATERIALS

A. Provide those materials as required to perform work as specified.

PART 3 EXECUTION

3.01 PREPARATION

A. Obtain Engineer's acceptance of clearing and grubbing work.

B. Construct an adequate work road where excavation will be from an existing spoil bank.

C. Notify appropriate government entity where excavation will be from a public roadway and make necessary arrangements for disposal of spoil.

3.02 FENCE REMOVAL

A. Observe requirements of this Section and instruction noted on the plans.

B. Use reasonable care in handling fence to be salvaged and stockpiled.

C. Dispose of fence not to be saved in a manner approved by the Engineer.

3.03 EXCAVATION

A. Deposit all excavated material at least three (3) feet back of top of existing ditch bank on existing spoil bank unless directed otherwise by Engineer.

B. Remove spoil equally from both sides of the ditch and dispose of continuously as excavation operation progresses.

C. Excavate all material lying above the neat line shown on the plans and as staked by Engineer.

D. Avoid excessive over-excavation of grade and bottom width expansion.

E. Fill and/or shape over bank washouts to reasonably conform with design cross-sectional shape.

3.04 FINISHING

A. Shape and slope ditch bottom and sideslopes to reasonably conform with alignment, grade and cross sections shown on plans or as established by Engineer.

B. Shape and slope spoil to a uniform cross section in close compliance with the typical cross section details contained in the standard drawings.

C. Provide a reasonably smooth surface ready for seeding operations.

3.05 CLEANUP

A. Dispose of all boulders, rocks and pieces of broken concrete or clay debris which have a vertical projection of three inches (3") or more above the ground surface or a diameter of four inches (4") or more that are visible after excavation and finishing operations.

B. Dispose of all tree roots and branches larger than one inch (1") in diameter and other rubbish that surface during excavation and finishing operations.

C. Dispose in manner approved by Engineer.

END OF SECTION

SECTION 31 2500
EROSION & SEDIMENT CONTROLS

PART 1 GENERAL

SECTION INCLUDES

1.1.1 NPDES General Permit No. 2

1.1.2 Storm Water Pollution Prevention Plan (SWPPP)

1.1.3 Erosion Control Measures

1.1.4 Velocity and Flow Control Measures

1.1.5 Sediment Control Measures

1.1.6 Application/Installation of Measures

1.1.7 Removal/Replacement of Measures

DESCRIPTION OF WORK

1.2.1 Furnish all materials; install, construct, maintain, and remove specified erosion control devices; at locations shown on the plans, or where specified by the Engineer, in accordance with the contract documents.

1.2.2 Complete the required construction work on this project, while minimizing soil erosion and controlling water pollution. Maintain these features as specified, from initial construction stages to final completion of the project.

1.2.3 Conform to local, state, and federal regulations regarding soil erosion and sediment control.

SUBMITTALS

1.3.1 Submit under Section 007200 Submittal Procedures.

1.3.2 Upon request, provide material certifications to the Engineer.

1.3.3 Upon request, provide copies of all records and documentation related to compliance with the Iowa DNR NPDES Permit.

SUBSTITUTIONS

1.4.1 Use only materials conforming to these specifications unless otherwise permitted by the Engineer.

1.4.2 Obtain written approval of the Engineer for all substitutions prior to use.

PROTECTION OF PROPERTY

1.5.1 Protect existing facilities at the site against damage, including the following:

A. Take precautions to ensure that equipment, vehicles, and construction operations do not disturb or damage existing grades, walls, drives, pavement, utilities, plants, lawns, or other facilities.

B. Verify locations and depths of all underground utilities prior to excavation and report any conflicts with new work.

C. Have repaired and/or pruned by an experienced tree surgeon or arborist, any damage to existing trees or shrubs, including branches and root systems.

D. Repair, replace, and/or return to original condition any damaged item, at the Contractor's expense.

1.5.2 Protect adjoining property, including public utilities, sanitary and storm drainage systems, and others from debris from project site. Repair any damage immediately at the Contractor's expense.

1.5.3 Prevent accumulation of earth, sediment, or debris from project site onto adjoining public or private property. Remove any accumulation of earth or debris immediately, and take remedial actions for prevention.

SCHEDULING

1.6.1 Implement erosion and sediment control measures at the appropriate time(s).

1.6.2 Coordinate construction to minimize damage to erosion and sediment control devices.

IOWA DNR NPDES GENERAL PERMIT NO. 2

1.7.1 When applicable, comply with the requirements of the Iowa Department of Natural Resources, NPDES (National Pollutant Discharge Elimination System) General Permit No. 2 for Storm Water Discharge Associated with Industrial Activity for Construction Activities, and the Storm Water Pollution Prevention Plan.

1.7.2 For projects covered under the Iowa DNR General Permit No. 2, sign on as a co-permittee with the owner and any other contractors or subcontractors.

1.7.3 When applicable, comply with the local jurisdiction's permitting requirements.

MEASUREMENT FOR PAYMENT

1.8.1 Erosion Control Mulching:

A. Conventional Mulching: Conventional mulching will be measured in squares, each square containing 100 square feet, or by acres, as specified. Application to undisturbed areas or areas outside of construction limits will not be measured for payment.

B. Hydromulching: Hydromulching will be measured in squares, each square containing 100 square feet, or by acres, as specified. Each type of hydromulching specified will be measured separately. Application to undisturbed areas or areas outside of the construction limits will not be measured for payment.

1.8.2 Silt Fence:

A. Installation: Measurement and payment will be by the linear foot of silt fence properly installed. Addition footage installed beyond that shown on plans will only be paid if approved by Engineer prior to installation. Silt fence installed to replace existing fences that are no longer adequate, will be paid only upon approval of Engineer. Unit price includes, but is not limited to, anchoring posts.

B. Removal of Sediment: Cleaning by removal of sediment from existing silt fence installations will be paid for under maintenance of SWPPP.

C. Removal of Device: Removal of silt fence, if required by contract, will be measured and paid for by the linear foot. Contract unit price includes restoration of the area to finished grade and removal and disposal of fence, posts, and accumulated sediment.

1.8.3 Wattles:

A. Installation: Measurement will be in linear feet for each type and size of wattle. Payment will be at the unit price per linear foot for each type and size of wattle. Unit price includes, but is not limited to, anchoring stakes.

B. Removal: Measurement will be in linear feet of wattle removed. Payment will be at the unit price per linear foot of wattle removed. Unit price includes, but is not limited to, restoration of the area to finished grade and off-site disposal of wattle and accumulated sediment.

1.8.4 Rip Rap:

A. Installation: Measurement will be in tons for each type of rip rap. Payment will be at the unit price per ton of rip rap. Unit price includes, but is not limited to, engineering fabric.

1.8.5 Stabilized Construction Entrance:

A. Installation: Measurement will be in square yards or tons of material placed. Payment will be at the unit price per square yard or ton of material placed. Unit price includes, but is not limited to, subgrade stabilization fabric.

1.8.6 Incidental Items:

A. Items not listed as specific bid items, but which are necessary to complete the work, are considered incidental to other work and will not be paid for separately.

B. When applicable, conduct all operations in compliance with the Iowa DNR NPDES General Permit No. 2. Labor, equipment, or materials not included as a bid item, but

necessary to prevent storm water contamination from construction related sources, are considered incidental. Incidental work related to compliance with the permit may include, but is not limited to: hazardous materials protection, fuel containment, waste disposal, and providing employee sanitary facilities.

C. Replacing erosion and sediment control practices that are damaged or removed by the contractor in a manner that is inconsistent with the current project staging or SWPPP is the Contractor's responsibility and will be at the Contractor's expense.

D. Additional maintenance, inspections, or other items of work that are required because work was not completed within the specified contract time, due to no fault of the contracting authority, will be considered incidental, and will be at the Contractor's expense.

PART 2 PRODUTS

SILT FENCE

2.1.1 Use silt fence that meets the following requirements:

2.1.2 Fabric: Conform to Iowa DOT 4196.01.

2.1.3 Posts: 4-foot minimum steel (T-section) weighing at least 1.25 pounds per foot, exclusive of anchor plate. Painted posts are not required.

2.1.4 Fastener: Wire or plastic ties with a minimum tensile strength of 50 pounds.

EROSION CONTROL MULCH

2.2.1 Conventional Mulch:

A. Use dry cereal straw (oats, wheat, barley, or rye) or native grass straw.

B. Use material that is free of noxious weed, seed-bearing stalks, or roots, and will be inspected and approved by the Engineer prior to use.

C. Other materials, subject to the approval of the Engineer may be used.

2.2.2 Hydromulch:

A. Wood Cellulose Mulch

B. Bonded Fiber Matrix (BFM)

C. Mechanically Bonded Fiber Matrix (MBFM)

D. See Section 9010, 2.07 of the Urban Standard Specifications for Public Improvements Manual for details.

ENGINEERING FABRIC: CONFORM TO IOWA DOT 4196.01, B, 3. (EMBANKMENT EROSION CONTROL)

RIP RAP

2.4.1 Class A Revetment: Conform to Iowa DOT 4130.

2.4.2 Class B Revetment: Conform to Iowa DOT 4130.

2.4.3 Class D and E Revetment: Conform to Iowa DOT 4130.

2.4.4 Erosion Stone: Conform to Iowa DOT 4130.

STABILIZED CONSTRUCTION ENTRANCE

2.5.1 Entrance Stone: Use Iowa DOT 4122, Gradation 13, Macadam crushed stone.

2.5.2 Subgrade Stabilization Material:

A. Use woven, UV-stabilized geotextile.

B. Minimum tensile strength of 135 lb/ft.

WATTLES

2.6.1 Netting: Open weave, degradable netting. Nominal diameter of 9 inches, or as specified.

2.6.2 Fill Material: Straw, wood excelsior, coir, or other natural materials approved by the Engineer.

2.6.3 Stakes: 1 inch by 1 inch (minimum) wooden stakes, or stakes of equivalent strength.

PART 3 EXECUTION

SWPPP MANAGEMENT

3.1.1 Coordinate and carry out all requirements of Iowa DNR NPDES General Permit No. 2 and any local ordinance requirements, including:

3.1.2 Update the SWPPP according to the requirements of the NPDES General Permit No. 2.

3.1.3 Revise the SWPPP and implement changes, as necessary, to prevent sediment or hazardous materials from being transported off the site.

3.1.4 Submit all SWPPP revisions to the Engineer for review and approval.

3.1.5 Perform, and maintain records of, weekly erosion and sediment control site inspections, unless otherwise specified.

3.1.6 Maintain records of transferal of responsibility under the NPDES General Permit No. 2.

3.1.7 Retain all records on-site, or as required by the NPDES General Permit No. 2.

3.1.8 After final stabilization, file a Notice of Discontinuation, according to the NPDES General Permit No. 2.

3.1.9 Provide all records and documentation to the Engineer upon completion of the project. Retain a copy of all records for the period required under the Permit.

3.1.10 Continue to perform the work required under this item throughout the duration of the project, and until final stabilization is achieved, and a Notice of Discontinuation is filed.

EROSION AND SEDIMENT CONTROL INSPECTION

3.2.1 Perform inspections according to and at frequency required by the Iowa DNR NPDES General Permit No. 2.

3.2.2 Schedule necessary maintenance or improvements for items that are included in the contract documents.

3.2.3 Notify the Engineer immediately of situations requiring attention beyond that provided for in the contract documents.

3.2.4 Provide copies of the inspection reports to the Engineer.

SILT FENCES

3.3.1 Installation:

A. Install material along the contour of the ground, as specified in the contract documents, or as directed by the Engineer.
B. Install silt fence with a mechanical soil slicing machine that creates a slit in the ground while simultaneously installing the fabric. The trenching method may be used when situations will not allow soil slicing, as determined by the Engineer.
C. Construct a “J-hook” at each end of a continuous run of silt fence, by turning the end of the silt fence uphill, as necessary to prevent runoff from flowing around ends when water behind the fence ponds to a level even with the top of the fence.
D. Insert 12 inches of fabric to a minimum depth of 6 inches (fabric may be folded below the ground line).
E. Compact installation by driving along each side of the silt fence, or by other means, as necessary to adequately anchor the material in the ground, to prevent pullout and water flow under the fence.
F. Drive steel posts into the ground alongside the silt fence, to a minimum depth of 20 inches, unless otherwise specified by the Engineer. Space posts as required to adequately support silt fence.

3.3.2 Maintenance: At the Contractor’s expense, repair or replace non-functioning silt fence that allows water to flow under the fence, is torn, or is otherwise damaged, due to inadequate installation.

3.3.3 Removal:

A. Remove the silt fence upon final stabilization of the project area, or according to the staging indicated in the SWPPP.
B. Remove and dispose of silt fence and posts.
C. Remove sediment or spread to match finished grade; ensure proper drainage.
D. Stabilize the area disturbed by removal operations.

3.3.4 Replacement:

A. When accumulated sediment reaches a level one-half the height of the fence, remove the silt fence as described above, and replace according to the installation instructions above.
B. At the Engineer's option, the existing silt fence and accumulated sediment may be left in place, and a new silt fence installed upslope from the existing silt fence.
C. When permitted by the Engineer, the existing silt fence may be left in place and the accumulated sediment removed. Carefully inspect the existing silt fence for structural integrity and signs of undermining. Make any necessary repairs.

TEMPORARY EROSION CONTROL SEEDING – SEE SECTION 329220.

EROSION CONTROL MULCHING

3.5.1 Conventional Mulching:

A. Use conventional mulching when the surface cannot be stabilized by seeding, due to season or ground conditions.
B. Uniformly distribute mulch over the required areas, at a rate of 2 tons/acre for dry cereal straw, or 2.5 tons/acre for prairie hay.
C. Work the mulch into the soil with a mulch tucker, designed to anchor the mulch into the soil, by means of dull blades or disks.

3.5.2 Hydromulching:

A. Place mulch and tackifier (if applicable) in equipment specifically manufactured for hydraulic mulching.
B. Mix materials with fresh, potable water; using a combination of re-circulation through the equipment's pump, and mechanical agitation to form a homogeneous slurry.
C. If necessary, dampen any dry, dusty soil, as required to prevent balling of the material during application.
D. Apply hydromulch in multiple layers from opposing directions, where possible.
E. Apply the slurry evenly over all specified areas, at the minimum component material rates specified:
    1. Wood Cellulose Mulch:
        a. Mulch: 2600 lb/acre dry weight.
        b. Tackifier: 50 lb/acre.
    2. Bonded Fiber Matrix: 3600 lb/acre dry weight.
    3. Mechanically Bonded Fiber Matrix: 3600 lb/acre dry weight.
F. Retain and count empty bags of mulch to ensure final application rate.

STABILIZED CONSTRUCTION ENTRANCE

3.6.1 Install a stabilized construction entrance at all locations where construction traffic leaving the site presents the potential for sediment track out.

3.6.2 Remove vegetation and excavate soft soils from the entrance area. Thoroughly compact subgrade prior to placing stone

3.6.3 Install culvert under entrance if necessary to maintain drainage.

3.6.4 Grade entrance to prevent runoff from flowing onto street. Direct all runoff from entrance to a sediment retention device.

3.6.5 When specified, install subgrade stabilization fabric prior to placing crushed stone.

3.6.6 Install layer of crushed stone to the thickness (6 inches minimum) and dimensions specified in the contract documents.

3.6.7 Remove the accumulated sediment and install new stone, as required to prevent track-out.

WATTLES

3.7.1 Installation:

A. Construct a shallow trench, 2 to 4 inches deep, matching the width and contour of the wattle.
B. Install wattle along contour of slope
C. Turn ends of wattle uphill to prevent water from flowing around ends.
D. Place and compact excavated soil against the wattle, on the uphill side.
E. Drive stakes through the center of the wattle, into the ground at a maximum spacing of 4 feet along the length of the wattle, and as needed to secure the wattle and prevent movement.
F. Abut ends of adjacent wattles tightly. Wrap joint with a 36 inch wide section of silt fence and secure with stakes.

MAINTENANCE

3.8.1 If temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled, and are ordered by the Engineer; perform such work at the Contractor's expense.

3.8.2 Prevent the accumulation of soil sediment or debris onto streets adjacent to project site. Remove any accumulation of earth or soil immediately, and take remedial actions for prevention.

3.8.3 In case of repeated failures on the part of the Contractor to control erosion, pollution, and/or siltation, the Engineer reserves the right to employ outside assistance to provide the necessary corrective measures. Such incurred direct costs, plus project engineering costs, will be at the Contractor's expense, and appropriate deductions will be made from the Contractor's monthly progress estimate and final payment.

END OF SECTION

SECTION 31 3120

BRUSH MANAGEMENT FOR DRAINAGE PROJECTS

PART 1 GENERAL

1.01 GENERAL DESCRIPTION OF WORK

A. Controlling the growth of woody plants along an open drainage ditch by applying mechanical and/or chemical treatment measures.

B. All work to be done in accordance with these specifications and shall comply with local, state and/or fed-eral requirements and OSHA Standards.

1.02 WORK AREA

A. Work shall be confined to both sides of the channel from the low water line to the toe of the adjacent spoil bank or as directed by construction note.

B. Access to the work provided by the Owner shall be limited to the Drainage District's right-of-way as listed, if not listed assume the right-of-way to extend from the centerline of the ditch 33 feet in each direction.

C. Contractor is to avoid damage to crops. If crop damage for access is necessary approval is required from trustees prior to access.

1.03 PROTECTION OF ADJACENT PROPERTY

A. Protect all property outside the Drainage District's right-of-way.

B. Contractor shall be responsible for crop damage outside of the right-of-way of the Drainage District.

C. Protect all other vegetation within the work limits from overspray of the chemical used.

1.04 PROJECT CONDITIONS

A. Contractor shall be certified by the Iowa Department of Agriculture and Land Stewardship for Category 6, Right-of-Way Pest Control.

B. Application of chemicals shall be according to the manufacturer's recommendations.

C. The contractor shall retreat all regrowth of woody plants during the next growing season prior to final acceptance of the work.

D. The contractor shall be responsible for any water quality problem arising from improper performance of the work.

1.05 SUBMITTALS

A. Prior to beginning work, submit the manufacturer's label of the herbicides planned for use showing compliance with the application methods specified.

B. Prior to acceptance of work, submit records of the herbicide applied as required under the Iowa Pesti-cide Act for commercial applicators.

PART 2 PRODUCTS

2.01 HERBICIDE

A. Approved by the manufacturer for application according to the treatment method specified.

B. Rated effective by the manufacture for control of the dominant species of woody plants expected to be encountered in the work.

C. Registered with the Iowa Department of Agriculture and Land Stewardship for use on drainage ditch banks.

PART 3 EXECUTION

3.01 METHODS OF TREATMENT

A. Woody plants with stems and trunks less than or equal to 6 inches in diameter, measured at 18 inches above the ground, shall be treated with basal-sprays.

B. Woody plants with stems and trunks greater than 6 inches in diameter, measured at 18 inches above the ground, shall be cut with the stumps chemically treated within 3 hours.

C. Thickets, areas containing large numbers of small stems in a small area, may be treated by foliage spraying (only limited use of this method is allowed).

3.02 BASAL SPRAY TREATMENT

A. Apply the spray as a drench to the lower 12 to 18 inches of the stems and trunks plus the root collar area around the base of the plant.

B. Application can be made at any time of the year ex-cept during periods of snow cover.

3.03 CUT-STUMP TREATMENT

A. Cut to within 3 inches of the ground surface.

B. Place all cut trees and brush in small piles at the top of ditch banks. Avoid piling brush within the high water level and any cropped areas.

C. Apply chemicals to the stump, the remaining trunk and exposed roots within 3 hours of cutting.

D. Application can be made at any time of the year except during the periods of heavy sap flow.

3.04 FOLIAGE-STEM TREATMENT

A. Only for thickets, spray leaves and stems to just wet.

B. Only spray during near wind still conditions to prevent drift.

C. Application can normally be made from the time leaves are fully expanded until they begin to turn in the fall. However, the plants should not be under moisture or heat stress when treated.

3.05 ACCEPTANCE

A. Treated areas will be inspected after completion of the work and accepted subject to compliance with specified project conditions and submittals.

3.06 CLEANUP

A. Remove empty chemical containers and other debris from the work site.

B. Repair all fences and gates disturbed in performance of the work.

END OF SECTION

SECTION 31 3121

WEED MANAGEMENT FOR DRAINAGE PROJECTS

PART 1 GENERAL

1.01 GENERAL DESCRIPTION OF WORK

A. Controlling the growth of noxious weeds and other plants not desired based on previous adjacent land use along an open drainage ditch by applying mechanical and/or chemical treatment measures.

B. All work to be done in accordance with these specifications and shall comply with local, state and/or fed-eral requirements and OSHA Standards.

1.02 WORK AREA

A. Work shall be confined to both sides of the channel from the low water line to the top of bank or as directed by construction note.

B. Access to the work provided by the Owner shall be limited to the Drainage District's right-of-way as listed, if not listed assume the right-of-way to extend from the centerline of the ditch 33 feet in each direction.

C. Contractor is to avoid damage to crops. If crop damage for access is necessary approval is required from the trustees prior to access.

1.03 PROTECTION OF ADJACENT PROPERTY

A. Protect all property outside the Drainage District's right-of-way.

B. Contractor shall be responsible for crop damage outside of the right-of-way of the Drainage District.

C. Protect all other vegetation within the work limits from overspray of the chemical used.

1.04 PROJECT CONDITIONS

A. Contractor shall be certified by the Iowa Department of Agriculture and Land Stewardship for Category 5, Aquatic, and Category 6, Right-of-Way Pest Control.

B. The contractor shall be responsible for any water quality problem arising from improper performance of the work.

1.05 SUBMITTALS

A. Prior to beginning work, submit the manufacturer's label of the herbicides planned for use showing compliance with the application methods specified.

B. Prior to acceptance of work, submit records of the herbicide applied as required under the Iowa Pesticide Act for commercial applicators.

PART2 PRODUCTS

2.01 HERBICIDE

A. Approved by the manufacturer for application according to the treatment method specified.

B. Rated effective by the manufacture for control of the specified plant.

C. Registered with the Iowa Department of Agriculture and Land Stewardship for use on drainage ditch banks.

PART 3 EXECUTION

3.01 METHOD OF TREATMENT

A. Application of chemicals shall be according to the manufacturer’s recommendations.

3.02 ACCEPTANCE

A. Treated areas will be inspected after completion of the work and accepted subject to compliance with specified project conditions and submittals.

3.03 CLEANUP

A. Remove empty chemical containers and other debris from the work site.

B. Repair all fences and gates disturbed in performance of the work.

END OF SECTION

SECTION 31 3700

RIPRAP

PART 1 GENERAL

1.01 GENERAL DESCRIPTION OF WORK

A. Perform excavation and place riprap or erosion stone as indicated on plans including all appurtenant required site grading.

B. Restore obstructions removed to accommodate construction equipment or to facilitate excavation.

C. Secure waste and/or borrow sites as required for project.

1.02 SUBMITTALS AND QUALITY ASSURANCES

A. Provide source of material.

B. Gradation of aggregate.

C. Tests results for bulk specific gravity, soundness in magnesium sulfate, and soundness in freezing and thawing performed on sample obtained from each ledge proposed for use. Test results shall have been performed during the last 12 months prior to delivery.

1.03 TEST METHODS

A. Bulk Specific Gravity: Saturated surface-dry (SSD) condition with bulk specific gravity so determined shall not be less than 2.55.

B. Soundness in Magnesium Sulfate: Test according to ASTM C88. The combined loss at 5 cycles shall not be more than 8 percent.

C. Soundness in Freezing and Thawing: Test according to AASHTO T103, Ledge Rock Method C. Loss at 12 cycles shall not exceed 5 percent.

PART 2 PRODUCTS

2.01 RIPRAP

A. Use broken limestone, dolomite or quartzite.

B. Provide sound material not subject to disintegration under action of air or water.

C. Take material from blasted rock. No added processing necessary except for selected loading.

D. Gradation: Well-graded material meeting following size limitations:

Stone Wt., Lbs.	Min %>
250	0
90	50
5	90

2.02 EROSION STONE

A. Use broken limestone, dolomite or quartzite.

B. Provide sound material not subject to disintegration under action of air or water.

C. Gradation: nominal 6 inch mixture well-graded meeting following size limitations:

Stone Wt., Lbs.	Dia., In.	Min/Max %>
100		0
30	6”	20–50
5	3"	80–100

Passing 1/2" sieve ≤5%.

2.03 ENGINEERING FABRIC

A. May be a woven or nonwoven synthetic material.

B. Physical Properties:
   1. Weight (min.) – 8 oz/yd.
   2. Grab Tensile Strength (min.) – 200 psi
   3. Width (min.) – 12'-6"

C. Trevira 1127, Amoco 4508, Synthetic Industries 801 grade or approved equivalent.

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION

A. Perform cuts and fills to line and grade shown on plans and/or details.

B. Grade subgrade surface smooth, firm and uniform.

C. Place no riprap until subgrade has been inspected and approved by Engineer.

3.02 EQUIPMENT PLACEMENT

A. Place uniformly in one lift and in manner to avoid disruption of underlying materials.

B. Avoid segregation.

C. Hand place as required around structures.

3.03 HAND PLACEMENT

A. Securely bed larger rocks.

B. Fill voids with smaller rocks or fragments.

C. Avoid segregation.

END OF SECTION

DIVISION 32

EXTERIOR IMPROVEMENTS

SECTION 32 9220
SEEDING & FERTILIZING

PART 1 GENERAL

QUALITY ASSURANCE

1.1.1 Source Quality Control: Provide producer's tests for purity and germination of seed, dated within nine months of sowing.

1.1.2 A soil test indicating adequate nutrients available may be to justify reduced or omitted fertilizer application. Submit a minimum of 1 composite sample per 5 acres of seeded area for testing. Composite samples shall consist of at least 15 subsamples.

Submittals

1.2.1 Provide manufacturer's data on the following:

A. Seed Mix: Documentation indicating scientific name, common name, type of seed, percent germination, percent purity, date of testing, and seed tags from bags used.
B. Fertilizer.

1.2.2 Soil test results reporting a minimum of pH, available phosphorous, nitrogen, potassium, and organic matter per each composite sample.

JOB CONDITIONS

1.3.1 Existing Conditions: Perform seeding and sodding only after preceding work affecting ground surface is completed.

1.3.2 Environmental Requirements:

A. Plant seed on unfrozen soil with adequate moisture content.
B. Permanent seed between calendar dates:
    1. Spring: March 1 to May 31
    2. Fall: August 10 to September 30
    3. Seeding outside of calendar window shall be submitted in writing and approved by the engineer.
C. Do not seed when wind exceeds 15 mph.

1.3.3 Watering:

A. Only as directed by the engineer. Paid for via change order if applied by contractor.
B. Provide labor, equipment, and water to supplement natural rainfall
C. Seed bed to be in a moist condition during the establishment period (forty-five days following application of seed).

PART 2 PRODUCT

SEED MIXTURE

2.1.1 Mix A - SUDAS Type 2 Permanent Cool Season Mixture for Slopes and Ditches

2.1.2 Mix B – SUDAS Type 3 Permanent Warm-Season Slope and Ditch Mixture

2.1.3 Mix C – SUDAS Type 1 Permanent Lawn Mixture for re-seeding flat, disturbed areas of lawn.

2.1.4 Use clean, dry, new crop seed.

2.1.5 Companion crop when specified shall be 3 lbs of clean Oats (*Avena sativa*) per acre. If seeding after September 20, substitute Oats for Winter Wheat (*Triticum aestivum*).

FERTILIZER

2.2.1 Commercial fertilizer meeting the requirements of applicable state laws. Fertilizer shall be derived from a minimum of 25% organic sources.

2.2.2 Available nutrients by weight: 12% Nitrogen – 12% Potassium – 12% Phosphorous applied at rate of 12 lbs / 1,000 sq. ft.

MULCH

2.3.1 Clean straw

2.3.2 Wood cellulose fiber

2.3.3 Jute netting

WATER

2.4.1 Contractor to furnish water only as directed by the engineer.

2.4.2 Free of matter harmful to plant growth.

2.4.3 Provide equipment, hoses, nozzles, sprinklers that will allow uniform soaking of the upper surface. Do not flood or jet.

PART 3 EXECUTION

general

3.1.1 Furnish all labor, tools, equipment, and materials required to complete the fertilizing and seeding operations.

INSPECTION

3.2.1 Check that preceding work affecting ground surface is completed and area to be seeded is reasonably smooth and soil is not compacted..

3.2.2 Verify that soil is not frozen and within acceptable range of moisture content.

3.2.3 Begin work only when conditions are satisfactory.

PREPARATION

3.3.1 Fine grade area using hand raking or other method to form seed bed.

3.3.2 For areas where equipment can be safely operated, the seedbed shall be adequately loosened (2 inches) and smoothed.

3.3.3 Remove all debris greater than golf ball size.

3.3.4 Remove all weeds, volunteer growth, etc. from areas to be seeded prior to placing fertilizer (if necessary) and seed. Do not leave weeds, etc. on surface. Rake and remove.

3.3.5 Water dry topsoil as required at least 48 hours prior to seeding to obtain a loose friable seed bed.

fertilizing

3.4.1 Apply fertilizer based on the nutrient deficiencies identified from the soil test in accordance with manufacturer’s instructions.

3.4.2 If soil is not tested prior to seeding, fertilizer meeting specifications in Fertilizer Products section shall be tilled into the top 2 inches of soil.

3.4.3 For open ditches and other areas not traversable, fertilizing shall be accomplished by spreading dry fertilizer with portable cyclone spreader.

seeding

3.5.1 The seeding operation shall be performed immediately after the seedbed is prepared.

3.5.2 The seed shall be broadcast or drilled with equipment that will ensure uniform distribution of the seed.

3.5.3 For slopes of ditches and other areas unable to be safely traversed by equipment, seeding shall be applied by one of the following methods:

A. A portable cyclone seeder.

B. Hydro-seeder with:

1. Pump rated at not less than 100 gpm.
2. Means of measuring tank volume.
3. Tank agitator.

C. Air seeder with:

1. Constant air pressure across boom.
2. Granulator for seeding rate control.
3. Capability for partial boom use.

3.5.4 Apply seed at the rate indicated in Seed Products section.

3.5.5 For broadcast seeding:

A. Broadcast half of seed with mechanical seeder.
B. Broadcast remaining half of seed at right angles to first seeding pattern, using same broadcast method.
C. Cover seed to depth of 1/4" by raking, harrowing or cultipacking.
D. Roll seeded area with roller weighing maximum of 112 lbs./ft. of width.

3.5.6 For hydro-seeding:

A. Apply 400 gallons of slurry (water, seed, and fertilizer) per acre.
B. Cover seed on traversable slopes to a depth of 1/4 to 1/2 inch by cultipacking immediately after seeding.

MULCH

3.6.1 Spread mulch uniformly at 90 lbs./1000 sq. ft.

3.6.2 Place [SPECIFY EROSION CONTROL PRODUCT] over seeded area with 3:1 slopes and steeper.

3.6.3 Anchor mulching fabric with stakes 4 feet o.c. and at edges.

3.6.4 Apply additional cover crop on slopes in excess of 20%.

A. If seeding with SUDAS Type 2, apply annual rye (*Lolium multiflorum*) at rate of 0.75 lbs/1000 sq. ft.
B. If seeding with SUDAS Type 3, apply weed-free Oats (*Avena sativa*) at rate of 0.5 lbs. / 1000 sq. ft.

TEMPORARY SEEDING

3.7.1 For periods when permanent seeding cannot be completed on traversable slopes, a temporary seeding of oats shall be made at a rate of 100 lbs per acre.

3.7.2 The residue from this crop shall be incorporated into the soil during seedbed preparation at the next permanent seeding period.

3.7.3 For ditch bank slopes finished after October 1, complete fertilizing and seeding operations between the period of April 1 to April 20 of the following year. Soil testing can be completed after final grading if ground is workable.

DORMANT SEEDINGS

3.8.1 A dormant seeding may be made late in the fall just prior to freeze up beginning on November 15. No seeding will be allowed on snow or ice covered surfaces or frozen ground.

3.8.2 The seeding application rate shall be increased by 50% of that specified and incorporated as outlined in Seeding Execution Section.

Re-seeding

3.9.1 Contractor shall be responsible for reseeding any area that does not establish vegetation, during active growing months/seasons where monthly average rainfall conditions are within 25% of the established average for the month.

A. If rainfall data is outside of the established range, as described in Paragraph A above, the Owner will pay for reseeding at the unit price.

3.9.2 Unsatisfactory areas shall be reseeded within seven (7) days during an active growing season. Determination of percent coverage density shall be made by Engineer.

3.9.3 Immediately reseed and mulch areas that show thin or bare spots and continue maintenance until vegetation coverage density requirement is met.

3.9.4 Repair and reseed eroded areas.

3.9.5 Contractor shall furnish water as directed by the engineer. Proper watering rates and times are dependent on species of grass, soil conditions, and weather.

3.9.6 Establishment period to extend forty-five days.

CLEANUP

3.10.1 Remove trash and excess materials from project site.

3.10.2 Maintain paved areas in clean condition.

END OF SECTION

SECTION 32 9221
OPEN DITCH SEEDING AND FERTILIZING

PART 1 GENERAL

QUALITY ASSURANCE

1.1.1 Source Quality Control provides producer's tests for purity and germination of seed, dated within nine (9) months of sowing.

1.1.2 A soil test indicating adequate nutrients available may be to justify reduced or omitted fertilizer application. Submit a minimum of 1 composite sample per 5 acres of seeded area for testing. Composite samples shall consist of at least 15 subsamples.

Submittals

1.2.1 Provide manufacturer's data on the following:

A. Seed Mix: Documentation indicating scientific name, common name, type of seed, percent germination, percent purity, date of testing, and seed tags from bags used.

B. Fertilizer

1.2.2 Soil test results reporting a minimum of pH, available phosphorous, nitrogen, potassium, and organic matter per each composite sample.

JOB CONDITIONS

1.3.1 Existing Conditions: perform seeding only after preceding work affecting ground surface is completed.

1.3.2 Environmental Requirements:

A. Plant seed on unfrozen soil with adequate moisture content.

B. Permanent seed between calendar dates:

1. Spring: March 1 to May 31
2. Fall: August 10 to September 10
3. Do not seed when wind exceeds 15 mph.
4. Seeding outside of calendar window shall be submitted in writing and approved by Engineer.

1.3.3 Watering:

A. Only as directed by the engineer. Paid for via change order if applied by contractor.

B. Provide labor, equipment, and water to supplement natural rainfall.

C. Seed bed to be in a moist condition during the establishmet period (forty-five days following application of seed).

PART 2 PRODUCTS

SEED MIXTURE

2.1.1 Mix A - General non-native seed mix that can be used for hay. Seed at 26 lbs per acre. For areas that are tillable acres and will be hayed following completion.

Species (Common)	Species (Scientific)	% By Weight
Alfalfa	*Medicago sativa*	25
Smooth Bromegrass	*Bromus inermis*	75

2.1.2 Mix B - General non-native mix for rapid stabilization. Seed at 25 lbs per acre. For areas that are tillable acres and will be row cropped following completion.

Species (Common)	Species (Scientific)	% By Weight
Smooth Bromegrass	*Bromus inermis*	24
Orchardgrass	Dactylis glomerata	24
Tall Fescue	Festuca arundinacea	24
Perennial Ryegrass	Lolium perenne	17

Timothy	Phelum pratense	11

2.1.3 Mix C - General native mix for rapid stabilization and long-term erosion protection. Seed at 50 lbs per acre. Do not use when fertilizer application is needed. For use in areas that will not be tillable acres.

Species (Common)	Species (Scientific)	% By Weight
Slender Wheatgrass	*Agropyron trachycaulum*	4
Big Bluestem	*Andropogon gerardii*	6
Sideoats Grama	*Bouteloua curtipendula*	8
Canada Wild Rye	*Elymus canadensis*	3
Switchgrass	*Panicum virgatum*	2
Little Bluestem	*Schizachyrium scoparium*	5
Indiangrass	*Sorghastrum nutans*	4
Partridge Pea	*Chamaecrista fasciculata*	2.4
Ox-eye Sunflower	*Heliopsis helianthoides*	0.8
Wild Bergamot	*Monarda fistulosa*	0.16
Yellow Coneflower	*Ratibida pinnata*	0.4
Black-eyed Susan	*Rudbeckia hirta*	0.24
Oats/Winter Wheat	*Avena sativa* / *Triticum aestivum*	48
Annual Rye	*Lolium italicum*	16

2.1.4 Use clean, dry, new crop seed.

2.1.5 Legume seed shall be inoculated by the wet method and shall not be exposed to direct sunlight for periods of time exceeding one-half hour prior to seeding.

2.1.6 Companion crop when specified shall be 3 lbs of clean Oats (*Avena sativa*) per acre. If seeding after September 20, subsitute Oats for Winter Wheat (*Triticum aestivum*).

FERTILIZER

2.2.1 Commercial agricultural fertilizer meeting the requirements of applicable state laws.

MULCH

2.3.1 Clean straw.

2.3.2 Wood cellulose fiber.

2.3.3 Jute netting.

PART 3 EXECUTION

GENERAL

3.1.1 Furnish all labor, tools, equipment, and materials required to complete the fertilizing and seeding operations.

INSPECTION

3.2.1 Check that preceding work affecting ground surface is completed and area to be seeded is reasonably smooth and soil is not compacted.

3.2.2 Verify that soil is unfrozen and within an allowable range of moisture content.

3.2.3 Begin work only when conditions are satisfactory.

SEEDBED PREPARATION

3.3.1 No special seedbed preparation is required for the slopes of open ditches and other areas unable to be traversed by equipment if fertilized and seeded at the end of each day of operation.

3.3.2 When provisions of Item 3.03.A. above cannot be met, preparation of seedbed on slopes of open ditches and other areas not traversable shall be accomplished by harrowing.

3.3.3 For all other areas where equipment can be safely operated, the seedbed shall be adequately loosened (2 to 4 inches) and smoothed by disking.

FERTILIZING

3.4.1 Apply fertilizer based on the nutrient deficiencies identified from the soil test in accordance with manufacturer's instructions.

3.4.2 If soil is not tested prior to seeding, fertilizer of the following blend shall be applied uniformly at a rate of 300 pounds per acre:

N	P2O5	K2O
6	24	24

3.4.3 For open ditches and other areas not traversable, fertilizing shall be accomplished by one of the following means:

A. Spread dry fertilizer by portable cyclone spreader.
B. Use liquid fertilizer and apply with a sprayer uniformly in a manner to prevent contamination of surface water.

3.4.4 If air or hydro seeding, fertilizer may be applied with seed.

SEEDING

3.5.1 The seeding operation shall be performed immediately after the seedbed is prepared.

3.5.2 The seed shall be broadcast or drilled with equipment that will ensure uniform distribution of the seed.

3.5.3 For slopes of ditches and other areas unable to be safely traversed by equipment, seeding shall be applied by one of the following methods:

A. A portable cyclone seeder.
B. Hydro-seeder with:
    1. Pump rated at not less than 100 gpm.
    2. Means of measuring tank volume.
    3. Tank agitator.
C. Air seeder with:
    1. Constant air pressure across boom.
    2. Granulator for seeding rate control.
    3. Capability for partial boom use.

3.5.4 Apply seed at the rate indicated in Seed Mixture of Products section.

3.5.5 For hydro-seeding, apply 400 gallons of slurry (water, seed and fertilizer) per acre.

3.5.6 Cover seed on traversable slopes to a depth of 1/4 to 1/2 inch by cultipacking immediately after seeding.

3.5.7 Drilled seeding need not be cultipacked if completed with press wheels.

MULCHING

3.6.1 If mulching is not specified, a companion crop of oats shall be seeded at a rate of 50 pounds per acre.

3.6.2 Apply mulch at 2,000 pounds per acre where specified and anchored by a straight disc.

TEMPORARY SEEDING

3.7.1 For periods when permanent seeding cannot be completed on traversable slopes, a temporary seeding of oats shall be made at a rate of 100 pounds per acre.

3.7.2 The residue from this crop shall be incorporated into the soil during seedbed preparation at the next permanent seeding period.

3.7.3 For ditch bank slopes finished after October 1, complete fertilizing and seeding operations between the period of April 1 to April 20 of the following year. Soil testing can be completed after final grading if ground is workable.

DORMANT SEEDINGS

3.8.1 A dormant seeding may be made late in the fall just prior to freeze up beginning on November 15. No seeding will be allowed on snow or ice covered surfaces or frozen ground.

3.8.2 The seeding application rate shall be increased by 50% of that specified and incorporated as outlined in Seeding section.

RE-SEEDING

3.9.1 Contractor shall be responsible for reseeding any area that does not establish vegetation during active growing months/seasons where monthy average rainfall conditions are within 25% of the established average for the month.

A. If ranfall data is outside of the established range, as described in paragraph above, the Owner will pay for reseeding at the unit price.

3.9.2 Unsatisfactory areas shall be reseeded within seven (7) days during an active growing season. Determination of percent coverage density shall be made by Engineer.

3.9.3 Immediately reseed and mulch areas that show thin or bare spots and continue maintenance until vegetation converage density requirement is met.

CLEANUP

3.10.1 Remove trash and excess materials from project site.

END OF SECTION

DIVISION 33

UTILITIES

SECTION 33 4114
SURFACE DRAIN PIPE

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. Furnish and install or salvage and reinstall corrugated metal pipe and appurtenant connecting bands as extensions of drain tile systems and for surface pipe outletting into the open ditch.

B. Cut or extend corrugated metal pipe tile extensions or surface pipe.

1.02 EXISTING DRAIN TILE AND EXTENSIONS

A. Do not disturb existing drain tile extensions or surface pipe not specifically indicated for removal, replacement or salvage on drawings or by Engineer.

B. Repair or replace all such extensions damaged or destroyed by willful or negligent actions as ordered by Engineer and at no expense to Owner.

C. Repair all existing tile intercepted, broken or forced out of alignment during construction of this project as directed by Engineer at no expense to Owner.

1.03 SUBMITTALS

A. Provide manufacturer's certification of compliance with specification requirements for pipe, drain tile and appurtenances.

1.04 CHANGES

A. Obtain prior approval for changes in location, diameter and length of pipe indicated on drawings from Engineer.

PART 2 PRODUCTS

2.01 CORRUGATED METAL PIPE (CMP)

A. Steel pipe: AASHTO M36, Type 1, Annular Only.

B. Aluminum pipe: AASHTO M196.

C. Wall Thickness: 16 gauge unless shown otherwise.

D. Use same materials as pipe for all joint material.

2.02 DRAIN TILE

A. Concrete: ASTM C412.

B. Clay: AASHTO M179 Extra Quality.

2.03 VITRIFIED CLAY PIPE (VCP)

A. ASTM C700 Extra Strength.

PART 3 EXECUTION

3.01 INSTALLATION

A. Complete channel excavation prior to commencing this work.

B. Use salvaged pipe or new metal pipe in minimum lengths of 20 feet unless directed otherwise by Engineer.

C. Make all cuts for metal pipe with torch or saw. Grind rough edges.

D. Excavate and backfill as required for installation.

3.02 BEDDING

A. Shape trench bottom conforming to Iowa DOT Standard Road Plan, DR-101.

B. Provide bearing for 25% of exterior circumference of pipe.

3.03 SURFACE PIPE

A. Locate in low spots along open ditch or replace existing as shown or directed by Engineer to provide drainage through finished spoil banks.

B. Camber trench bottom to anticipate spoil bank settlement.

C. Install with upper inlet 1/2 pipe diameter below natural grade.

D. Install outlet with no more than 4 feet of exposed pipe, no more than 2 feet above ditch flowline and with flow falling at ditch bottom.

E. Provide minimum fall of one foot over total pipe installation.

F. Shape spoil bank and surrounding area to drain toward inlet.

3.04 DRAIN TILE EXTENSIONS

A. Locate near or at existing tile outlet unless directed otherwise by Engineer.

B. Terminate metal pipe extension with no more than 4 feet exposed, between 2 and 4 feet above ditch flowline and with flow falling at ditch bottom.

C. Size extension to fit over tile at least 6 inches on undisturbed soil.

D. Place concrete collar at least 1 foot long by 6 inches thick around joint.

3.05 CLEAN-UP

A. Mound excess trench excavation over trench.

B. Reshape spoil bank as needed.

END OF SECTION

SECTION 33 4115
DRAIN TILE EXTENSIONS

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. Furnish and install or salvage and reinstall corrugated metal pipe and appurtenant connecting bands of the specified size, kind and length and in compliance with the drawings and specifications as extensions of drain tile systems outletting into the open ditch.

B. Cut or band and extend corrugated metal pipe tile extensions.

C. Repair or replace as needed, drain tile prior to installation of tile extension.

D. Remove and dispose of existing pipe and appurtenances not reused.

E. All work to be done in accordance with these specifications and the requirements of the State of Iowa and OSHA Standards.

1.02 EXISTING DRAIN TILE AND EXTENSIONS

A. All existing drain tile extensions not specifically indicated to be removed and replaced or salvaged and relayed on the drawings or ordered by the Engineer are not to be disturbed.

B. All such extensions damaged or destroyed by willful or negligent actions of the Contractor shall be re-paired or replaced as ordered by the Engineer and at the Contractor's expense.

C. All existing tile intercepted, broken or forced out of alignment during the construction of this project and due solely to the Contractor's willful or negligent action will be repaired and reconnected, or otherwise handled as directed by the Engineer, at the Contractor's expense.

D. Salvage and relay to plan requirements the existing tile extension pipe so indicated.

1.03 SUBMITTALS

A. Manufacturers' certification of compliance with specification requirements for pipe, tubing, drain tile and appurtenances.

1.04 CHANGES

A. Engineer must give prior approval to changes from plan in location, diameter and length of pipe. Paragraph 1.03 to be satisfied prior to construction.

PART 2 MATERIALS

2.01 GENERAL

A. Shall be of the type called for on the drawings or in the specifications.

B. Provide those materials as required to perform work as specified.

2.02 PIPE REQUIREMENTS

A. Corrugated Iron or Steel Pipe and Appurtenances:
   1. Must meet requirements of AASHTO M36 for Type I pipe with riveted, resistance spot welded, lock or welded seams except as limited hereafter and/or on the plans.
   2. Minimum Thickness: 16 gauge or as specified. Coupling bands and diaphragms shall be of the same material as the pipe and meet the requirements of AASHTO M36 except as limited hereafter and/or on the plans.
   3. Band angles, bolts and nuts used with coupling bands and diaphragms shall be galvanized and meet requirements of AASHTO M36 except as limited hereafter and/or on the plans.
   4. Limitations and Modifications to AASHTO M36:
      a. Coupling bands furnished to join a new pipe to a site-salvaged pipe or to join two site-salvaged pipe sections must have corrugations compatible with the pipes to be joined. If the pipes to be joined do not have corrugation compatible with one band type then coupling bands as specified on paragraph 4.b., following, or as specified by Engineer shall be used. Channel bands or other bands incorporating a locking channel or dimpled bands are not permissible unless otherwise approved by Engineer.
      b. Unless specified otherwise on the plans coupling bands which are to be furnished under bid items, separate from pipe bid items which include subsidiary coupling bands or are exempted under 2.02.A.4.d., are to have annular corrugations, be fully

corrugated across the entire width and shall not be less than seven (7) inches wide for diameters 4 to 36 inches, inclusive, and not less than 10-1/2 inches wide for all other pipe di-ameters.

c. Reformed or rerolled ends of new pipes with helical corrugation must be fabricated to accommodate the coupling band specified in paragraph 4.b. if the pipes will be used where that coupling band is specified.

d. Channel bands or other bands incorporating a locking channel are permissible only in the joining of two newly furnished pipe sections in which the pipe ends to be coupled have been reformed with flanges designed to accommodate the bands.

5. New pipe to be used in pipe installations requiring new pipe lengths of 20 feet or less are to be furnished in one piece without coupling bands.

B. Corrugated Aluminum Pipe:
1. Must meet requirements of AASHTO M196.
2. Minimum Thickness: 16 gauge or as specified.
3. Coupling bands, diaphragms and appurtenances shall be of the same material as the pipe and meet requirements of AASHTO M196.
4. New pipe to be used in pipe installations requiring new pipe lengths of 20 feet or less are to be furnished in one piece without coupling bands.

C. Concrete Drain Tile:
1. Must meet requirements of ASTM C412 for the quality of the tile specified.
2. Minimum class of concrete drain tile will be Extra Quality or as directed by Engineer.

D. Vitrified Clay Pipe:
1. Must meet requirements of ASTM C200 for extra strength.

E. Corrugated Polyethylene Drainage Tubing:
1. Must meet requirements of ASTM F405.

2.03 PIPE BEDDING AND BACKFILL

A. Bedding:
1. Unless otherwise directed by the Engineer, the bedding shall consist of natural earth.

B. Backfill:
1. Unless otherwise directed by the Engineer, material used for backfilling shall be free from vegetation, boulders or broken concrete over eight (8) inches in the greatest dimension, or frozen material.

PART 3 EXECUTION

3.01 PREPARATION

A. Channel excavation at and downstream from the installation site, shall be completed prior to installation.

3.02 INSTALLATION

A. New outlets should be at or near the existing outlet or as directed by Engineer.

B. Excavate as required. Trench width shall be at least 12 inches wider than pipe and sufficient to permit thorough hand tamping of backfill.

C. Carefully remove and cleanout pipe to be salvaged and relayed. All salvaged pipe for relay to be at least ten (10) feet long or as allowed by the Engineer.

D. Cuts may be made by saw and are to be made perpendicular to the pipe centerline and in a workmanlike manner. Sharp edges are to be removed.

E. Place initial backfill by hand and hand tamp to not less than 12 inches above top of pipe. Compacted density shall be equal to or greater than the surrounding soil.

3.03 CLEANUP

A. Excess excavated material shall be slightly mounded over the ditch and spread on the adjacent spoil.

B. Dispose of removed existing pipe and appurtenances not reused.

END OF SECTION

SECTION 33 4617
AGRICULTURAL DRAIN TILE

PART 1 GENERAL

GENERAL DESCRIPTION OF WORK

1.1.1 Furnish and install pipe for agricultural drainage as indicated on plans.

1.1.2 Provide transportation and handling, excavation, compaction, dewatering, sheeting, shoring, utility repair and/or relocation, surface restoration and miscellaneous associated work.

1.1.3 Excavate as provided in Section 312334 - Trench Excavation and Backfill For Agricultural Drain Tile.

Definitions

1.2.1 Granular Foundation: Material placed 6 inches or greater below the bottom of the pipe grade as recommended by Engineer or soils testing laboratory as replacement for unsuitable or unstable soils, to achieve adequate foundation support.

