

Executive Summary

Project Title:

Drainage District No. 20 Tile Improvements, Greene County, Iowa

Project Description:

The project consists of improvements to the Drainage District No. 20 tile system. Work includes installation of approximately 21,389 linear feet of drainage pipe ranging in diameter from 12 inches to 36 inches, two road borings, and three open-cut road crossings. The project shall include all labor, equipment, materials, and incidental items necessary to complete the work in accordance with the plans and specifications.

An alternate bid (alternate plans) will be considered for the use of dual-wall HDPE pipe in lieu of reinforced concrete pipe (RCP). An additional bid includes the installation of approximately 3,885 linear feet of drainage pipe ranging in diameter from 12 inches to 15 inches.

Engineer Contact:

AgriVia
Jacob Hagan
712-250-4318
jacob.agrivia@gmail.com

Project Estimate:

Base Bid: \$1,570,000

Pre-Bid Meeting:

Time: Friday, February 27th, 2026 @ 10:00 A.M.
Location: Intersection of J Ave and 130th Street, Northeast of Churdan, IA

Landowner Notice:

Letters will be sent to all landowners prior to staking. Landowners will receive official notice of completion.

Additional Information:

Engineer's Report and Amendment to the report including photos, existing tile information and preliminary calculations can be found at: <https://www.agriviapl.com/reports>

Bid Due:

Bids Due: Monday, March 16th, 2026 @ 9:00 A.M.
Location: Greene County Auditor's Office, 114 N Chestnut St, Jefferson, IA 50129

Bid Opening / Consideration:

Time: March 16th, 2026 @ 9:00 A.M.
Location: Board Room, Greene County Board of Supervisors, 114 N Chestnut St, Jefferson, IA 50129 (Board may consider bids at that time or a later meeting)

Contract Documents:

Available via AgriVia, contact at 712-250-4318 or jacob.agrivia@gmail.com or download electronically at <https://www.agriviapl.com/bidding-opportunities>

Bid Security:

5% of the total bid amount.

Funding / Payment:

Funds on hand or Drainage Warrants issued by Drainage District No. 20 per the decision of the Board of Trustees.
Monthly pay applications including stockpiled materials.
Retainage: 10%
Final payment follows Iowa Code 468.100-103 procedures.

Key Dates:

Commencement: Upon Notice to Proceed.
Final Completion: March 27, 2027.

Liquidated Damages:

\$500.00 per calendar day beyond the Final Completion date.

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NOTICE TO BIDDERS

For Tile Improvements, Drainage District No. 20, Greene County, Iowa

General Nature of Public Improvement: The project consists of improvements to the Drainage District No. 20 tile system. Work includes installation of approximately 21,389 linear feet of drainage pipe ranging in diameter from 12 inches to 36 inches, two road borings, and three open-cut road crossings. The project shall include all labor, equipment, materials, and incidental items necessary to complete the work in accordance with the plans and specifications.

An alternate bid (alternate plans included) will be considered for the use of dual-wall HDPE pipe in lieu of reinforced concrete pipe (RCP). An additional bid includes the installation of approximately 3,885 linear feet of drainage pipe ranging in diameter from 12 inches to 15 inches.

Time and Place for Filing Sealed Bids: Sealed bids for the work comprising the improvements as stated below must be filed before 9:00 A.M. on March 16th, 2026 in the office of the Greene County Auditor, 114 N. Chestnut St #7, Jefferson, IA 50129.

Time and Place Sealed Bids Will be Opened and Considered: Sealed bids will be opened and publicly read at 9:00 A.M. on March 16th, 2026 in the Board Room of the Greene County Board of Supervisors at 114 N. Chestnut St, Jefferson, IA 50129. Bids will be considered by the Greene County Board of Supervisors/Trustees acting for Drainage District No. 20 at that time or at a later meeting. The Board reserves the right to reject any and all bids and to waive informalities.

Contract Documents: Copies of the project documents are available upon request via email from the Engineer, AgriVia at jacob.agrivia@gmail.com or electronically at <https://www.agriviapl.com/bidding-opportunities>. Bidders may view the digital plan documents for free by submitting the form on the website. Documents may be downloaded at no cost. Please contact AgriVia at 712-250-4318 or jacob.agrivia@gmail.com for assistance with registration and downloading. Optional paper sets may be obtained from the Engineer, AgriVia, PO Box 44, 1124 Willis Ave, Perry, Iowa, Phone: 712-250-4318, upon payment of a \$100.00 refundable deposit, provided the documents are returned complete and in good condition within fourteen (14) calendar days after the award of the project.

Bid Security: Each bid must be accompanied by bid security as defined in Iowa Code Section 468.35a, in an amount equal to five percent (5%) of the total amount of the Bid (including all alternates). Bid security shall be in the form of a cashier's check, certified check drawn on an FDIC insured bank in Iowa or the United States, certified share draft drawn on a credit union in Iowa or the United States, or a Bid Bond on the form provided in the Bidding Documents, executed by a corporation authorized to contract as a surety in Iowa. Bid security must be filed in a separate, sealed envelope attached to the bid proposal envelope.

Iowa Contractor Registration and Bidder Status: All bidders must be registered with the Iowa Division of Labor Services prior to contract award (Iowa Code Chapter 91C). Bidders shall submit a completed State of Iowa Bidder Status Form with the bid proposal, per 875 Iowa Administrative Code Chapter 156. Failure to submit a fully completed Bidder Status Form may result in the bid being deemed non-responsive and rejected. Out-of-state bidders must comply with additional Iowa requirements.

Preference of Products and Labor: Preference shall be given to domestic construction materials and Iowa products, provisions, and labor to the extent lawfully required under Iowa Code Chapters 73 and 73A. Resident bidder preference applies as per Iowa Code Chapter 73A.

Sales Tax: The bidder shall not include Iowa sales tax in the bid. The Greene County Auditor will issue tax exemption certificates and authorization letters to the Contractor and qualifying subcontractors for the purchase of construction materials incorporated into this specific project.

Time for Commencement and Completion of Work: Work on the improvement shall commence upon approval of the contract by the Board and issuance of a written Notice to Proceed. All work under the Contract must be Fully Completed (Final Completion) no later than March 27, 2027.

Liquidated Damages: Liquidated damages in the amount of \$500.00 per calendar day will be assessed for each day the work remains incomplete beyond the specified completion dates, subject to authorized extensions.

Payment: Payment for work done will be made based on monthly estimates approved by the Engineer. Payments may be made in Drainage Warrants issued by the Drainage District. Registered warrants stamped "not paid for want of funds" shall bear interest at a rate fixed by the Board not to exceed the maximum set by law (Iowa Code Chapter 468). Progress payments will be made for ninety percent (90%) of the work completed, with ten percent (10%) retained per Iowa Code 468. Final payment and the release of retained funds will be made not less than thirty (30) days after completion and final acceptance of the work by the Board, subject to the conditions and procedures of Iowa Code Sections 468.100 through 468.103, including a final acceptance hearing. The Board reserves the right to issue Drainage District Improvement Certificates (Iowa Code Chapter 468).

Performance, Payment, and Maintenance Bond: The successful bidder will be required to furnish a combined Performance, Payment, and Maintenance Bond in an amount equal to one hundred percent (100%) of the contract price. Said bond shall be issued by a responsible surety authorized to do business in Iowa and approved by the Board. The bond guarantees faithful performance, payment of labor and materials per Iowa Code Chapter 573, and maintenance of the improvements against defects in materials and workmanship for a period of one (1) year from the date of final acceptance.

This Notice is given by authority of the Greene County Board of Supervisors/Trustees, acting for the Drainage District No. 20.

By: Billie Hoskins, Greene County Auditor

INSTRUCTIONS TO BIDDERS

DRAINAGE DISTRICT NO. 20 TILE IMPROVEMENTS

The work comprising the above referenced project shall be constructed in accordance with the 2026 edition of the SUDAS Standard Specifications and as further modified by supplemental specifications and special provisions included in the contract documents. The terms used in the contract documents are defined in said Standard Specifications. Before submitting your bid, review the requirements of Division 1, General Provisions and Covenants, in particular the sections regarding proposal requirements, bonding, contract execution and insurance requirements. Be certain that all documents have been completed properly, as failure to complete and sign all documents and to comply with the requirements listed below can cause your bid not to be read.

BID SECURITY

The bid security must be in the minimum amount of 5% of the total bid amount including all add alternates (do not deduct the amount of deduct alternates). Bid security shall be in the form of a cashier’s check or a certified check, drawn on an FDIC insured bank in Iowa or drawn on an FDIC insured bank chartered under the laws of the United States; or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States; or a bid bond executed by a corporation authorized to contract as a surety in Iowa or satisfactory to the Jurisdiction. The bid bond must be submitted on the enclosed Bid Bond form as no other bid bond forms are acceptable. All signatures on the bid bond must be original signatures in ink; facsimile (fax) of any signature or use of an electronic signature on the bid bond is not acceptable. Bid security other than said bid bond shall be made payable to Drainage District No. 20, Greene County. “Miscellaneous Bank Checks,” and personal checks, as well as “Money Orders” and “Traveler’s Checks” issued by persons, firms, or corporations licensed under Chapter 533C of the Iowa Code, are not acceptable bid security.

SUBMISSION OF THE PROPOSAL AND IDENTITY OF BIDDER

The proposal shall be sealed in an envelope, properly identified as the Proposal with the project title and the name and address of the bidder, and deposited with the Jurisdiction at or before the time and at the place provided in the Notice to Bidders. It is the sole responsibility of the bidder to see that its proposal is delivered to the Jurisdiction prior to the time for opening bids, along with the appropriate bid security sealed in a separate envelope identified as Bid Security and attached to the outside of the bid proposal envelope. Any proposal received after the scheduled time for the receiving of proposals will be returned to the bidder unopened and will not be considered. If the Jurisdiction provides envelopes for proposals and bid security, bidders shall be required to utilize such envelopes in the submission of their bids.

The following documents shall be completed, signed, and returned in the Proposal envelope. The bid cannot be read if any of these documents are omitted from the Proposal envelope.

PROPOSAL – Complete each of the following parts:

- Part B – Acknowledgment of Addenda, if any have been issued
- Part C – Bid Items, Quantities, and Prices
- Part F – Additional Requirements

The following proposal attachments must be completed and attached:

Item No.	Description of Attachment
1.	None

- Part G – Identity of Bidder (including the Bidder Status Form)

Sign the proposal. The signature on the proposal and all proposal attachments must be an original signature in ink signed by the same individual who is the Company Owner or an authorized Officer of the Company; copies or facsimile of any signature or electronic signatures will not be accepted.

The Bidder Status Form is required by the Iowa Labor Commissioner, pursuant to the Iowa Administrative Code rule 875-156.2(1). The Bidder must complete and submit the Bidder Status Form, signed by an authorized representative of the Bidder, with their bid proposal. Under Iowa Administrative Code rule 875-156.2(1), failure to provide the Bidder Status Form with the bid may result in the bid being deemed non-responsive and may result in the bid being rejected. The Worksheet: Authorized to Transact Business from the Labor Commissioner is included on the following page and can be used to assist Bidders in completing the Bidder Status Form.

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.

PROPOSAL

The following documents must be submitted as printed. No alterations, additions, or deletions are allowed. If the Bidder notes a requirement in the contract documents that the Bidder believes will require a conditioned or unsolicited alternate bid, the Bidder must immediately notify the Engineer in writing. The Engineer will issue any necessary interpretation by an addendum.

PROPOSAL: PART A – SCOPE

Drainage District No. 20, Greene County, hereinafter called the “Jurisdiction,” has need of a qualified contractor to complete the work comprising the below referenced improvement. The undersigned Bidder hereby proposes to complete the work comprising the below referenced improvement as specified in the contract documents, which are officially on file with the Jurisdiction, in the office of the Greene County Auditor’s Office at the prices hereinafter provided in Part C of the Proposal, for the following described improvements:

PROJECT DESCRIPTION:

The project consists of improvements to the Drainage District No. 20 tile system. Work includes installation of approximately 21,389 linear feet of drainage pipe ranging in diameter from 12 inches to 36 inches, two road borings, and three open-cut road crossings. The project shall include all labor, equipment, materials, and incidental items necessary to complete the work in accordance with the plans and specifications.

An alternate bid (alternate plans included) will be considered for the use of dual-wall HDPE pipe in lieu of reinforced concrete pipe (RCP). An additional bid includes the installation of approximately 3,885 linear feet of drainage pipe ranging in diameter from 12 inches to 15 inches.

PROPOSAL: PART B – ACKNOWLEDGMENT OF ADDENDA

The Bidder hereby acknowledges that all addenda become a part of the contract documents when issued, and that each such addendum has been received and utilized in the preparation of this bid. The Bidder hereby acknowledges receipt of the following addenda by inserting the number of each addendum in the blanks below:

Addendum Number		Addendum Number	
Addendum Number		Addendum Number	

and certifies that said addenda were utilized in the preparation of this bid.

PROPOSAL: PART C – BID ITEMS, QUANTITIES, AND PRICES

UNIT BID PRICE CONTRACTS:

The Bidder must provide the Unit Bid Price, the Total Bid Price, any Add-Alternate Prices, and the Total Construction Costs on the Proposal Attachment: Part C – Bid Items, Quantities, and Prices. In case of discrepancy, the Unit Bid Price governs. The quantities shown on the Proposal Attachment: Part C – Bid Items, Quantities, and Prices are approximate only, but are considered sufficiently adequate for the purpose of comparing bids. The Total Construction Cost plus any alternates selected by the Jurisdiction, shall be used only for comparison of bids. The Total Construction Cost, including any Add-Alternates, shall be used for determining the sufficiency of the bid security.

BASE BID CONTRACTS:

The Bidder must provide any Bid Prices, any Alternate Prices, and the Total of the Base Bid plus any Add-Alternates on the Proposal Attachment: Part C – Bid Items, Quantities, and Prices. The Total of the Base Bid plus any Alternates selected by the Jurisdiction shall be used only for comparison of bids. The Total of the Base Bid plus any Add-Alternates shall be used for determining the sufficiency of the bid security.

PROPOSAL: PART D – GENERAL

The Bidder hereby acknowledges that the Jurisdiction, in advertising for public bids for this project, reserves the right to:

1. Reject any or all bids. Award of the contract, if any, to be to the lowest responsible, responsive bidder; and
2. Reject any or all alternates in determining the items to be included in the contract. Designation of the lowest responsible, responsive bidder to be based on comparison of the total bid plus any selected alternates; and
3. Make such alterations in the contract documents or in the proposal quantities as it determines necessary in accordance with the contract documents after execution of the contract. Such alterations shall not be considered a waiver of any conditions of the contract documents, and shall not invalidate any of the provisions thereof; and

The Bidder hereby agrees to:

1. Enter into a contract, if this proposal is selected, in the form approved by the Jurisdiction, provide proof of registration with the Iowa Division of Labor in accordance with Chapter 91C of the Iowa Code, and furnish a performance, maintenance, and payment bond; and
2. Forfeit bid security, not as a penalty but as liquidated damages, upon failure to enter into such contract and/or to furnish said bond; and
3. Commence the work on this project on or before a date to be specified in a written notice to proceed by the Jurisdiction, and to fully complete the project; and to pay liquidated damages for noncompliance with said completion provisions at the rate of five hundred dollars (\$500) for each calendar day thereafter that the work remains incomplete.

PROPOSAL: PART E – NON-COLLUSION AFFIDAVIT

The Bidder hereby certifies:

1. That this proposal is not affected by, contingent on, or dependent on any other proposal submitted for any improvement with the Jurisdiction; and
2. That no individual employed by the Bidder has employed any person to solicit or procure the work on this project, nor will any employee of the Bidder make any payment or agreement for payment of any compensation in connection with the procurement of this project; and
3. That no part of the bid price received by the Bidder was or will be paid to any person, corporation, firm, association, or other organization for soliciting the bid, other than the payment of their normal compensation to persons regularly employed by the Bidder whose services in connection with the construction of the project were in the regular course of their duties for the Bidder; and
4. That this proposal is genuine and not collusive or sham; that the Bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidder or person, to submit a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought, by agreement or collusion, or communication or conference, with any person, to fix the bid price of the Bidder or of any other bidder, and that all statements in this proposal are true; and
5. That the individual(s) executing this proposal have the authority to execute this proposal on behalf of the Bidder.

PROPOSAL: PART F – ADDITIONAL REQUIREMENTS

The Bidder hereby agrees to comply with the additional requirements listed below that are included in this proposal and identified as proposal attachments:

Item No.	Description of Attachment
1	None

PROPOSAL: PART G – IDENTITY OF BIDDER

The Bidder shall indicate whether the bid is submitted by a/an:

- Individual, Sole Proprietorship
- Partnership
- Corporation
- Limited Liability Company
- Joint-venture: all parties must join-in and execute all documents
- Other

By

_____ Bidder

_____ Signature

_____ Name (Print/Type)

_____ Title

_____ Street Address

_____ City, State, Zip Code

_____ Telephone Number

Type or print the name and title of the company’s owner, president, CEO, etc. if a different person than entered above

_____ Name

_____ Title

The Bidder shall enter its Public Registration Number _____ - _____ issued By the Iowa Commissioner of Labor Pursuant Section 91C.5 of the Iowa Code.

Failure to provide said Registration Number shall result in the bid being read under advisement. A contract will not be executed until the Contractor is registered.

NOTE: The signature on this proposal must be an original signature in ink; copies, facsimiles, or electronic signatures will not be accepted.

All bidders must submit the following completed form to the governmental body requesting bids per 875 Iowa Administrative Code Chapter 156.

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 included in the bidding documents).
- 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 e-mail.
- 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 non-resident 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: _____
(mm/dd/yyyy) City, State, Zip: _____
- Dates: _____ To _____ Address: _____
(mm/dd/yyyy) City, State, Zip: _____
- Dates: _____ To _____ Address: _____
(mm/dd/yyyy) City, State, Zip: _____

You may attach additional sheet(s) if needed.

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 bidders who are residents? 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.

Firm Name: _____

Signature: _____ Date: _____

PROPOSAL ATTACHMENT: PART C – BID ITEMS, QUANTITIES, AND PRICES

This is a UNIT BID PRICE CONTRACT. The bidder must provide the Unit Bid Price(s) for Part C – Bid Items, Quantities, and Prices. The Unit Price shall govern the total amount for each bid item. The total of the Base Bid plus Additional Item Bid shall be used for determining the sufficiency of the bid security.

Base Bid

The Base Bid includes Divisions 1, 2, and 3. Construction Plans – Sheets A.01-M.07, M.10-V.02.

DIVISION 1- WORK ON PRIVATE LANDS					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
101	36" DIA CL III RCP	1,800	LF	\$	\$
102	36" DIA CL III RCP PIPE, R-2 BEDDING	700	LF	\$	\$
103	30" DIA CL III RCP PIPE	6,134	LF	\$	\$
104	24" DIA CL III RCP PIPE	4,014	LF	\$	\$
105	18" DIA CL III RCP PIPE	4,400	LF	\$	\$
106	15" HDPE PIPE, DUAL WALL	2,282	LF	\$	\$
107	12" HDPE PIPE, DUAL WALL	1,707	LF	\$	\$
108	RCP REDUCER, 36" TO 30"	1	EA	\$	\$
109	RCP REDUCER, 30" TO 24"	1	EA	\$	\$
110	RCP REDUCER, 24" TO 18"	1	EA	\$	\$
111	RCP REDUCER, 18" TO 15"	1	EA	\$	\$
112	HDPE REDUCER, 15" TO 12"	1	EA	\$	\$
113	RCP WYE, 24" ON 30"	1	EA	\$	\$
114	RCP WYE, 15" ON 36"	1	EA	\$	\$
115	RCP TEE, 24" ON 24"	1	EA	\$	\$
116	INTAKE, 18" HD BAR GUARD	6	EA	\$	\$
117	INTAKE, 12" HD BAR GUARD	2	EA	\$	\$
118	LARGE TILE CONNECTION	19	EA	\$	\$
119	SMALL TILE CONNECTION	44	EA	\$	\$
120	CLASS E RIPRAP	50	TN	\$	\$
121	CLASS A ROADSTONE (DRIVEWAY)	120	TN	\$	\$
122	TRENCH BEDDING STONE	200	TN	\$	\$
123	TEMPORARY CONSTRUCTION ENTRANCE	2	EA	\$	\$
124	FENCE, REMOVE AND REINSTALL	4	EA	\$	\$
125	EXCAVATION, EXPLORATORY	18	HR	\$	\$
126	TILE WORK AREA COVER CROP SEEDING	54	AC	\$	\$
127	MOBILIZATION	1	LS	\$	\$
DIVISION 1 TOTAL BID					\$

DIVISION 2- WORK IN GREENE COUNTY ROAD RIGHT-OF-WAY					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
201	TRENCHLESS, STEEL CASING, 18" DIA. 0.312" MIN. THICKNESS	84	LF	\$	\$
202	30" DIA CL III RCP PIPE, R-2 BEDDING	66	LF	\$	\$
203	24" DIA CL III RCP PIPE, R-2 BEDDING	66	LF	\$	\$
204	18" DIA CL III RCP PIPE, R-2 BEDDING	16	LF	\$	\$
205	INTAKE, 12" HD BAR GUARD	6	EA	\$	\$
206	CLASS A ROADSTONE	48	TN	\$	\$
207	EXCAVATION, EXPLORATORY	2	HR	\$	\$
208	ROAD DITCH SEEDING	3	EA	\$	\$
209	TRAFFIC CONTROL	3	EA	\$	\$
210	MOBILIZATION	1	LS	\$	\$
DIVISION 2 TOTAL BID					\$

DIVISION 3- WORK IN IOWA DOT ROAD RIGHT-OF-WAY					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
301	TRENCHLESS, STEEL CASING, 24" DIA. 0.375" MIN. THICKNESS	84	LF	\$	\$
302	24" DIA CL III RCP PIPE, R-2 BEDDING	66	LF	\$	\$
303	INTAKE, 12" HD BAR GUARD	2	EA	\$	\$
304	EXCAVATION, EXPLORATORY	2	HR	\$	\$
305	ROAD DITCH SEEDING	1	EA	\$	\$
306	TRAFFIC CONTROL	1	EA	\$	\$
307	MOBILIZATION	1	LS	\$	\$
DIVISION 3 TOTAL BID					\$

BASE BID	
TOTAL BASE BID	\$

Alternate Base Bid

The Alternate Base Bid includes Divisions 1A, 2A, and 3A. Alternate Construction Plans- Sheets A.01A-V0.2A.

DIVISION 1A- WORK ON PRIVATE LANDS					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
101A	36" DIA HDPE DW PIPE, F-2 BEDDING	1,375	LF	\$	\$
102A	36" DIA PP PIPE, F-2 BEDDING	1,075	LF	\$	\$
103A	30" DIA HDPE DW PIPE, F-2 BEDDING	5,484	LF	\$	\$
104A	24" DIA HDPE DW PIPE, F-2 BEDDING	3,364	LF	\$	\$
105A	18" DIA HDPE DW PIPE, F-2 BEDDING	4,125	LF	\$	\$
106A	18" DIA. PP PIPE, F-2 BEDDING	275	LF	\$	\$
107A	15" HDPE PIPE, DUAL WALL	2,282	LF	\$	\$
108A	12" HDPE PIPE, DUAL WALL	1,707	LF	\$	\$
109A	HDPE DW REDUCER, 36" TO 30"	1	EA	\$	\$
110A	HDPE DW REDUCER, 30" TO 24"	1	EA	\$	\$
111A	HDPE DW REDUCER, 24" TO 18"	1	EA	\$	\$
112A	HDPE DW REDUCER, 18" TO 15"	1	EA	\$	\$
113A	HDPE DW REDUCER, 15" TO 12"	1	EA	\$	\$
114A	HDPE DW WYE, 24" ON 30"	1	EA	\$	\$
115A	HDPE DW WYE, 15" ON 36"	1	EA	\$	\$
116A	HDPE DW TEE, 24" ON 24"	1	EA	\$	\$
117A	INTAKE, 18" HD BAR GUARD	6	EA	\$	\$
118A	INTAKE, 12" HD BAR GUARD	2	EA	\$	\$
119A	LARGE TILE CONNECTION	19	EA	\$	\$
120A	SMALL TILE CONNECTION	44	EA	\$	\$
121A	CLASS E RIPRAP	50	TN	\$	\$
122A	CLASS A ROADSTONE (DRIVEWAY)	120	TN	\$	\$
123A	TRENCH BEDDING STONE	200	TN	\$	\$
124A	TEMPORARY CONSTRUCTION ENTRANCE	2	EA	\$	\$
125A	FENCE, REMOVE AND REINSTALL	4	EA	\$	\$
126A	EXCAVATION, EXPLORATORY	18	HR	\$	\$
127A	TILE WORK AREA COVER CROP SEEDING	54	AC	\$	\$
128A	MOBILIZATION	1	LS	\$	\$
DIVISION 1A TOTAL BID					\$

DIVISION 2A- WORK IN GREENE COUNTY ROAD RIGHT-OF-WAY					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
201A	TRENCHLESS, STEEL CASING, 18" DIA. 0.312" MIN. THICKNESS	84	LF	\$	\$
202A	30" DIA CL III RCP PIPE, R-2 BEDDING	66	LF	\$	\$
203A	24" DIA CL III RCP PIPE, R-2 BEDDING	66	LF	\$	\$
204A	18" DIA CL III RCP PIPE, R-2 BEDDING	16	LF	\$	\$
205A	INTAKE, 18" HD BAR GUARD	6	EA	\$	\$
206A	CLASS A ROADSTONE	48	TN	\$	\$
207A	EXCAVATION, EXPLORATORY	2	HR	\$	\$
208A	ROAD DITCH SEEDING	3	EA	\$	\$
209A	TRAFFIC CONTROL	3	EA	\$	\$
210A	MOBILIZATION	1	LS	\$	\$
DIVISION 2A TOTAL BID					\$

DIVISION 3A- WORK IN IOWA DOT ROAD RIGHT-OF-WAY					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
301A	TRENCHLESS, STEEL CASING, 24" DIA. 0.375" MIN. THICKNESS	84	LF	\$	\$
302A	24" DIA CL III RCP PIPE, R-2 BEDDING	66	LF	\$	\$
303A	INTAKE, 12" HD BAR GUARD	2	EA	\$	\$
304A	EXCAVATION, EXPLORATORY	2	HR	\$	\$
305A	ROAD DITCH SEEDING	1	EA	\$	\$
306A	TRAFFIC CONTROL	1	EA	\$	\$
307A	MOBILIZATION	1	LS	\$	\$
DIVISION 3A TOTAL BID					\$

ALTERNATE BASE BID	
TOTAL BASE BID	\$

Additional Item Bid

The Additional Item Bid includes Divisions 4 and 5. Construction Plans- Sheets M.08-M.09.

DIVISION 4- WORK ON PRIVATE LANDS					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
401	15” HDPE PIPE, DUAL WALL	3,754	LF	\$	\$
402	12” HDPE PIPE, DUAL WALL	65	LF	\$	\$
403	INTAKE, 12” HD BAR GUARD	2	EA	\$	\$
404	LARGE TILE CONNECTION	2	EA	\$	\$
405	SMALL TILE CONNECTION	9	EA	\$	\$
406	CLASS A ROADSTONE (DRIVEWAY)	24	TN	\$	\$
407	TEMPORARY CONSTRUCTION ENTRANCE	1	EA	\$	\$
408	EXCAVATION, EXPLORATORY	4	HR	\$	\$
409	TILE WORK AREA COVER CROP SEEDING	8	AC	\$	\$
410	MOBILIZATION	1	LS	\$	\$
DIVISION 4 TOTAL BID					\$

DIVISION 5- WORK IN GREENE COUNTY ROAD RIGHT-OF-WAY					
ITEM NO.	DESCRIPTION	ESTIMATED UNITS	UNIT	UNIT PRICE	AMOUNT
501	15” DIA CL III RCP PIPE, R-2 BEDDING	66	LF	\$	\$
502	INTAKE, 12” HD BAR GUARD	2	EA	\$	\$
503	CLASS A ROADSTONE	24	TN	\$	\$
504	EXCAVATION, EXPLORATORY	2	HR	\$	\$
505	ROAD DITCH SEEDING	1	EA	\$	\$
506	TRAFFIC CONTROL	1	EA	\$	\$
507	MOBILIZATION	1	LS	\$	\$
DIVISION 5 TOTAL BID					\$

ADDITIONAL ITEM BID	
TOTAL ADDITIONAL ITEM BID	\$

NOTE: Due to the inherent variability of Drainage District construction, the quantities provided herein are estimates for bidding purposes only. Final quantities and payment will be based on actual measurements and conditions encountered in the field. Quantity changes that amount to 20% or less of the amount bid shall not affect the unit bid price.

Bid Structure and Award

Bidders must submit prices for the Base Bid and the Additional Item Bid. Submission of a price for the Alternate Base Bid is optional.

The Base Bid represents the work using the specified pipe material. The Alternate Base Bid represents the same scope of work using an approved alternate pipe material. The Additional Item Bid consists of an additional lateral tile, which may or may not be included in the final award.

Only one contractor will be awarded this project.

The Owner will determine the award based on the lowest responsible total price, considering any of the following combinations, at the Owner's discretion:

- Base Bid only
- Base Bid and Additional Item Bid
- Alternate Base Bid only
- Alternate Base Bid and Additional Item Bid

The Owner reserves the right to:

- Award the Base Bid even if the price is higher than the Alternate Base Bid; and
- Include or exclude the Additional Item Bid from the final contract.

BID BOND

KNOW ALL BY THESE PRESENTS:

That we, _____, as Principal, and _____, as Surety, are held and firmly bound unto _____, as Obligee, (hereinafter referred to as “the Jurisdiction”), in the penal sum of _____ dollars (\$_____), lawful money of the United States, for which payment said Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas the Principal has submitted to the Jurisdiction a certain proposal, in a separate envelope, and hereby made a part hereof, to enter into a contract in writing, for the following described improvements;

General Nature of Public Improvement: The project consists of improvements to the Drainage District No. 20 tile system. Work includes installation of approximately 21,389 linear feet of drainage pipe ranging in diameter from 12 inches to 36 inches, two road borings, and three open-cut road crossings. The project shall include all labor, equipment, materials, and incidental items necessary to complete the work in accordance with the plans and specifications.

An alternate bid (alternate plans included) will be considered for the use of dual-wall HDPE pipe in lieu of reinforced concrete pipe (RCP). An additional bid includes the installation of approximately 3,885 linear feet of drainage pipe ranging in diameter from 12 inches to 15 inches.

The Surety hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Jurisdiction may accept such bid or execute such Contract; and said Surety does hereby waive notice of any such extension.

In the event that any actions or proceedings are initiated with respect to this Bond, the parties agree that the venue thereof shall be Greene County, State of Iowa. If legal action is required by the Jurisdiction against the Surety or Principal to enforce the provisions of the bond or to collect the monetary obligation incurring to the benefit of the Jurisdiction, the Surety or Principal agrees to pay the Jurisdiction all damages, costs, and attorney fees incurred by enforcing any of the provisions of this Bond. All rights, powers, and remedies of the Jurisdiction hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers and remedies given to the Jurisdiction, by law. The Jurisdiction may proceed against Surety for any amount guaranteed hereunder whether action is brought against Principal or whether Principal is joined in any such action or actions or not.

NOW, THEREFORE, if said proposal by the Principal be accepted, and the Principal shall enter into a contract with Jurisdiction in accordance with the terms of such proposal, including the provision of insurance and of a bond as may be specified in the contract documents, with good and sufficient surety for the faithful performance of such contract, for the prompt payment of labor and material furnished in the prosecution thereof, and for the maintenance of said improvements as may be required therein, then this obligation shall become null and void; otherwise, the Principal shall pay to the Jurisdiction the full amount of the bid bond, together with court costs, attorney’s fees, and any other expense of recovery.

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

SURETY:

PRINCIPAL:

By _____
 Surety Company

 Signature Attorney-in-Fact/Officer

 Printed Name of Attorney-in-Fact/Officer

 Company Name

 Company Address

 City, State, Zip Code

 Company Telephone Number

By _____
 Bidder

 Signature

 Printed Name

 Title

 Address

 City, State, Zip Code

 Telephone Number

NOTE: All signatures on this bid bond must be original signatures in ink; copies, facsimile, or electronic signatures will not be accepted. This bond must be sealed with the Surety’s raised, embossing seal. The Certificate or Power of Attorney accompanying this bond must be valid on its face and sealed with the Surety’s raised, embossing seal.

NOTICE OF AWARD

To:

[Contractor Name]

[Contractor Address]

Re:

[Project Name]

[Project No.]

Dear Contractor:

The Board of Trustees has completed its review of bids received for the above-referenced public improvement project. Based on this review, your proposal has been determined to be the lowest responsive and responsible bid and is hereby accepted.

The total contract amount is \$ _____.

This Notice of Award authorizes you to proceed with execution of the formal contract. Within fifteen (15) calendar days of receipt of this notice, you are required to return the executed contract and submit all documents required by the bidding and contract documents, including performance and payment bonds and proof of insurance.

If the required documents are not received within the time stated, the Owner may withdraw this award, retain the bid security as allowed by law, and proceed with award of the project to another bidder or take other action permitted under Iowa law.

Enclosed are three (3) copies of the Contract for execution. Please return all signed copies along with the required bonds, insurance certificate, and a list of subcontractors. The subcontractor list shall include the company name, address, telephone number, and federal tax identification number, as applicable for public contracting and tax purposes.

If you have questions regarding this Notice of Award or the contract requirements, please contact AgriVia at 712-250-4318 or jacob.agrivia@gmail.com

Dated this ____ day of _____, 2026.

CONTRACT

THIS CONTRACT, made and entered into at _____ this _____ day of 2026, by and between the Drainage District No. 20, Greene County, Iowa hereinafter called the "Jurisdiction," and _____ hereinafter called the "Contractor."

WITNESSETH:

The Contractor hereby agrees to complete the work comprising the below referenced improvement as specified in the contract documents, which are officially on file with the Jurisdiction, in the office of the Greene County Auditor’s Office. This contract includes all contract documents. The work under this contract shall be constructed in accordance with the SUDAS Standard Specifications, 2026 Edition, and as further modified by the supplemental specifications and special provisions included in said contract documents, and the Contract Attachment - Item 1: General, which is attached hereto. The Contractor further agrees to complete the work in strict accordance with said contract documents, and to guarantee the work as required by law, for the time required in said contract documents, after its acceptance by the Jurisdiction.

This contract is awarded and executed for completion of the work specified in the contract documents for the bid prices shown on the Contract Attachment - Item 2: Bid Items, Quantities, and Prices, which were proposed by the Contractor in its proposal submitted in accordance with the Notice to Bidders and Notice of Public Hearing for the following described improvements:

General Nature of Public Improvement: To be updated as determined at time of award.

The Contractor agrees to perform said work for and in consideration of the Jurisdiction’s payment of the bid amount of _____ dollars (\$_____) which amount shall constitute the required amount of the performance, maintenance, and payment bond. The Contractor hereby agrees to commence work under this contract on or before a date to be specified in a written notice to proceed by the Jurisdiction and to fully complete the project no later than _____; and to pay liquidated damages for noncompliance with said completion provisions at the rate of Five Hundred dollars (\$500) for each calendar day thereafter that the work remains incomplete.

IN WITNESS WHEREOF, the Parties hereto have executed this instrument, in triplicate on the date first shown written.

JURISDICTION

CONTRACTOR

By _____
County Board Chairman

Contractor

(Seal)
ATTEST:

By _____
Signature

County Auditor

Title

Street Address

City, State, Zip Code

Telephone

CONTRACTOR PUBLIC REGISTRATION INFORMATION To Be Provided By:

1. All Contractors: The Contractor shall enter its Public Registration Number ____ - ____ issued by the Iowa Commissioner of Labor pursuant to Section 91C.5 of the Iowa Code.
2. Out-of-State Contractors:
 - a. Pursuant to Section 91C.7 of the Iowa Code, an out-of-state contractor, before commencing a contract in excess of five thousand dollars in value in Iowa, shall file a bond with the division of labor services of the department of workforce development. It is the contractor’s responsibility to comply with said Section 91C.7 before commencing this work.
 - b. Prior to entering into contract, the designated low bidder, if it is a corporation organized under the laws of a state other than Iowa, shall file with the Engineer a certificate from the Secretary of the State of Iowa showing that it has complied with all the provisions of Chapter 490 of the Iowa Code, or as amended, governing foreign corporations.

NOTE: All signatures on this contract must be original signatures in ink; copies, facsimile, or electronic signatures will not be accepted.

CORPORATE ACKNOWLEDGMENT

State of _____)
) SS
_____ County)

On this ____ day of _____, 20____, before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____ and _____, to me known, who, being by me duly sworn, did say that they are the _____, and _____, respectively, of the corporation executing the foregoing instrument; that (no seal has been procured by) (the seal affixed thereto is the seal of) the corporation; that said instrument was signed (and sealed) on behalf of the corporation by authority of this Board of Directors; that _____ and _____ acknowledged the execution of the instrument to be the voluntary act and deed of the corporation, by it and by them voluntarily executed.

Notary Public in and for the State of _____
My commission expires _____, 20 _____

PARTNERSHIP ACKNOWLEDGMENT

State of _____)
) SS
_____ County)

On this ____ day of _____, 20 ____, before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____ to me personally known, who being by me duly sworn, did say that the person is one of the partners of _____, a partnership, and that the instrument was signed on behalf of the partnership by authority of the partners and the partner acknowledged the execution of the instrument to be the voluntary act and deed of the partnership by it and by the partner voluntarily executed.

Notary Public in and for the State of _____
My commission expires _____, 20 _____

INDIVIDUAL ACKNOWLEDGMENT

State of _____)
) SS
_____ County)

On this ____ day of _____, 20____, before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____ and _____, to me known to be the identical person(s) named in and who executed the foregoing instrument, and acknowledged that (he) (she) (they) executed the instrument as (his) (her) (their) voluntary act and deed.

Notary Public in and for the State of _____
My commission expires _____, 20 _____

LIMITED LIABILITY COMPANY ACKNOWLEDGMENT

State of _____)
) SS
_____ County)

On this ____ day of _____, 20____, before me a Notary Public in and for said county, personally appeared _____, to me personally known, who being by me duly sworn did say that person is _____ of said _____, that (the seal affixed to said instrument is the seal of said OR no seal has been procured by the said) _____, and that said instrument was signed and sealed on behalf of the said _____, by authority of its managers and the said _____ acknowledged the execution of said instrument to be the voluntary act and deed of said _____, by it voluntarily executed.

Notary Public in and for the State of _____
My commission expires _____, 20 _____

CONTRACT ATTACHMENT: ITEM 1 – GENERAL- None

CONTRACT ATTACHMENT: ITEM 2 - BID ITEMS AND QUANTITIES

This contract is awarded and executed for completion of the work specified in the contract documents for the bid prices tabulated below as proposed by the Contractor in its proposal submitted in accordance with notice to bidders and notice of public hearing. All quantities are subject to revision by the Jurisdiction. Quantity changes that amount to 20% or less of the amount bid shall not affect the unit bid price.

To be updated as determined at time of award.

SURETY BOND NO. _____

PERFORMANCE, PAYMENT, AND MAINTENANCE BOND

KNOW ALL BY THESE PRESENTS:

That we, _____, as Principal (hereinafter the “Contractor” or “Principal” and _____, as Surety are held and firmly bound unto _____, as Oblige (hereinafter referred to as “the Jurisdiction”), and to all persons who may be injured by any breach of any of the conditions of this Bond in the penal sum of _____ dollars(\$ _____), lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, legal representatives and assigns, jointly or severally, firmly by these presents.

The conditions of the above obligations are such that whereas said Contractor entered into a contract with the Jurisdiction, bearing date the _____ day of _____, 2026, hereinafter the “Contract”) wherein said Contractor undertakes and agrees to construct the following described improvements:

General Nature of Public Improvement: To be updated as determined at time of award.

and to faithfully perform all the terms and requirements of said Contract within the time therein specified, in a good and workmanlike manner, and in accordance with the Contract Documents. Provided, however, that one year after the date of acceptance as complete of the work under the above referenced Contract, the maintenance portion of this Bond shall continue in force but the penal sum for the remaining maintenance period.

