

AGENDA

Drainage District 22 Completion Hearing
Wednesday, September 9, 2020 11:00 AM
Large Conference Room, Lower Level of Courthouse

This meeting will be open to the public for in-person attendance and also via conference call/online.

You may call at 11:00 am to access the meeting by following the instructions below:

To access the meeting call: 1-(312)-626-6799, when prompted enter meeting ID code: 820 7567 2007

You can also access the meeting online at:

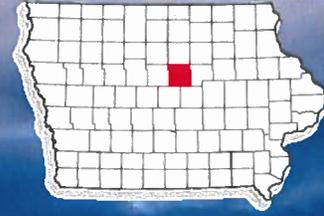
<https://us02web.zoom.us/j/82075672007>

1. Open Meeting
2. Approve Agenda
3. Introductions/Attendance
4. Open Public Hearing
5. Verify Publication
Published in the Times Citizen on August 26, 2020.
6. Explanation Of Project

Documents:

[DD 22 - 8712 - FINAL COMPLETION REPORT.PDF](#)
7. Written Or Verbal Comments/Discussion
8. Damage Claims
9. Close Public Hearing
10. Possible Action
Approve Completion of Project
Approve Final Pay Estimate
Approve Damage Claims
11. Other Business
12. Adjourn Meeting

HARDIN COUNTY, IOWA



2020



**COMPLETION REPORT ON
MAIN TILE REPAIRS TO
DRAINAGE DISTRICT 22
FACILITIES
HARDIN COUNTY, IOWA
(PROJECT NOS. DD-6532.2 AND 8712)**



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

Heather Ann Thomas
HEATHER ANN THOMAS, P.E.

08/28/2020
DATE

LICENSE NUMBER: 23208
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2021
PAGES OR SHEETS COVERED BY THIS SEAL:
SHOWN ON TABLE OF CONTENTS



CLAPSADDLE-GARBER ASSOCIATES OFFICE LOCATIONS

16 East Main Street, PO Box 754 | Marshalltown, IA 50158
1523 S. Bell Avenue, Suite 101 | Ames, IA 50010
5106 Nordic Drive | Cedar Falls, IA 50613
739 Park Avenue | Ackley, IA 50601
511 Bank Street | Webster City, IA 50595

Project Office
739 Park Avenue
Ackley, IA. 50601
Phone: 641-847-3273
Fax: 641-847-2303

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Appendices

- A – As Built Plan Sheets
- B – Project Change Orders
- C – Final Quantities Pay Estimate #6 (Approved 04/29/20)
- D – Proposed Release of Retainage Pay Estimate #7
- E – Landowner / County Split of Project Construction Cost
- F – Lien Waivers

Project Timeline

The Hardin County Board of Supervisors, acting as District Trustees, requested Clapsaddle-Garber & Associates, Inc. (CGA) investigate and provide recommendations to Drainage District 22. CGA reviewed available information and previous investigative work performed to make a recommendation to address failures in the drainage tile installed in 2011 in Drainage District 22. The District Trustees and Landowners met on October 25th, 2017 and went through recommendations. In an effort to be cognizant of financial constraints, the landowners desired to proceed with a project to replace the 30-inch tile and decided to handle any other issues on the smaller diameter 2011 installed tile as a spot repair or work order in the future, as they were identified. At that time, the estimated costs (in 2017 dollars) came to \$487,250.

Additional concerns were later brought about on the original main due to the formation of a sinkhole and CGA was directed to have the line televised, review the condition of that line, and propose options. The District Trustees and Landowners met on March 2nd, 2018 and April 11th, 2018 to review options presented by CGA. It was decided to proceed with the original plan of replacing the 30-inch tile (Supplemental or Parallel Main) and perform spot repairs on the Original Main. Estimated project costs totaled \$841,000. The trustees authorized CGA to proceed with completion of project plans and specifications and proceed with a bid letting. The Trustees directed CGA to bid the project with alternative pipe materials (RCP or Polypropylene) and also several Add Alternates.

CGA completed plans and specifications and a bid letting date of July 25th, 2018 was set by the Trustees. A landowner meeting was held August 1st, 2018 to review bids received and the District recommending awarding the RCP pipe material with rock bedding and both Add Alternates 4 & 6. The following tabulation shows the bid prices for that selected material and add alternates:

| | Contractor | RCP Alternate with Rock | Add Alternate #4 | Add Alternate #6 |
|----|--|------------------------------------|-----------------------------|-----------------------------|
| 1. | Gehrke, Inc. of Eldora, Iowa | \$ 539,778.50 | \$ 4,554.00 | \$ 5,000.00 |
| 2. | Lodge Construction, Inc. of Clarksville, Iowa | \$ 619,245.00 | \$ 8,420.00 | \$ 9,500.00 |
| 3. | Wunsch Construction, Inc. of Greene, Iowa | \$653,675.25 | \$ 4,800.00 | \$ 2,000.00 |

The District Trustees identified Gehrke, Inc. as the lowest responsible bidder for the project and awarded the project with the above shown options at a construction contract price of \$549,332.50. The contract was signed on August 16th, 2018.