1.2.2 Granular Bedding: Material placed below pipe, prior to pipe installation, to facilitate proper shaping and to achieve uniform pipe support.

1.2.3 Granular Haunch: Material placed from the spring line of the pipe to the Granular Bedding zone.

1.2.4 Granular Encasement: Material placed from the Granular Haunch to top of pipe, after pipe installation, for protection of pipe and to assure proper filling of voids or thorough consolidation of backfill.

1.2.5 Backfill: Placed from the top of pipe to top of trench, before topsoil placement is to be replaced.

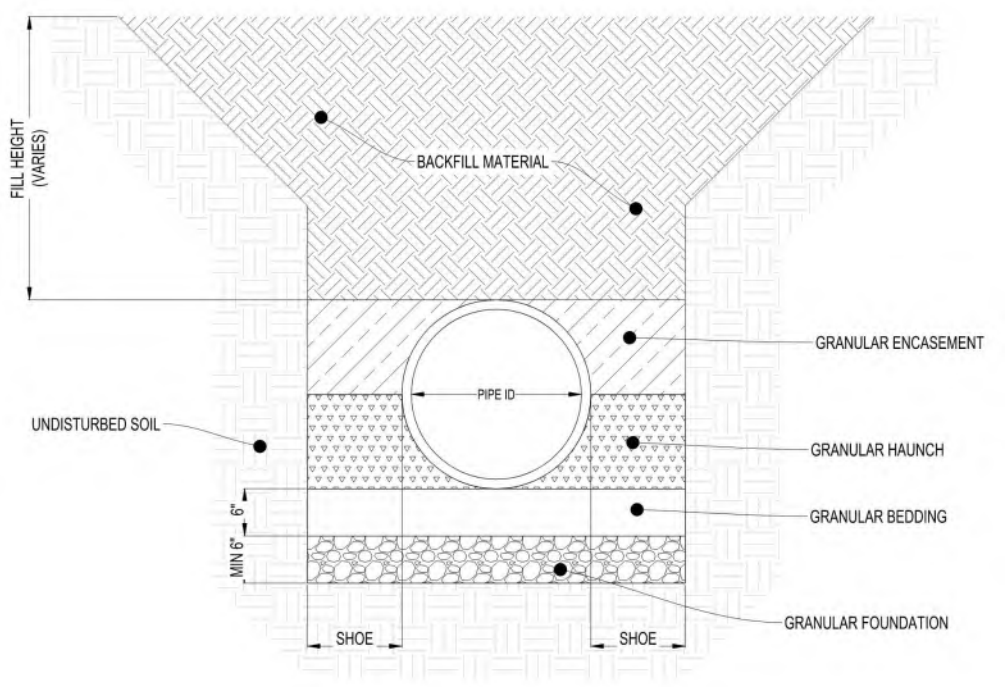


FIGURE 4510-1
AGRICULTURAL PIPE ZONE
NTS

1.2.6 Shoe: width outside of pipe to trench wall to perform adequate compaction of granular material (See Figure 4510-1)

SUBMITTALS AND QUALITY ASSURANCE

1.3.1 The materials used in this work shall be new and conform to the specifications for class, kind and size of material specified below, or as specified hereinafter.

1.3.2 Materials at delivery point shall be inspected by the Contractor for loss or damage in transit. It shall be Contractor's responsibility to repair or replace damaged items in accordance with the manufacturer's instructions.

1.3.3 The Engineer may reject any damage pipe before installation. If Contractor installs rejected pipe from the Engineer, it shall be the Contractors responsibility to repair the pipe or provide new pipe meeting specifications.

1.3.4 Furnish manufacturer's certificates for strength and/or class of pipe for all sizes installed.

1.3.5 Furnish manufacturer's literature with sample, if practical, of incidental materials to be incorporated. Provide source names for bedding material and concrete encasement if required for project.

Tolerance

1.4.1 Contractor shall perform the work within the following tolerances unless approved by the Engineer:

A. Tile Installation Elevation = 0.10 feet
B. Pipe Gap Joints = 1-inch
C. Deflection = 7.0%

PART 2 MATERIALS

REINFORCED CONCRETE PIPE (RCP)

2.1.1 Circular Pipe: ASTM C76.

2.1.2 Arch Pipe: ASTM C506.

2.1.3 Elliptical Pipe: ASTM C507.

2.1.4 Strength:

A. Under roadways and within 5' on either side:
   1. Class IV (AASHTO 3000D).
B. Under railroads for distance shown on plans:
   1. Class V (AASHTO 3750D).
C. All other areas unless specified otherwise on plans or details:
   1. Class II (AASHTO 1500D).
D. Higher strengths shown on plans supersede the minimum strengths listed here.

CORRUGATED METAL PIPE (CMP)

2.2.1 Circular Pipe: AASHTO M36, Type I.

2.2.2 Arch Pipe: AASHTO M36, Type II.

2.2.3 Wall Thickness: 16 gage unless shown otherwise.

2.2.4 Perforated Pipe:

A. AASHTO M36, Type III.
B. Use only where specifically designated on plans or as directed by Engineer.

POLYVINYL CHLORIDE (PVC) PIPE

2.3.1 All PVC sewer pipes and fittings shall be minimum SDR-35 conforming to ASTM D3034. Joints shall be elastomeric gasketed must conform to Section 2.01.F of this specification.

PLASTIC DRAIN TILE

2.4.1 Dual Wall, Smooth Interior, Corrugated Polyethylene Pipe: 4-60 inch diameter:

A. Pipe materials, dimensions, markings, perforations, and corrugations shall conform to ASTM F2648 for 2-60 inch diameter, AASHTO, M252 for 4-10 inch diameter and M294, Type S for 12-60 inch diameter.
B. Gaskets and Fittings shall be soil tight in accordance with ASTM F477 and ASTM D3212 Alternative fittings to those listed on the plans shall be approved by the engineer before use.
C. Installation shall be in accordance with ASTM D2321, and the Engineer's recommended guidelines. Pipe and fittings shall be free of all foreign inclusions and visible defects. Pipe ends shall be cut square and Contractor will assure the interior is free of obstruction.
D. When applicable, all joint performance testing shall conform to ASTM F1417 or ASTM F2487.

2.4.2 Dual Wall Smooth Interior Corrugated Polypropylene Pipe: 6-60 inch diameter:
A. Pipe materials, dimensions, markings, perforations, and corrugations shall conform to ASTM F2736 for 6-30 inch diameter pipes and ASTM F2881 and AASHTO M330 for 12-60 inch diameter pipes.
B. Gaskets and Fittings shall be soil tight in accordance with ASTM F477 and ASTM D3212. Alternative fittings to those listed on the plans shall be approved by the engineer before use.
C. Installation shall be in accordance with ASTM D2321, and the Engineer's recommended guidelines. Pipe and fittings shall be free of all foreign inclusions and visible defects. Pipe ends shall be cut square and Contractor will assure the interior is free of obstruction.
D. When applicable, all joint performance testing shall conform to ASTM F1417 or ASTM F2487.

2.4.3 PE Drain Tile
A. Corrugated polyethylene tubing: ASTM F405 for 3 to 6 inch diameter and ASTM F667 for 4 to 24 inch diameter.

2.4.4 Water Tight Gasketed Fittings (WTGF)
A. All fiitings shall be an Inserta-Tee or QwikSeal or approved equal by the Engineer.

2.4.5 Gaskets
A. All gaskets shall be watertight and must conform to ASTM D3212 and ASTM F477.

CONCRETE

2.5.1 Comply with Cast-In-Place Concrete - Section 033000.

2.5.2 Ready mix concrete may be used with approval of Engineer.

Ridgid DRAIN TILE

2.6.1 Concrete: ASTM C412 and AASHTO M178.

2.6.2 Clay: ASTM C4 and AASHTO M179 Extra Quality

granular materials

2.7.1 Granular materials furnished for foundation, bedding, encasement, backfill, or other purposes as may be specified shall consist of any natural or synthetic mineral aggregate such as sand, gravel, crushed rock, crushed stone, or slag, that shall be so graded as to meet the gradation requirements specified herein of each particular use. Suitable materials shall be subject to the approval of the Engineer.
A. At no time shall clay material be utilized as granular foundation, granular bedding or granular encasement.
B. In each case below, unless otherwise indicated, the lower limits of any particular zone shall be the top surface of the next lower course as constructed. The upper limits of each zone are established to define variable needs for material gradation and sequence of construction and other conditions. The material use and zone designations defined shall only serve to fulfill the objectives and shall not be construed to restrict the use of any particular material in other zones where the gradations require.

2.7.2 GRANULAR FOUNDATION ZONE

A. All Granular Foundation shall conform to ASTM Class I. See Table 4510-1 below.

2.7.3 GRANULAR BEDDING, HAUNCH AND ENCASEMENT ZONES

A. All Granular Bedding, Haunch and Encasement material shall conform to ASTM Class II. See Table 4510-1 below.

1. If ASTM Class II Material is not locally available, Contractor shall submit gradation of local material source for approval by the Engineer.

Table 4510 - 1
Granular Material Gradations
(Percent Passing)

Sieve Size	Pipe Zone	
	Foundation	Bedding & Haunch & Encasement
	ASTM CLASS I (CRUSHED ROCK, ANGULAR)	ASTM CLASS II (CLEAN, COARSE-GRAINED)
2 in	-	-
1 1/2 in	100	100
1 in	-	-
3/4 in	-	-
3/8 in	< 25	-
No. 4	≤ 15	-
No. 10	-	-
No. 40	-	-
No. 200	< 12	<12

2.7.4 SELECT NATIVE MATERIAL

A. All Select Native material shall have a gradation of less than 30% passing the #200 sieve.

B. Select Native material may consist of excavated material from the trench.

PART 3 EXECUTION

TILE INVESTIGATION

3.1.1 The Contractor shall notify the Engineer at least 48 hours prior to the start of Tile Investigation and shall not begin investigation until the Engineer is onsite or notified that Investigation has begun.

3.1.2 The Contractor shall locate, mark and record depth of any existing tile, to the best of their ability, prior to the 2,500 linear foot section of work in progress.

3.1.3 The Engineer will record the marked locations and determine, if any, plan adjustments should be implemented for the proposed alignment.

3.1.4 If excavated area needs backfilling for further trenching operation such use of equipment and labor is incidental to exploratory time.

Trench Excavation

3.2.1 Refer to Section 31 2334 Trench Excavation and Backfill for Agricultural Drain Tile

Granular foundation

3.3.1 Whenever wet, soft or unstable soil, incapable of properly supporting the pipe, manholes or other structures encountered in the trench, a further depth and/or width shall be excavated and refilled to trench bottom grade with granular foundation material thoroughly compacted to assure a firm foundation.

A. Place only where approved by Engineer.
B. Place to depth shown on Figure 4510-1 or as directed by Engineer.
C. Contractor shall notify Engineer of area and submit all load tickets for the granular foundation material used. If no tickets are submitted, payment will not be made.

BEDDING & ENCASEMENT

3.4.1 All pipes shall be bedded and encased as indicated on the drawings, details, and referenced herein or approved by the Engineer;

3.4.2 In the event that natural, suitable, granular material is not encountered during normal excavation of the trench or when the material encountered is determined unsuitable by the Engineer for backfilling around the pipe as required, the Contractor shall provide and place such approved material as required. If suitable excess excavation is available from other area of the project, Contractor may be required to install such material in the trench.

3.4.3 Soils consisting of clay including but not limited to clayey gravel, clays and silts are not permissible for use as Bedding, Encasement or Foundation materials.

3.4.4 Spoon Installation Method

A. Unless specified elsewhere, the normal bedding for drain tile will be a hand shaped trench bottom; conforming to Class C, Type 2 for RCP and AG-140 for HDPE or PP (See Pipe Envelope Requirements, on the plan details sheets).
B. Reinforced Concrete Pipe
    1. Where no specific bedding requirement is called out, use Class C bedding. Concrete pipe shall be laid with the groove (or bell) ends up grade; the tongue (or spigot) end shall be firmly inserted in the groove.
    2. Class C Bedding is laid with ordinary care in a earth foundation shaped to fit the lower 50 percent breadth of the pipe. The remainder of the pipe is surrounded to its top by Select Native Material.
C. Corrugated PE
    1. In accordance with ASTM F449
        a. Spoon dimensions shall be in accordance with Table 4510-2 or the pipe manufacturer, whichever is more tolerant.
        b. Gap between native soil and pipe shall not exceed 1-inch.
        c. No granular bedding material is required for spoon installation method as long as the gap between trench sidewall and pipe does not exceed 1-inch.
        d. Granular Encasement material shall be used from springline of pipe to top of pipe.
D. Corrugated HDPE
    1. In accordance with ASTM F449
        a. Spoon dimensions shall be in accordance with Table 4510-2 or the pipe manufacturer, whichever is more tolerant.
        b. No granular bedding material is required for spoon installation method as long as the gap between trench sidewall and pipe does not exceed 1-inch.

c. Granular Encasement material shall be compacted in 6 inch lifts from the bottom of the pipe to the top of the pipe to achieve a compaction of at least 95% SPD or manufacturer's recommendation, whichever is greater.

E. Corrugated Polypropylene Pipe (PPP)

1. In accordance with ASTM F449
   a. Spoon dimensions shall be in accordance with Table 4510-2 or the pipe manufacturer, whichever is more tolerant.
   b. Granular Bedding material is not required for spoon installation method as long as the gap between trench sidewall and pipe does not exceed 1-inch.
   c. Granular Encasement material shall be compacted in 6 inch lifts from the bottom of the pipe to the top of the pipe to achieve a compaction of at least 95% SPD or manufacturer's recommendation, whichever is greater.

Table 4510 - 2

Spoon Dimensions

Nominal Pipe ID (in)	Nominal Pipe OD (in)	Spoon Width (in)	Spoon Depth (in)
4	4.8	-	-
6	6.9	-	-
8	9.1	9.5	4.8
10	11.4	13.5	5.7
12	14.5	16.5	7.3
15	18	19.6	8.8
18	22	23.3	10.6
24	28	29.9	14
30	36	37.2	17.6
36	42	43.2	20.6
42	48	49.8	23.9
48	54	55.7	26.9
60	67	68.6	33.3

3.4.5 Flat Bottom Installation Method

A. Reinforced Concrete Pipe

1. Where no specific bedding requirement is called out, use Class C bedding. Concrete pipe shall be laid with the groove (or bell) ends up grade; the tongue (or spigot) end shall be firmly inserted in the groove.
2. Class B Bedding is defined as 6 inches of Granular Bedding material below the pipe with Granular Bedding material compacted in 6 inch lifts to the springline of the pipe.
3. Select Native Material will be an acceptable backfill above the springline of the pipe.

4. The class of reinforced concrete pipe shall be dependent on the Type of installation method, as specified in the American Concrete Pipe Association Fill Height Tables.

B. Polyvinyl Chloride (PVC)
   1. In accordance with ASTM D2321, using Class I or II bedding material compacted to 95% Standard Proctor Density.

C. Corrugated PE
   1. In accordance with ASTM F449.
      a. Trench dimensions shall be in accordance with Table 4510-3 or the pipe manufacturer, whichever is more tolerant
      b. Granular Encasement material shall be compacted in 6 inch lifts from the bottom of the pipe to the top of the pipe.

D. Corrugated HDPE
   1. In accordance with ASTM F449.
      a. Trench dimensions shall be in accordance with Table 4510-3 or the pipe manufacturer, whichever is more tolerant
      b. Granular Encasement material shall be compacted in 6 inch lifts from the bottom of the pipe to the top of the pipe to achieve a compaction of at least 95% SPD or manufacturer's recommendation, whichever is greater.

E. Corrugated Polypropylene Pipe (PPP)
   1. In accordance with ASTM F449.
      a. Trench dimensions shall be in accordance with Table 4510-3 or the pipe manufacturer, whichever is more tolerant
      b. Granular Encasement material shall be compacted in 6 inch lifts from the bottom of the pipe to the top of the pipe to achieve a compaction of at least 95% SPD or manufacturer's recommendation, whichever is greater.

Table 4510 - 3

Flat Bottom Trench Dimensions

Nominal Pipe ID (in)	Nominal Pipe OD (in)	Mnimum Trench Width (in)	Minimum Depth of Granular Bedding (in)
4	4.8	21	6
6	6.9	23	6
8	9.1	26	6
10	11.4	28	6
12	14.5	30	6
15	18	34	6
18	22	39	6
24	28	48	6
30	36	56	6
36	42	64	6
42	48	72	6
48	54	80	6
60	67	96	6

PIPE LAYING

3.5.1 The Pipe shall be laid according the plan grade, size, material as specified on the plans.

3.5.2 All pipe shall be laid using approved grade boards, furnished and set by the Contractor at no additional cost to the Owner, or laser beam control. No gravity line shall be laid unless there is a minimum of three grade stakes and grade boards set to check the proper grade and alignment; the laser beam shall be checked into grades ahead prior to start of pipe placement.

3.5.3 The Contractor shall provide and use a suitable grade rod to insure the proper grade of the pipe. Contractor shall check pipe grades at a minimum of 100 foot intervals. Proper implements, tools, equipment and facilities satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of the work.

3.5.4 All pipe lifting and hauling shall conform to the pipe manufacturers' specification.

3.5.5 Immediately before placement, the joint surfaces of each pipe section and coupling shall be inspected for the presence of foreign matter, coating blisters, rough edges or projections, and any imperfections also detected shall be corrected by pipe manufacturer's recommendations.

3.5.6 At all times when pipe laying is not in progress, including noon hour and overnight periods, all open ends of the pipe line shall be closed by soil tight plugs or other means approved by the Engineer. If water is present in the trench, the seals shall remain in-place until the trench is pumped dry enough to perform acceptable work.

3.5.7 If at any time the pipe becomes filled with mud or sand to such an extent, that in the judgment of the Engineer, the pipe will be damaged thereby or not function properly for the drainage purpose

intended, the Engineer may require the Contractor to clean such pipe, for which no extra compensation will be allowed.

PIPE JOINT GAPS

3.6.1 Pipe manufacturer joint gap tolerances shall be used at the time the project is bid and any technical releases after bidding shall be subject to Engineer approval.

3.6.2 If any gap is identified to be installed outside of the tolerance, the Engineer shall review and notify the Contractor of approximate location. Further investigation may be required to determine conformance and shall be at no cost to the Owner. Method of investigation and requirements of remediation shall be determined by the Engineer.

clay plug

3.7.1 Clay must be placed and mechanically compacted, at each end of pipe having a free outlet, from bottom of pipe to top of pipe.

A. If not suitable clay is found on site, clay material must be hauled in from quality source or from nearby area, with permission from the landowner.

3.7.2 Thickness of Clay Plug shall be a minimum of 2 feet.

Secondary ROAD CROSSING

3.8.1 Use pipe material specified on plans.

3.8.2 Construct in accordance with special instructions furnished by County Engineer and noted on plans.

3.8.3 Notify County Engineer a minimum of 48 hours prior when ready to make crossing.

3.8.4 Jack or auger in place where shown on plans in accordance with Section 2553, Iowa Department of Transportation Standard Specifications.

3.8.5 Fill upper 24" of open cut through roadway with compacted crushed limestone or rock.

3.8.6 Shape road ditches to drain. Leave entire right-of-way in a neat and workmanship like manner.

3.8.7 Dispose of excess excavation.

3.8.8 Provide traffic control measures as required by County Engineer(s).

WATER TIGHT GASKETED FITTINGS (WTGF)

3.9.1 All WTGF’s shall conform to manufacturer installation methods.

3.9.2 WTGF’s shall only be used if service pipe is ½ of the diameter of the connecting pipe.

A. I.E. Connection to a 6-inch service pipe shall have a 12-inch connecting pipe.

EXISTING DRAIN TILE

3.10.1 Connect to new drain tile Main or Lateral:

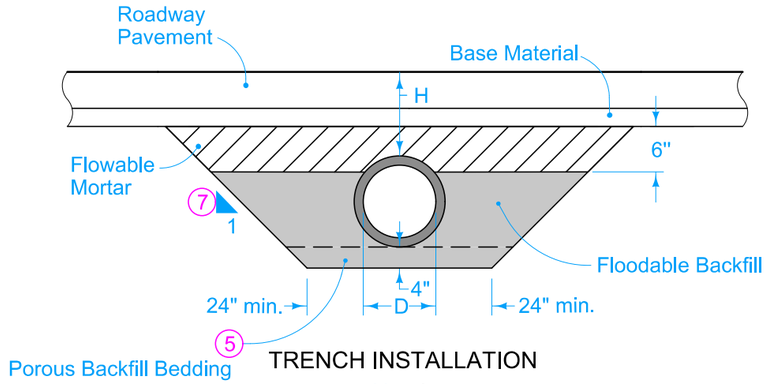
A. Material: corrugated polyethylene tubing or HDPE dual-wall tile.
B. Size of tubing: use one size larger than existing tile.
C. Fittings to the new tile shall be WTGF, where applicable. If WTGF's not applicable, a prefabricated tee shall be used.
D. Make connections water tight at both ends by using concrete collar.
E. Cut end of connecting tubing to shape of Main or Lateral so as not to impede flow.
F. Connect tubing to Main or Lateral to provide a center-to-center connection or higher with at least a minimum flow line differential elevation of 0.3 feet.
G. Plug downstream end of existing tile at trench wall with Portland Cement Concrete.

3.10.2 Provide Engineer with all locations where tile has been connected to new Main or Lateral as well as location of plugs. Locations to be identified by stationing at connections, size of connecting pipe, quantity of pipe and direction of flow.

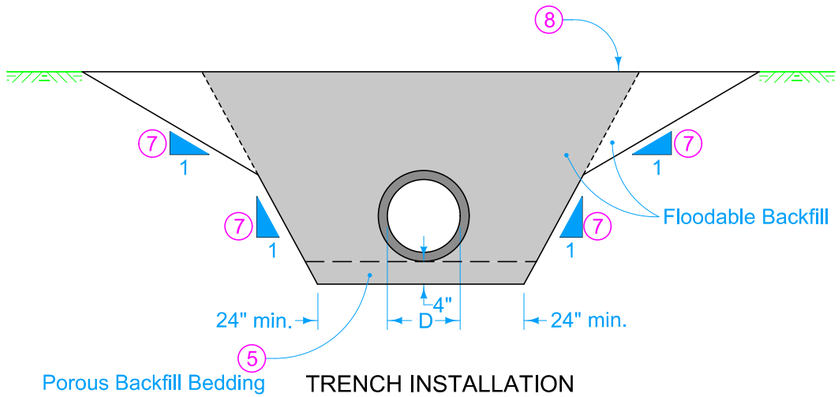
END OF SECTION

STANDARD DETAILS

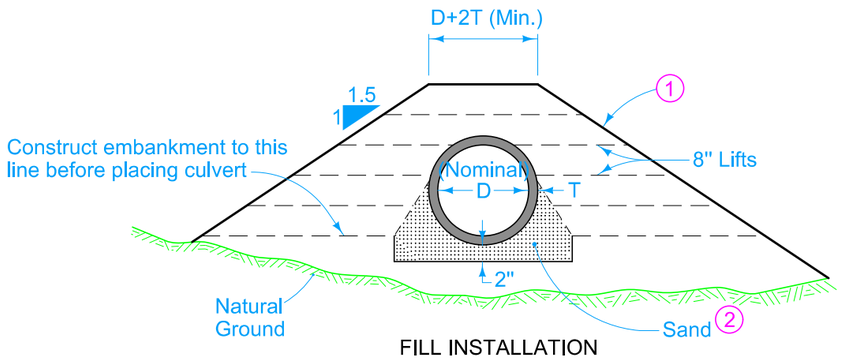
DESIGNER INFORMATION



TRENCH INSTALLATION
H ≤ 4



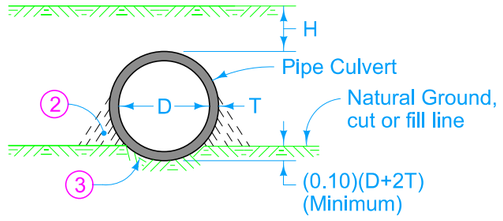
TRENCH INSTALLATION
H > 4



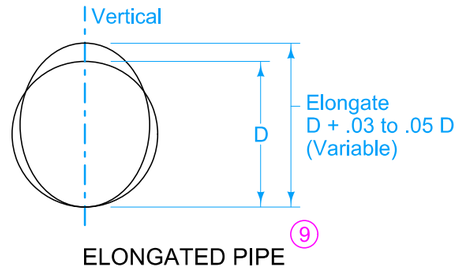
FILL INSTALLATION
(FOR RIGID PIPES ONLY)

CLASS 'B' BEDDING & BACKFILL 4

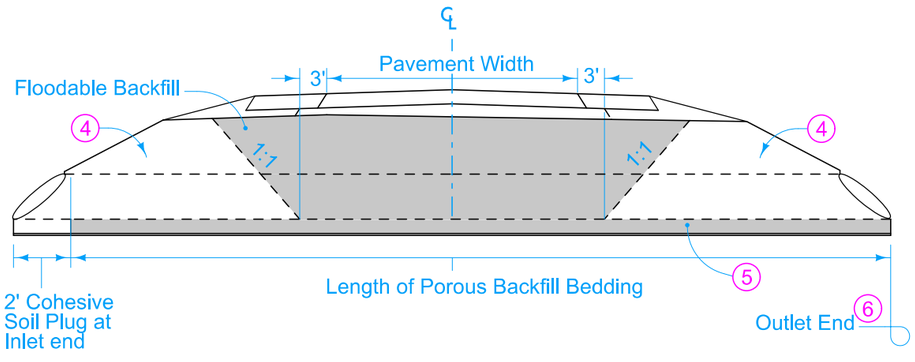
Denotes pay limits for flooded backfill



CLASS 'C' BEDDING & BACKFILL



ELONGATED PIPE



TYPICAL SECTION - SOIL PLUG

Refer to DR-104 for minimum and maximum allowable cover H for the particular kind of pipe culvert.

Possible Contract Items:
- Flowable Mortar
- Flooded Backfill
- Excavation, Class 20

Possible Tabulations:
- 104-3
- 104-4

1. The backfill adjacent to and above the pipe culvert may be placed in conjunction with normal embankment construction. Thoroughly tamp the embankment within the limits shown.
2. Take extra care to ensure complete and satisfactory tamping of backfill material in the area immediately adjacent to the lower portion of pipe.
3. Carefully shape excavation below groundline either using a template conforming to actual dimension and shape of the pipe or using other means. If using other means, check with a template conforming to the actual dimension and shape of the pipe.
4. For culverts backfilled by flooding, place a cohesive soil plug at the inlet, outlet, and, when necessary, sides, prior to flooding.
5. 4-inch Porous Backfill bedding. 2-inch Floodable Backfill bedding may be used under unsealed rigid pipe.
6. Extend Porous Backfill through the outlet end soil plug when used for bedding.
7. Quantity calculations are based upon a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations.
8. Ground Line at time of pipe installation. When existing ground exceeds 5 feet depth over pipe, backfill and compaction by flooding is not required more than 5 feet above the pipe.
9. Where a corrugated metal pipe culvert requiring elongation is to be installed (to counteract deformation caused by backfill), complete elongation using a means approved by the Engineer. Elongation may be developed either as part of shop fabrication or field installation. Install with elongated axis vertical.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	04-18-17

DR-101

SHEET 1 of 1

REVISIONS: Changed "Porous Backfill" to "Porous Backfill Bedding" for clarity. Modified trench installation detail for H>4' to clarify pay limits.

APPROVED BY DESIGN METHODS ENGINEER

PIPE CULVERT
(BEDDING AND BACKFILL)

CONSTRUCTION PLANS

MCNEILL INTERCOUNTY DRAINAGE DISTRICT
PHASE II MAIN OPEN DITCH REPAIRS
MONONA COUNTY, IOWA
CONSTRUCTION PLANS

MOR Engineering

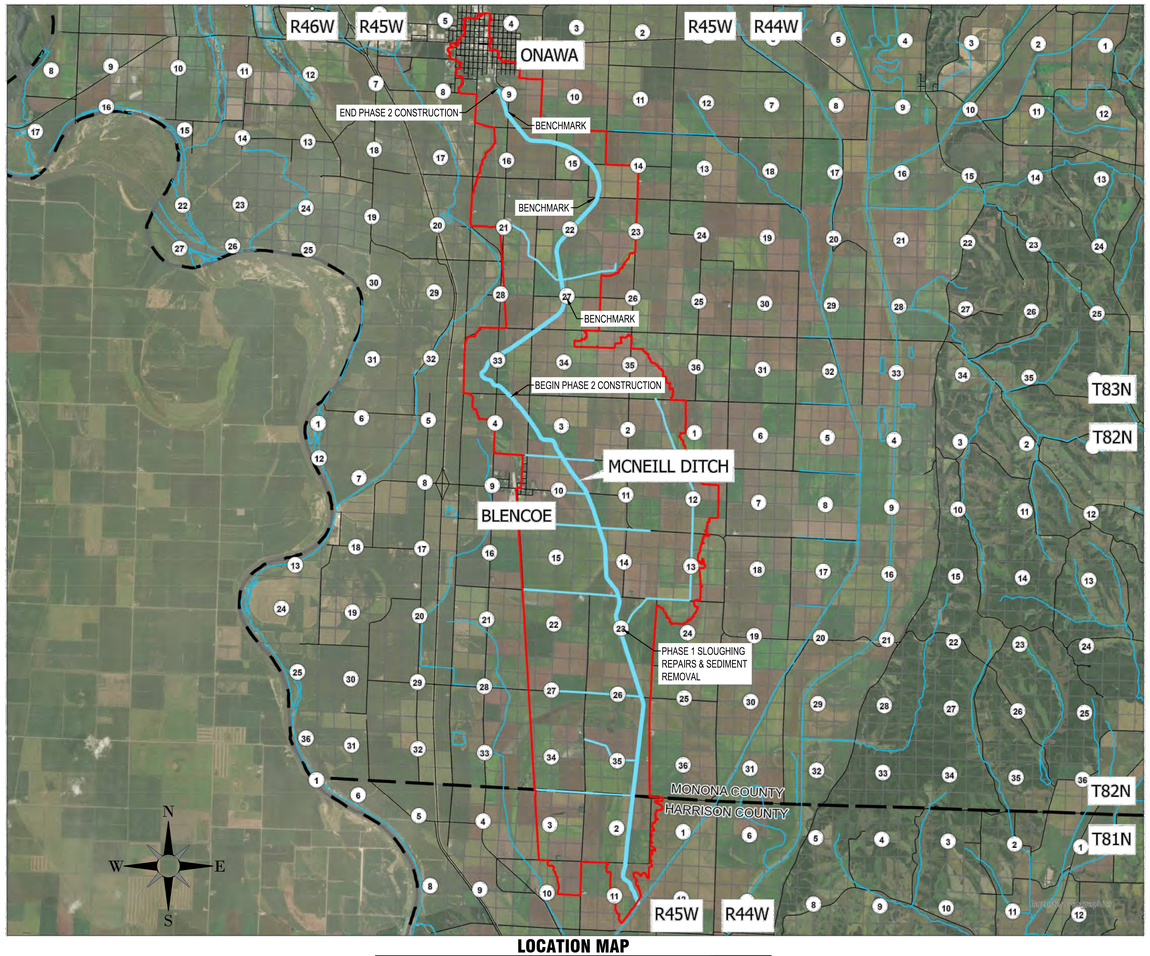
LEGEND

EXISTING

- WATERSHED BOUNDARY
- CITY LIMITS
- SECTION LINE
- QUARTER SECTION LINE
- RIGHT OF WAY LINE
- PROPERTY / LOTLINE
- EASEMENT LINE
- ACCESS CONTROL
- WATER EDGE
- WETLAND BOUNDARY
- FENCE LINE
- EXISTING OPEN DITCH
- CULVERT
- TILE
- PRIVATE TILE
- WATER
- GAS
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- UNDERGROUND UTILITY
- UNDERGROUND FIBER OPTIC
- CONTOUR (MAJOR)
- CONTOUR (MINOR)
- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE LINE
- DROP INTAKE
- HYDRANT
- POWER POLE

PROPOSED

- EASEMENT
- PROPOSED OPEN DITCH
- OPEN DITCH REPAIR
- CULVERT (RCP)
- CULVERT (CMP)
- CULVERT (HDPE)
- TILE
- TILE (PIPE WIDTH)
- PRIVATE TILE
- WATER
- GAS
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND TV
- CONTOUR (MAJOR)
- CONTOUR (MINOR)
- DROP INTAKE
- SLOUGH REPAIR
- SPOIL PLACEMENT
- TREE CLEARING
- REMOVE TREE
- BUFFER



LOCATION MAP

SHEET INDEX

A.01	TITLE
A.02	DISTRICT PLAT
B.01 - B.03	DETAILS
C.01 - C.02	CONSTRUCTION NOTES
C.03 - C.04	QUANTITIES
C.05	LINE AND CURVE DATA
E.01 - E.02	PHASE 1 REPAIRS
D.01 - D.14	PLAN & PROFILE
X.01 - X.20	CROSS SECTIONS

SEAL

LICENSED PROFESSIONAL ENGINEER
CALEB D. RASMUSSEN
25713
IOWA

I hereby certify that this engineering document was prepared by me or under direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Caleb Rasmussen — 7/28/2026

(signature) (date)

Printed or typed name

License number 25713

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: All sheets in the sheet index.

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PROJECT GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS, AND CLARIFICATIONS ISSUED BY ARCHITECT/ENGINEER.
2. CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK.
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
4. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
5. DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
7. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
8. THE LOCATION AND TYPE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY AND ARE ACCURATE AND COMPLETE TO THE BEST OF THE KNOWLEDGE OF MOR Engineering, PLLC. NO WARRANTY OR GUARANTEE IS IMPLIED. THE CONTRACTOR SHALL VERIFY THE SIZES, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM PLAN.
9. THE CONTRACTOR IS TO CONTACT "IOWA ONE CALL" FOR UTILITY LOCATIONS A MINIMUM OF 2 BUSINESS DAYS PRIOR TO ANY EXCAVATION / CONSTRUCTION (1-800-292-8989).

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1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

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PROJECT
MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS
MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	
FILE NAME	25740-TITLE-PHASE II
DRAWN BY	ISG, CDR
DESIGNED BY	CDR
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	7/28/2026
CLIENT PROJECT NO.	

TITLE
TITLE

SHEET
A.01

PROJECT INDEX:

OWNER:

MCNEILL INTERCOUNTY DRAINAGE DISTRICT
HARRISON COUNTY, IOWA
MONONA COUNTY, IOWA

PROJECT ADDRESS / LOCATION:

SECTIONS:
9,15,16,22,27,33,34 T83N R45W
4 T82N R45W

HARRISON COUNTY, IOWA
MONONA COUNTY, IOWA

CONSTRUCTION MANAGER

PROJECT MANAGER: CALEB RASMUSSEN
EMAIL: C.RASMUSSEN@DOMORENGINEERING.COM
PHONE # : 712-304-1958

PROJECT DATUM

HORIZONTAL COORDINATES HAVE BEEN REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), 1996 ADJUSTMENT (NAD83(1996)). ON THE IOWA REGIONAL COORDINATE SYSTEM (ZONE 6), COORDINATE SYSTEM, IN U.S. SURVEY FEET. ELEVATIONS HAVE BEEN REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). RTK GPS METHODS WERE USED TO ESTABLISH HORIZONTAL AND VERTICAL COORDINATES FOR THIS PROJECT.

B.M. ELEVATION 1=1041.92
SPIKE IN POWER POLE
NORTHING: 7227720.64
EASTING: 16408587.17

B.M. ELEVATION 2=1043.09
NAIL IN POWER POLE
NORTHING: 7241980.37
EASTING: 16403574.09

B.M. ELEVATION 3=1043.97
TO PRIVATE CULVERT
NORTHING: 7235631.53
EASTING: 16410785.48

TOPOGRAPHIC SURVEY

THIS PROJECT'S TOPOGRAPHIC SURVEY CONSISTS OF DATA COLLECTED IN 2013 & SEPTEMBER 2022 BY ISG. VERIFIED BY MOR IN SUMMER 2026.



MOREngineering

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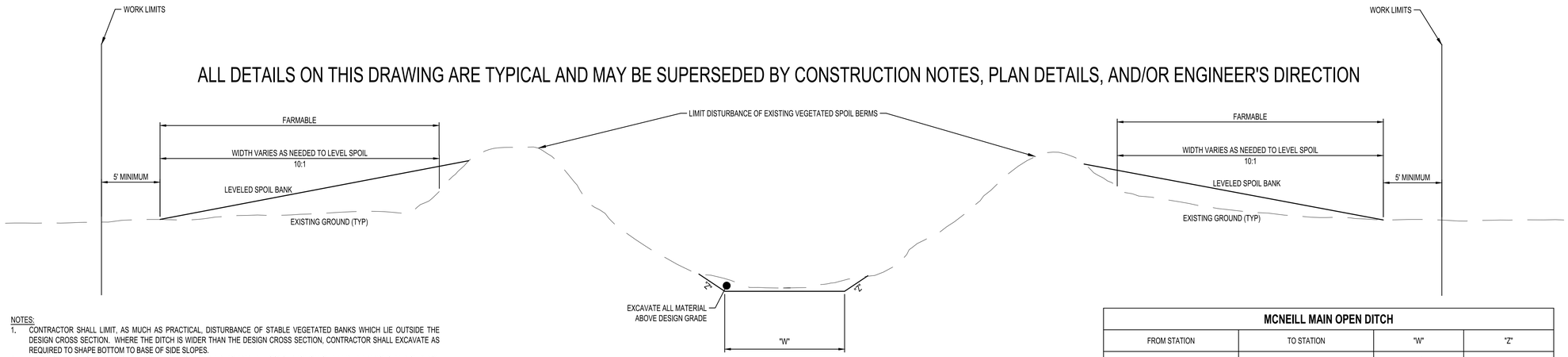
TITLE

DISTRICT PLAT

SHEET

A.02

ALL DETAILS ON THIS DRAWING ARE TYPICAL AND MAY BE SUPERSEDED BY CONSTRUCTION NOTES, PLAN DETAILS, AND/OR ENGINEER'S DIRECTION



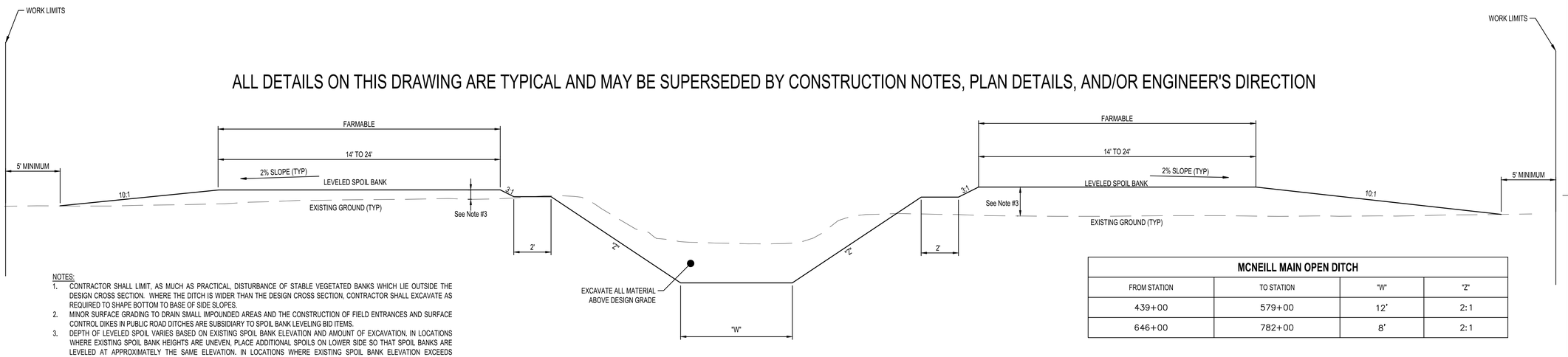
NOTES:
1. CONTRACTOR SHALL LIMIT, AS MUCH AS PRACTICAL, DISTURBANCE OF STABLE VEGETATED BANKS WHICH LIE OUTSIDE THE DESIGN CROSS SECTION. WHERE THE DITCH IS WIDER THAN THE DESIGN CROSS SECTION, CONTRACTOR SHALL EXCAVATE AS REQUIRED TO SHAPE BOTTOM TO BASE OF SIDE SLOPES.
2. MINOR SURFACE GRADING TO DRAIN SMALL IMPOUNDED AREAS AND THE CONSTRUCTION OF FIELD ENTRANCES AND SURFACE CONTROL DIKES IN PUBLIC ROAD DITCHES ARE SUBSIDIARY TO SPOIL BANK LEVELING BID ITEMS.

MCNEILL MAIN OPEN DITCH			
FROM STATION	TO STATION	"W"	"Z"
579+00	646+00	8'	2:1

OPEN DITCH CLEANOUT TWO SIDED SPOIL LEVELING TYPICAL SECTION

NTS DETAIL 1

ALL DETAILS ON THIS DRAWING ARE TYPICAL AND MAY BE SUPERSEDED BY CONSTRUCTION NOTES, PLAN DETAILS, AND/OR ENGINEER'S DIRECTION



NOTES:
1. CONTRACTOR SHALL LIMIT, AS MUCH AS PRACTICAL, DISTURBANCE OF STABLE VEGETATED BANKS WHICH LIE OUTSIDE THE DESIGN CROSS SECTION. WHERE THE DITCH IS WIDER THAN THE DESIGN CROSS SECTION, CONTRACTOR SHALL EXCAVATE AS REQUIRED TO SHAPE BOTTOM TO BASE OF SIDE SLOPES.
2. MINOR SURFACE GRADING TO DRAIN SMALL IMPOUNDED AREAS AND THE CONSTRUCTION OF FIELD ENTRANCES AND SURFACE CONTROL DIKES IN PUBLIC ROAD DITCHES ARE SUBSIDIARY TO SPOIL BANK LEVELING BID ITEMS.
3. DEPTH OF LEVELED SPOIL VARIES BASED ON EXISTING SPOIL BANK ELEVATION AND AMOUNT OF EXCAVATION. IN LOCATIONS WHERE EXISTING SPOIL BANK HEIGHTS ARE UNEVEN, PLACE ADDITIONAL SPOILS ON LOWER SIDE SO THAT SPOIL BANKS ARE LEVELED AT APPROXIMATELY THE SAME ELEVATION. IN LOCATIONS WHERE EXISTING SPOIL BANK ELEVATION EXCEEDS PROPOSED MINIMUM, LEVEL SPOIL AS WIDE AS POSSIBLE WITHIN THE WORK LIMITS. IN LOCATIONS WHERE EXISTING SPOIL BANKS ARE LOWER THAN THE PROPOSED MINIMUM, BUILD SPOIL BANKS UP TO THE APPROXIMATE MINIMUM ELEVATION SHOWN. PRIORITIZE LEVELING OF THE TWO SPOIL BANKS. SEE PROFILES AND CROSS SECTIONS FOR EXISTING SPOIL BANK ELEVATIONS AND APPROXIMATE PROPOSED MINIMUM ELEVATIONS.

MCNEILL MAIN OPEN DITCH			
FROM STATION	TO STATION	"W"	"Z"
439+00	579+00	12'	2:1
646+00	782+00	8'	2:1

OPEN DITCH CLEANOUT TWO SIDED SPOIL LEVELING TYPICAL SECTION

NTS DETAIL 2

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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

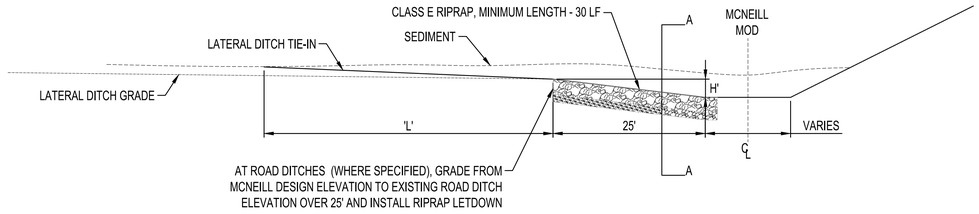
PROJECT NO.	
FILE NAME	
DRAWN BY	ISG, CDR
DESIGNED BY	CDR
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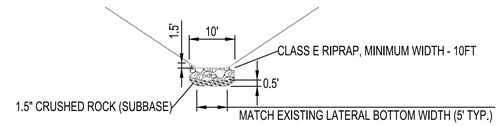
TITLE

DETAILS

SHEET

B.01





SECTION A-A

NOTE: SUBBASE IS INCIDENTAL TO DITCH LETDOWN RIPRAP INSTALLATION

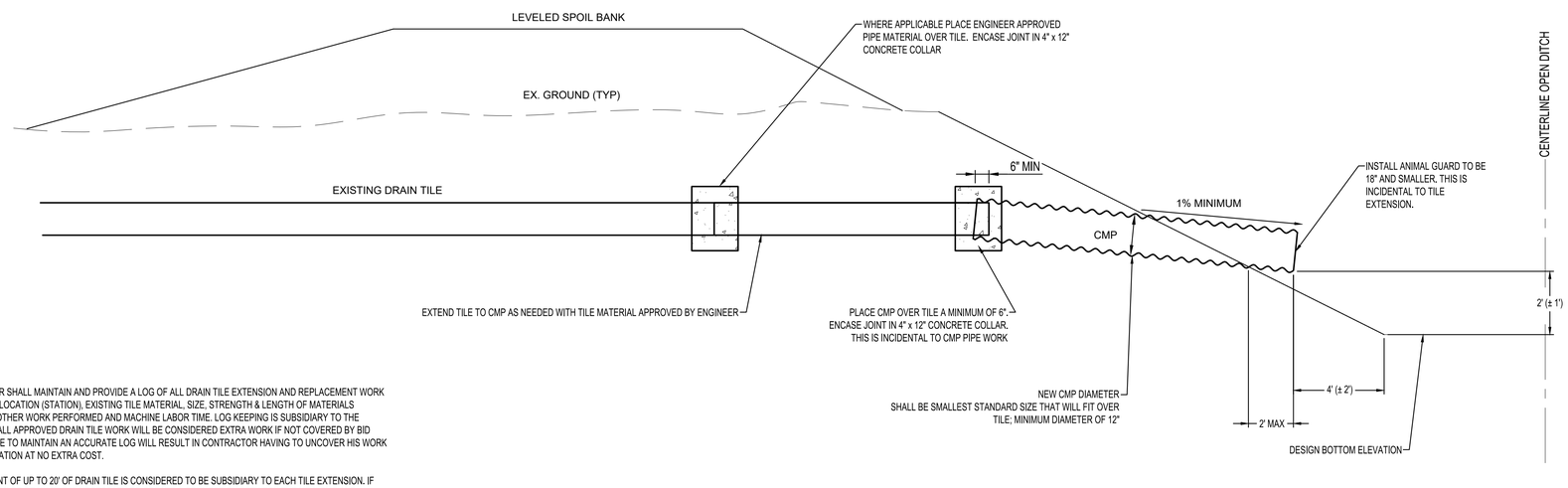
LATERAL DITCH AND ROAD DITCH OUTLET DETAIL

NTS Detail 3

LATERAL DITCH CONNECTION DATA

LATERAL	'H'	LATERAL ELEVATION	MCNEILL ELEVATION	GRADE	TONS
1	1.33	1034	1032.67	5.30%	25
4	1.30	1033.9	1032.6	5.20%	25

NOTE: 'L' SHALL BE EITHER 100' OR DAYLIGHTED USING A 1% SLOPE, WHICHEVER LENGTH IS LESS.



NOTE:
CONTRACTOR SHALL MAINTAIN AND PROVIDE A LOG OF ALL DRAIN TILE EXTENSION AND REPLACEMENT WORK RECORDING LOCATION (STATION), EXISTING TILE MATERIAL, SIZE, STRENGTH & LENGTH OF MATERIALS INSTALLED, OTHER WORK PERFORMED AND MACHINE LABOR TIME. LOG KEEPING IS SUBSIDIARY TO THE CONTRACT. ALL APPROVED DRAIN TILE WORK WILL BE CONSIDERED EXTRA WORK IF NOT COVERED BY BID ITEM. FAILURE TO MAINTAIN AN ACCURATE LOG WILL RESULT IN CONTRACTOR HAVING TO UNCOVER HIS WORK FOR VERIFICATION AT NO EXTRA COST.

REPLACEMENT OF UP TO 20' OF DRAIN TILE IS CONSIDERED TO BE SUBSIDIARY TO EACH TILE EXTENSION. IF MORE THAN 20' OF DRAIN TILE IS NECESSARY TO CREATE A CONNECTION BETWEEN THE NEW CMP AND EXISTING DRAIN TILE, CONTACT THE PROJECT ENGINEER FOR APPROVAL.