It is expressly understood and agreed by the Contractor and Surety in this bond that the following provisions are a part of this Bond and are binding upon said Contractor and Surety, to-wit:

1. **PERFORMANCE:** The Contractor shall well and faithfully observe, perform, fulfill, and abide by each and every covenant, condition, and part of said Contract and Contract Documents, by reference made a part hereof, for the above referenced improvements, and shall indemnify and save harmless the Jurisdiction from all outlay and expense incurred by the Jurisdiction by reason of the Contractor’s default of failure to perform as required. The Contractor shall also be responsible for the default or failure to perform as required under the Contract and Contract Documents by all its subcontractors, suppliers, agents, or employees furnishing materials or providing labor in the performance of the Contract.
2. **PAYMENT:** The Contractor and the Surety on this Bond hereby agreed to pay all just claims submitted by persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the performance of the Contract on account of which this Bond is given, including but not limited to claims for all amounts due for labor, materials, lubricants, oil, gasoline, repairs on machinery, equipment, and tools, consumed or used by the Contractor or any subcontractor, wherein the same are not satisfied out of the portion of the contract price the Jurisdiction is required to retain until completion of the improvement, but the Contractor and Surety shall not be liable to said persons, firms, or corporations unless the claims of said claimants against said portion of the contract price shall have been established as provided by law. The Contractor and Surety hereby bind themselves to the obligations and conditions set forth in Chapter 573 of the Iowa Code, which by this reference is made a part hereof as though fully set out herein.
3. **MAINTENANCE:** The Contractor and the Surety on this Bond hereby agree, at their own expense:

- a. To remedy any and all defects that may develop in or result from all work except new paving to be performed under the Contract within the period of 1 year from the date of acceptance of the work under the Contract, by reason of defects in workmanship or materials used in construction of said work; and
 - b. To keep all work in continuous good repair; and
 - c. To pay the Jurisdiction's reasonable costs of monitoring and inspection to assure that any defects are remedied, and to repay the Jurisdiction all outlay and expense incurred as a result of Contractor's and Surety's failure to remedy any defect as required by this section.
 - d. Maintenance bond requirements shall not apply to the following: work that is not permanently incorporated into the project, pavement markings, seeding, sodding, and plant material and planting.
4. GENERAL: Every Surety on this Bond shall be deemed and held bound, any contract to the contrary notwithstanding, to the following provisions:
- a. To consent without notice to any extension of time to the Contractor in which to perform the Contract;
 - b. To consent without notice to any change in the Contract or Contract Documents, which thereby increases the total contract price and the penal sum of this bond, provided that all such changes do not, in the aggregate, involve an increase of more than 20% of the total contract price, and that this bond shall then be released as to such excess increase; and
 - c. To consent without notice that this Bond shall remain in full force and effect until the Contract is completed, whether completed within the specified contract period, within an extension thereof, or within a period of time after the contract period has elapsed and the liquidated damage penalty is being charged against the Contractor.
 - d. That no provision of this Bond or of any other contract shall be valid that limits to less than five years after the acceptance of the work under the Contract the right to sue on this Bond.
 - e. That as used herein, the phrase "all outlay and expense" is not to be limited in any way, but shall include the actual and reasonable costs and expenses incurred by the Jurisdiction including interest, benefits, and overhead where applicable. Accordingly, "all outlay and expense" would include but not be limited to all contract or employee expense, all equipment usage or rental, materials, testing, outside experts, attorneys' fees (including overhead expenses of the Jurisdiction's staff attorneys), and all costs and expenses of litigation as they are incurred by the Jurisdiction. It is intended the Contractor and Surety will defend and indemnify the Jurisdiction on all claims made against the Jurisdiction on account of Contractor's failure to perform as required in the Contract and Contract Documents, that all agreements and promises set forth in the Contract and Contract Documents, in approved change orders, and in this Bond will be fulfilled, and that the Jurisdiction will be fully indemnified so that it will be put into the position it would have been in had the Contract been performed in the first instance as required.

In the event the Jurisdiction incurs any "outlay and expense" in defending itself against any claim as to which the Contractor or Surety should have provided the defense, or in the enforcement of the promises given by the Contractor in the Contract, Contract Documents, or approved change orders, or in the enforcement of the promises

given by the Contractor and Surety in this Bond, the Contractor and Surety agree that they will make the Jurisdiction whole for all such outlay and expense, provided that the Surety's obligation under this bond shall not exceed 125% of the penal sum of this bond.

In the event that any actions or proceedings are initiated regarding this Bond, the parties agree that the venue thereof shall be Greene County, State of Iowa. If legal action is required by the Jurisdiction to enforce the provisions of this Bond or to collect the monetary obligation incurring to the benefit of the Jurisdiction, the Contractor and the Surety agree, jointly, and severally, to pay the Jurisdiction all outlay and expense incurred therefor by the Jurisdiction. All rights, powers, and remedies of the Jurisdiction hereunder shall be cumulative and not alternative and shall be in addition to all rights, powers, and remedies given to the Jurisdiction, by law. The Jurisdiction may proceed against surety for any amount guaranteed hereunder whether action is brought against the Contractor or whether Contractor is joined in any such action(s) or not.

NOW THEREFORE, the condition of this obligation is such that if said Principal shall faithfully perform all the promises of the Principal, as set forth and provided in the Contract, in the Contract Documents, and in this Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

When a word, term, or phrase is used in this Bond, it shall be interpreted or construed first as defined in this Bond, the Contract, or the Contract Documents; second, if not defined in the Bond, Contract, or Contract Documents, it shall be interpreted or construed as defined in applicable provisions of the Iowa Code; third, if not defined in the Iowa Code, it shall be interpreted or construed according to its generally accepted meaning in the construction industry; and fourth, if it has no generally accepted meaning in the construction industry, it shall be interpreted or construed according to its common or customary usage.

Failure to specify or particularize shall not exclude terms or provisions not mentioned and shall not limit liability hereunder. The Contract and Contract Documents are hereby made a part of this Bond.

PRINCIPAL:

SURETY:

 Contractor

By _____
 Signature

 Title

 Surety Company

By _____
 Signature Attorney-in-Fact Officer

 Printed Name of Attorney-in-Fact Officer

FORM APPROVED BY:

 Attorney for Jurisdiction

 Company Name

 Company Address

 City, State, Zip Code

 Company Telephone Number

NOTE:

1. All signatures on this performance, payment, and maintenance bond must be original signatures in ink; copies, facsimile, or electronic signatures will not be accepted.
2. This bond must be sealed with the Surety's raised, embossing seal.
3. The Certificate or Power of Attorney accompanying this bond must be valid on its face and sealed with the Surety's raised, embossing seal.
4. The name and signature of the Surety's Attorney-in-Fact/Officer entered on this bond must be exactly as listed on the Certificate or Power of Attorney accompanying this bond.

NOTICE TO PROCEED

To:

[Contractor Name]

[Contractor Address]

Re:

[Project Name]

[Project No.]

Dear Contractor:

This letter serves as formal Notice to Proceed for the above-referenced public improvement project.

The Owner hereby authorizes you to begin work in accordance with the terms of the Contract and related contract documents dated _____. The Contract Time shall commence on the date of this Notice to Proceed, unless otherwise stated in the Contract Documents.

All work shall be performed in compliance with the Agreement, plans, specifications, and applicable laws and regulations. The project shall be substantially and finally completed within the time limits set forth in the Contract.

If you have questions regarding this Notice to Proceed or the contract requirements, please contact AgriVia at 712-250-4318 or jacob.agrivia@gmail.com

Dated this ____ day of _____, 2026.

Supplementary Specifications

Drainage District No. 20

Tile Improvements

Greene County, Iowa
2026

GENERAL CONDITIONS

The General Conditions for this project shall be Division 1 - General Provisions and Covenants of the Iowa Statewide Urban Design and Specifications (SUDAS), 2026 Edition.

These standard specifications are incorporated herein by reference and are not physically attached to this Project Manual. Bidders are responsible for obtaining and familiarizing themselves with the SUDAS Standard Specifications, 2026 Edition.

The General Conditions are amended and supplemented by the Supplementary Conditions contained in this Project Manual. In case of conflict between the General Conditions and the Supplementary Conditions / Special Provisions, the Supplementary Conditions / Special Provisions shall govern.

SUPPLEMENTARY CONDITIONS

These Supplementary Specifications amend and supplement the SUDAS Standard Specifications, 2026 Edition (hereinafter "SUDAS"). Where provisions of these Supplementary Specifications conflict with SUDAS, these Supplementary Specifications shall govern.

Division 1: General Provisions and Covenants

Section 1020 - Proposal Requirements and Conditions

Supplement Section 1020, 1.09 "Preparation of the Proposal" by adding the following:

- B. A computer-generated unit price attachment may be submitted by the Bidder as specified in SUDAS Section 1020, 1.09.B

Section 1040 - Scope of Work

Amend Section 1040, 1.09 "Changed Site Conditions" by adding the following:

- C. **Unknown Subsurface Tile:** The presence of unknown, unmapped, or incorrectly located subsurface private or district tile lines shall not be considered a "latent or subsurface condition" differing materially from those indicated. Such encounters shall be considered incidental to the work, and no additional compensation will be granted for their discovery or for time lost during their repair.

Section 1050 - Control of Work

Amend Section 1050, 1.10C "Line and Grade Stakes" by adding the following:

- C. The cost of correcting or replacing such stakes will be charged to the Contractor at a fixed rate of \$200.00 per hour, including travel time. This amount will be deducted from any monies due to the Contractor.

Section 1060 - Control of Materials

Amend Section 1060, 1.03 "Samples and Testing" by adding the following:

- D. **Cost of Testing:** All material testing required by the contract documents, including but not limited to gradation, compaction, and material certifications, shall be considered incidental and paid for by the Contractor. The Contractor shall retain an independent testing laboratory approved by the Engineer and shall provide all test results to the Engineer.
- E. **Retesting:** If test results do not meet the specifications, the Contractor shall make the necessary corrections and pay all costs for retesting to demonstrate compliance.

Section 1070 - Legal Relations and Responsibility to the Public

Amend Section 1070, 1.03 "Permits and Licenses" by adding the following:

- A. **Permits Obtained by Owner:** The Owner (Drainage District) will be responsible for obtaining and paying for the primary environmental and jurisdictional permits necessary for the project footprint, typically including:
 - a. Iowa DNR Section 401 Water Quality Certification / US Army Corps of Engineers Section 404 Permit (if applicable).
 - b. Iowa DNR NPDES General Permit No. 2 for Storm Water Discharge (if applicable). Contractor remains responsible for SWPPP implementation and updates (if applicable).
 - c. Any necessary Drainage District establishment or modification orders.

- B. Permits Obtained by Contractor:** The Contractor shall be responsible for obtaining and paying for all other permits, licenses, and fees required for the execution of the work, including but not limited to:
- County or IDOT permits for work within road rights-of-way (e.g., utility, entrance, oversize/overweight load permits). The cost for jurisdictional permits required solely for access or construction methods chosen by the contractor shall be borne by the contractor.
 - Railroad crossing permits or flagger coordination fees (unless explicitly stated otherwise).
 - Local building or miscellaneous permits.
 - Contractor and vehicle licensing.

Amend Section 1070, 2.08 "Protection of Property" by adding the following:

- D. Damage Outside Work Area:** The Contractor shall confine all operations, equipment, and material storage to the designated Work Area. Any damage caused by the Contractor's operations to crops, fences, private tile, or other private property outside the designated Work Area shall be the sole responsibility of the Contractor. Crop damages outside the Work Area will be calculated the same way as crop damages within the Work Area; however, the amount to be paid will be deducted from the contractor's final payment.
- E. Damage Inside Work Area:** It is understood that construction activities will cause damage to crops, fences, and other property within the designated Work Area. The district will compensate landowners for damage within the Work Area including damaged crop, and compaction damages. Contractor shall be responsible for excessive damages due to failure to follow specifications or best practices such as but not limited to erosion, rocks, and excessive soil mixing.

Section 1080 - Prosecution and Progress

Amend Section 1080, 1.03B "Work Progress and Schedule" deleting it in its entirety and replacing it with the following:

- B.** At or before the preconstruction meeting, the Contractor shall prepare and submit to the Engineer for approval a progress schedule that will ensure the completion of the project within the time specified. Adequate equipment and forces shall be made available by the Contractor to start work to completion according to schedule and within the time specified. Work shall be completed in each Township Mile Section before starting work in the next Township Mile Section. Work shall progress so the entire work area is not all disturbed and unfinished at the same time

Amend Section 1080, 1.07 "Work on Sundays or Legal Holidays" by deleting it in its entirety and replacing it with the following:

Work is permitted on Sundays and holidays. However, if the Contractor's operations on these days will require inspection by the Engineer, the Contractor shall provide the Engineer with a minimum 48-hour notice.

Amend Section 1080, 1.08 "Temporary Suspension of Working Days" by adding the following:

In addition to the reasons stated, the Engineer shall have the authority to order a temporary suspension of work, wholly or in part, due to saturated soil conditions or to accommodate essential farming operations (such as planting or harvesting) by affected landowners. Such suspensions, if they affect the controlling item of work, will not be charged as working days.

Section 1090 - Measurement and Payment

Amend Section 1090, 1.05B "Progress Payments" deleting it in its entirety and replacing it with the following:

- B. Retainage:** The Jurisdiction shall retain from each monthly progress payment 10% of the amount determined to be due according to the estimate of the Engineer.

Amend Section 1090, 1.06 "Payment of Retainage" and 1.08 "Acceptance and Final Payment" by deleting them in their entirety and replacing them with the following:

1.08 FINAL ACCEPTANCE AND PAYMENT

- A. Governing Authority:** The procedures for final acceptance and the release of retained funds shall be governed by Iowa Code Sections 468.100 through 468.103, which shall supersede any conflicting provisions in the contract documents.
- B. Acceptance Process:** Upon certification by the Engineer that the work is complete, the Board shall hold a public hearing on the acceptance of the work as required by Iowa Code 468.101.
- C. Release of Payment:** Final payment and the release of retained funds shall not be made until at least thirty (30) days after the Board's formal acceptance of the work by resolution. No portion of the retainage shall be released early or upon substantial completion.
- D. Claims:** Any claims for damages must be filed with the Board at or before the completion hearing. The Board may pay for verified damages resulting from Contractor negligence from the funds due to the Contractor.
- E. Form of Payment:** Payment will be made against the funds of Drainage District No. 20 held by the County Treasurer. Payment will typically be issued in the form of Drainage Warrants as provided by Iowa Code Chapter 468. However, at the County's discretion, payment may be issued via county check drawn against said fund. If payment is made by warrant and funds are not sufficient for immediate payment upon presentation, warrants shall be stamped 'not paid for want of funds' by the Treasurer and shall thereafter bear interest at a rate fixed by the Board in accordance with Iowa Code Chapter 468.

Add new Section 1.09 – Incidental Work Items

1.09 INCIDENTAL WORK ITEMS

The following work items are considered incidental to the project unless there is a specific bid item for the work. Their costs shall be included in unit prices developed by the Bidder. This list is intended to assist the Contractor in delineating incidental work, but is not all inclusive:

A. Earthwork and Site Preparation:

- a) Stripping, stockpiling and replacement of topsoil. Minimum of 12". Includes picking up rocks 4" and larger, and fine grading.
- b) Discing the entire Work Area prior to cover crop seeding following leveling, picking up and disposal of all rock 4" and larger, brush and other debris and releveling as necessary.
- c) Disposing of construction rubble, concrete, asphalt, trees, brush and all other excess excavated material.

- d) Cleanup of site and disposal of construction materials upon completion of project.

B. Pipe Installation:

- a) Placing approved engineering fabric completely around each joint in the RCP pipe, overlapping sufficiently to avoid movement while backfilling.
- b) Plugs for lift holes and joint connectors on first three pipes.
- c) Pipe elbows for flexible pipe (HDPE/PP).
- d) Plastic pipe collars.
- e) Concrete collars at locations where pipe size or material changes.
- f) Excavating for bells on any pipe with bell joints.
- g) Factory caps on tile extensions and plugging of downstream side of tile where connections are made.
- h) Drainage tile installed necessary to make the tile connection, up to 25 LF per connection. Any additional length needed per engineer approval require a GPS-located and time-stamped photo and log to receive payment.
- i) Concrete fillets in junction boxes and intake, and any other concrete required for installation.
- j) Deflection testing and videoing on HDPE/PP pipe.

C. Bedding, Backfill:

- a) Installing 3 tons crushed stone around all tile connections.
- b) Installing 3 tons crushed stone around all pipe structures, such as elbows, tees, wyes, intakes, etc.
- c) Providing crushed stone bedding for polypropylene elbows as shown in SUDAS Figure 3010.103, Class F-2.
- d) Engineering fabric beneath riprap.
- e) Compacting backfill material.
- f) Trench backfill consolidation (for drainage district tile trenches in agricultural areas).

D. Documentation & Submittals:

- a) Providing the Engineer with set of drawings suitably marked to show any deviations from the original set of drawings.
- b) Providing a time-stamped and GPS-located photograph to the Engineer showing each tile connection before it is backfilled.
- c) Providing a time-stamped and GPS-located photograph to the Engineer showing every 100 LF of HDPE/PP haunch support.
- d) Providing the Engineer all rock tickets for all rock used including where rock is listed as incidental.
- e) Providing the Engineer with the GPS location of each tile connection and the size and material of each tile connected, including the approximate angle of the tile being connected compared to the new pipe.

E. Traffic Control & Site Access:

- a) Removal and replacement of street signs, fences, etc.
- b) Installing and maintaining all signing, including road closures.
- c) Flagmen for traffic control and notifications to adjoining property owners of temporary road closures.
- d) Coordination time while shutting down utility services or temporarily closing a portion of any street or driveway.

F. Erosion & Environmental Controls:

- a) Erosion and Pollution Control following best management practices to minimize erosion and pollution.
Any specific erosion control measures such as silt fence shall be paid as bid item.
- b) Maintenance of erosion control measures, including silt removal.
- c) Dewatering unless directed by the Engineer.

G. Coordination & Project Management:

- a) Coordination and cooperation with affected property owners, County, utility companies, other contractors, and with other projects in the area.
- b) Completing a One Call request. Protection of existing utilities.
- c) Temporary sheeting and shoring.
- d) Construction staging and phasing.

Division 2 – Earthwork, Subgrade, and Subbase

Section 2010 – Earthwork, Subgrade, and Subbase

Amend SUDAS 2010, 1.08, D (Topsoil) by deleting it in its entirety and replacing it with the following:

- D. **Topsoil:** This work shall be considered incidental to other contract items, and no separate payment will be made. This incidental work includes stripping, stockpiling, and replacing the top 12” of soil or A-horizon soil, whichever is deeper.

Add new subsection SUDAS 2010, 1.08, N:

N. Open Ditch Excavation (Class 10 or 13):

1. **Measurement:** Measurement will be in cubic yards, as specified for Class 10 or Class 13 Excavation.
2. **Payment:** Payment will be at the unit price per cubic yard. No actual measurement will be taken. Quantity will be as shown on plans.
3. **Includes:** Unit price includes, but is not limited to, excavation as specified in Section 2010, 3.03 as amended; placement of spoil material adjacent to the ditch; disposal of unsuitable material (unless paid separately); shaping, trimming; and incidental removal of obstructions such as trash, glacial rocks, and debris. Construction of access roads, overhaul, over-excavation, removal of minor ditch bank sloughs, excavation to allow for placement of revetment, patrolling for sediment and removal in reaches previously cleaned, and finish shaping and sloping of the channel. Includes furnishing all equipment, tools, labor and incidentals necessary to complete the work.

Add new subsection SUDAS 2010, 1.08, O:

O. Spoil Leveling:

1. **Measurement:** Measurement will be in stations (STA) along the centerline of the excavated open ditch where spoil has been placed and leveled.
2. **Payment:** Payment will be at the unit price per station.
3. **Includes:** Unit price includes, but is not limited to, all labor and equipment required to spread, shape, allow for drying, track, finish, and blend the spoil material as specified in Section 2010, 3.04 as amended.

Add new subsection SUDAS 2010, 1.08, P:

P. Spoil Tillage and Rock Pick Up:

1. **Measurement:** Measurement will be in stations (STA) along the centerline of the excavated open ditch where spoil has been tilled and rocks picked up.
2. **Payment:** Payment will be at the unit price per station.

3. **Includes:** Unit price includes, but is not limited to, all labor and equipment required to deep till the spoil material a minimum of 6" deep two (2) times, and two (2) passes of picking up all rocks larger than a softball within the Work Area. Contractor shall call engineer before and after rock pick up for inspection. Rocks may be stockpiled and used as riprap, buried or the contractor may haul off site at their discretion. Any rocks to be used as riprap will require the engineer to make a visual inspection of quality and quantity. Engineer may reject any rocks he deems unfit for riprap. Stockpiled rocks used as riprap will be paid under riprap bid item.

Add new subsection SUDAS 2010, 1.08, Q:

Q. Excavation, Exploratory:

1. **Measurement:** Measurement will be in hours per tile locating crew.
2. **Payment:** Payment will be at the unit price per hour.
3. **Includes:** Unit price includes, but is not limited to, all labor and equipment required to excavate tile or unknown underground conditions, check flowline and condition, and mobilize to and from various exploratory sites as directed by Engineer. Includes a crew consisting of an excavator, and trench man as needed to probe for tile. Includes repairing any tile broken during the process as incidental.

Amend SUDAS 2010, 3.01, D (Disposal) by adding the following:

- D. **Disposal:** Materials from clearing and grubbing, including trees, brush, and rubbish, may be disposed of by burial within the project Work Area, provided a minimum of four (4) feet of soil cover is achieved over the buried material. Large woody debris (defined as material >6 inches in diameter) shall be burned prior to burial. Burning operations must comply with all state and local regulations and safety requirements. The Contractor is responsible for obtaining any necessary burn permits and must notify the local fire chief prior to commencing burning. Unattended burning is prohibited. Rocks generated from clearing and grubbing may be salvaged by the Contractor, and stockpiled. Spoil and debris shall be managed to prevent material from washing or blowing back into cleared areas or waterways.

Amend SUDAS 2010, 3.02, A (Stripping and Salvaging) by adding the following:

All topsoil stripping, stockpiling, and replacement shall be considered incidental to other items of work. Topsoil shall be stripped and stockpiled separately from other excavated materials.

Supplement SUDAS 2010, 3.03 (Excavation) by adding the following:

- J. **Open Ditch Excavation:** For open ditch excavation, work shall generally begin at the downstream end of the designated ditch segment and proceed upstream from both sides of the open ditch, unless otherwise approved by the Engineer. Excavated material (spoil) shall be placed along both top bank(s) as designated on the plans or directed by the Engineer, taking care to prevent material from spilling or washing back into the excavated channel prior to drying and leveling.

Amend SUDAS 2010, 3.04 (Embankment Construction) by replacing paragraphs D and E with the following:

- D. **Spoil Leveling:** Spoil material placed along the top bank(s) shall be spread and leveled to achieve a reasonably uniform grade and slope, free of abrupt mounds or depressions, promoting stability and future maintenance. Spoil material shall be allowed to dry sufficiently (as determined by the Engineer) before final leveling operations to prevent sloughing or washing back into the ditch.
- E. **Compaction:** Compaction of spoil material shall be achieved primarily by tracking the material with equipment treads/tires during the leveling process. Specific moisture conditioning and density testing (e.g., Proctor testing, nuclear density testing) are waived for spoil leveling unless specifically noted on the plans (e.g., for embankments, under roadways, or structures). The intent is to place the material without significant voids. The edges of the leveled spoil banks shall be blended into the adjacent ground to provide a smooth transition.

Division 3 – Trench and Trenchless Construction

Section 3010 – Trench Excavation and Backfill

Amend SUDAS 3010, 1.08, A (Incidental Items) by deleting item 8 and adding item 10:

8. *(Deleted)*

10. Stripping, stockpiling, and replacing topsoil (as specified in Section 3010, 3.01, B as amended).

Add new subsection SUDAS 3010, 2.02, E:

- E. **Native Soil Bedding (Shaped Earth Bedding / 'Spoon Bed')**: For Reinforced Concrete Pipe (RCP) installations, unless otherwise directed by the Engineer due to unsuitable soil conditions, the primary bedding shall consist of the excavated native soil, carefully shaped to match the bottom curvature of the pipe barrel ('spoon bed'), providing uniform support. Class I crushed stone bedding (2.02, A) is generally not required for RCP unless trench foundation stabilization is necessary.

Amend SUDAS 3010, 3.01, B (Topsoil) by replacing it with the following:

- B. Remove topsoil to a minimum depth of 12 inches, or the depth of the A-horizon if greater, and stockpile separately from subsoil excavation. This work is incidental to the pipe installation.

Amend SUDAS 3010, 3.05 (Pipe Bedding and Backfill) by replacing paragraphs B, C, D, and E entirely with the following:

B. Pipe Bedding:

1. **Reinforced Concrete Pipe (RCP)**: Unless unsuitable trench bottom conditions are encountered and the Engineer directs the use of stabilization material, prepare bedding by carefully excavating and shaping the native soil trench bottom to accurately fit the lower outside curvature of the pipe ('spoon bed'). Ensure the pipe is uniformly supported along its entire barrel length upon placement. Excavate for pipe bells. If stabilization material (Section 3010, 2.05) is required by the Engineer, it will be paid for under Trench Foundation Stabilization. Class I bedding material is incidental if used at the Contractor's option when not required by the Engineer.
2. **High Density Polyethylene Pipe (HDPE) / Polypropylene Pipe (PP)**: Place Class I bedding material (SUDAS 3010, 2.02, A) according to SUDAS Figure 3010.103, Class F-2 (minimum 4 inches below pipe, extending up to the top of pipe). Place bedding material in lifts not exceeding 6 inches and consolidate. Shape bedding to uniformly support the pipe. Excavate for bells/couplings. Furnishing and placing Class I bedding material for HDPE/PP pipe is incidental to the pipe installation.

C. Haunch Support:

1. **RCP**: Carefully place suitable excavated subsoil material (Class II, III, or IVA) by hand or approved method into the haunch area (from bedding up to springline).

2. **HDPE/PP:** Place Class I bedding material in the haunch area up to the springline. Place in lifts not exceeding 6 inches and consolidate by slicing, hand tamping, or other approved methods to ensure fill without displacing the pipe. The Contractor shall provide time stamped geolocated photographic evidence of proper haunching placement at 100-foot intervals to the Engineer's satisfaction.

D. Trench Backfill (Top of Pipe to Final Grade):

1. Place suitable excavated subsoil material (Class II, III, IVA, or IVB if approved) from the top of the pipe up to the elevation required for topsoil placement. Material shall be free of frozen lumps, vegetation, rocks over 6 inches, or other debris.
2. Place backfill material carefully to avoid displacing the pipe.
3. **Consolidation:** Consolidate backfill primarily by tracking with equipment treads/tires during placement or by other methods acceptable to the Engineer. Specific moisture conditioning and density testing (e.g., Proctor testing, nuclear density testing) are waived for drainage district tile trenches unless specifically noted on the plans (e.g., under roadways, structures, or embankments). The intent is to place the backfill without significant voids to minimize future settlement.
4. Place stockpiled topsoil (Class V) in the final 12 inches (approximate) of the trench, graded to match adjacent contours or slightly mounded as directed by the Engineer. Lightly track topsoil to consolidate.

Delete SUDAS 3010, 3.06 (Trench Compaction Testing) entirely and replace with:

3.06 Consolidation Verification:

- A. The Engineer will visually inspect the backfilling and consolidation process. If, in the Engineer's judgment, consolidation appears inadequate (e.g., excessive voids), the Engineer may direct the Contractor to modify methods or apply additional compactive effort.
 1. Under and within six (6) feet of pavement, roads, or driveways: The Engineer may require testing to 95% minimum Standard Proctor Density upon visual judgment. Test shall be performed on 2 vertical feet of consolidated fill and at a maximum horizontal spacing of 200 feet, and at any road crossings called out for testing. This test is considered incidental to the road crossing.

Division 4 – Sewers and Drains

Section 4020 – Storm Sewers

Amend SUDAS 4020, 1.01 (Section Includes) by adding the following:

- C. All agricultural drainage pipe shall be considered Storm Sewer.

Amend SUDAS 4020, 1.08, A, 1, c (Trenched Storm Sewer Includes) by modifying the text:

- c. **Includes:** Unit price includes, but is not limited to, trench excavation; dewatering; furnishing and installing pipe; furnishing, placing, and consolidating bedding and backfill material as specified in Section 3010 as amended; joint wrapping (if required for RCP); pipe joints; testing; and inspection. Includes elbows and bends as incidental unless called out on the bid documents. Wyes, tees, reducers, and private tile connections shall be paid for separately under Division 6. Includes trench bedding for HDPE and PP pipe as incidental. Does not include trench bedding needed for stabilization for RCP due to poor conditions as determined by Engineer. Trench bedding used at contractor's decision instead of spoon bedding for RCP is considered incidental. A spoon bottom may be used with engineer's approval for HDPE pipe 15" or smaller if laid using a tile plow or wheel trencher with grade control. A spoon bottom (no rock bedding) using an excavator is not acceptable for any size HDPE pipe.

Amend SUDAS 4020, 2.01 (Storm Sewers) by adding the following:

- P. **Pipe Material Options:** The contractor shall use the pipe material called out on the bid form and plans. Reinforced Concrete Pipe (RCP) shall meet SUDAS 4020, 2.01, A. High-Density Polyethylene Pipe (HDPE) shall meet SUDAS 4020, 2.01, F. Polypropylene Pipe (PP) shall meet SUDAS 4020, 2.01, L.

Amend SUDAS 4020, 3.02, A, (Pipe Installation General) by adding the following:

- 8. **Grade and Alignment Control:** Utilize laser guidance systems, GPS machine control, or traditional staking methods acceptable to the Engineer to control pipe grade and alignment.
- 9. **Flexible Pipe Bends:** Manufactured elbows for flexible pipe (HDPE/PP) are considered incidental to the cost of the pipe and shall not be paid for separately, unless explicitly detailed and itemized on the bid. Contractors may use allowable pipe curvature/joint deflection for gradual bends in lieu of fittings only for reinforced concrete pipe (RCP) bends.

Section 4030 – Pipe Culverts

Amend SUDAS 4030, 1.08, A (Pipe Culverts) by adding the following:

J. Surface Drain Pipe:

- 1. **Measurement:** Measurement will be in linear feet for the specified type and size of Surface Drain Pipe.
- 2. **Payment:** Payment will be at the unit price per linear foot of each type and size of pipe.

3. **Includes:** Unit price includes furnishing and installing the pipe (typically CMP or dual-wall HDPE) for surface water conveyance to the open ditch (this item does not include intakes, which are paid separately). Payment includes excavation, bedding, backfill, and any required outlet/inlet protection (e.g., riprap, animal guard) unless paid for as a separate item. A time stamped and geo-located photo of each connection to the existing tile and a log of all connections is to be submitted to engineer prior to payment.

K. Tile Outlet:

1. **Measurement:** Measurement will be in linear feet for the specified type and size of Tile Outlet Pipe.
2. **Payment:** Payment will be at the unit price per linear foot of each type and size of pipe.
3. **Includes:** Unit price includes all labor and materials to connect to an existing tile line, furnish and install a new outlet pipe section (typically CMP or dual-wall HDPE, 20 ft as specified), furnish and install all necessary excavation, bedding, and backfill. Includes relaying or repairing the existing tile to make a good connection. 25' of HDPE drain tile to make a good connection is considered incidental. A time stamped and geo-located photo of each connection to the existing tile and a log of all connections is to be submitted to engineer prior to payment.

Amend SUDAS 4030, 2.01, B (Pipe Culverts) by adding the following:

The pipe culvert types described in Section 4020 may be used for Surface Drains pipes and Tile Outlet pipes as specified in the bidding documents.

Amend SUDAS 4030, 3.01, 2, b (Pipe Culvert Installation) by adding the following:

- b. No granular bedding material is required for Surface Drains or Tile Outlet pipes.

Section 4040 – Subdrains and Footing Drain Collectors

Amend SUDAS 4040, 1.01 (Section Includes) by adding the following:

- E.** This section shall only apply to perforated subdrains if explicitly called for on the plans. Drainage District tile is specified in Section 4020.

Section 4060 – Cleaning, Inspection, and Testing of Sewers

Amend SUDAS 4060, 1.08 (Measurement and Payment) by replacing it with the following:

Cleaning, inspecting, and testing of HDPE or PP pipe (including video inspection and deflection testing) are incidental to other project costs and will not be paid for separately until listed as separate bid item. Failure to pass deflection testing shall require removal and replacement of the failed pipe section and re-testing, all at the Contractor's expense.

Division 6 – Structures for Sanitary and Storm Sewers

Section 6010 – Structures for Sanitary and Storm Sewers

Amend SUDAS 6010, 1.08, B (Intake) by adding the following:

4. **Includes:** This item shall include Hickenbottom, Bar Guard, SW-512, and other field intakes as specified in the contract documents. Payment includes the structure, tee or connection to the main tile, casting, excavation, bedding of a minimum of 3 tons of Class I bedding, backfill consolidation and connection stub.

Add new subsections SUDAS 6010, 1.08, I through M:

I. Tile Connections:

1. **Measurement:** Each connection, divided into two size groups: Small Tile Connection- equal to or smaller than a 10” connection and Large Tile Connection- 12” or larger, of an existing private or public drain tile to the new district pipe, documented and accepted by the Engineer, will be counted.
2. **Payment:** Payment will be at the contract unit price per Each of large and small tile connections.
3. **Includes:** Unit price includes all work and materials, including excavation, cutting existing tile, furnishing and installing the specified tee fitting for the pipe size and material (e.g., Inserta-Tee for small tile connections), furnishing and installing adapters/connectors, sealing joints, furnishing, hauling, placing, and consolidating the 3 tons of Class I bedding material around the connection, backfill consolidation, and providing the required photo and GPS documentation. A log shall be kept of all tile connections including tile size, condition, material, and angle and submitted prior to payment.

J. Elbows:

1. **Measurement:** Manufactured elbows or bends for Reinforced Concrete Pipe (RCP), when specified on the plans, will be counted per Each for the specified size and angle. Elbows for flexible pipe (HDPE/PP) shall be considered incidental to the pipe installation and will not be measured or paid for separately, unless explicitly itemized on the proposal.
2. **Payment:** Payment will be at the contract unit price per Each for RCP Elbows.
3. **Includes:** Unit price includes furnishing and installing the fitting, excavation, furnishing and placing required minimum 3 tons of Class I bedding material around the fitting, and backfill consolidation as specified in Section 3010 as amended.

K. Reducers:

1. **Measurement:** Reducers installed for any pipe type will be counted per Each for the specified transition sizes.
2. **Payment:** Payment will be at the contract unit price per Each.

3. **Includes:** Unit price includes furnishing and installing the fitting (including any required couplings or fusion), excavation, furnishing and placing required minimum 3 tons of Class I bedding material around the fitting (even if RCP), and backfill consolidation.

L. Tees and Wyes:

1. **Measurement:** Manufactured Tees and Wyes for Reinforced Concrete Pipe (RCP), when specified on the plans and bidding documents, will be counted per Each for the specified size and angle. Tees and Wyes for flexible pipe (HDPE/PP) shall be considered incidental to the tile connection or intake installation and will not be measured or paid for separately, unless explicitly itemized on the proposal.
2. **Payment:** Payment will be at the contract unit price per Each.
3. **Includes:** Unit price includes furnishing and installing the fitting (including any required couplings or fusion), excavation, furnishing and placing required minimum 3 tons of Class I bedding material around the fitting (even if RCP), and backfill consolidation.

Division 9 – Site Work and Landscaping

Section 9010 – Seeding

Add new subsections SUDAS 9010, 1.08, F through J:

F. Tile Work Area Cover Crop Seeding:

1. **Measurement:** Measurement will be in acres.
2. **Payment:** Payment will be at the unit price per acre.
3. **Includes:** Unit price includes, but is not limited to, preparing the seedbed by light tillage, furnishing and placing seed, including any treatment required, and incorporating the seed via light tillage or drilling. Mulching and Fertilizing is not required. Seeding shall be completed within 7 days of completion of all work within a Township Mile Section.

G. Open Ditch Slope Temporary Cover Crop Seeding:

1. **Measurement:** Measurement will be in stations.
2. **Payment:** Payment will be at the unit price per station. No actual measurement will be taken.
3. **Includes:** Unit price includes, but is not limited to, preparing the seedbed by light tillage, furnishing and placing seed, including any treatment required, and incorporating the seed via light tillage after seeding. Mulching and Fertilizing is not required.

H. Open Ditch Spoil Cover Crop Seeding:

1. **Measurement:** Measurement will be in stations.
2. **Payment:** Payment will be at the unit price per station. No actual measurement will be taken.
3. **Includes:** Unit price includes, but is not limited to, preparing the seedbed by roughening all slopes 3:1 or steeper (including ditch banks) by using a toothed bucket to pull the slope and running a harrow or engineer approved equal to create horizontal ridging immediately after seeding to improve seed to soil contact, furnishing and placing seed, including any treatment required; furnishing and placing fertilizer. Open Ditch Cover Crop Seeding is to be completed daily on the work completed that day. Mulching and Fertilizing is not required.

I. Open Ditch Slope Permanent Seeding (Hydraulic Seeding):

1. **Measurement:** Measurement will be in stations.
2. **Payment:** Payment will be at the unit price per station. No actual measurement will be taken.
3. **Includes:** Unit price includes, but is not limited to, furnishing, seeding, fertilizing and mulching the ditch banks via hydraulic seeding.

J. Road Ditch Seeding:

1. **Measurement:** Measurement will be in each road crossing.
2. **Payment:** Payment will be at the unit price per crossing. No actual measurement will be taken.
3. **Includes:** Unit price includes, but is not limited to, preparing the seedbed by light tillage, furnishing and placing seed, including any treatment required, and incorporating the seed via light tillage or drilling. No mulching or watering is required. Type 2 (Permanent Cool Season Mixture for Slopes and Ditches) seed mixture shall be used.

Amend SUDAS 9010, 2.02 (Seed Mixtures) by adding the following:

- I. Drainage District Tile Work Area Cover Crop Seeding (Tile Areas):** Used within the Work Area during tile installation project. Use between April 1 and September 30.

Tile Work Area Cover Crop Seed Mixture	
Common Name	Application Rate
Oats	20 lb/ac
Crimson Clover (inoculated)	5 lbs/ac
Buckwheat	5 lbs/ac
Daikon Radish (e.g. TapMaster)	3 lbs/ac
Rapeseed (e.g. Dwarf Essex)	1 lb/ac

- J. Drainage District Open Ditch Spoil Cover Crop Seeding (Top of Ditch Banks):** Used on top of spoil banks during open ditch repairs. Use between April 1 and September 30.

Open Ditch Spoil Cover Crop Seed Mixture	
Common Name	Application Rate
Oats	3 bu/ac

- K. Drainage District Ditch Slope Cover Crop Seeding:** Used daily on freshly worked open ditch slopes. Use between April 1 and September 30.

Ditch Slope Cover Crop Seed Mixture	
Common Name	Application Rate
Buckwheat	10 lb/ac
Cowpeas (inoculated)	10 lbs/ac
Barley	10 lbs/ac
Sunn Hemp (inoculated)	5 lbs/ac
Smooth Brome Grass	5 lbs/ac
Annual Ryegrass	5 lbs/ac

- L. Drainage District Open Ditch Permanent Seeding (Hydroseed):** Used after completion of an open ditch repair. Use between April 1 and September 30.

Ditch Slope Permanent Seed Mixture (Hydraulic Seeding Mix)	
Common Name	Application Rate

Smooth Brome	10 lbs/ac
Tall Fescue	6 lbs/ac
Perennial Ryegrass	6 lbs/ac
Meadow Fescue	6 lbs/ac
Annual Ryegrass	4 lbs/ac
Action Bluegrass	3 lbs/ac
Orchardgrass	3 lbs/ac
Timothy	2 lbs/ac

Amend SUDAS 9010, 2.03, 3 (Fertilizer) by adding the following:

Apply fertilizer rate of 10 lbs nitrogen (N), 20 lbs phosphate (P), and 10 lbs of potash (K) with Ditch Slope Permanent Seed Mixture (Hydraulic Seeding).

C. Fertilizer is not required for Cover Crop Mixtures (I, J, and K)

Amend SUDAS 9010, 2.07 (Mulch) by adding the following:

D. For Drainage District Cover Crop Seeding mixes, mulch is not required.

Amend SUDAS 9010, 3.03 (Seedbed Preparation) by adding the following:

D. Surface Roughening (Ditch Slopes): Roughen all slopes 3:1 or steeper (including ditch banks) by using a toothed bucket to pull the slope and running a harrow or engineer approved equal to create horizontal ridging immediately after seeding to improve seed to soil contact. This is incidental to the seeding pay item.

E. Topsoil Preparation (Leveled Spoil Banks): On leveled spoil banks (top of bank), deep till (12") to alleviate compaction, remove rocks >4", and apply/incorporate topsoil if specified. This work is incidental to Spoil Tillage and Rock Pick Up.

Amend SUDAS 9010, 3.04 (Seeding) by adding the following:

H. Temporary Seeding Application: For Drainage District Cover Crop Seeding, apply seed daily or as soon as practicable to disturbed ditch slopes. Do not delay seeding until project completion. Time Stamped and Geo-Located photos of daily seeding is required to be submitted for payment.

Amend SUDAS 9010, 3.10, A, 2 (Acceptance and Warranty) by replacing with the following:

2. Acceptance will occur upon proper application and documentation. Emergence and establishment are understood to be difficult and therefore are not required for acceptance.

Section 9040 – Erosion and Sediment Control

Amend SUDAS 9040, 1.08, A (Stormwater Pollution Prevention Plan (SWPPP)) by adding the following:

1. Unless stated otherwise on the plans or in the bid items, a Stormwater Pollution Prevention Plan (SWPPP) is not required for agricultural drainage work, therefore it does not apply for this project.

Section 9060 – Chain Link Fence

Amend SUDAS 9060, 1.01 (Section Includes) by adding the following:

D. Agricultural Fence

Amend SUDAS 9060, 1.08, D and E by replacing with the following:

D. Removal and Reinstallation of Existing Fence:

1. **Measurement:** Measurement will be in Each for each fence removed and reinstalled as shown on the plans.
2. **Payment:** Payment will be at the contract unit price per Each for each fence removed and reinstalled.
3. **Includes:** Unit price includes, but is not limited to, removing vegetation; removing all fence fabric, appurtenances, posts, and gates; removal of concrete encasement from posts; storage of the removed fencing materials to prevent damage; reinstallation of the posts, gates, and fabric, including all appurtenances; and replacement of any fence parts that are not able to be salvaged and reinstalled. Replace items damaged from Contractor's operations with new materials, at no additional cost to the Contracting Authority.

E. Removal of Fence:

1. **Measurement:** No measurement will be made, any fence removed and not replaced will be considered incidental to the work.
2. **Payment:** No payment for removing a fence. Plans show which fences to remove and which fences to reinstall.
3. **Includes:** Unit price includes, but is not limited to, removing vegetation; removing all fence fabric, appurtenances, posts, and gates; removal of concrete encasement from posts; storage of the removed fencing materials to prevent damage.