The contract was written to allow, but not require a Contractor to begin construction in 2018. Gehrke, Inc planned to start in the Spring of 2019. The start of construction activities was delayed due to very wet weather conditions. The saturated ground coupled with the area being previously disturbed made for challenging construction conditions. Construction activities were started on July 26th, 2019. The weather conditions did push back the completion date as described within the change orders.

Substantial completion was achieved on April 10th, 2020. As-built plan sheets are as shown in Appendix A.

There are several warranties and a maintenance bond on this project as described below:

1. The seeding warranty for County Ditches is in effect from April 1st, 2020 to March 31st, 2021.
2. The seeding warranty for Travis Reyerson's yard is in effect from April 10th, 2020 to April 9th, 2021.
3. The 2-year Maintenance Bond started April 10th, 2020 and will be in effect through April 9th, 2022.

Observations on 2011 Project

A portion of this project (being the replacement of the 2011 installed supplemental main tile) was the result of a previous project and lawsuit settlement. The Drainage District Trustees requested the Contractor and Construction Observer note some of the observed issues and inconsistencies. These are summarized below:

1. The 2011 installed 30" HDPE tile was not installed with rock bedding support throughout the project, including through the road crossings.
2. While removing the 2011 "egg-shaped" tile, it appeared there was no undisturbed spoon shaped earthen support. The bottom of the previous trench appeared flat.
3. In several locations, it appeared soil that was in the area of the haunch had not been compacted during the initial installation. What was observed was consistent with a backfill being dumped over the pipe and not appropriately compacted around the pipe, under and up to the springline. Installing HDPE in this manner is known to cause the pipe to become "egg-shaped" initially and then it can further crush and flatten out under the weight of the soil backfill above and settling of the ground over time.
4. The 2011 installed tile that was removed "snaked" back and forth horizontally. This snaking appeared not only to be side to side of the 2011 dug trench but also the trench itself. The alignment was not laid with smooth curves and consistent joint deflections.
5. Records on location of the installed 2011 tile were very sparse, which made locating and following the route difficult.
6. Several stretches of the 2011 30" HDPE tile had back fall; the pipe was not laid at a consistent grade.
7. During construction, additional private tile lines were located that were not shown on the 2011 as built. Some were attached to the 2011 supplemental main tile and some were never connected in 2011 to the supplemental main tile. It is important to note that it is possible some of those found that were connected may have been connected after the conclusion of the 2011 project.
8. The connections made in 2011 between the HDPE tile and structures were poor and not solid. When disconnecting the 2011 30" HDPE tile, the concrete collar used to connect to the structure crumbled apart.
9. The alignment of the supplemental main tile ran directly through the Ryerson property septic field. There are no records of and no evidence was observed in the field that the septic field was fixed in 2011.

Project Change Orders

This project followed the authorized plans and specifications, with the following change orders. Additional information on each can be seen in Appendix B.

1. Approved Equivalent #1 –
Approved equal for ADS Insert-A-Tee Connection and reduction of Bid Item 10A, “24” x 18” RCP Reducer – For spot Repairs” (-\$442.00)
2. Change Order #2 –
Additional Spot Repair Necessary Due to Lack of Field Alignment Knowledge. As-Built plans of the supplemental main showed a 15-foot offset from the original main tile, this was not the case. (+\$1,184.00)
3. Change Order #3 –
Adjust Contract Quantities to reflect field installed quantities for spot repairs. The allowed spot repair quantities were greater than what was determined needed in the field. The contract quantities were adjusted. (-17,992.00)
4. Change Order #4 –
Allow native backfill be utilized for road crossings. Recommendation and allowance was obtained from the Hardin County Engineer. (\$0.00)
5. Change Order #5 –
Allow for exploratory excavation to lessen needed changes or damaging the original supplemental main. (+\$1,749.00)
6. Change Order #6 –
Completion date was extended to December 1st, 2019. (+\$0.00)
7. Change Order #7 –
Repair Travis Ryerson’s septic system (+\$1,650.00)
8. Change Order #8 -
During the 30-inch tile replacement, a 6” private tile, running longitudinally with the 30” tile needed removed and replaced. (+\$3,150.00)
9. Change Order #9 –
3-inch rock bedding material was needed to provide pipe support in an area of poor soil. (+\$360.00)
10. Change Order #10 – Quantity Adjustments
The original contract, as bid, was largely completed (with the exception of seeding, clean-up, and other miscellaneous work that was unable to be completed with the winter weather/frozen ground conditions) as of January 13th, 2020. The quantities installed to date and the anticipated work remaining for the Spring was compiled to determine the projected final quantities. (-\$1,896.00)
11. Change Order #11 –
Completion date was extended to May 31st, 2020. This change order also establishes a completion date for Change Order #12 of November 30th, 2020. (+\$0.00)

12. Change Order #12 – Overflow Cross Connections

Landowners voted to add extra work not in the original project scope by adding several overflow connections at structures to connect the main and supplemental tile.