TILE EXTENSION

NTS AG660

MOREngineering

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NOTE:
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

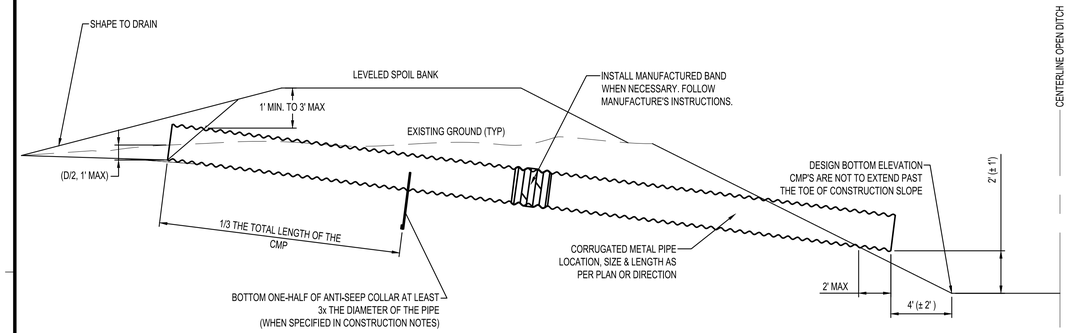
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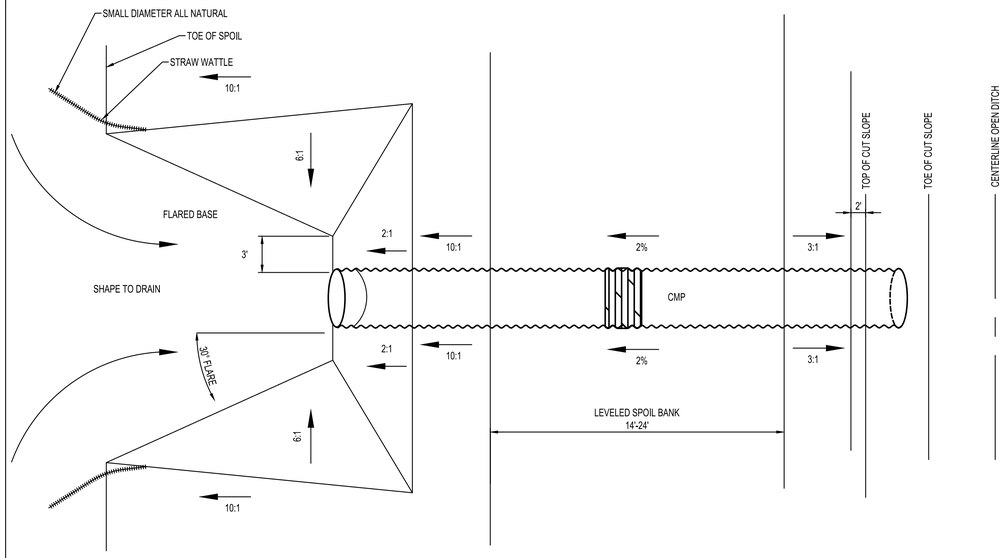
SHEET

B.02



SURFACE DRAIN SINGLE STAGE DITCH PROFILE VIEW

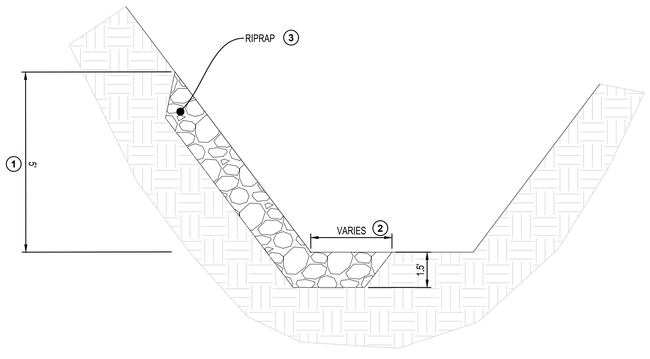
NTS AG650



NOTE:
SHAPING OF SPOIL IS SUBSIDIARY TO SURFACE DRAIN INSTALLATION

SURFACE DRAIN SINGLE STAGE DITCH PLAN VIEW

NTS AG651



NOTES:

(1) RIPRAP SHALL BE PLACED 5' IN HEIGHT UNLESS OTHERWISE SPECIFIED IN THE PLANS.

(2) DISTANCE VARIES. 4' TYPICAL

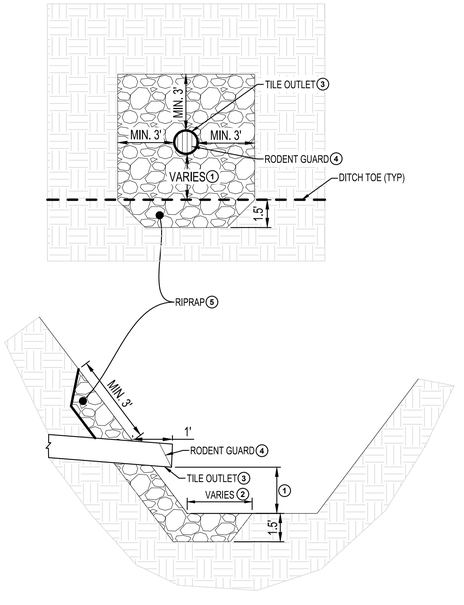
(3) RIPRAP SHALL BE IaDOT CLASS D OR E, UNLESS OTHERWISE SPECIFIED.

RIPRAP DIMENSIONS SHOWN ARE TYPICAL AND MAY BE MODIFIED ON A SITUATIONAL BASIS, IF APPROVED BY THE ENGINEER.

RIPRAP SHALL BE PLACED AT AN APPROXIMATE RATE OF 1.25 TON PER LINEAL FOOT OF OPEN DITCH BANK

RIPRAP ARMOR ON OPEN DITCH BANK

NTS AG480



DIMENSIONS	
NOMINAL PIPE DIA	RIPRAP (5)
UNDER 12"	12 TON
12"-15"	13 TON
18" TO 36"	14 TON
42" TO 60"	15 TON
ABOVE 60"	18 TON

NOTES:

ONLY TO BE INSTALLED WHERE SPECIFIED ON PLAN.

(1) DISTANCE VARIES. REFER TO PLANS AND DETAILS.

(2) DISTANCE VARIES. 4' OR 1/2 OF DITCH BOTTOM, WHICHEVER IS GREATER.

(3) SIZE AND TYPE VARIES. REFER TO PLANS AND SCHEDULES.

(4) RODENT GUARDS SHALL BE INSTALLED ON ALL OUTLETS 18" AND SMALLER. (INCIDENTAL TO RESPECTIVE BID ITEMS).

(5) RIPRAP SHALL BE IaDOT CLASS D OR E, UNLESS OTHERWISE SPECIFIED. RIPRAP SHALL BE PAID FOR BY THE TON INSTALLED.

RIPRAP DIMENSIONS SHOWN ARE TYPICAL AND MAY BE MODIFIED ON A SITUATIONAL BASIS, IF APPROVED BY THE ENGINEER.

RIPRAP SHALL NOT IMPEDE FLOW FROM THE TILE OUTLET OR THE RECEIVING BODY.

RIPRAP OF THE OPPOSITE BANK MAY BE REQUIRED BY THE ENGINEER IN THE FIELD OR AS CALLED OUT IN THE PLANS. PAID FOR BY THE TON INSTALLED.

RIPRAP AT TILE OUTLET

NTS AG640

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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

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DETAILS

SHEET

B.03

WORK LIMITS, COORDINATION, AND PROGRESSION

1. SCHEDULE AND NOTICES - A PRE-CONSTRUCTION MEETING WITH THE ENGINEER IS REQUIRED PRIOR TO COMMENCING WORK. A PROJECT SCHEDULE THAT INCLUDES APPROXIMATE DATES OF EACH ROAD CROSSING IS TO BE PROVIDED BY THE CONTRACTOR AT THE PRE-CONSTRUCTION MEETING. TWO (2) WEEKS NOTICE SHALL BE PROVIDED TO MONONA COUNTY SECONDARY ROADS (ONAWA FOREMAN P: 712-420-2034) BEFORE EXCAVATION THROUGH EACH ROADWAY. A ONE (1) WEEK NOTICE SHALL BE PROVIDED TO LANDOWNERS WITH IRRIGATION PIVOTS ADJACENT TO THE DITCH. 48-HOUR NOTICE SHALL BE PROVIDED TO THE CITY OF ONAWA PRIOR TO ANY WORK IN THE CITY LAGOON PROPERTY. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE NOTICES.

2. DRAINAGE DISTRICT RIGHT-OF-WAY - THE DISTRICT'S EXISTING RIGHT-OF-WAY IS CENTERED ON THE CENTERLINE OF THE DITCH AND VARIES THROUGHOUT THE LENGTH OF THE DITCH. ACQUISITION OF UNIFORM RIGHT OF WAY IS CURRENTLY BEING COMPLETED.

3. RAILROAD RIGHT-OF-WAY - NO ENTRY, EXCAVATION, OR WORK IS PERMITTED IN THE RAILROAD RIGHT-OF-WAY. SHOULD THE ENTRY INTO THE RAILROAD RIGHT-OF-WAY BE NECESSARY TO COMPLETE THE WORK IN THE PLANS, NOTIFY ENGINEER. NO WORK SHALL COMMENCE IN THE RIGHT-OF-WAY WITHOUT CONSENT FROM THE RAILROAD. RESTORATION WORK FROM DAMAGE RESULTING FROM ENTRY INTO THE RAILROAD RIGHT-OF-WAY WITHOUT KNOWLEDGE OF THE ENGINEER AND CONSENT FROM THE RAILROAD WILL BE RESPONSIBILITY OF THE CONTRACTOR.

4. WORK LIMITS - MINIMUM REQUIRED TO EFFICIENTLY ACCOMPLISH THE WORK AS SHOWN ON THE PLANS. WHERE WORK LIMITS DO NOT PARALLEL ROADWAYS, ENGINEER WILL STAKE WORK LIMITS AS NEEDED AT CONTRACTOR'S REQUESTED OFFSETS LEFT AND RIGHT OF PROJECT CENTERLINE. LANDOWNERS WERE INSTRUCTED TO REFRAIN FROM PLANTING CROPS WITHIN 50' FROM THE TOP OF BANKS OF THE DITCH. EVERY EFFORT SHALL BE MADE TO MINIMIZE DAMAGE TO CROPS OUTSIDE OF THIS AREA.

5. ACCESS - TO THE WORK AREAS IS AVAILABLE FROM FIELD ENTRANCES OFF PUBLIC ROADS. CONTRACTOR IS RESPONSIBLE TO SECURE OTHER ACCESS AS NEEDED AND TO LIMIT CROP DAMAGES IN ACCESSING WORK LIMITS. PLEASE COMMUNICATE WITH LANDOWNERS. TEMPORARY ACCESS CAN BE CONSTRUCTED FROM ROADWAYS WITH KNOWLEDGE AND PERMISSION OF THE COUNTY OR IaDOT ENGINEER. COUNTY SECONDARY ROAD DRIVEWAY ENTRANCE PERMITS SHALL BE COMPLETED FOR ALL CONSTRUCTED ACCESS. CROP DAMAGE OUTSIDE OF WORK LIMITS FOR THE PURPOSE OF ACCESS SHALL ONLY OCCUR WITH PRIOR APPROVAL OF THE ENGINEER.

6. CROP DAMAGES - COMMODITY CROPS WITHIN THE WORK LIMITS CAN BE DAMAGED AS REQUIRED TO COMPLETE THE WORK. SHOULD WORK NEED TO EXTEND OUTSIDE OF THE WORK LIMITS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER **PRIOR** TO DAMAGING CROPS. FAILURE TO NOTIFY THE ENGINEER PRIOR TO DAMAGING CROPS OUTSIDE OF THE WORK LIMITS, MAY RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR COMPENSATING THE LANDOWNER FOR DAMAGE.

7. CROP REMOVAL - THE LANDOWNER SHALL BE GIVEN THE OPPORTUNITY TO REMOVE/RECOVER/TERMINATE THE CROPS IN TIMELY FASHION THAT WILL NOT IMPEDE CONSTRUCTION. COORDINATION WITH THE LANDOWNER FOR CROP REMOVAL IS THE RESPONSIBILITY OF THE CONTRACTOR. CROP REMOVAL PERFORMED BY THE CONTRACTOR SHALL BE STRIPPED SEPARATELY FROM ANY TOPSOIL. DISPOSAL OF TERMINATED CROPS SHALL BE DISPOSED OF IN A WAY THAT DOES NOT INTERFERE WITH TOPSOILING, SEEDING, ACCESS, AND OTHER RESTORATION OR FARM OPERATION ACTIVITY.

8. WORK AND STORAGE IN ROAD RIGHT-OF-WAY - NO WORK OR STORAGE OF EQUIPMENT AND MATERIAL SHALL BE DONE WITHIN COUNTY OR IaDOT ROAD RIGHT-OF-WAY WITHOUT THE KNOWLEDGE AND PERMISSION OF THE RESPECTIVE ENGINEER. CONTRACTOR IS RESPONSIBLE TO CONTACT THE RESPECTIVE ENGINEER AND TO COOPERATE IN OBSERVANCE OF REQUIRED SAFETY MEASURES AND POSTED REQUIREMENTS FOR WORK IN ROAD RIGHT-OF-WAY.

9. PROJECT CONTACTS - CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE PROPER AUTHORITY AS NEEDED.

JOHN RASMUSSEN	AMY BORCHARDT-SICK	CALEB RASMUSSEN
MONONA COUNTY ENGINEER	DRAINAGE DEPUTY	PROJECT ENGINEER
P: 712-433-2284	P: 712-433-2630	P: 712-304-1958
E: JRASMUSSEN@HARRISONCOUNTY.IOWA.GOV	E: MOCODR1@MONONACOUNTYIOWA.GOV	E C.RASMUSSEN@DOMORENGINEERING.COM

10. UTILITIES - CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL UTILITY COMPANIES AND TO COOPERATE WITH THEM IN THE LOCATION, MARKING AND PROTECTION OF THEIR FACILITIES. CONTRACTOR IS TO IMMEDIATELY NOTIFY ENGINEER OF APPARENT CONFLICTS OF EXISTING UTILITIES WITH THE PLAN GRADE OR CROSS-SECTIONS OF THE OPEN DITCH. IOWA ONE CALL 1-800-292-8989.

KNOWN UTILITIES

CITY OF ONAWA	NUSTAR PIPELINE OPERATING PART	LONG LINES BROADBAND
BRYAN SAVERY	KEELY HOSMANN	MILES PATTON
P: 712-433-1236	P: 316-721-7073	P: 712-271-5550
E: bsavery@onawa.com	E: keely.hosmann@nustarenergy.com	E: MILES.PATTON@LONGLINES.BIZ
MIDAMERICAN ELECTRIC	SPRINT NEXTEL	WINDSTREAM COMMUNICATIONS
CODY PARMETER	MICHAEL CHEBUL	LISA ZINGULA
P: 712-233-4821	P: 402-880-8720	P: 1-800-289-1901
E: cody.parmeter@midamerican.com	E: michael.j.chebul@t-mobile.com	E: Lisa.Zingula@windstream.com
WESTERN IOWA POWER COOPERATIVE	MIDAMERICAN ELECTRIC	
JASON LEE	DAVID FITCH	
P: 712-263-2943	P: 712-366-5669	
E: jason.lee@wipco.com	E: dlfitch@midamerican.com	

11. COMPLETION OF WORK - REFER TO SPECIFICATION 017710. ALL WORK SHALL BE COMPLETED ON OR BEFORE DECEMBER 15, 2026. SUBSTANTIAL COMPLETION WILL BE ISSUED ONCE THE DITCH(ES), TILE(S), AND OTHER DRAINS FUNCTION AS INTENDED WITH MINOR DISCREPANCIES. THE FOLLOWING COMPONENTS ARE REQUIRED TO BE COMPLETED FOR SUBSTANTIAL COMPLETION:
SITE PREP., REMOVALS, AND RELATED WORK
OPEN DITCH EXCAVATION SURFACE DRAIN PIPES TILE EXTENSION PIPES ROCK RIPRAP OPEN DITCH SEEDING

12. SAFETY - CONTRACTOR IS SOLEY RESPONSIBLE FOR SAFETY ON THE WORK SITE INCLUDING THE BRACING OF, SHORING OF, SHAPING OF, AND/OR USE OF A TRENCH BOX IN THE EXCAVATIONS. THIS INCLUDES KNOWLEDGE AND COMPLIANCE WITH ALL RULES AND REGULATIONS INTENDED TO PROTECT THE HEALTH AND SAFETY OF THE CONTRACTOR'S, ENGINEER'S AND OWNER'S PERSONNEL. ALL WORK SHALL BE DONE ACCORDING TO OSHA STANDARDS FOR PROTECTION OF LIFE. NOTHING INDICATED ON THE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE REGULATIONS.

13. WINTER WEATHER - THE CONTRACTOR SHALL SUBMIT A WINTER CONSTRUCTION PLAN FOR SITE STABILIZATION, EROSION PREVENTION, AND SEDIMENT CONTROL IF THE PROJECT IS NOT COMPLETED BY OCTOBER 15TH OF THE GIVEN CONSTRUCTION SEASON, UNLESS APPROVED BY THE ENGINEER. THE PLAN SHALL BE DEVELOPED TO SPECIFICALLY ADDRESS SHUTDOWN PROCEDURES OR ACTIVE CONSTRUCTION PLANS.

EXCAVATION, GRADING, & ARMOURMENTS

14. EXCAVATION & DEWATERING - THE DITCH BOTTOM SHALL BE EXCAVATED TO SPECIFIED GRADE +0.0/-0.5 FEET. SPOIL IS REQUIRED TO BE DEPOSITED ROUGHLY EQUAL ON EACH SIDE, UNLESS OTHERWISE SPECIFIED OR WHERE EXISTING SPOIL BANKS ARE UNEVEN (SEE TYPICAL SPOIL LEVELING DETAILS 1 & 2). UPON APPROVAL OF THE ENGINEER, SPOIL MAY BE PLACED AND LEVELED ON ONE SIDE OF THE DITCH.

    EXCAVATION AND DEWATERING TO BE COMPLETED IN 2,500 LF SECTION, UNLESS APPROVED BY THE ENGINEER. PRIOR TO COMMENCING WORK ON A NEW SECTION, ALL WORK IN THE PREVIOUS SECTION SHALL BE COMPLETED IN ADHERENCE WITH THE CONTRACT DOCUMENTS. A STOP WORK ORDER MAY BE ISSUED OR PAYMENT WITHHELD UNTIL THE PREVIOUS SECTION HAS BEEN COMPLETED.

    PILOT CHANNELING WILL BE CONSIDERED AN ACCEPTABLE METHOD OF DEWATERING UPSTREAM OF 265TH AVE.

    MEANS AND METHODS OF EXCAVATION FROM STATION 500+00 TO 748+00 SHALL BE DESCRIBED TO THE ENGINEER AT THE PRE-CONSTRUCTION MEETING. FINAL SHAPING SHALL BE IN CONFORMANCE WITH SECTION 21-2335 OF THE SPECIFICATIONS. IF THE FINISHED SURFACE IS NOT IN CLOSE COMPLIANCE WITH THE SECTION, THE CONTRACTOR WILL NEED TO MODIFY MEANS AND METHODS.

    CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY WHEN SLOPE FAILURES OCCUR. FAILURE TO NOTIFY THE ENGINEER AND CONTINUED EXCAVATION WILL RESULT IN A STOP WORK ORDER.

15. SLIDES & TOE PROTECTION - AN ASSUMED QUANTITY OF ROCK RIPRAP OF 1.5TONS/STATION IS INCLUDED FOR TOE PROTECTION AND SLIDE REPAIRS. IF ROCK USED FOR THE REPAIR OF TOE AND SLOPE FAILURES EXCEEDS 1.5 TONS/STATION, A REVIEW OF MEANS AND METHODS WILL BE REQUIRED AND ALTERNATE METHOD SHALL BE PROPOSED BY THE CONTRACTOR TO REDUCE THE FREQUENCY OF SLOPE AND TOE FAILURES. NO ADJUSTMENT OF UNIT PRICE WILL BE PERMITTED FOR ROCK RIPRAP BASED ON FINAL INSTALLED QUANTITY.

16. SPOIL BANK LEVELING - SPOIL TO BE SHAPED ON A 10:1 SLOPE AWAY FROM THE TOP OF BANK. POSITIVE DRAINAGE AWAY FROM THE DITCH SHALL BE PROVIDED. SEE TYPICAL SECTIONS AND NOTES ON SHEETS B.01, B.02, & B.03 FOR REQUIREMENTS. IF SPOIL IS INADEQUATE TO CONSTRUCT AS PROVIDED IN SHEET B.01, THE EXISTING GROUND ADJACENT TO THE BANK SHALL BE GRADED TO PREVENT OVERBANK FLOWS. THIS WORK IS SUBSIDIARY TO THE SPOIL BANK LEVELING BID ITEM.

    THE TOP 8 INCHES OF ALL LEVELED SPOIL IS TO BE TILLED BY CONTRACTOR WITH A FIELD CULTIVATOR OR SIMILAR FINISHING IMPLEMENT (DISKS ARE NOT ALLOWED). CONTRACTOR IS TO GATHER AND DISPOSE OF ALL ROCKS LARGER THAN 3 INCHES IN DIAMETER AND OTHER DEBRIS EXPOSED BY THIS OPERATION. ENTIRE SURFACE OF SPOIL BANK IS THEN TO BE FINISH GRADED WITH ONLY GENTLE UNDULATIONS ON LINES PARALLEL TO THE DITCH ALLOWED. CHISELING AND FINISH GRADING ARE SUBSIDIARY TO THE SPOIL BANK LEVELING BID ITEM.

    NECESSARY BORROW EXCAVATION, MINOR SURFACE GRADING TO DRAIN SMALL IMPOUNDED AREAS, AND THE CONSTRUCTION OF FIELD ENTRANCES OR SURFACE WATER CONTROL DIKES IN THE PUBLIC ROAD DITCHES ARE SUBSIDIARY TO THE SPOIL BANK LEVELING BID ITEM.

    UNLESS SPECIFICALLY APPROVED BY THE COUNTY ENGINEER OR IaDOT ENGINEER, EXCAVATED SPOIL IS NOT TO BE PLACED IN THE THOROUGHFARE
    RIGHT-OF-WAY EXCEPT AS NECESSARY FOR TEMPORARY DRAINAGE CONTROL.

17. BRIDGES & CULVERTS - INCLUDING SURFACE DRAINS, ARE TO BE COMPLETELY CLEAR OF SEDIMENT TO THE DESIGN GRADE. THIS WORK IS SUBSIDIARY TO THE EXCAVATION BID ITEM.

UTILITY LEGEND

EXISTING		PROPOSED
>>	STORM DRAIN	>>
>	SANITARY SEWER	>
II>	SANITARY SEWER FORCEMAIN	II>
I	WATER MAIN	I
G	GAS	G
OE	OVERHEAD ELECTRIC	OE
UE	UNDERGROUND ELECTRIC	UE
UT	UNDERGROUND TELEPHONE	UT
UTV	UNDERGROUND TV	
OHL	OVERHEAD UTILITY	
UTL	UNDERGROUND UTILITY	
FBO	FIBER OPTIC	

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES.

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MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS
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TITLE
CONSTRUCTION NOTES

SHEET
C.01

PIPES AND RELATED WORK

19. NEW CM PIPE SPECIFICATIONS - (AMENDS SPECIFICATION SECTIONS 334114 AND 334115)
    - ALL NEW PIPES ARE TO BE FABRICATED FROM CORRUGATED STEEL OR IRON.
    - ALL NEW PIPES USED IN SURFACE DRAIN INSTALLATIONS ARE TO HAVE ANNULAR CORRUGATIONS WITH RIVETED OR RESISTANT SPOT WELDED SEAMS.
    - NEW PIPES USED IN TILE DRAIN INSTALLATIONS AND EQUAL TO OR GREATER THAN 12 INCHES IN DIAMETER ARE TO HAVE ANNULAR CORRUGATIONS WITH RIVETED OR RESISTANCE SPOT WELDED SEAMS.

20. EXISTING PIPES - IMMEDIATELY NOTIFY ENGINEER OF EXISTING PIPES FOUND THAT ARE NOT SPECIFIED FOR REPLACEMENT OR PROTECTION ON THE PLANS. IF PIPES SPECIFIED FOR REPLACEMENT ARE FOUND TO BE IN GOOD CONDITION, NOTIFY ENGINEER AND PROTECT EXISTING PIPE UNTIL FINAL DETERMINATION IS MADE ON REPLACEMENT.

21. DRAIN TILE LINES - WHERE IT IS NECESSARY TO EXTEND OR RELAY TILE LINES (12" OR LARGER IN DIA.) TO REACH TILE EXTENSION PIPES, THE EXTENSION SHALL BE IN ACCORDANCE WITH SPECIFICATION 334617, WITH A MAXIMUM WIDTH OF 24" OR 12" WIDER THAN THE TILE SECTIONS, WHICHEVER IS WIDER (SEE DETAIL DRAWING B.03). THE TILE SHALL BE INSTALLED IN COMPLIANCE WITH SPECIFICATION 334617. USE NEW HEAVY-DUTY EXTRA QUALITY CONCRETE DRAIN TILE UNDER DEEPER COVER.

    EXTEND ALL SMALLER DIAMETER TILE LINES, WITH SDR-35 PVC SEWER PIPE. FIT THE SEWER PIPE OVER THE TILE WHENEVER POSSIBLE AND THEN INTO THE CM OUTLET PIPE. MINIMUM SIZE OF OUTLET PIPE SHALL BE 12" IN DIAMETER. NECESSARY EXTENSIONS OR RELAYS LESS THAN 20 FEET IN LENGTH MAY BE COMPLETED WHEN DISCOVERED. LONGER EXTENSIONS MUST BE FIRST APPROVED BY ENGINEER. CORRUGATED PLASTIC TUBING IS NOT PERMITTED

    WHERE A LATERAL TILE LINE IS FOUND TO BE CRUSHED, CRACKED AND/OR FILLED WITH SEDIMENT, CONTRACTOR IS TO NOTIFY ENGINEER PRIOR TO DOING ADDITIONAL WORK. ENGINEER WILL DETERMINE IF REPLACEMENT OR ABANDONMENT IS WARRANTED. TILE REPLACEMENT WILL NOT EXTEND BEYOND THE WORK LIMITS.

    CONTRACTOR IS REQUIRED TO MAINTAIN AND PROVIDE A LOG OF ALL DRAIN TILE LINE EXTENSION WORK RECORDING LOCATION, EXISTING TILE MATERIAL, SIZE, STRENGTH AND LENGTH OF MATERIALS INSTALLED, OTHER WORK PERFORMED AND MACHINE AND LABOR TIME. LOG KEEPING IS SUBSIDIARY TO THE CONTRACT. ALL APPROVED DRAIN TILE WILL BE CONSIDERED EXTRA WORK. FAILURE TO MAINTAIN AN ACCURATE LOG WILL RESULT IN CONTRACTOR HAVING TO UNCOVER HIS WORK FOR VERIFICATION AT HIS COST.

    ALL CONNECTIONS OF DRAIN TILE TO EXTENSION PIPES OR TO AG DRAIN TILE ARE TO BE ENCASED IN 4" x 12" CONCRETE COLLAR. THIS WORK IS SUBSIDIARY TO THE DRAIN TILE EXTENSION BID ITEMS. ALTERNATE CONNECTIONS MAY BE ALLOWED WITH PRIOR APPROVAL FROM THE ENGINEER.

22. PIPE WORK - QUANTITIES ARE ESTIMATED AS SHOWN ON THE PLANS. IF ANY TILE LINES NOT CALLED OUT ON THE PLANS ARE DISCOVERED DURING EXCAVATION THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY. SURFACE DRAINS WILL BE FINALIZED AT THE TIME THE PIPE IS FIELD STAKED AND MARKED. ALL PROTECTED PIPES THAT WILL NOT BE REPLACED WILL BE STAKED AND MARKED IN THE FIELD. ANY DAMAGE THAT OCCURS TO PIPES STAKED AS PROTECTED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL TILE EXTENSIONS AND SURFACE DRAINS REMOVED AS PART OF THE WORK SHALL BE DISPOSED OF OFFSITE. DISPOSAL IS SUBSIDIARY TO PIPE WORK ITEMS.

23. ANIMAL GUARDS - EXISTING ANIMAL GUARDS ON TILE EXTENSION PIPES ARE TO BE SALVAGED AND REINSTALLED ON THE SAME TILE LINE, WHEN POSSIBLE. IF A NEW ANIMAL GUARD IS NEEDED TO REPLACE AN EXISTING ANIMAL GUARD, THE CONTRACTOR SHALL FURNISH AND INSTALL A GUARD APPROVED BY THE ENGINEER. SALVAGED WORKABLE GUARDS, WHICH CANNOT BE USED ARE TO BE TURNED OVER TO THE ADJACENT LANDOWNER OR REPRESENTATIVE. LABOR TO REMOVE, SALVAGE AND INSTALL, SALVAGED OR NEW ANIMAL GUARDS IS SUBSIDIARY TO THE TILE EXTENSION BID ITEMS.

24. ROAD CROSSINGS - ROAD CULVERTS WILL NOT BE REPLACED UNTIL NEW OUTLETS THROUGH THE RAILROAD ARE IN PLACE. THE CONTRACTOR MAY UTILIZE ROAD CROSSING CULVERTS AS A MEANS TO CONTAIN WATER WITH APPROVAL FROM THE COUNTY ENGINEER, BUT SHALL RETURN THE CULVERT TO ORIGINAL STATE.

25. TRAFFIC CONTROL - IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL NECESSARY TRAFFIC CONTROL SIGNS, DEVICES, ETC. AND TO PLACE, MAINTAIN, AND REMOVE SAID SIGNS, DEVICES, ETC. AS CONSTRUCTION COMMENCES AND IS COMPLETED. THIS IS TO BE DONE IN ACCORDANCE WITH THE CURRENT EDITION OF THE IOWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. FAILURE TO COMPLY WITH THIS WILL RESULT IN SUSPENSION OF WORK UNTIL THE SITUATION IS CORRECTED. A REDUCTION IN THE JOB SUM TO BE PAID WILL BE MADE FOR EXCESSIVE NONCOMPLIANCE WITH REQUIRED TRAFFIC CONTROL. NO WORK SHALL COMMENCE IN ANY GIVEN AREA UNTIL ALL APPROPRIATE TRAFFIC CONTROL IS IN PLACE.

SITE PREPARATION, REMOVALS, AND RESTORATION

26. CLEARING AND GRUBBING - ALL TREES, BRUSH AND STUMPS LOCATED ALONG THE OPEN DITCHES ARE TO BE CLEARED AND GRUBBED WITHIN 20 FEET OUTSIDE THE TOP OF BANK ON EITHER SIDE OF THE DITCHES UNLESS OTHERWISE MARKED ON THE PLANS. NO TREE COUNT/ MEASUREMENT HAS BEEN MADE, CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION. NO CHEMICAL TREATMENT IS SPECIFIED.

    ALL DEBRIS THAT HAS OCCURRED FROM THE CLEARING AND GRUBBING PROCESS, INCLUDING SMALL BRANCHES, IS TO BE BURNED AND BURIED IN NON-WETLAND AREAS ADJACENT TO THE OPEN DITCH AND COVERED WITH A MINIMUM OF 3' OF SOIL. UPON BURIAL OF DEBRIS THE CONTRACTOR SHALL TAKE CARE TO AVOID ALL UTILITIES, TILE LINES AND APPARENT DRAINAGE WAYS, PRIVATE OR OTHERWISE. ALL EXCESS SOIL FROM BURIAL SHALL BE SPREAD UNIFORMLY OVER THE SPOIL BANK. ANY OTHER DISPOSAL METHODS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER BEFORE BEING UTILIZED. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL NECESSARY BURNING PERMITS IF REQUIRED. IT IS A RECOMMENDED BEST PRACTICE TO BURY DEBRIS ON THE SAME PARCEL IT WAS CLEARED FROM. CLEARING, GRUBBING, AND TREE REMOVAL IS NOT TO TAKE PLACE BETWEEN JUNE 1 AND JULY 31 FOR PROTECTION OF THE NORTHERN LONG-EARED BAT.

27. FERTILIZING AND SEEDING - BETWEEN APRIL 1 AND OCTOBER 1 ALL DISTURBED OPEN DITCH BANK SLOPES ABOVE THE NORMAL WATER SURFACE AND IN ROAD DITCHES ARE TO BE FERTILIZED AND SEEDED BY MEANS OF A PORTABLE CYCLONE SEEDER OR BY OTHER APPROVED MEANS AT THE END OF EACH DAY'S OPERATION. (HAND SEED CASTING IS NOT ACCEPTABLE). DITCH BANK SLOPES FINISHED AFTER OCTOBER 1 ARE TO BE FERTILIZED AND SEEDED BETWEEN APRIL 1 AND APRIL 20 OF THE FOLLOWING YEAR (IF CONTRACT TIME ALLOWS). ALTERNATIVELY, A DORMANT SEEDING APPLICATION RATE MAY BE FOLLOWED AFTER NOVEMBER 15. FOR COMPLETE FERTILIZING AND SEEDING SPECIFICATIONS, SEE SECTION 329221. NO CHANGES IN PAYMENT WILL BE MADE FOR DORMANT SEEDING APPLICATION, UNLESS OTHERWISE SPECIFIED. A COVER CROP SEEDING SHOULD BE COMPLETED ON DISTURBED GROUND DAILY. FOR THE END OF DAY SEEDING SEE SUDAS 9010 2.02 E, TYPE 5.

28. ROCK, JUNK AND RUBBISH DISPOSAL - ROCK PILES, JUNK AND RUBBISH LOCATED IN THE DISTRICT RIGHT-OF-WAY ARE TO BE DISPOSED OF BY BURIAL OR OTHER APPROVED MEANS. ALL JUNK NOT MEETING THE EXEMPTIONS FOR FARM WASTE OR FARM BUILDINGS UNDER IDNR RULE 567-100.4(2) (HTTPS://WWW.LEGIS.IOWA.GOV/DOCS/ACO/CHAPTER/567.100.PDF) IS TO BE STOCKPILED AT THE EDGE OF THE DISTRICT RIGHT-OF-WAY NEAR WHERE THE JUNK WAS FOUND. MAJOR ITEMS INCLUDED IN THE WORK ARE CALLED OUT ON THE PLANS. MISCELLANEOUS ROCK, JUNK, AND RUBBISH UNCOVERED DURING EXCAVATION OPERATION SHALL BE DISPOSED OF BY BURIAL AND IS SUBSIDIARY TO EXCAVATION.

29. FENCE REMOVAL - REMOVE, SALVAGE, AND REPLACE FENCE AS INDICATED ON THE PLAN SHEETS. FENCE REPLACEMENT SHALL BE COMPLETED WITH SALVAGED MATERIALS WHERE POSSIBLE. REPLACE FENCE WITH SIMILAR MATERIALS AS EXISTING UNLESS OTHERWISE APPROVED.

30. PRIVATE FIELD CROSSING - THE PRIVATE FIELD CROSSING AT STATION 619+40 AND 683+81 SHALL BE REMOVED AND SALVAGED. PRIVATE CROSSING REPLACEMENT, IF REQUESTED, IS TO BE PAID FOR BY THE LANDOWNER. ANY AGREEMENT MADE BETWEEN THE LANDOWNER AND THE CONTRACTOR IS OUTSIDE THE SCOPE OF THIS CONTRACT.

31. EROSION PROTECTION - TEMPORARY EROSION PROTECTION FOR ACCESSES FROM ROADWAYS OR INTO THE DITCH SHALL BE PROVIDED. MANNER OF EROSION PROTECTION IS AT CONTRACTORS DISCRETION.

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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	
FILE NAME	
DRAWN BY	ISG, CDR
DESIGNED BY	CDR
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	7/28/2026
CLIENT PROJECT NO.	

TITLE

CONSTRUCTION NOTES

SHEET

C.02

Material Table			
Station	Area	Volume	Cumulative Volume
440+00.00	142.84	0.00	0.00
442+00.00	134.49	1027.15	1027.15
444+00.00	165.78	1112.11	2139.25
446+00.00	176.64	1268.22	3407.47
448+00.00	193.40	1370.50	4777.97
450+00.00	219.37	1528.79	6306.76
452+00.00	115.60	1240.66	7547.42
454+00.00	174.86	1075.79	8623.21
456+00.00	123.47	1104.92	9728.13
458+00.00	127.43	929.26	10657.39
460+00.00	219.92	1286.49	11943.88
462+00.00	243.04	1714.68	13658.55
464+00.00	231.38	1757.10	15415.65
466+00.00	227.55	1699.73	17115.38
468+00.00	201.59	1589.42	18704.81
470+00.00	210.14	1524.94	20229.75
472+00.00	209.43	1553.95	21783.70
474+00.00	193.65	1492.89	23276.59
476+00.00	202.08	1465.67	24742.25
478+00.00	233.20	1612.16	26354.41
480+00.00	205.65	1625.39	27979.80
482+00.00	200.44	1504.02	29483.82
484+00.00	230.60	1596.43	31080.25
486+00.00	213.62	1645.28	32725.53
488+00.00	198.82	1527.56	34253.09
490+00.00	153.27	1304.02	35557.11
492+00.00	182.68	1244.27	36801.38
494+00.00	189.69	1379.16	38180.54
496+00.00	167.64	1323.46	39504.00
499+00.00	142.29	1721.87	41225.87
500+00.00	171.96	581.96	41807.83
502+00.00	178.88	1299.43	43107.25
504+00.00	188.61	1361.09	44468.35
506+00.00	227.51	1541.19	46009.54
508+00.00	209.70	1619.28	47628.81
510+00.00	225.96	1613.54	49242.36
512+00.00	212.79	1625.01	50867.37
514+00.00	242.49	1686.23	52553.59
516+00.00	214.35	1692.01	54245.60
518+00.00	206.97	1560.48	55806.08
520+00.00	182.69	1443.20	57249.28
523+00.00	132.29	1749.87	58999.15
524+00.00	131.83	489.10	59488.25
526+00.00	199.25	1226.21	60714.46
529+00.00	162.58	2010.18	62724.63
530+00.00	156.07	590.10	63314.73
532+00.00	139.20	1093.62	64408.36
534+00.00	143.24	1046.08	65454.44
536+00.00	136.38	1035.61	66490.05
538+00.00	133.96	1001.24	67491.28
540+00.00	138.64	1009.62	68500.90
542+00.00	137.80	1023.85	69524.75
544+00.00	115.77	939.15	70463.89
546+00.00	130.67	912.72	71376.61
548+00.00	116.48	915.37	72291.98
550+00.00	80.32	728.90	73020.88
552+00.00	98.65	662.86	73683.74
554+00.00	64.59	604.59	74288.32
556+00.00	49.37	422.05	74710.37
558+00.00	71.27	446.81	75157.18

Material Table			
Station	Area	Volume	Cumulative Volume
560+00.00	66.42	509.97	75667.15
562+00.00	52.55	440.64	76107.79
564+00.00	65.65	437.80	76545.59
566+00.00	71.11	506.51	77052.10
568+00.00	69.19	519.61	77571.71
570+00.00	73.93	530.07	78101.79
572+00.00	97.58	635.23	78737.02
574+00.00	93.65	708.26	79445.28
576+00.00	78.86	638.91	80084.20
578+00.00	132.47	782.70	80866.89
580+00.00	115.12	917.00	81783.90
582+00.00	85.95	744.69	82528.59
584+00.00	101.81	695.38	83223.96
586+00.00	105.30	767.06	83991.02
588+00.00	127.63	862.69	84853.71
590+00.00	109.47	878.13	85731.84
592+00.00	149.11	957.68	86689.53
594+00.00	144.82	1088.60	87778.13
596+00.00	139.81	1054.18	88832.31
598+00.00	168.14	1140.58	89972.89
600+00.00	149.61	1176.85	91149.74
602+00.00	144.83	1090.51	92240.25
604+00.00	145.11	1073.84	93314.10
606+00.00	154.88	1111.05	94425.14
608+00.00	142.33	1100.77	95525.91
610+00.00	140.14	1046.18	96572.09
612+00.00	134.32	1016.51	97588.60
614+00.00	117.75	933.58	98522.18
616+00.00	118.57	875.26	99397.44
618+00.00	125.87	905.32	100302.76
620+00.00	129.58	946.08	101248.84
622+00.00	152.45	1044.54	102293.38
624+00.00	143.27	1095.24	103388.62
626+00.00	129.84	1011.52	104400.14
628+00.00	132.84	972.90	105373.04
630+00.00	126.94	962.14	106335.18
632+00.00	138.60	983.47	107318.65
634+00.00	111.30	925.54	108244.19
636+00.00	84.14	723.85	108968.04
638+00.00	109.33	716.54	109684.58
640+00.00	111.36	817.34	110501.92
642+00.00	95.58	766.44	111268.35
644+00.00	124.31	814.40	112082.76
646+00.00	117.53	895.68	112978.44
648+00.00	60.44	659.14	113637.58
650+00.00	100.16	594.82	114232.40
652+00.00	89.78	703.47	114935.87
654+00.00	83.64	642.27	115578.14
656+00.00	59.30	529.41	116107.55
658+00.00	63.79	455.90	116563.45
660+00.00	56.02	443.74	117007.19
662+00.00	50.50	394.52	117401.71
664+00.00	41.83	341.96	117743.68
666+00.00	44.75	320.66	118064.33
668+00.00	46.19	336.80	118401.13
670+00.00	43.52	332.24	118733.37
672+00.00	38.47	303.66	119037.03
674+00.00	48.52	322.19	119359.22
676+00.00	48.86	360.68	119719.89
678+00.00	40.58	331.27	120051.16

Material Table			
Station	Area	Volume	Cumulative Volume
680+00.00	40.66	300.89	120352.05
681+00.00	38.50	146.59	120498.65
683+00.00	48.79	323.32	120821.96
686+00.00	49.42	545.66	121367.62
688+00.00	56.95	393.96	121761.57
690+00.00	40.77	361.89	122123.47
692+00.00	41.09	303.15	122426.62
694+00.00	43.74	314.15	122740.78
696+00.00	43.12	321.70	123062.47
698+00.00	45.36	327.71	123390.19
700+00.00	65.17	409.37	123799.56
702+00.00	58.14	456.68	124256.24
704+00.00	65.06	456.27	124712.51
706+00.00	77.14	526.65	125239.16
708+00.00	85.65	602.91	125842.07
710+00.00	97.82	679.49	126521.56
712+00.00	79.94	658.35	127179.91
713+00.00	78.66	293.69	127473.60
716+00.00	79.15	876.71	128350.32
718+00.00	86.81	614.68	128965.00
720+00.00	79.28	615.15	129580.15
722+00.00	89.37	624.63	130204.78
724+00.00	78.91	623.27	130828.05
726+00.00	59.32	511.99	131340.04
728+00.00	76.33	502.41	131842.45
730+00.00	69.14	538.76	132381.20
732+00.00	70.52	517.25	132898.45
734+00.00	61.87	490.35	133388.80
736+00.00	58.76	446.79	133835.59
738+00.00	61.56	445.64	134281.23
740+00.00	64.65	467.46	134748.69
742+00.00	60.70	464.27	135212.95
744+00.00	59.64	445.72	135658.67
746+00.00	61.88	450.09	136108.76
748+00.00	76.39	512.12	136620.88
750+00.00	66.44	528.99	137149.87
752+00.00	62.63	478.04	137627.91
754+00.00	57.46	444.78	138072.69
756+00.00	57.04	424.06	138496.75
758+00.00	51.82	403.21	138899.96
760+00.00	52.51	386.43	139286.39
762+00.00	51.61	385.63	139672.01
764+00.00	51.43	381.61	140053.63
766+00.00	52.80	386.01	140439.64
768+00.00	47.56	371.68	140811.32
770+00.00	51.87	368.23	141179.54
772+00.00	48.76	372.68	141552.22
774+00.00	45.19	347.95	141900.17
776+00.00	44.14	330.86	142231.03
778+00.00	44.67	328.94	142559.98
780+00.00	43.90	328.05	142888.03
782+00.00	41.02	314.53	143202.56
784+00.00	40.28	301.13	143503.69

SURFACE PIPE TABLE

Approximate Station	Size	Side	Approximate Length	Material
441+67	18	RT	56	CMP
442+82	18	LT	60	CMP
458+81	18	RT	78	CMP
470+95	18	LT	76	CMP
483+01	18	LT	88	CMP
484+93	18	LT	80	CMP
496+01	18	LT	60	CMP
499+80	18	LT	110	CMP
503+84	18	RT	110	CMP
513+78	18	LT	90	CMP
523+25	18	RT	56	CMP
525+19	18	LT	96	CMP
547+32	18	RT	95	CMP
548+54	18	LT	82	CMP
552+19	18	LT	56	CMP
554+68	18	RT	42	CMP
565+80	18	RT	60	CMP
566+93	18	LT	50	CMP
582+00	18	LT	60	CMP
586+45	18	RT	78	CMP
589+95	18	LT	80	CMP
590+50	18	RT	40	CMP
597+80	18	RT	94	CMP
598+90	18	RT	56	CMP
599+15	18	LT	74	CMP
607+89	18	LT	90	CMP
608+29	18	RT	100	CMP
613+06	18	LT	100	CMP
613+29	18	RT	100	CMP
617+84	18	RT	96	CMP
622+26	18	LT	84	CMP
626+16	18	RT	100	CMP
633+58	18	RT	94	CMP
635+00	24	LT	80	CMP
637+59	24	LT	88	CMP
640+35	24	RT	74	CMP
657+40	18	RT	60	CMP
667+30	18	LT	40	CMP
685+20	18	RT	44	CMP
685+35	18	LT	46	CMP
700+05	18	LT	66	CMP
722+50	18	LT	52	CMP
727+12	18	LT	58	CMP
727+25	18	RT	52	CMP
733+50	18	LT	40	CMP
741+41	18	LT	40	CMP
741+60	18	RT	42	CMP
760+20	18	LT	42	CMP
761+03	18	RT	46	CMP

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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	
FILE NAME	
DRAWN BY	ISG, CDR
DESIGNED BY	- CDR
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	7/28/2026
CLIENT PROJECT NO.	

TITLE

QUANTITIES

SHEET

C.03

ESTIMATE OF QUANTITIES

SPEC. REF.	ITEM NO.	DESCRIPTION	QUANTITY	UNIT
01 7113	1	MOBILIZATION	1	LS
31 1100	2	HEAVY VEGITATIVE CLEARING WITH TREE REMOVAL	3.5	AC
31 3121	3	WEED MANAGEMENT	1	LS
31 2319	4	DEWATERING	1	LS
31 2335	5	OPEN DITCH EXCAVATION	143,504	CY
31 2335	6	SPOIL BANK LEVELING, TWO SIDED	342.4	STA
31 2335	7	SPOIL BANK LEVELING, ONE SIDED	12.4	STA
31 3700	8	FURNISH & INSTALL ROCK RIPRAP, IA DOT CLASS E	1,050	TN
32 9220	9	RURAL FERTILIZING & SEEDING	3.5	AC
32 9220	10	URBAN FERTILIZING & SEEDING	3.0	AC
32 9221	11	OPEN DITCH FERTILIZING & SEEDING	354.8	STA
33 4114	12	FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 24" DIA.	242	LF
33 4114	13	FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 18" DIA	3,219	LF
33 4114	14	REMOVE AND SALVAGE 72" CMP, STA 619+40	1	EA
33 4114	15	REMOVE AND SALVAGE 72" CMP, STA 683+81	1	EA

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ESTIMATE REFERENCE
1	MOBILIZATION PER SPECIFICATION. INCLUDES NECESSARY TRAFFIC CONTROL, AND EROSION, SEDIMENT, AND SEDIMENT TRACKOUT CONTROL MEASURES, AND ANY PERMITTING REQUIRED BY THE CONTRACTOR (OVERSIZE/OVER WEIGHT PERMITS, TEMPORARY ENTRANCE PERMITS, ETC). CONTRACTOR TO PROVIDE ONE-CALL TICKET NUMBER TO ENGINEER PRIOR TO BEGINNING EXCAVATION.
2	HEAVY VEGITATIVE CLEARING WITH TREE REMOVAL NO TREE COUNT PERFORMED OR WILL BE PROVIDED. STUMPING REQUIRED WHEN TREES ARE GREATER THAN 10" DBH BETWEEN TOP OF DITCH BANK. REFER TO SPECIFICATION FOR STUMP REMOVAL REQUIREMENTS. MINOR GRUBBING DURING OPEN DITCH EXCAVATION INCIDENTAL TO OPEN DITCH EXCAVATION BID ITEM. DO NOT STUMP LARGE TREES IN EXCAVATION LIMITS, CUT FLUSH AND CHEMICALY TREAT PER SPECIFICATION 31 3120.
3	WEED MANAGEMENT CONTROL WEEDS BEFORE THEY GO TO SEED WITHIN THE WORKLIMITS THROUGH CONTRACT COMPLETION. IF LANDOWNER OCCUPIES COMPLETED SEGMENTS PRIOR TO CONTRACT COMPLETION, NOTIFY THE ENGINEER AND WEED CONTROL MAY BE WAIVED FOR THE OCCUPIED AREA SO LONG AS NO ADDITIONAL CONTRACT WORK IS REQUIRED. CHEMICAL TREATMENT IS NOT ALLOWED BETWEEN MAY 1 AND OCTOBER 1, OR WHILE CROPS ARE IN THEIR GROWING SEASON. PAYMENT FOR THIS ITEM WILL WITHHELD IN PROPORTION TO UNCONTROLED LENGTH. EXCESSIVE NON-COMPLIANCE WILL RESULT IN A STOP-WORK ORDER FROM THE OWNER. CONTRACTOR TO SUBMIT A WRITTEN WEED CONTROL PLAN AT THE PRECONSTRUCTION MEETING.
4	DEWATERING DEWATERING BY PUMPING, IF NEEDED TO BE DONE TO MATERIAL REMOVE SURFACE WATER TO REDUCE SLOPE FAILURE. WATER SHALL NOT BE DISCHARGED TO CAUSE SCOUR OR EROSION WITHIN THE DITCH OR ON ADJACENT LANDS. CONTRACTOR TO FURNISH ANY AGREEMENT FOR LANDONWER RECLIMATION FOR IRRIGATION. DEWATERING OF EACH WORK SEGMENT SHOULD BE RELATIVELY COMPLETED BEFORE ENGINEER TO PROVIDE STAKING IN DITCH BOTTOM. ENGINEER MAY PRESCRIBE PILOTING IF PUMP RATE IS NOT SUFFICIENT. PILOT CHANNEL IS ACCEPTABLE MEANS TO DEWATER UPSTREAM OF STATION 636+00, CONTRACTOR MAY ELECT TO PUMP AT NO ADDITIONAL COMPENSTION. TEMPORARY CONTAINMENT DIKES ARE ALLOWED, BUT CONTRACTOR SHALL MONITOR UPSTREAM WATER LEVELS AND PREVENT WATER FROM BACKING INTO FIELDS. WORK IS ASSUMED TO BE COVERED BY IA DNR NPDES GP #9. CONTRACTOR RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS BASED ON PREFFERED MEANS AND METHODS.
5	OPEN DITCH EXCAVATION ENGINEER MAY ALLOW TOP DOWN EXCAVATION AT THE REQUEST OF CONTRACTOR AND WITH CLEAR DEMONSTRATION OF ELEVATION CONTROL. ENGINEER RESERVES THE RIGHT TO STOP TOP DOWN EXCAVATION AT ANY TIME. REFER TO SPECIFICATION FOR REMOVAL OF SEDIMENT THROUGH ROAD CULVERTS. RESIDENTIAL DEBRIS ENCOUNTERED, IF ANY, TO BE SEPERATED AND TRUCKED TO THE LANDFILL. THIS WILL BE CONSIDERED EXTRA WORK AND BE PAID BASED ON AGREED UPON PRICE AND LANDFILL TIPPING FEES. SEE CONSTRUCTION NOTES ON SHEET C.01.
6	SPOIL BANK LEVELING, TWO SIDED SEE PLAN NOTES ON SHEET D.10 & D.14. WATER CONTROL DIKES FOR DEWATERING, IF CONTRACTOR ELECTED, ARE INCIDENTAL TO THIS ITEM. SEE SPECIFICATION FOR SHAPING SPOIL BANKS TO SURFACE WATER INLETS.
7	SPOIL BANK LEVELING, ONE SIDED SEE PLAN NOTES ON SHEET E.02, D.01, D.10, & D.14. 157+80 TO 157+00 & 175+25 TO 174+25 & 217+55 TO 218+85 & 682+00 TO 683+75 & 681+50 TO 674+00 INCLUDES TOP LOADING AND HAULING 268 CY YARDS NEAR STATION 682+60 TO AN ADJACENT LOWER SPOIL BANK FOR LEVELING. WATER CONTROL DIKES FOR DEWATERING, IF CONTRACTOR ELECTED, ARE INCIDENTAL TO THIS ITEM. SEE SPECIFICATION FOR SHAPING SPOIL BANKS TO SURFACE WATER INLETS.
8	FURNISH & INSTALL ROCK RIPRAP, IA DOT CLASS E 25.0 TN - SHERMAN OUTLET REPAIR 225.0 TN - SLOUGH REPAIR SHEET E.02 532.0TN - ASSUMED SLOUGH REPAIRS (1.5TN/STA) 50.0 TN - DD LATERAL DITCH LET DOWNS (SEE DETAIL 3 SHEET B.02 FOR INCIDENTAL CRUSHED ROCK) 218 TN - 42 ROAD DITCH LET DOWNS @ 5TN EACH NEBRASKA DOR TYPE B RIPRAP MAY BE USED AS AN APPROVED ALTERNATE WITHOUT PRIOR APPROVAL.
9	RURAL FERTILIZING & SEEDING WHERE HEAVY VEGITATION AND TREE REMOVAL OCCURS OUTSIDE TOP OF BANKS, SEED DISTURBED AREA WITH "MIX A" IN SPEC 32 9221.
10	URBAN FERTILIZING & SEEDING WHERE DISTURBANCE TO MOWED ACREAGE LOTS OCCUR OR ADJACENT TO CITY OF ONAWA OWNED LOTS. SEED DISTURBED AREA WITH "MIX C" IN SPEC 32 9221. FOR BIDDING PURPOSES 50 FEET OUTSIDE THE TOP OF BANK IS USED TO ESTIMATE QUANTIES THROUGH SAID PARCELS.
11	OPEN DITCH FERTILIZING & SEEDING INCLUEDS DAILY END OF OPERATION SEEDING (TEMPORARY) AND END OF PROJECT (PERMANENT SEEDING) 1. TEMPORARY SEEDING MAY BE BROADCAST BY MECHANICAL HAND APPLICATOR. USE SUDAS 90102.02 E, TYPE 5 SEED. NO FERTILIZER REQUIRED. 2. PERMANENT SEEDING & FERTILIZING TO BE DONE USING MECHANICAL APPLICATOR (NOT BY HAND) AS EACH SEGMENT IS COMPLETED. WHEN DAILY OPERATION COMPLETES A SEGEMENT, TEMPORARY SEED IS STILL REQUIRED. USE "MIX B." AT CONTRACTOR'S COST, AN AGRONOMIST MAY BE USED TO DETERMINE SEED AND FERTILIZER RATES, BUT NO ADDITIONAL COMPENSATION WILL BE MADE. PARTIAL PAYMENT TO BE MADE BASED ON SEGEMENTS, PER SPEC 31 2335, COMPLETED.
12	FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 24" DIA. NOTIFY THE ENGINEER IF ANY EXISTING PIPE IS FOUND TO BE UNDERMINED. PIPES FOUND TO BE SIGNIFICANTLY UNDERMINED WILL BE FITTED WITH ANTI-SEEP COLLAR PER DETAIL, THIS IS CONSIDERED EXTRA WORK. IF FOUND, REMOVE AND REINSTALL ALL FLAP GATES AND ANIMAL GUARDS.
13	FURNISH & INSTALL CORRUGATED METAL SURFACE PIPE, 18" DIA NOTIFY THE ENGINEER IF ANY EXISTING PIPE IS FOUND TO BE UNDERMINED. PIPES FOUND TO BE SIGNIFICANTLY UNDERMINED WILL BE FITTED WITH ANTI-SEEP COLLAR PER DETAIL, THIS IS CONSIDERED EXTRA WORK. IF FOUND, REMOVE AND REINSTALL ALL FLAP GATES AND ANIMAL GUARDS.
14	REMOVE AND SALVAGE 72" CMP, STA 619+40 INCLUEDS REMOVAL OF EXISTING CULVERT, ALL LABOR MATERIALS, AND EQUIPMENT REQUIRED FOR THE REMOVAL. CULVERT TO REMAIN PROPERTY OF THE LANDOWNER. THROUGH CAREFUL EXCAVATION, REMOVE THE CULVERT TO LIMIT DAMAGE. REINSTALLATION OF THE CULVERT TO BE ARRANGED BY THE LANDOWNER OUTSIDE THE SCOPE OF THIS CONTRACT.
15	REMOVE AND SALVAGE 72" CMP, STA 683+81 INCLUEDS REMOVAL OF EXISTING CULVERT, ALL LABOR MATERIALS, AND EQUIPMENT REQUIRED FOR THE REMOVAL. CULVERT TO REMAIN PROPERTY OF THE LANDOWNER. THROUGH CAREFUL EXCAVATION, REMOVE THE CULVERT TO LIMIT DAMAGE. REINSTALLATION OF THE CULVERT TO BE ARRANGED BY THE LANDOWNER OUTSIDE THE SCOPE OF THIS CONTRACT.