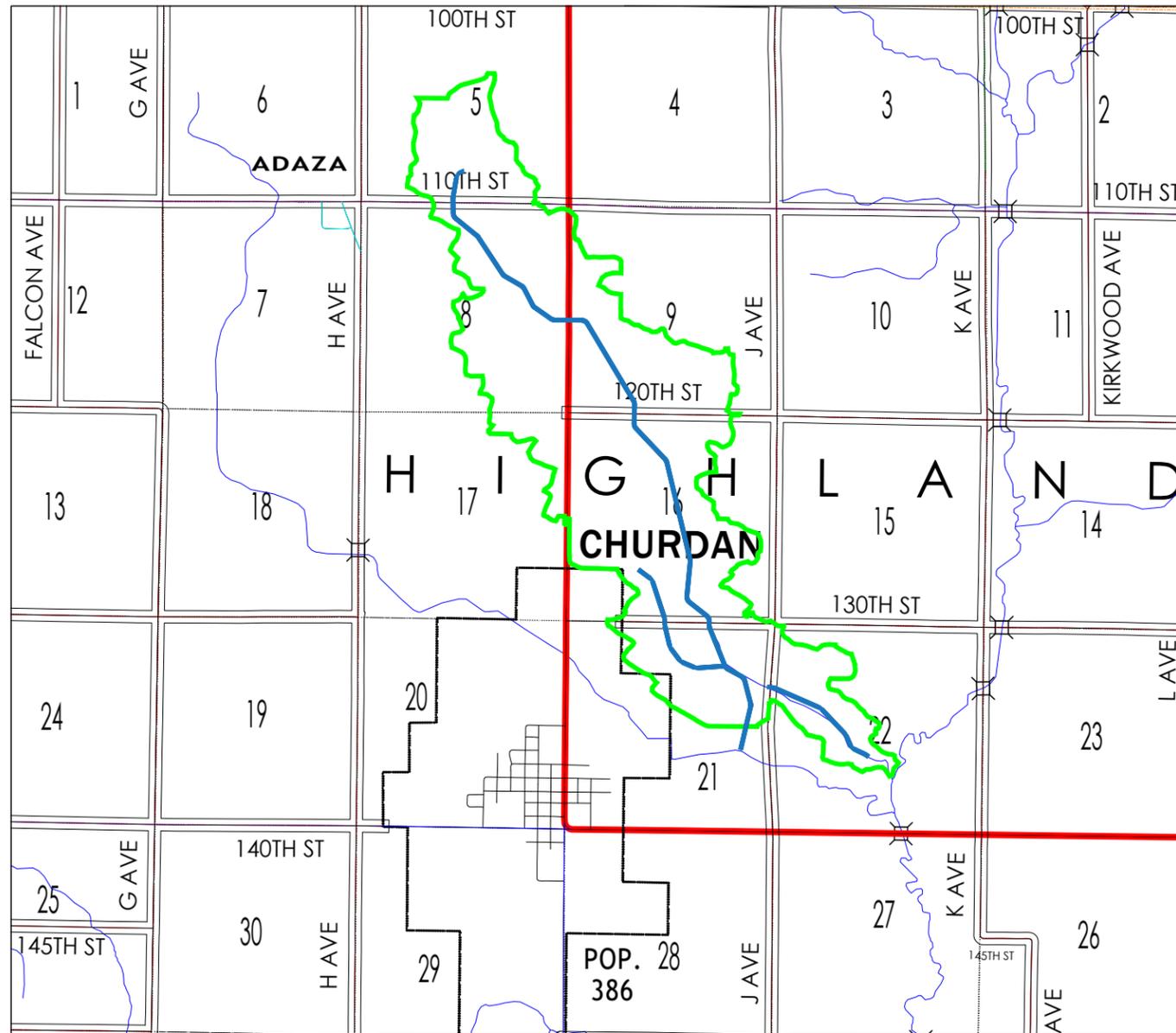
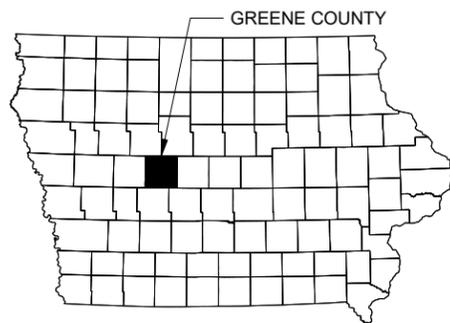
CONSTRUCTION PLANS FOR DRAINAGE DISTRICT NO. 20 TILE IMPROVEMENTS GREENE COUNTY, IA 2026



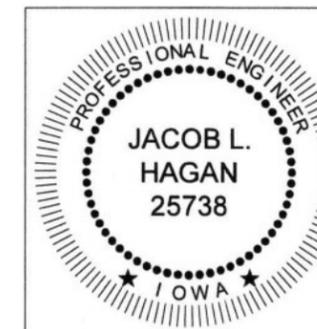
The contractor shall field verify exact locations prior to commencing construction as required by state law. Notify Iowa One Call, 811 or 1-800-292-8989.

Specifications
Unless otherwise noted, the governing standards for this project shall be the 2026 edition of the Iowa Statewide Urban Design and Specifications (SUDAS) for Public Improvements, supplemented where referenced by the Iowa Department of Transportation's Standard Specifications for Highway and Bridge Construction, Series 2023, along with all active general supplemental specifications, materials, instructional memoranda, and relevant special provisions.

Where conflicts arise, the stricter requirement shall take precedence. Complete compliance with all applicable federal, state, and local laws, ordinances, and regulations is mandatory throughout the project's execution.



Sheet Number	Sheet Title
A.01	Title Sheet
A.02	District Plat
C.01	General Construction Notes & Details
C.02	Pipe Construction Notes & Details
C.03	Pipe Structures Construction Notes & Details
M.01	Main Tile (Sta 0 → 28+00)
M.02	Main Tile (Sta 28+00 → 58+00)
M.03	Main Tile (Sta 58+00 → 88+00)
M.04	Main Tile (Sta 88+00 → 118+00)
M.05	Main Tile (Sta 118+00 → 148+00)
M.06	Main Tile (Sta 148+00 → 178+00)
M.07	Main Tile (Sta 178+00 → 179+82)
M.08	1st Timmons Branch Tile (Sta 0+00 → 29+00)
M.09	1st Timmons Branch Tile (Sta 29+00 → 38+20)
M.10	Lower Main Tile (Sta 0+00 → 29+00)
M.11	Lower Main Tile (Sta 29+00 → 32+18)
V.01	Boring Sheet - Main Tile (Sta 125+65 → 126+85) (State Hwy 4)
V.02	Boring Sheet - Main Tile (Sta 170+42 → 171+42) (110th St / Co Rd E13)



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.

Jacob Hagan 2/16/2026 (date)
 Jacob L. Hagan, P.E.
 License No. 25738
 My license renewal date is December 31, 2026.
 Pages or sheets covered by this seal:
 All



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes
PLAN LEGEND
 Proposed District Tile ———
 Old District Tile ———
 Benefitted Area ———

Project Datum:
 State Plane, IA83-NF
 NAVD 88

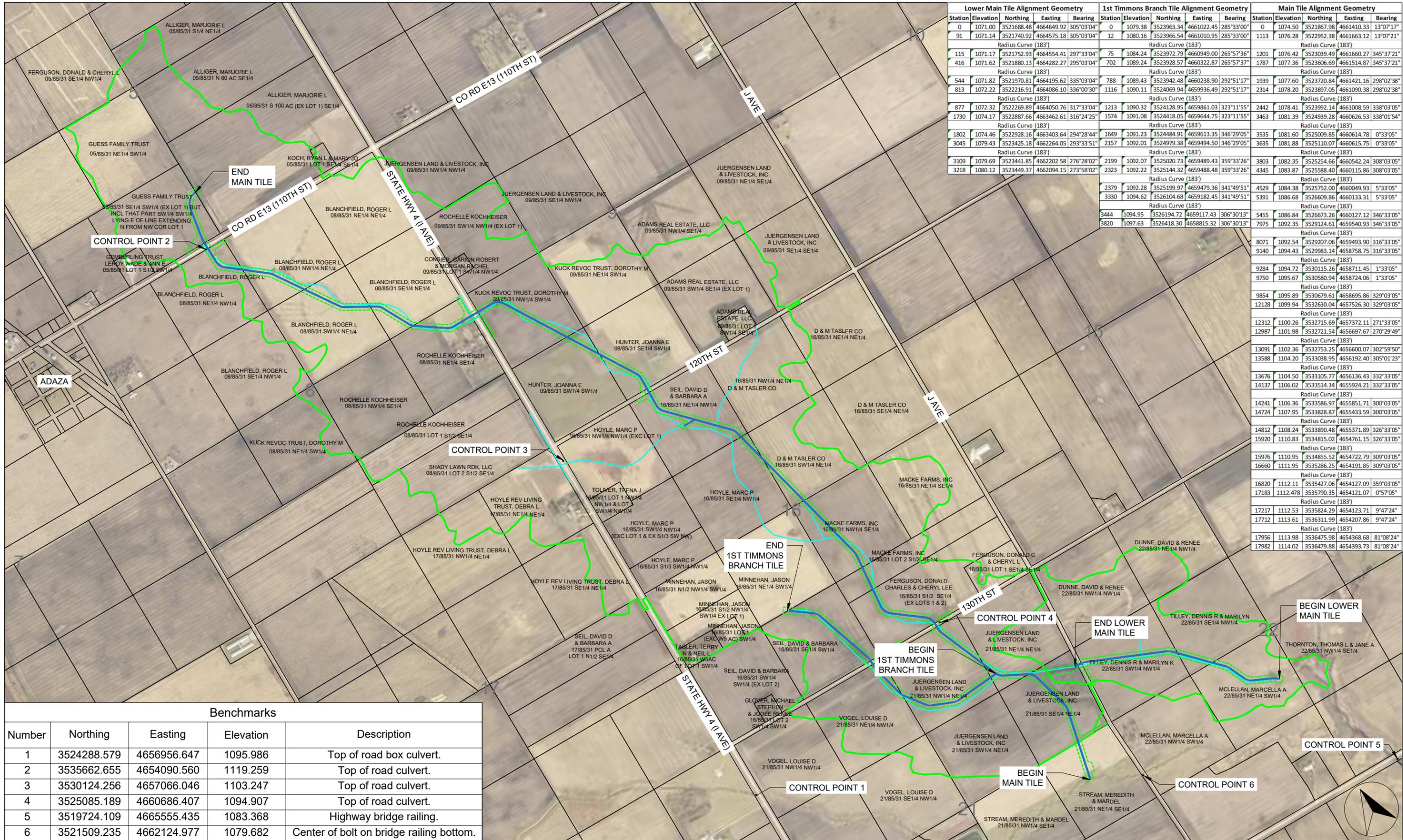
No.	Revision/Issue	Date

Sheet Name
 Title Sheet

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project
 2502-37
 Date
 2026-01-30
 Plan Scale
 1" = 4000'

A.01



Lower Main Tile Alignment Geometry				1st Timmons Branch Tile Alignment Geometry				Main Tile Alignment Geometry						
Station	Elevation	Northing	Eastng	Bearing	Station	Elevation	Northing	Eastng	Bearing	Station	Elevation	Northing	Eastng	Bearing
0	1071.00	3521688.48	4664649.92	305°03'04"	0	1079.38	3523963.34	4661022.45	285°33'00"	0	1074.50	3521867.98	4661410.33	13°07'17"
91	1071.14	3521740.92	4664575.18	305°03'04"	12	1080.16	3523966.54	4661010.95	285°33'00"	1113	1076.28	3522952.38	4661663.12	13°07'21"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
115	1071.17	3521752.93	4664554.41	297°33'04"	75	1084.24	3523972.79	4660949.00	265°57'36"	1201	1076.42	3523039.49	4661660.27	345°37'21"
416	1071.62	3521880.13	4664282.27	295°03'04"	702	1089.24	3523928.57	4660322.87	265°57'37"	1787	1077.36	3523606.69	4661514.87	345°37'21"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
544	1071.82	3521970.81	4664195.62	335°03'04"	788	1089.43	3523942.48	4660238.90	292°51'17"	1939	1077.60	3523720.84	4661421.16	298°02'38"
813	1072.22	3522216.91	4664086.10	336°00'30"	1116	1090.11	3524069.94	4659936.49	292°51'17"	2314	1078.20	3523997.05	4661090.38	298°02'38"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
877	1072.32	3522269.89	4664050.76	317°33'04"	1213	1090.32	3524128.95	4659861.03	323°11'55"	2442	1078.41	3523992.14	4661008.59	338°03'05"
1730	1074.17	3522887.66	4663462.61	316°24'25"	1574	1091.08	3524418.05	4659644.75	323°11'55"	3463	1081.39	3524939.28	4660626.53	338°01'54"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
1802	1074.46	3522928.16	4663403.64	294°28'44"	1649	1091.23	3524484.91	4659613.35	346°29'05"	3535	1081.60	3525009.85	4660614.78	0°33'05"
3045	1079.43	3523425.18	4662264.05	293°33'51"	2157	1092.01	3524979.38	4659494.50	346°29'05"	3635	1081.88	3525110.07	4660615.75	0°33'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
3109	1079.69	3523441.85	4662202.58	276°28'02"	2199	1092.07	3525020.73	4659489.43	359°33'26"	3803	1082.35	3525254.66	4660542.24	308°03'05"
3218	1080.12	3523449.37	4662094.15	273°58'02"	2323	1092.22	3525144.32	4659488.48	359°33'26"	4345	1083.87	3525588.40	4660115.86	308°03'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
3370	1092.28	3525199.97	4659479.36	341°49'51"	4529	1084.38	3525752.00	4660049.93	5°33'05"	5391	1086.68	3526609.86	4660133.31	5°33'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
3444	1094.95	3526194.72	4659117.43	306°30'13"	5455	1086.84	3526673.26	4660127.12	346°33'05"	7975	1092.35	3529124.61	4659540.93	346°33'05"
3820	1097.63	3526418.30	4658815.32	306°30'13"	Radius Curve (183')				Radius Curve (183')					
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
8071	1092.54	3529207.06	4659493.90	316°33'05"	9140	1094.43	3529983.14	4658758.75	316°33'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
9284	1094.72	3530115.26	4658711.45	1°33'05"	9750	1095.67	3530580.94	4658724.06	1°33'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
9854	1095.89	3530679.61	4658695.86	329°03'05"	12128	1099.94	3532630.04	4657526.30	329°03'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
12312	1100.26	3532715.69	4657372.11	271°33'05"	12987	1101.98	3532721.54	4656697.67	270°29'49"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
13091	1102.36	3532753.25	4656600.07	302°59'50"	13588	1104.20	3533038.95	4656192.40	305°01'23"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
13676	1104.50	3533105.77	4656136.43	332°33'05"	14137	1106.02	3533514.34	4655924.21	332°33'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
14241	1106.36	3533586.97	4655851.71	300°03'05"	14724	1107.95	3533828.87	4655433.59	300°03'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
14812	1108.24	3533890.48	4655371.89	326°33'05"	15920	1110.83	3534815.02	4654761.15	326°33'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
15976	1110.95	3534855.52	4654722.79	309°03'05"	16660	1111.95	3535286.25	4654191.85	309°03'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
16820	1112.11	3535427.06	4654127.09	359°03'05"	17183	1112.478	3535790.35	4654121.07	0°57'05"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
17217	1112.53	3535824.29	4654123.71	9°47'24"	17712	1113.61	3536311.99	4654207.86	9°47'24"	Radius Curve (183')				
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
17956	1113.98	3536475.98	4654368.68	81°08'24"	17982	1114.02	3536479.88	4654393.73	81°08'24"	Radius Curve (183')				

Benchmarks				
Number	Northing	Eastng	Elevation	Description
1	3524288.579	4656956.647	1095.986	Top of road box culvert.
2	3535662.655	4654090.560	1119.259	Top of road culvert.
3	3530124.256	4657066.046	1103.247	Top of road culvert.
4	3525085.189	4660686.407	1094.907	Top of road culvert.
5	3519724.109	4665555.435	1083.368	Highway bridge railing.
6	3521509.235	4662124.977	1079.682	Center of bolt on bridge railing bottom.



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes	
Proposed District Tile	
Old District Tile	
Benefitted Lands	
Parcel Lines	
Work Area (ROW)	

No.	Revision/Issue	Date

Sheet Name
District Plat

Project Name, Client, and Address
Tile Improvements
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project
2502-37

Date
2026-01-30

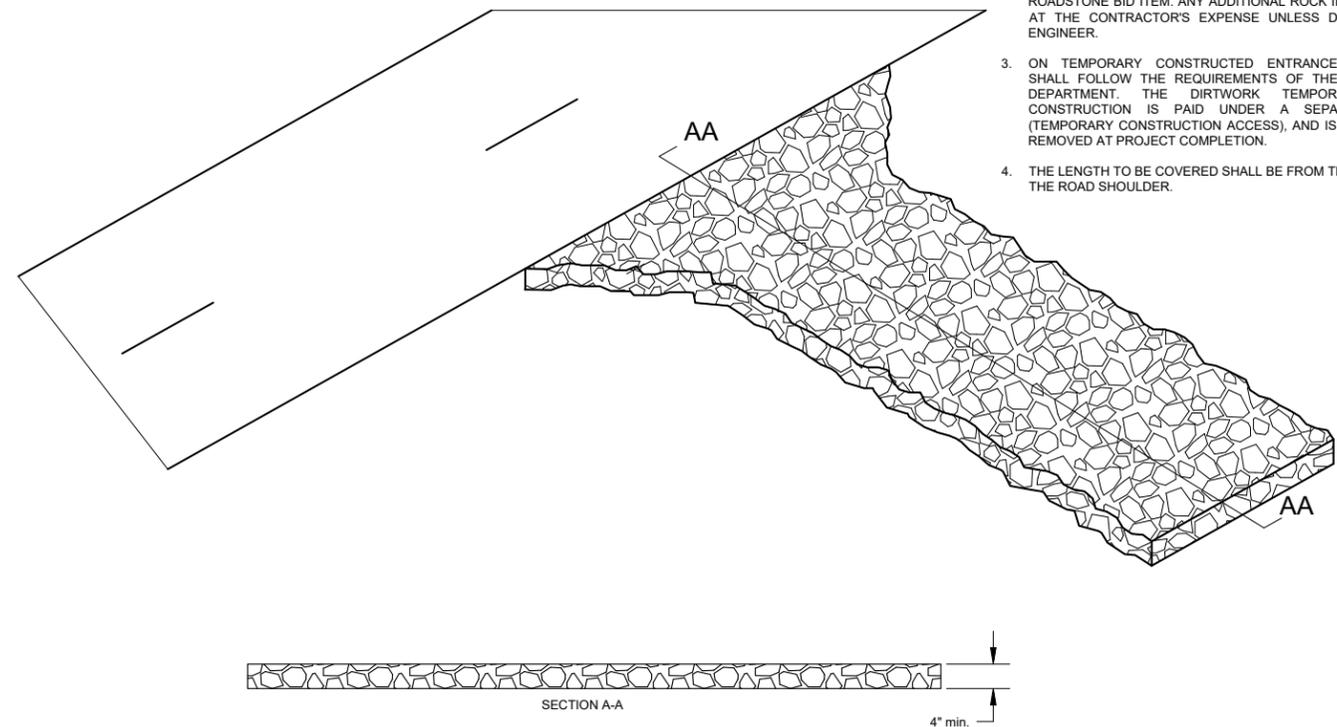
Sheet
A.02

Plan Scale
1" = 650'

GENERAL PROVISIONS & PRE-CONSTRUCTION

- WORK AREA:** THE PLANS SHOW THE WORK AREA. STANDARD WORK AREA IS 50 FEET FROM THE CENTERLINE OF THE TILE UNLESS OTHERWISE NOTED. THE CONTRACTOR MUST STAY WITHIN THIS AREA. ANY DAMAGE OUTSIDE THE WORK AREA WILL BE DEDUCTED FROM FINAL PAYMENT. ALL STAGING AND STORAGE SHALL BE WITHIN THE WORK AREA. NO STORAGE OR STAGING SHALL TAKE PLACE ON ROADWAYS.
- ACCESS:** ACCESS TO THE WORK AREA IS LIMITED TO PUBLIC ROAD INTERSECTIONS AND DRIVEWAYS CALLED OUT ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR SECURING ANY ADDITIONAL TEMPORARY ACCESS AGREEMENTS WITH LANDOWNERS OR THE COUNTY ENGINEER FOR ROAD ROW ENTRY.
- UTILITIES & LOCATES:** THE CONTRACTOR SHALL NOTIFY IOWA ONE CALL (811) PRIOR TO EXCAVATION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTING ALL MARKED AND UNMARKED UTILITIES.
- TILE EXPLORATION:** EXISTING TILE IS APPROXIMATELY LOCATED ON THE PLANS. ENGINEER MAY DIRECT CONTRACTOR TO LOCATE TILE BEFORE STARTING AND ADVANCING WORK TO DETERMINE EXISTING TILE LOCATION AND DEPTH TO AVOID POTENTIAL CONFLICTS. CONTRACTOR SHALL BE COMPENSATED ON AN HOURLY BASIS PER EXCAVATION, EXPLORATORY BID ITEM.
- AS-BUILT DOCUMENTATION:** THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COMPLETE SET OF DRAWINGS SUITABLY MARKED TO SHOW ANY DEVIATIONS FROM THE ORIGINAL PLANS, INCLUDING BUT NOT LIMITED TO ACTUAL PIPE ALIGNMENTS, DEPTHS, CONNECTION LOCATIONS, AND ANY FIELD MODIFICATIONS. THIS DOCUMENTATION SHALL BE PROVIDED PRIOR TO FINAL ACCEPTANCE.
- THE LANDOWNERS** WHERE THE TILE IS BEING INSTALLED ARE PAYING FOR THIS PROJECT. AT COMPLETION OF THE PROJECT, THOSE LANDOWNERS ARE INVITED TO A PUBLIC HEARING AND CAN FILE CLAIMS FOR DAMAGES. THESE SPECIFICATIONS AND PLANS EXIST AS MUCH TO GUIDE AND PROTECT THE CONTRACTOR AS TO PROTECT THE LANDOWNERS. REGULAR DOCUMENTATION ALONG WITH OPEN COMMUNICATION WITH THE ENGINEER IS ESSENTIAL TO A SMOOTH PROJECT FOR ALL PARTIES.

CONSTRUCTION ACCES



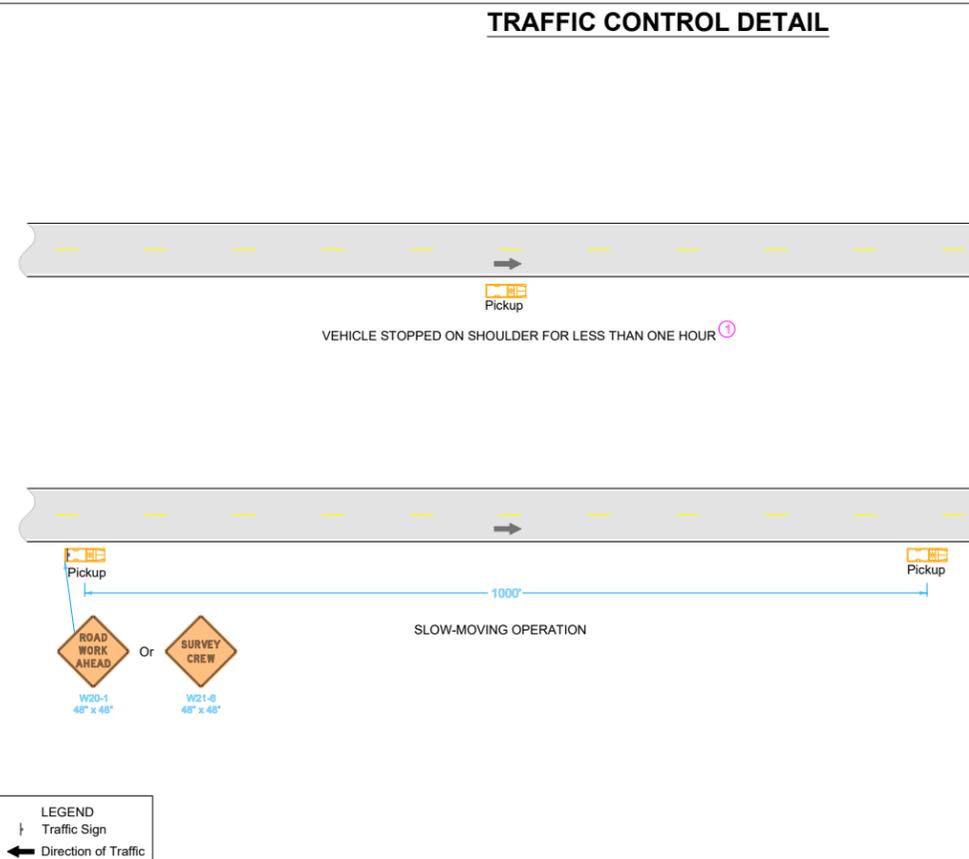
GENERAL NOTES:

- LOCATIONS OF CONSTRUCTION ENTRANCES ARE MARKED ON THE PLANS. OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO USING ANY OTHER ENTRANCES.
- PLACING 12 TONS OF CLASS A ROADSTONE ON EACH EXISTING AND TEMPORARY ENTRANCE WILL BE PAID UNDER THE CLASS A ROADSTONE BID ITEM. ANY ADDITIONAL ROCK IF PLACED WILL BE AT THE CONTRACTOR'S EXPENSE UNLESS DIRECTED BY THE ENGINEER.
- ON TEMPORARY CONSTRUCTED ENTRANCES, CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE COUNTY ROADS DEPARTMENT. THE DIRTWORK TEMPORARY DRIVEWAY CONSTRUCTION IS PAID UNDER A SEPARATE BID ITEM (TEMPORARY CONSTRUCTION ACCESS), AND IS REQUIRED TO BE REMOVED AT PROJECT COMPLETION.
- THE LENGTH TO BE COVERED SHALL BE FROM THE FIELD EDGE TO THE ROAD SHOULDER.

ROADWAY CROSSINGS

- PERMITS & NOTIFICATIONS:** THE CONTRACTOR SHALL OBTAIN ALL NECESSARY OCCUPANCY PERMITS FROM THE COUNTY ENGINEER OR IOWA DOT. NOTIFY THE RESPECTIVE AGENCY AND THE PROJECT ENGINEER AT LEAST 48 HOURS PRIOR TO COMMENCING ANY WORK WITHIN THE ROW.
- TRAFFIC CONTROL:** THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL, INCLUDING SIGNAGE, BARRICADES, AND FLAGGERS. ALL SETUPS MUST STRICTLY ADHERE TO THE LATEST MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS AND ANY SPECIFIC REQUIREMENTS SET BY THE COUNTY OR DOT PERMIT.
- UTILITY VERIFICATION:** ALL UTILITIES WITHIN THE ROW (FIBER OPTIC, GAS, WATER) MUST BE DAYLIGHTED VIA POTHOLING PRIOR TO THE ARRIVAL OF THE BORING OR TRENCHING EQUIPMENT.
- SEEDING:** DISTURBED ROAD DITCHES SHALL BE SEEDED FOLLOWING SUDAS TYPE 2 (PERMANENT COOL SEASON MIXTURE FOR SLOPES AND DITCHES) SEED MIXTURE.
- STORAGE AND PARKING:** NO STORAGE OR PARKING OF EQUIPMENT IN PUBLIC RIGHT-OF-WAY. NO CROSSING PAVED ROADS WITH TRACKED EQUIPMENT.
- OPEN CUT: COUNTY GRAVEL ROAD**
 - PIPE SUPPORT:** ALL PIPE UNDER THE ROADWAY MUST BE INSTALLED USING MODIFIED TYPE 4 TRENCHING.
 - MATERIALS:** WITHIN THE ROAD PRISM, NATIVE SOIL SHALL NOT BE USED FOR HAUNCHING. USE 1-INCH CLEAN CRUSHED STONE OR SUDAS CLASS A CRUSHED STONE TO THE SPRINGLINE OF THE PIPE. FROM THE TOP OF THE HAUNCHING TO WITHIN 12 INCHES OF THE ROAD SURFACE, THE TRENCH MAY FILLED WITH NATIVE SUBSOIL MATERIAL PER THE ENGINEER'S APPROVAL. THE ENGINEER MAY REQUIRE THE BACKFILL TO BE CLASS A STONE PER THEIR DIRECTION.
 - COMPACTION LIFTS:** BACKFILL SHALL BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS. EACH LIFT MUST BE MECHANICALLY COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 - SURFACE MATERIAL:** THE TOP 12 INCHES OF THE TRENCH SHALL BE FILLED WITH CLASS A ROAD STONE (OR THE SPECIFIC GRAVEL GRADE USED BY THE COUNTY) AND COMPACTED THOROUGHLY.
 - CROWNING:** THE FINISHED SURFACE OF THE TRENCH SHOULD BE "CROWNED" APPROXIMATELY 1 TO 2 INCHES HIGHER THAN THE ADJACENT ROAD GRADE TO ALLOW FOR INITIAL TRAFFIC-DRIVEN COMPACTION WITHOUT CREATING A DEPRESSION.
 - SHOULDER REPAIR:** ANY DAMAGE TO THE ROAD SHOULDERS OR SIDE SLOPES SHALL BE RESHAPED TO MATCH THE ORIGINAL PROFILE AND IMMEDIATELY SEEDED/MULCHED.
 - ROAD DITCH SEEDING:** SHALL FOLLOW SUDAS 9010. USE TYPE 2 (PERMANENT COOL SEASON MIXTURE FOR SLOPES AND DITCHES) SEED MIXTURE. ENGINEER MAY DIRECT DIFFERENT SEED MIXTURE DUE TO WEATHER OR SEASON CONDITIONS.
 - ROAD CLOSURE:** THE CROSSING NEEDS TO BE COMPLETED IN ONE DAY. THE ROAD SHALL ONLY BE CLOSED FROM SUN RISE TO SUN SET. BY SUN SET THE ROAD SHALL BE OPEN TO TRAFFIC.
- TRENCHLESS / BORED METHOD:** SHALL FOLLOW SUDAS 3020 AND IOWA DOT PERMIT REQUIREMENTS.

TRAFFIC CONTROL DETAIL



Do not allow work to interfere with the flow of traffic.

When parked, locate vehicles as far from the open traffic lane as possible. Entrances and driveways should be used whenever appropriate.

Equip all vehicles with an amber revolving light or amber strobe light.

① For work lasting longer than one hour, refer to TC-202 or TC-402.

Possible Contract Item:
Traffic Control

IOWA DOT STANDARD ROAD PLAN	REVISION 3 10-15-18
	TC-1 SHEET 1 of 1
REVISIONS: New Sign.	
APPROVED BY DESIGN METHOD ENGINEER	
WORK NOT AFFECTING TRAFFIC (TWO-LANE OR MULTI-LANE)	



Company Information
AgriVia PLLC
PO Box 44
1124 Willis Ave
Perry, IA 50220

Designer
TJB
Drafter
TJB
Checker
JLH

No.	Revision/Issue	Date

No.	Revision/Issue	Date

Sheet Name
General Construction
Notes & Details

Project Name, Client, and Address
Tile Improvements
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project 2502-37	Sheet C.01
Date 2026-01-30	
Plan Scale 1" = 650'	

PIPE EXCAVATION, TRENCHING & BEDDING NOTES

- RIGID PIPE (RCP):** SUDAS SW-102 MODIFIED R-1 BEDDING. THE TRENCH BASE MUST BE EXCAVATED WITH A SHAPED BOTTOM GROOVE CONFORMING TO AT LEAST 1/6 OF THE PIPE OUTSIDE CIRCUMFERENCE TO PROVIDE UNIFORM SUPPORT. IF A FIRM TRENCH BOTTOM IS NOT FOUND, THE CONTRACTOR SHALL OVER-EXCAVATE AND PLACE 1"-3" CLEAN CRUSHED STONE BEDDING (SUDAS CLASS 2) TO STABILIZE THE BASE PER ENGINEER'S DIRECTION. GPS LOCATED AND TIME STAMPED PHOTOS SHALL BE TAKEN EVERY 100 FEET OF ANY TIME ROCK BEDDING IS USED AND ROCK TICKETS SHALL BE SUBMITTED.
- FLEXIBLE PIPE (CPDT):** SUDAS SW-103 F-2 BEDDING REQUIREMENTS. TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER PLUS 12 INCHES. GPS LOCATED AND TIME STAMPED PHOTOS SHALL BE TAKEN EVERY 100 FEET SHOWING THE ROCK TO THE TOP OF THE PIPE BEFORE BACKFILLING WITH DIRT. ALL ROCK TICKETS SHALL BE SUBMITTED, AND ALL ROCK USED IS INCIDENTAL TO INSTALLATION. ROCK TICKETS SHALL BE SUBMITTED WEEKLY WITH A LOG OF LENGTH OF TILE INSTALLED CORRESPONDING TO THE ROCK USED. A SPOON BOTTOM MADE BE USED FOR PIPE 15" OR SMALLER IF LAID USING A TILE PLOW OR TRENCHER WITH GRADE CONTROL. A SPOON BOTTOM (NO ROCK BEDDING) USING AN EXCAVATOR IS NOT ACCEPTABLE FOR ANY SIZE PIPE.

TO ENSURE LONGEVITY AND MINIMIZE SETTLEMENT FOR FLEXIBLE PIPE INSTALLATION, THE CONTRACTOR MUST PARTICIPATE IN THE FOLLOWING VERIFICATION PROCESS:

STEP 1 (DEMONSTRATION): IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR SHALL DEMONSTRATE THEIR COMPACTION METHOD ON THE FIRST SEVERAL PIPE SECTIONS. DENSITY TESTS MAY BE TAKEN TO CONFIRM THE METHOD ACHIEVES 95% STANDARD PROCTOR DENSITY.

STEP 3 (SPOT CHECKING): ONCE A METHOD IS APPROVED, THE CONTRACTOR MAY PROCEED, BUT MAY BE RANDOMLY TESTED BY THE ENGINEER AT THE ENGINEER'S SOLE DECISION. GPS LOCATED AND TIME STAMPED PHOTOS EVERY 100 FEET SHOWING THE TILE UNBLINDED WITH THE HAUNCHES FILLED AND COMPACTED ARE REQUIRED TO BE SUBMITTED.

STEP 3 (VIDEO AND DEFLECTION TESTING): PER SUDAS REQUIREMENTS FOR FLEXIBLE PIPE AFTER COMPLETION OF THE PROJECT.

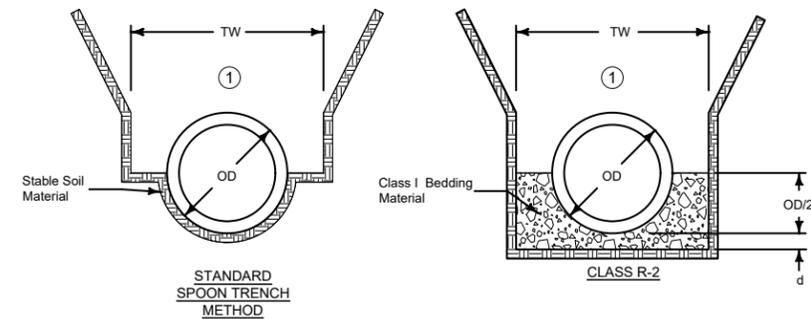
- BACKFILL AND TOPSOIL:** TOPSOIL (TOP 12" OR HORIZON A SOIL IF DEEPER) SHALL BE SEGREGATED DURING EXCAVATION PLACED ON THE OPPOSITE OF THE TRENCH AS THE SUBSOIL IS PLACED. THE SUBSOIL SHALL BE PLACED FIRST IN 6-INCH LIFTS AND THE TOPSOIL PLACED ON TOP. ROCKS SHALL BE PICKED UP AND BURIED AT LEAST 4 FEET DEEP. A SMALL MOUND IS ALLOWABLE (MAXIMUM HEIGHT OF 6 INCHES).

- ELBOWS AND BENDS:** THE PLANS SHOW BENDS AND ELBOWS. ADDITIONAL BENDS OR ELBOWS MAY BE REQUIRED DEPENDING ON EXISTING TILE LOCATIONS AND UNKNOWN SUBSURFACE CONDITIONS. ALL BENDS AND ELBOWS ARE INCIDENTAL UNLESS CALLED OUT IN BID DOCUMENTS. CONTRACTOR SHALL RECEIVE NO ADDITIONAL COMPENSATION FOR ADDITIONAL RCP BENDS OR HDPE ELBOWS NEEDED DUE TO ALIGNMENT CHANGES.

RCP PIPE: GENTLE CURVES CAN BE ACCOMPLISHED VIA GAPPING THE PIPE. ALL RADIUS SHALL BE WRAPPED IN FABRIC. MAXIMUM ALLOWABLE DEGREE PER PIPE SECTION IS 2.5 DEGREE.

HDPE PIPE: ALL CHANGES IN DIRECTIONS SHALL BE DONE USING MANUFACTURED ELBOWS. THE MAXIMUM ALLOWABLE ELBOW TO BE USED IS 22.5 DEGREES. TO ACHIEVE BENDS GREATER THAN 22.5 DEGREES, MULTIPLE ELBOWS SHALL BE USED.

RCP AND VCP CIRCULAR PIPE BEDDING



- Use Standard Spoon Trench Method or R-2 unless specified otherwise.
- Place remainder of bedding and backfill materials as specified in the contract documents.

Key

- OD = Outside diameter of pipe
 TW = Trench width at top of pipe:
 Min. = OD+18 inches
 Max. = 1.25xOD+12 inches OR 54 inches (whichever is greater)
 d = Depth of bedding material below pipe:
 OD/8 or OD/8, OR 4 inches (whichever is greater)

CLASS III RCP

Pipe Diameter (in)	Standard "Spoon-Trench" Method	Class R-2 Bedding
12	7'	10'
15	8'	10'
18	8'	11'
21	8'	11'
24	8'	12'
27	10'	15'
30	11'	15'
33	11'	15'
36	11'	15'
42	11'	15'
48	11'	15'
54	11'	15'
60	11'	15'
66	11'	15'
72	11'	15'

ALLOWABLE BURY DEPTH

CLASS IV RCP

Pipe Diameter (in)	Standard "Spoon-Trench" Method	Class R-2 Bedding
12	12'	15'
15	12'	16'
18	13'	16'
21	13'	18'
24	16'	23'
27	19'	30'
30	19'	29'
33	19'	28'
36	19'	28'
42	18'	27'
48	18'	26'
54	18'	25'
60	18'	25'
66	18'	25'
72	18'	24'

CLASS V RCP

Pipe Diameter (in)	Standard "Spoon-Trench" Method	Class R-2 Bedding
12	18'	23'
15	19'	24'
18	19'	30'
21	25'	40'
24	34'	40'
27	40'	40'
30	40'	40'
33	40'	40'
36	40'	40'
42	37'	40'
48	35'	40'
54	33'	40'
60	32'	40'
66	31'	40'
72	31'	40'

TRENCH BEDDING AND BACKFILL ZONES

Refer to the contract documents for specific material and placement requirements.

- Required only when specified in the contract documents or when directed by the Engineer.

Key

- OD = Outside diameter of pipe
 D = Inside diameter of pipe
 TW = Trench width at top of pipe
 d = Depth of bedding material below pipe

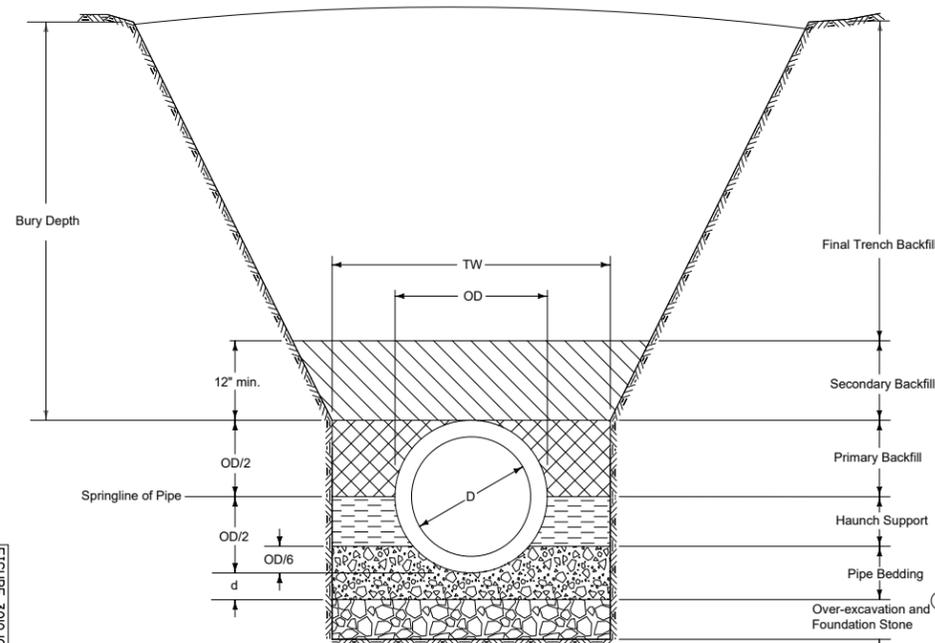


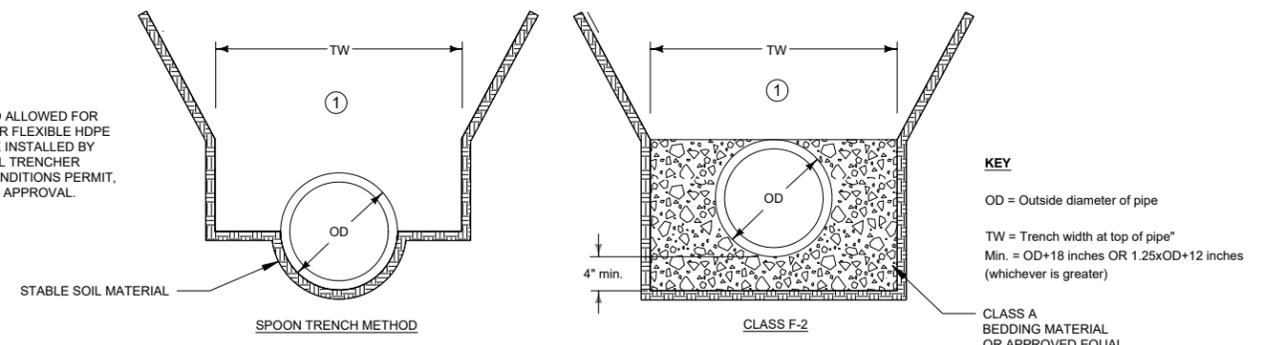
FIGURE 300.010 | SHEET 101

		REVISION 1 04-17-18
FIGURE 300.010	STANDARD ROAD PLAN	SW-101
REVISIONS: Replaced Iowa DOT and SUDAS logos.		
 SUDAS OPERATOR		
 DESIGNER		
TRENCH BEDDING AND BACKFILL ZONES		

HDPE & PP PIPE INSTALLATION DETAIL

NOTE

- SPOON METHOD ALLOWED FOR 15" AND SMALLER FLEXIBLE HDPE DUAL WALL PIPE INSTALLED BY PLOW OR WHEEL TRENCHER WHERE SOIL CONDITIONS PERMIT, WITH ENGINEER APPROVAL.