(+\$20,492.00)

Final Project Costs

The final project construction cost came to \$557,587.50, as shown below. Engineering costs (not including televising investigation completed by others) are estimated at \$148,000. The total project cost may increase depending upon any damage claims brought forth at the completion hearing and do not include the one damage claim approved to date. It should also be noted that these costs shown herein are also without any administrative costs, legal fees paid by the district, televising paid by the district, or interest on construction warrants. The total project cost, without the above items, is \$705,557.50, as detailed below:

| | | |
|--|--|----------------------|
| | Project, as bid by Contractor | \$ 549,332.50 |
| | Approved Equivalent #1 | - (\$ 442.00) |
| | Change Order #2 | + \$ 1,184.00 |
| | Change Order #3 | - (\$ 17,992.00) |
| | Change Order #4 | - |
| | Change Order #5 | + \$ 1,749.00 |
| | Change Order #6 | - |
| | Change Order #7 | + \$ 1,650.00 |
| | Change Order #8 | + \$ 3,150.00 |
| | Change Order #9 | + \$ 360.00 |
| | Change Order #10 | - (\$ 1,896.00) |
| | Change Order #11 | - |
| | Change Order #12 | + \$ 20,492.00 |
| | Total Construction Contract Amount | \$ 557,587.50 |
| | | |
| | Estimated Engineering @ End of Completion Hearing | \$ 148,000.00 |
| | | |
| | TOTAL PROJECT COST | \$ 705,587.50 |

The cost of this project is taken on by two separate entities, being the Landowners and Hardin County. Hardin County covers any materials within the Right of Way of any road. The Landowners cover the remaining costs. See Appendix E for a breakdown of the construction costs between Landowners and Hardin County which resulted in 91.57% of the costs being the Landowner share and 8.43% being the County’s share. When applied to the Total Project Cost amount above, Landowners are responsible for \$646,106.47 and the county is responsible for \$59,481.03.

The landowner share of \$646,106.47 is less than the \$717,002.00 as discussed with the Landowners on April 11th, 2018, when it was voted to proceed with the project.

Crop Damage

Crop damaged was incurred by 5 property owners on this project. Crops impacted were beans and corn. The following table shows which property owners were impacted, which type of crops were impacted, and the number of acres of crops that were damaged/removed.

| Property Owner | Corn Damage (Acres) | Bean Damage (Acres) |
|-----------------------|----------------------------|----------------------------|
| Annette Ioerger | 2.216 | |
| Royle & Jo Duncan | | 2.323 |
| Randy Silvest | | 8.992 |
| Lee Anderson | 2.841 | |
| Marvin Krause Trust | | 3.411 |

An aerial of these areas can also be found in Appendix A (the As-Built Plan Sheets) on Sheet 4 of 19 (A.04-“Crop Damage”).

Pending Items

As of the writing of this report, this project is complete (including punch list items) in general accordance with the authorized plans and specifications and lien waivers for suppliers have been submitted by the general contractor (as attached in Appendix F).

After the completion hearing, final payment (release of remaining retainage) for the project needs to be authorized by the Trustees. The last payment made to the Contractor was on April 29, 2020 and is included as Appendix C. The final payment due is as shown on Pay Estimate #7, included as Appendix D.

It is my recommendation that the project be accepted.

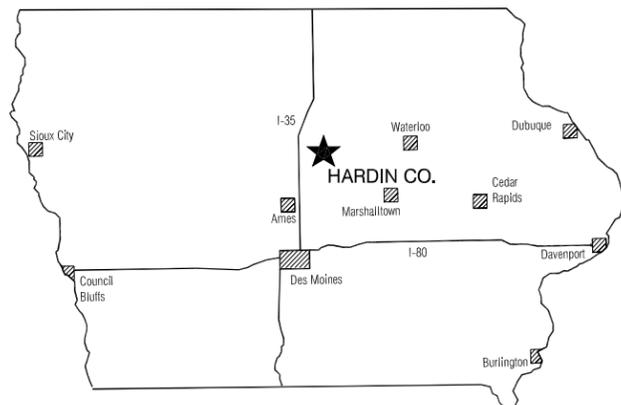
I also recommend that the entire project be walked and reviewed just prior to the expiration of the seeding warranties and Maintenance Bond for any items that may need to be remedied by the contractor. These dates are listed below.