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PROJECT
MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS
MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	
FILE NAME	
DRAWN BY	ISG, CDR
DESIGNED BY	CDR
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	7/28/2026
CLIENT PROJECT NO.	

TITLE
QUANTITIES

SHEET
C.04

25740-MCNEILL-PHASE II ALIGNMENT PROPERTIES

SEGMENT	STATION	NORTHING; EASTING	LENGTH	RADIUS	TANGENT DIRECTION Δ ANGLE
L1	START: 438+04.71 END: 438+58.88	START: N7,219,729.152; E16,404,411.516 END: N7,219,739.933; E16,404,358.434	54.17'		N78° 31' 12.09"W
C1	PC: 438+58.88 PI: 438+83.00 PT: 439+06.22	PI: N7,219,744.734; E16,404,334.792	47.34'	100.00'	Δ = 27° 07' 32.01"
L2	START: 439+06.22 END: 439+90.22	START: N7,219,759.786; E16,404,315.941 END: N7,219,812.201; E16,404,250.295	84.00'		N51° 23' 40.08"W
C2	PC: 439+90.22 PI: 440+18.50 PT: 440+46.58	PI: N7,219,829.846; E16,404,228.195	56.36'	270.00'	Δ = 11° 57' 32.11"
L3	START: 440+46.58 END: 441+16.26	START: N7,219,851.688; E16,404,210.231 END: N7,219,905.505; E16,404,165.970	69.68'		N39° 26' 07.97"W
L4	START: 441+16.26 END: 444+82.88	START: N7,219,905.505; E16,404,165.970 END: N7,220,161.037; E16,403,903.079	366.62'		N45° 48' 47.70"W
L5	START: 444+82.88 END: 447+99.10	START: N7,220,161.037; E16,403,903.079 END: N7,220,375.611; E16,403,670.798	316.22'		N47° 16' 08.85"W
L6	START: 447+99.10 END: 449+61.46	START: N7,220,375.611; E16,403,670.798 END: N7,220,476.579; E16,403,543.644	162.36'		N51° 32' 54.09"W
C3	PC: 449+61.46 PI: 450+91.25 PT: 452+11.37	PI: N7,220,557.290; E16,403,442.000	249.91'	375.00'	Δ = 38° 10' 58.01"
L7	START: 452+11.37 END: 452+97.82	START: N7,220,557.900; E16,403,312.209 END: N7,220,558.305; E16,403,225.758	86.45'		N89° 43' 52.10"W
L8	START: 452+97.82 END: 453+25.54	START: N7,220,558.305; E16,403,225.758 END: N7,220,559.451; E16,403,198.061	27.72'		N87° 37' 50.49"W
C4	PC: 453+25.54 PI: 454+65.86 PT: 455+88.03	PI: N7,220,565.252; E16,403,057.867	262.49'	300.00'	Δ = 50° 07' 57.00"
L9	START: 455+88.03 END: 457+06.13	START: N7,220,676.574; E16,402,972.452 END: N7,220,770.265; E16,402,900.564	118.09'		N37° 29' 53.49"W
C5	PC: 457+06.13 PI: 457+13.80 PT: 457+21.45	PI: N7,220,776.355; E16,402,895.892	15.32'	100.00'	Δ = 8° 46' 44.59"
L10	START: 457+21.45 END: 458+48.87	START: N7,220,783.087; E16,402,892.203 END: N7,220,894.832; E16,402,830.976	127.42'		N28° 43' 08.90"W
C6	PC: 458+48.87 PI: 459+15.43 PT: 459+74.16	PI: N7,220,953.205; E16,402,798.993	125.29'	150.00'	Δ = 47° 51' 26.97"
L11	START: 459+74.16 END: 462+46.38	START: N7,220,968.656; E16,402,734.250 END: N7,221,031.852; E16,402,469.462	272.23'		N76° 34' 35.86"W
C7	PC: 462+46.38 PI: 463+84.94 PT: 465+19.40	PI: N7,221,064.016; E16,402,334.695	273.02'	650.00'	Δ = 24° 03' 56.99"
L12	START: 465+19.40 END: 466+27.75	START: N7,221,148.341; E16,402,224.758 END: N7,221,214.281; E16,402,138.789	108.35'		N52° 30' 38.87"W
C8	PC: 466+27.75 PI: 467+50.98 PT: 468+59.45	PI: N7,221,289.281; E16,402,041.009	231.71'	275.00'	Δ = 48° 16' 32.43"
L13	START: 468+59.45 END: 469+04.92	START: N7,221,412.176; E16,402,031.909 END: N7,221,457.520; E16,402,028.551	45.47'		N4° 14' 06.45"W
C9	PC: 469+04.92 PI: 470+15.09 PT: 471+07.11	PI: N7,221,567.392; E16,402,020.415	202.19'	205.00'	Δ = 56° 30' 35.66"
L14	START: 471+07.11 END: 471+94.98	START: N7,221,634.804; E16,402,107.557 END: N7,221,688.567; E16,402,177.054	87.87'		N52° 16' 29.21"E
C10	PC: 471+94.98 PI: 473+80.41 PT: 475+55.51	PI: N7,221,802.032; E16,402,323.728	360.54'	625.00'	Δ = 33° 03' 05.11"
L15	START: 475+55.51 END: 479+45.22	START: N7,221,977.131; E16,402,384.784 END: N7,222,345.116; E16,402,513.098	389.71'		N19° 13' 24.10"E
C11	PC: 479+45.22 PI: 480+31.25 PT: 481+13.93	PI: N7,222,426.342; E16,402,541.421	168.70'	350.00'	Δ = 27° 37' 01.04"
L16	START: 481+13.93 END: 485+22.61	START: N7,222,485.185; E16,402,604.170 END: N7,222,764.737; E16,402,902.284	408.68'		N46° 50' 25.15"E
C12	PC: 485+22.61 PI: 486+24.53 PT: 487+22.67	PI: N7,222,834.453; E16,402,976.628	200.06'	425.00'	Δ = 26° 58' 14.55"
L17	START: 487+22.67 END: 489+08.78	START: N7,222,862.869; E16,403,074.505 END: N7,222,914.758; E16,403,253.236	186.11'		N73° 48' 39.70"E
L18	START: 489+08.78 END: 498+33.77	START: N7,222,914.758; E16,403,253.236 END: N7,223,398.317; E16,404,041.768	924.99'		N58° 28' 54.19"E

25740-MCNEILL-PHASE II ALIGNMENT PROPERTIES

SEGMENT	STATION	NORTHING; EASTING	LENGTH	RADIUS	TANGENT DIRECTION Δ ANGLE
L19	START: 498+33.77 END: 499+00.61	START: N7,223,398.317; E16,404,041.768 END: N7,223,414.477; E16,404,106.622	66.84'		N76° 00' 26.63"E
C13	PC: 499+00.61 PI: 499+18.70 PT: 499+36.41	PI: N7,223,418.852; E16,404,124.177	35.80'	100.00'	Δ = 20° 30' 38.95"
L20	START: 499+36.41 END: 500+49.22	START: N7,223,429.101; E16,404,139.087 END: N7,223,493.005; E16,404,232.057	112.81'		N55° 29' 47.68"E
L21	START: 500+49.22 END: 503+37.80	START: N7,223,493.005; E16,404,232.057 END: N7,223,669.382; E16,404,460.462	288.58'		N52° 19' 27.52"E
L22	START: 503+37.80 END: 521+56.38	START: N7,223,669.382; E16,404,460.462 END: N7,224,763.165; E16,405,913.344	1818.58'		N53° 01' 34.43"E
L23	START: 521+56.38 END: 521+79.62	START: N7,224,763.165; E16,405,913.344 END: N7,224,775.561; E16,405,932.999	23.24'		N57° 45' 34.99"E
L24	START: 521+79.62 END: 527+45.25	START: N7,224,775.561; E16,405,932.999 END: N7,225,115.415; E16,406,385.158	565.64'		N53° 04' 13.99"E
L25	START: 527+45.25 END: 527+83.01	START: N7,225,115.415; E16,406,385.158 END: N7,225,137.669; E16,406,415.656	37.75'		N53° 52' 57.25"E
L26	START: 527+83.01 END: 544+14.96	START: N7,225,137.669; E16,406,415.656 END: N7,226,116.241; E16,407,721.668	1631.95'		N53° 09' 23.10"E
C14	PC: 544+14.96 PI: 546+97.02 PT: 549+75.39	PI: N7,226,285.375; E16,407,947.395	560.43'	2000.00'	Δ = 16° 03' 18.26"
L27	START: 549+75.39 END: 550+01.37	START: N7,226,510.339; E16,408,117.543 END: N7,226,531.059; E16,408,133.214	25.98'		N37° 06' 04.84"E
C15	PC: 550+01.37 PI: 553+09.77 PT: 556+13.89	PI: N7,226,795.830; E16,408,291.351	612.52'	2125.00'	Δ = 16° 30' 55.14"
L28	START: 556+13.89 END: 557+89.40	START: N7,227,094.631; E16,408,367.698 END: N7,227,264.675; E16,408,411.146	175.51'		N14° 19' 58.57"E
C16	PC: 557+89.40 PI: 559+16.61 PT: 560+41.41	PI: N7,227,387.920; E16,408,442.636	252.01'	750.00'	Δ = 19° 15' 07.75"
L29	START: 560+41.41 END: 561+55.72	START: N7,227,514.656; E16,408,431.728 END: N7,227,628.542; E16,408,421.926	114.31'		N4° 55' 09.18"W
C17	PC: 561+55.72 PI: 561+89.77 PT: 562+23.74	PI: N7,227,662.465; E16,408,419.006	68.02'	600.00'	Δ = 6° 29' 44.96"
L30	START: 562+23.74 END: 562+70.11	START: N7,227,695.840; E16,408,412.268 END: N7,227,741.295; E16,408,403.090	46.37'		N11° 24' 54.14"W
L31	START: 562+70.11 END: 562+95.44	START: N7,227,741.295; E16,408,403.090 END: N7,227,765.070; E16,408,394.362	25.33'		N20° 09' 29.62"W
L32	START: 562+95.44 END: 566+68.41	START: N7,227,765.070; E16,408,394.362 END: N7,228,131.216; E16,408,323.341	372.97'		N10° 58' 38.08"W
L33	START: 566+68.41 END: 569+20.65	START: N7,228,131.216; E16,408,323.341 END: N7,228,378.439; E16,408,273.301	252.24'		N11° 26' 33.60"W
L34	START: 569+20.65 END: 596+08.98	START: N7,228,378.439; E16,408,273.301 END: N7,231,014.160; E16,407,744.047	2688.33'		N11° 21' 14.50"W
C18	PC: 596+08.98 PI: 603+08.47 PT: 609+10.68	PI: N7,231,699.958; E16,407,606.338	1301.70'	1435.00'	Δ = 51° 58' 24.97"
L35	START: 609+10.68 END: 616+99.81	START: N7,232,230.903; E16,408,061.728 END: N7,232,829.885; E16,408,575.473	789.12'		N40° 37' 10.47"E
L37	START: 616+99.81 END: 632+99.25	START: N7,232,829.885; E16,408,575.473 END: N7,234,041.513; E16,409,619.588	1599.44'		N40° 45' 10.71"E
L38	START: 632+99.25 END: 647+06.44	START: N7,234,041.513; E16,409,619.588 END: N7,235,107.855; E16,410,537.796	1407.19'		N40° 43' 52.26"E
C19	PC: 647+06.44 PI: 650+36.62 PT: 653+52.06	PI: N7,235,358.059; E16,410,753.242	645.61'	1250.00'	Δ = 29° 35' 34.10"
L39	START: 653+52.06 END: 655+24.14	START: N7,235,682.019; E16,410,817.026 END: N7,235,850.857; E16,410,850.269	172.08'		N11° 08' 18.16"E
L40	START: 655+24.14 END: 660+08.20	START: N7,235,850.857; E16,410,850.269 END: N7,236,324.337; E16,410,950.954	484.07'		N12° 00' 18.40"E
C20	PC: 660+08.20 PI: 661+23.53 PT: 662+36.80	PI: N7,236,437.140; E16,410,974.941	228.60'	700.00'	Δ = 18° 42' 39.25"
L41	START: 662+36.80 END: 664+38.11	START: N7,236,551.676; E16,410,961.475 END: N7,236,751.608; E16,410,937.968	201.31'		N6° 42' 20.84"W

25740-MCNEILL-PHASE II ALIGNMENT PROPERTIES

SEGMENT	STATION	NORTHING; EASTING	LENGTH	RADIUS	TANGENT DIRECTION Δ ANGLE
C21	PC: 664+38.11 PI: 665+99.62 PT: 667+60.36	PI: N7,236,912.016; E16,410,919.108	322.25'	1900.00'	Δ = 9° 43' 03.66"
L42	START: 667+60.36 END: 670+24.23	START: N7,237,066.938; E16,410,873.443 END: N7,237,320.039; E16,410,798.838	263.87'		N16° 25' 24.50"W
L43	START: 670+24.23 END: 672+47.82	START: N7,237,320.039; E16,410,798.838 END: N7,237,533.596; E16,410,732.599	223.59'		N17° 13' 56.46"W
C22	PC: 672+47.82 PI: 673+45.42 PT: 674+41.77	PI: N7,237,626.815; E16,410,703.686	193.95'	700.00'	Δ = 15° 52' 29.83"
L44	START: 674+41.77 END: 678+91.88	START: N7,237,708.569; E16,410,650.376 END: N7,238,085.600; E16,410,404.524	450.11'		N33° 06' 26.29"W
C23	PC: 678+91.88 PI: 679+70.42 PT: 680+48.32	PI: N7,238,151.396; E16,410,361.620	156.44'	700.00'	Δ = 12° 48' 18.05"
L45	START: 680+48.32 END: 682+76.91	START: N7,238,206.047; E16,410,305.201 END: N7,238,365.095; E16,410,141.005	228.60'		N45° 54' 44.34"W
L46	START: 682+76.91 END: 692+13.30	START: N7,238,365.095; E16,410,141.005 END: N7,239,008.262; E16,409,460.449	936.39'		N46° 37' 04.47"W
C24	PC: 692+13.30 PI: 693+84.44 PT: 695+53.89	PI: N7,239,125.811; E16,409,336.067	340.59'	1400.00'	Δ = 13° 56' 19.58"
L47	START: 695+53.89 END: 702+50.17	START: N7,239,209.936; E16,409,187.031 END: N7,239,552.199; E16,408,580.686	696.27'		N60° 33' 24.05"W
C25	PC: 702+50.17 PI: 704+35.96 PT: 706+19.44	PI: N7,239,643.530; E16,408,418.886	369.28'	1350.00'	Δ = 15° 40' 21.07"
L48	START: 706+19.44 END: 717+25.81	START: N7,239,687.757; E16,408,238.429 END: N7,239,951.116; E16,407,163.857	1106.37'		N76° 13' 45.13"W
C26	PC: 717+25.81 PI: 719+24.07 PT: 721+20.74	PI: N7,239,998.310; E16,406,971.296	394.93'	1800.00'	Δ = 12° 34' 15.49"
L49	START: 721+20.74 END: 726+39.13	START: N7,240,002.461; E16,406,773.079 END: N7,240,013.316; E16,406,254.807	518.39'		N88° 48' 00.62"W
L50	START: 726+39.13 END: 732+66.34	START: N7,240,013.316; E16,406,254.807 END: N7,240,022.714; E16,405,627.665	627.21'		N89° 08' 29.17"W
C27	PC: 732+66.34 PI: 736+23.66 PT: 739+38.44	PI: N7,240,028.068; E16,405,270.386	672.10'	800.00'	Δ = 48° 08' 08.83"
L51	START: 739+38.44 END: 745+66.55	START: N7,240,297.717; E16,405,035.937 END: N7,240,771.712; E16,404,623.817	628.10'		N41° 00' 20.34"W
L52	START: 745+66.55 END: 761+08.89	START: N7,240,771.712; E16,404,623.817 END: N7,241,952.999; E16,403,632.164	1542.34'		N40° 00' 44.62"W
C28	PC: 761+08.89 PI: 761+22.89 PT: 761+36.19	PI: N7,241,963.723; E16,403,623.162	27.30'	50.00'	Δ = 31° 17' 19.91"
L53	START: 761+36.19 END: 761+69.50	START: N7,241,968.212; E16,403,609.899 END: N7,241,978.890; E16,403,578.351	33.31'		N71° 18' 04.53"W
C29	PC: 761+69.50 PI: 762+14.41 PT: 762+53.93	PI: N7,241,993.290; E16,403,535.804	84.43'	100.00'	Δ = 48° 22' 36.97"
L54	START: 762+53.93 END: 762+74.23	START: N7,242,034.660; E16,403,518.308 END: N7,242,053.360; E16,403,510.400	20.30'		N22° 55' 27.57"W
L55	START: 762+74.23 END: 775+95.18	START: N7,242,053.360; E16,403,510.400 END: N7,243,315.898; E16,403,121.946	1320.95'		N17° 06' 06.88"W
L56	START: 775+95.18 END: 779+17.74	START: N7,243,315.898; E16,403,121.946 END: N7,243,621.396; E16,403,018.416	322.56'		N18° 43' 15.56"W
C30	PC: 779+17.74 PI: 779+86.26 PT: 780+51.49	PI: N7,243,686.284; E16,402,996.426	133.74'	250.00'	Δ = 30° 39' 05.28"
L57	START: 780+51.49 END: 780+89.43	START: N7,243,730.896; E16,402,944.428 END: N7,243,755.601; E16,402,915.631	37.94'		N49° 22' 20.84"W
C31	PC: 780+89.43 PI: 781+63.12 PT: 782+35.93	PI: N7,243,803.583; E16,402,859.704	146.51'	550.00'	Δ = 15° 15' 43.75"
L58	START: 782+35.93 END: 784+29.26	START: N7,243,864.595; E16,402,818.380 END: N7,244,024.660; E16,402,709.966	193.32'		N34° 06' 37.09"W

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PROJECT
MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS
MONONA COUNTY IOWA

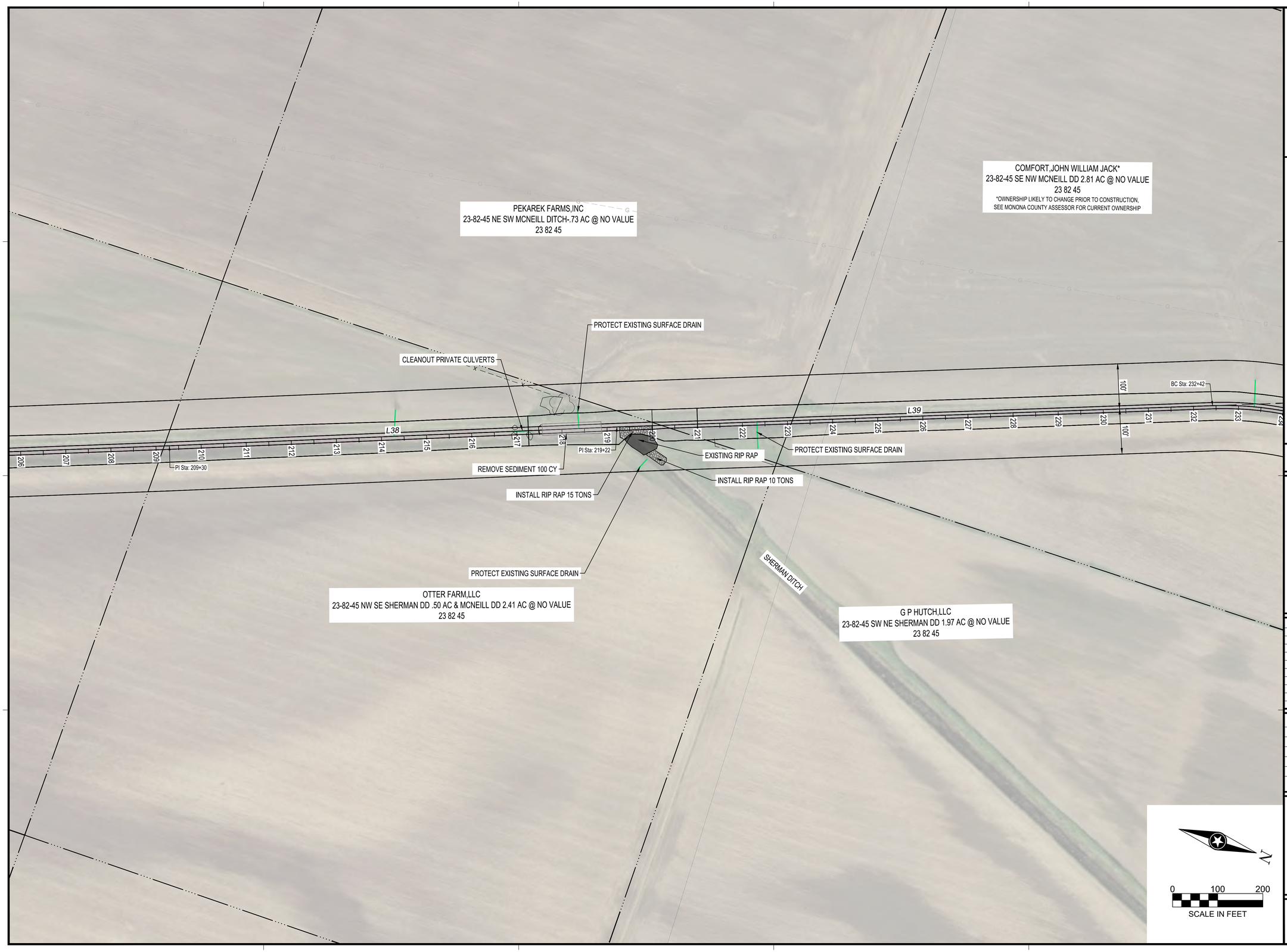
REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.
FILE NAME
DRAWN BY ISG, CDR
DESIGNED BY CDR
REVIEWED BY CDR
ORIGINAL ISSUE DATE 7/28/2026
CLIENT PROJECT NO.

TITLE
LINE AND CURVE DATA

SHEET
C.05



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE I MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740- PHASE I REPAIRS
DRAWN BY	HLC/LDS
DESIGNED BY	HLC
REVIEWED BY	ALG
ORIGINAL ISSUE DATE	03/03/2026
CLIENT PROJECT NO.	-

RSG, CDR
CDR
CDR
7/28/2026

TITLE

PHASE 1 REPAIR

SHEET

E.01

RUST DATED 06/15/1982
.96 AC @ NO VALUE

STANISLAV,DENNIS P REVOCABLE TRUST DATED 06/15/1982
26-82-45 NE SE MCNEILL MAIN DD 2.98 AC @ NO VALUE SPLIT FROM -001 TO -002 & -003
26 82 45

BEARG,BENJAMIN A
26-82-45 PT NW SE SPLIT FROM -001 TO -002 & -003
26 82 45

BRANDT,RICHARD R MARITAL TRUST DTD 6/2/97;BRANDT,BETTY M-T
26-82-45 SW NE MCNEILL LAT #7 DD .38 AC @ NO VALUE
26 82 45

SLOUGH REPAIR STATION
157+00TO 157+80

INSTALL RIP RAP 100 TONS
PER DETAIL AG480

PI Sta: 153+46

BC Sta: 158+47

EC Sta: 165+08

PI Sta: 167+02

BENCHMARK: SPIKE IN POWER POLE
ELEV: 1032.07

SLOUGH REPAIR STATION
174+25 TO 175+25

INSTALL RIP RAP 125 TONS
PER DETAIL AG480

100'

100'

L34

C12

L35

L36

323TH STREET

STANISLAV,DENNIS P REVOCABLE TRUST DATED 06/15/1982
26-82-45 NE SE MCNEILL MAIN DD 2.98 AC @ NO VALUE SPLIT FROM -001 TO -002 & -003
26 82 45

BRANDT,RICHARD R MARITAL TRUST DTD 6/2/97;BRANDT,BETTY M-TR
26-82-45 SE NE MCNEILL MAIN DD 3.18 AC &LAT #7 .13AC @ NV
26 82 45

DAYKIN,FRANK,PROPERTY TRUST AGREEMEN
25-82-45 NW
25 82 45

N

0 100 200
SCALE IN FEET

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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE I MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

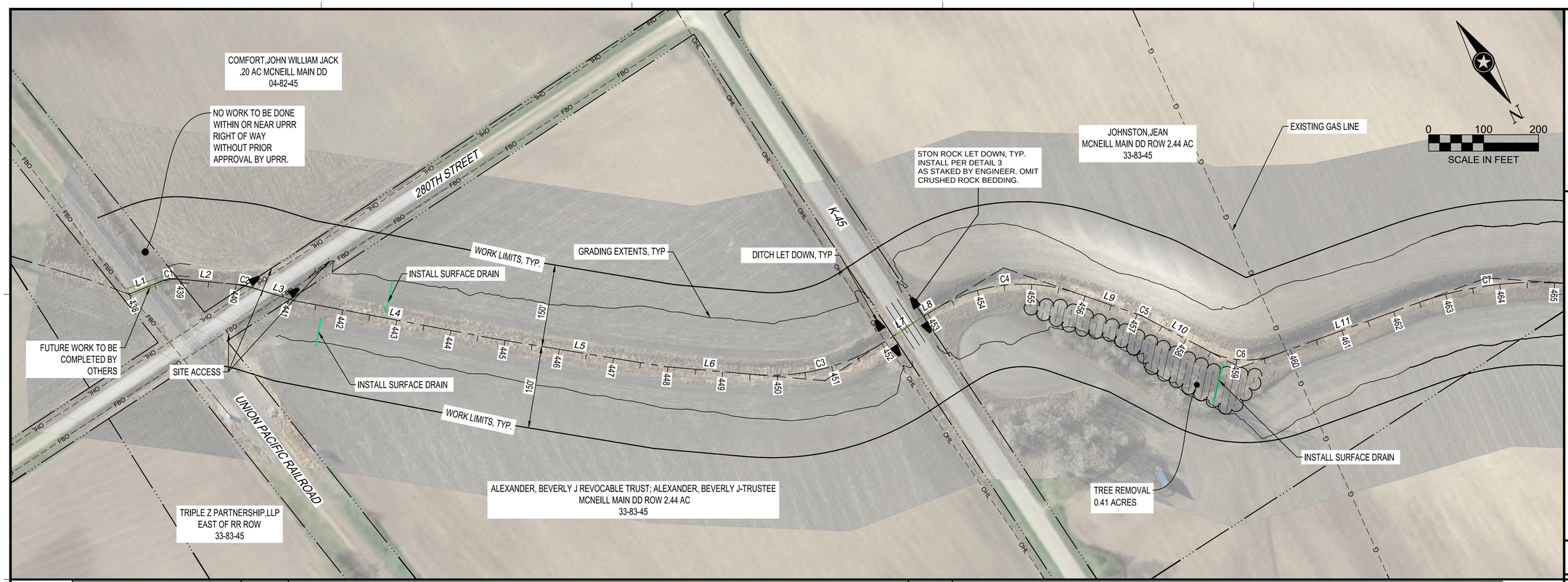
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FILE NAME	25740- PHASE I REPAIRS
DRAWN BY	HLC/LDS
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026 ISG CDR
CLIENT PROJECT NO.	-

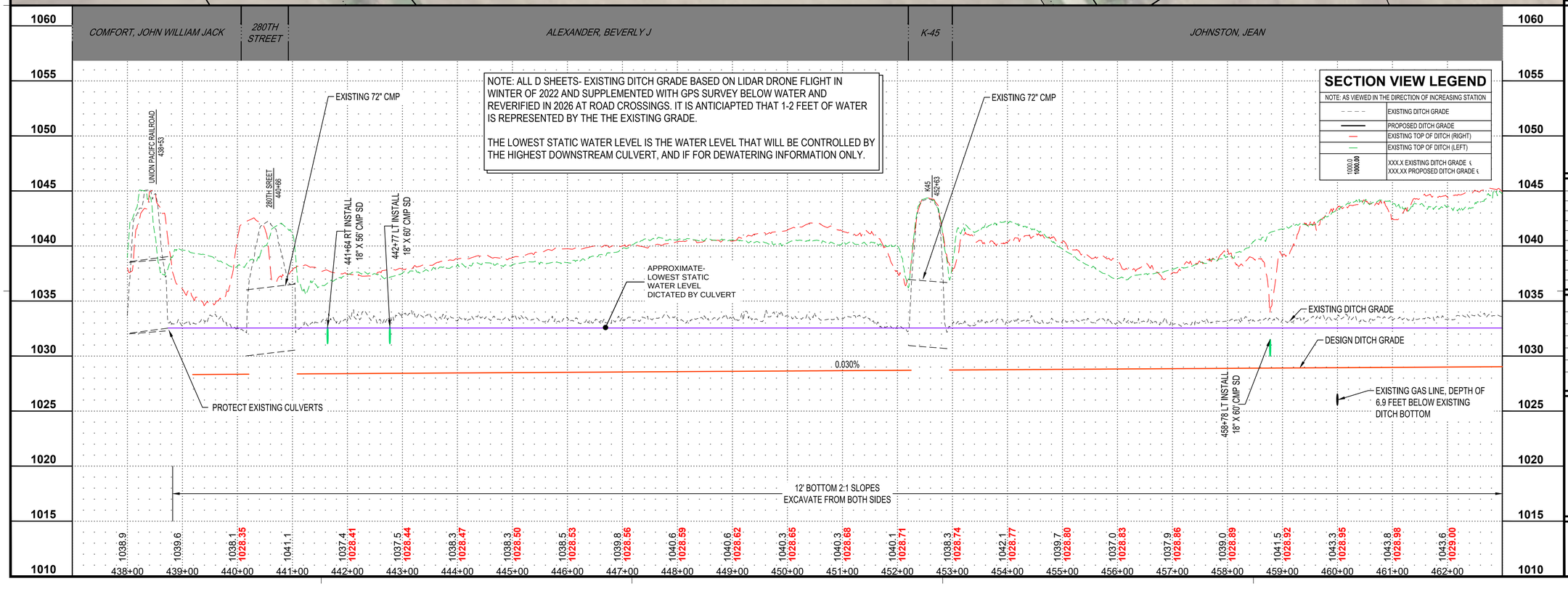
TITLE

PHASE I REPAIR

SHEET

E.02





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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

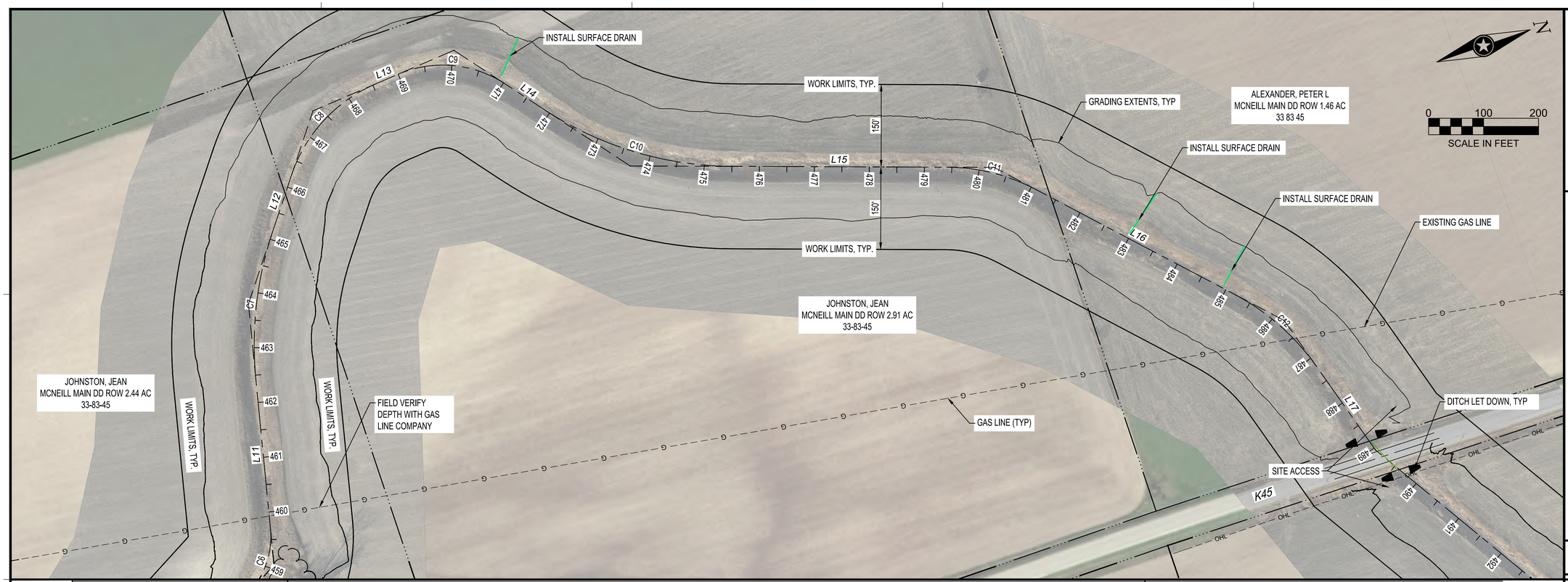
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DRAWN BY	HLC/LRS
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

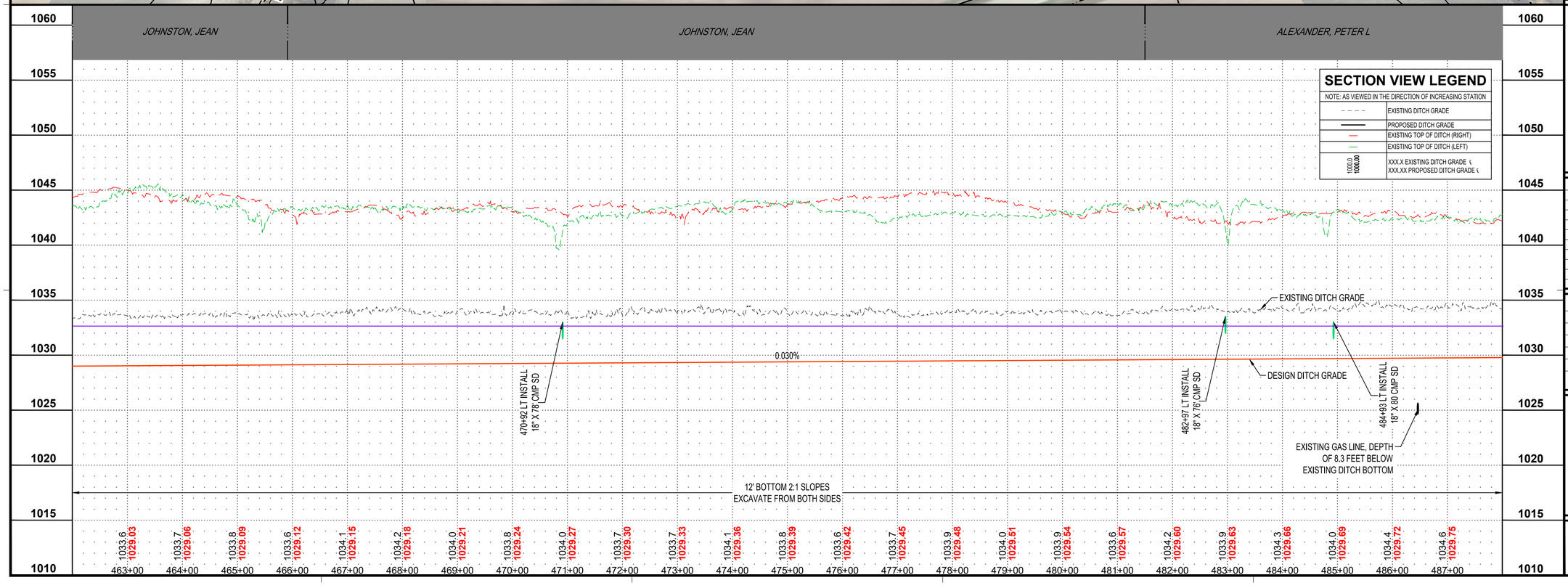
TITLE

PLAN & PROFILE

SHEET

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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

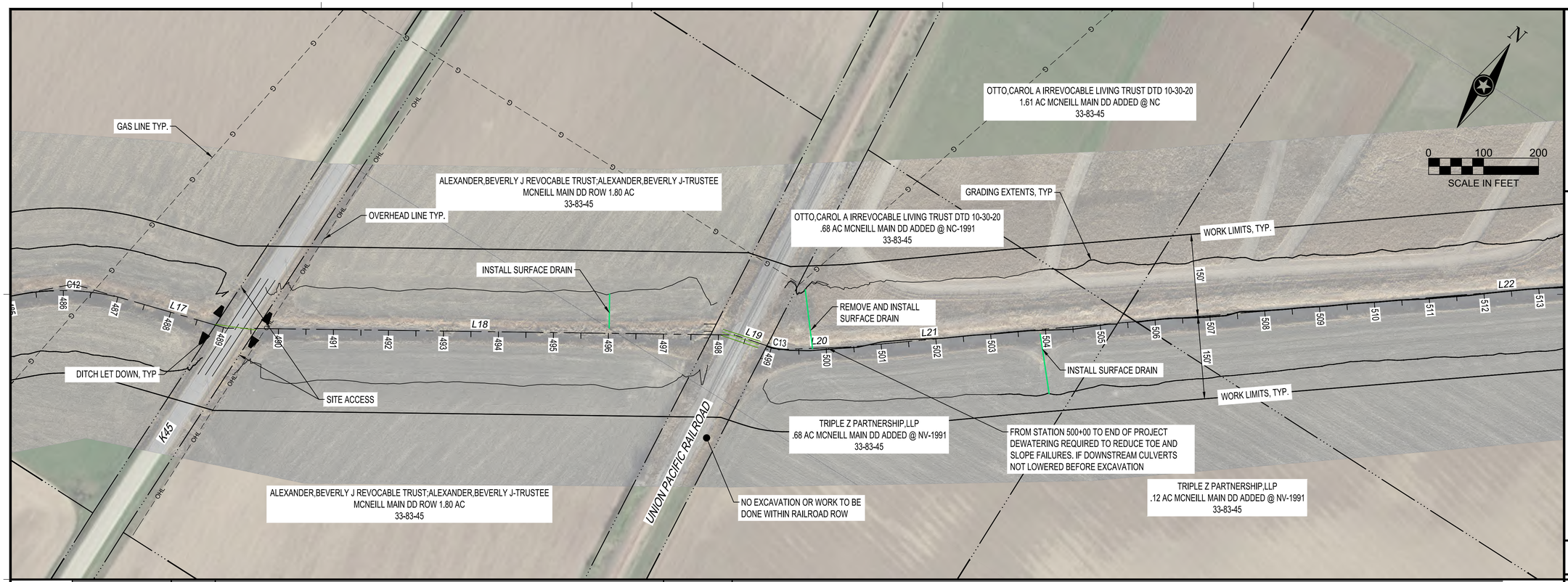
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CLIENT PROJECT NO.	-	

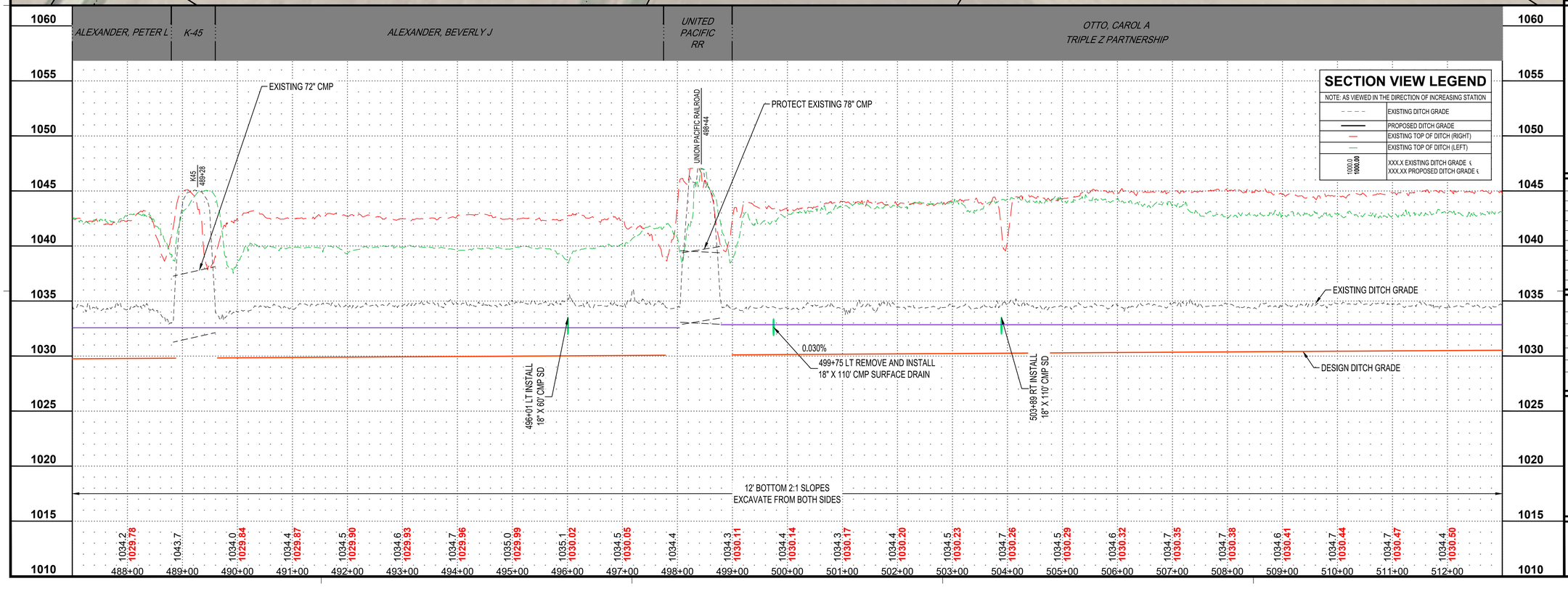
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MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740-PROF-PHASE II
DRAWN BY	HLC/LRS
DESIGNED BY	HLC
REVIEWED BY	ALG
ORIGINAL ISSUE DATE	03/03/2026
CLIENT PROJECT NO.	-

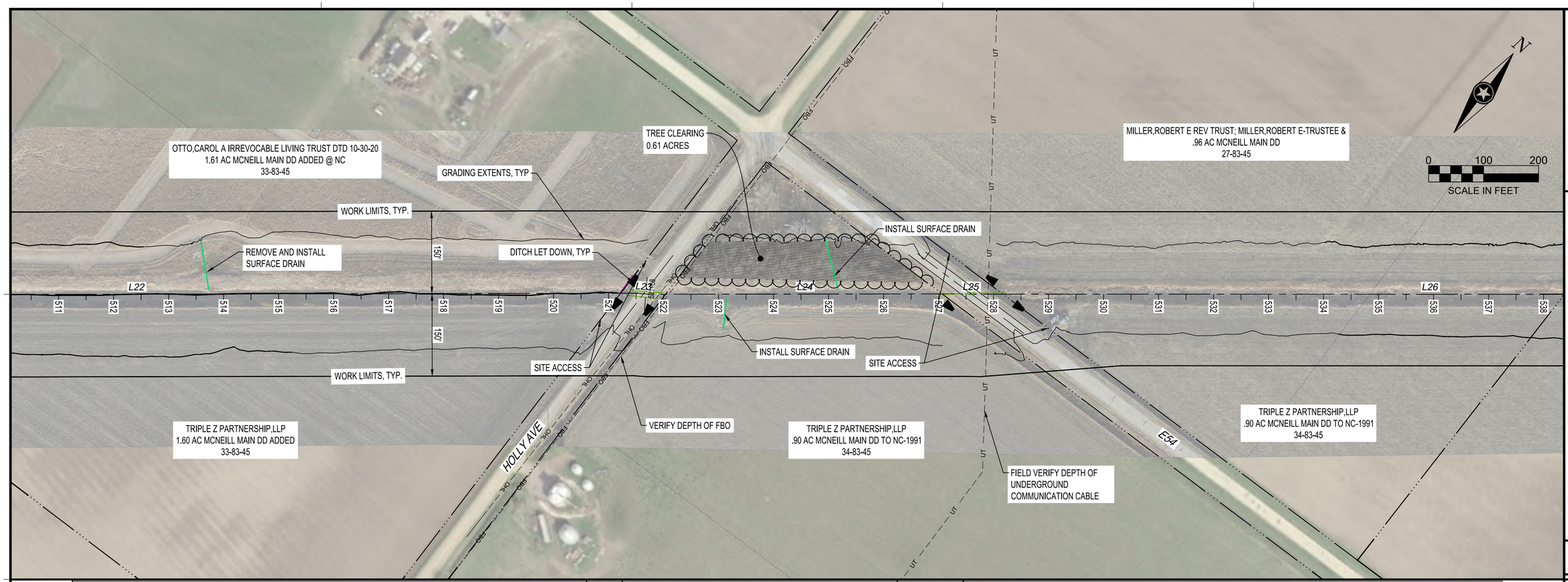
RSG, CDR
CDR
CDR
7/28/2026

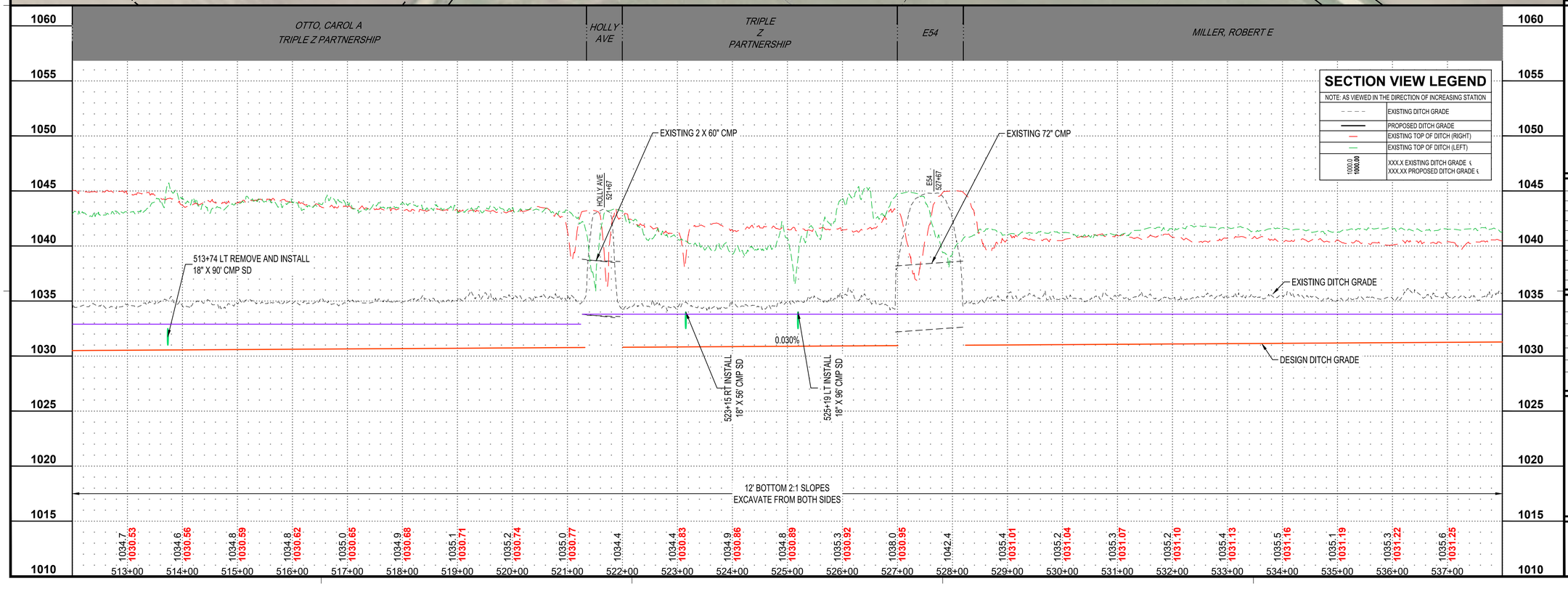
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MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