KEY

- OD = Outside diameter of pipe
 TW = Trench width at top of pipe"
 Min. = OD+18 inches OR 1.25xOD+12 inches (whichever is greater)

ALLOWABLE BURY DEPTH

HDPE PIPE

Pipe Diameter (in)	AASHTO M 294
12	8'
15	9'
18	9'
24	9'
30	9'
36	9'
42	8'
48	8'
54	8'
60	8'

POLYPROPYLENE PIPE

Pipe Diameter (in)	ASTM F 2764
12	24'
15	25'
18	22'
24	20'
30	22'
36	21'
42	22'
48	23'
54	21'
60	21'



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

No.	Revision/Issue	Date

Notes

Sheet Name
Pipe Construction Notes & Details

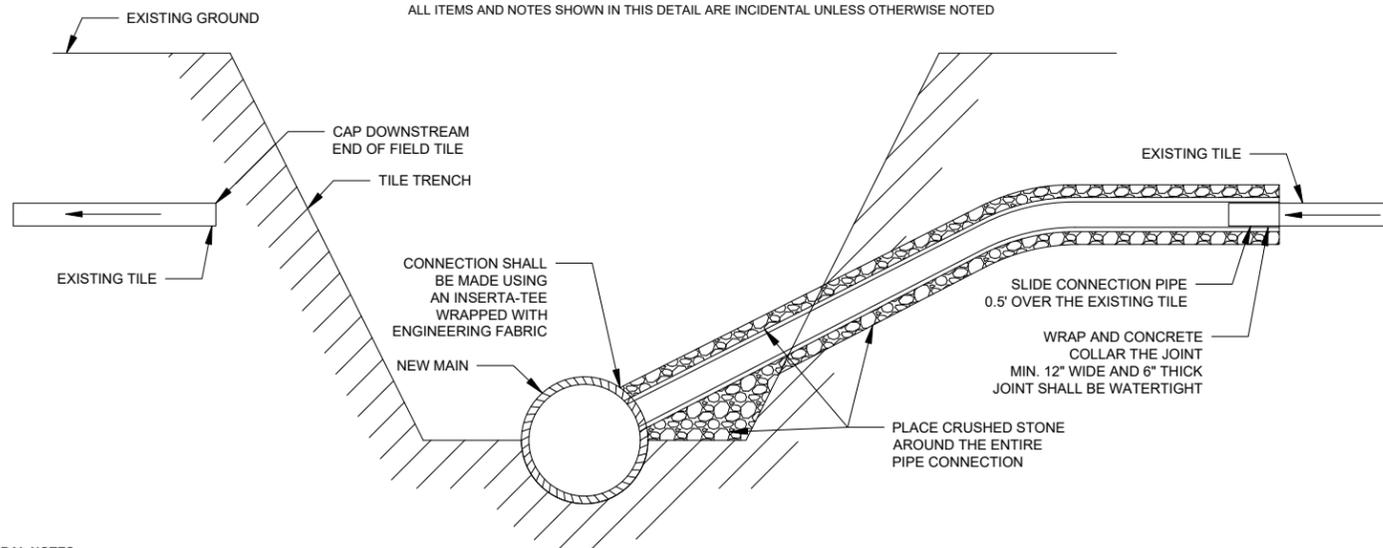
Project Name, Client, and Address
**Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050**

Project
2502-37
 Date
2026-01-30
 Plan Scale
1" = 650'

C.02

TYPICAL TILE CONNECTION DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED

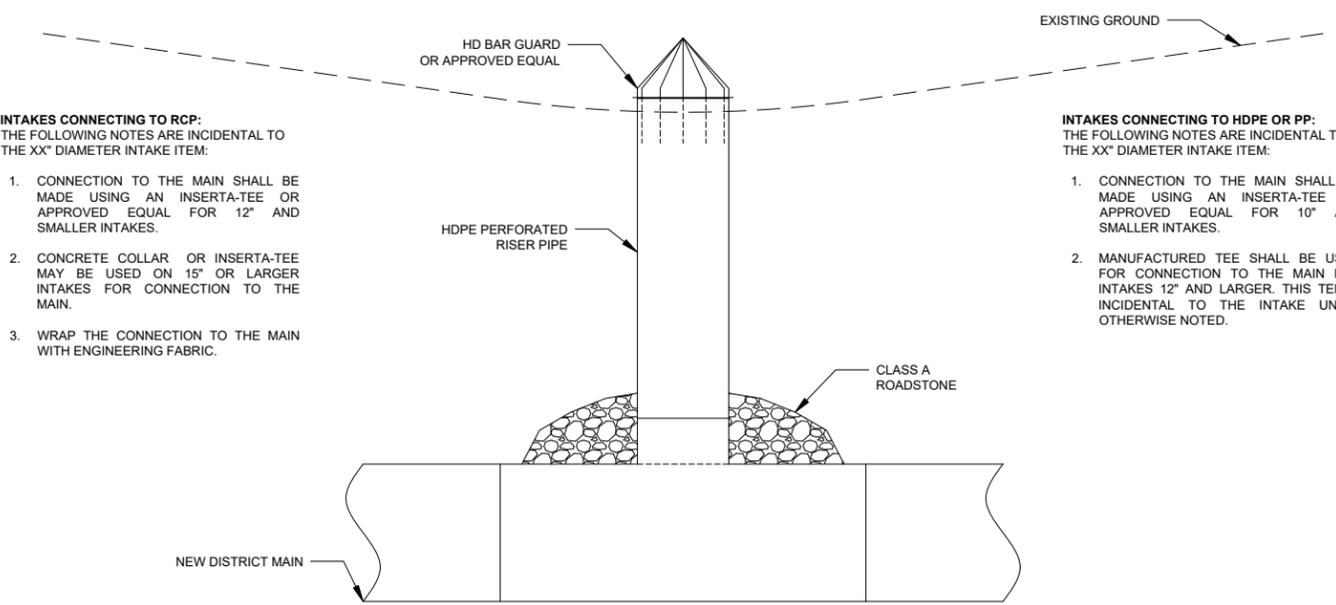


GENERAL NOTES

- TILE CONNECTIONS:** ALL EXISTING TILES ENCOUNTERED, WHETHER SHOWN ON PLANS OR NOT, SHALL BE EXPLORED AND RECONNECTED TO THE NEW SYSTEM. ALL TILE CONNECTIONS REQUIRE A MINIMUM OF 3 TONS OF BEDDING STONE TO BE PLACED AROUND THE ENTIRE TILE CONNECTION. A TIME-STAMPED AND GPS-LOCATED PHOTO WILL BE REQUIRED FOR EACH CONNECTION. THE PHOTO SHALL BE TAKEN BEFORE THE ROCK HAS COMPLETELY ENCASED THE PIPE. A LOG OF ALL CONNECTIONS INCLUDING SIZE, LOCATION AND EXISTING MATERIAL SHALL BE SUBMITTED PRIOR TO PAYMENT. ROCK TICKETS MUST BE SUBMITTED. ROCK USED IS INCIDENTAL TO INSTALLATION. ANY LATERAL TILE CROSSING THE MAIN LINE TRENCH MUST BE SUPPORTED BY CRUSHED STONE BEDDING TO PREVENT SETTLEMENT AND SHEARING AT THE CONNECTION POINT.
- TO MAKE THE CONNECTION, SINGLE WALL CORRUGATED DRAIN TILE OF THE SAME OR LARGER SIZE THAN THE EXISTING TILE MAY BE USED FOR TILES UP TO 10" IN DIAMETER. ANY TILE 12" OR LARGER WILL REQUIRE USING FLEXIBLE DUAL WALL DRAIN TILE OF THE SAME OR LARGER TILE TO MAKE THE CONNECTION. 25 LF OF DRAIN TILE IS CONSIDERED INCIDENTAL TO THE CONNECTION, IF LONGER THAN 25 FEET IS USED, IT NEEDS TO BE NOTED IN THE LOG WITH A PHOTO TO BE PAID.
- THE UPSTREAM END CONNECTING TO THE TILE SHALL BE WRAPPED WITH FABRIC AND CONCRETE COLLARED. THE DOWNSTREAM END OF THE TILE CONNECTION SHALL BE CAPPED WITH BROKEN TILE AND CONCRETE PIECES BONDED WITH SACKRETE OR APPROVED SIMILAR AND WRAPPED WITH FABRIC OR A HDPE END CAP MAY BE USED.
- 12" TILE INTERCONNECTIONS WITH THE EXISTING DISTRICT TILE WILL BE PAID AS LARGE TILE CONNECTIONS. TILE INTERCONNECTIONS WITH THE EXISTING FIELD TILE WILL BE PAID AS SMALL TILE CONNECTIONS.
- RCP DISTRICT TILE CONNECTIONS:** ALL TILE CONNECTIONS 12" OR SMALLER SHALL BE MADE WITH INSERTA-TEE OR APPROVED SIMILAR. ALL TILE CONNECTIONS 15" OR LARGER SHALL BE MADE WITH EITHER AN INSERTA-TEE OR MAY BE CONCRETE COLLARED.
- HDPE DISTRICT TILE CONNECTIONS:** ALL TILE CONNECTIONS 10" OR SMALLER SHALL BE MADE WITH AN INSERTA-TEE OR APPROVED SIMILAR. ALL TILE CONNECTIONS 12" OR LARGER SHALL BE USE A MANUFACTURED TEE CONNECTED VIA A CONCRETE COLLAR OR INTERLOCKED.

HD XX" BAR GUARD INTAKE DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED



INTAKES CONNECTING TO RCP:
THE FOLLOWING NOTES ARE INCIDENTAL TO THE XX" DIAMETER INTAKE ITEM:

- CONNECTION TO THE MAIN SHALL BE MADE USING AN INSERTA-TEE OR APPROVED EQUAL FOR 12" AND SMALLER INTAKES.
- CONCRETE COLLAR OR INSERTA-TEE MAY BE USED ON 15" OR LARGER INTAKES FOR CONNECTION TO THE MAIN.
- WRAP THE CONNECTION TO THE MAIN WITH ENGINEERING FABRIC.

INTAKES CONNECTING TO HDPE OR PP:
THE FOLLOWING NOTES ARE INCIDENTAL TO THE XX" DIAMETER INTAKE ITEM:

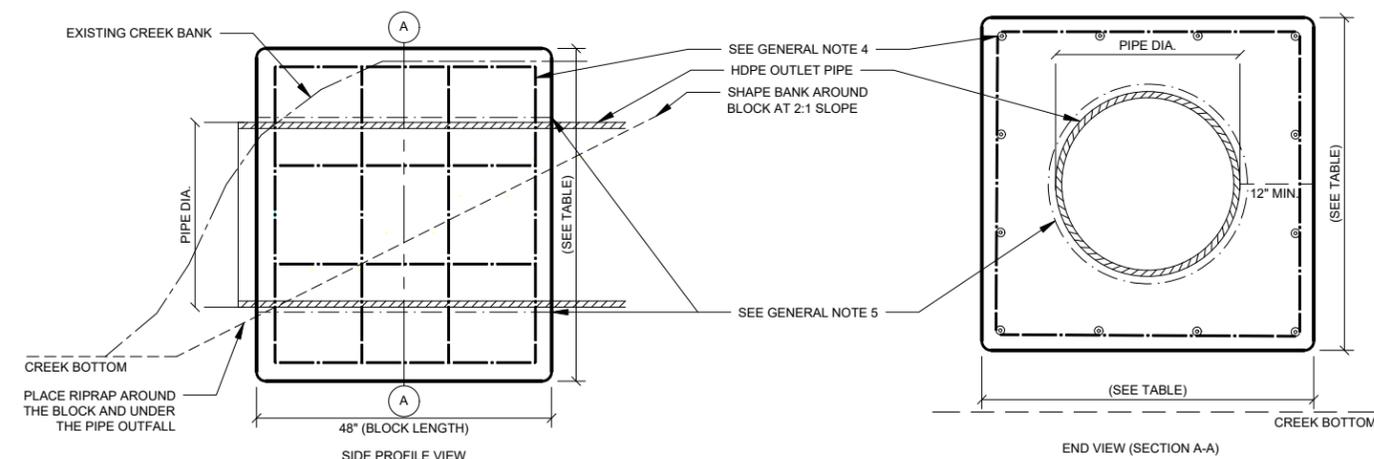
- CONNECTION TO THE MAIN SHALL BE MADE USING AN INSERTA-TEE OR APPROVED EQUAL FOR 10" AND SMALLER INTAKES.
- MANUFACTURED TEE SHALL BE USED FOR CONNECTION TO THE MAIN FOR INTAKES 12" AND LARGER. THIS TEE IS INCIDENTAL TO THE INTAKE UNLESS OTHERWISE NOTED.

GENERAL NOTES

- INTAKES (HICKENBOTTOM/BAR GUARD):** ALL INTAKES ARE CALLED OUT ON THE PLANS. ALL INTAKES REQUIRE A MINIMUM OF 3 TONS OF BEDDING STONE TO BE PLACED AROUND THE ENTIRE CONNECTION. A TIME-STAMPED AND GPS-LOCATED PHOTO WILL BE REQUIRED FOR EACH CONNECTION. THE PHOTO SHALL BE TAKEN BEFORE THE ROCK HAS COMPLETELY ENCASED THE PIPE. A LOG OF ALL CONNECTIONS INCLUDING SIZE, LOCATION AND MATERIAL SHALL BE SUBMITTED PRIOR TO PAYMENT. ROCK TICKETS MUST BE SUBMITTED. ROCK USED IS INCIDENTAL TO INSTALLATION. THE GROUND AROUND THE INTAKE SHALL BE RESHAPED TO DRAIN TO THE INTAKE.
- BAR GUARD INTAKES:** ALL BAR GUARD INTAKES SHALL BE CONSIDERED HEAVY DUTY. CONSTRUCTED OF 1/2" STEEL ROD WITH A YELLOW POWDER COAT FINISH. AGRI-DRAIN HD YELLOW BAR GUARD OR APPROVED EQUAL.
- INTAKE MARKER:** ALL INTAKES PLACED IN ROAD DITCHES SHALL INCLUDE AN INLET TILE MARKER SIGN, SUCH AS PROVIDED AT AGRI-DRAIN OR APPROVED EQUAL. THE SIGN SHALL BE FIXED TO A STEEL OR WOODEN POST AT MINIMUM 6' LONG.
- RISER:** PERFORATED HDPE DUAL WALL PIPE SHALL BE USED AS THE RISER, THE APPROXIMATE LENGTH REQUIRED IS SHOWN ON THE PLANS. THE PIPE USED AS A RISER IS CONSIDERED INCIDENTAL TO THE INTAKE INSTALLATION. NO MEASUREMENT WILL BE MADE OF THE LENGTH NEEDED. RISER MUST BE CUT FLUSH TO GROUND LEVEL.

LARGE HDPE PIPE OUTLET DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED



PIPE DIA. (IN.)	BLOCK WIDTH (IN.)	BLOCK HEIGHT (IN.)	BLOCK LENGTH (IN.)	CONCRETE (CU. YD.)	REBAR (#4) (LBS.)
18"	42"	42"	48"	1.55	65
24"	48"	48"	48"	1.90	75
30"	54"	54"	48"	2.27	100
36"	60"	60"	48"	2.66	110
42"	66"	66"	48"	3.06	135
48"	72"	72"	48"	3.47	145
54"	78"	78"	48"	3.90	175
60"	84"	84"	48"	4.35	190

GENERAL NOTES

- ALL DIMENSIONS IN INCHES U.N.O.
- PIPE SHALL BE CENTERED IN BLOCK.
- CONCRETE: 4,000 PSI MIN., 28-DAY.
- REBAR: ASTM A615, GRADE 60, #4 BARS. PLACE #4 BARS @ 12" O.C. E.W. ON EACH FACE (FRONT, BACK, AND BOTH SIDES), 3" CLR. COVER U.N.O. CUT AND BEND BARS AROUND PIPE OPENING WITH STD. HOOKS. LAP BARS 12" MIN. AT CORNERS. WIRE-TIE ALL INTERSECTIONS. 3" MIN. CONCRETE COVER OVER ALL REBAR.
- WRAP PIPE W/ 1/4"-1/2" CLOSED-CELL FOAM BEFORE PLACING CONCRETE.
- BACKFILL IN 6" LIFTS. COMPACT TO 95% STD. PROCTOR.
- SMOOTH TROWEL ALL EXPOSED CONCRETE FACES.
- ROUND ALL CONCRETE EDGES AND CORNERS.
- REBAR QUANTITIES ARE ESTIMATED NET WEIGHTS AND DO NOT INCLUDE LAP SPLICES, HOOKS, BENDS AT PIPE OPENING, OR CUTTING WASTE.
- PLACE 25 TONS OF RIPRAP AROUND THE CONCRETE BLOCK AND BENEATH THE PIPE OUTFALL. RIPRAP MUST BE KEYED INTO THE SLOPE AND CANNOT IMPEDED THE STREAM FLOW.
- PLACE 6" COMPACTED CRUSHED STONE BENEATH THE BLOCK AS A BASE.

HDPE & PP INSPECTION PORT DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED

MATERIALS

- TEE BASE:** MAIN TILE SIZE X 18" FABRICATED HDPE TEE (WATERTIGHT/SOIL-TIGHT).
- RISER PIPE:** 18" DUAL-WALL HDPE (NON-PERFORATED) (AASHTO M294 TYPE S).
- COVER ASSEMBLY:** NYLOPLAST 24" DUCTILE IRON SOLID COVER (ADS PART #1801DI OR SIMILAR).
NOTE: THE COVER MUST BE H-20 LOAD RATED (CAPABLE OF SUPPORTING 32,000 LBS PER AXLE). DO NOT USE PLASTIC SEPTIC LIDS OR FLAT END CAPS.
- SUPPORT STRUCTURE:** 4,000 PSI STRUCTURAL CONCRETE (FOR THE COLLAR).
- BEDDING/BACKFILL:** CLEAN, CRUSHED ANGULAR STONE (SUDAS CLASS I OR *1-INCH CLEAN*) FOR THE BEDDING AND THE FIRST 2 FEET OF RISER BACKFILL.

GENERAL NOTES

- ALL MATERIALS AND INSTALLATION SHALL COMPLY WITH IOWA SUDAS SECTION 4020/4040 AND MANUFACTURER SPECIFICATIONS FOR H-20 TRAFFIC LOADING.
- INSTALL AT INTERVALS SHOWN ON PLANS (NOMINALLY EVERY 1,000 FEET) OR SHORTER AS REQUIRED BY YOUR TESTING EQUIPMENT.
- INSPECTION PORTS ARE INCIDENTAL TO THE INSTALLATION OF HDPE AND PP DRAINAGE MAIN TILE. QUANTITY SHOWN ON PLANS IS ESTIMATED TO BE THE MINIMUM REQUIRED TO COMPLETE THE REQUIRED TESTING. IF MORE INSPECTION PORTS ARE NEEDED THAN SHOWN ON THE PLANS TO PROPERLY INSPECT THE PIPE OR IF LARGER INSPECTION PORTS ARE NEEDED FOR THE TOOLS REQUIRED, ANY ADDITIONAL COST FOR INSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR FOR SUCH ACCOMMODATIONS. ALL ITEMS SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL PROVIDE TIMESTAMPED AND GPS LOCATED PHOTOS OF EACH PORT PRIOR TO BACKFILLING. ROCK TICKETS FOR EACH PORT MUST BE SUBMITTED. ROCK USE FOR EACH PORT IS INCIDENTAL.

INSTALLATION

- PHASE I: MAIN LINE CONSTRUCTION**
INSTALL THE 18" ON MAIN TILE SIZE TEE ON A STABLE FOUNDATION OF F-2 BEDDING (PER USER SPEC).
INSTALL THE 18" RISER PIPE VERTICALLY. FOR THE 30-DAY INSPECTION PERIOD, LEAVE THE PIPE EXTENDING 1 FOOT ABOVE THE SURFACE.
- PHASE II: 30-DAY INSPECTION**
THIRTY (30) DAYS POST-CONSTRUCTION, PERFORM THE REQUIRED CAMERA INSPECTION AND MANDREL PULL THROUGH THE MAIN VIA THE 18" PORT.
UPON APPROVAL OF THE INSPECTION, PROCEED TO FINAL BURIAL.
- PHASE III: FINAL BURIAL & LOAD SUPPORT**
CUTTING: EXCAVATE AROUND THE RISER AND CUT THE HDPE PIPE TO A DEPTH OF 4 FEET BELOW FINAL GRADE.
CONCRETE COLLAR (CRUCIAL): EXCAVATE A SHELF IN THE NATIVE SOIL AROUND THE TOP OF THE 18" PIPE. POUR AN 8-INCH-THICK CONCRETE COLLAR (SUDAS CLASS C) (APPROX. 36" IN DIAMETER) AROUND THE PIPE.
LID PLACEMENT: SET THE NYLOPLAST DUCTILE IRON FRAME AND SOLID COVER INTO THE CONCRETE COLLAR/RISER. ENSURE THE FRAME IS LEVEL AND SUPPORTED BY THE CONCRETE, NOT JUST RESTING ON THE PLASTIC PIPE.
BEDDING: PLACE 12 INCHES OF CRUSHED ROCK OVER THE LID TO PROVIDE A DRAINAGE/STABILITY LAYER.
FINAL BACKFILL: BACKFILL THE REMAINING 3 FEET WITH NATIVE SOIL IN 6-INCH LIFTS, COMPACTING WITH BUCKET, LEAVE MOUND NOT TO EXCEED 6 INCHES.



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

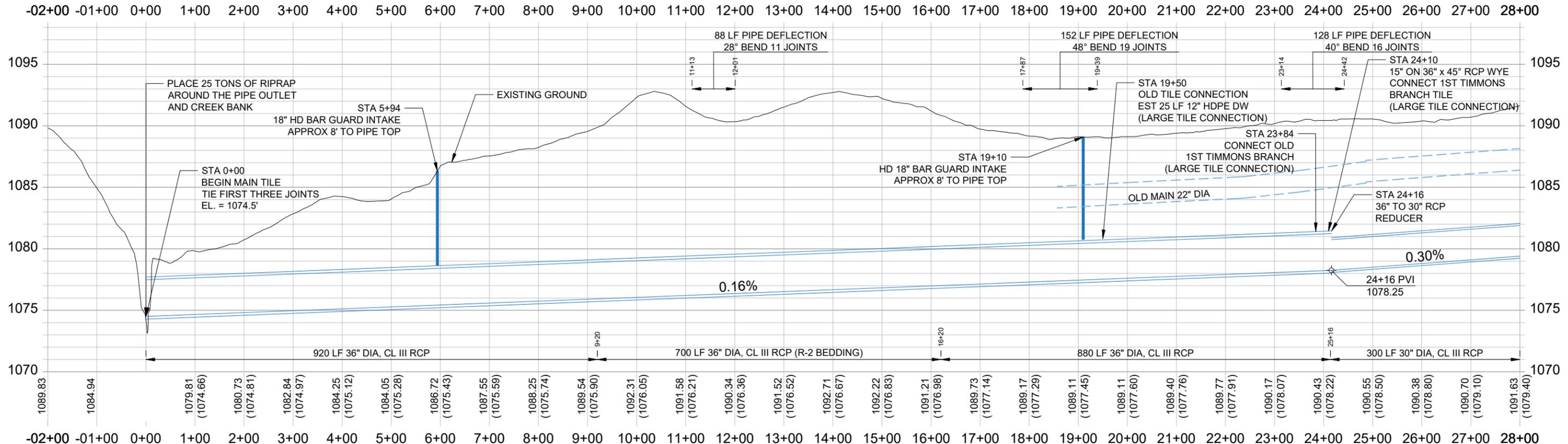
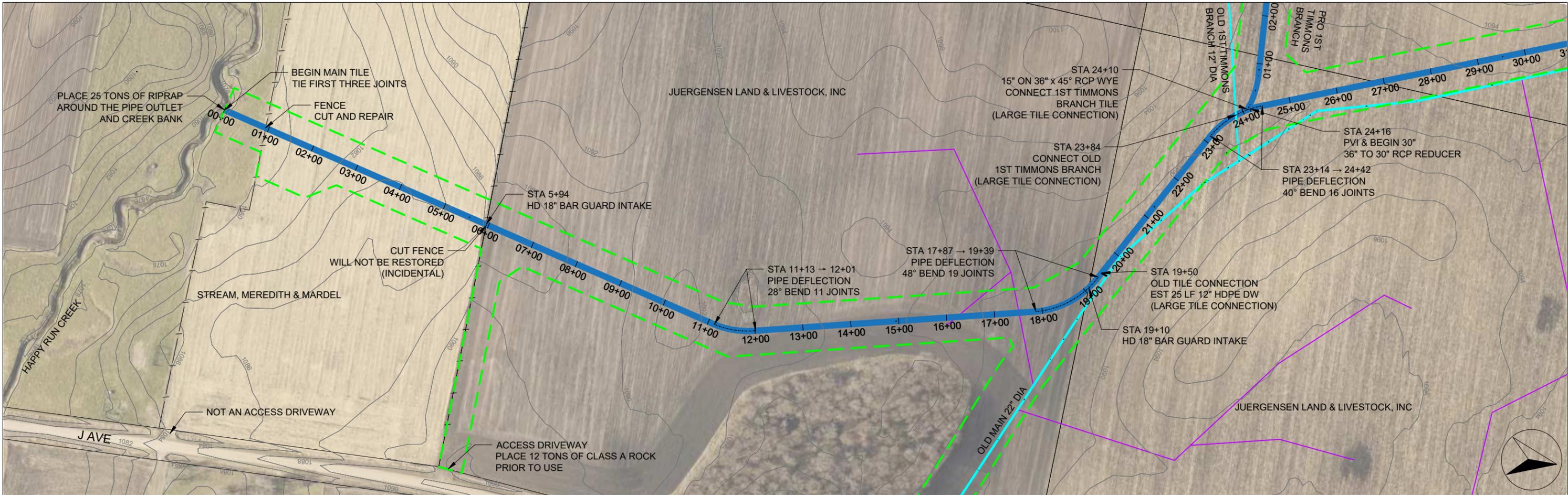
Designer
TJB
 Drafter
TJB
 Checker
JLH

No.	Revision/Issue	Date

Sheet Name
Pipe Structures Construction Notes & Details

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	Sheet
2502-37	C.03
Date 2026-01-30	
Plan Scale 1" = 650'	



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
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 Drafter
TJB
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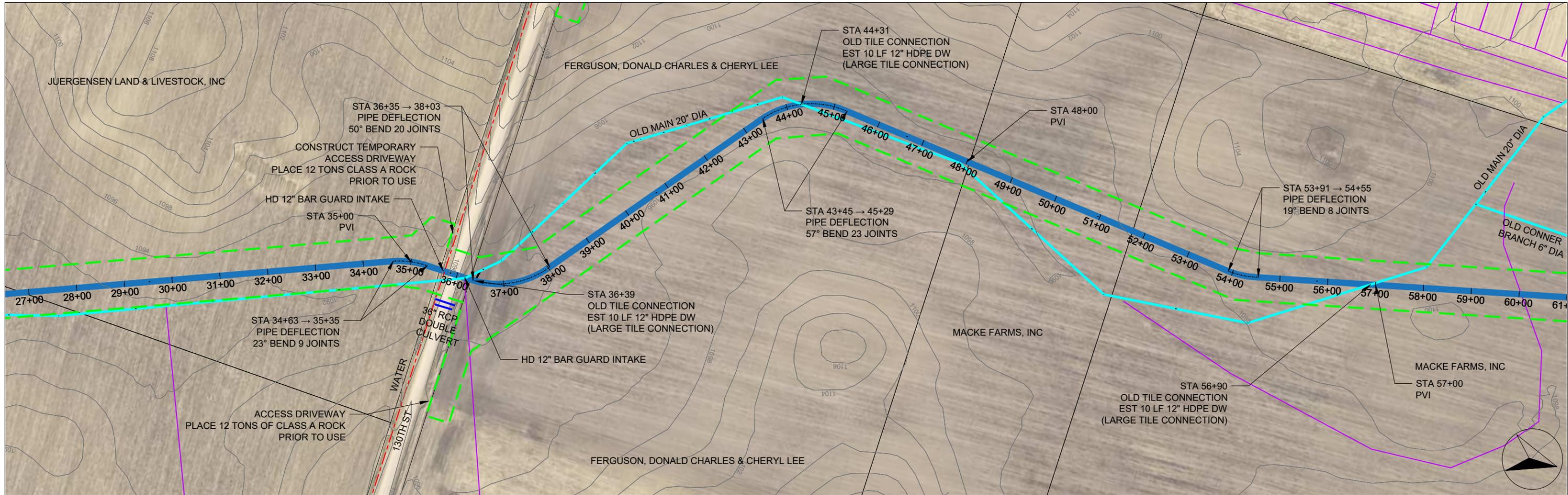
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Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline (ROW)	
2' Contours	

No.	Revision/Issue	Date

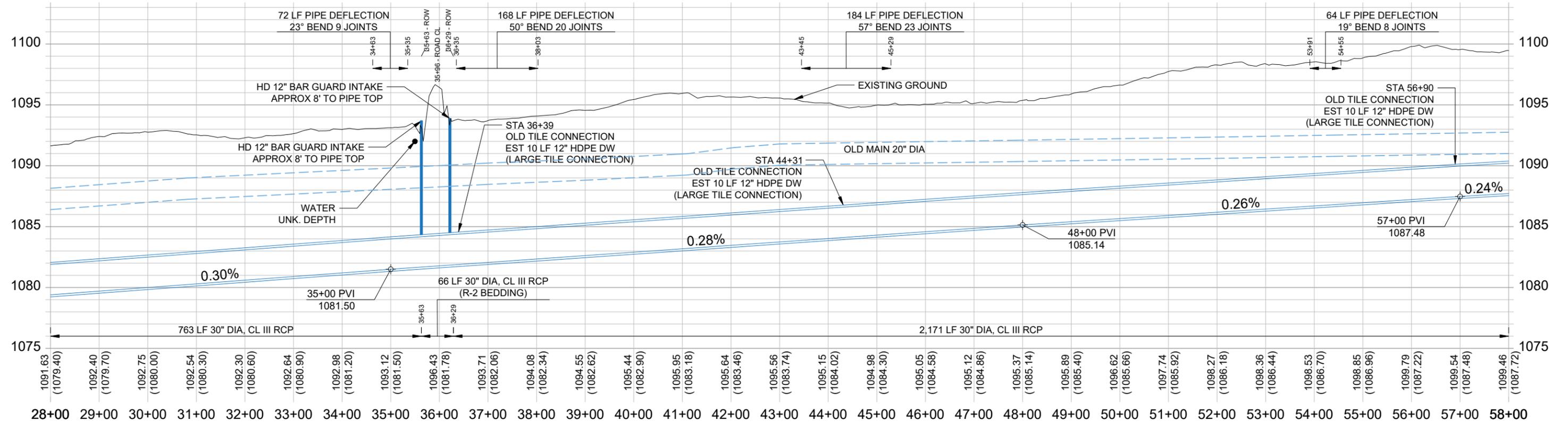
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Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.01
Date	2026-01-30		
Plan Scale	1" = 200'		



28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00



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AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
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 Drafter
TJB
 Checker
JLH

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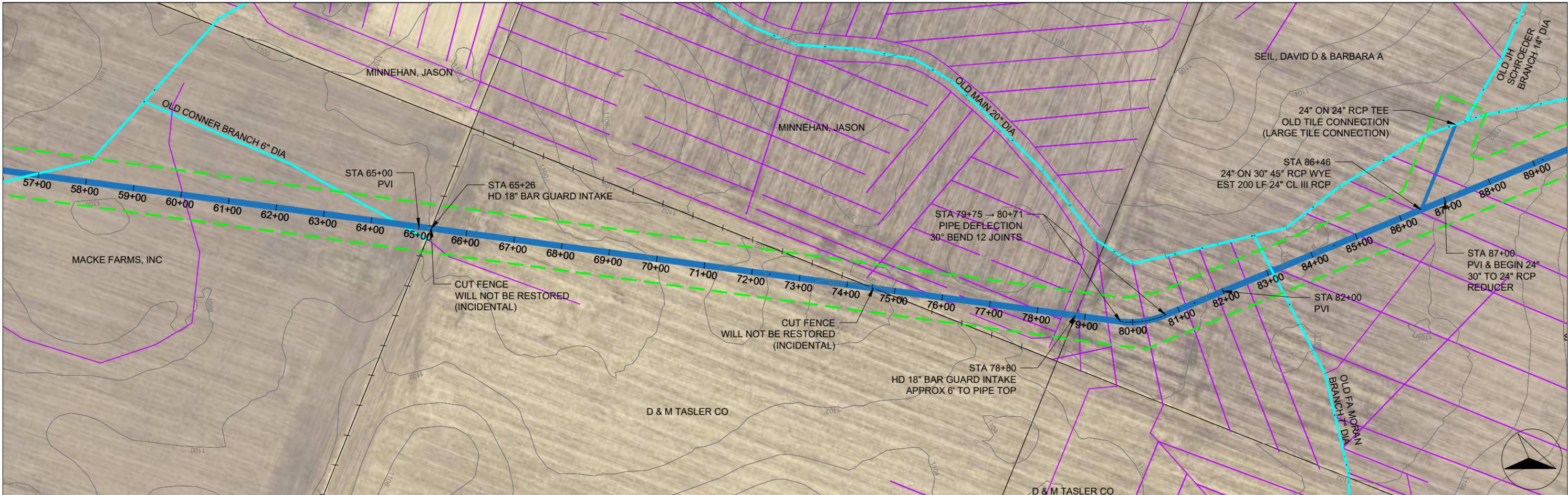
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Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

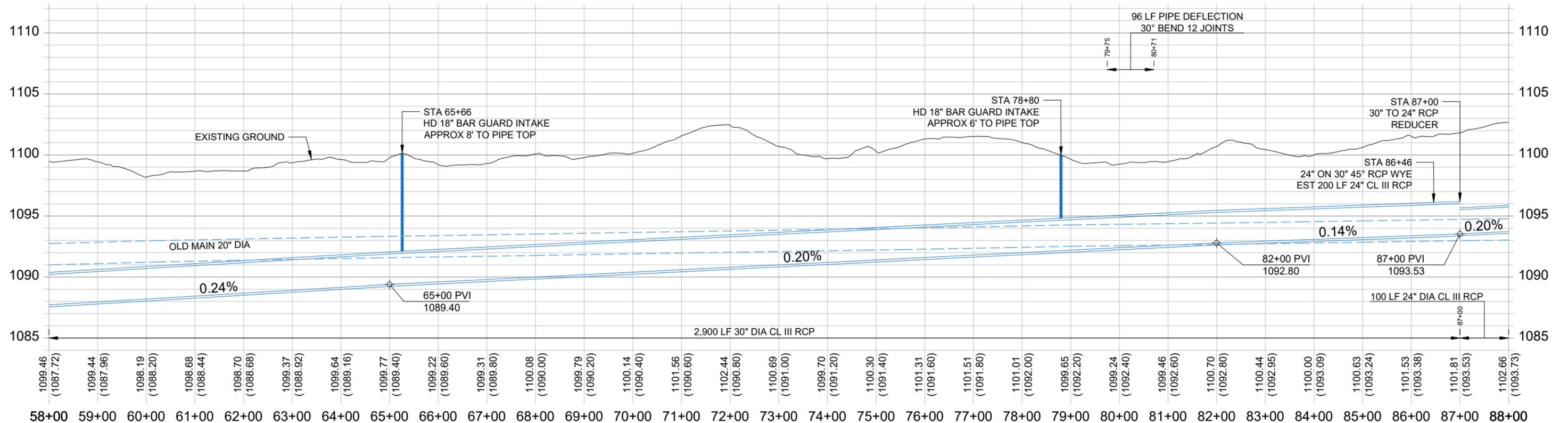
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Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.02
Date	2026-01-30		
Plan Scale	1" = 200'		



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AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

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TJB
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JLH

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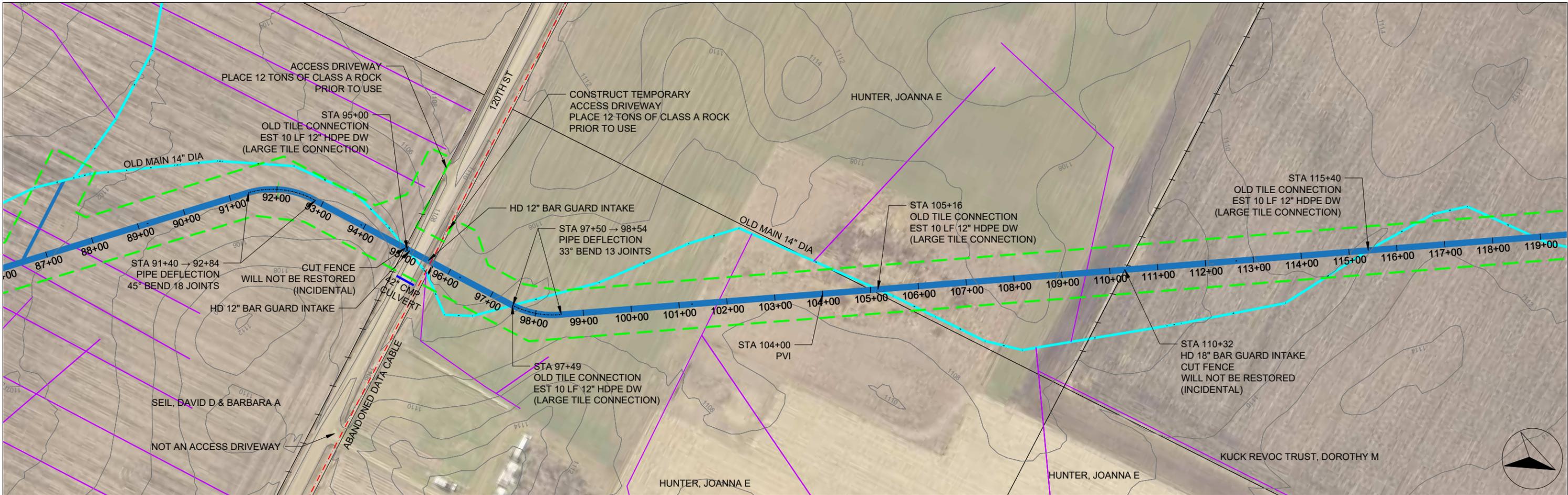
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Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

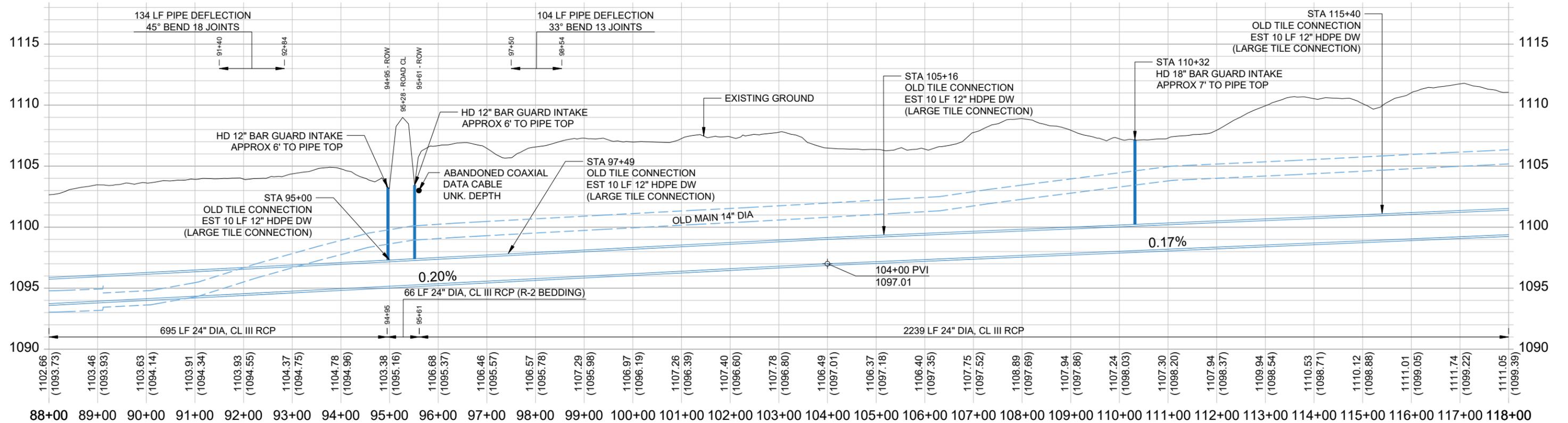
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Main Tile
 Sta 58+00 → 88+00

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.03
Date	2026-01-30		
Plan Scale	1" = 200'		



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AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