- Seeding warranty for County Ditches is in effect from April 1st, 2020 to March 31st, 2021.
- Seeding warranty for Travis Reyerson’s yard is in effect from April 10th, 2020 to April 9th, 2021.
- The 2-year Maintenance Bond is in effect from April 10th, 2020 through April 9th, 2022.

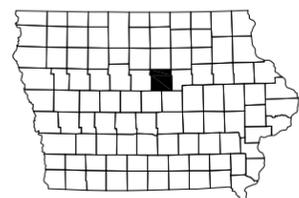
It should be noted that if the Trustees decide to exercise this recommendation, there are no engineering fees included in the above Final Project Costs to cover this service.

APPENDIX A

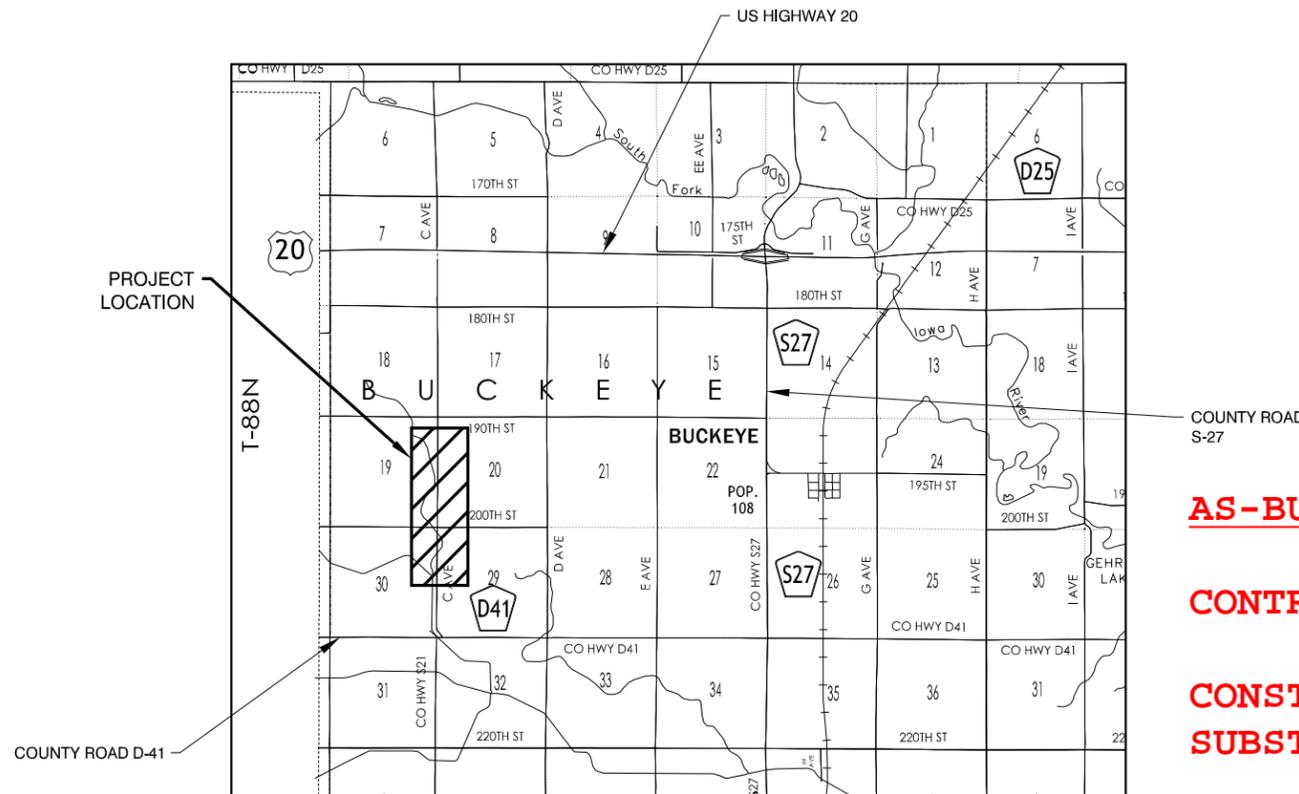
MAIN TILE REPAIRS DRAINAGE DISTRICT NO. 22 HARDIN COUNTY, IOWA 2018



LOCATION MAP



HARDIN COUNTY, IOWA



VICINITY MAP

NOT TO SCALE

| SHEET NO. | INDEX OF SHEETS | DESCRIPTION |
|-----------|--|-------------|
| A.01 | TITLE SHEET | |
| A.02 | LAYOUT PLAN | |
| B.01-B.06 | DETAILS | |
| C.01-C.02 | ESTIMATE OF QUANTITIES AND REFERENCE INFORMATION | |
| D.01-D.03 | TILE REPLACEMENT PLAN AND PROFILE | |
| D.04-D.05 | TILE SPOT REPAIRS | |

AS-BUILT PLAN SET 08/28/2020

CONTRACTOR: GEHRKE, INC.