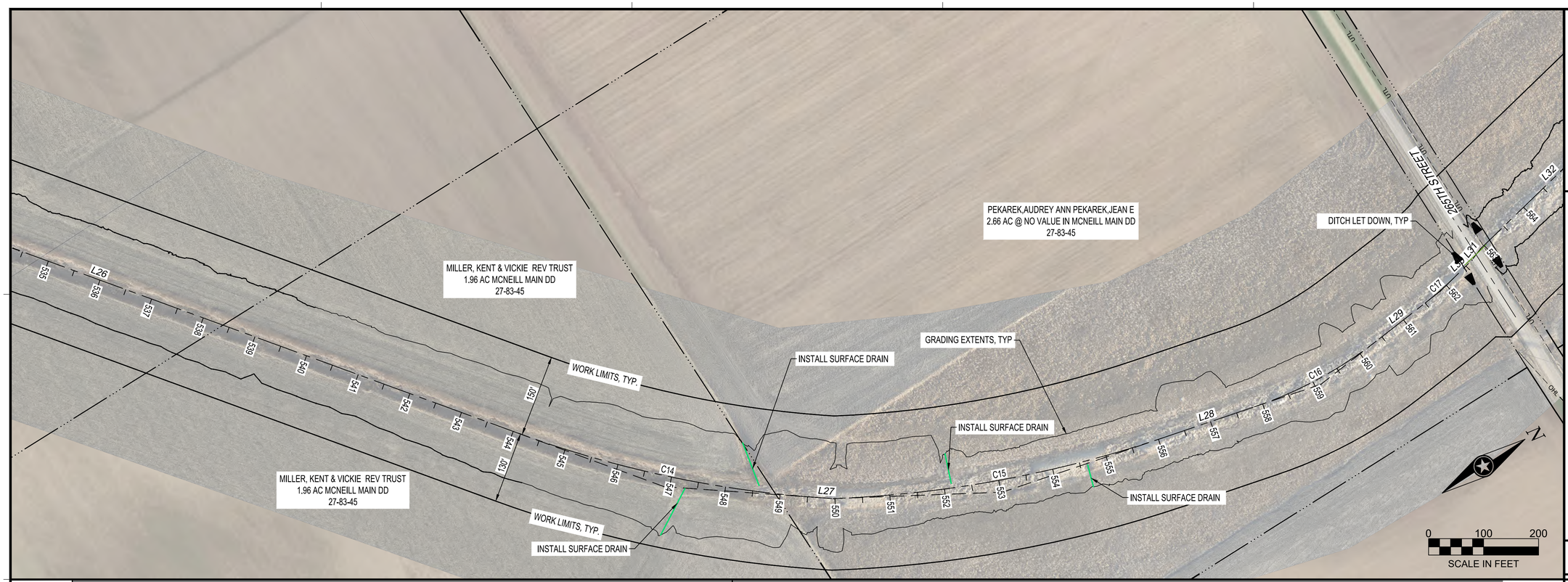
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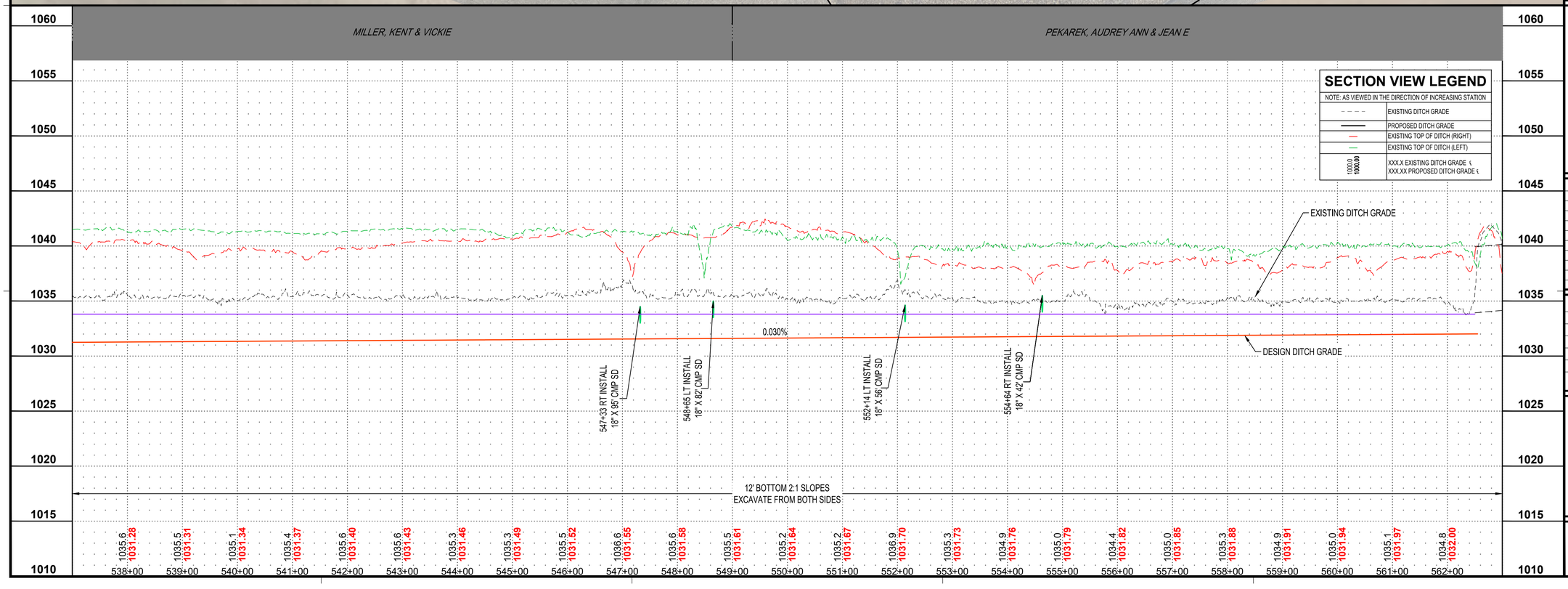
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

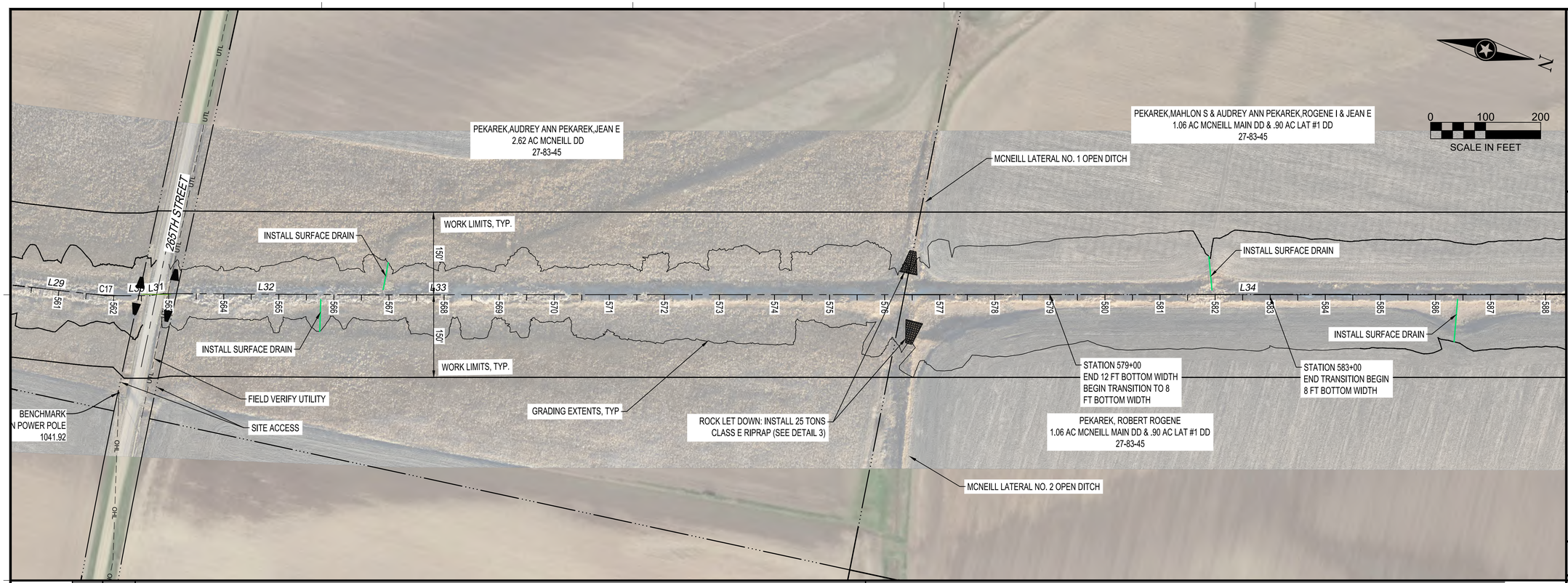
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CLIENT PROJECT NO.	-

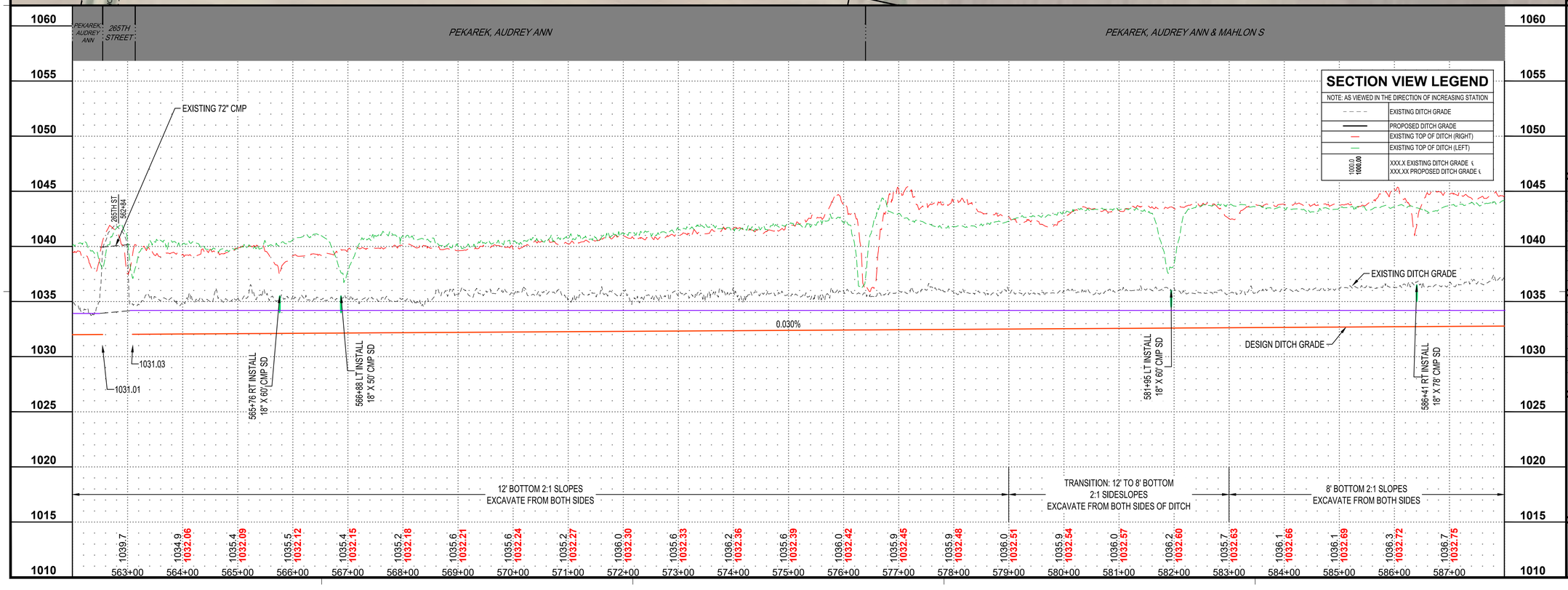
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

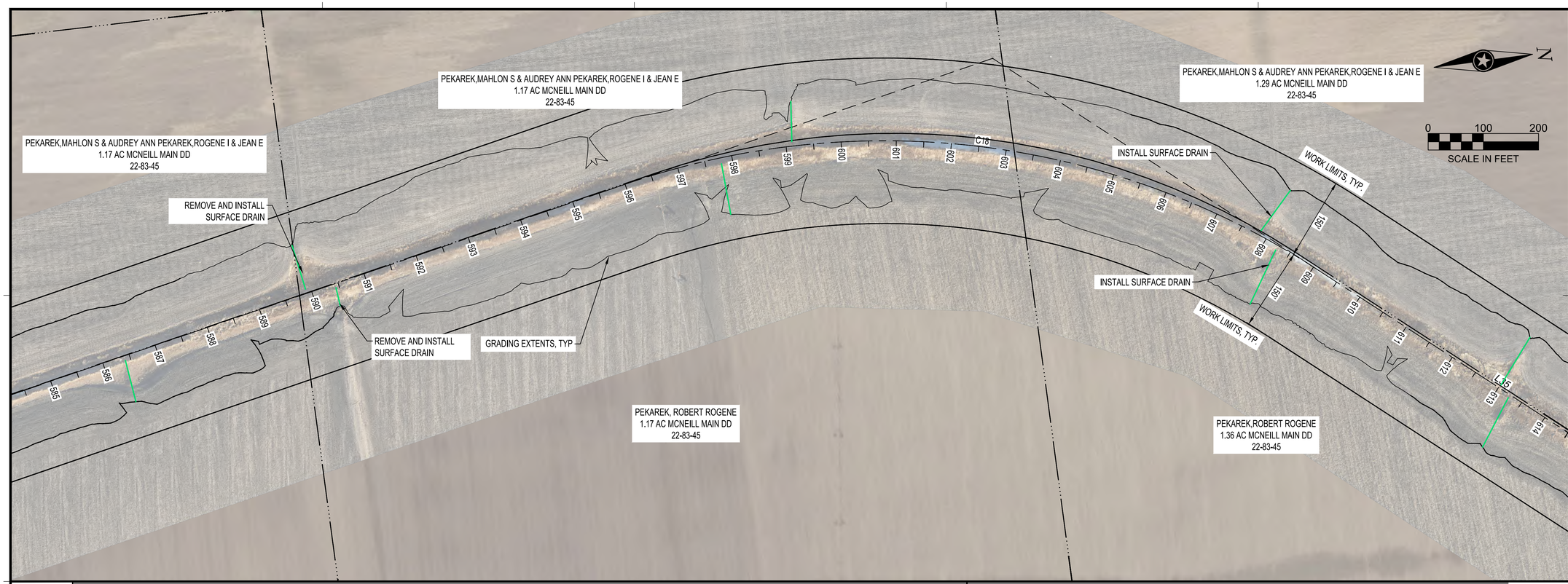
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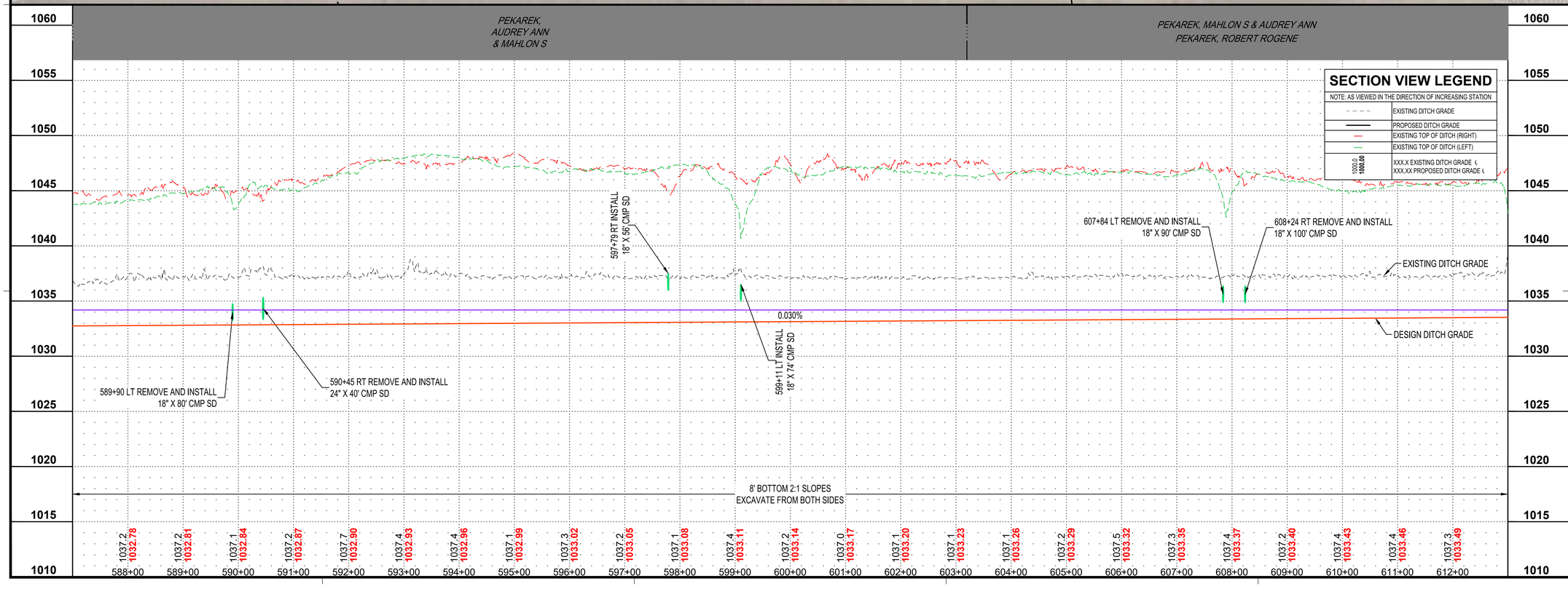
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

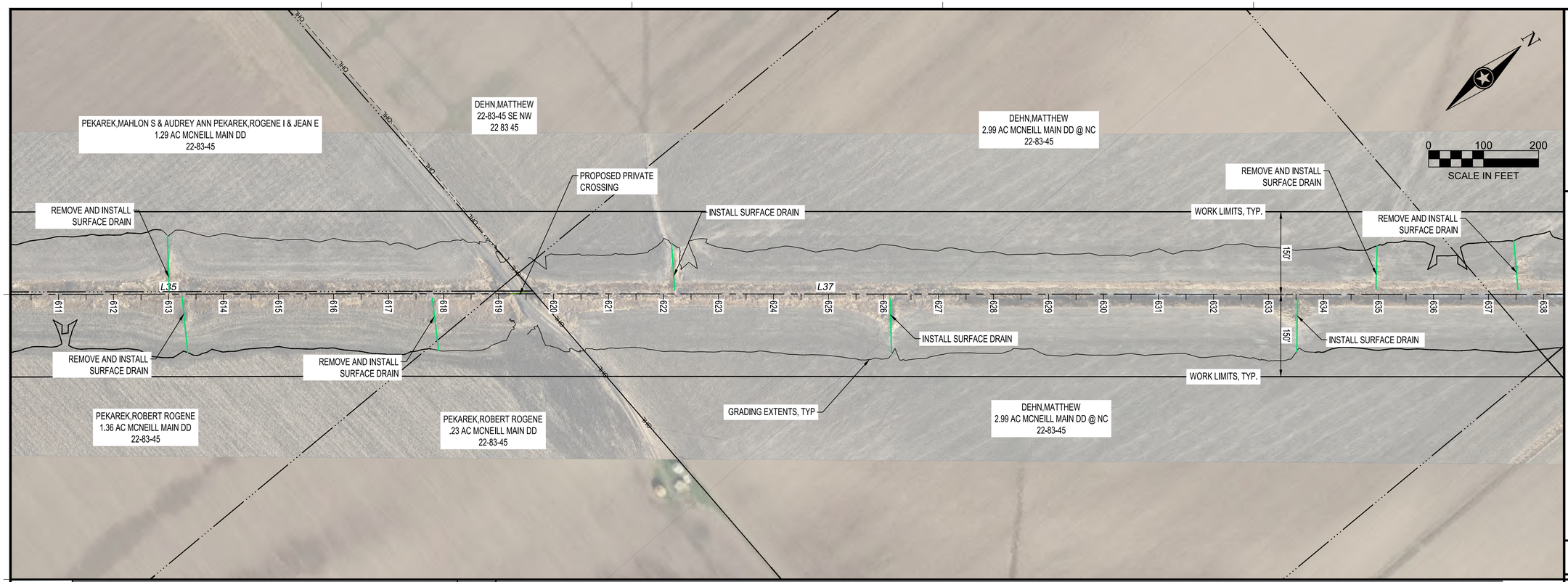
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REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026 ISG, CDR
CLIENT PROJECT NO.	-

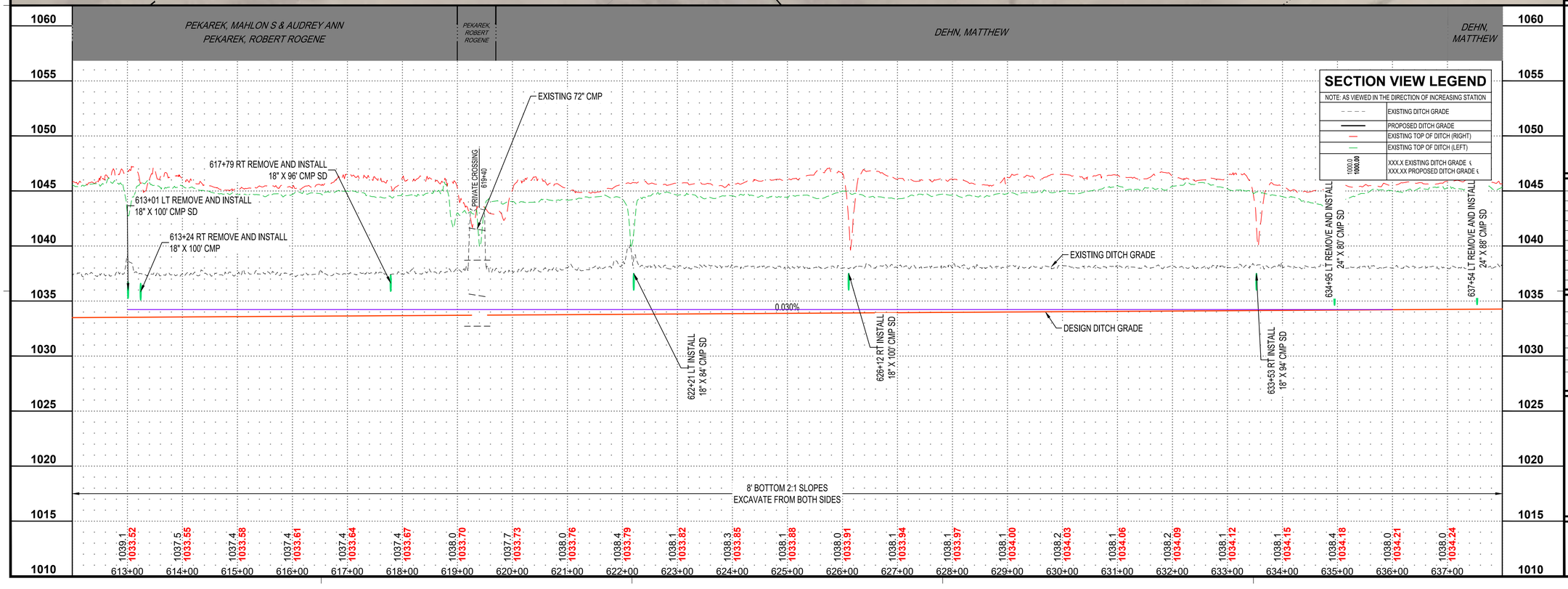
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

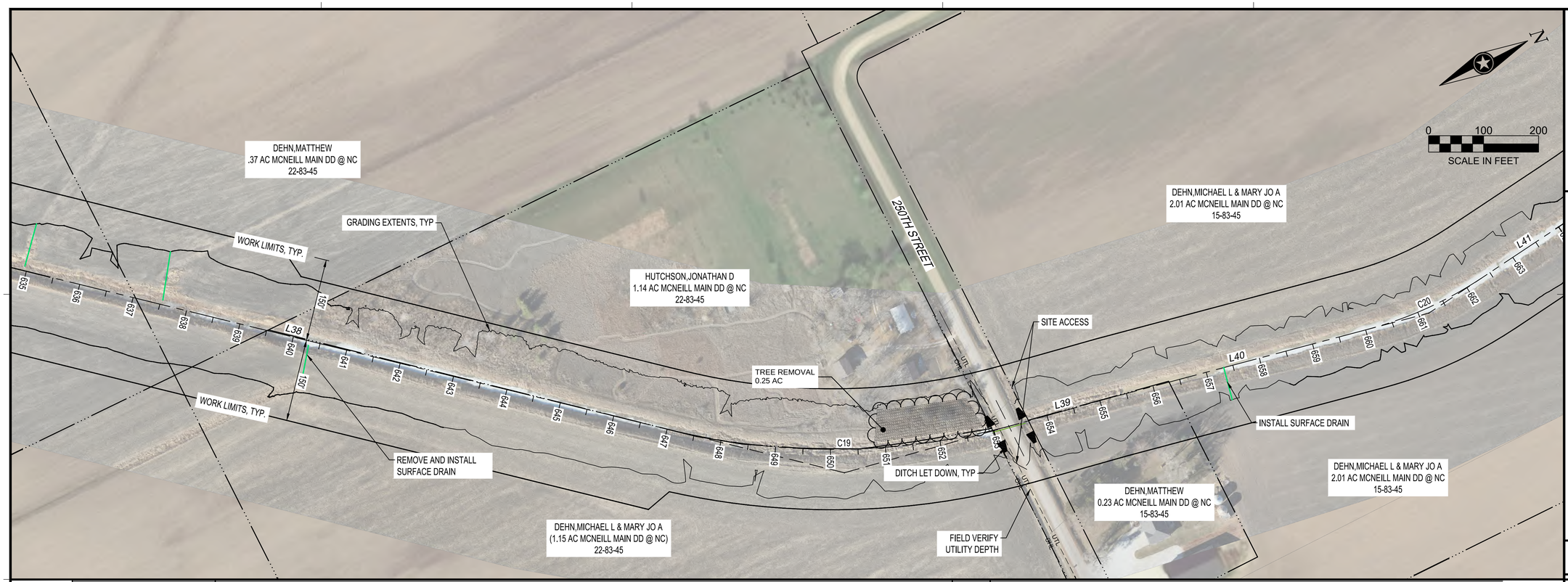
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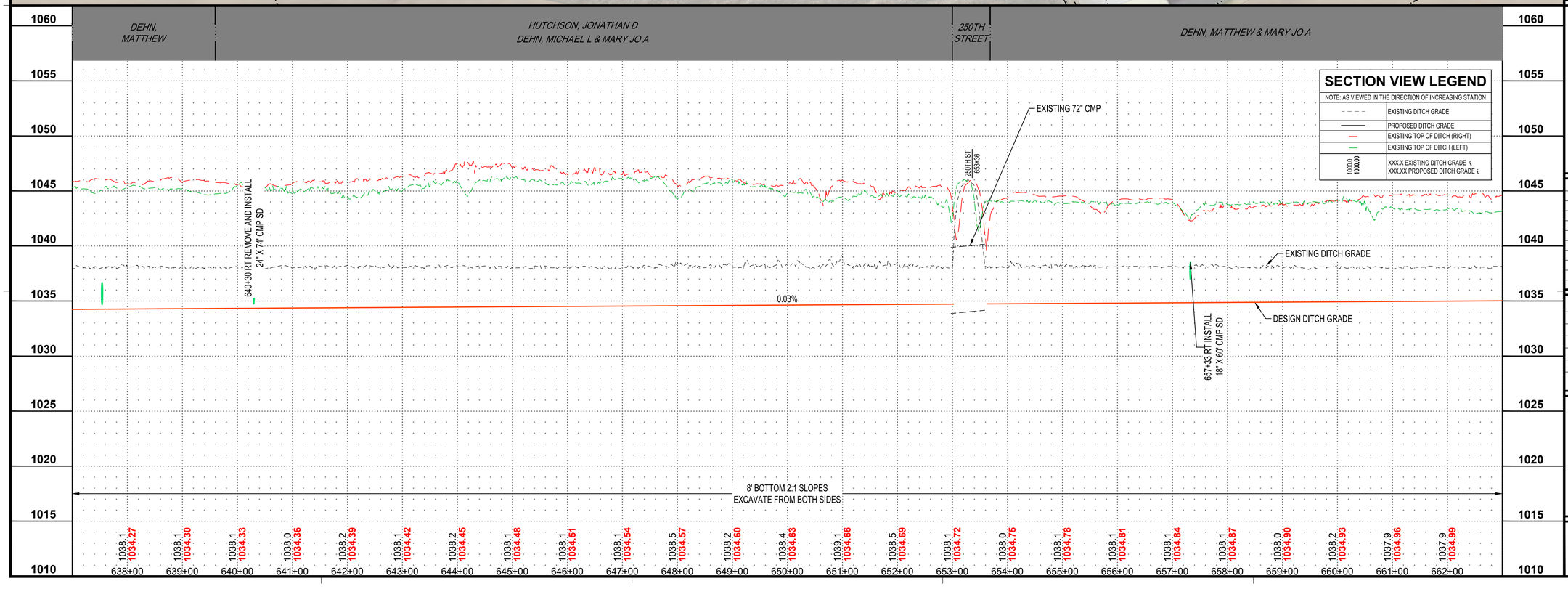
TITLE

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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

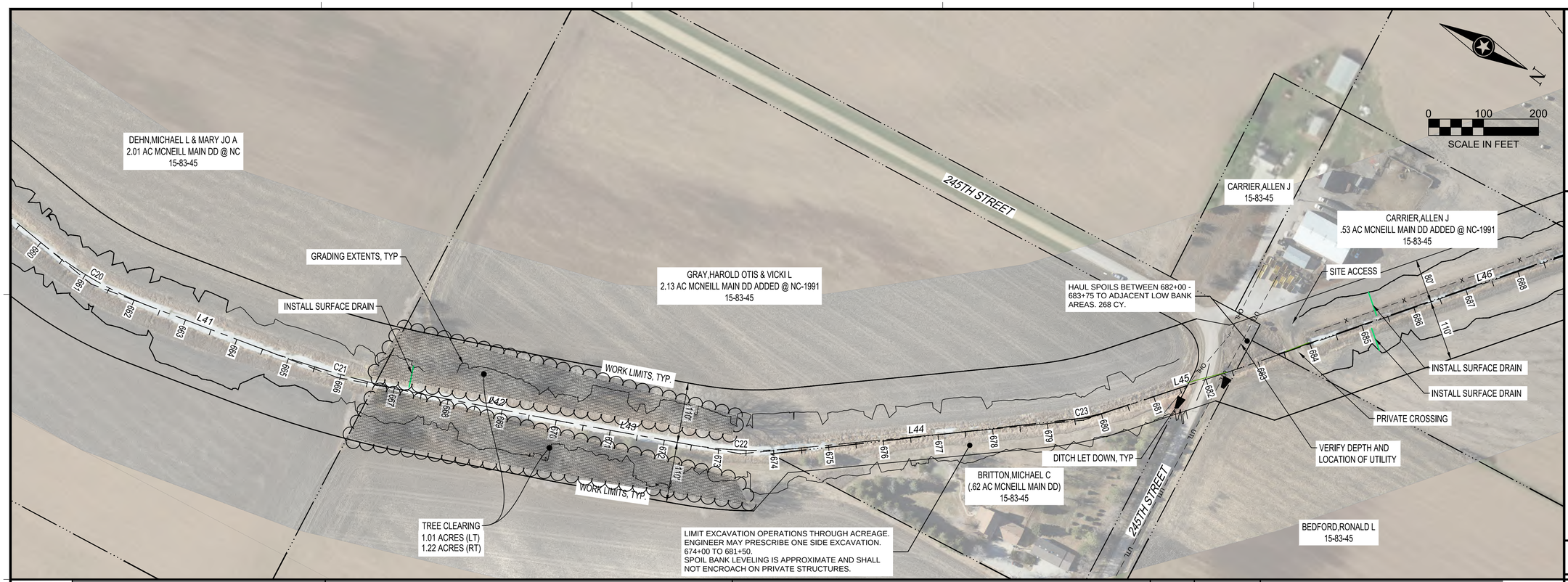
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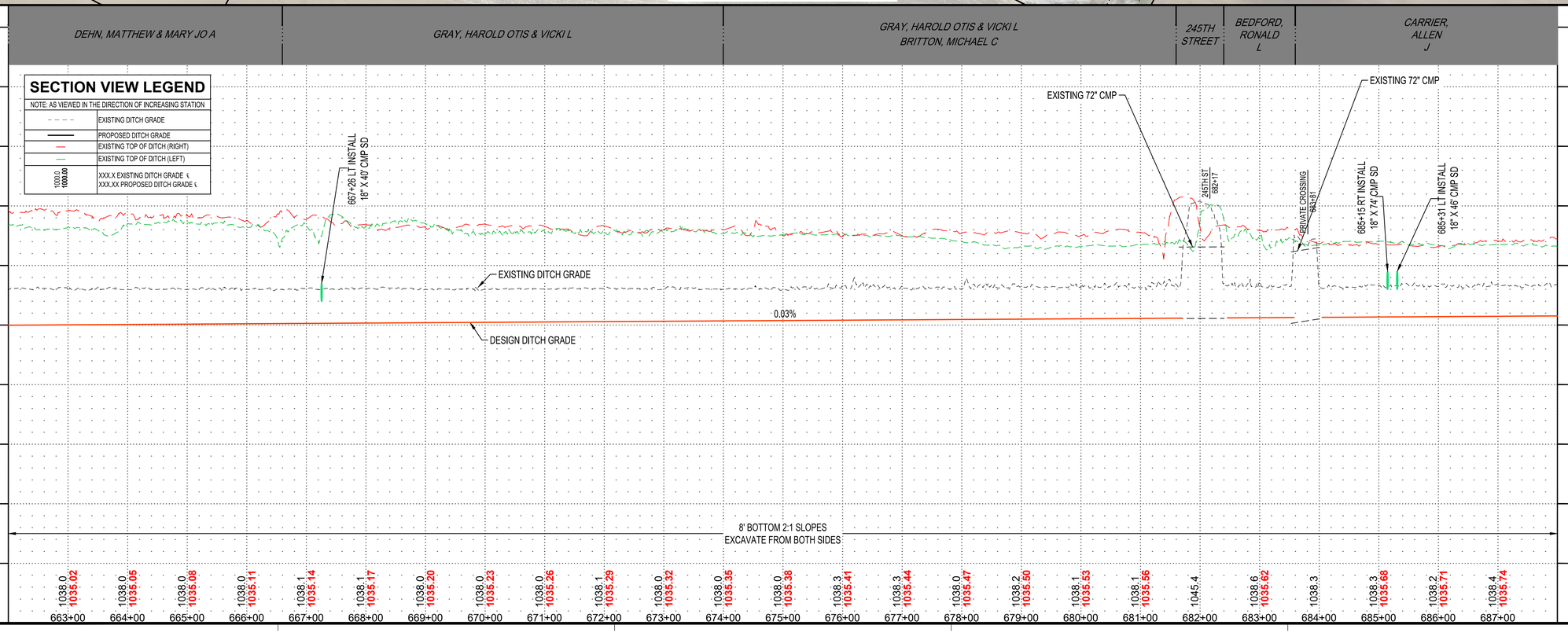
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MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

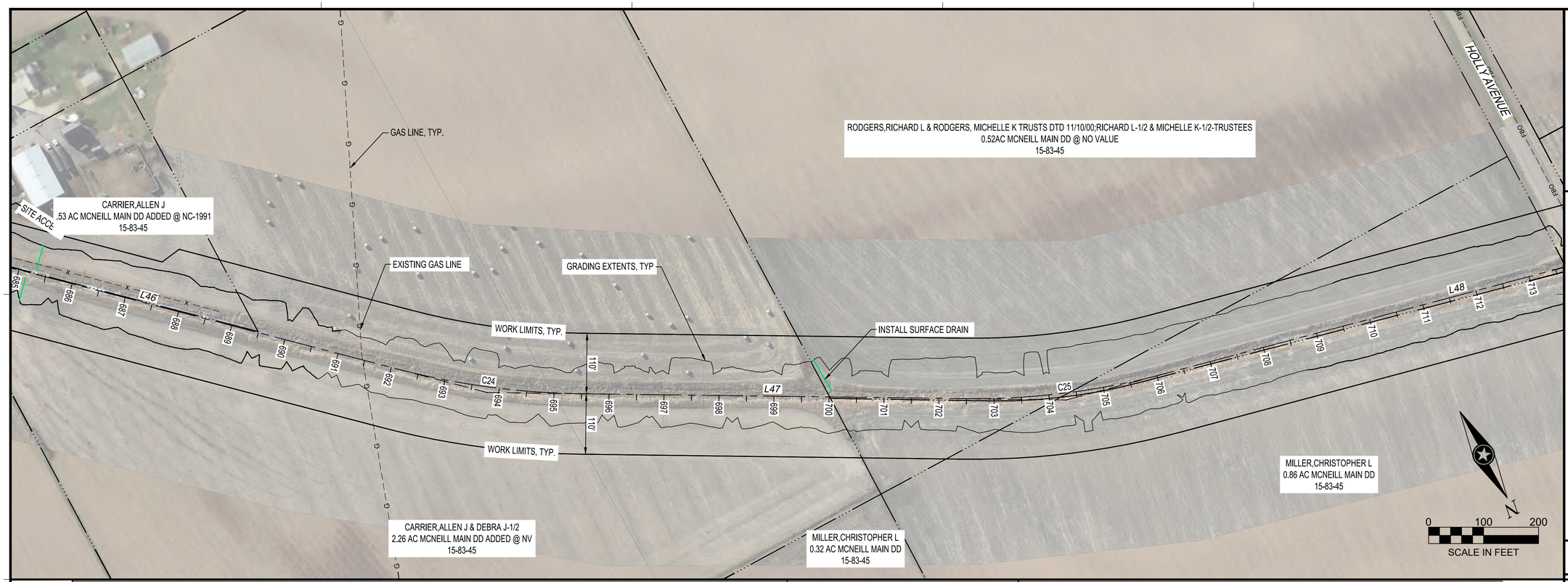
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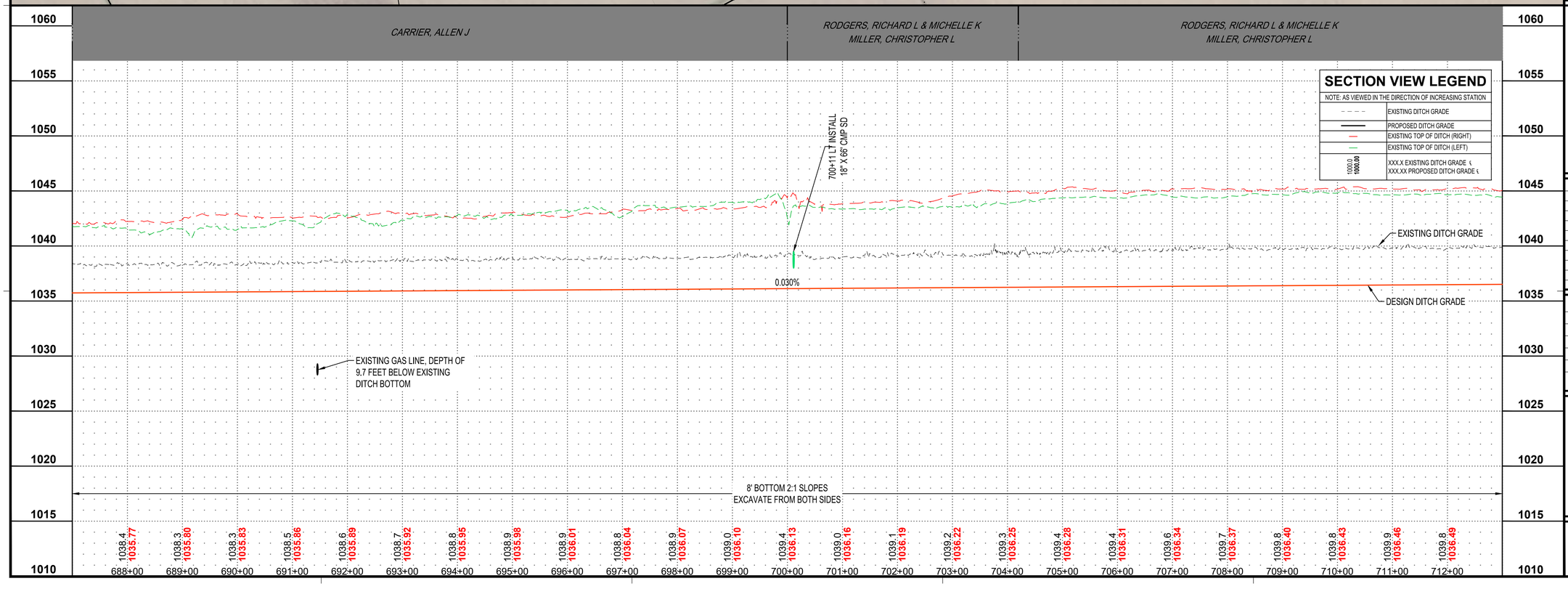
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

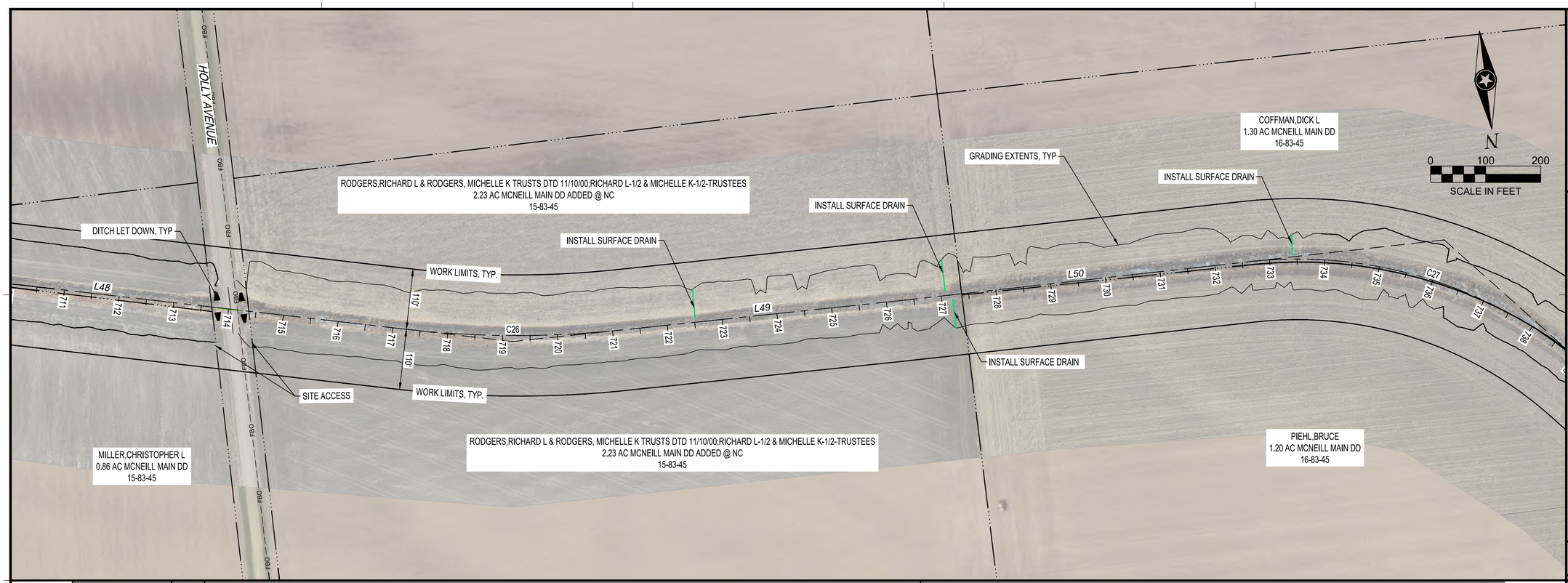
PROJECT NO.	21-25740
FILE NAME	25740-PROF-PHASE II
DRAWN BY	HLC/LRS ISG, CDR
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

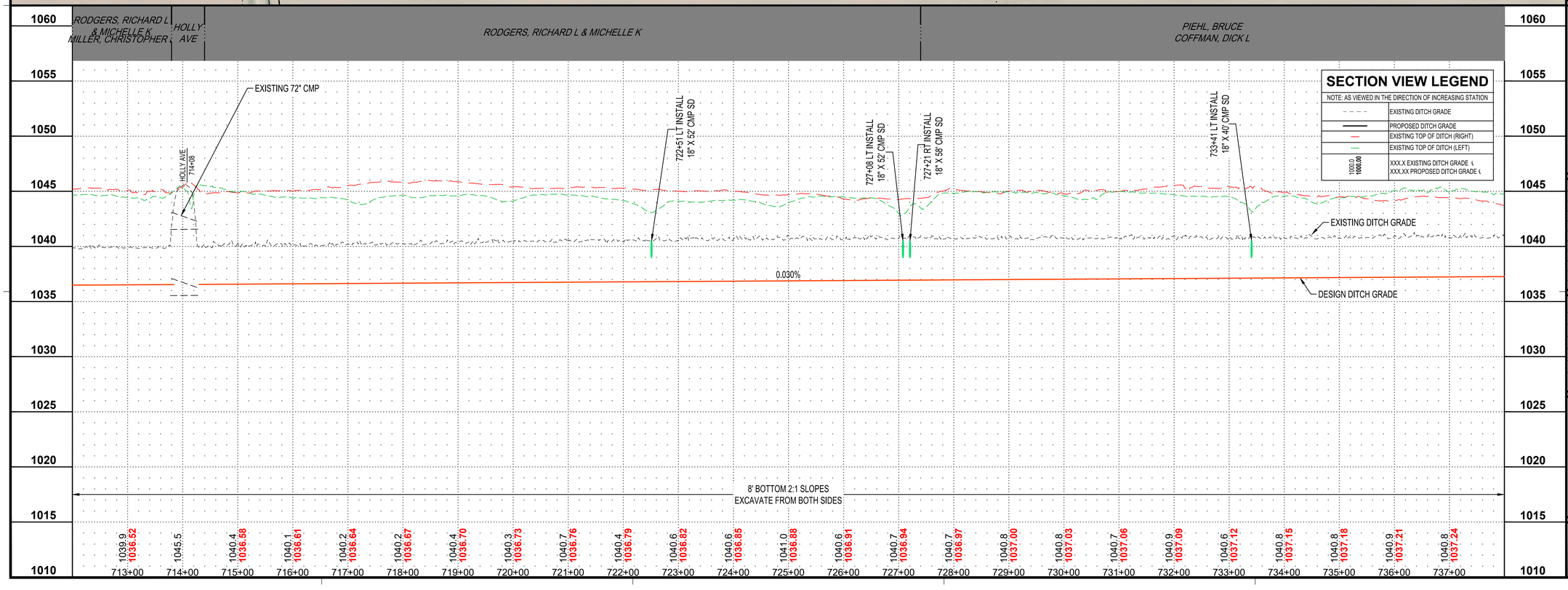
TITLE

PLAN & PROFILE

SHEET

D.11





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MONONA COUNTY IOWA

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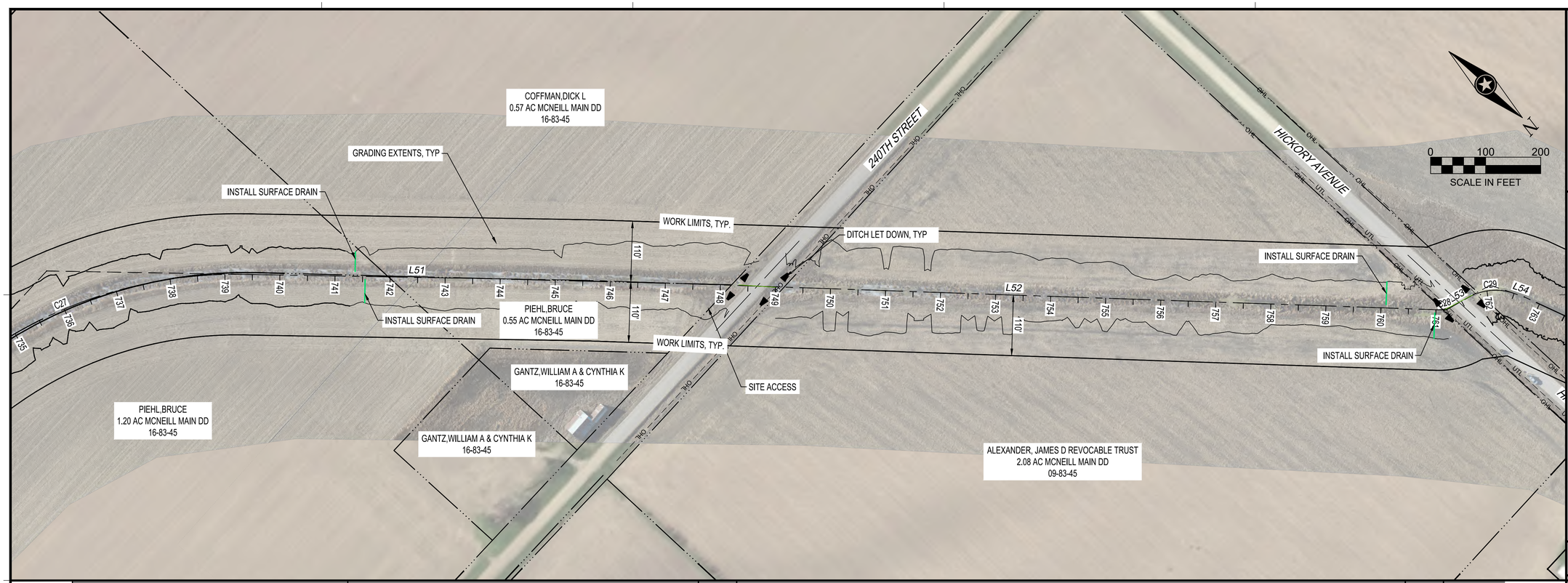
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FILE NAME	25740-PROF-PHASE II	
DRAWN BY	HLC/LPS	ISG, CDR
DESIGNED BY	HLC	CDR
REVIEWED BY	ALG	CDR
ORIGINAL ISSUE DATE	03/03/2026	7/28/2026
CLIENT PROJECT NO.	-	