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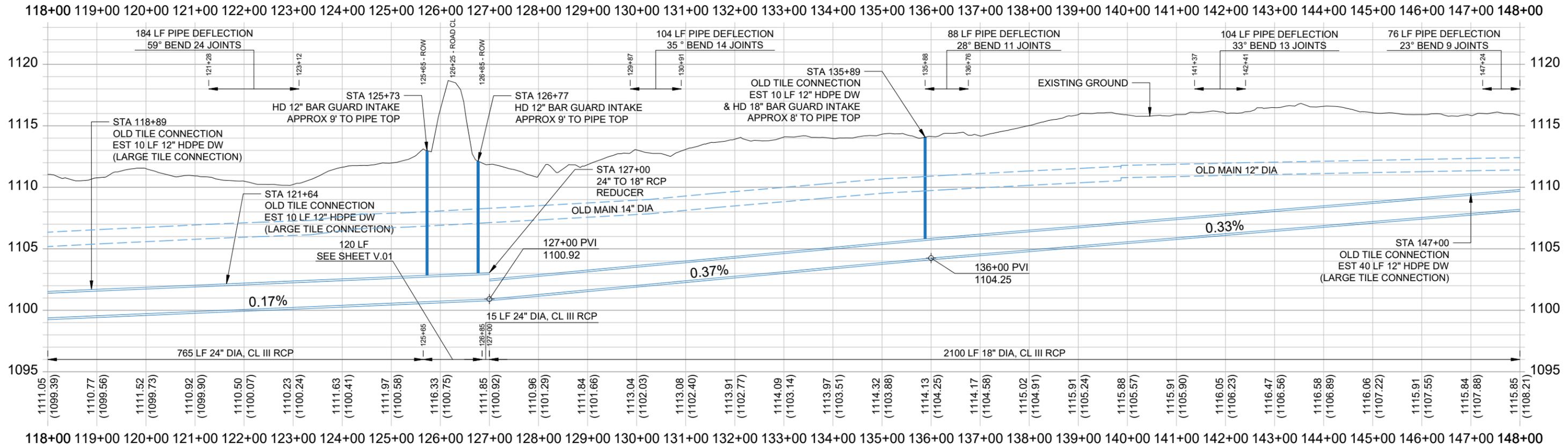
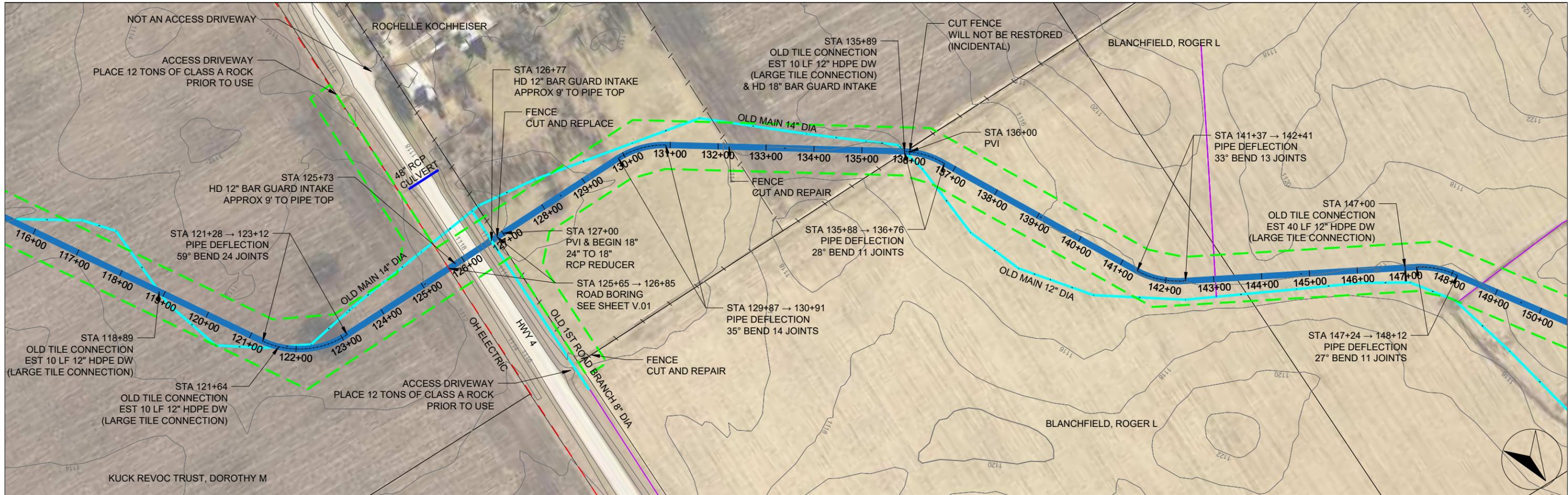
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Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Main Tile
 Sta 88+00 → 118+00

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.04
Date	2026-01-30		
Plan Scale	1" = 200'		



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
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 Checker
JLH

Notes

No.	Revision/Issue	Date

Plan Legend

- Proposed District Tile (Solid Blue Line)
- Old District Tile (Dashed Blue Line)
- Private Tile (Dashed Cyan Line)
- Work Area (ROW) (Dashed Green Line)
- Fenceline (Dashed Purple Line)
- 2' Contours (Thin Grey Line)

No.	Revision/Issue	Date

Sheet Name
Main Tile
 Sta 118+00 → 148+00

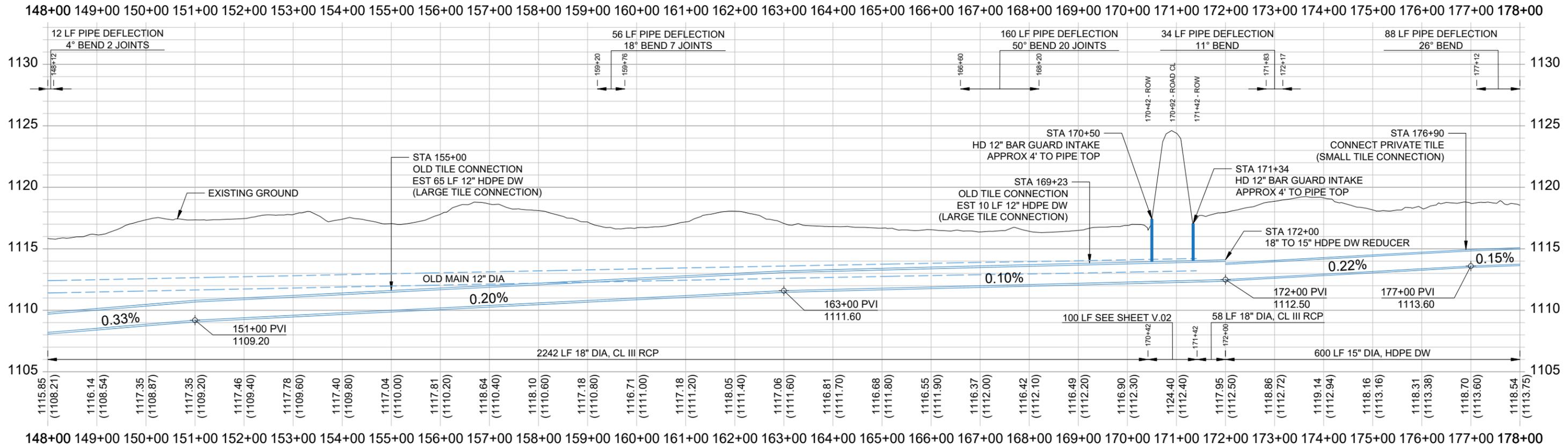
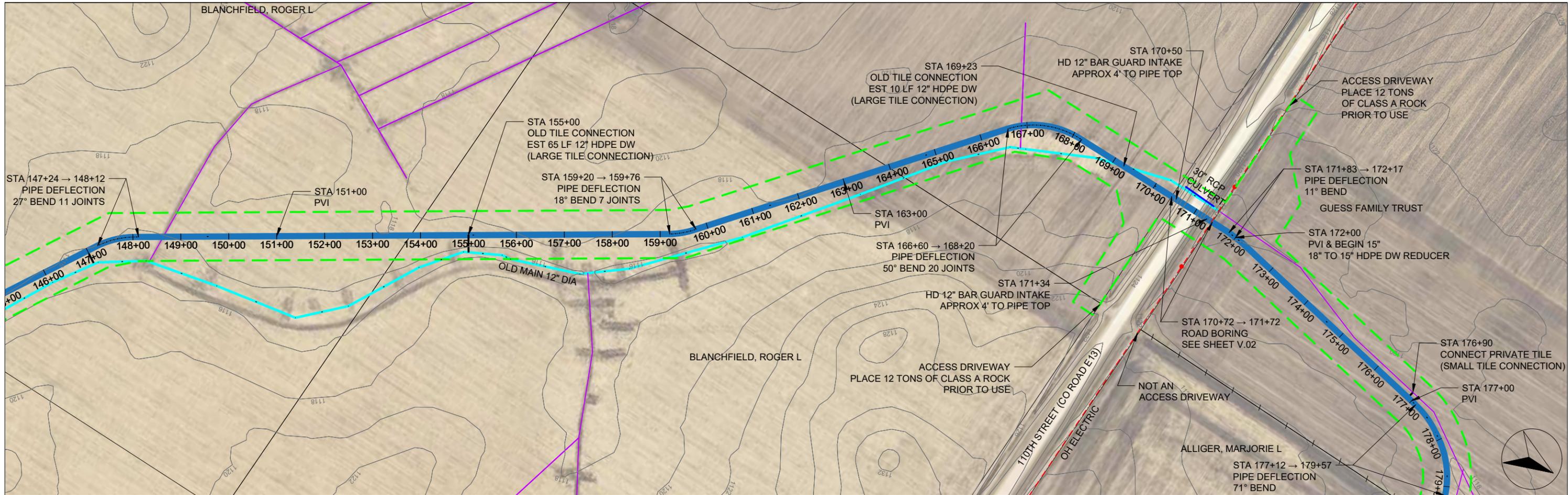
Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project
2502-37

Date
2026-01-30

Plan Scale
1" = 200'

Sheet
M.05



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Main Tile
 Sta 148+00 → 178+00

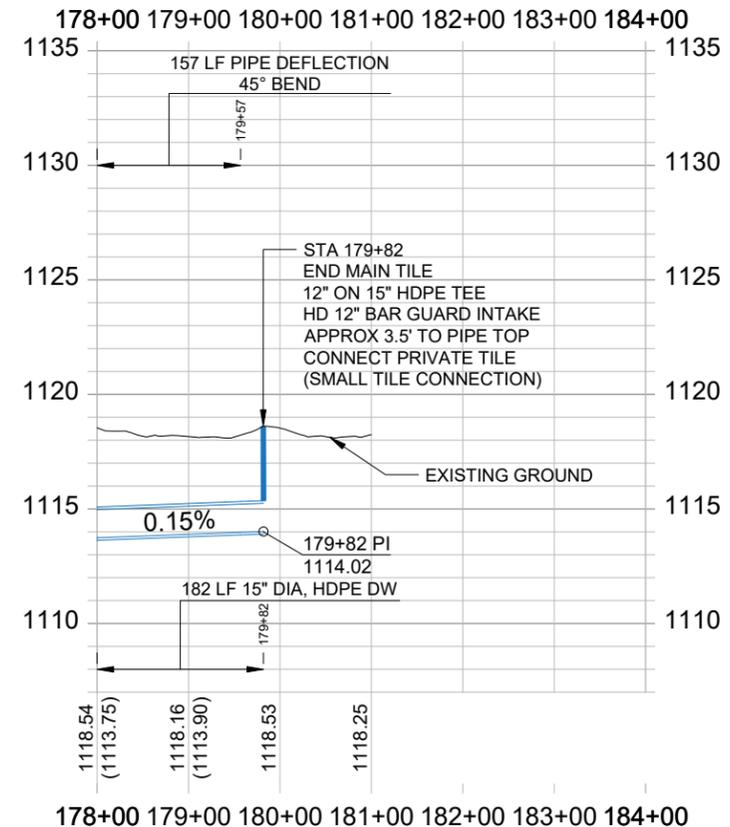
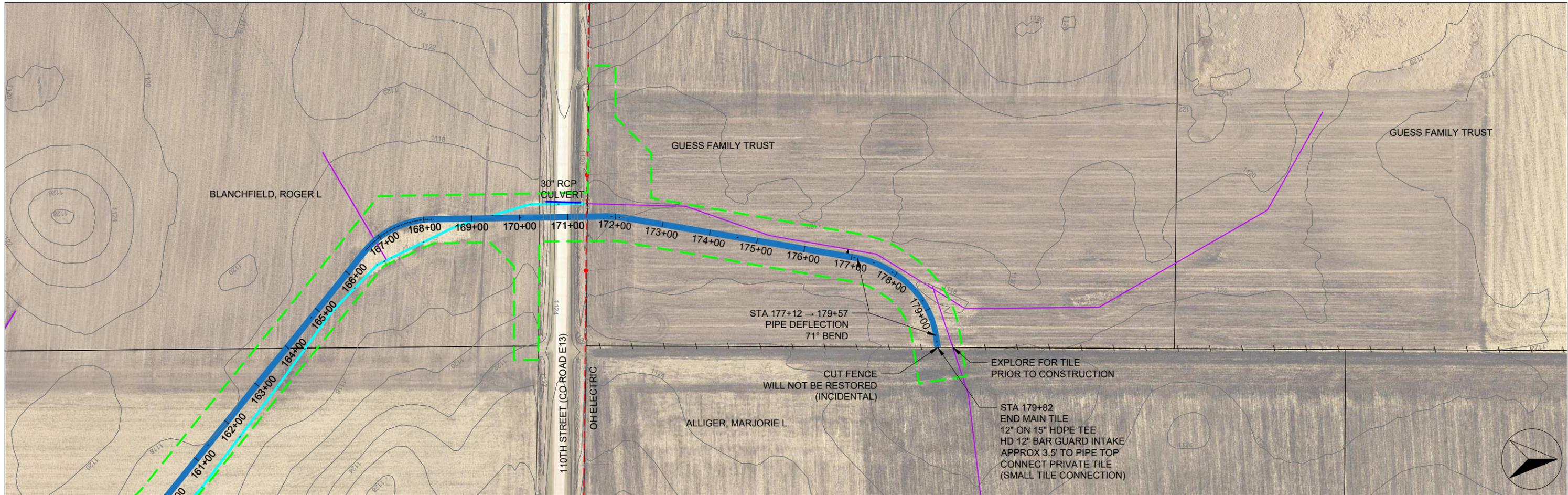
Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project
2502-37

Date
2026-01-30

Plan Scale
1" = 200'

Sheet
M.06



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

Plan Legend

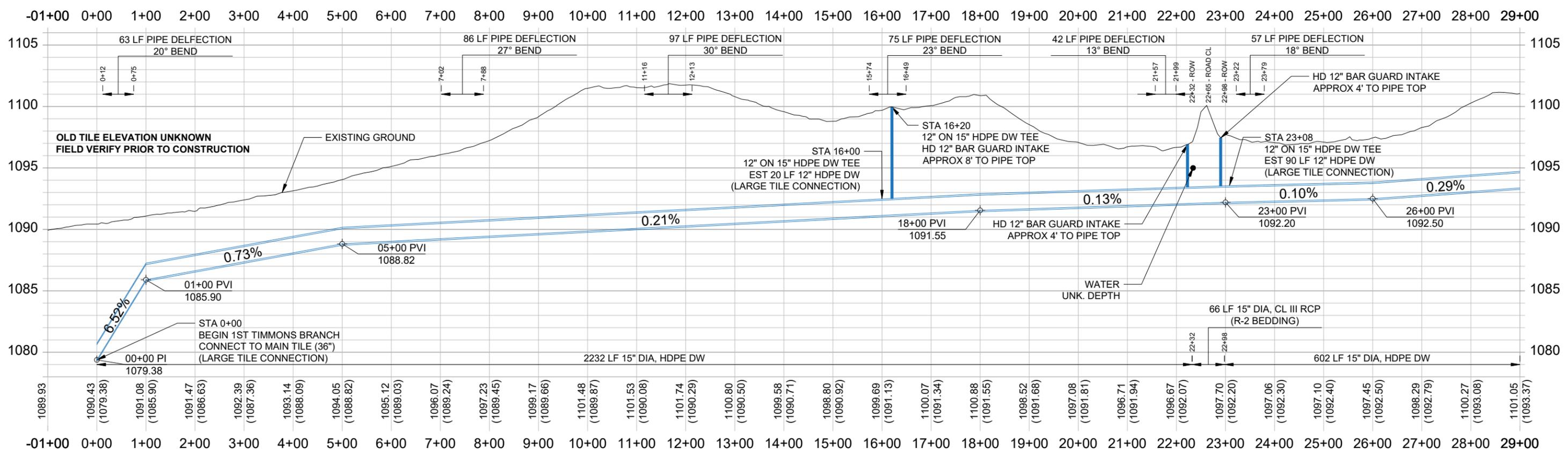
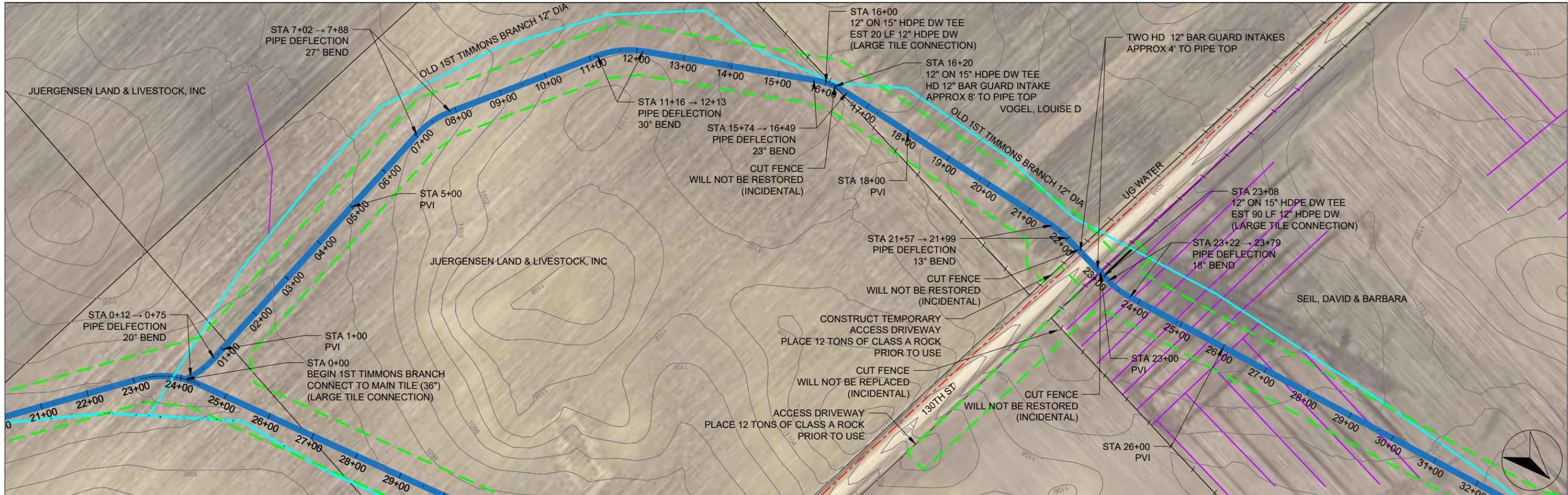
- Proposed District Tile ———
- Old District Tile ———
- Private Tile ———
- Work Area (ROW) - - - - -
- Fenceline - · - · -
- 2' Contours ———

No.	Revision/Issue	Date

Sheet Name
Main Tile
 Sta 178+00 → 179+82

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project 2502-37	Sheet
Date 2026-01-30	M.07
Plan Scale 1" = 200'	



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

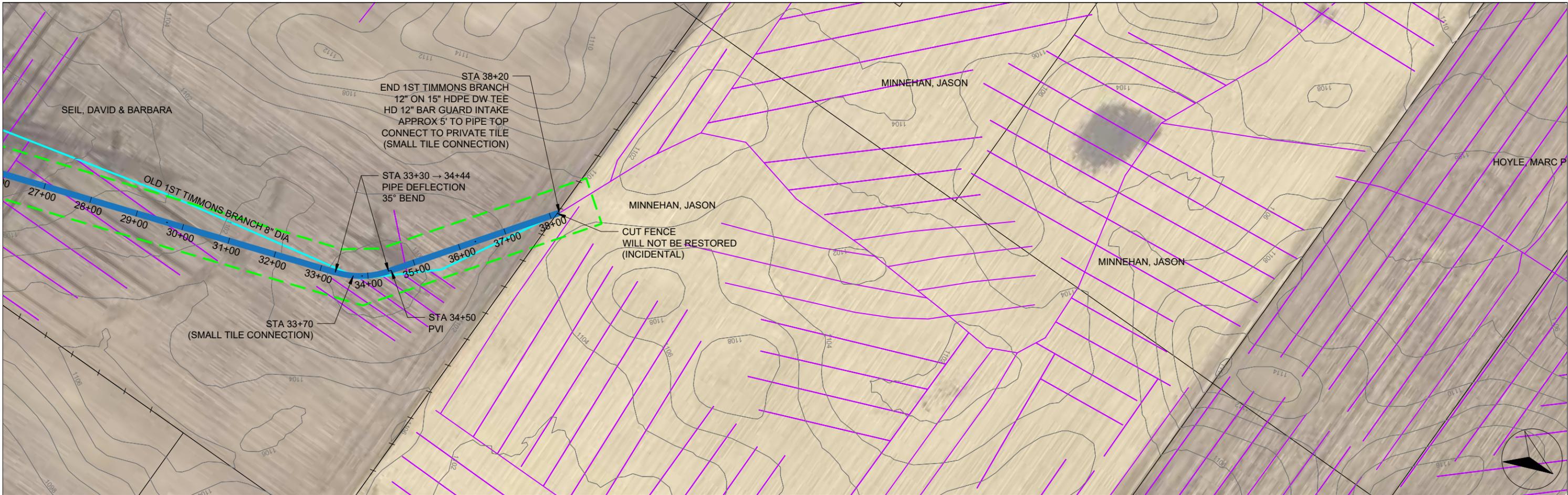
Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

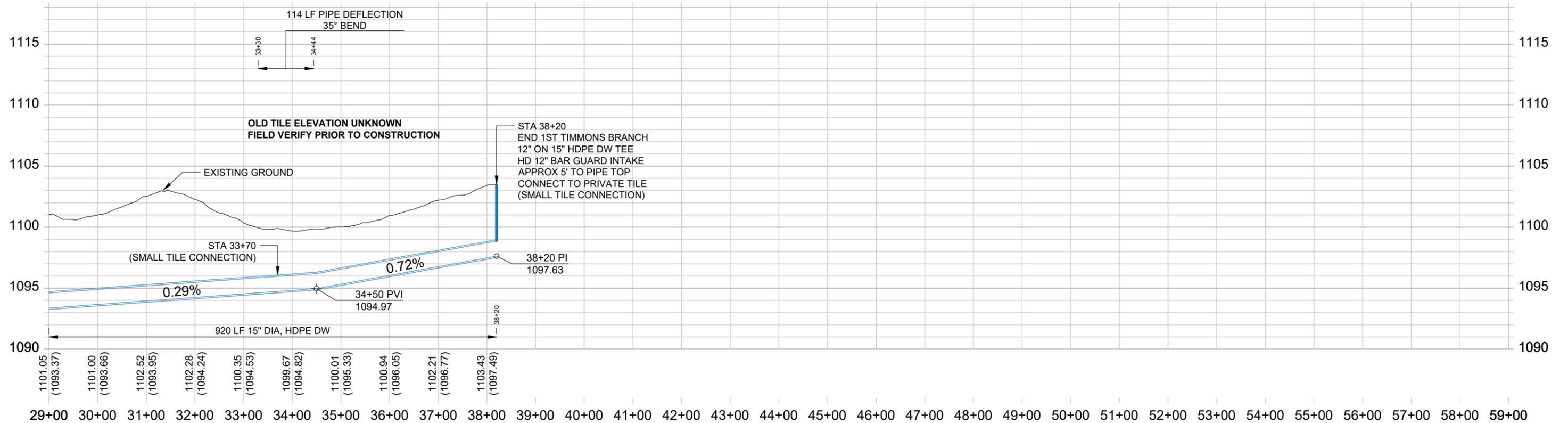
Sheet Name
1st Timmons Branch Tile
 Sta 0+00 → 29+00

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.08
Date	2026-01-30		
Plan Scale	1" = 200'		



29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

No.	Revision/Issue	Date

Plan Legend

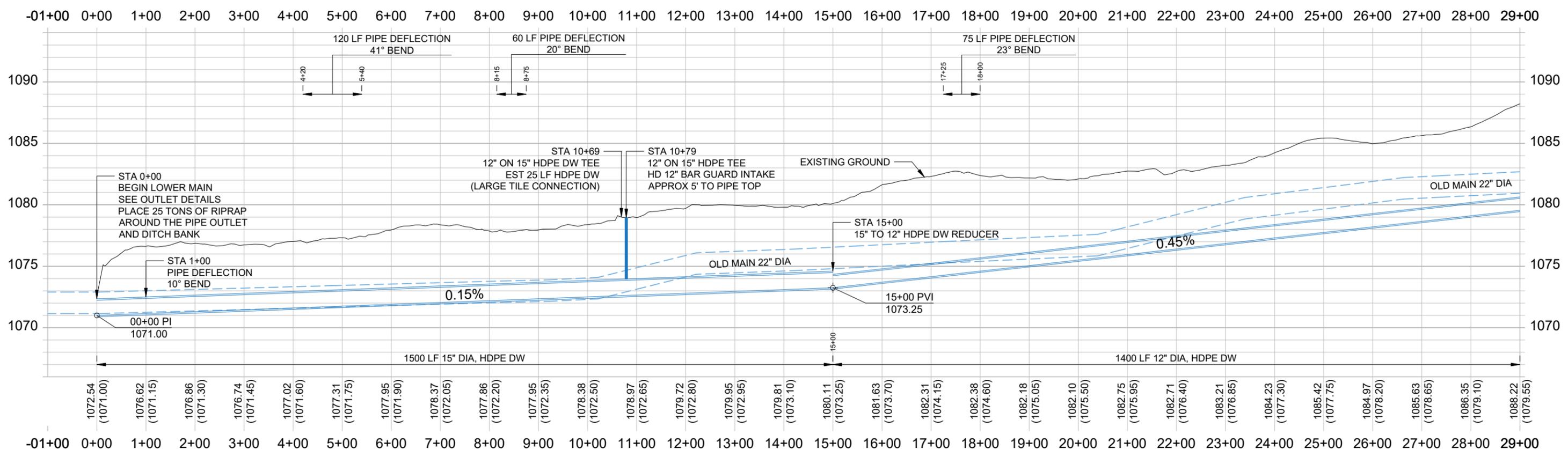
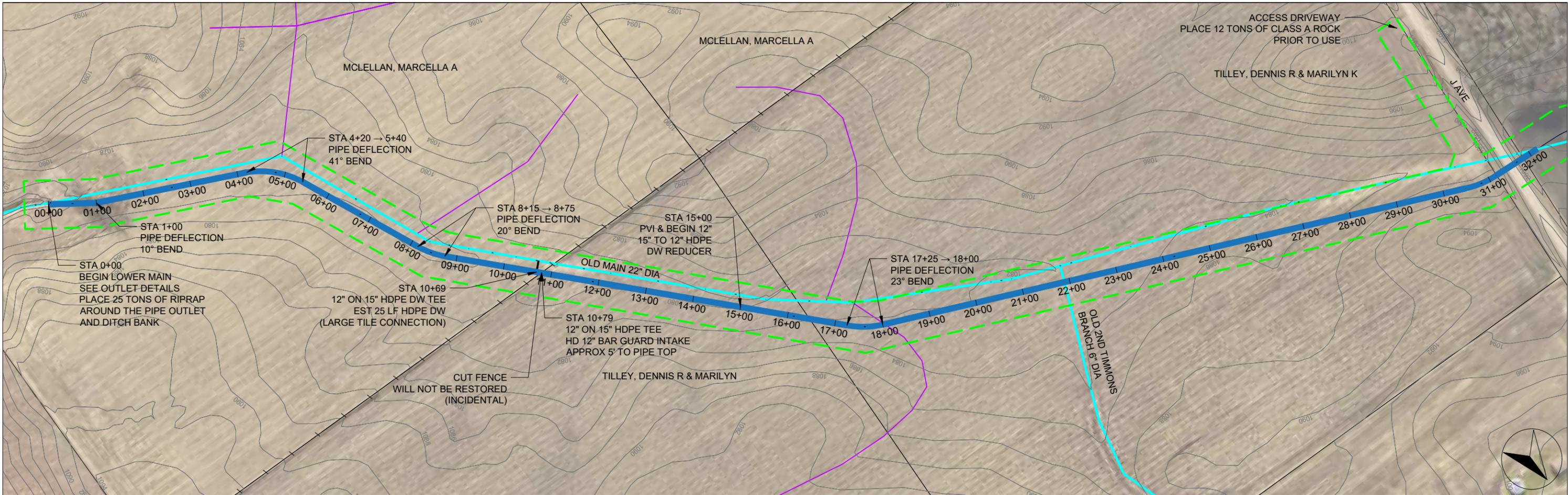
- Proposed District Tile (Blue line)
- Old District Tile (Cyan line)
- Private Tile (Purple line)
- Work Area (ROW) (Dashed green line)
- Fenceline (Dashed black line)
- 2' Contours (Thin grey lines)

No.	Revision/Issue	Date

Sheet Name
1st Timmons Branch Tile
 Sta 29+00 → 38+20

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.09
Date	2026-01-30		
Plan Scale	1" = 200'		



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

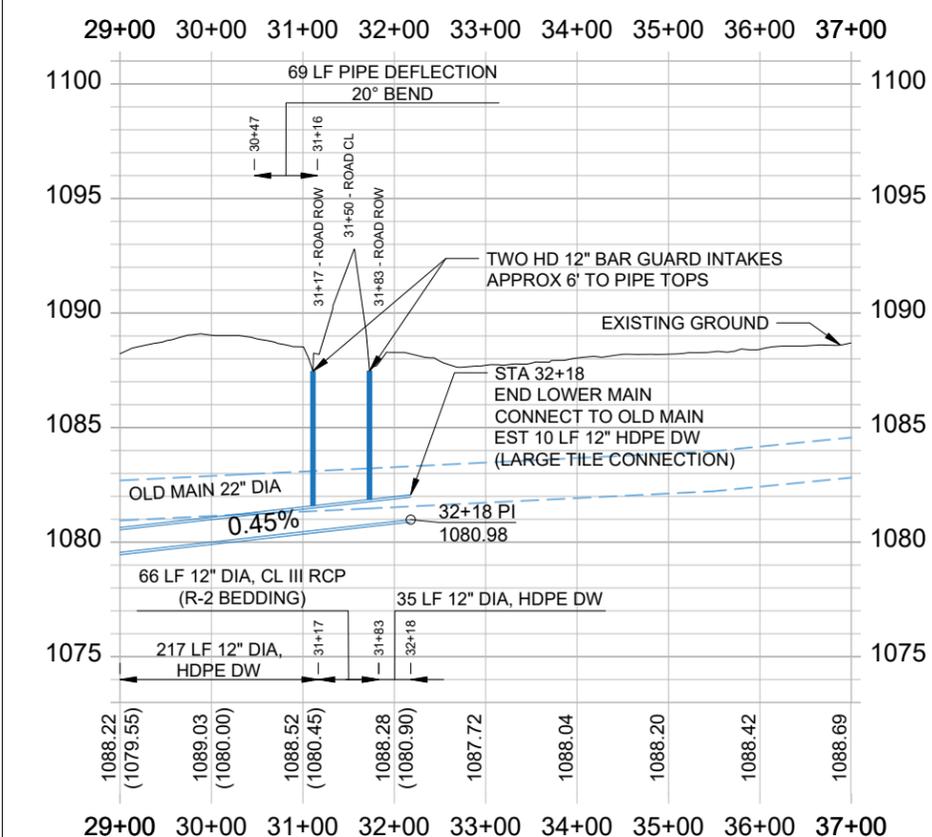
Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Lower Main
 Sta 0+00 → 29+00

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.10
Date	2026-01-30		
Plan Scale	1" = 200'		



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

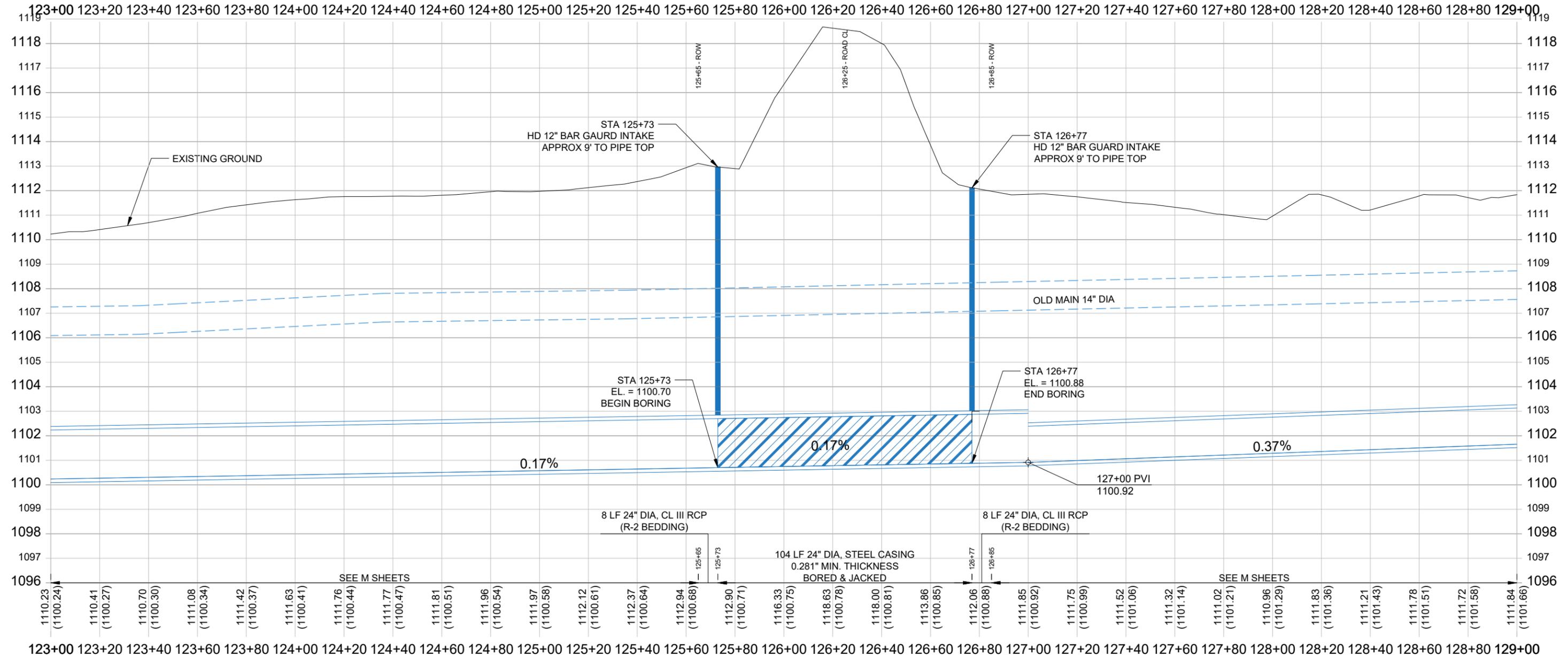
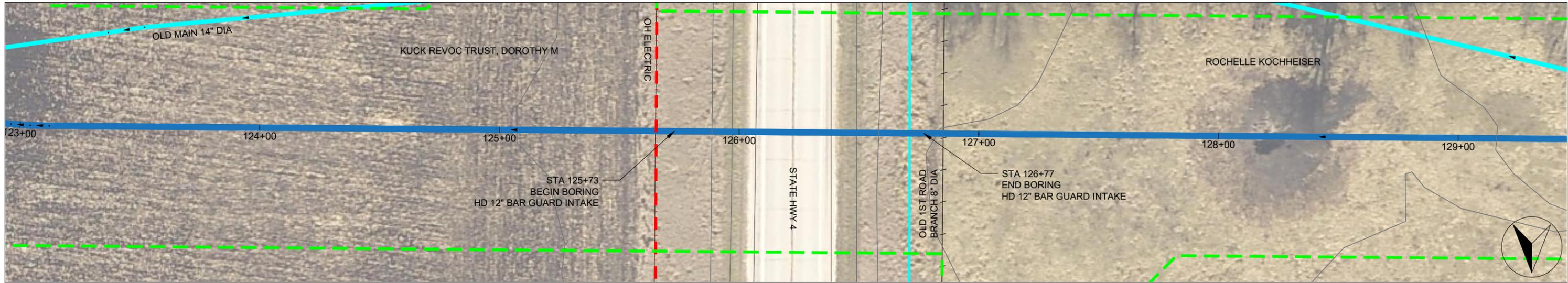
Notes	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Lower Main
 Sta 29+00 → 32+18

Project Name, Client, and Address
Tile Improvements
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project 2502-37	Sheet
Date 2026-01-30	M.11
Plan Scale 1" = 200'	



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

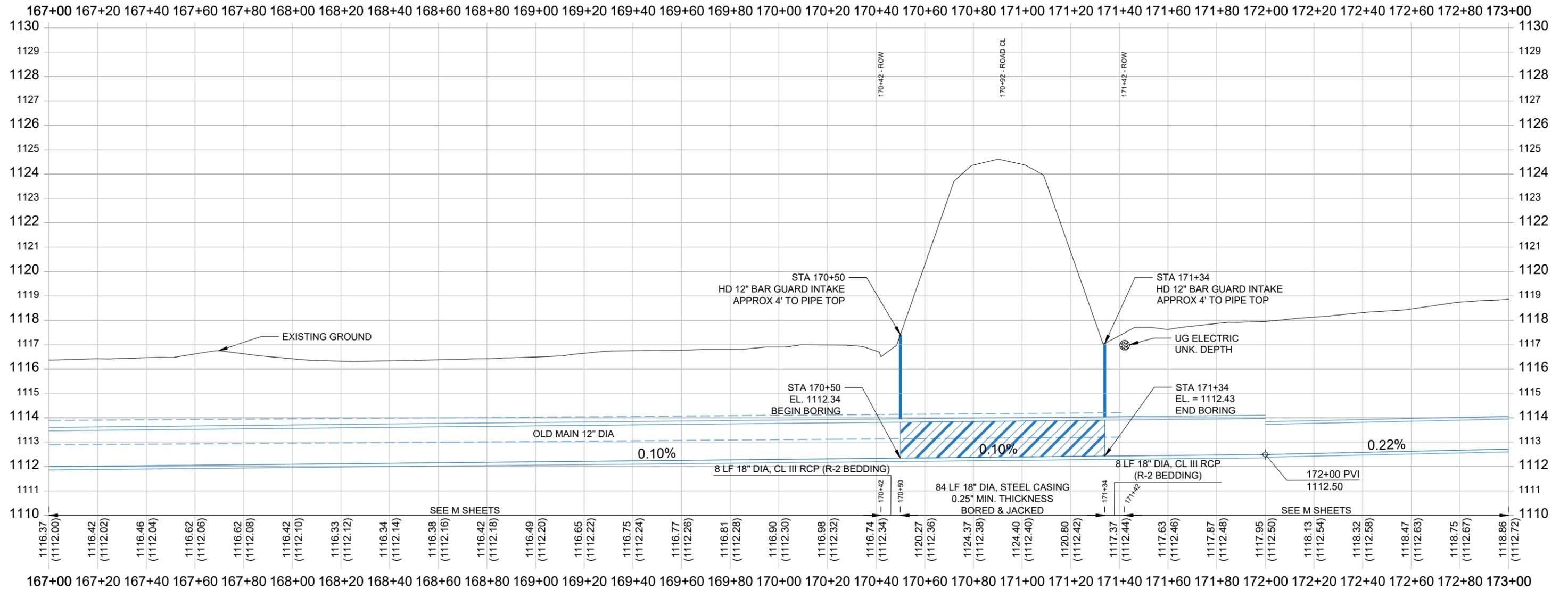
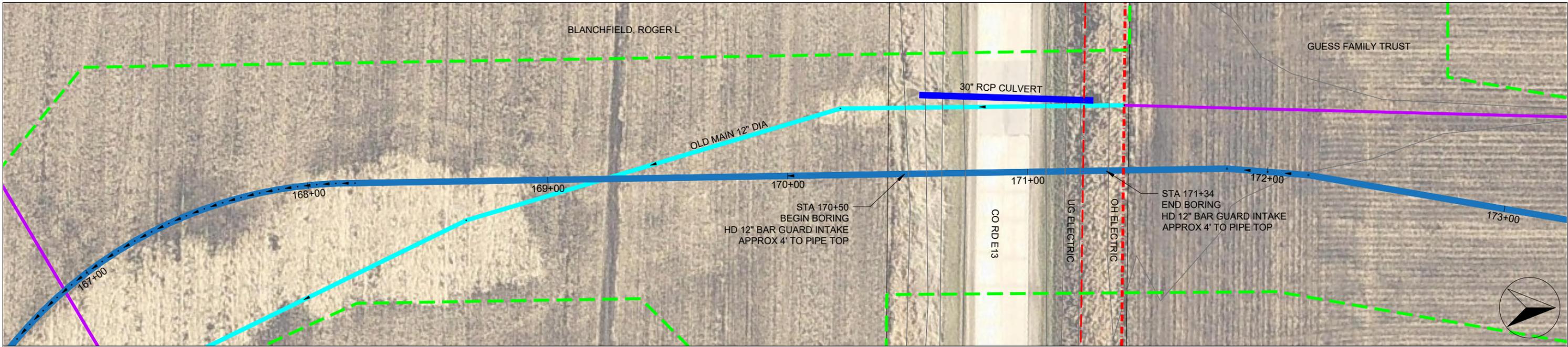
Notes	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Limits (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Boring Sheet
Main Tile
 Sta 125+65 → 126+85
 (State Hwy 4)

Project Name, Client, and Address
Tile Improvements
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	
Date	2026-01-30	V.01	
Plan Scale	1" = 40'		



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Boring Sheet
Main Tile
 Sta 170+42 → 171+42
 (110th St / Co Rd E13)

Project Name, Client, and Address
Tile Improvements
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet V.02
Date	2026-01-30	
Plan Scale	1" = 40'	

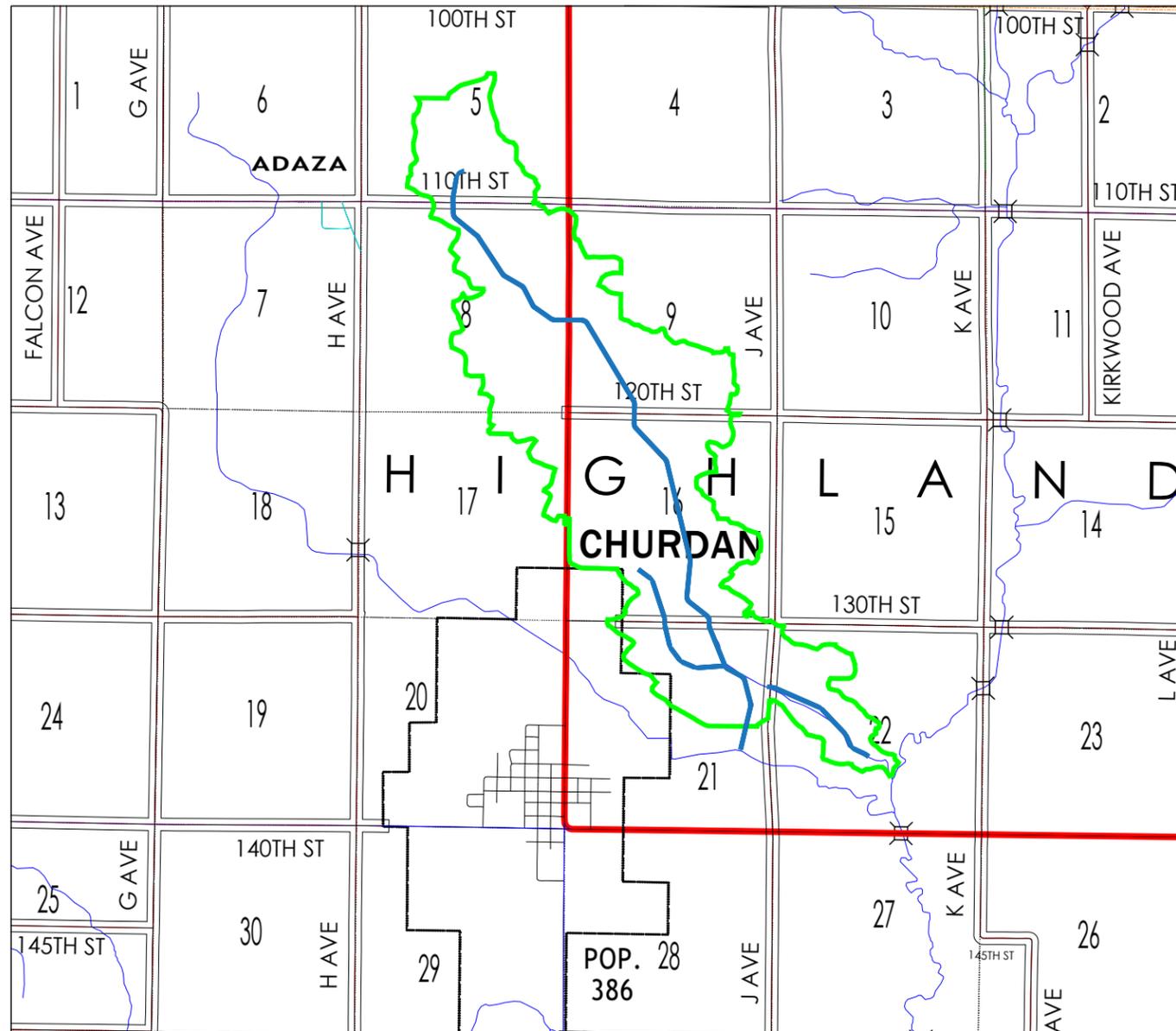
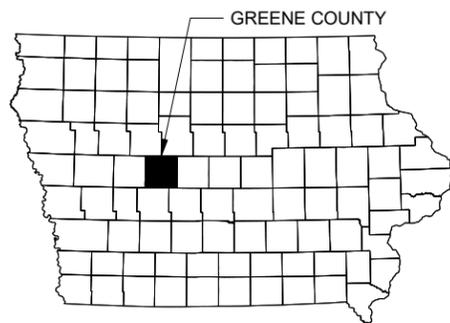
ALTERNATE CONSTRUCTION PLANS FOR DRAINAGE DISTRICT NO. 20 TILE IMPROVEMENTS GREENE COUNTY, IA 2026



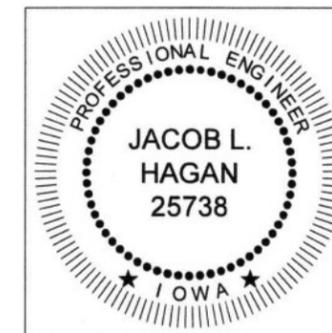
The contractor shall field verify exact locations prior to commencing construction as required by state law. Notify Iowa One Call, 811 or 1-800-292-8989.