**CONSTRUCTION START: JULY 26, 2019
SUBSTANTIAL COMPLETION: APRIL 10, 2020**

**CONSTRUCTION OBSERVATION
PROVIDED BY:**

**CLAPSADDLE-GARBER-ASSOCIATES
RANDY BROCKA &
GARRETT JACOBS**

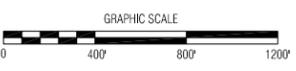
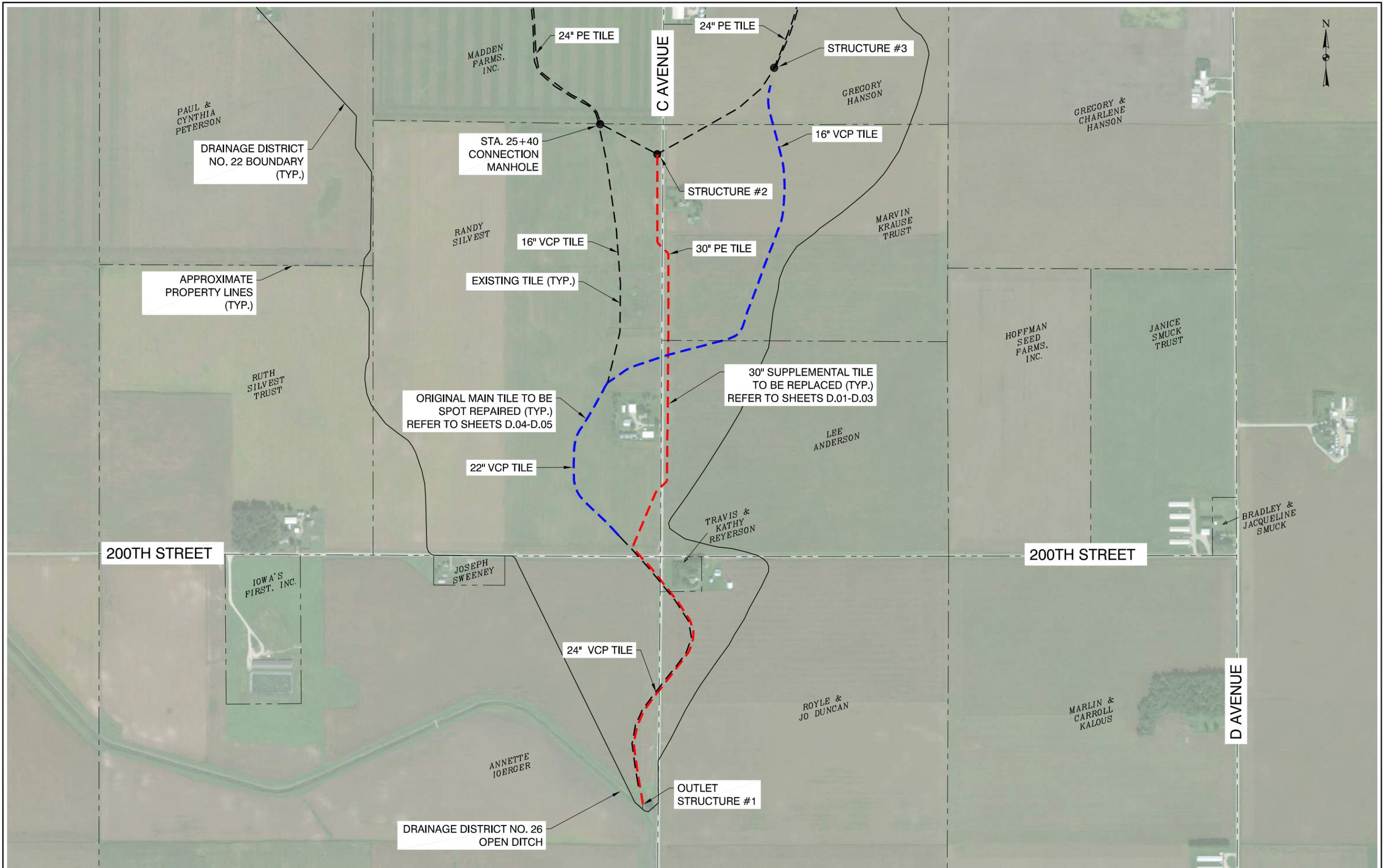