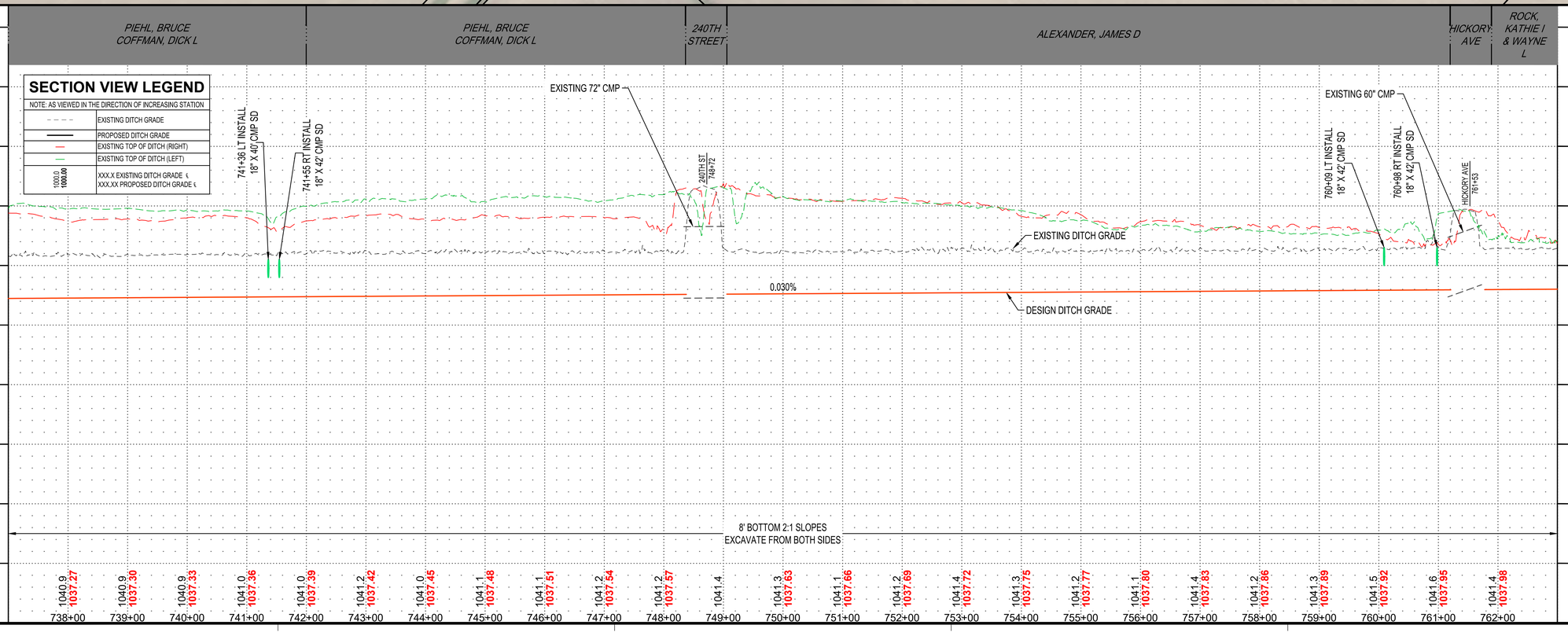
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PLAN & PROFILE

SHEET

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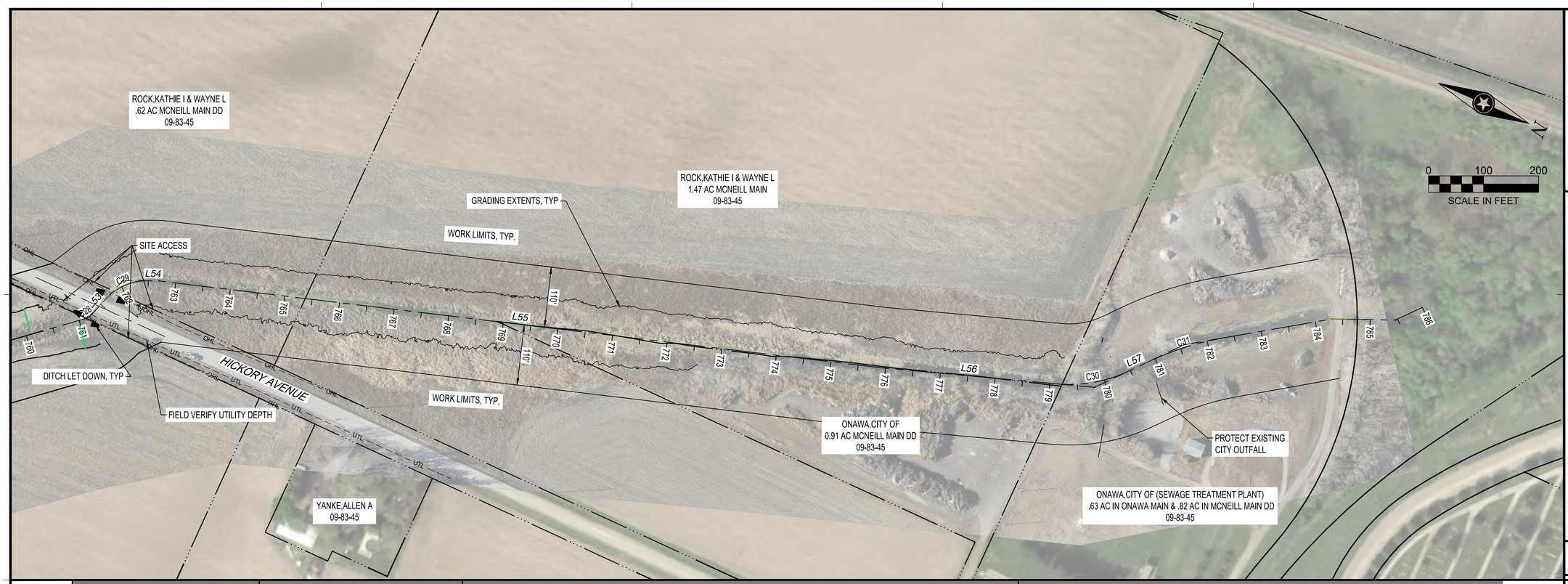
PROJECT NO.	21-25740	
FILE NAME	25740-PROF-PHASE II	
DRAWN BY	HLC/LPS	ISG, CDR
DESIGNED BY	HLC	CDR
REVIEWED BY	ALG	CDR
ORIGINAL ISSUE DATE	03/03/2026	7/28/2026
CLIENT PROJECT NO.	-	

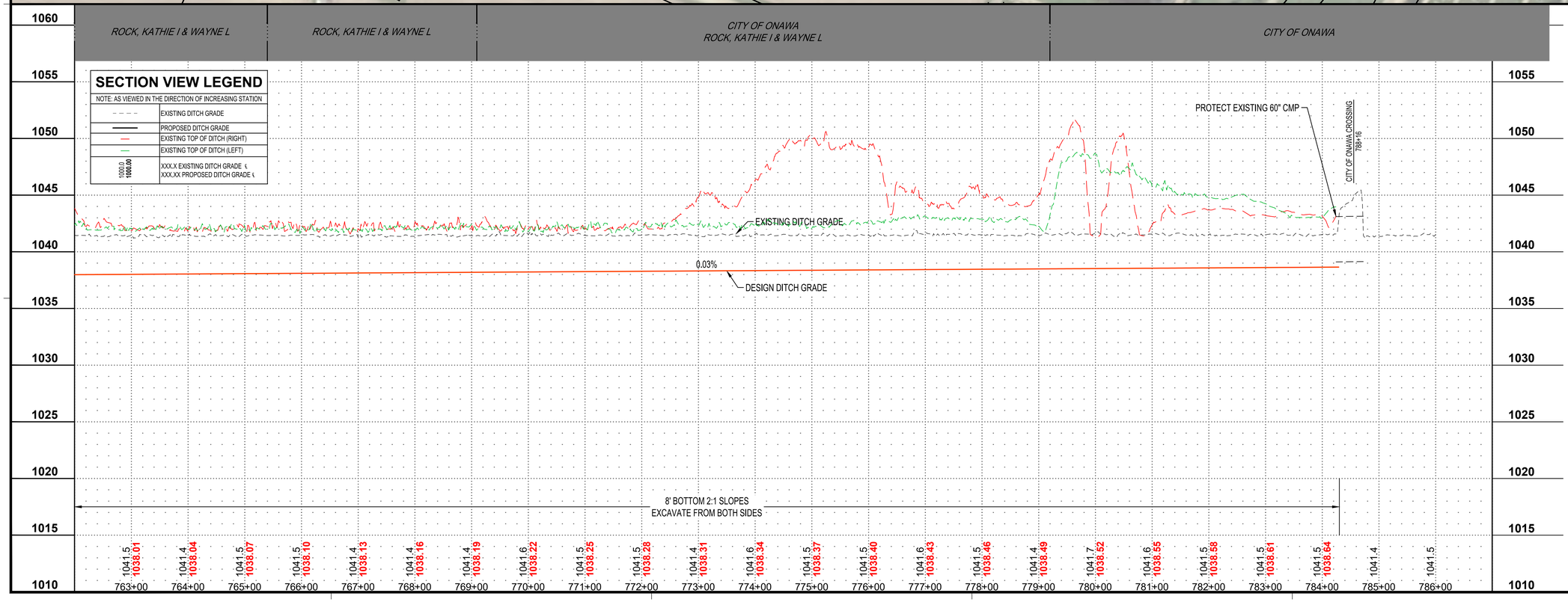
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PLAN & PROFILE

SHEET

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MONONA COUNTY IOWA

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DESIGNED BY	HLC
REVIEWED BY	ALG
ORIGINAL ISSUE DATE	03/03/2026
CLIENT PROJECT NO.	-

ISG, CDR
CDR
CDR
7/28/2026

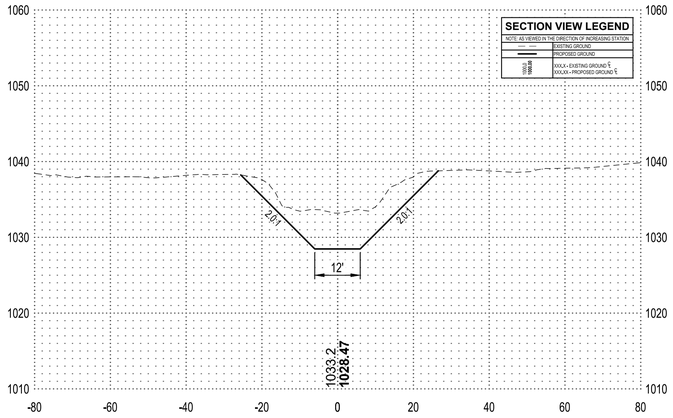
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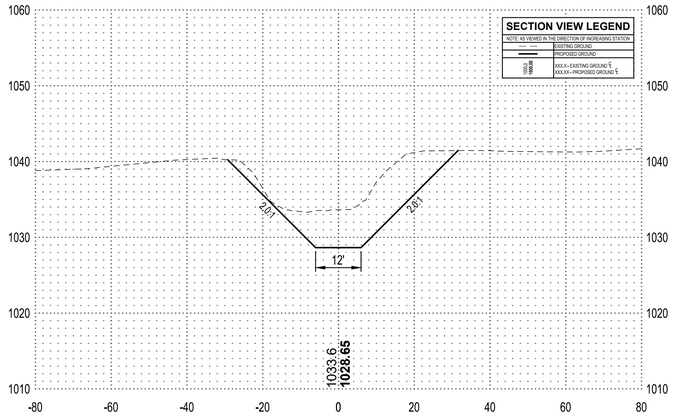
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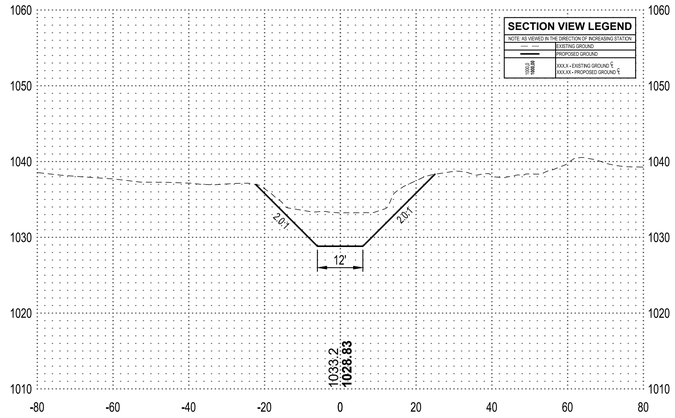
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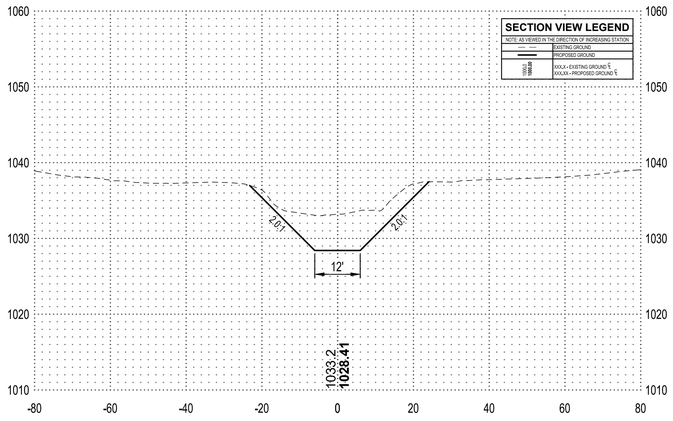
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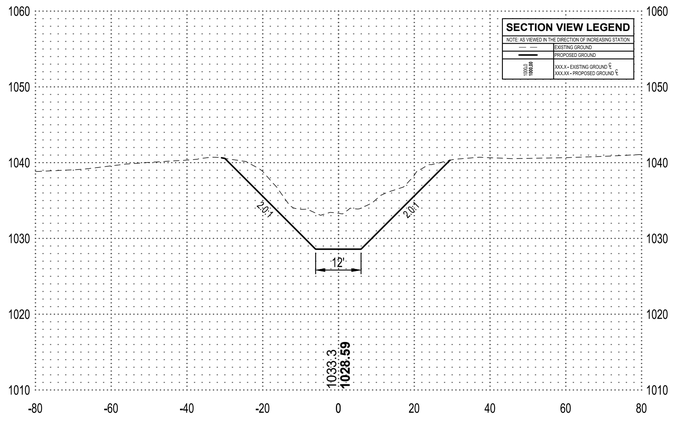
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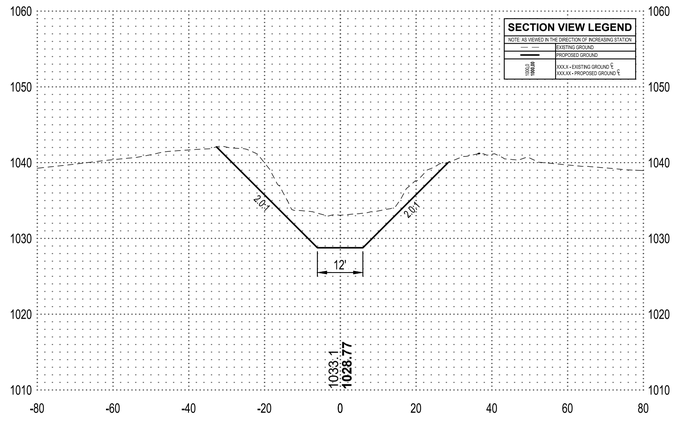
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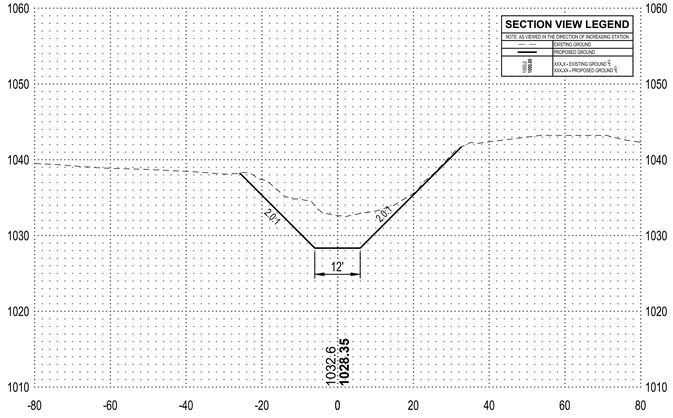
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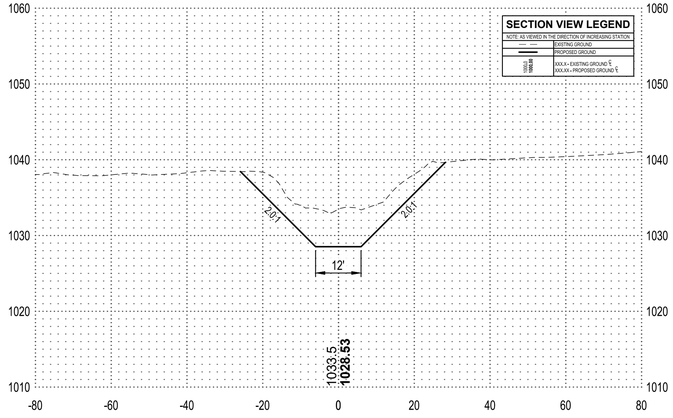
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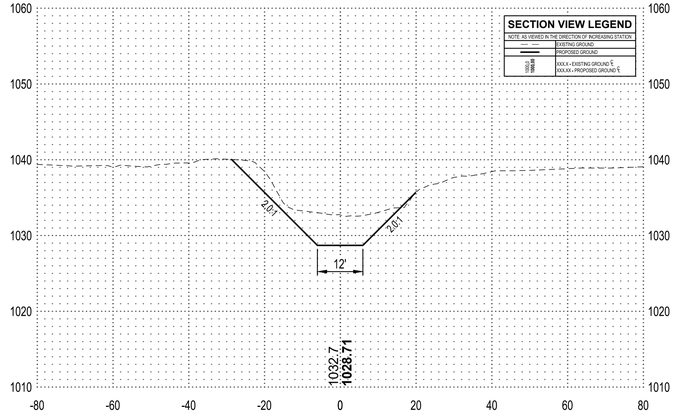
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MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDC
DESIGNED BY	HLC RG, CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

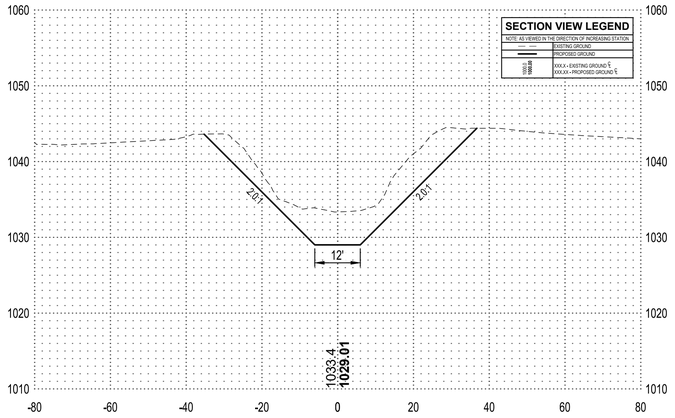
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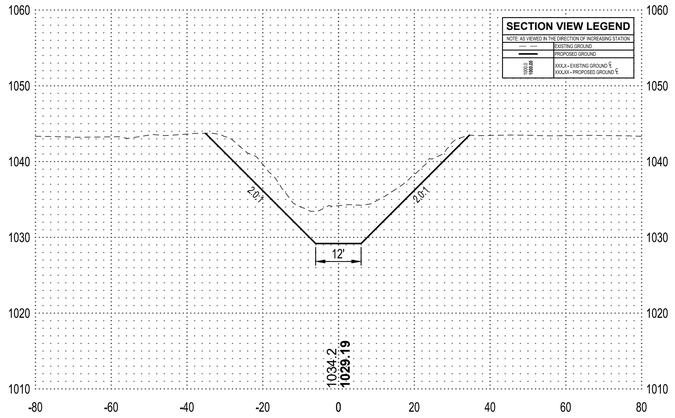
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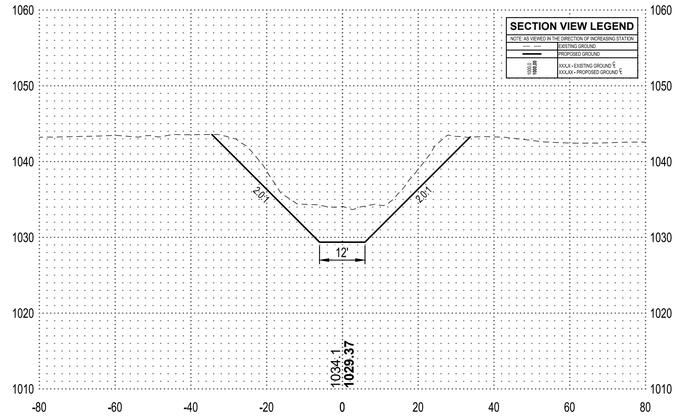
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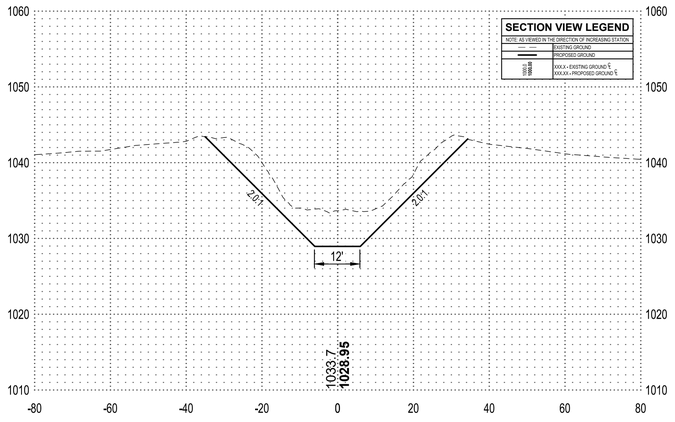
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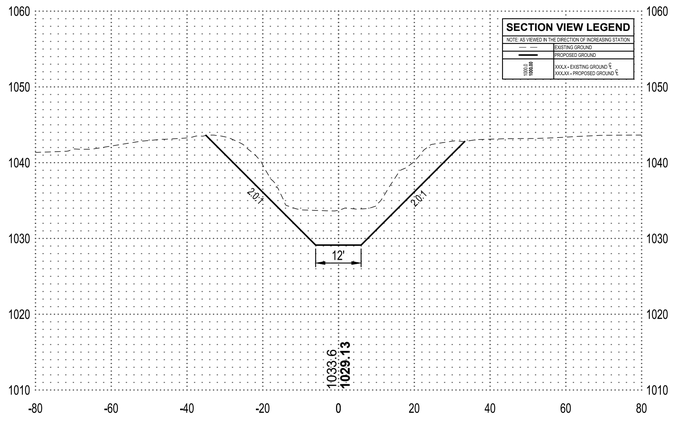
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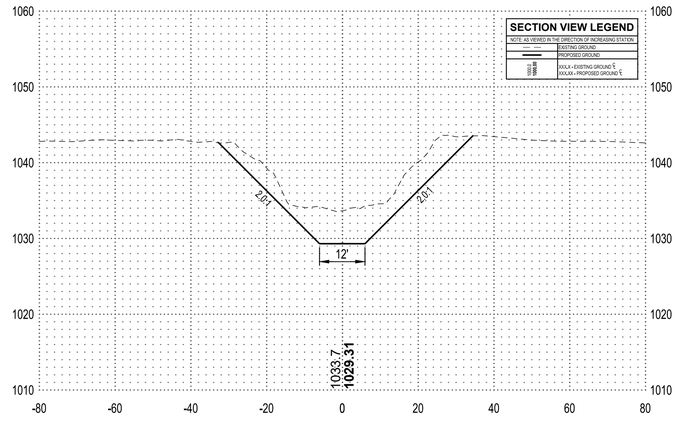
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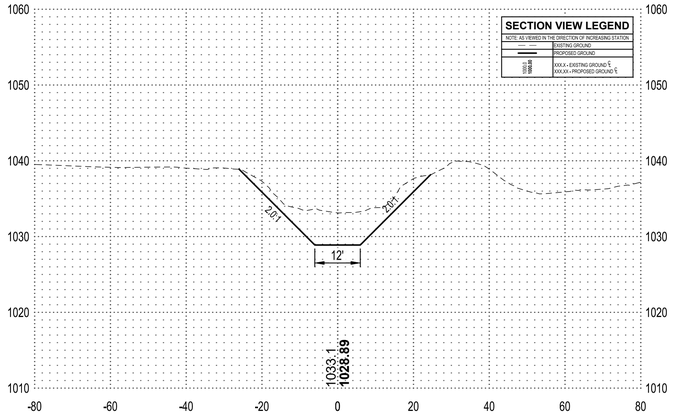
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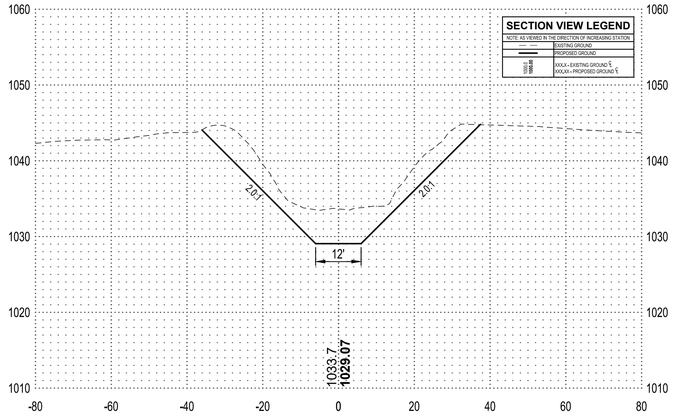
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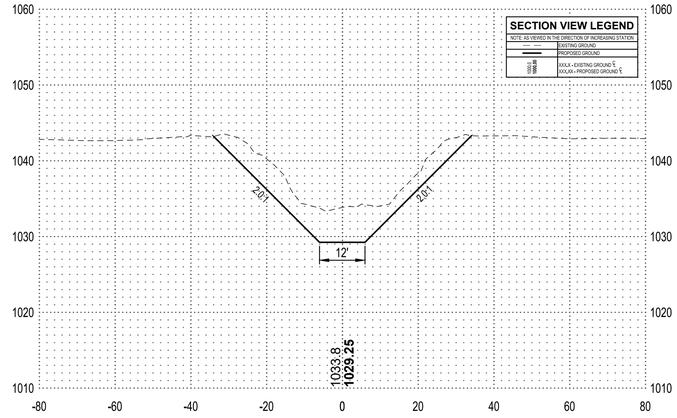
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MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDS
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026 ISG, CDR
CLIENT PROJECT NO.	-

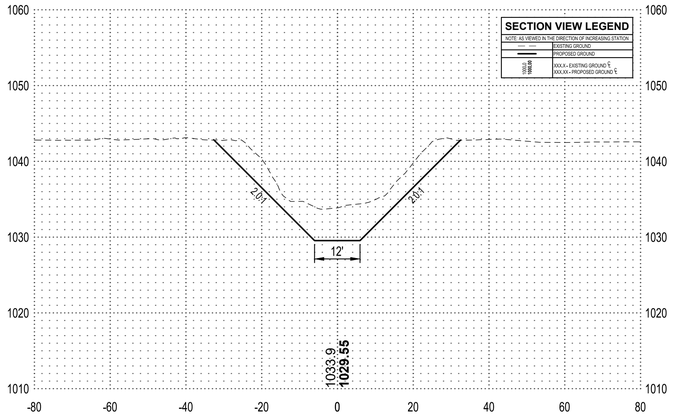
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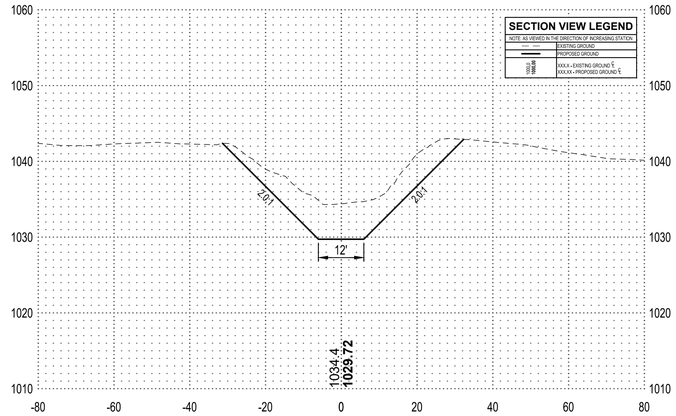
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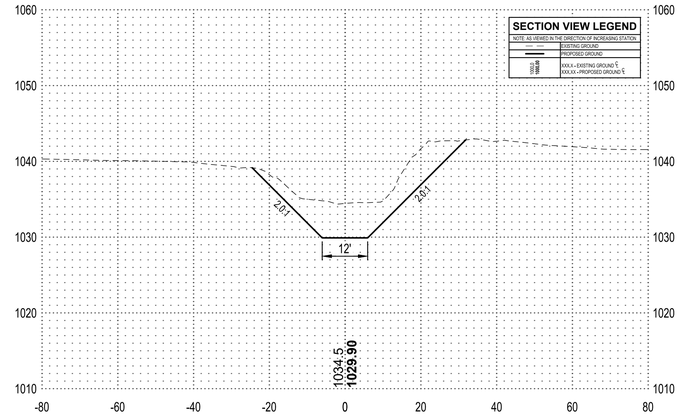
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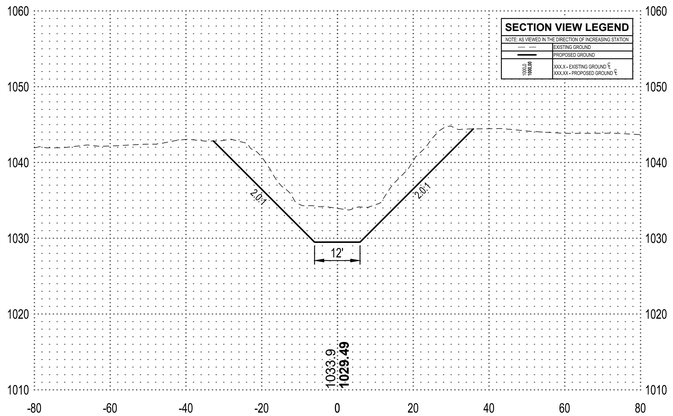
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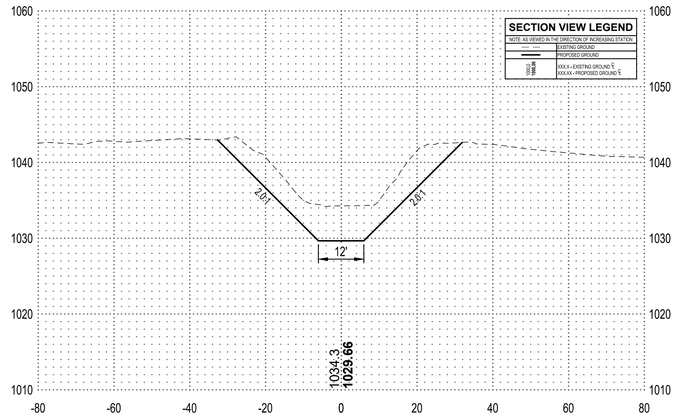
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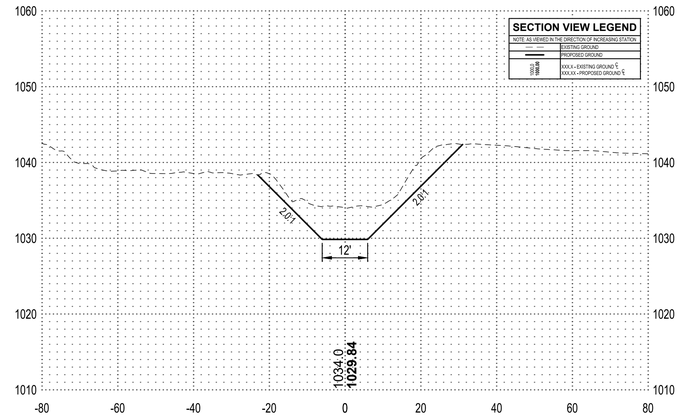
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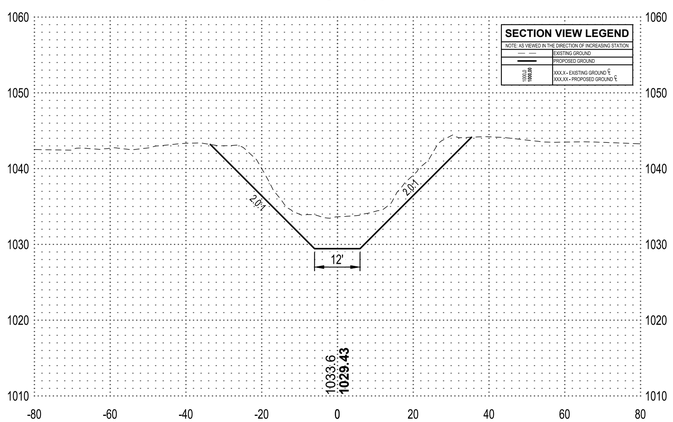
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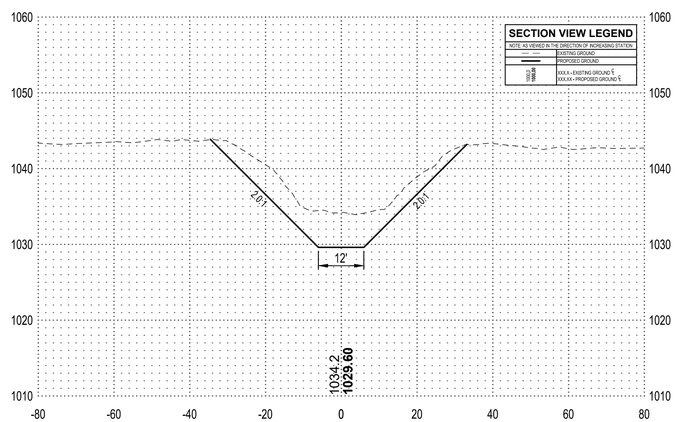
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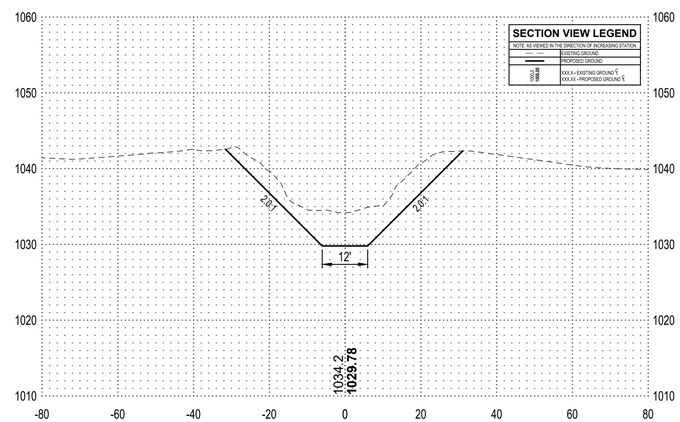
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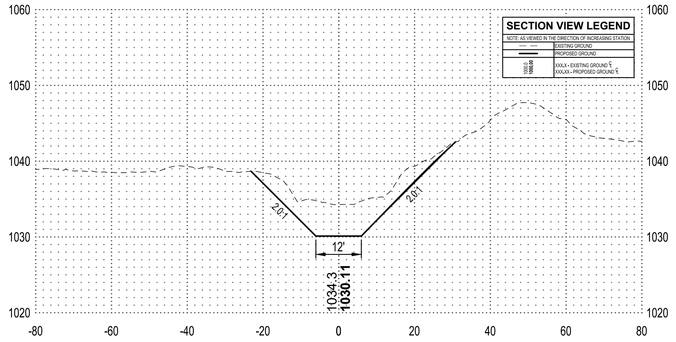
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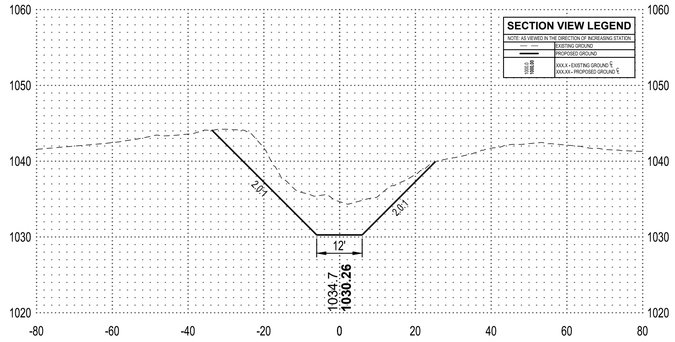
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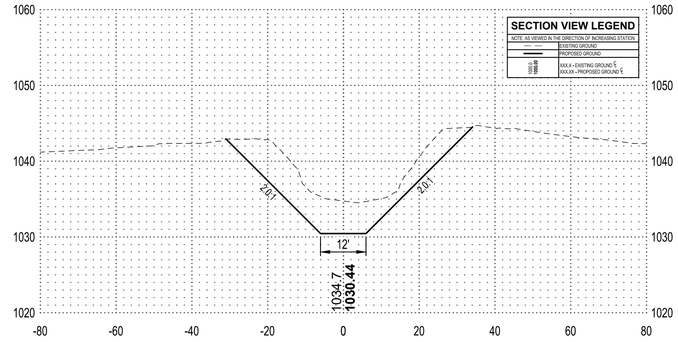
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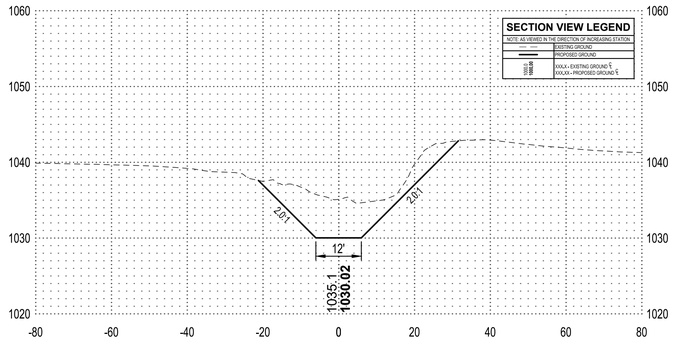
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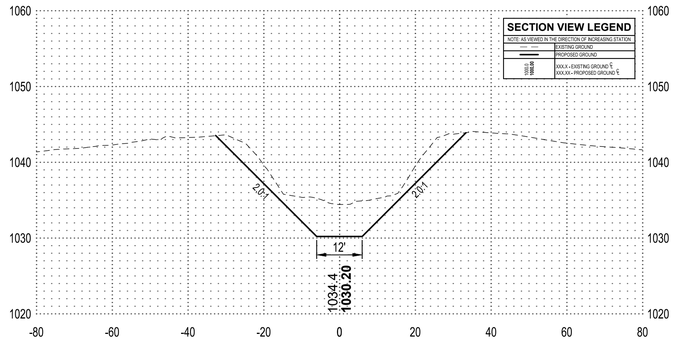
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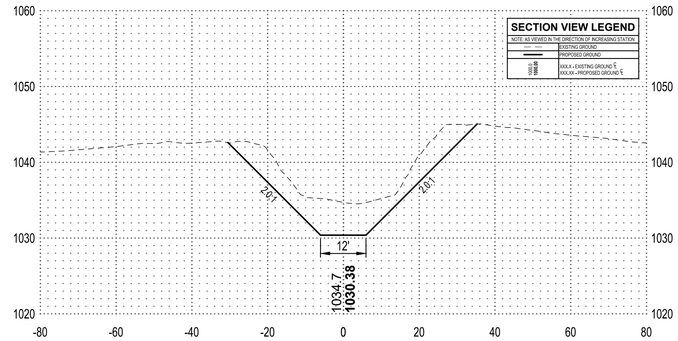
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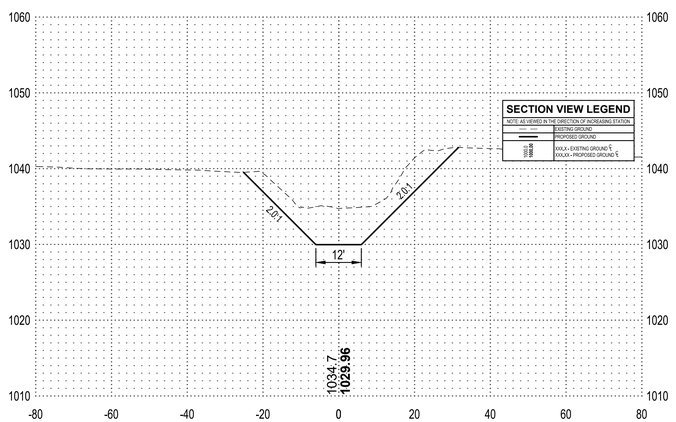
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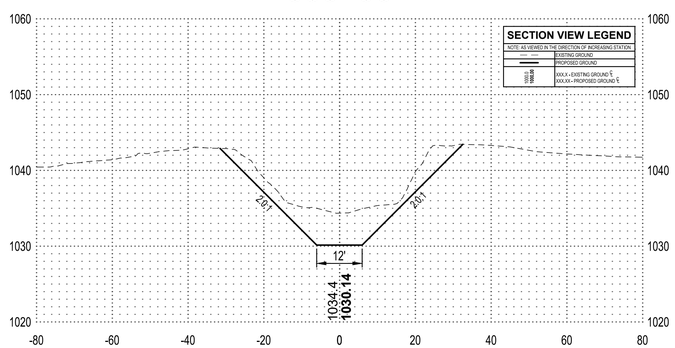
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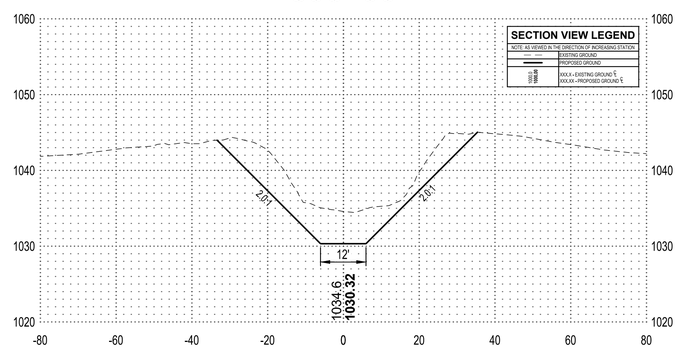
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500+00



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDS
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

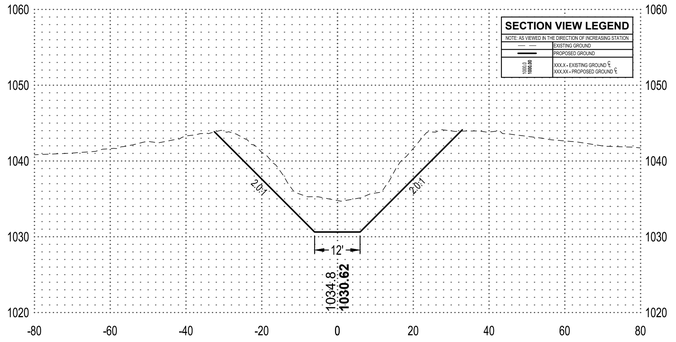
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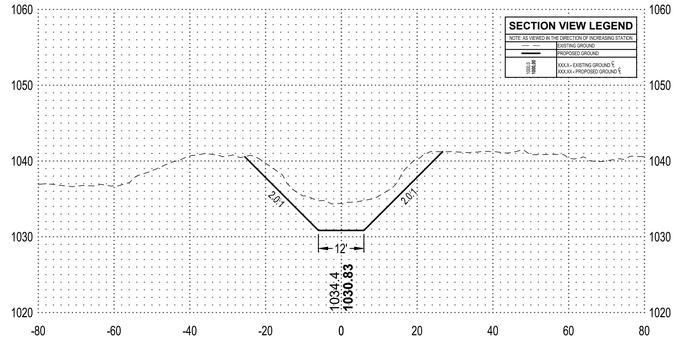
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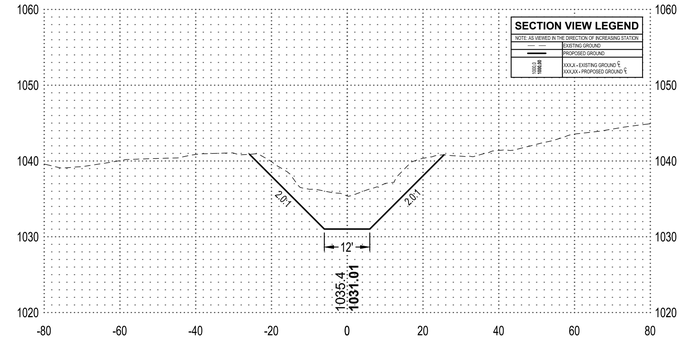
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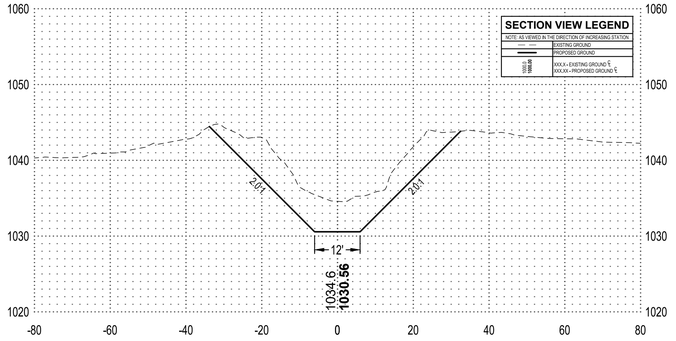
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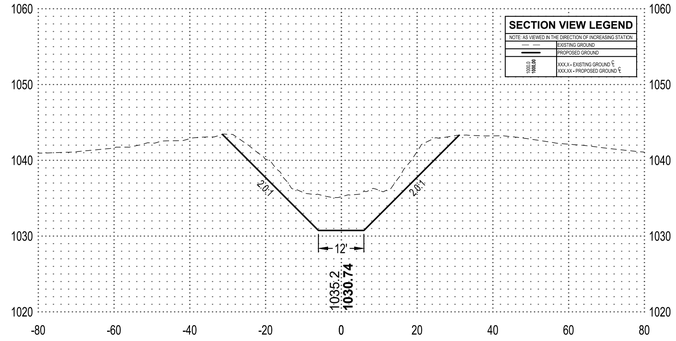
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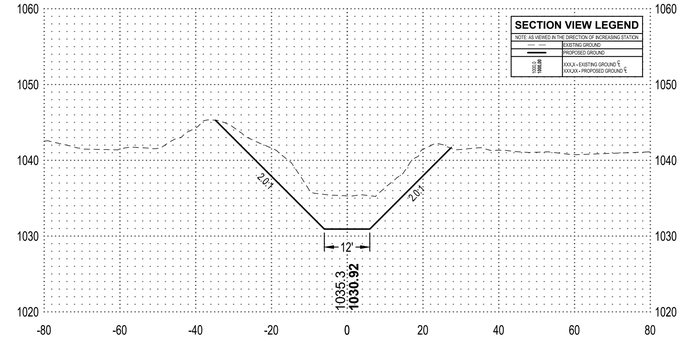
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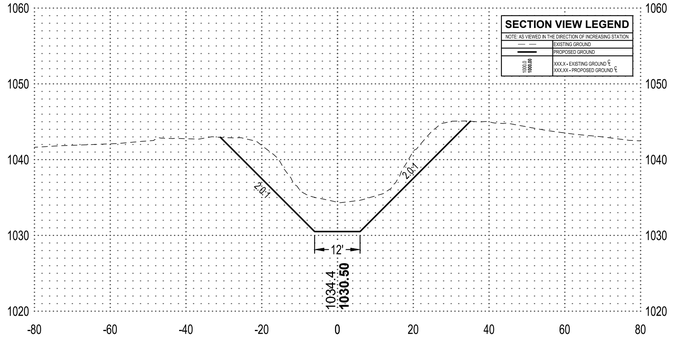
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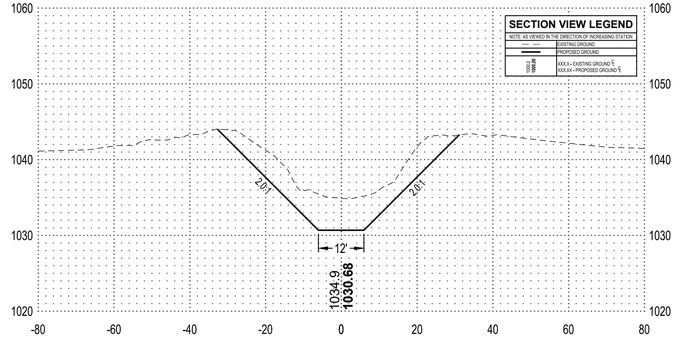
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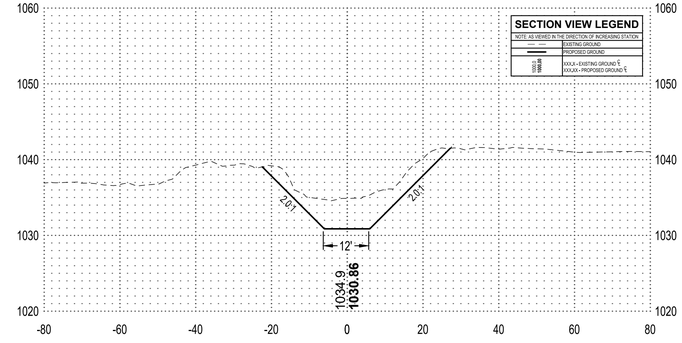
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PROJECT