Specifications
Unless otherwise noted, the governing standards for this project shall be the 2026 edition of the Iowa Statewide Urban Design and Specifications (SUDAS) for Public Improvements, supplemented where referenced by the Iowa Department of Transportation's Standard Specifications for Highway and Bridge Construction, Series 2023, along with all active general supplemental specifications, materials, instructional memoranda, and relevant special provisions.

Where conflicts arise, the stricter requirement shall take precedence. Complete compliance with all applicable federal, state, and local laws, ordinances, and regulations is mandatory throughout the project's execution.



Sheet Number	Sheet Title
A.01 - A	Title Sheet
A.02 - A	District Plat
C.01 - A	General Construction Notes & Details
C.02 - A	Pipe Construction Notes & Details
C.03 - A	Pipe Structures Construction Notes & Details
M.01 - A	Main Tile (Sta 0 → 28+00)
M.02 - A	Main Tile (Sta 28+00 → 58+00)
M.03 - A	Main Tile (Sta 58+00 → 88+00)
M.04 - A	Main Tile (Sta 88+00 → 118+00)
M.05 - A	Main Tile (Sta 118+00 → 148+00)
M.06 - A	Main Tile (Sta 148+00 → 178+00)
M.07 - A	Main Tile (Sta 178+00 → 180+83)
M.08 - A	1st Timmons Branch Tile (Sta 0+00 → 29+00)
M.09 - A	1st Timmons Branch Tile (Sta 29+00 → 38+24)
M.10 - A	Lower Main Tile (Sta 0+00 → 29+00)
M.11 - A	Lower Main Tile (Sta 29+00 → 32+18)
V.01 - A	Boring Sheet - Main Tile (Sta 125+65 → 126+85) (State Hwy 4)
V.02 - A	Boring Sheet - Main Tile (Sta 170+42 → 171+42) (110th St / Co Rd E13)



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.

Jacob Hagan 2/16/2026 (date)
 Jacob L. Hagan, P.E.
 License No. 25738
 My license renewal date is December 31, 2026.
 Pages or sheets covered by this seal:
 All



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes
PLAN LEGEND
 Proposed District Tile ————
 Old District Tile ————
 Benefitted Area ————

Project Datum:
 State Plane, IA83-NF
 NAVD 88

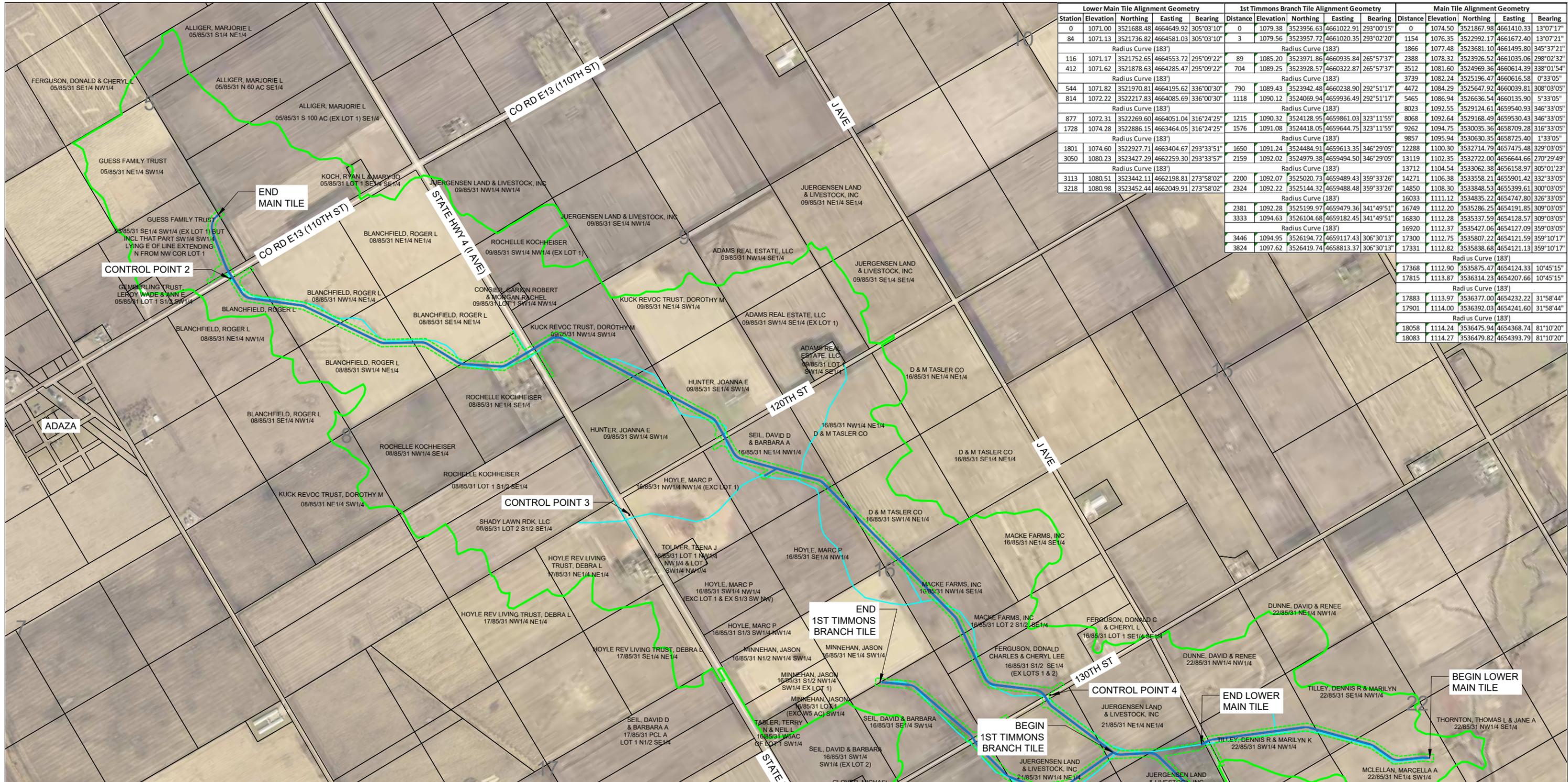
No.	Revision/Issue	Date

Sheet Name
 Title Sheet

Project Name, Client, and Address
 Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project
 2502-37
 Date
 2026-01-30
 Plan Scale
 1" = 4000'

Sheet
A.01
 - A



Lower Main Tile Alignment Geometry				1st Timmons Branch Tile Alignment Geometry				Main Tile Alignment Geometry						
Station	Elevation	Northing	Easting	Bearing	Distance	Elevation	Northing	Easting	Bearing	Distance	Elevation	Northing	Easting	Bearing
0	1071.00	3521688.48	4664649.92	305°03'10"	0	1079.38	3523956.63	4661022.91	299°00'15"	0	1074.50	3521867.98	4661410.33	13°07'17"
84	1071.13	3521736.82	4664581.03	305°03'10"	3	1079.56	3523957.72	4661020.35	299°02'20"	1154	1076.35	3522992.17	4661672.40	13°07'21"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
116	1071.17	3521752.65	4664553.72	295°09'22"	89	1085.20	3523971.86	4660935.84	265°57'37"	1866	1077.48	3523681.10	4661495.80	345°37'21"
412	1071.62	3521878.63	4664285.47	295°09'22"	704	1089.25	3523928.57	4660322.87	265°57'37"	2388	1078.32	3523926.52	4661035.06	298°02'32"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
544	1071.82	3521970.81	4664195.62	336°00'30"	790	1089.43	3523942.48	4660238.90	292°51'17"	3512	1081.60	3524969.36	4660614.39	338°01'54"
814	1072.22	3522217.83	4664085.69	336°00'30"	1118	1090.12	3524069.94	4659936.49	292°51'17"	3739	1082.24	3525196.47	4660616.58	0°33'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
877	1072.31	3522269.60	4664051.04	316°24'25"	1215	1090.32	3524128.95	4659861.03	323°11'55"	4472	1084.29	3525647.92	4660039.81	308°03'05"
1728	1074.28	3522886.15	4663464.05	316°24'25"	1576	1091.08	3524418.05	4659644.75	323°11'55"	5465	1086.94	3526636.54	4660135.90	5°33'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
1801	1074.60	3522927.71	4663404.67	293°33'51"	1650	1091.24	3524484.91	4659613.35	346°29'05"	8023	1092.55	3529124.61	4659540.93	346°33'05"
3050	1080.23	3523427.29	4662259.30	293°33'57"	2159	1092.02	3524979.38	4659494.50	346°29'05"	8068	1092.64	3529168.49	4659530.43	346°33'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
3113	1080.51	3523442.11	4662198.81	273°58'02"	2200	1092.07	3525020.73	4659489.43	359°33'26"	9262	1094.75	3530035.36	4658709.28	316°33'05"
3218	1080.98	3523452.44	4662049.91	273°58'02"	2324	1092.22	3525144.32	4659488.48	359°33'26"	9857	1095.94	3530630.35	4658725.40	1°33'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
2381	1092.28	3525199.97	4659479.36	341°49'51"	16749	1112.20	3532862.22	4654747.80	326°33'05"	16749	1112.20	3532862.22	4654747.80	326°33'05"
3333	1094.63	3526104.68	4659182.45	341°49'51"	16830	1112.28	3533377.59	4654128.57	309°03'05"	16830	1112.28	3533377.59	4654128.57	309°03'05"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
3446	1094.95	3526194.72	4659117.43	306°30'13"	16920	1112.37	3534527.06	4654127.09	359°03'05"	16920	1112.37	3534527.06	4654127.09	359°03'05"
3824	1097.62	3526419.74	4658813.37	306°30'13"	17300	1112.75	3535807.22	4654121.59	359°10'17"	17300	1112.75	3535807.22	4654121.59	359°10'17"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
17368	1112.90	3535875.47	4654124.33	10°45'15"	17368	1112.90	3535875.47	4654124.33	10°45'15"	17368	1112.90	3535875.47	4654124.33	10°45'15"
17815	1113.87	3536314.23	4654207.66	10°45'15"	17815	1113.87	3536314.23	4654207.66	10°45'15"	17815	1113.87	3536314.23	4654207.66	10°45'15"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
17883	1113.97	3536377.00	4654232.22	31°58'44"	17883	1113.97	3536377.00	4654232.22	31°58'44"	17883	1113.97	3536377.00	4654232.22	31°58'44"
17901	1114.00	3536392.03	4654241.60	31°58'44"	17901	1114.00	3536392.03	4654241.60	31°58'44"	17901	1114.00	3536392.03	4654241.60	31°58'44"
Radius Curve (183')					Radius Curve (183')					Radius Curve (183')				
18058	1114.24	3536475.94	4654368.74	81°10'20"	18058	1114.24	3536475.94	4654368.74	81°10'20"	18058	1114.24	3536475.94	4654368.74	81°10'20"
18083	1114.27	3536479.82	4654393.79	81°10'20"	18083	1114.27	3536479.82	4654393.79	81°10'20"	18083	1114.27	3536479.82	4654393.79	81°10'20"

Benchmarks				
Number	Northing	Easting	Elevation	Description
1	3524288.579	4656956.647	1095.986	Top of road box culvert.
2	3535662.655	4654090.560	1119.259	Top of road culvert.
3	3530124.256	4657066.046	1103.247	Top of road culvert.
4	3525085.189	4660686.407	1094.907	Top of road culvert.
5	3519724.109	4665555.435	1083.368	Highway bridge railing.
6	3521509.235	4662124.977	1079.682	Center of bolt on bridge railing bottom.



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes	
Proposed District Tile	
Old District Tile	
Benefitted Lands	
Parcel Lines	
Work Area (ROW)	

No.	Revision/Issue	Date

Sheet Name
District Plat

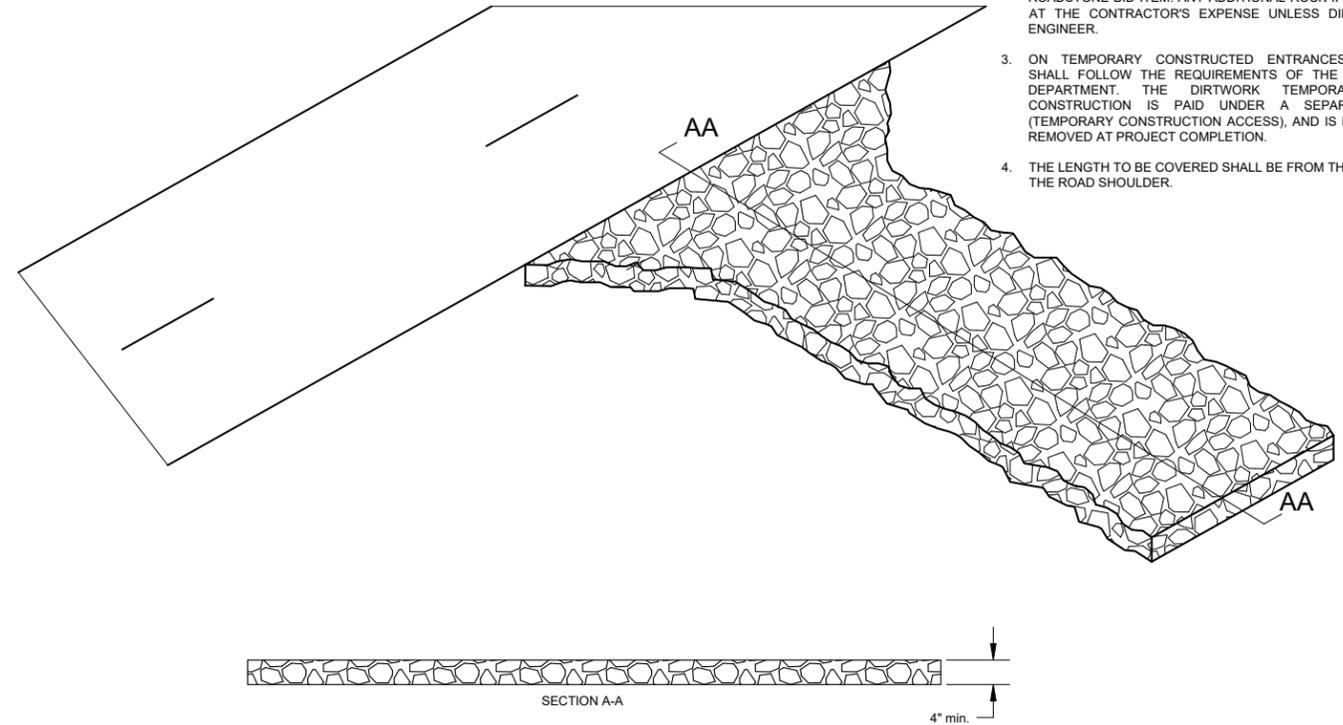
Project Name, Client, and Address
Tile Improvements (Alternate)
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project	Sheet
2502-37	
Date	
2026-01-30	A.02
Plan Scale	- A
1" = 650'	

GENERAL PROVISIONS & PRE-CONSTRUCTION

- WORK AREA:** THE PLANS SHOW THE WORK AREA. STANDARD WORK AREA IS 50 FEET FROM THE CENTERLINE OF THE TILE UNLESS OTHERWISE NOTED. THE CONTRACTOR MUST STAY WITHIN THIS AREA. ANY DAMAGE OUTSIDE THE WORK AREA WILL BE DEDUCTED FROM FINAL PAYMENT. ALL STAGING AND STORAGE SHALL BE WITHIN THE WORK AREA. NO STORAGE OR STAGING SHALL TAKE PLACE ON ROADWAYS.
- ACCESS:** ACCESS TO THE WORK AREA IS LIMITED TO PUBLIC ROAD INTERSECTIONS AND DRIVEWAYS CALLED OUT ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR SECURING ANY ADDITIONAL TEMPORARY ACCESS AGREEMENTS WITH LANDOWNERS OR THE COUNTY ENGINEER FOR ROAD ROW ENTRY.
- UTILITIES & LOCATES:** THE CONTRACTOR SHALL NOTIFY IOWA ONE CALL (811) PRIOR TO EXCAVATION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROTECTING ALL MARKED AND UNMARKED UTILITIES.
- TILE EXPLORATION:** EXISTING TILE IS APPROXIMATELY LOCATED ON THE PLANS. ENGINEER MAY DIRECT CONTRACTOR TO LOCATE TILE BEFORE STARTING AND ADVANCING WORK TO DETERMINE EXISTING TILE LOCATION AND DEPTH TO AVOID POTENTIAL CONFLICTS. CONTRACTOR SHALL BE COMPENSATED ON AN HOURLY BASIS PER EXCAVATION, EXPLORATORY BID ITEM.
- AS-BUILT DOCUMENTATION:** THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COMPLETE SET OF DRAWINGS SUITABLY MARKED TO SHOW ANY DEVIATIONS FROM THE ORIGINAL PLANS, INCLUDING BUT NOT LIMITED TO ACTUAL PIPE ALIGNMENTS, DEPTHS, CONNECTION LOCATIONS, AND ANY FIELD MODIFICATIONS. THIS DOCUMENTATION SHALL BE PROVIDED PRIOR TO FINAL ACCEPTANCE.
- THE LANDOWNERS** WHERE THE TILE IS BEING INSTALLED ARE PAYING FOR THIS PROJECT. AT COMPLETION OF THE PROJECT, THOSE LANDOWNERS ARE INVITED TO A PUBLIC HEARING AND CAN FILE CLAIMS FOR DAMAGES. THESE SPECIFICATIONS AND PLANS EXIST AS MUCH TO GUIDE AND PROTECT THE CONTRACTOR AS TO PROTECT THE LANDOWNERS. REGULAR DOCUMENTATION ALONG WITH OPEN COMMUNICATION WITH THE ENGINEER IS ESSENTIAL TO A SMOOTH PROJECT FOR ALL PARTIES.

CONSTRUCTION ACCES



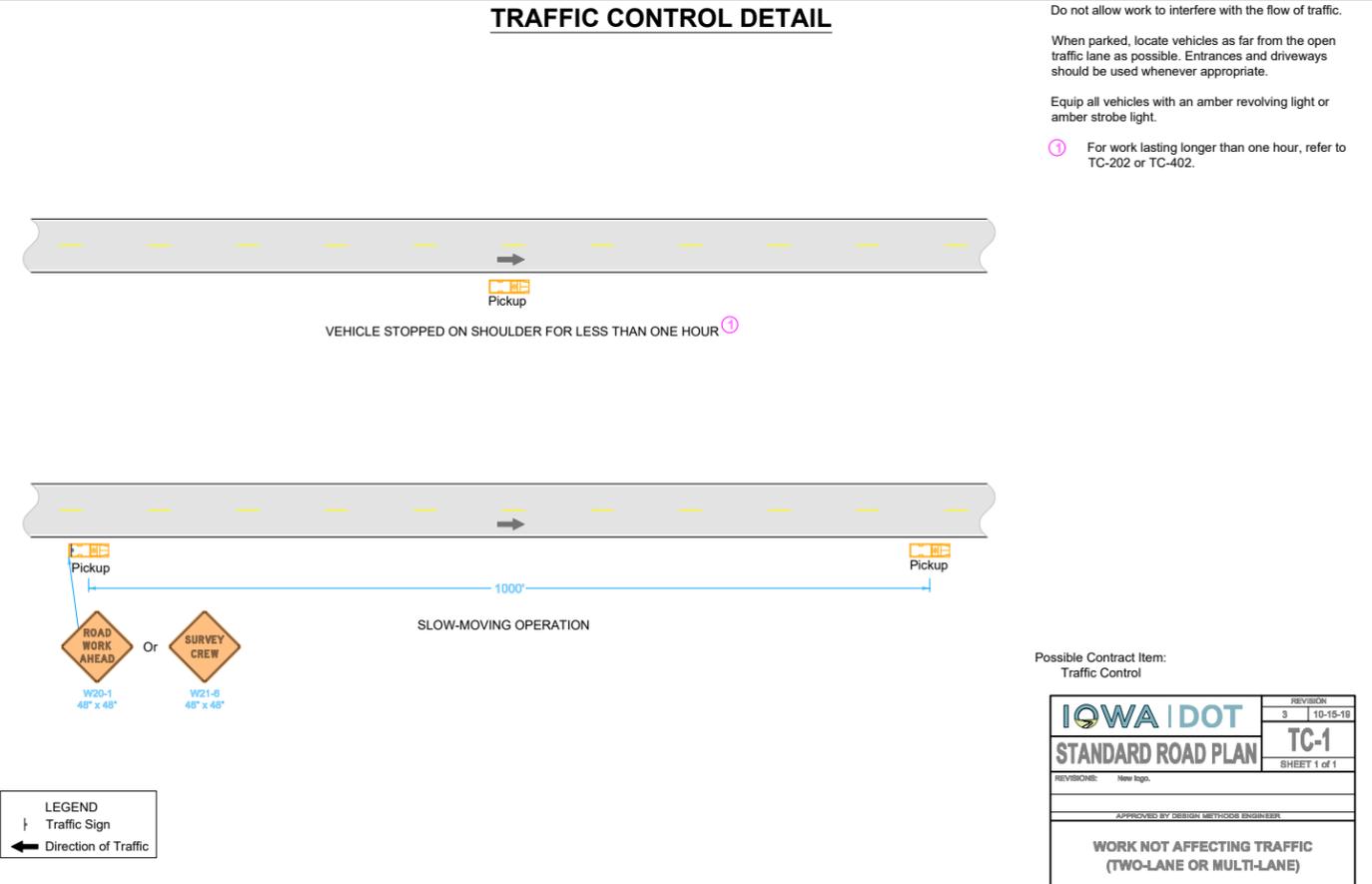
GENERAL NOTES:

- LOCATIONS OF CONSTRUCTION ENTRANCES ARE MARKED ON THE PLANS. OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO USING ANY OTHER ENTRANCES.
- PLACING 12 TONS OF CLASS A ROADSTONE ON EACH EXISTING AND TEMPORARY ENTRANCE WILL BE PAID UNDER THE CLASS A ROADSTONE BID ITEM. ANY ADDITIONAL ROCK IF PLACED WILL BE AT THE CONTRACTOR'S EXPENSE UNLESS DIRECTED BY THE ENGINEER.
- ON TEMPORARY CONSTRUCTED ENTRANCES, CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE COUNTY ROADS DEPARTMENT. THE DIRTWORK TEMPORARY DRIVEWAY CONSTRUCTION IS PAID UNDER A SEPARATE BID ITEM (TEMPORARY CONSTRUCTION ACCESS), AND IS REQUIRED TO BE REMOVED AT PROJECT COMPLETION.
- THE LENGTH TO BE COVERED SHALL BE FROM THE FIELD EDGE TO THE ROAD SHOULDER.

ROADWAY CROSSINGS

- PERMITS & NOTIFICATIONS:** THE CONTRACTOR SHALL OBTAIN ALL NECESSARY OCCUPANCY PERMITS FROM THE COUNTY ENGINEER OR IOWA DOT. NOTIFY THE RESPECTIVE AGENCY AND THE PROJECT ENGINEER AT LEAST 48 HOURS PRIOR TO COMMENCING ANY WORK WITHIN THE ROW.
- TRAFFIC CONTROL:** THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL, INCLUDING SIGNAGE, BARRICADES, AND FLAGGERS. ALL SETUPS MUST STRICTLY ADHERE TO THE LATEST MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS AND ANY SPECIFIC REQUIREMENTS SET BY THE COUNTY OR DOT PERMIT.
- UTILITY VERIFICATION:** ALL UTILITIES WITHIN THE ROW (FIBER OPTIC, GAS, WATER) MUST BE DAYLIGHTED VIA POTHOLING PRIOR TO THE ARRIVAL OF THE BORING OR TRENCHING EQUIPMENT.
- SEEDING:** DISTURBED ROAD DITCHES SHALL BE SEEDED FOLLOWING SUDAS TYPE 2 (PERMANENT COOL SEASON MIXTURE FOR SLOPES AND DITCHES) SEED MIXTURE.
- STORAGE AND PARKING:** NO STORAGE OR PARKING OF EQUIPMENT IN PUBLIC RIGHT-OF-WAY. NO CROSSING PAVED ROADS WITH TRACKED EQUIPMENT.
- OPEN CUT: COUNTY GRAVEL ROAD**
 - PIPE SUPPORT:** ALL PIPE UNDER THE ROADWAY MUST BE INSTALLED USING MODIFIED TYPE 4 TRENCHING.
 - MATERIALS:** WITHIN THE ROAD PRISM, NATIVE SOIL SHALL NOT BE USED FOR HAUNCHING. USE 1-INCH CLEAN CRUSHED STONE OR SUDAS CLASS A CRUSHED STONE TO THE SPRINGLINE OF THE PIPE. FROM THE TOP OF THE HAUNCHING TO WITHIN 12 INCHES OF THE ROAD SURFACE, THE TRENCH MAY FILLED WITH NATIVE SUBSOIL MATERIAL PER THE ENGINEER'S APPROVAL. THE ENGINEER MAY REQUIRE THE BACKFILL TO BE CLASS A STONE PER THEIR DIRECTION.
 - COMPACTION LIFTS:** BACKFILL SHALL BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS. EACH LIFT MUST BE MECHANICALLY COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 - SURFACE MATERIAL:** THE TOP 12 INCHES OF THE TRENCH SHALL BE FILLED WITH CLASS A ROAD STONE (OR THE SPECIFIC GRAVEL GRADE USED BY THE COUNTY) AND COMPACTED THOROUGHLY.
 - CROWNING:** THE FINISHED SURFACE OF THE TRENCH SHOULD BE "CROWNED" APPROXIMATELY 1 TO 2 INCHES HIGHER THAN THE ADJACENT ROAD GRADE TO ALLOW FOR INITIAL TRAFFIC-DRIVEN COMPACTION WITHOUT CREATING A DEPRESSION.
 - SHOULDER REPAIR:** ANY DAMAGE TO THE ROAD SHOULDERS OR SIDE SLOPES SHALL BE RESHAPED TO MATCH THE ORIGINAL PROFILE AND IMMEDIATELY SEEDED/MULCHED.
 - ROAD DITCH SEEDING:** SHALL FOLLOW SUDAS 9010. USE TYPE 2 (PERMANENT COOL SEASON MIXTURE FOR SLOPES AND DITCHES) SEED MIXTURE. ENGINEER MAY DIRECT DIFFERENT SEED MIXTURE DUE TO WEATHER OR SEASON CONDITIONS.
 - ROAD CLOSURE:** THE CROSSING NEEDS TO BE COMPLETED IN ONE DAY. THE ROAD SHALL ONLY BE CLOSED FROM SUN RISE TO SUN SET. BY SUN SET THE ROAD SHALL BE OPEN TO TRAFFIC.
- TRENCHLESS / BORED METHOD:** SHALL FOLLOW SUDAS 3020 AND IOWA DOT PERMIT REQUIREMENTS.

TRAFFIC CONTROL DETAIL



Company Information
AgriVia PLLC
PO Box 44
1124 Willis Ave
Perry, IA 50220

Designer
TJB
Drafter
TJB
Checker
JLH

Notes

No.	Revision/Issue	Date

Sheet Name
General Construction
Notes & Details

Project Name, Client, and Address
Tile Improvements (Alternate)
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project
2502-37
Date
2026-01-30
Plan Scale
1" = 650'

Sheet
C.01
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PIPE EXCAVATION, TRENCHING & BEDDING NOTES

- RIGID PIPE (RCP):** SUDAS SW-102 MODIFIED R-1 BEDDING. THE TRENCH BASE MUST BE EXCAVATED WITH A SHAPED BOTTOM GROOVE CONFORMING TO AT LEAST 1/6 OF THE PIPE OUTSIDE CIRCUMFERENCE TO PROVIDE UNIFORM SUPPORT. IF A FIRM TRENCH BOTTOM IS NOT FOUND, THE CONTRACTOR SHALL OVER-EXCAVATE AND PLACE 1"-3" CLEAN CRUSHED STONE BEDDING (SUDAS CLASS 2) TO STABILIZE THE BASE PER ENGINEER'S DIRECTION. GPS LOCATED AND TIME STAMPED PHOTOS SHALL BE TAKEN EVERY 100 FEET OF ANY TIME ROCK BEDDING IS USED AND ROCK TICKETS SHALL BE SUBMITTED.
- FLEXIBLE PIPE (CPDT):** SUDAS SW-103 F-2 BEDDING REQUIREMENTS. TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER PLUS 12 INCHES. GPS LOCATED AND TIME STAMPED PHOTOS SHALL BE TAKEN EVERY 100 FEET SHOWING THE ROCK TO THE TOP OF THE PIPE BEFORE BACKFILLING WITH DIRT. ALL ROCK TICKETS SHALL BE SUBMITTED, AND ALL ROCK USED IS INCIDENTAL TO INSTALLATION. ROCK TICKETS SHALL BE SUBMITTED WEEKLY WITH A LOG OF LENGTH OF TILE INSTALLED CORRESPONDING TO THE ROCK USED. A SPOON BOTTOM MADE BE USED FOR PIPE 15" OR SMALLER IF LAID USING A TILE PLOW OR TRENCHER WITH GRADE CONTROL. A SPOON BOTTOM (NO ROCK BEDDING) USING AN EXCAVATOR IS NOT ACCEPTABLE FOR ANY SIZE PIPE.

TO ENSURE LONGEVITY AND MINIMIZE SETTLEMENT FOR FLEXIBLE PIPE INSTALLATION, THE CONTRACTOR MUST PARTICIPATE IN THE FOLLOWING VERIFICATION PROCESS:

STEP 1 (DEMONSTRATION): IN THE PRESENCE OF THE ENGINEER, THE CONTRACTOR SHALL DEMONSTRATE THEIR COMPACTION METHOD ON THE FIRST SEVERAL PIPE SECTIONS. DENSITY TESTS MAY BE TAKEN TO CONFIRM THE METHOD ACHIEVES 95% STANDARD PROCTOR DENSITY.

STEP 3 (SPOT CHECKING): ONCE A METHOD IS APPROVED, THE CONTRACTOR MAY PROCEED, BUT MAY BE RANDOMLY TESTED BY THE ENGINEER AT THE ENGINEER'S SOLE DECISION. GPS LOCATED AND TIME STAMPED PHOTOS EVERY 100 FEET SHOWING THE TILE UNBLINDED WITH THE HAUNCHES FILLED AND COMPACTED ARE REQUIRED TO BE SUBMITTED.

STEP 3 (VIDEO AND DEFLECTION TESTING): PER SUDAS REQUIREMENTS FOR FLEXIBLE PIPE AFTER COMPLETION OF THE PROJECT.

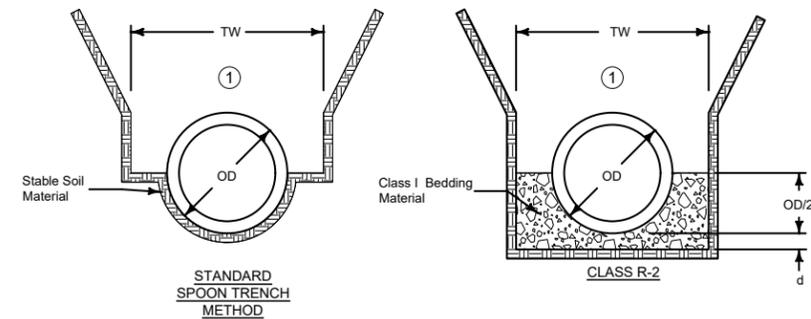
- BACKFILL AND TOPSOIL:** TOPSOIL (TOP 12" OR HORIZON A SOIL IF DEEPER) SHALL BE SEGREGATED DURING EXCAVATION PLACED ON THE OPPOSITE OF THE TRENCH AS THE SUBSOIL IS PLACED. THE SUBSOIL SHALL BE PLACED FIRST IN 6-INCH LIFTS AND THE TOPSOIL PLACED ON TOP. ROCKS SHALL BE PICKED UP AND BURIED AT LEAST 4 FEET DEEP. A SMALL MOUND IS ALLOWABLE (MAXIMUM HEIGHT OF 6 INCHES).

- ELBOWS AND BENDS:** THE PLANS SHOW BENDS AND ELBOWS. ADDITIONAL BENDS OR ELBOWS MAY BE REQUIRED DEPENDING ON EXISTING TILE LOCATIONS AND UNKNOWN SUBSURFACE CONDITIONS. ALL BENDS AND ELBOWS ARE INCIDENTAL UNLESS CALLED OUT IN BID DOCUMENTS. CONTRACTOR SHALL RECEIVE NO ADDITIONAL COMPENSATION FOR ADDITIONAL RCP BENDS OR HDPE ELBOWS NEEDED DUE TO ALIGNMENT CHANGES.

RCP PIPE: GENTLE CURVES CAN BE ACCOMPLISHED VIA GAPPING THE PIPE. ALL RADIUS SHALL BE WRAPPED IN FABRIC. MAXIMUM ALLOWABLE DEGREE PER PIPE SECTION IS 2.5 DEGREE.

HDPE PIPE: ALL CHANGES IN DIRECTIONS SHALL BE DONE USING MANUFACTURED ELBOWS. THE MAXIMUM ALLOWABLE ELBOW TO BE USED IS 22.5 DEGREES. TO ACHIEVE BENDS GREATER THAN 22.5 DEGREES, MULTIPLE ELBOWS SHALL BE USED.

RCP AND VCP CIRCULAR PIPE BEDDING



- Use Standard Spoon Trench Method or R-2 unless specified otherwise.
- Place remainder of bedding and backfill materials as specified in the contract documents.

Key

- OD = Outside diameter of pipe
- TW = Trench width at top of pipe:
Min. = OD+18 inches
Max. = 1.25xOD+12 inches OR 54 inches (whichever is greater)
- d = Depth of bedding material below pipe:
OD/8 or OD/8, OR 4 inches (whichever is greater)

CLASS III RCP

Pipe Diameter (in)	Standard "Spoon-Trench" Method	Class R-2 Bedding
12	7'	10'
15	8'	10'
18	8'	11'
21	8'	11'
24	8'	12'
27	10'	15'
30	11'	15'
33	11'	15'
36	11'	15'
42	11'	15'
48	11'	15'
54	11'	15'
60	11'	15'
66	11'	15'
72	11'	15'

ALLOWABLE BURY DEPTH

CLASS IV RCP

Pipe Diameter (in)	Standard "Spoon-Trench" Method	Class R-2 Bedding
12	12'	15'
15	12'	16'
18	13'	16'
21	13'	18'
24	16'	23'
27	19'	30'
30	19'	29'
33	19'	28'
36	19'	28'
42	18'	27'
48	18'	26'
54	18'	25'
60	18'	25'
66	18'	25'
72	18'	24'

CLASS V RCP

Pipe Diameter (in)	Standard "Spoon-Trench" Method	Class R-2 Bedding
12	18'	23'
15	19'	24'
18	19'	30'
21	25'	40'
24	34'	40'
27	40'	40'
30	40'	40'
33	40'	40'
36	40'	40'
42	37'	40'
48	35'	40'
54	33'	40'
60	32'	40'
66	31'	40'
72	31'	40'

TRENCH BEDDING AND BACKFILL ZONES

Refer to the contract documents for specific material and placement requirements.

- Required only when specified in the contract documents or when directed by the Engineer.

Key

- OD = Outside diameter of pipe
- D = Inside diameter of pipe
- TW = Trench width at top of pipe
- d = Depth of bedding material below pipe

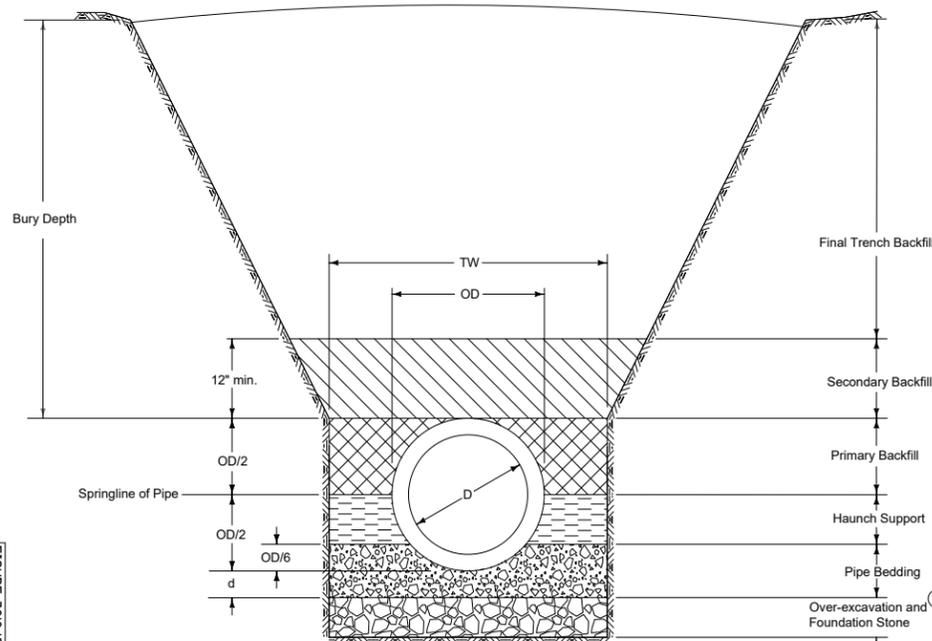


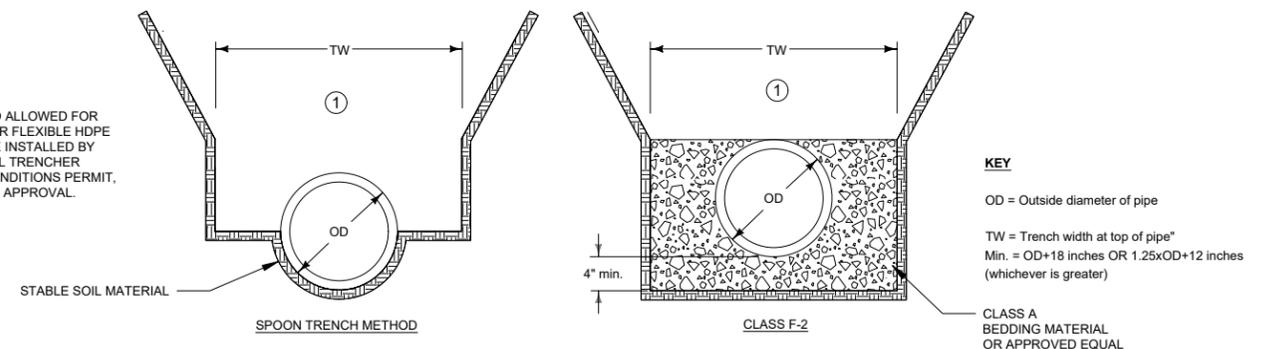
FIGURE 300.010 | SHEET 101-1

		REVISION 1 04-17-18
FIGURE 300.010	STANDARD ROAD PLAN	SW-101
SHEET 1 of 1		
REVISIONS: Replaced Iowa DOT and SUDAS logos.		
 SUDAS OPERATOR		
 DESIGNER		
TRENCH BEDDING AND BACKFILL ZONES		

HDPE & PP PIPE INSTALLATION DETAIL

NOTE

- SPOON METHOD ALLOWED FOR 15" AND SMALLER FLEXIBLE HDPE DUAL WALL PIPE INSTALLED BY PLOW OR WHEEL TRENCHER WHERE SOIL CONDITIONS PERMIT, WITH ENGINEER APPROVAL.