1-800-292-8989
www.iowaonecall.com



Clapsaddle-Garber Associates, Inc
739 Park Avenue
Ackley, Iowa 50601
Phone 641-847-3273
www.cgaconsultants.com

| | |
|--|---|
| | 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. Signature: <u>Heather Ann Thomas</u> Date: <u>08/28/2020</u> |
| | Signature: Heather A. Thomas, PE Iowa License Number 23208 My license renewal date is December 31, 2019 |
| Pages or sheets covered by this set: <u>19 Sheets As Built Set</u> | |



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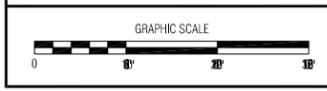
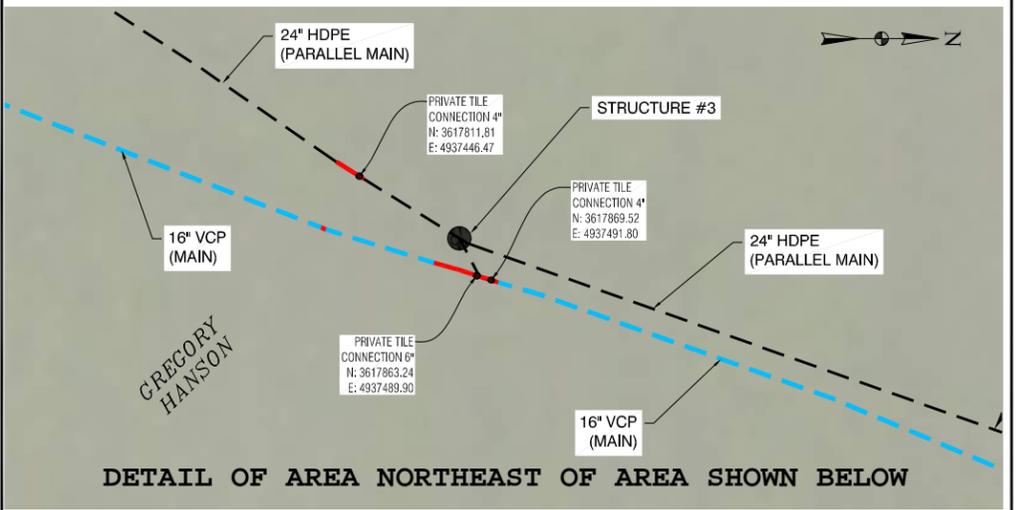
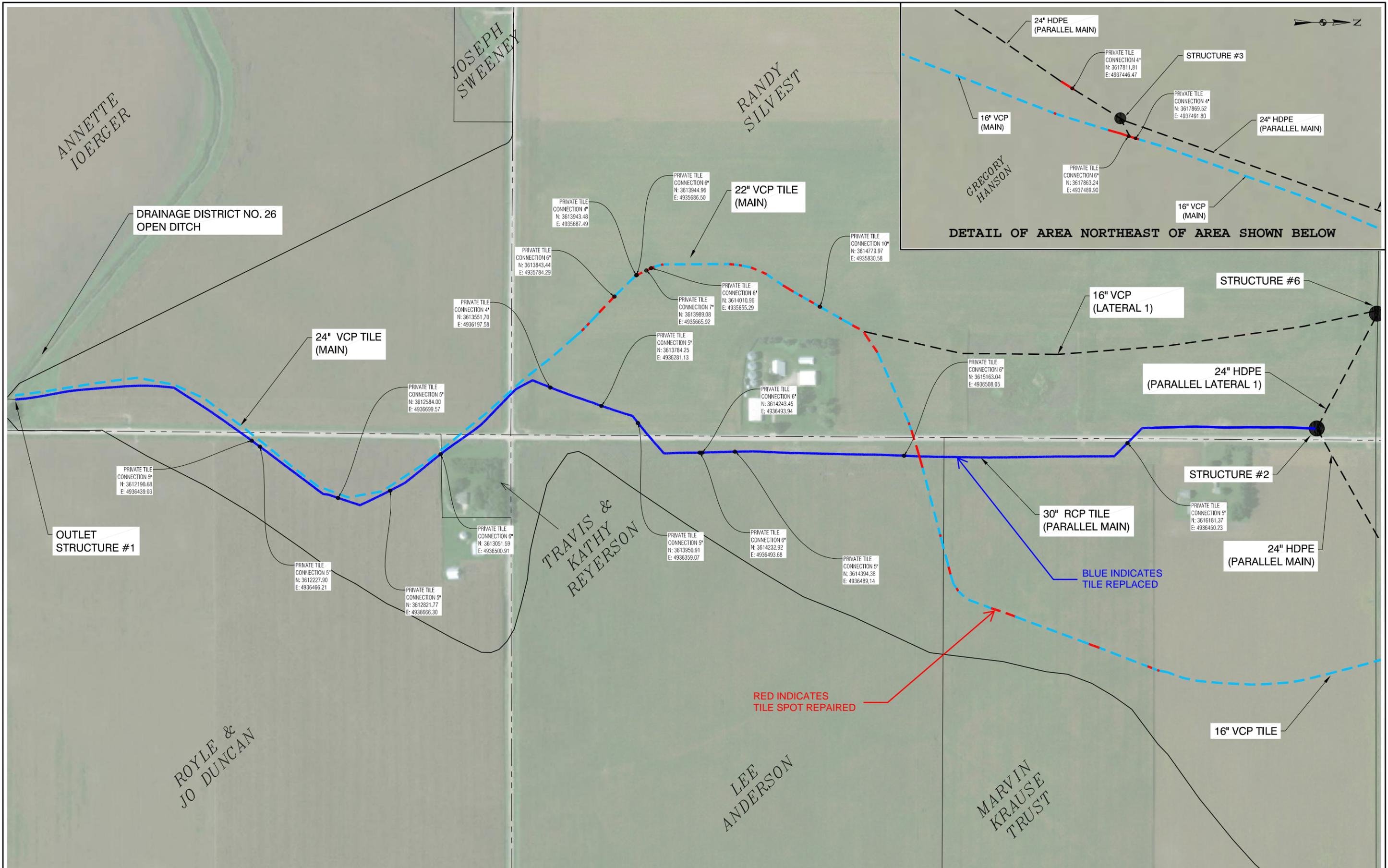
CGA Clapsaddle-Garber Associates, Inc.
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 Ashley, Iowa 50601
 Phone: 641-847-3373
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 APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
 HARDIN COUNTY, IOWA