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MONONA COUNTY IOWA

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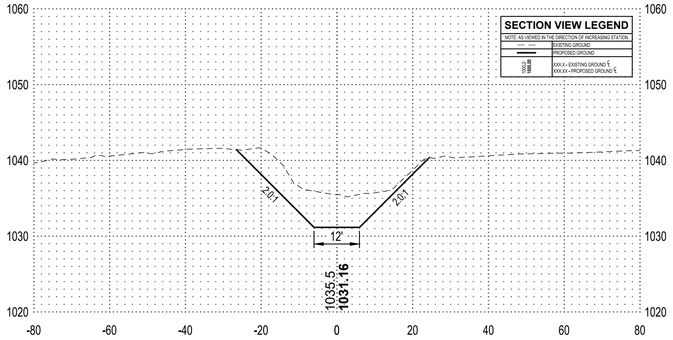
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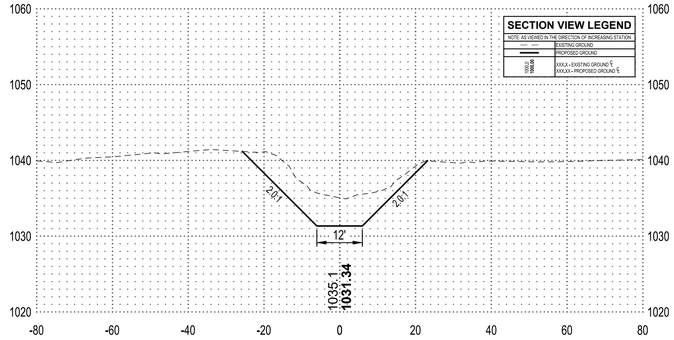
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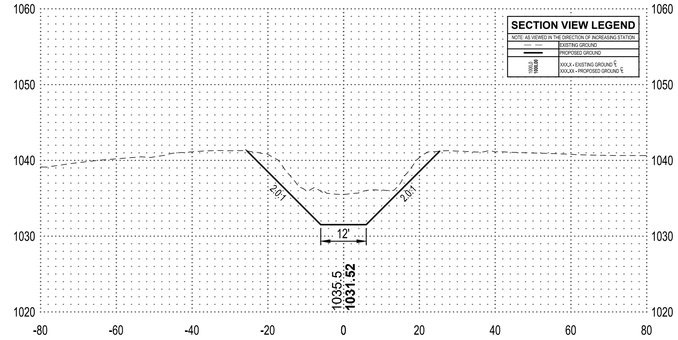
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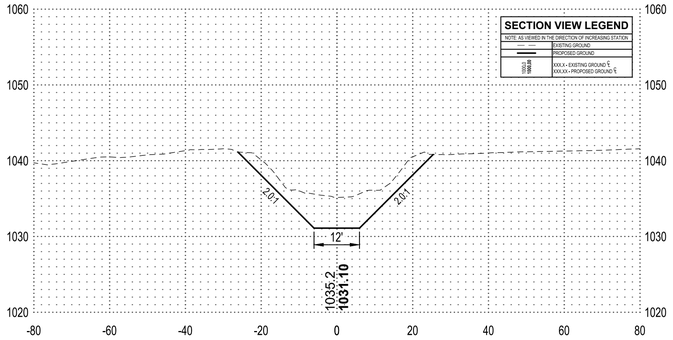
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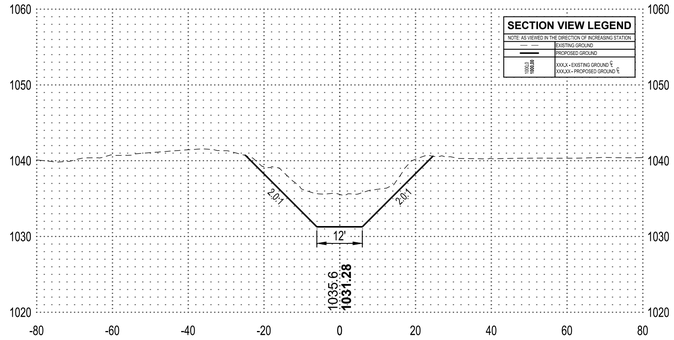
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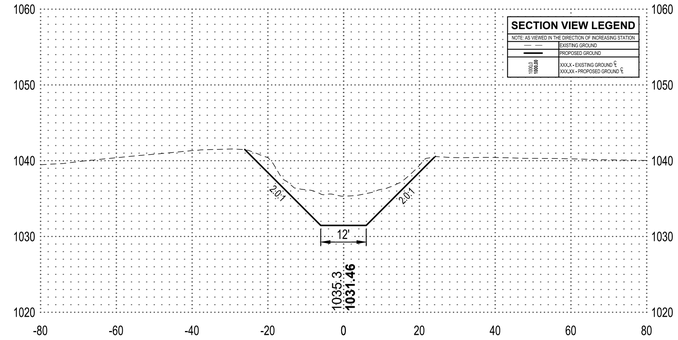
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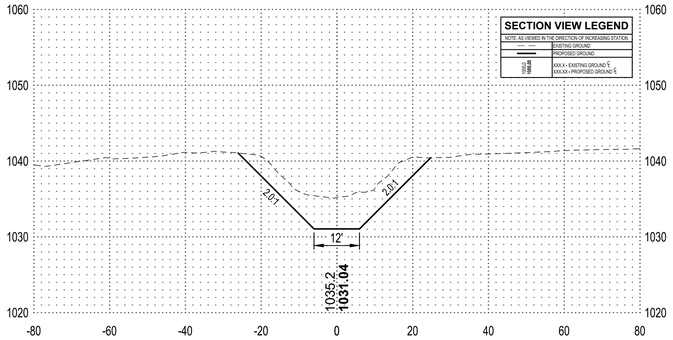
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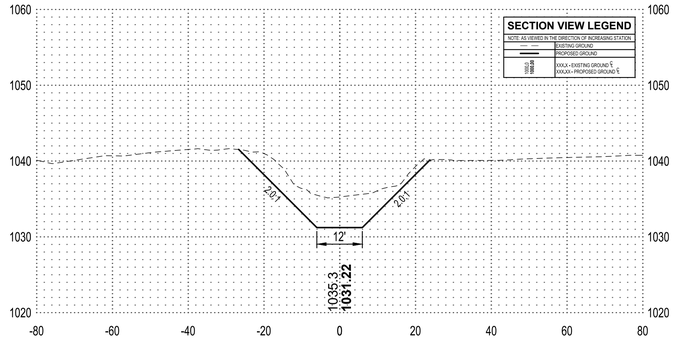
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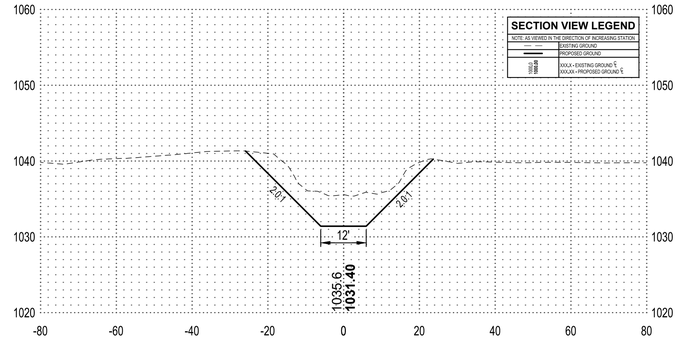
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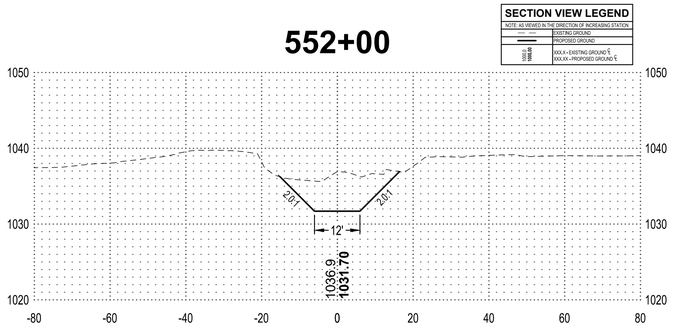
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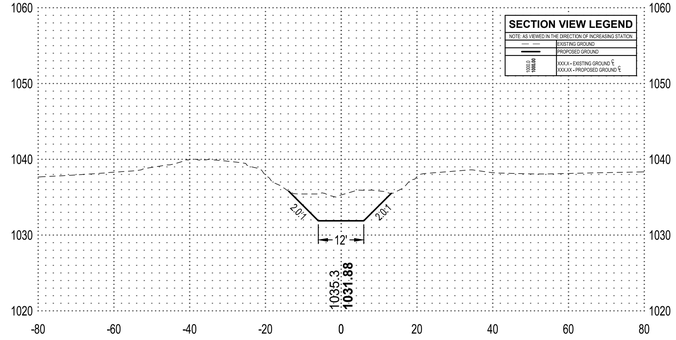
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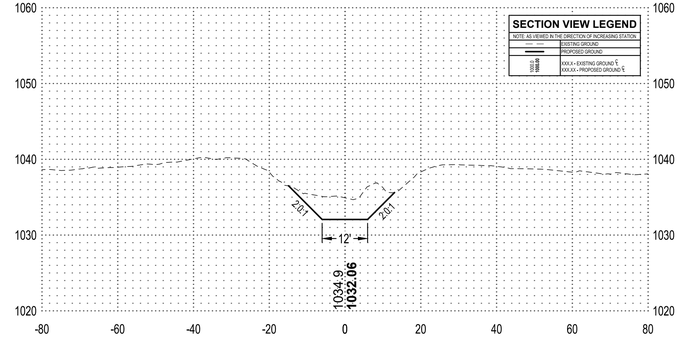
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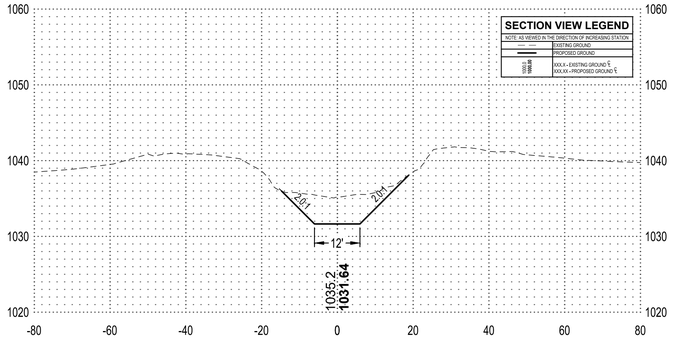
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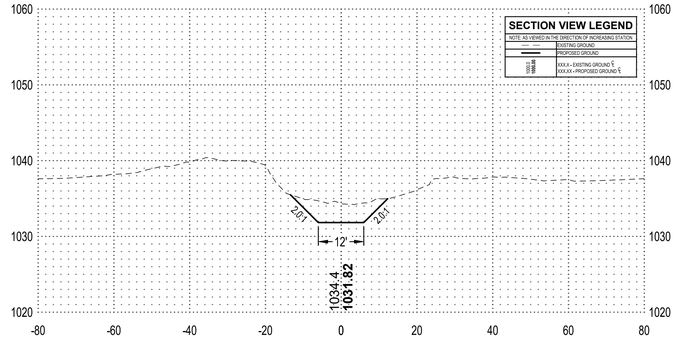
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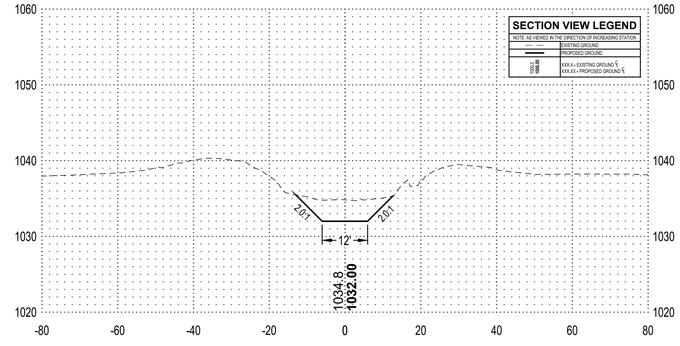
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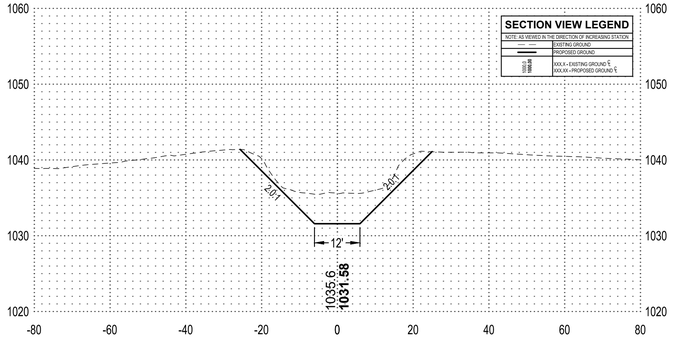
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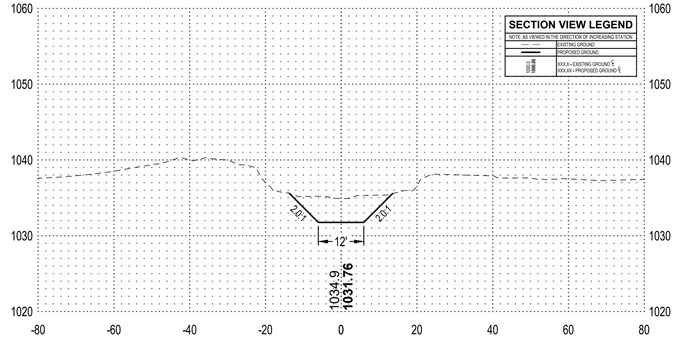
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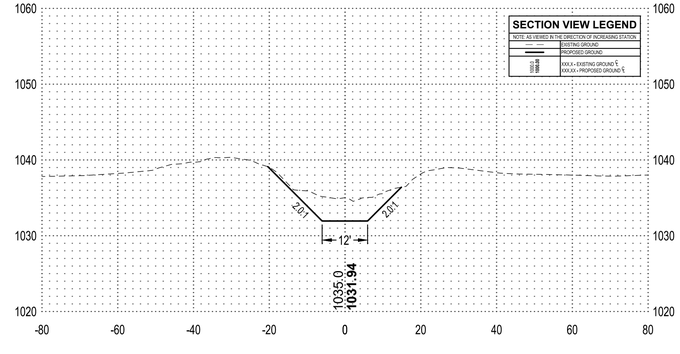
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MONONA COUNTY IOWA

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PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG
DESIGNED BY	HLC
REVIEWED BY	ALG
ORIGINAL ISSUE DATE	03/03/2026
CLIENT PROJECT NO.	-

LDG, CDR
CDR
CDR
7/28/2026

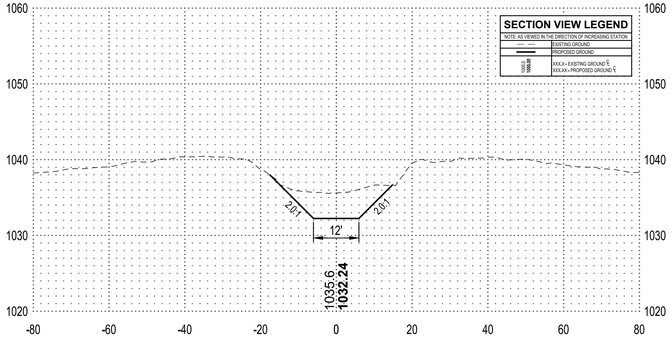
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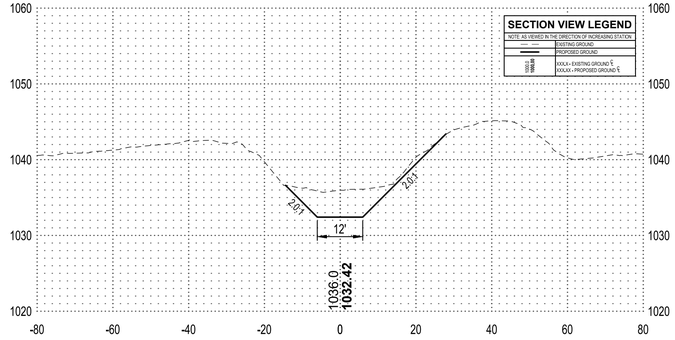
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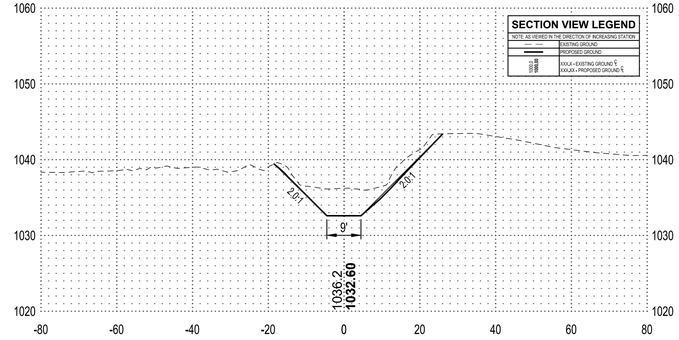
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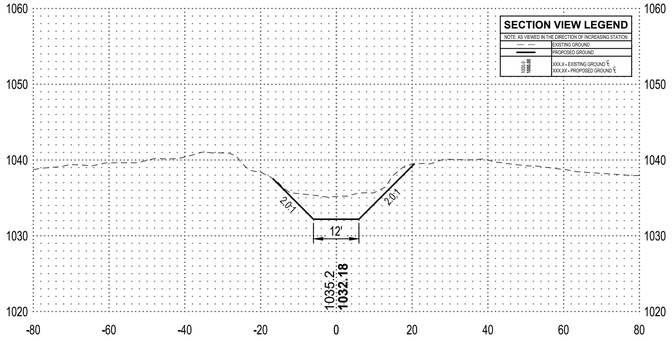
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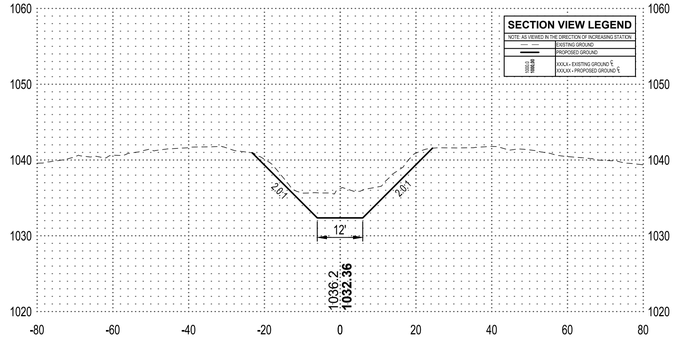
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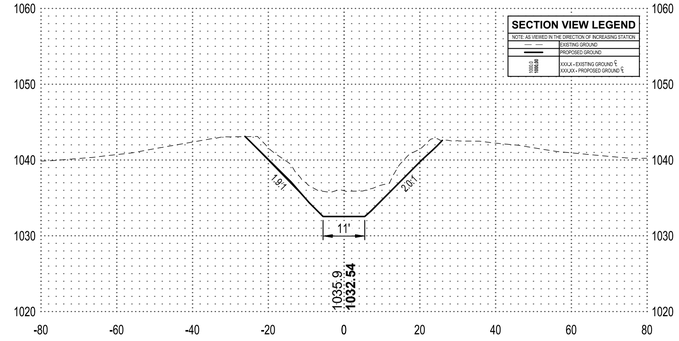
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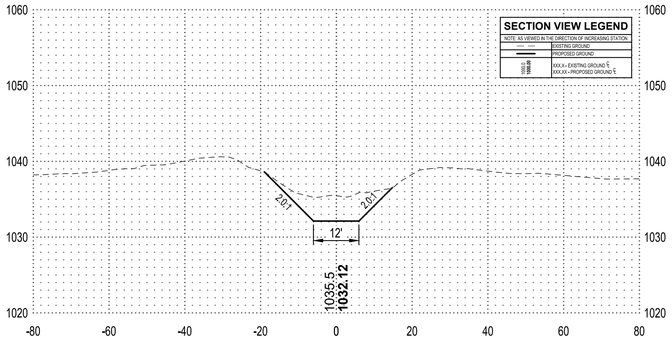
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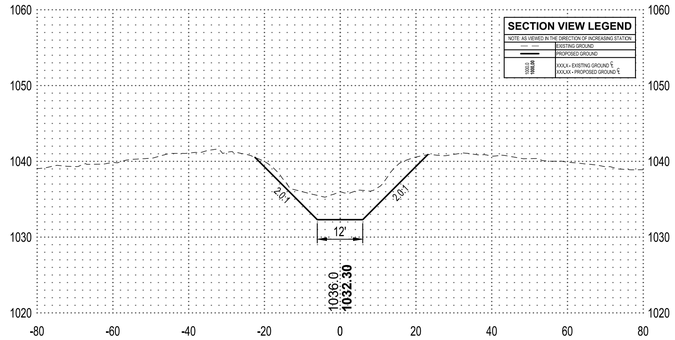
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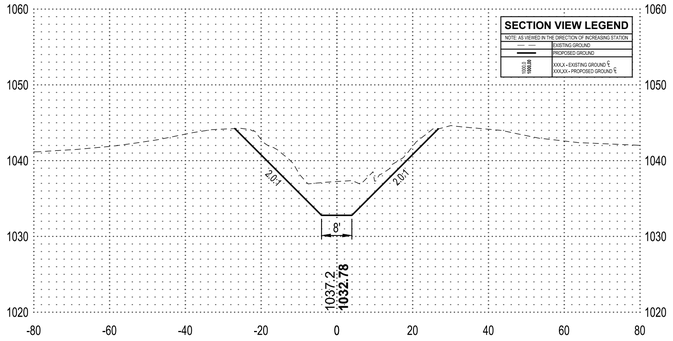
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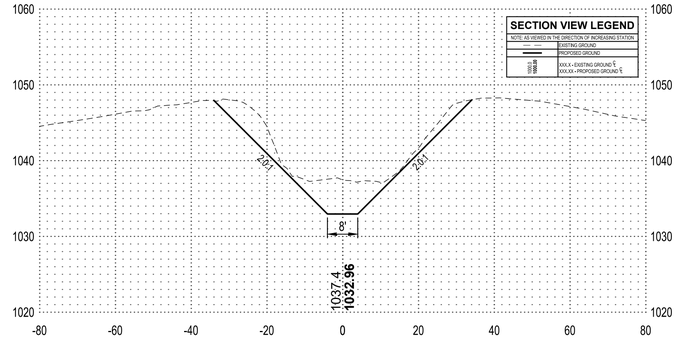
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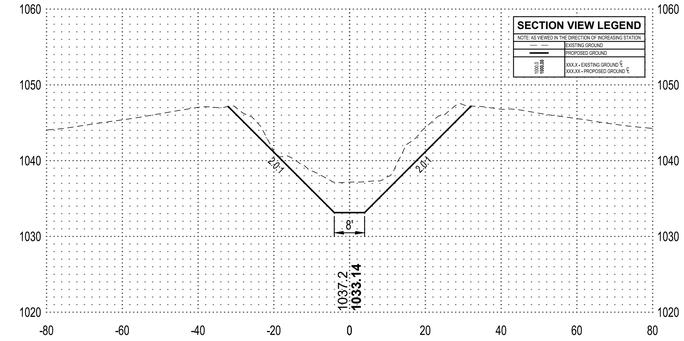
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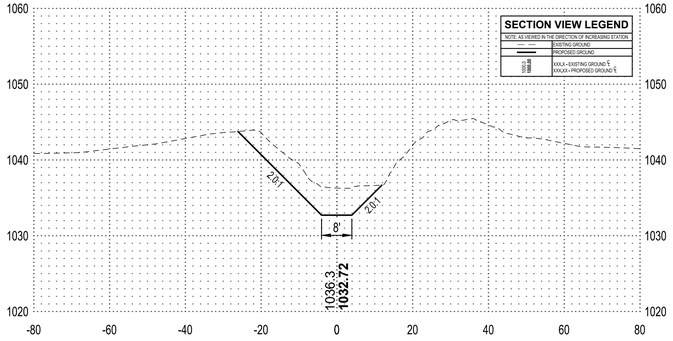
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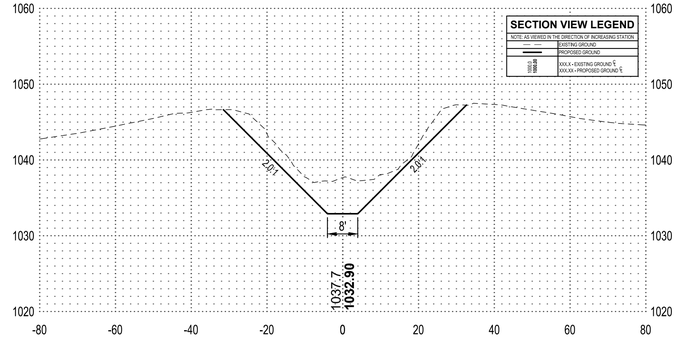
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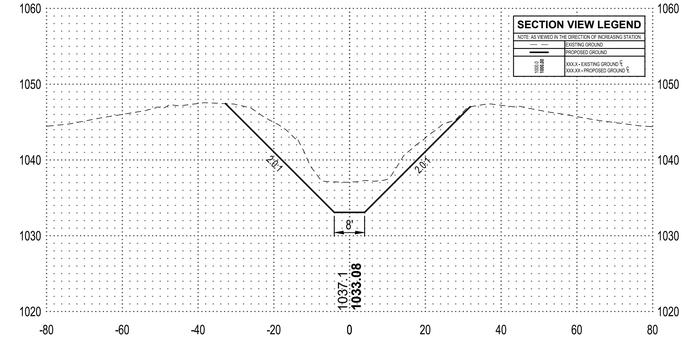
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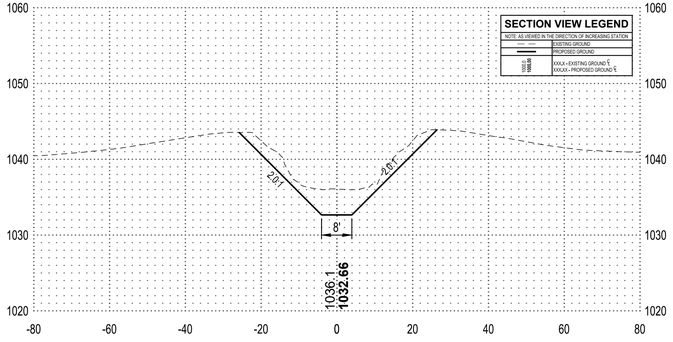
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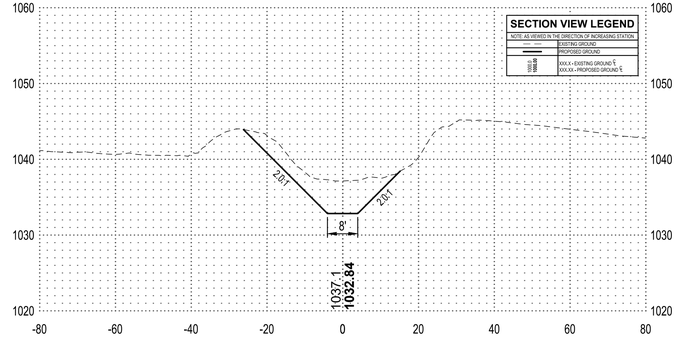
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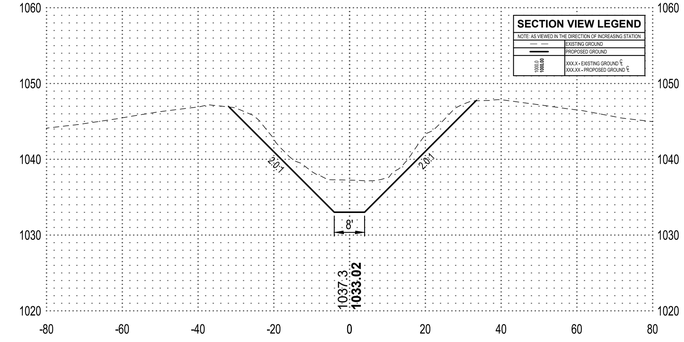
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590+00



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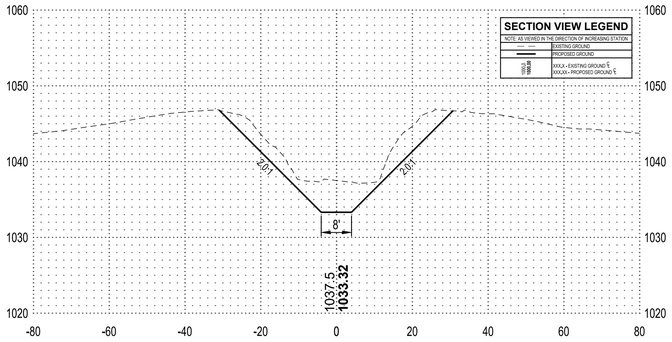
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CROSS SECTIONS

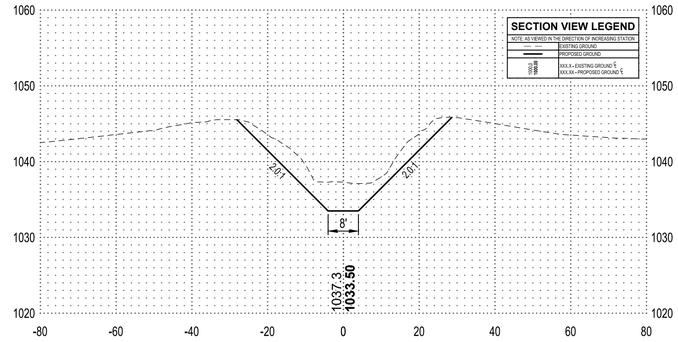
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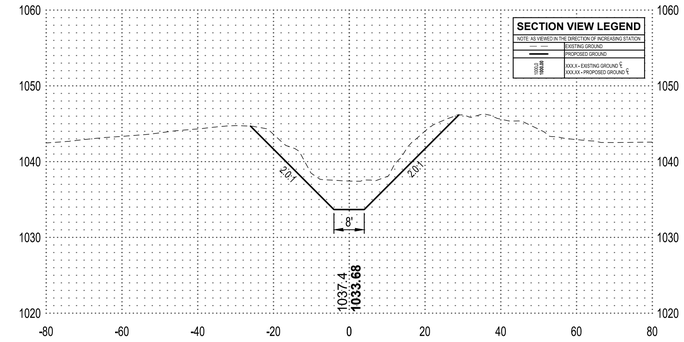
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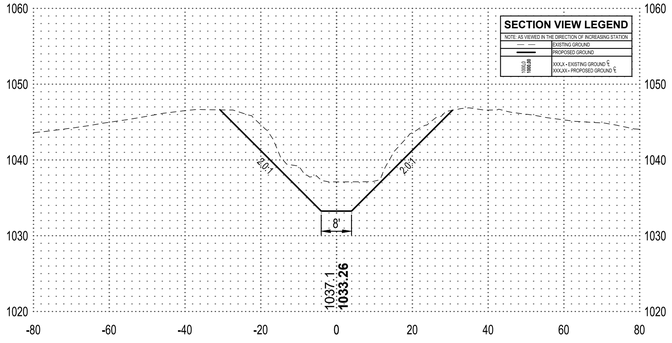
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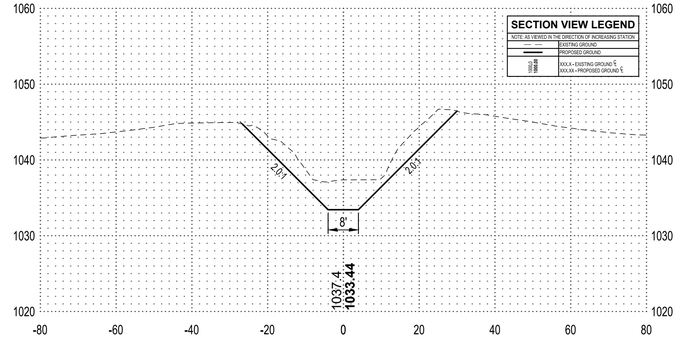
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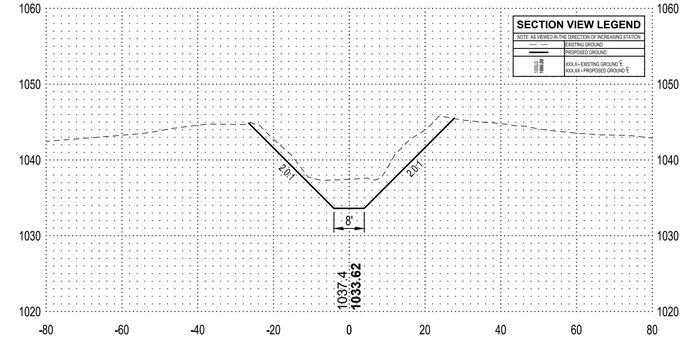
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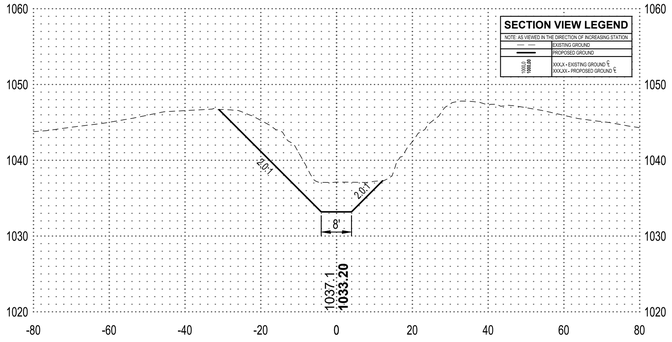
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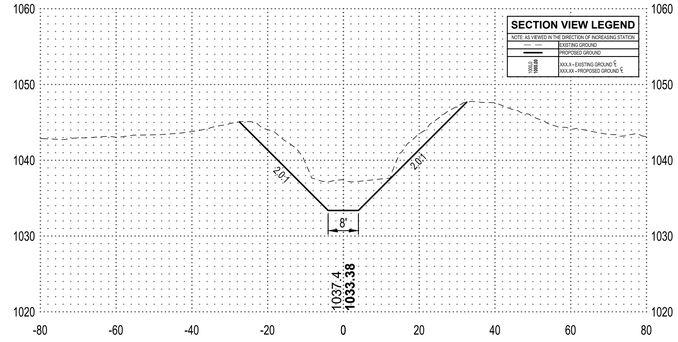
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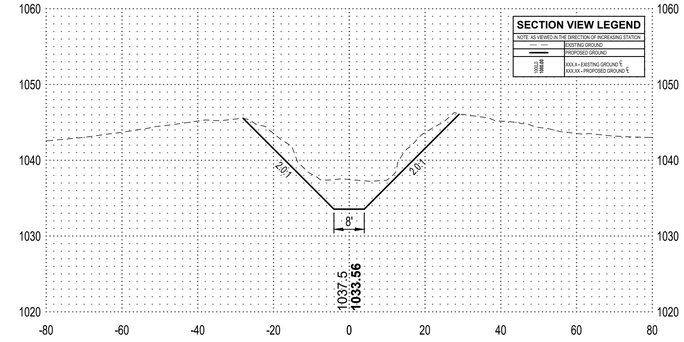
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608+00



614+00



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG, CDR
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

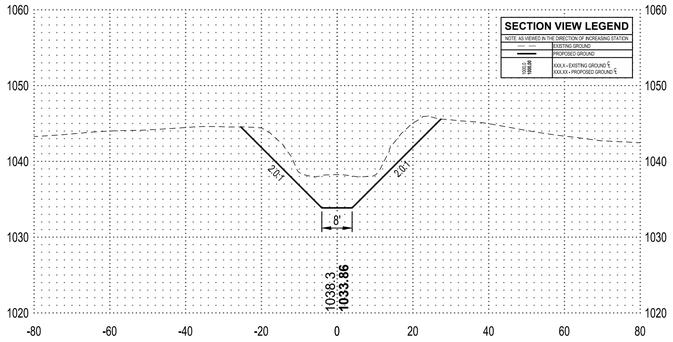
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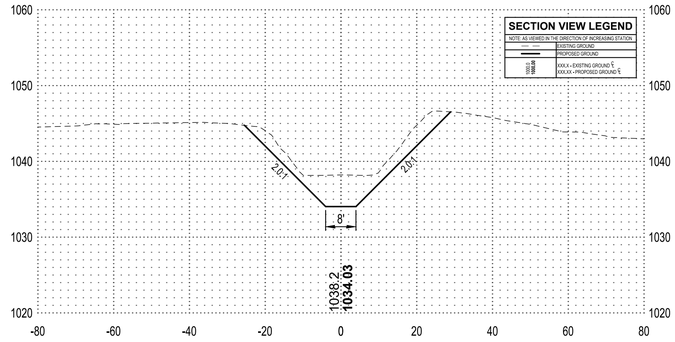
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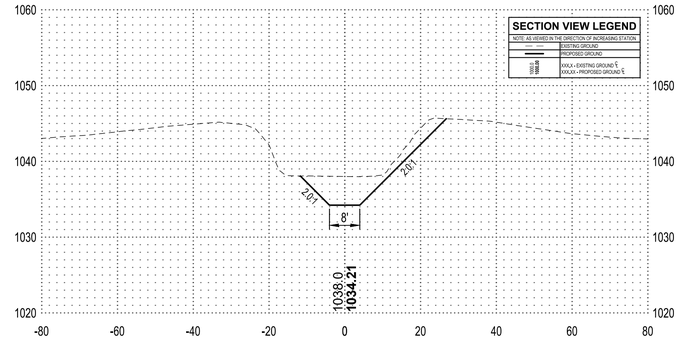
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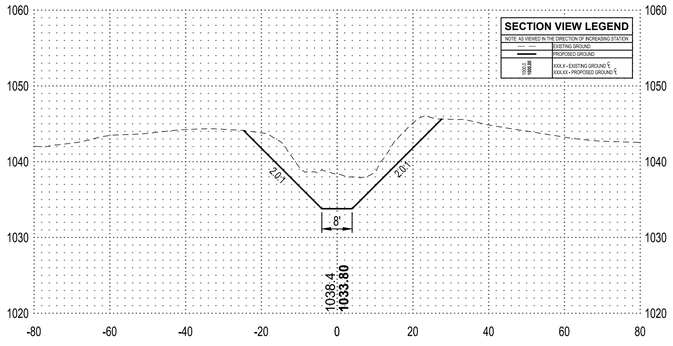
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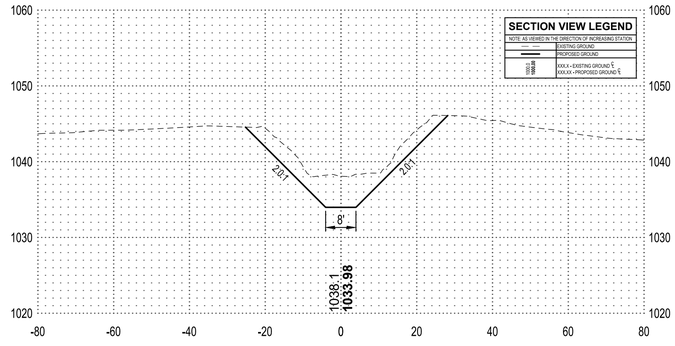
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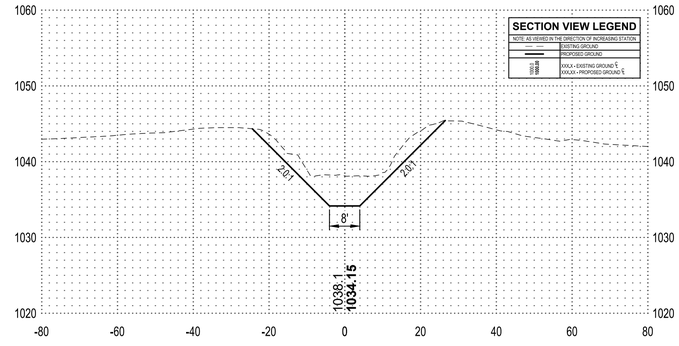
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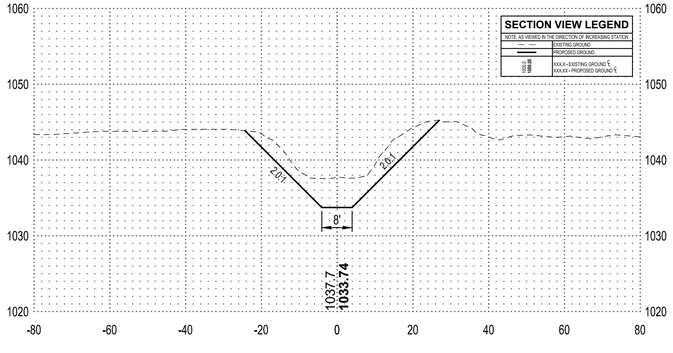
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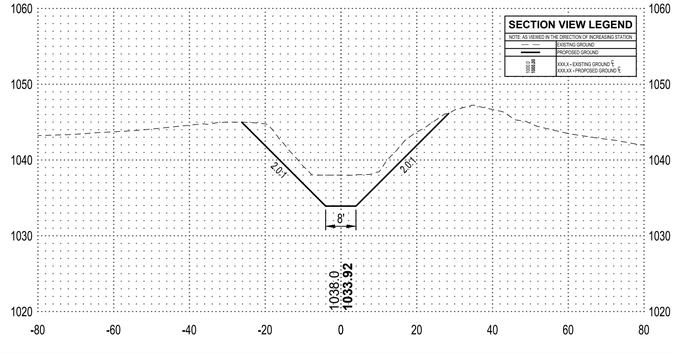
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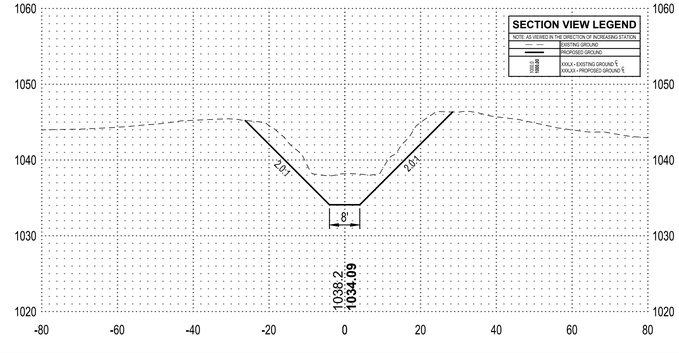
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG, CDR
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

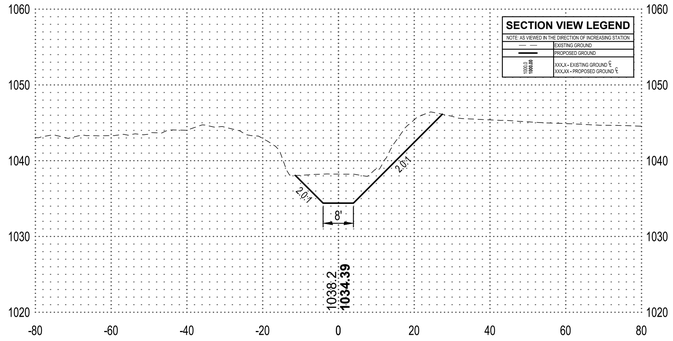
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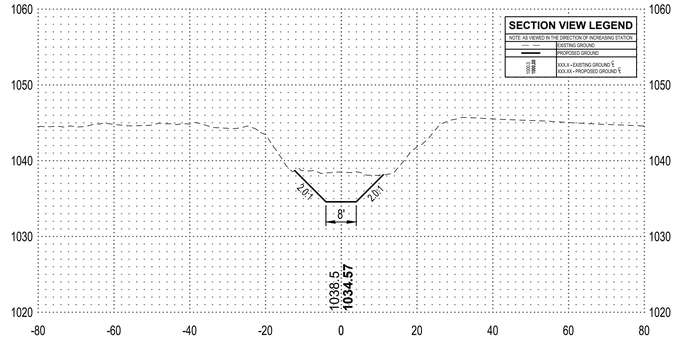
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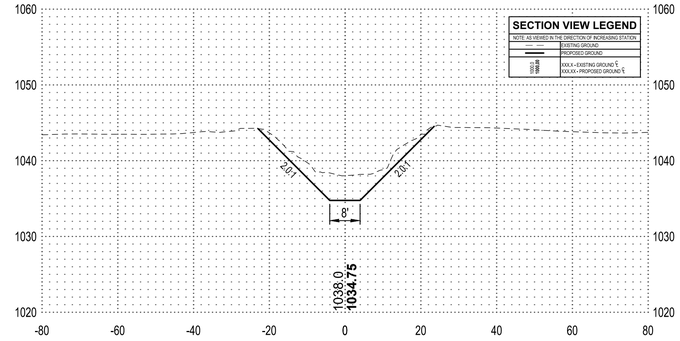
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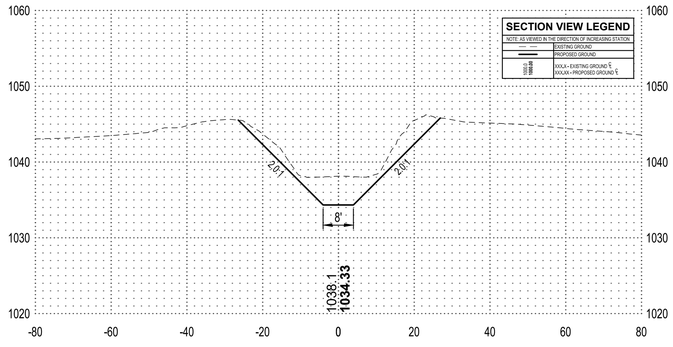
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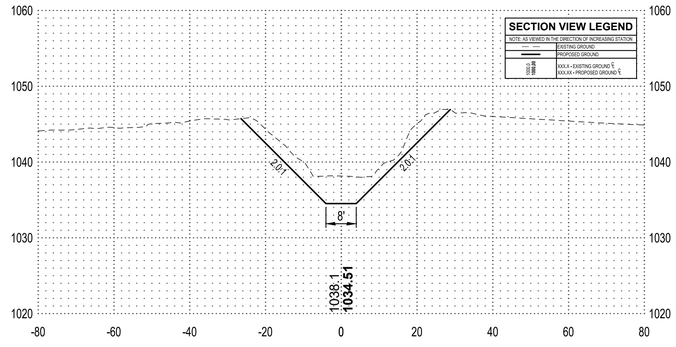
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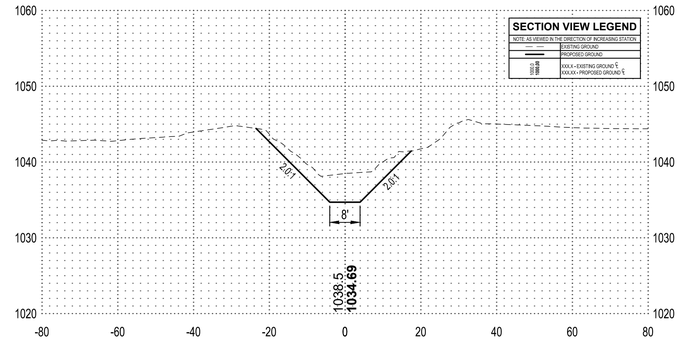
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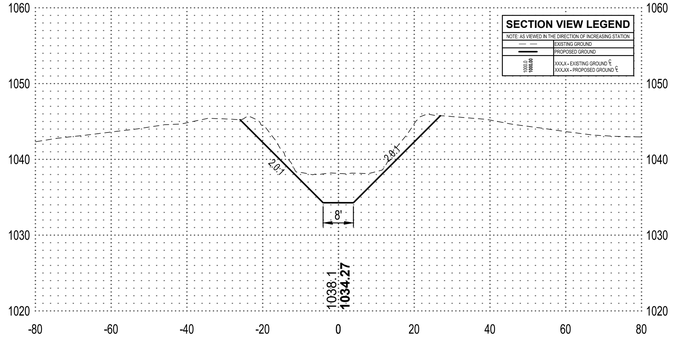
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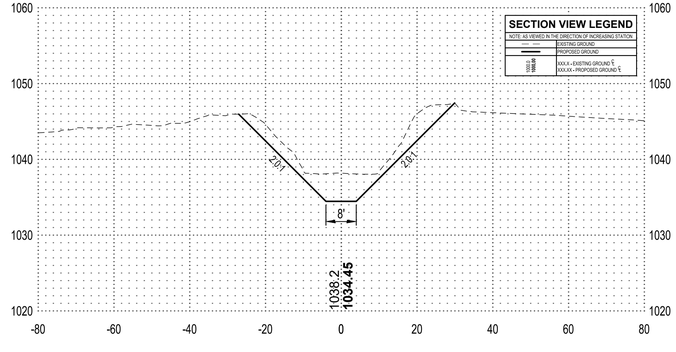
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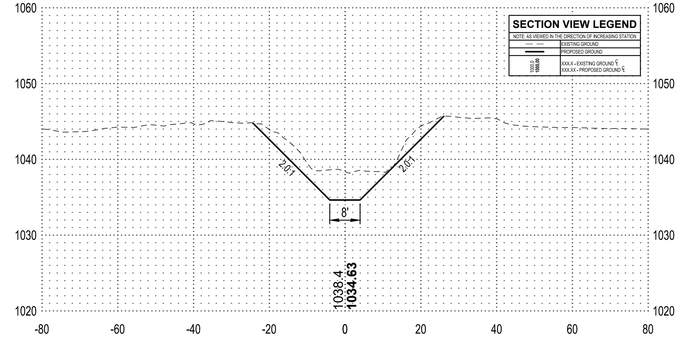
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644+00