ALLOWABLE BURY DEPTH

HDPE PIPE

Pipe Diameter (in)	AASHTO M 294
12	8'
15	9'
18	9'
24	9'
30	9'
36	9'
42	8'
48	8'
54	8'
60	8'

POLYPROPYLENE PIPE

Pipe Diameter (in)	ASTM F 2764
12	24'
15	25'
18	22'
24	20'
30	22'
36	21'
42	22'
48	23'
54	21'
60	21'



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
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JLH

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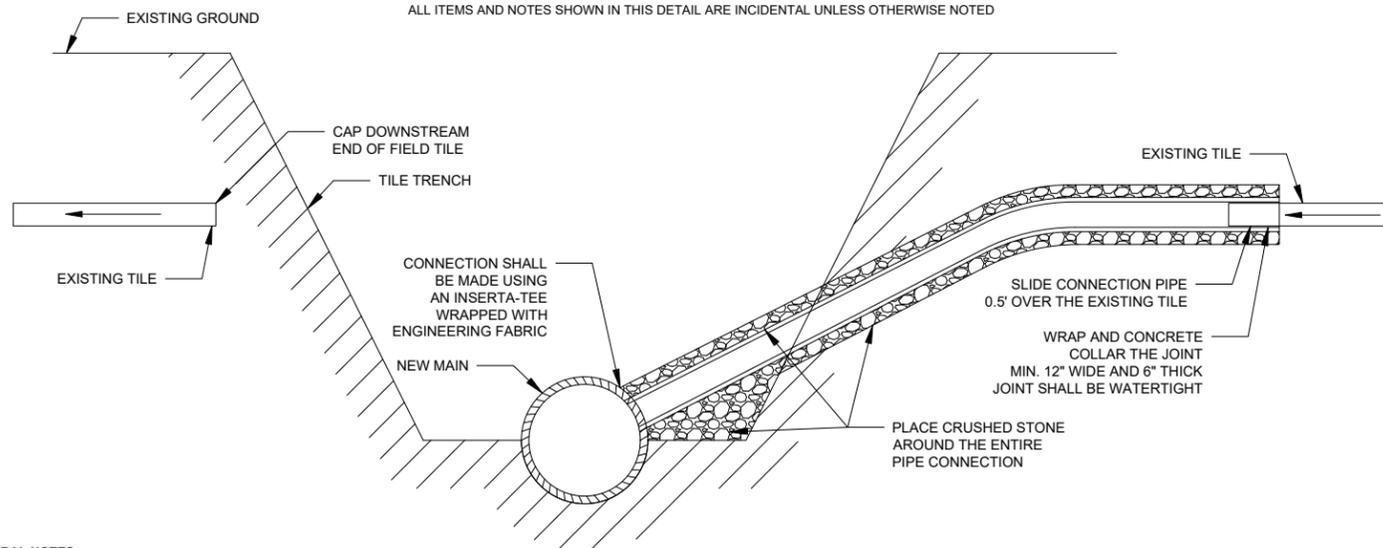
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TYPICAL TILE CONNECTION DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED

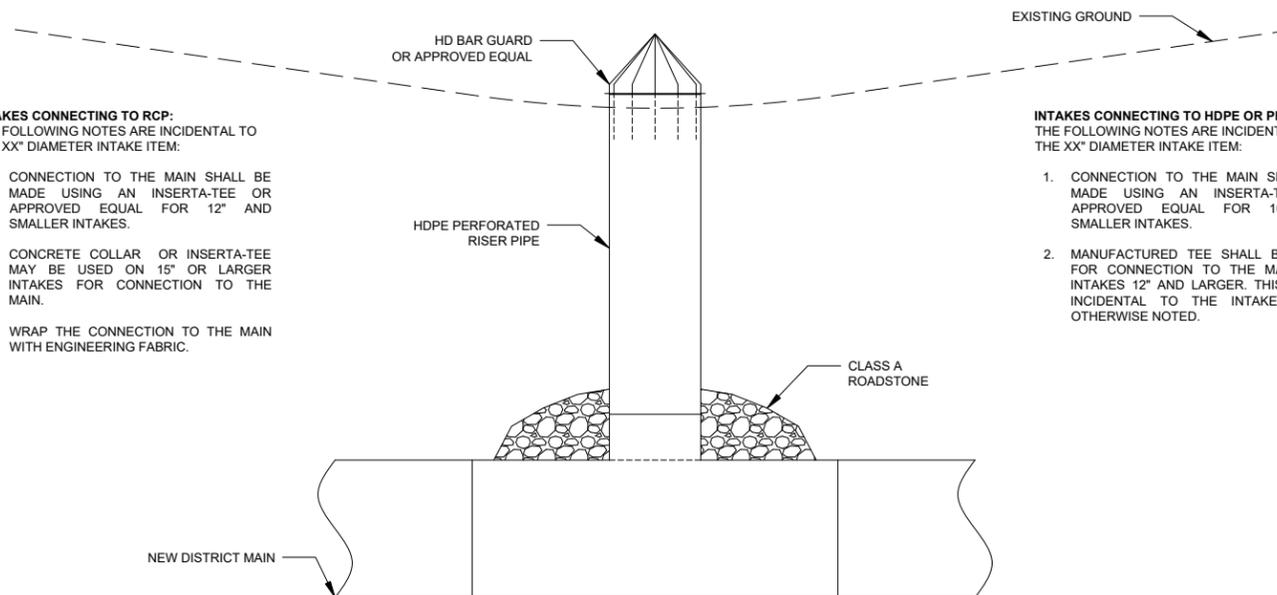


GENERAL NOTES

- TILE CONNECTIONS:** ALL EXISTING TILES ENCOUNTERED, WHETHER SHOWN ON PLANS OR NOT, SHALL BE EXPLORED AND RECONNECTED TO THE NEW SYSTEM. ALL TILE CONNECTIONS REQUIRE A MINIMUM OF 3 TONS OF BEDDING STONE TO BE PLACED AROUND THE ENTIRE TILE CONNECTION. A TIME-STAMPED AND GPS-LOCATED PHOTO WILL BE REQUIRED FOR EACH CONNECTION. THE PHOTO SHALL BE TAKEN BEFORE THE ROCK HAS COMPLETELY ENCASED THE PIPE. A LOG OF ALL CONNECTIONS INCLUDING SIZE, LOCATION AND EXISTING MATERIAL SHALL BE SUBMITTED PRIOR TO PAYMENT. ROCK TICKETS MUST BE SUBMITTED. ROCK USED IS INCIDENTAL TO INSTALLATION. ANY LATERAL TILE CROSSING THE MAIN LINE TRENCH MUST BE SUPPORTED BY CRUSHED STONE BEDDING TO PREVENT SETTLEMENT AND SHEARING AT THE CONNECTION POINT.
- TO MAKE THE CONNECTION, SINGLE WALL CORRUGATED DRAIN TILE OF THE SAME OR LARGER SIZE THAN THE EXISTING TILE MAY BE USED FOR TILES UP TO 10" IN DIAMETER. ANY TILE 12" OR LARGER WILL REQUIRE USING FLEXIBLE DUAL WALL DRAIN TILE OF THE SAME OR LARGER TILE TO MAKE THE CONNECTION. 25 LF OF DRAIN TILE IS CONSIDERED INCIDENTAL TO THE CONNECTION, IF LONGER THAN 25 FEET IS USED, IT NEEDS TO BE NOTED IN THE LOG WITH A PHOTO TO BE PAID.
- THE UPSTREAM END CONNECTING TO THE TILE SHALL BE WRAPPED WITH FABRIC AND CONCRETE COLLARED. THE DOWNSTREAM END OF THE TILE CONNECTION SHALL BE CAPPED WITH BROKEN TILE AND CONCRETE PIECES BONDED WITH SACKRETE OR APPROVED SIMILAR AND WRAPPED WITH FABRIC OR A HDPE END CAP MAY BE USED.
- 12" TILE INTERCONNECTIONS WITH THE EXISTING DISTRICT TILE WILL BE PAID AS LARGE TILE CONNECTIONS. TILE INTERCONNECTIONS WITH THE EXISTING FIELD TILE WILL BE PAID AS SMALL TILE CONNECTIONS.
- RCP DISTRICT TILE CONNECTIONS:** ALL TILE CONNECTIONS 12" OR SMALLER SHALL BE MADE WITH INSERTA-TEE OR APPROVED SIMILAR. ALL TILE CONNECTIONS 15" OR LARGER SHALL BE MADE WITH EITHER AN INSERTA-TEE OR MAY BE CONCRETE COLLARED.
- HDPE DISTRICT TILE CONNECTIONS:** ALL TILE CONNECTIONS 10" OR SMALLER SHALL BE MADE WITH AN INSERTA-TEE OR APPROVED SIMILAR. ALL TILE CONNECTIONS 12" OR LARGER SHALL BE USE A MANUFACTURED TEE CONNECTED VIA A CONCRETE COLLAR OR INTERLOCKED.

HD XX" BAR GUARD INTAKE DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED



INTAKES CONNECTING TO RCP:
THE FOLLOWING NOTES ARE INCIDENTAL TO THE XX" DIAMETER INTAKE ITEM:

- CONNECTION TO THE MAIN SHALL BE MADE USING AN INSERTA-TEE OR APPROVED EQUAL FOR 12" AND SMALLER INTAKES.
- CONCRETE COLLAR OR INSERTA-TEE MAY BE USED ON 15" OR LARGER INTAKES FOR CONNECTION TO THE MAIN.
- WRAP THE CONNECTION TO THE MAIN WITH ENGINEERING FABRIC.

INTAKES CONNECTING TO HDPE OR PP:
THE FOLLOWING NOTES ARE INCIDENTAL TO THE XX" DIAMETER INTAKE ITEM:

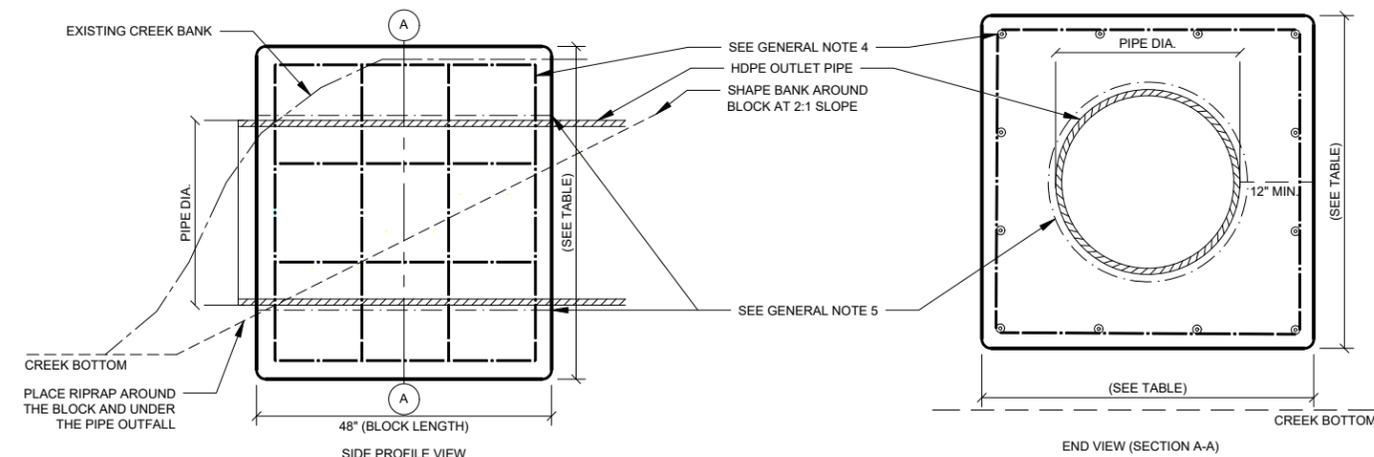
- CONNECTION TO THE MAIN SHALL BE MADE USING AN INSERTA-TEE OR APPROVED EQUAL FOR 10" AND SMALLER INTAKES.
- MANUFACTURED TEE SHALL BE USED FOR CONNECTION TO THE MAIN FOR INTAKES 12" AND LARGER. THIS TEE IS INCIDENTAL TO THE INTAKE UNLESS OTHERWISE NOTED.

GENERAL NOTES

- INTAKES (HICKENBOTTOM/BAR GUARD):** ALL INTAKES ARE CALLED OUT ON THE PLANS. ALL INTAKES REQUIRE A MINIMUM OF 3 TONS OF BEDDING STONE TO BE PLACED AROUND THE ENTIRE CONNECTION. A TIME-STAMPED AND GPS-LOCATED PHOTO WILL BE REQUIRED FOR EACH CONNECTION. THE PHOTO SHALL BE TAKEN BEFORE THE ROCK HAS COMPLETELY ENCASED THE PIPE. A LOG OF ALL CONNECTIONS INCLUDING SIZE, LOCATION AND MATERIAL SHALL BE SUBMITTED PRIOR TO PAYMENT. ROCK TICKETS MUST BE SUBMITTED. ROCK USED IS INCIDENTAL TO INSTALLATION. THE GROUND AROUND THE INTAKE SHALL BE RESHAPED TO DRAIN TO THE INTAKE.
- BAR GUARD INTAKES:** ALL BAR GUARD INTAKES SHALL BE CONSIDERED HEAVY DUTY. CONSTRUCTED OF 1/2" STEEL ROD WITH A YELLOW POWDER COAT FINISH. AGRI-DRAIN HD YELLOW BAR GUARD OR APPROVED EQUAL.
- INTAKE MARKER:** ALL INTAKES PLACED IN ROAD DITCHES SHALL INCLUDE AN INLET TILE MARKER SIGN, SUCH AS PROVIDED AT AGRI-DRAIN OR APPROVED EQUAL. THE SIGN SHALL BE FIXED TO A STEEL OR WOODEN POST AT MINIMUM 6' LONG.
- RISER:** PERFORATED HDPE DUAL WALL PIPE SHALL BE USED AS THE RISER, THE APPROXIMATE LENGTH REQUIRED IS SHOWN ON THE PLANS. THE PIPE USED AS A RISER IS CONSIDERED INCIDENTAL TO THE INTAKE INSTALLATION. NO MEASUREMENT WILL BE MADE OF THE LENGTH NEEDED. RISER MUST BE CUT FLUSH TO GROUND LEVEL.

LARGE HDPE PIPE OUTLET DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED



PIPE DIA. (IN.)	BLOCK WIDTH (IN.)	BLOCK HEIGHT (IN.)	BLOCK LENGTH (IN.)	CONCRETE (CU. YD.)	REBAR (#4) (LBS.)
18"	42"	42"	48"	1.55	65
24"	48"	48"	48"	1.90	75
30"	54"	54"	48"	2.27	100
36"	60"	60"	48"	2.66	110
42"	66"	66"	48"	3.06	135
48"	72"	72"	48"	3.47	145
54"	78"	78"	48"	3.90	175
60"	84"	84"	48"	4.35	190

GENERAL NOTES

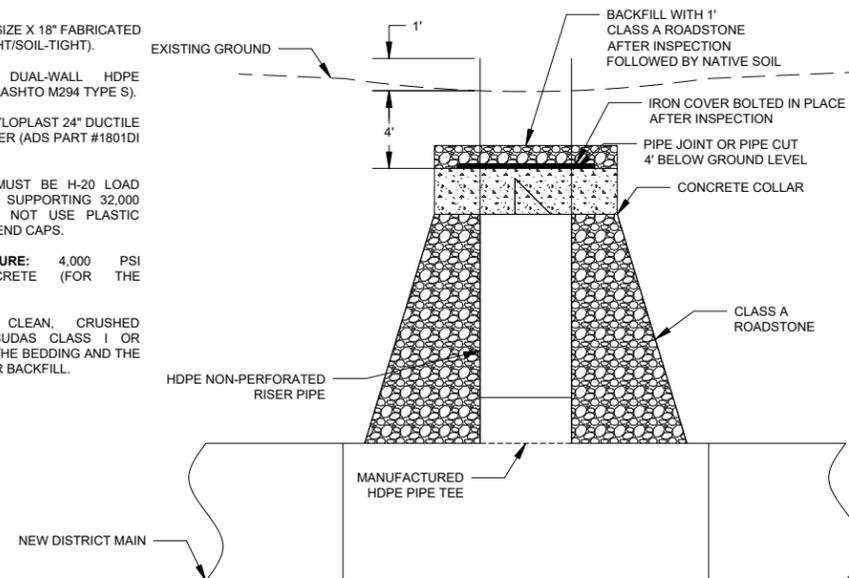
- ALL DIMENSIONS IN INCHES U.N.O.
- PIPE SHALL BE CENTERED IN BLOCK.
- CONCRETE: 4,000 PSI MIN., 28-DAY.
- REBAR: ASTM A615, GRADE 60, #4 BARS. PLACE #4 BARS @ 12" O.C. E.W. ON EACH FACE (FRONT, BACK, AND BOTH SIDES), 3" CLR. COVER U.N.O. CUT AND BEND BARS AROUND PIPE OPENING WITH STD. HOOKS. LAP BARS 12" MIN. AT CORNERS. WIRE-TIE ALL INTERSECTIONS. 3" MIN. CONCRETE COVER OVER ALL REBAR.
- WRAP PIPE W/ 1/4"-1/2" CLOSED-CELL FOAM BEFORE PLACING CONCRETE.
- BACKFILL IN 6" LIFTS. COMPACT TO 95% STD. PROCTOR.
- SMOOTH TROWEL ALL EXPOSED CONCRETE FACES.
- ROUND ALL CONCRETE EDGES AND CORNERS.
- REBAR QUANTITIES ARE ESTIMATED NET WEIGHTS AND DO NOT INCLUDE LAP SPLICES, HOOKS, BENDS AT PIPE OPENING, OR CUTTING WASTE.
- PLACE 25 TONS OF RIPRAP AROUND THE CONCRETE BLOCK AND BENEATH THE PIPE OUTFALL. RIPRAP MUST BE KEYED INTO THE SLOPE AND CANNOT IMPEDED THE STREAM FLOW.
- PLACE 6" COMPACTED CRUSHED STONE BENEATH THE BLOCK AS A BASE.

HDPE & PP INSPECTION PORT DETAIL

ALL ITEMS AND NOTES SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED

MATERIALS

- TEE BASE:** MAIN TILE SIZE X 18" FABRICATED HDPE TEE (WATERTIGHT/SOIL-TIGHT).
- RISER PIPE:** 18" DUAL-WALL HDPE (NON-PERFORATED) (AASHTO M294 TYPE S).
- COVER ASSEMBLY:** NYLOPLAST 24" DUCTILE IRON SOLID COVER (ADS PART #1801DI OR SIMILAR).
NOTE: THE COVER MUST BE H-20 LOAD RATED (CAPABLE OF SUPPORTING 32,000 LBS PER AXLE). DO NOT USE PLASTIC SEPTIC LIDS OR FLAT END CAPS.
- SUPPORT STRUCTURE:** 4,000 PSI STRUCTURAL CONCRETE (FOR THE COLLAR).
- BEDDING/BACKFILL:** CLEAN, CRUSHED ANGULAR STONE (SUDAS CLASS I OR *1-INCH CLEAN*) FOR THE BEDDING AND THE FIRST 2 FEET OF RISER BACKFILL.



INSTALLATION

- PHASE I: MAIN LINE CONSTRUCTION**
INSTALL THE 18" ON MAIN TILE SIZE TEE ON A STABLE FOUNDATION OF F-2 BEDDING (PER USER SPEC).
INSTALL THE 18" RISER PIPE VERTICALLY. FOR THE 30-DAY INSPECTION PERIOD, LEAVE THE PIPE EXTENDING 1 FOOT ABOVE THE SURFACE.
- PHASE II: 30-DAY INSPECTION**
THIRTY (30) DAYS POST-CONSTRUCTION, PERFORM THE REQUIRED CAMERA INSPECTION AND MANDREL PULL THROUGH THE MAIN VIA THE 18" PORT.
UPON APPROVAL OF THE INSPECTION, PROCEED TO FINAL BURIAL.
- PHASE III: FINAL BURIAL & LOAD SUPPORT**
CUTTING: EXCAVATE AROUND THE RISER AND CUT THE HDPE PIPE TO A DEPTH OF 4 FEET BELOW FINAL GRADE.
CONCRETE COLLAR (CRUCIAL): EXCAVATE A SHELF IN THE NATIVE SOIL AROUND THE TOP OF THE 18" PIPE. POUR AN 8-INCH-THICK CONCRETE COLLAR (SUDAS CLASS C) (APPROX. 36" IN DIAMETER) AROUND THE PIPE.
LID PLACEMENT: SET THE NYLOPLAST DUCTILE IRON FRAME AND SOLID COVER INTO THE CONCRETE COLLAR/RISER. ENSURE THE FRAME IS LEVEL AND SUPPORTED BY THE CONCRETE, NOT JUST RESTING ON THE PLASTIC PIPE.
BEDDING: PLACE 12 INCHES OF CRUSHED ROCK OVER THE LID TO PROVIDE A DRAINAGE/STABILITY LAYER.
FINAL BACKFILL: BACKFILL THE REMAINING 3 FEET WITH NATIVE SOIL IN 6-INCH LIFTS, COMPACTING WITH BUCKET, LEAVE MOUND NOT TO EXCEED 6 INCHES.

GENERAL NOTES

- ALL MATERIALS AND INSTALLATION SHALL COMPLY WITH IOWA SUDAS SECTION 4020/4040 AND MANUFACTURER SPECIFICATIONS FOR H-20 TRAFFIC LOADING.
- INSTALL AT INTERVALS SHOWN ON PLANS (NOMINALLY EVERY 1,000 FEET) OR SHORTER AS REQUIRED BY YOUR TESTING EQUIPMENT.
- INSPECTION PORTS ARE INCIDENTAL TO THE INSTALLATION OF HDPE AND PP DRAINAGE MAIN TILE. QUANTITY SHOWN ON PLANS IS ESTIMATED TO BE THE MINIMUM REQUIRED TO COMPLETE THE REQUIRED TESTING. IF MORE INSPECTION PORTS ARE NEEDED THAN SHOWN ON THE PLANS TO PROPERLY INSPECT THE PIPE OR IF LARGER INSPECTION PORTS ARE NEEDED FOR THE TOOLS REQUIRED, ANY ADDITIONAL COST FOR INSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR FOR SUCH ACCOMMODATIONS. ALL ITEMS SHOWN IN THIS DETAIL ARE INCIDENTAL UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL PROVIDE TIMESTAMPED AND GPS LOCATED PHOTOS OF EACH PORT PRIOR TO BACKFILLING. ROCK TICKETS FOR EACH PORT MUST BE SUBMITTED. ROCK USE FOR EACH PORT IS INCIDENTAL.



Company Information
AgriVia PLLC
PO Box 44
1124 Willis Ave
Perry, IA 50220

Designer
TJB
Drafter
TJB
Checker
JLH

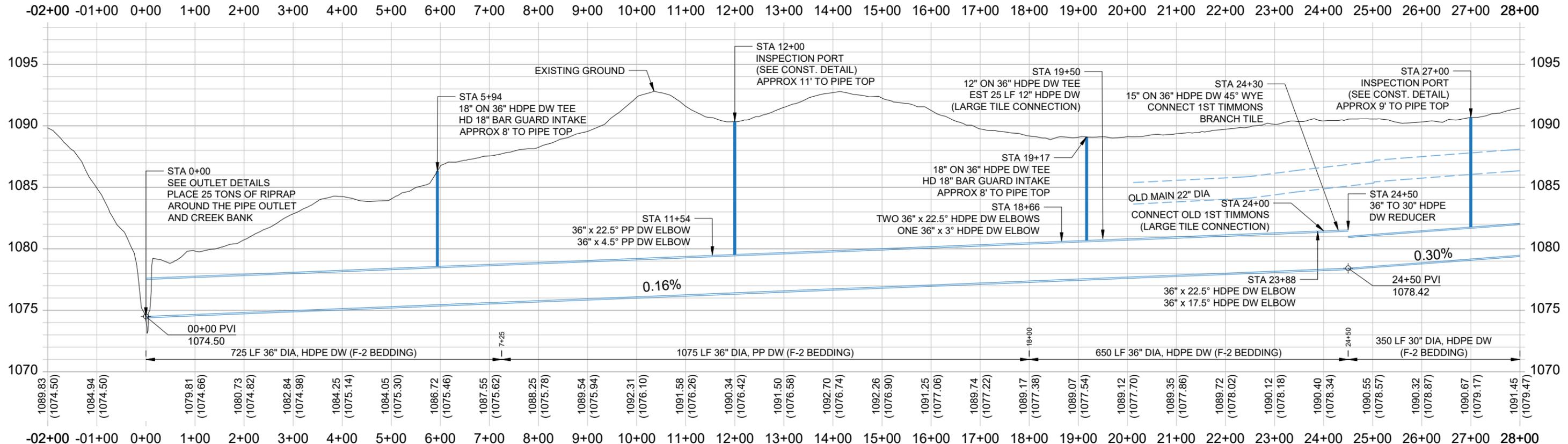
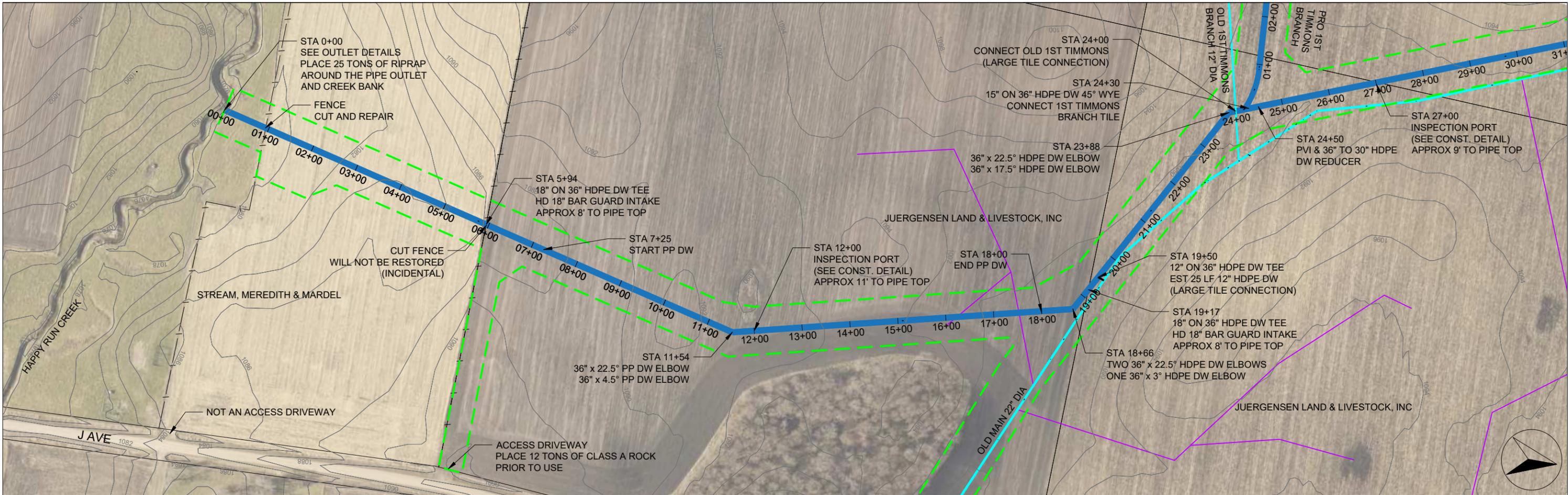
Notes

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AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

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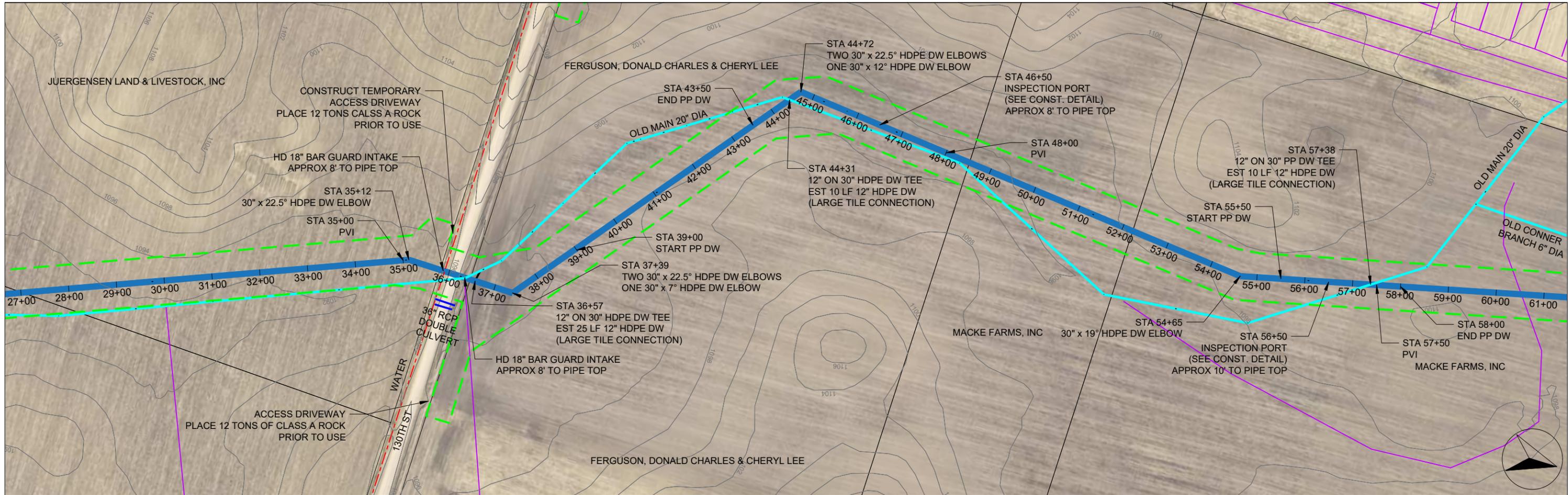
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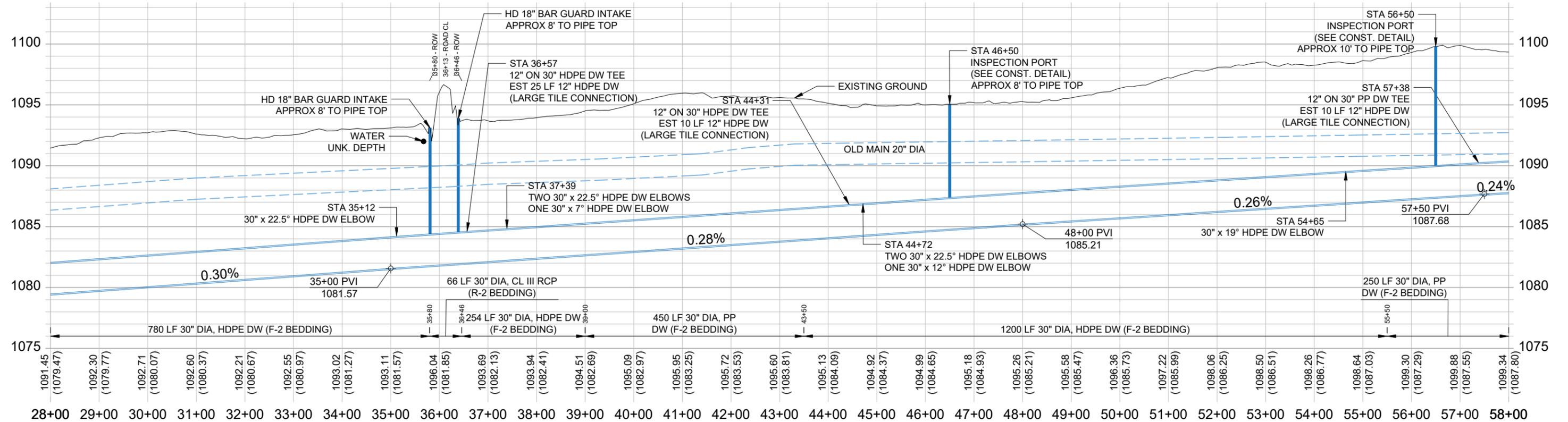
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Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.01 - A
Date	2026-01-30		
Plan Scale	1" = 200'		



28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

No.	Revision/Issue	Date

Plan Legend

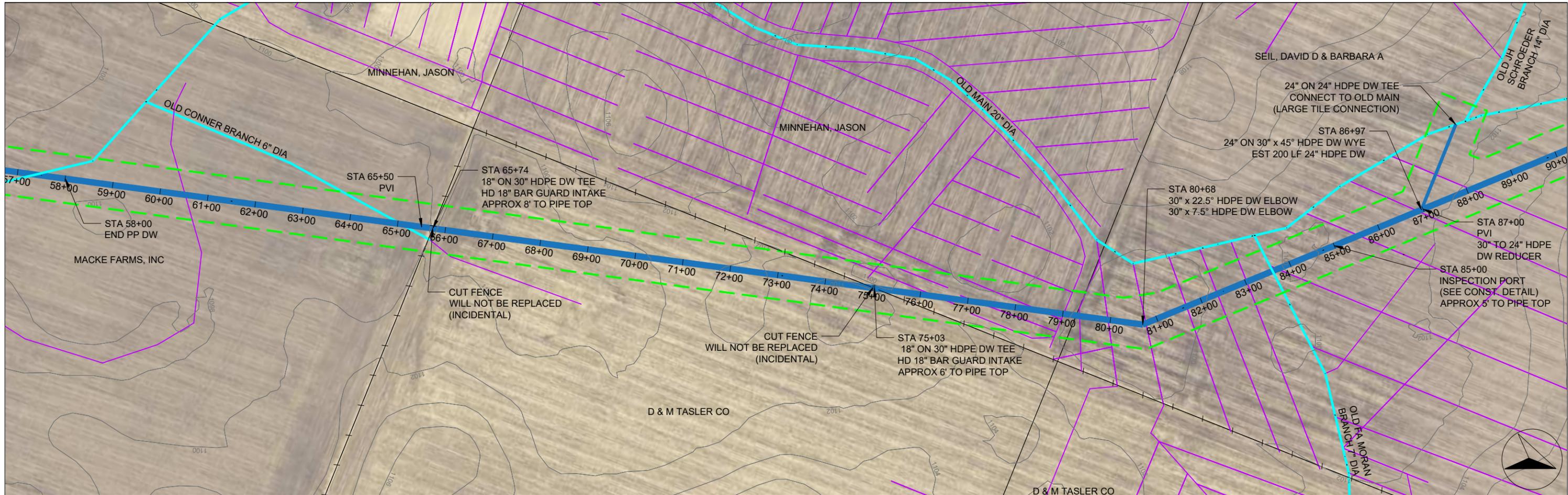
- Proposed District Tile (Blue line)
- Old District Tile (Cyan line)
- Private Tile (Purple line)
- Work Area (ROW) (Green dashed line)
- Fenceline (Black dashed line)
- 2' Contours (Brown line)

No.	Revision/Issue	Date

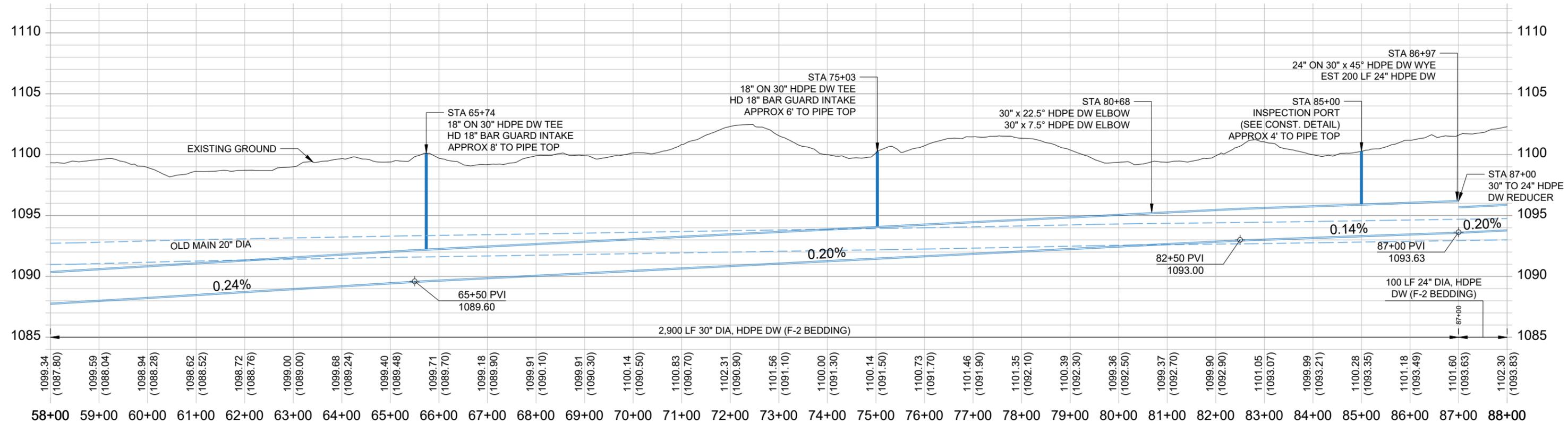
Sheet Name
Main Tile
 Sta 28+00 → 58+00

Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project 2502-37	Sheet
Date 2026-01-30	M.02
Plan Scale 1" = 200'	
- A	



58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

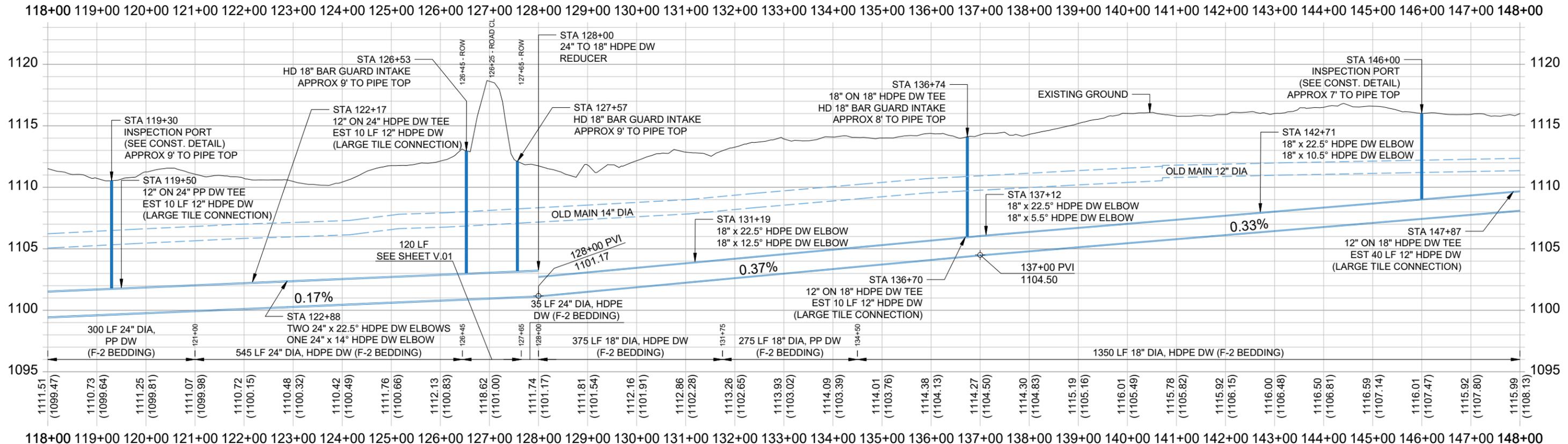
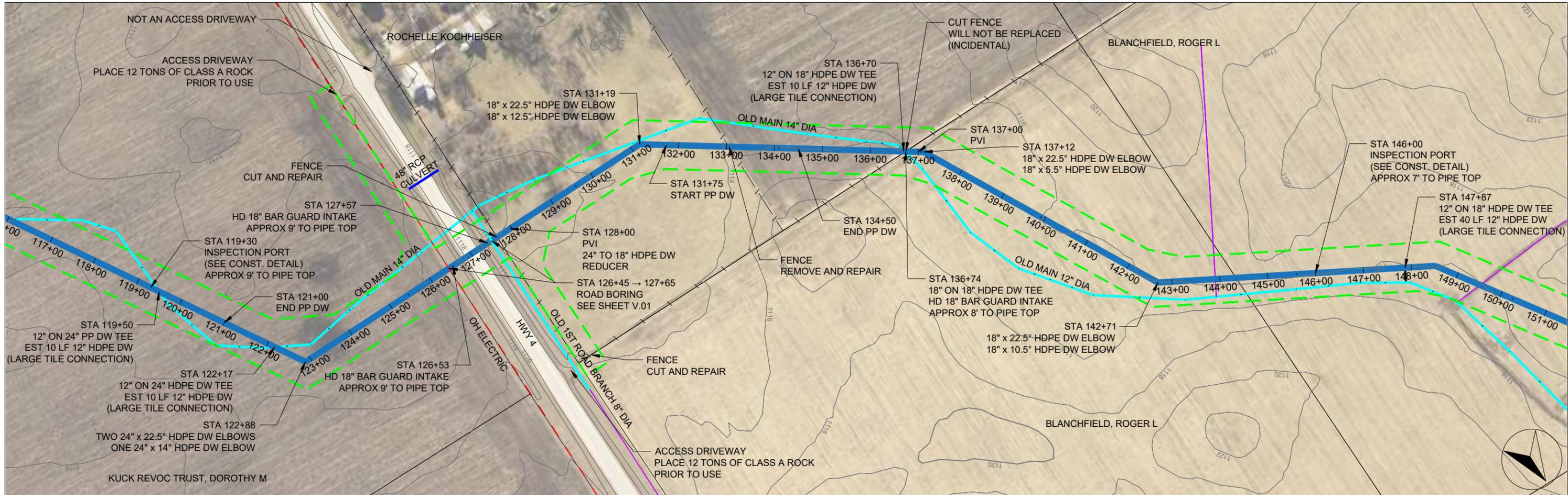
Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Main Tile
 Sta 58+00 → 88+00

Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.03 - A
Date	2026-01-30		
Plan Scale	1" = 200'		



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

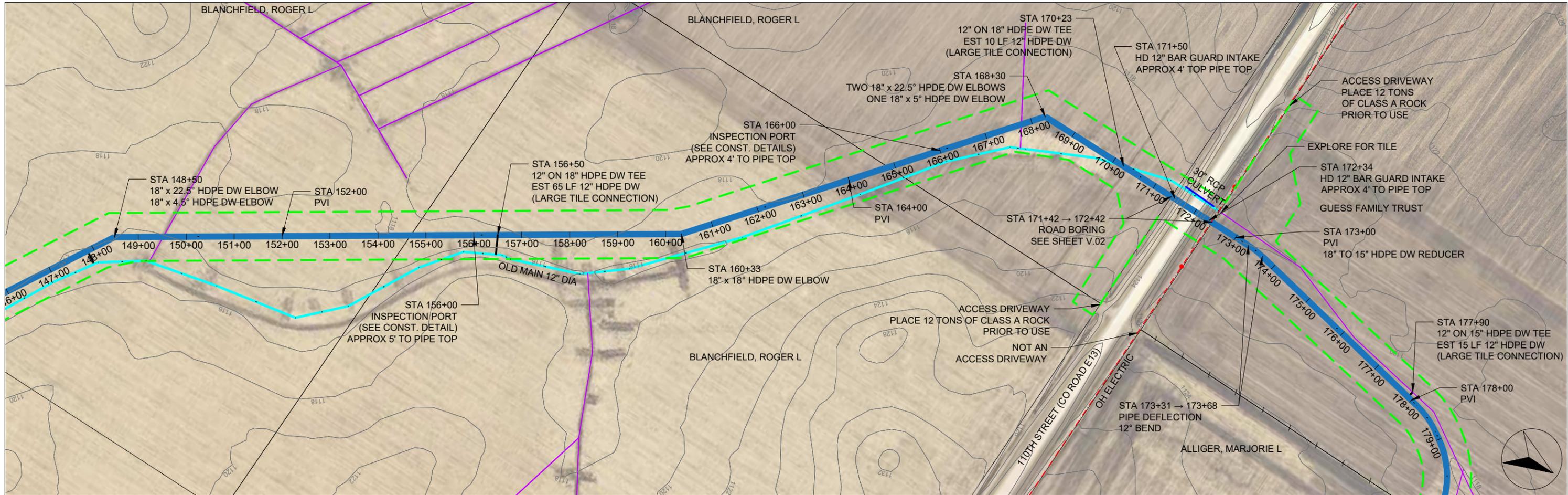
Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

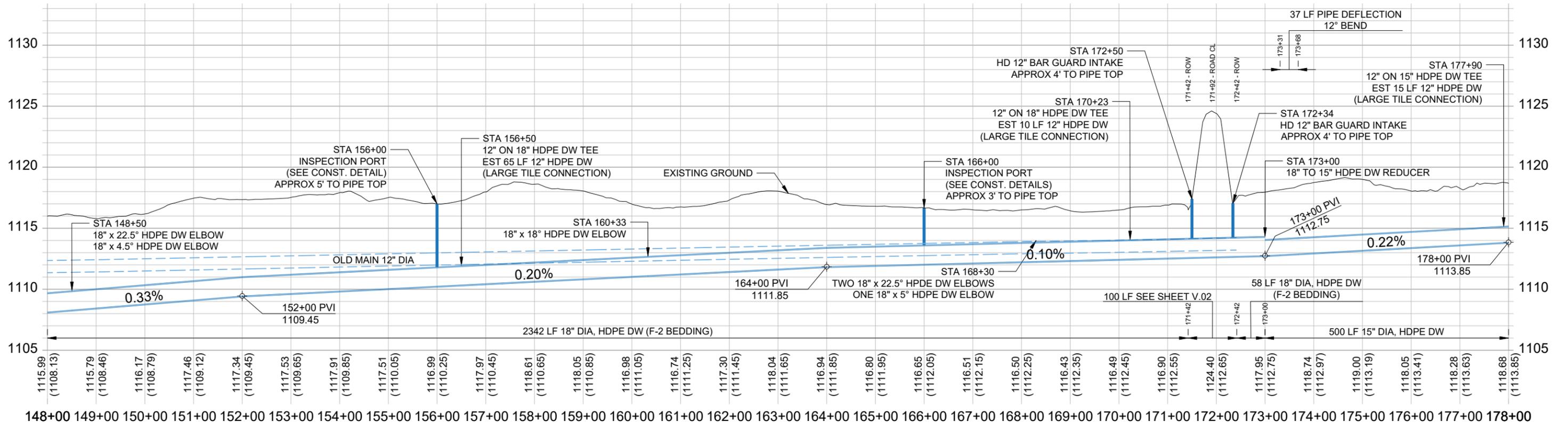
Sheet Name
Main Tile
 Sta 118+00 → 148+00

Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.05 - A
Date	2026-01-30		
Plan Scale	1" = 200'		



148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+00



148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00 156+00 157+00 158+00 159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00 174+00 175+00 176+00 177+00 178+00



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

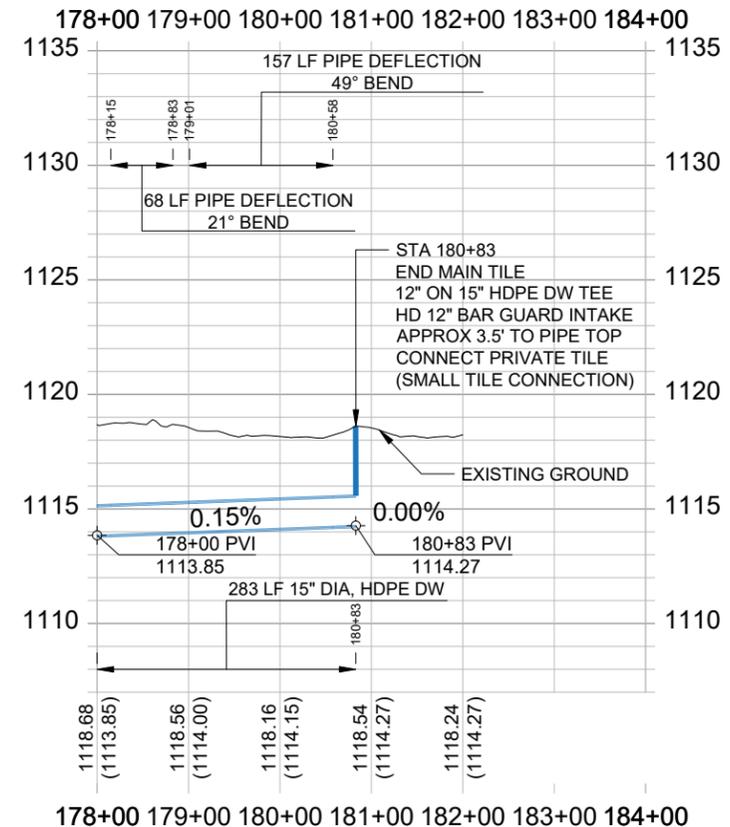
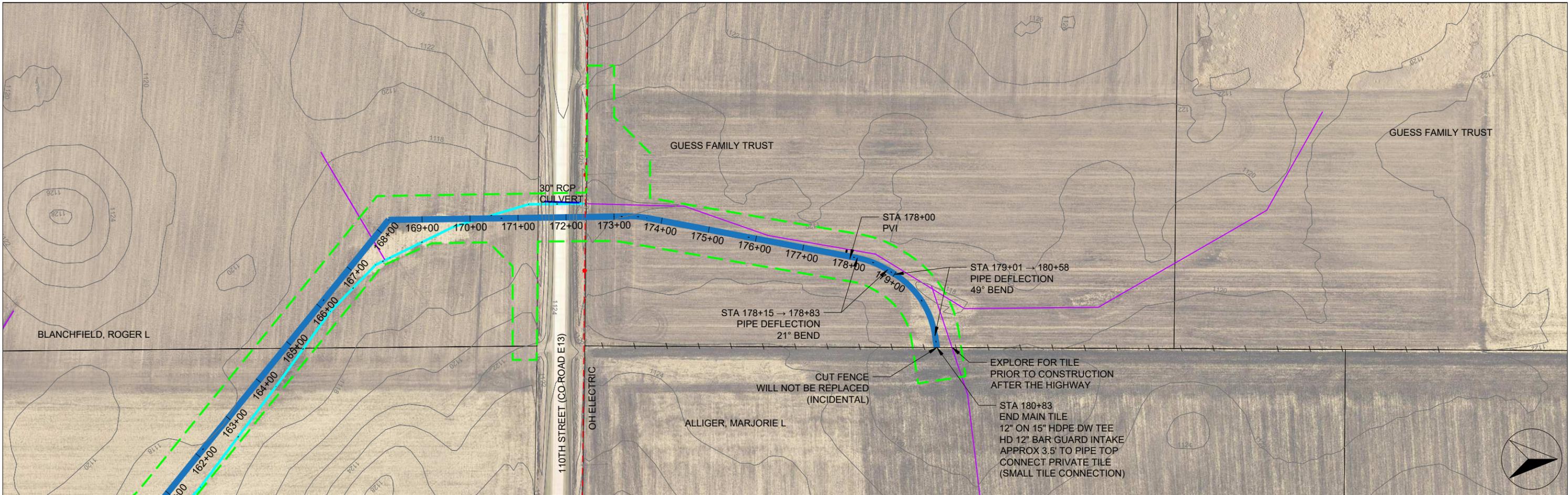
Notes	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Main Tile
 Sta 148+00 → 178+00

Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.06 - A
Date	2026-01-30		
Plan Scale	1" = 200'		



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

Plan Legend

- Proposed District Tile ———
- Old District Tile ———
- Private Tile ———
- Work Area (ROW) - - - - -
- Fenceline - · - · -
- 2' Contours ———

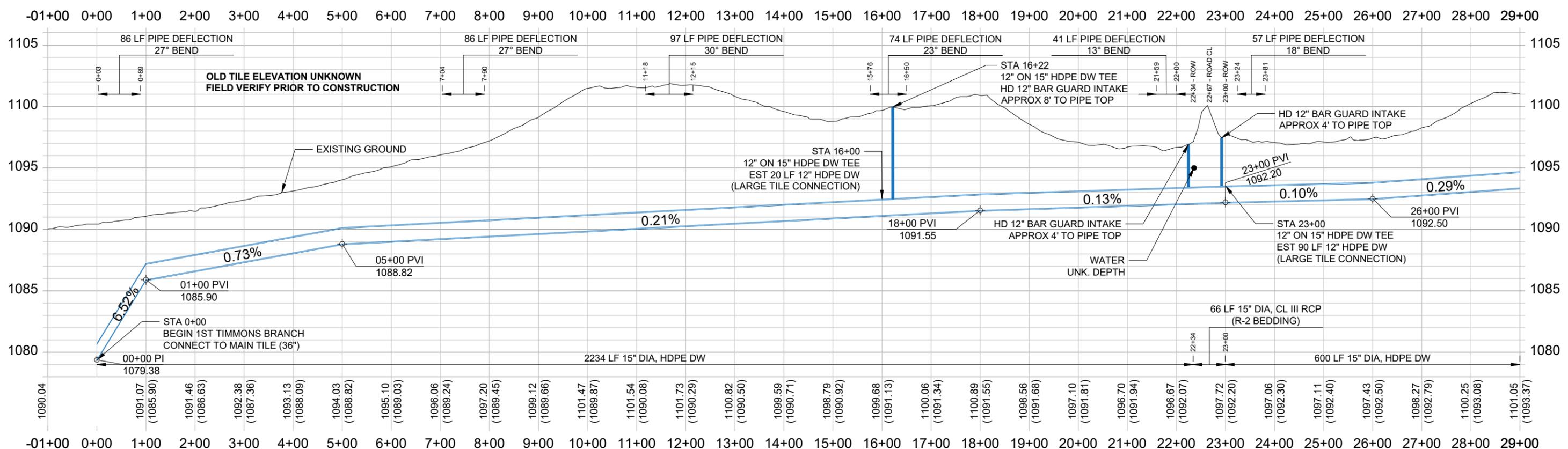
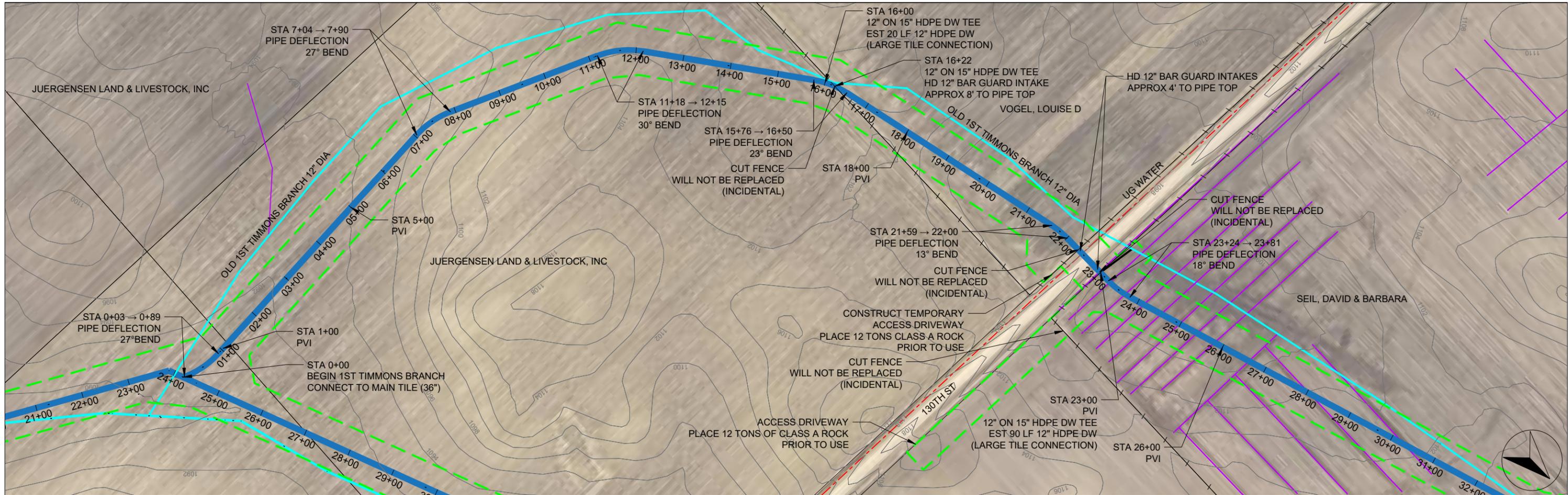
No.	Revision/Issue	Date

Sheet Name
Main Tile
 Sta 178+00 → 180+83

Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project
2502-37
 Date
2026-01-30
 Plan Scale
1" = 200'

Sheet
M.07
- A



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

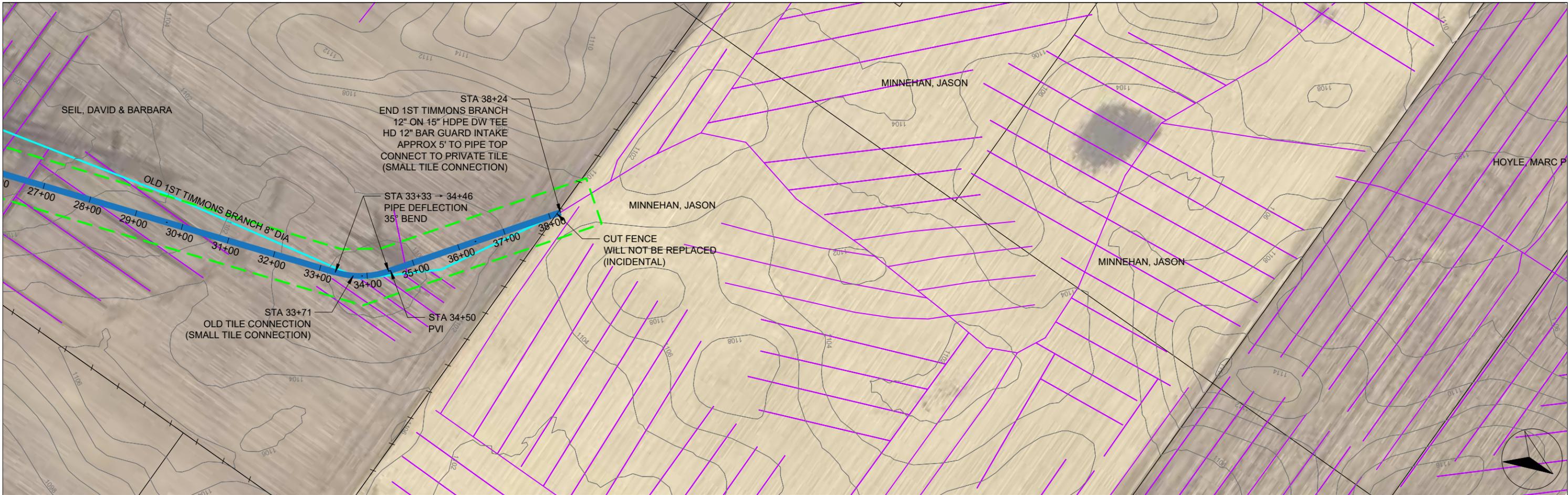
Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

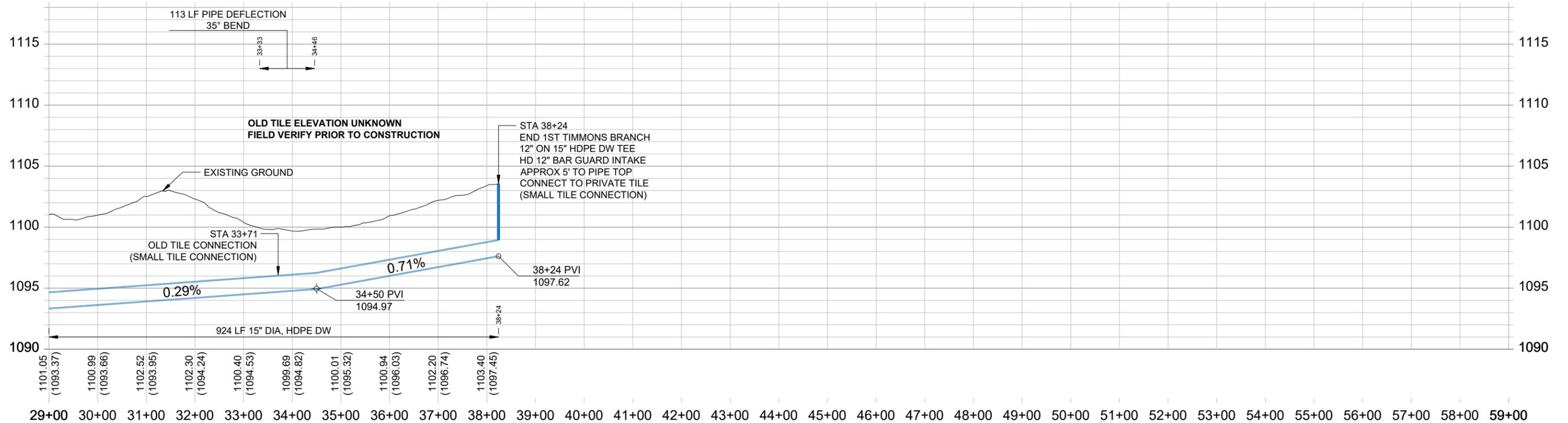
Sheet Name
1st Timmons Branch Tile
 Sta 0+00 → 29+00

Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	M.08 - A
Date	2026-01-30		
Plan Scale	1" = 200'		



29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes	
Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

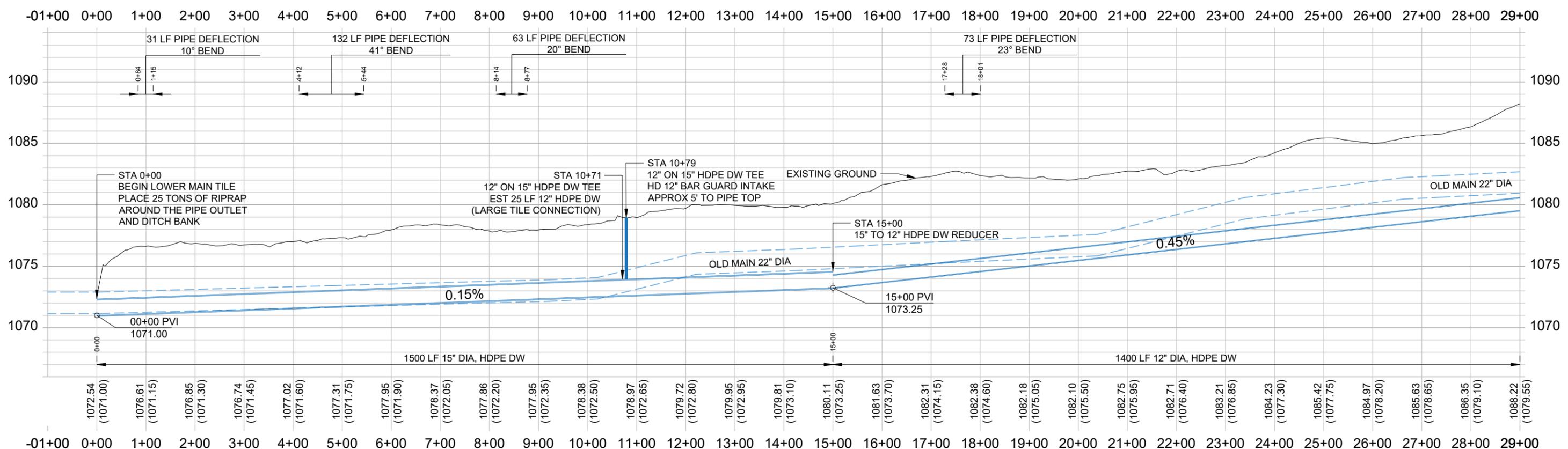
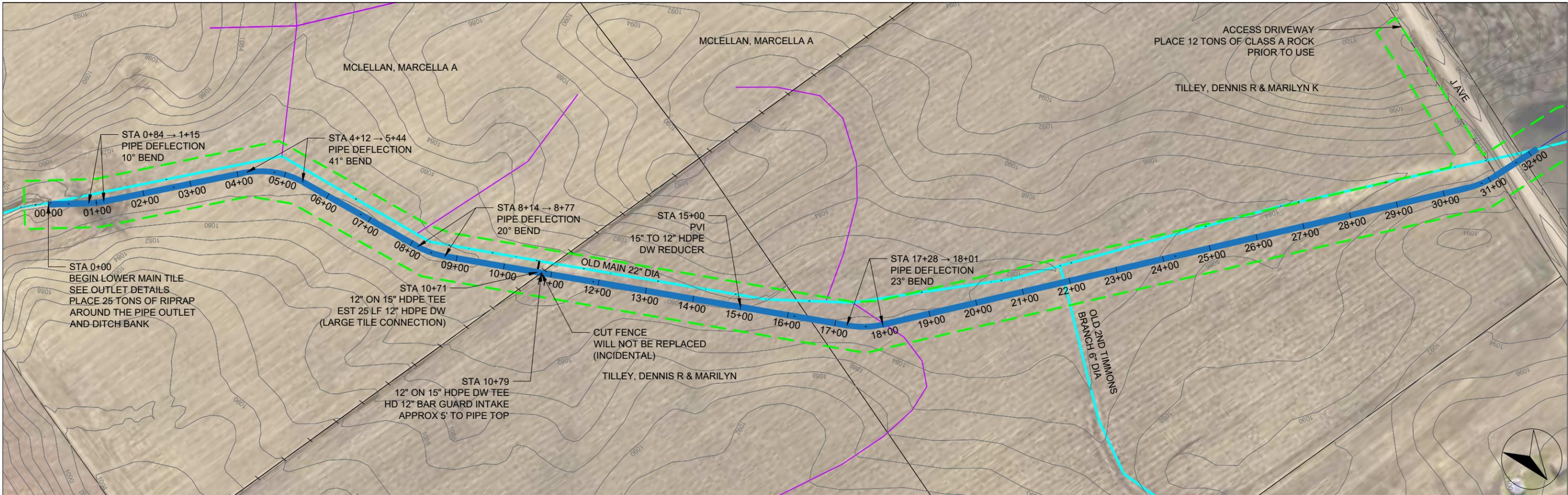
No.	Revision/Issue	Date

Sheet Name
**1st Timmons
 Branch Tile
 Sta 29+00 → 38+24**

Project Name, Client, and Address
**Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050**

Project
2502-37
 Date
2026-01-30
 Plan Scale
1" = 200'

Sheet
**M.09
 - A**



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

No.	Revision/Issue	Date

Plan Legend

- Proposed District Tile
- Old District Tile
- Private Tile
- Work Area (ROW)
- Fenceline
- 2' Contours

No.	Revision/Issue	Date

Sheet Name
Lower Main Tile
 Sta 0+00 → 29+00

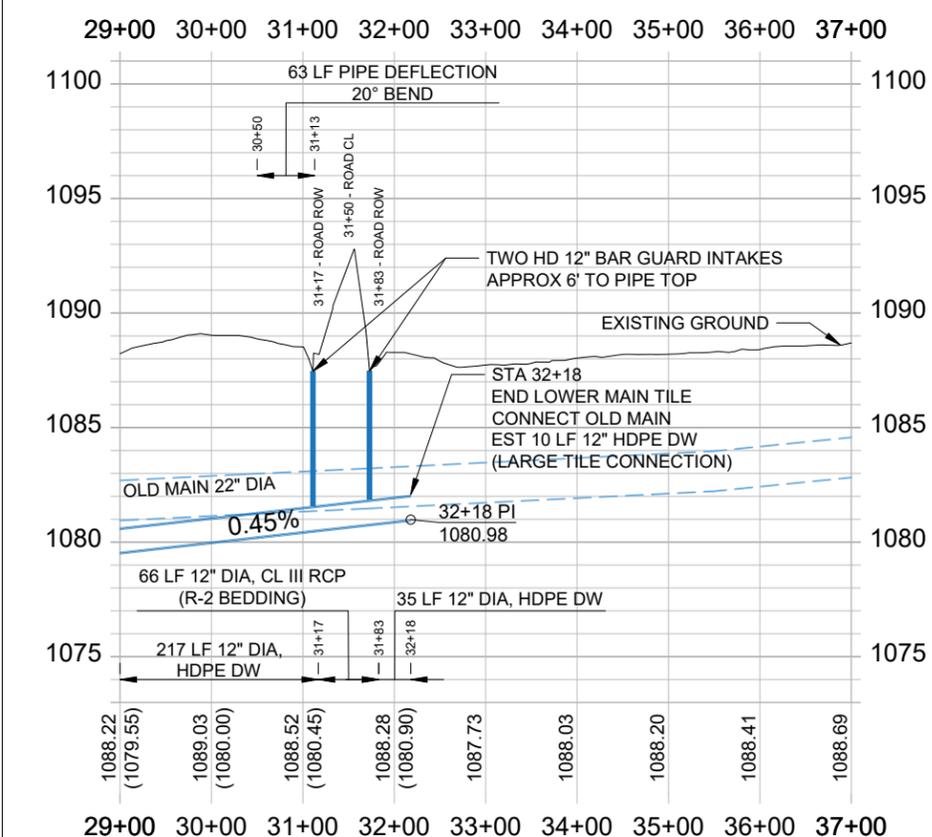
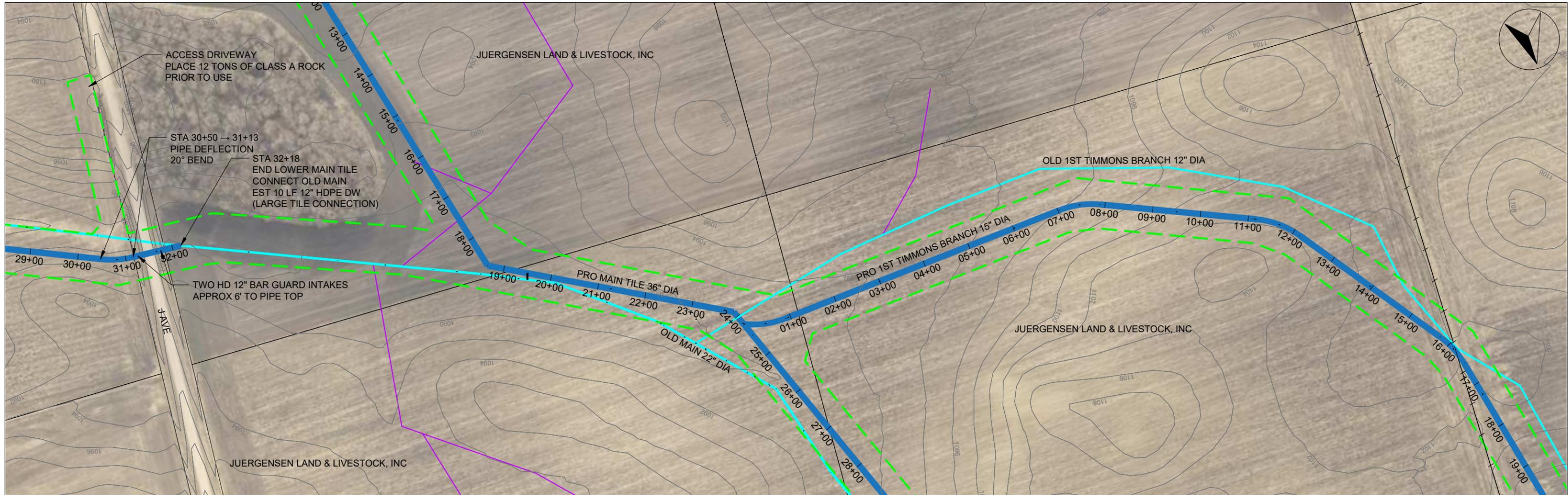
Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project
2502-37

Date
2026-01-30

Plan Scale
1" = 200'

Sheet
M.10
- A



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

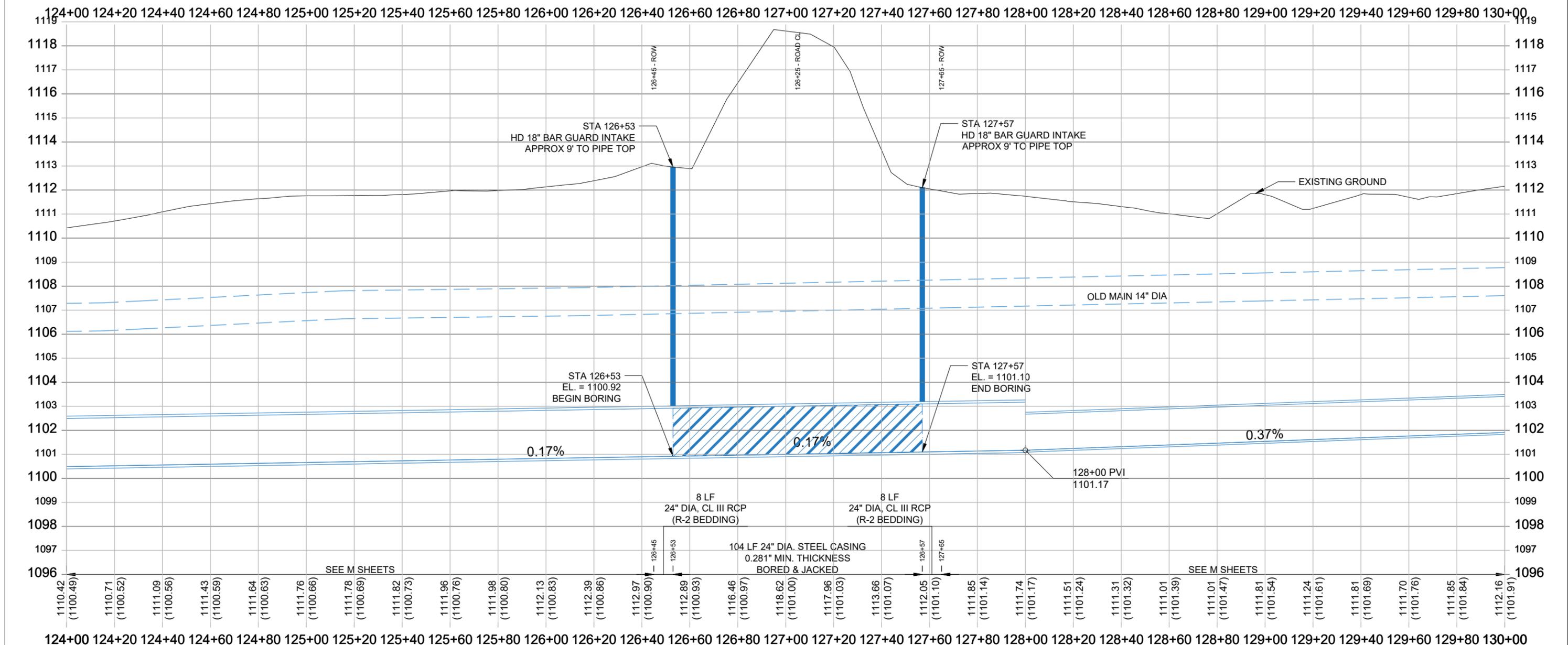
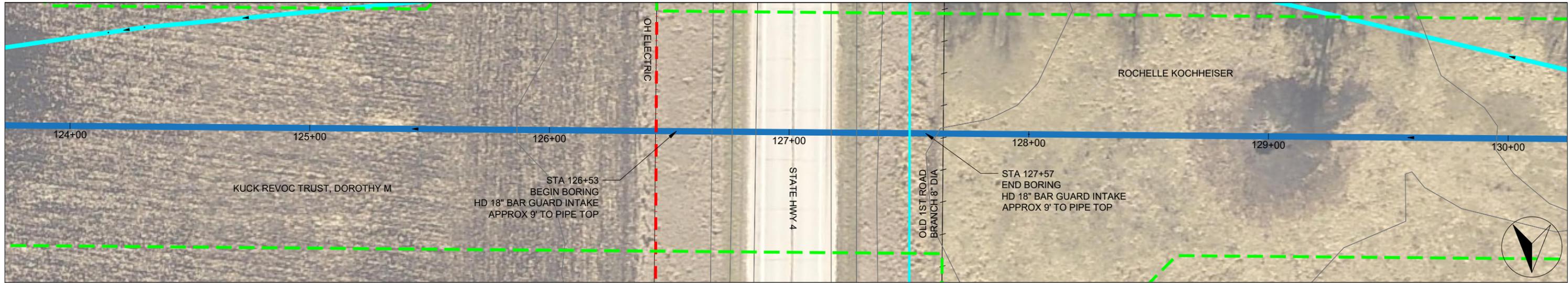
Notes	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Lower Main Tile
 Sta 29+00 → 32+18

Project Name, Client, and Address
Tile Improvements (Alternate)
 Drainage District No. 20
 Greene County, IA
 J Ave & 130th St, Churdan, IA 50050

Project 2502-37	Sheet M.11
Date 2026-01-30	
Plan Scale 1" = 200'	- A



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes

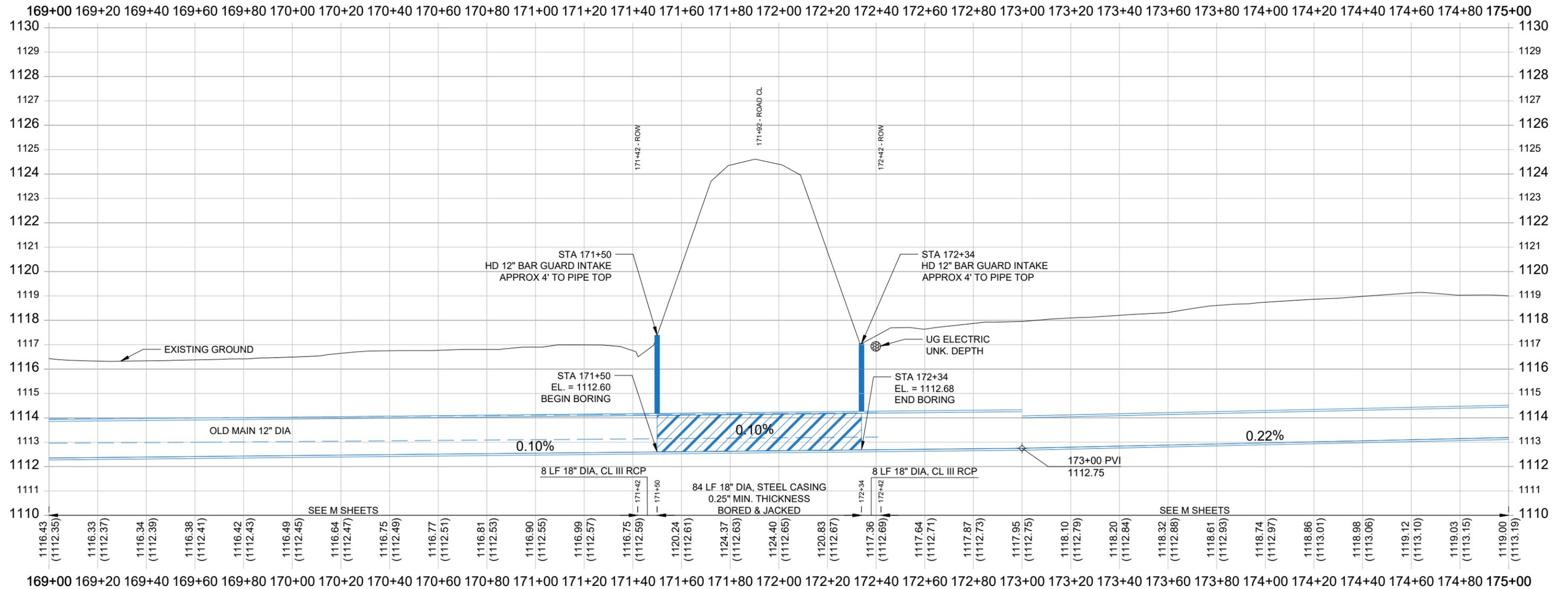
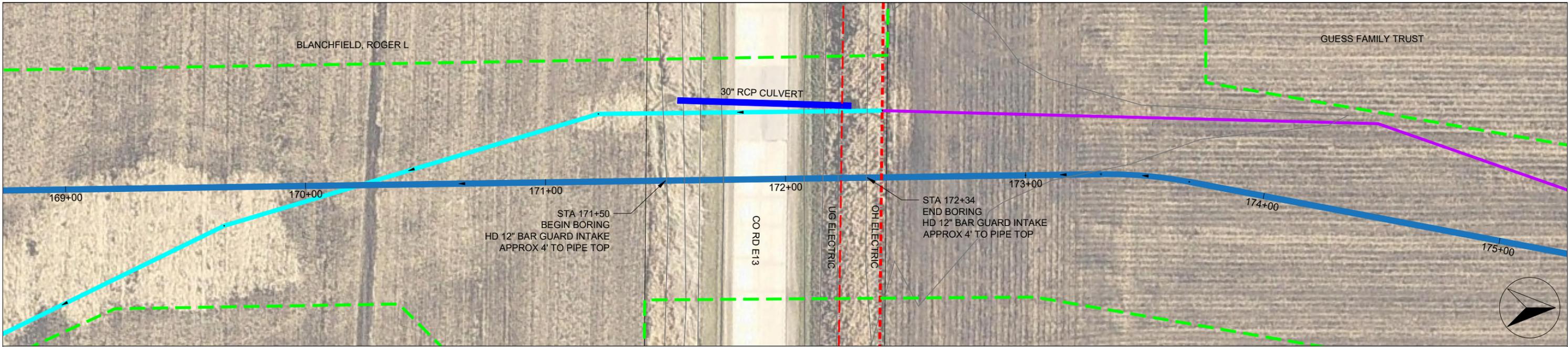
Plan Legend	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Boring Sheet
Main Tile
 Sta 126+45 → 127+65
 (State Hwy 4)

Project Name, Client, and Address
Title Improvements (Alternate)
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	
Date	2026-01-30	V.01	- A
Plan Scale	1" = 40'		



Company Information
AgriVia PLLC
 PO Box 44
 1124 Willis Ave
 Perry, IA 50220

Designer
TJB
 Drafter
TJB
 Checker
JLH

Notes	
Proposed District Tile	
Old District Tile	
Private Tile	
Work Area (ROW)	
Fenceline	
2' Contours	

No.	Revision/Issue	Date

Sheet Name
Boring Sheet
Main Tile
Sta 171+42 → 172+42
(110th St / Co Rd E13)

Project Name, Client, and Address
Tile Improvements (Alternate)
Drainage District No. 20
Greene County, IA
J Ave & 130th St, Churdan, IA 50050

Project	2502-37	Sheet	V.02 - A
Date	2026-01-30		
Plan Scale	1" = 40'		