LAYOUT PLAN

PROJECT NO. 8712
 SHEET NO. A.02



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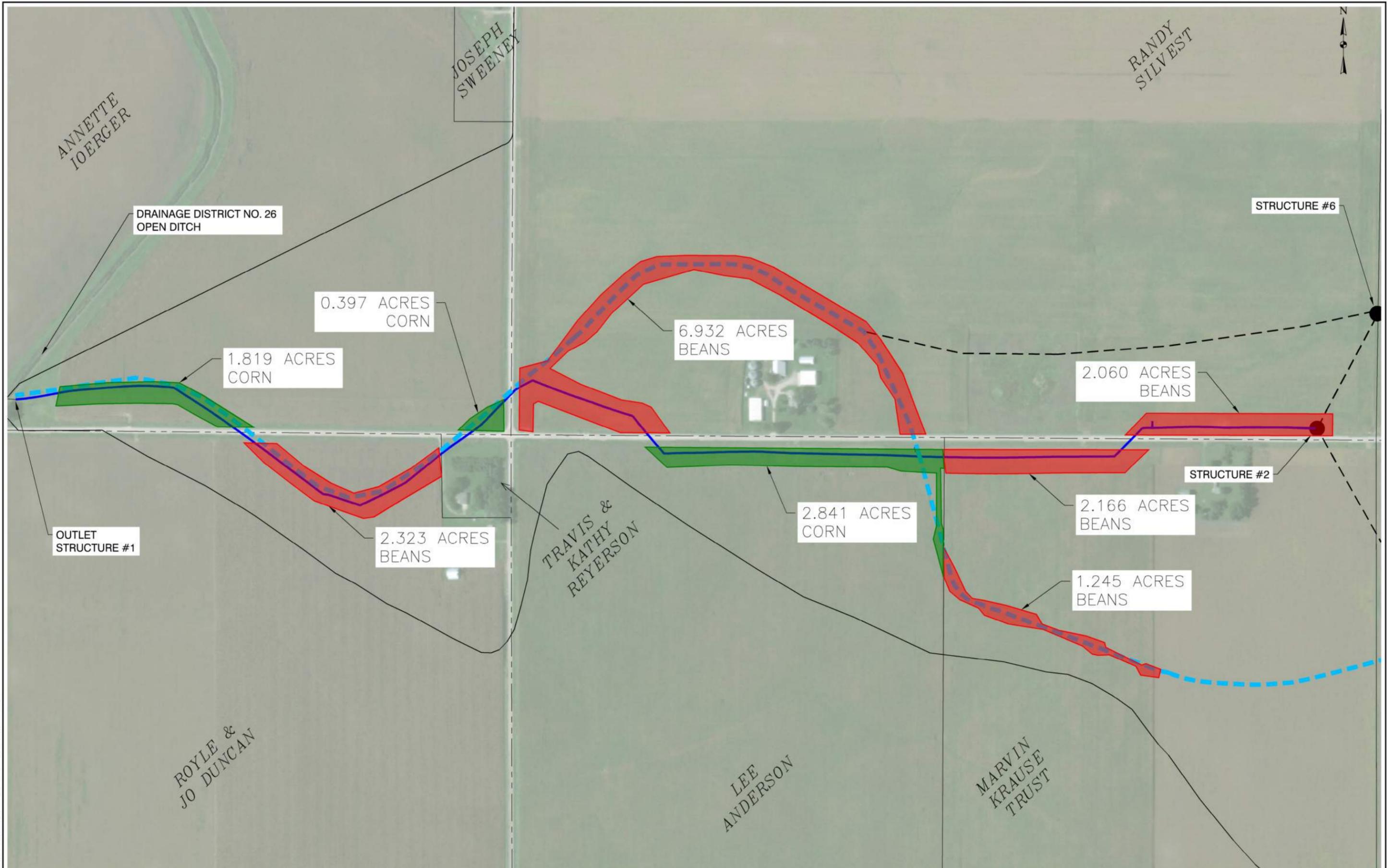
CGA Clapsaddle-Garber Associates, Inc.
 739 Park Avenue
 Ashley, Iowa 50601
 Phone: 641-947-3373
 www.cgaconsultants.com