650+00



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG, CDR
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

TITLE

CROSS SECTIONS

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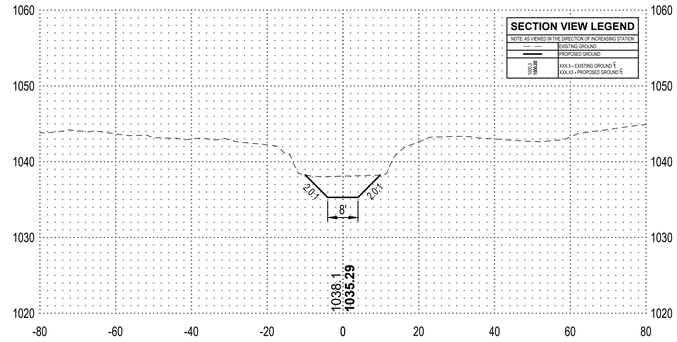
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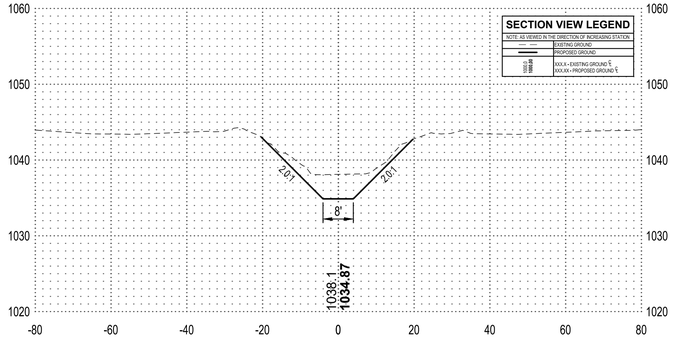
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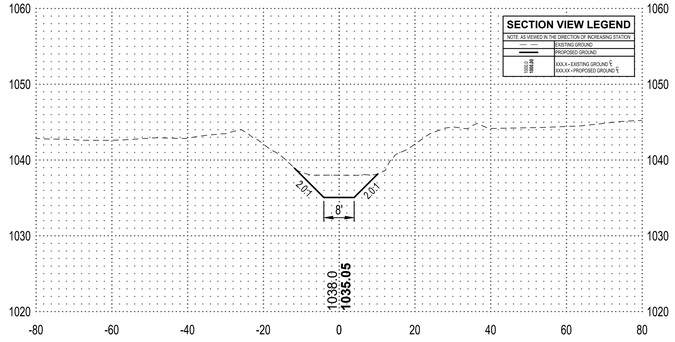
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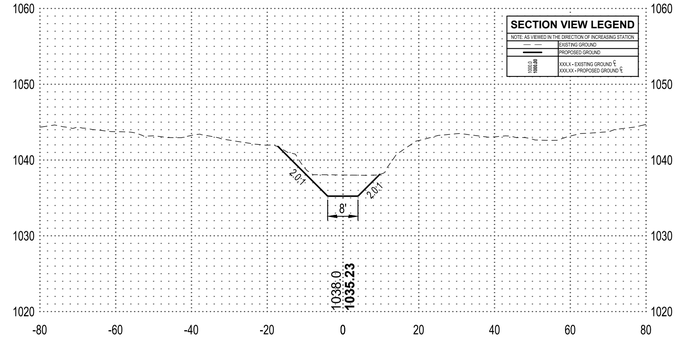
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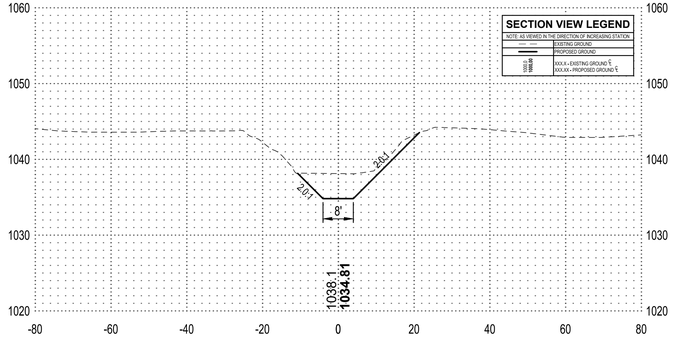
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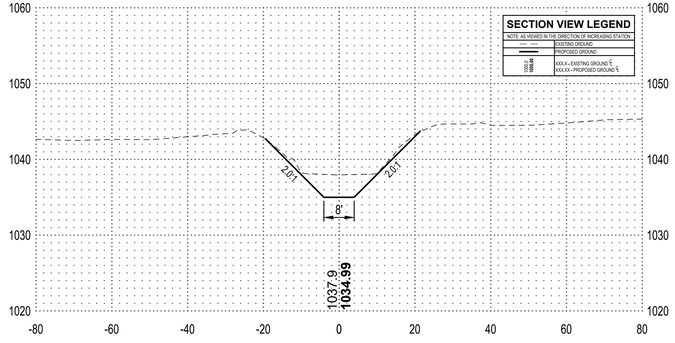
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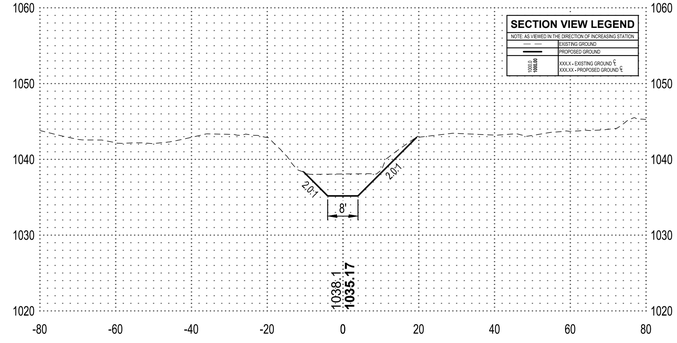
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662+00



668+00



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG, CDR
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

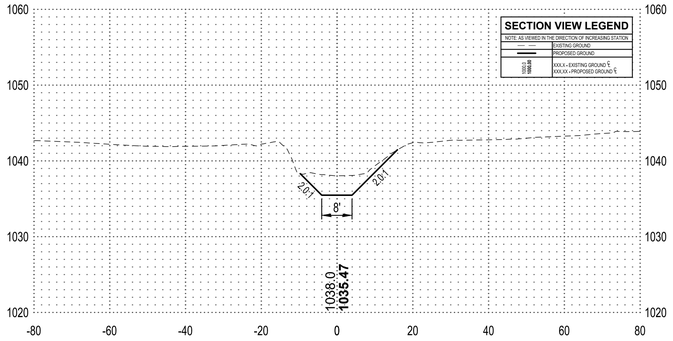
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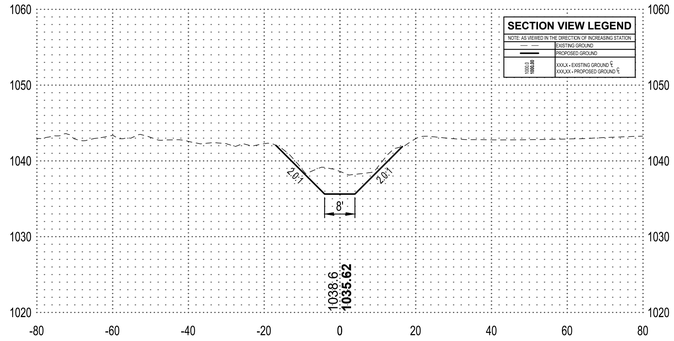
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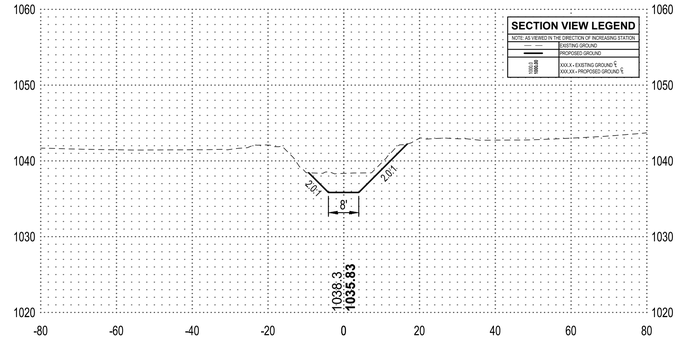
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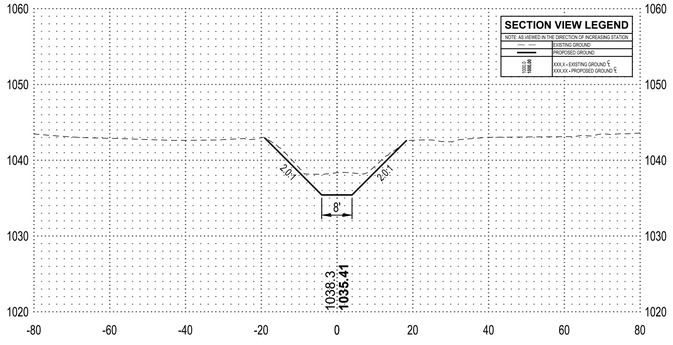
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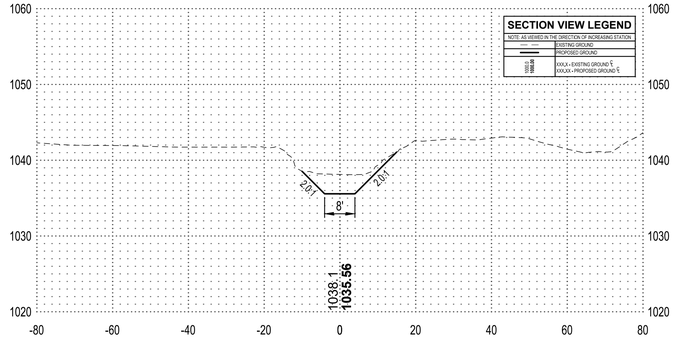
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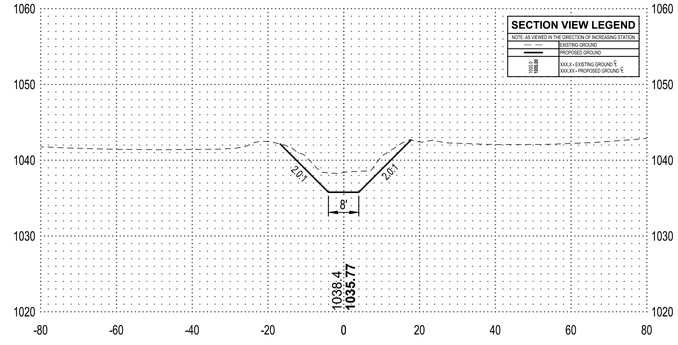
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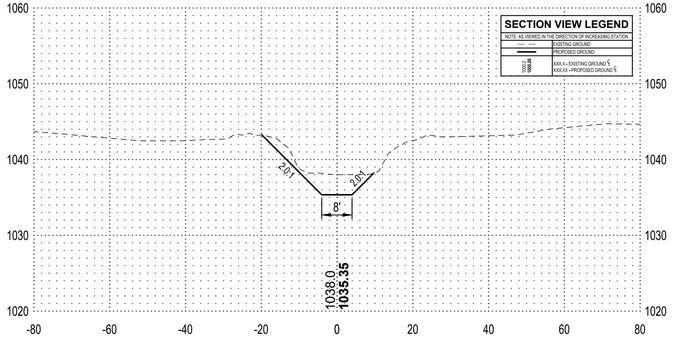
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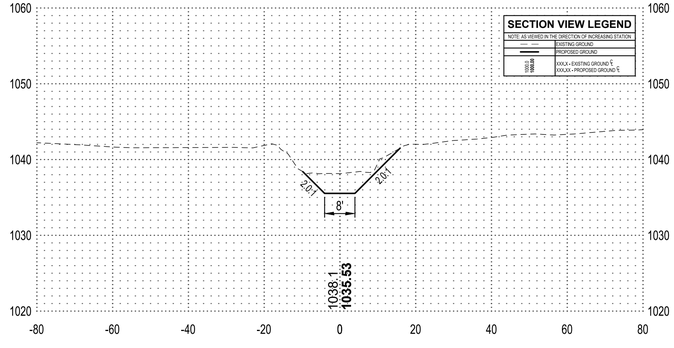
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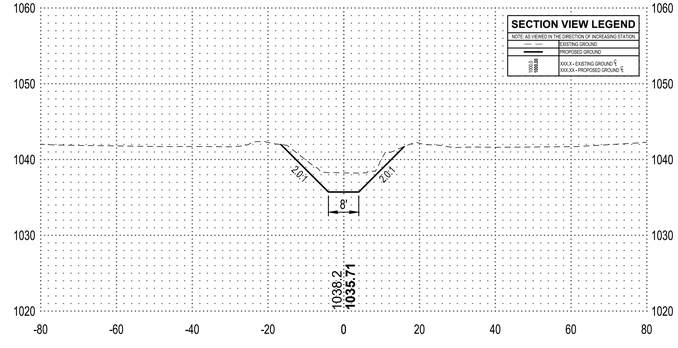
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680+00



686+00



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDS
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

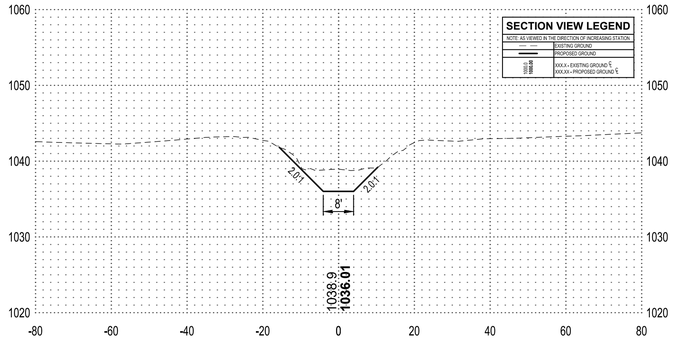
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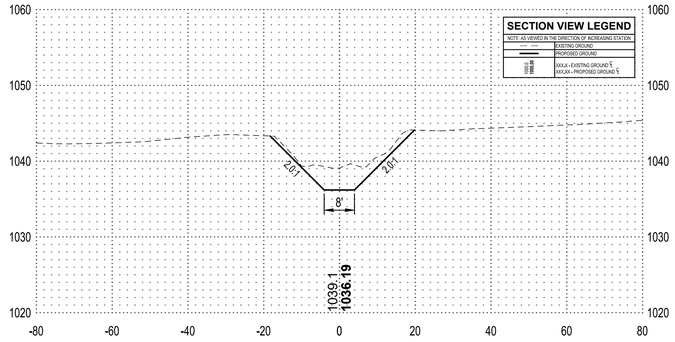
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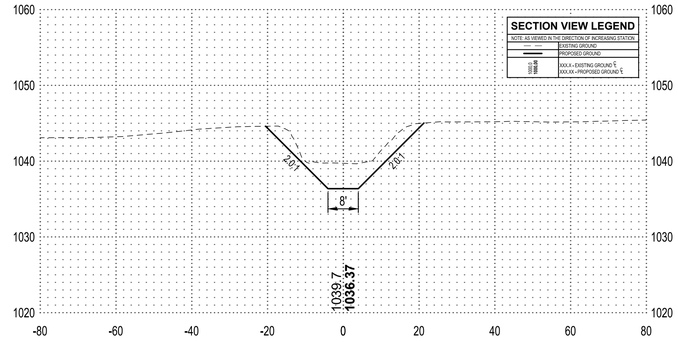
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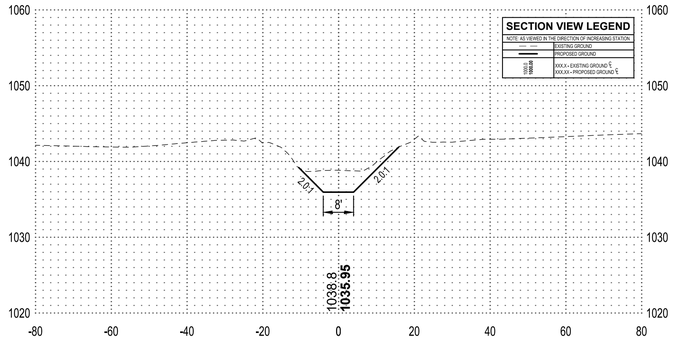
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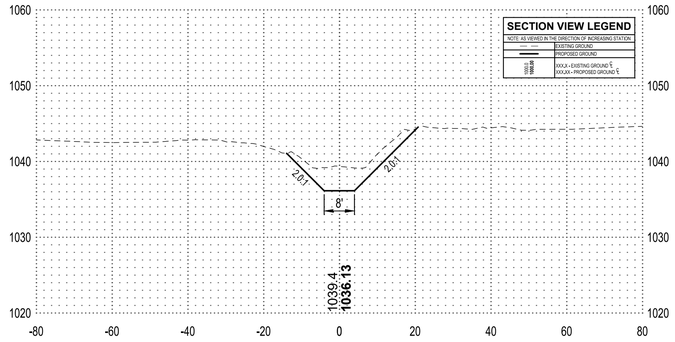
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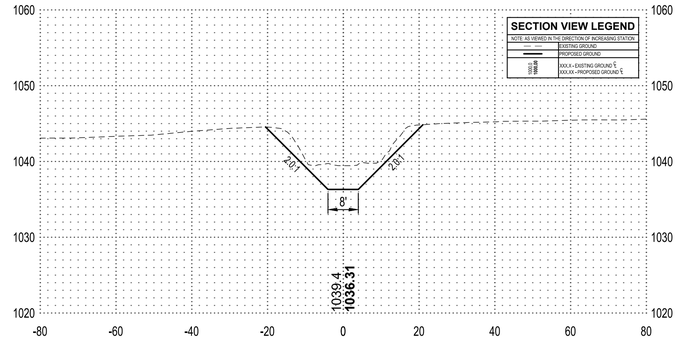
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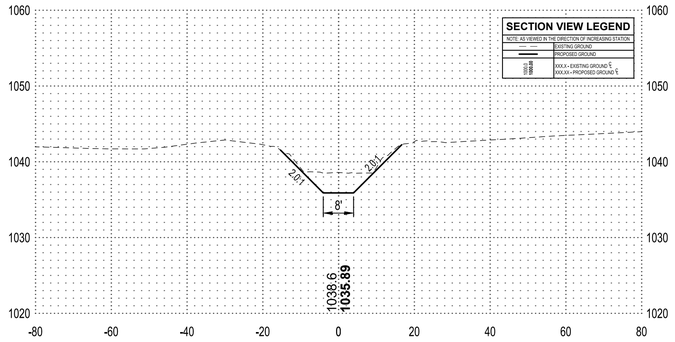
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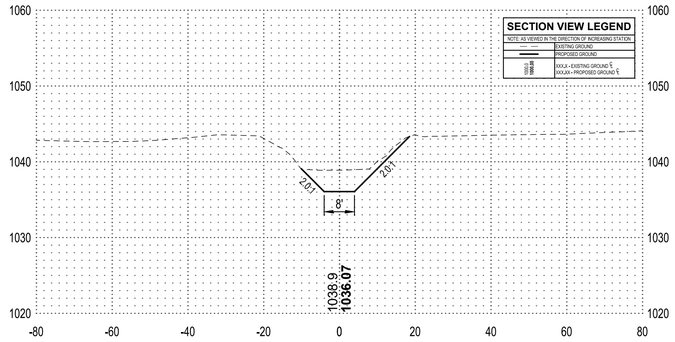
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692+00



698+00



704+00



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG, CDR
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

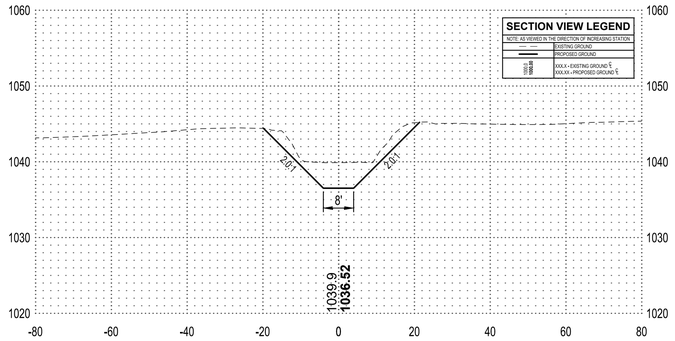
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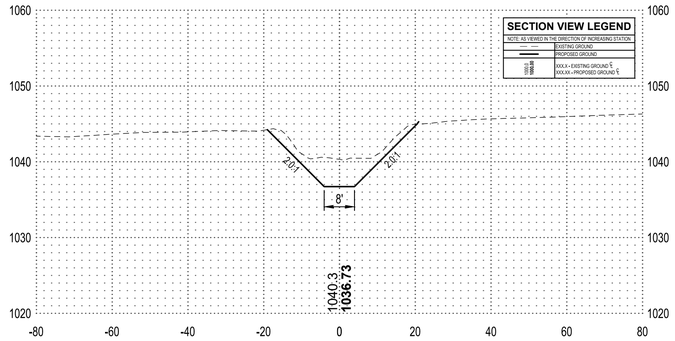
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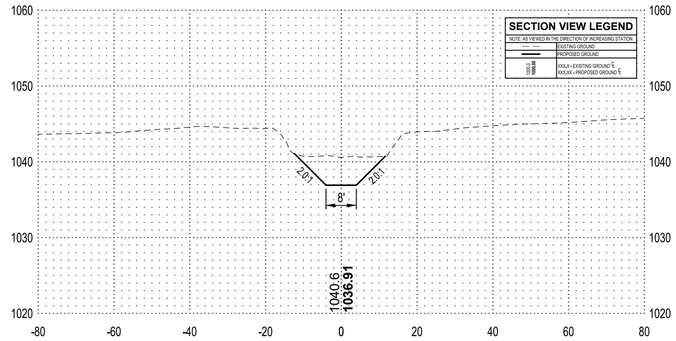
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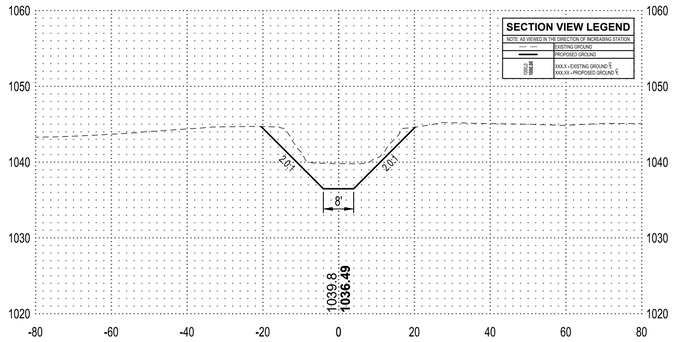
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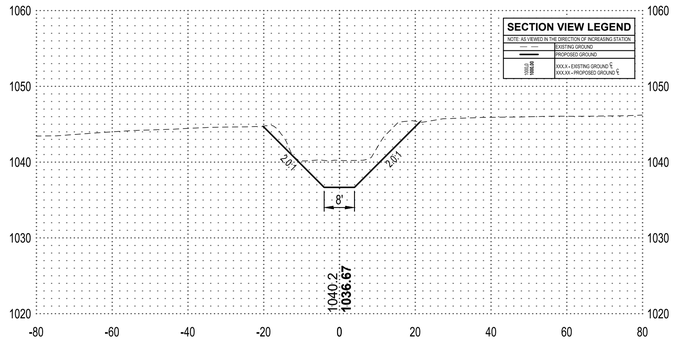
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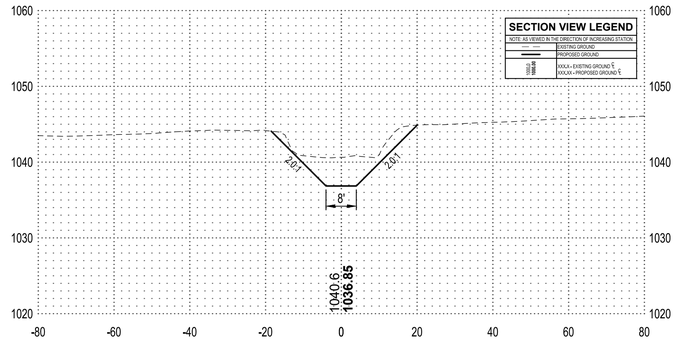
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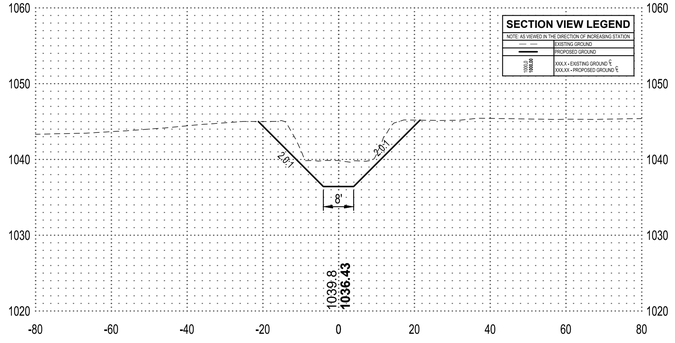
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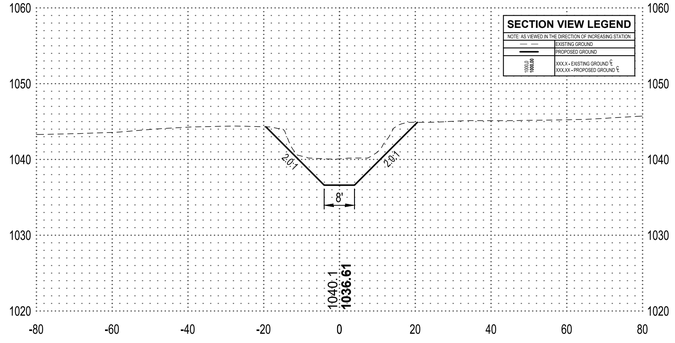
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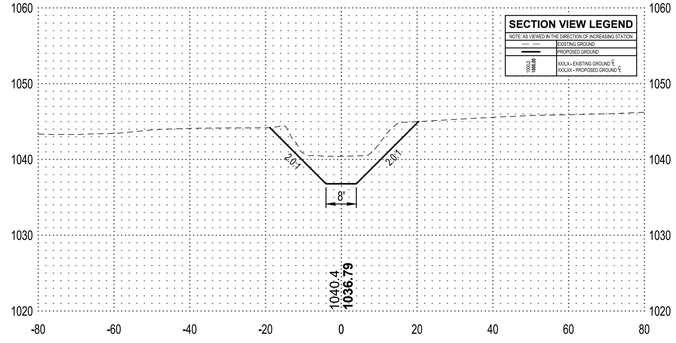
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716+00



722+00



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MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

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DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

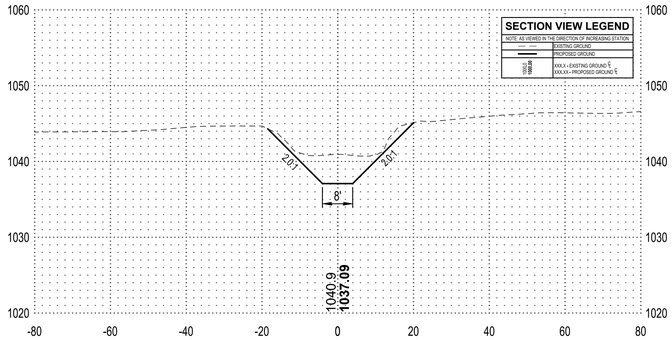
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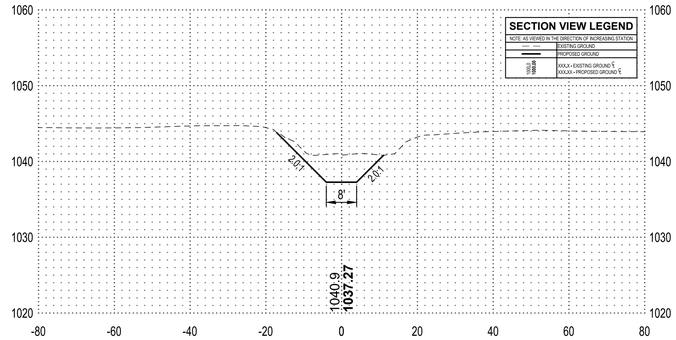
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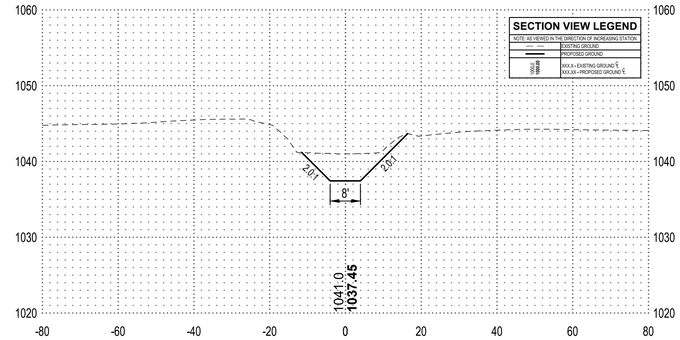
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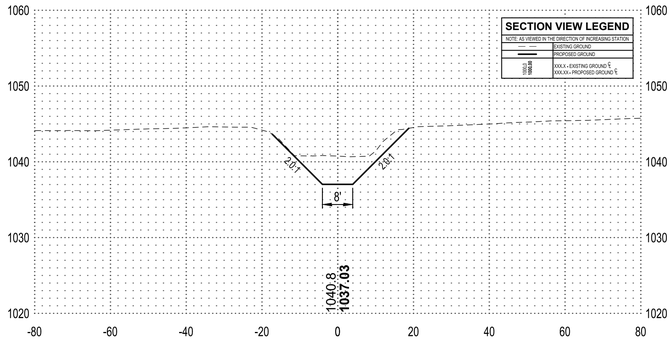
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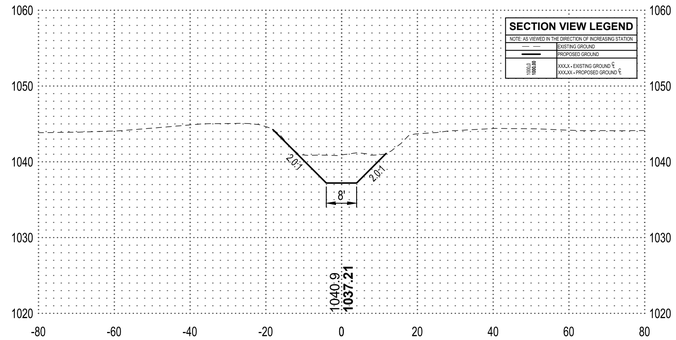
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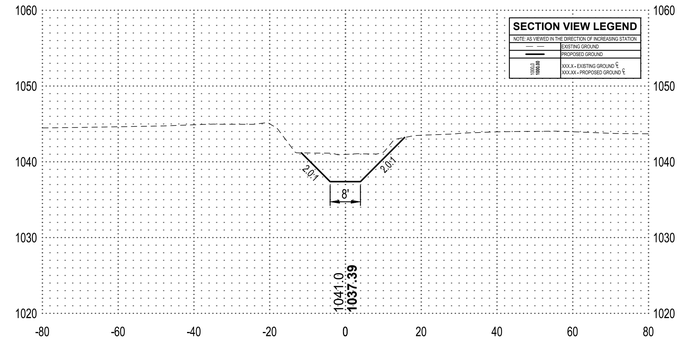
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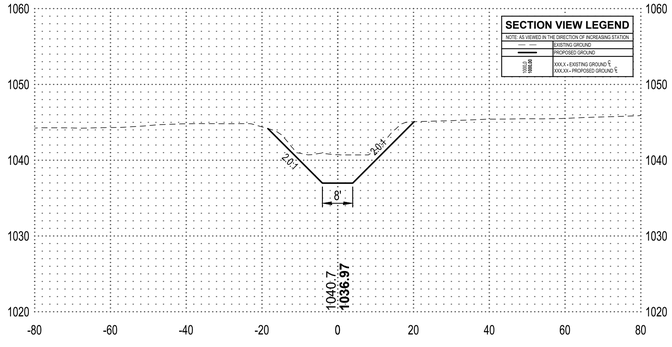
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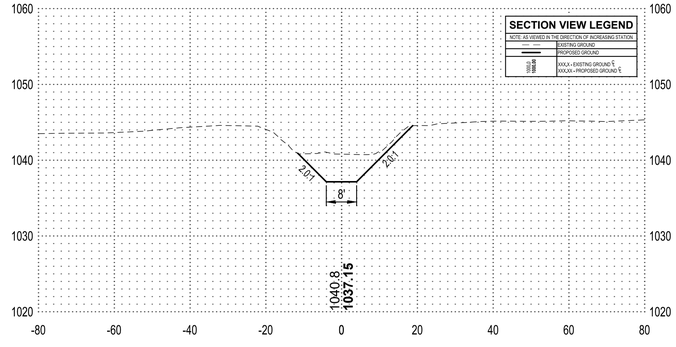
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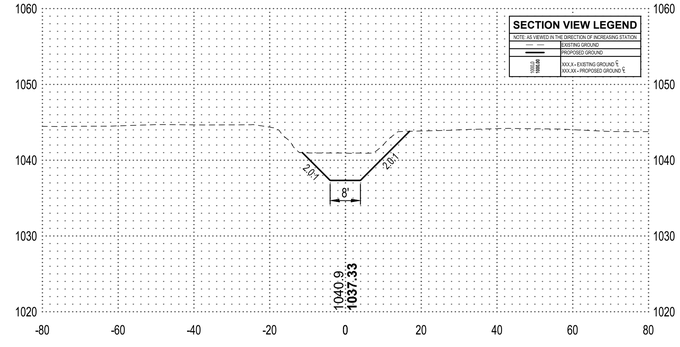
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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG
DESIGNED BY	HLC
REVIEWED BY	ALG
ORIGINAL ISSUE DATE	03/03/2026
CLIENT PROJECT NO.	-

RSG, CDR
CDR
CDR
7/28/2026

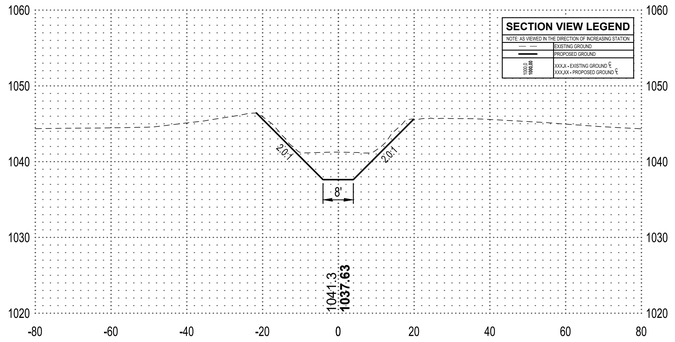
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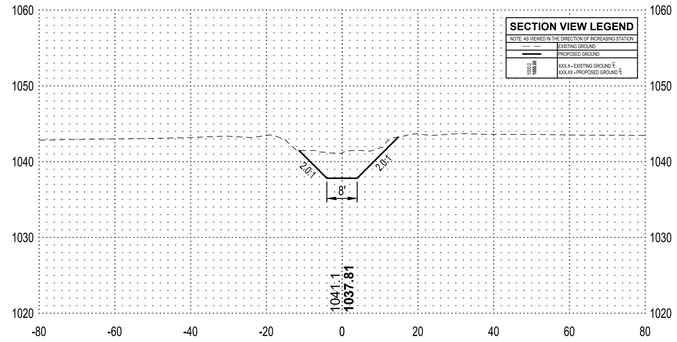
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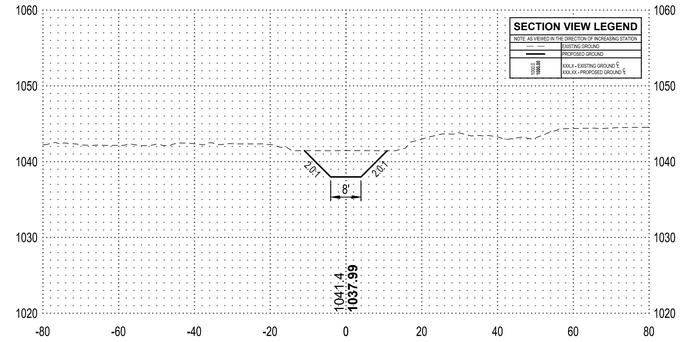
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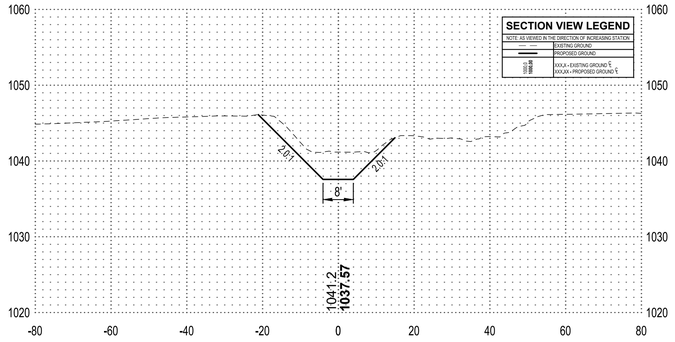
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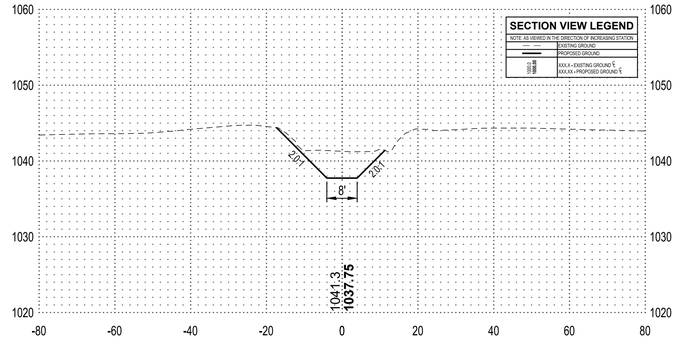
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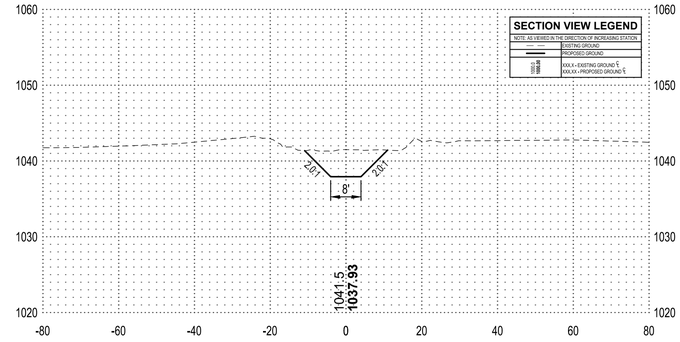
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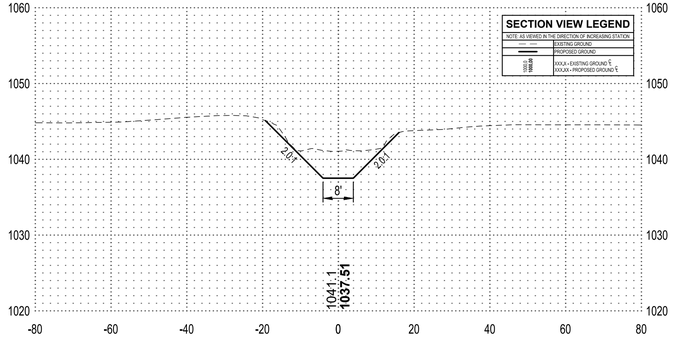
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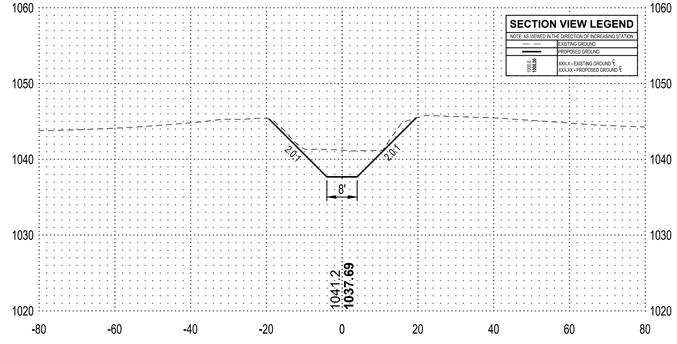
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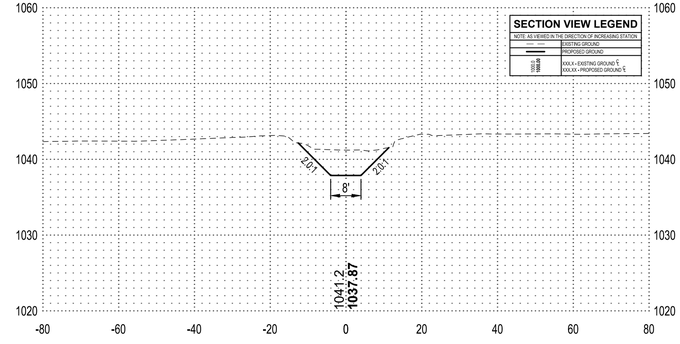
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752+00



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PROJECT

MCNEILL INTERCOUNTY DRAINAGE DISTRICT PHASE II MAIN OPEN DITCH REPAIRS

MONONA COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
FILE NAME	25740 CROSS SECTIONS-PHASE II
DRAWN BY	HLC/LDG, CDR
DESIGNED BY	HLC CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

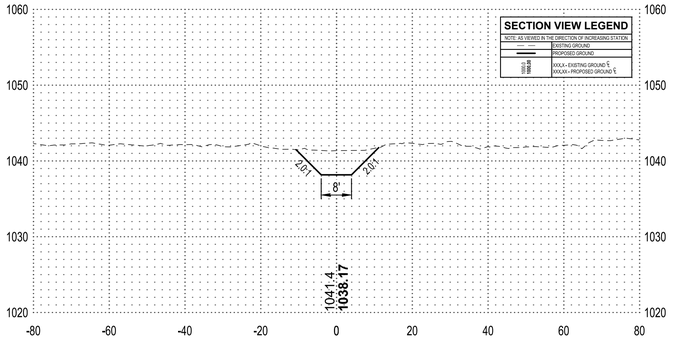
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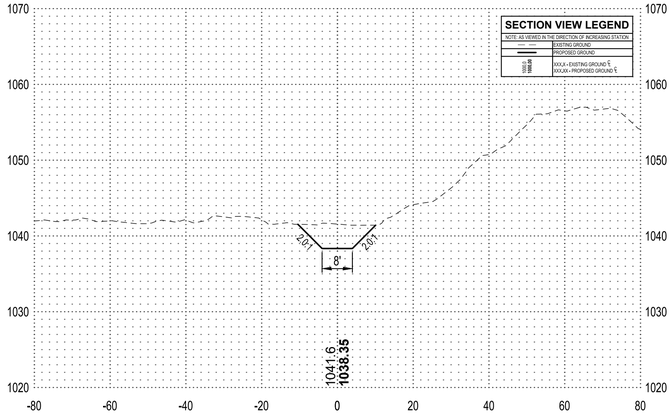
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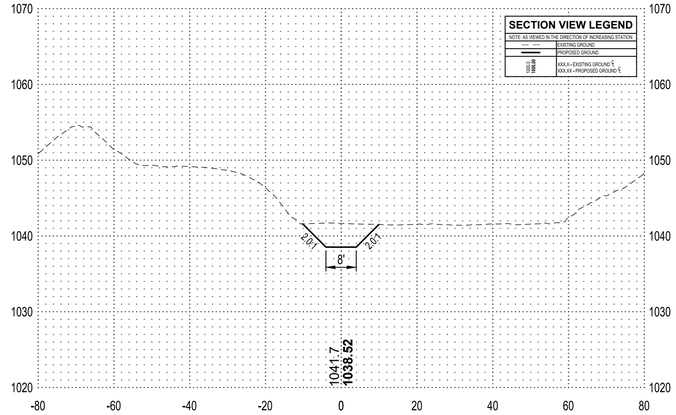
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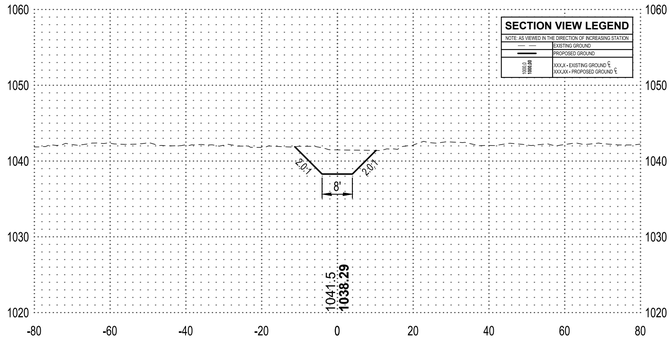
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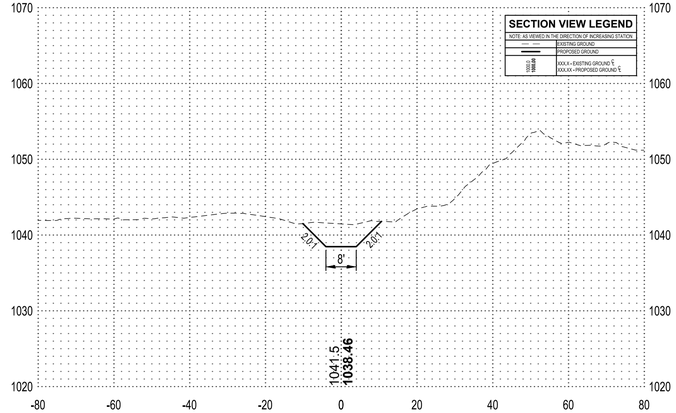
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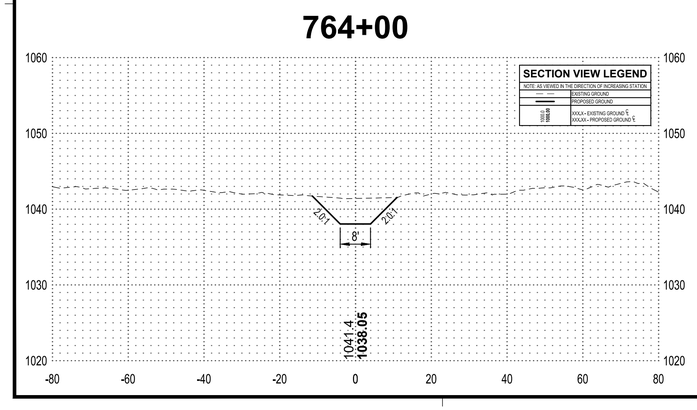
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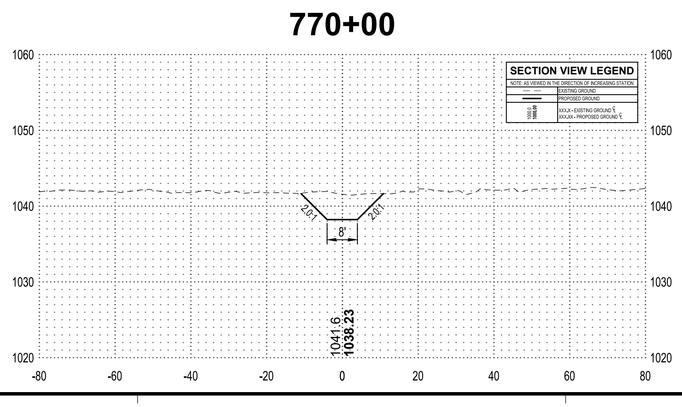
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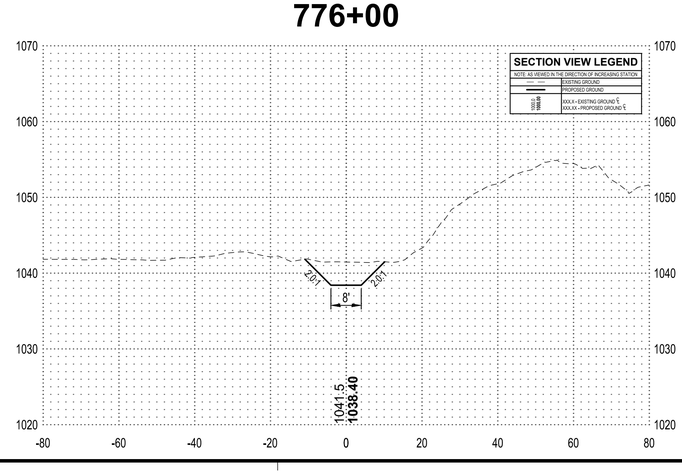
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770+00



776+00



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MONONA COUNTY IOWA

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DATE	DESCRIPTION	BY

PROJECT NO.	21-25740
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DRAWN BY	HLC/LPD
DESIGNED BY	HLC ISG, CDR
REVIEWED BY	ALG CDR
ORIGINAL ISSUE DATE	03/03/2026 7/28/2026
CLIENT PROJECT NO.	-

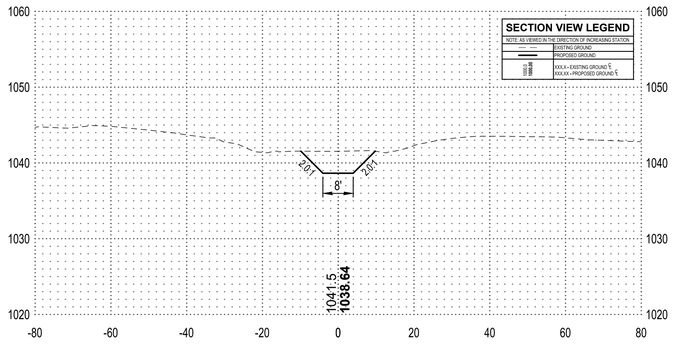
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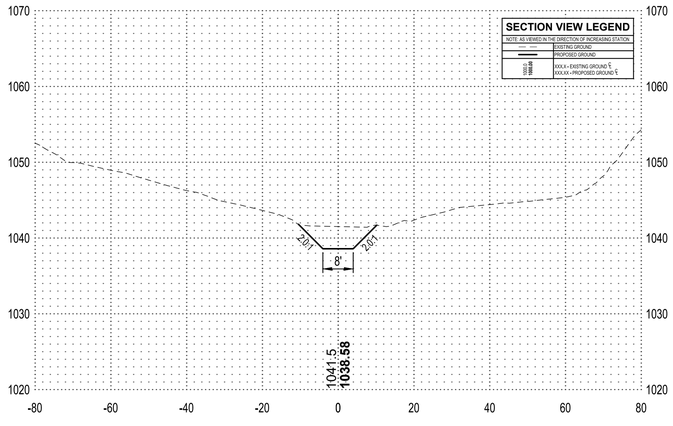
SHEET

X.19

784+00



782+00



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CROSS SECTIONS

SHEET

X.20