DESIGNED: ### DATE: ###
 DRAWN: ### DATE: ###
 CHECKED: ### DATE: ###
 APPROVED: ### DATE: ###

MAIN TILE REPAIRS - DD #22
 HARDIN COUNTY, IOWA

AS-BUILT OVERVIEW

PROJECT NO. 8712
 SHEET NO. A.03



DRAINAGE DISTRICT NO. 26
OPEN DITCH

STRUCTURE #6

0.397 ACRES
CORN

6.932 ACRES
BEANS

1.819 ACRES
CORN

2.060 ACRES
BEANS

OUTLET
STRUCTURE #1

2.323 ACRES
BEANS

TRAVIS &
KATHY
REYERSON

2.841 ACRES
CORN

STRUCTURE #2

2.166 ACRES
BEANS

1.245 ACRES
BEANS

ROYLE &
JO DUNCAN

LEE
ANDERSON

MARVIN
KRAUSE
TRUST



| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
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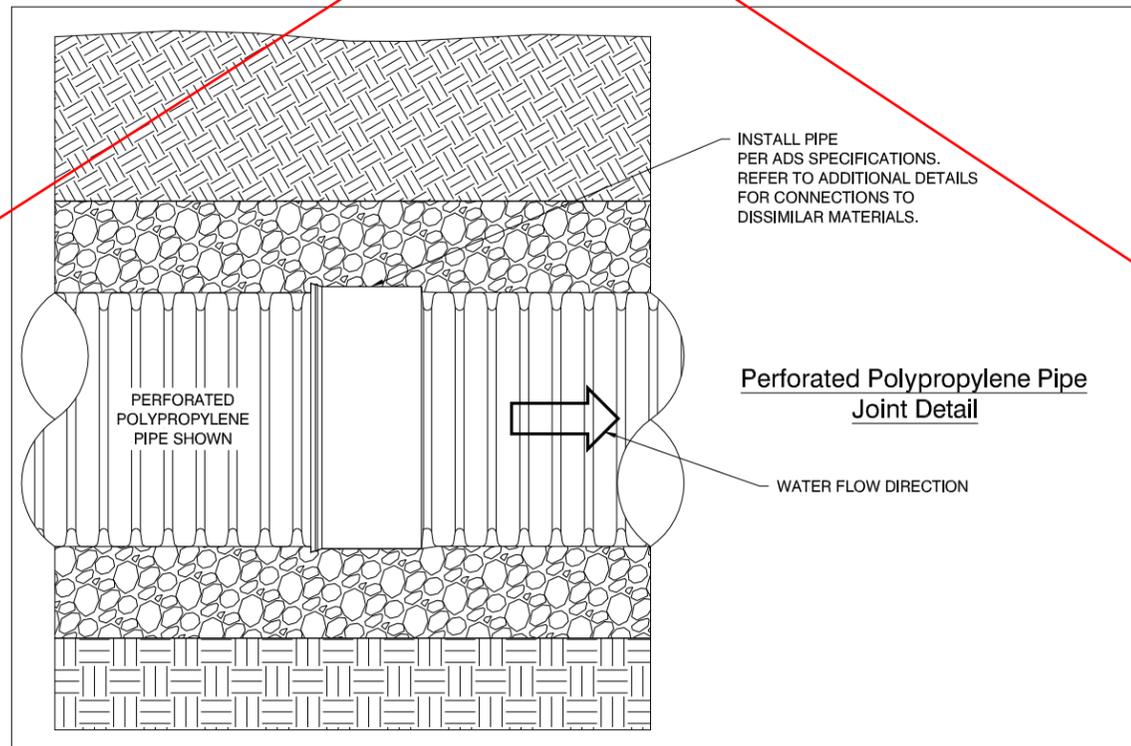
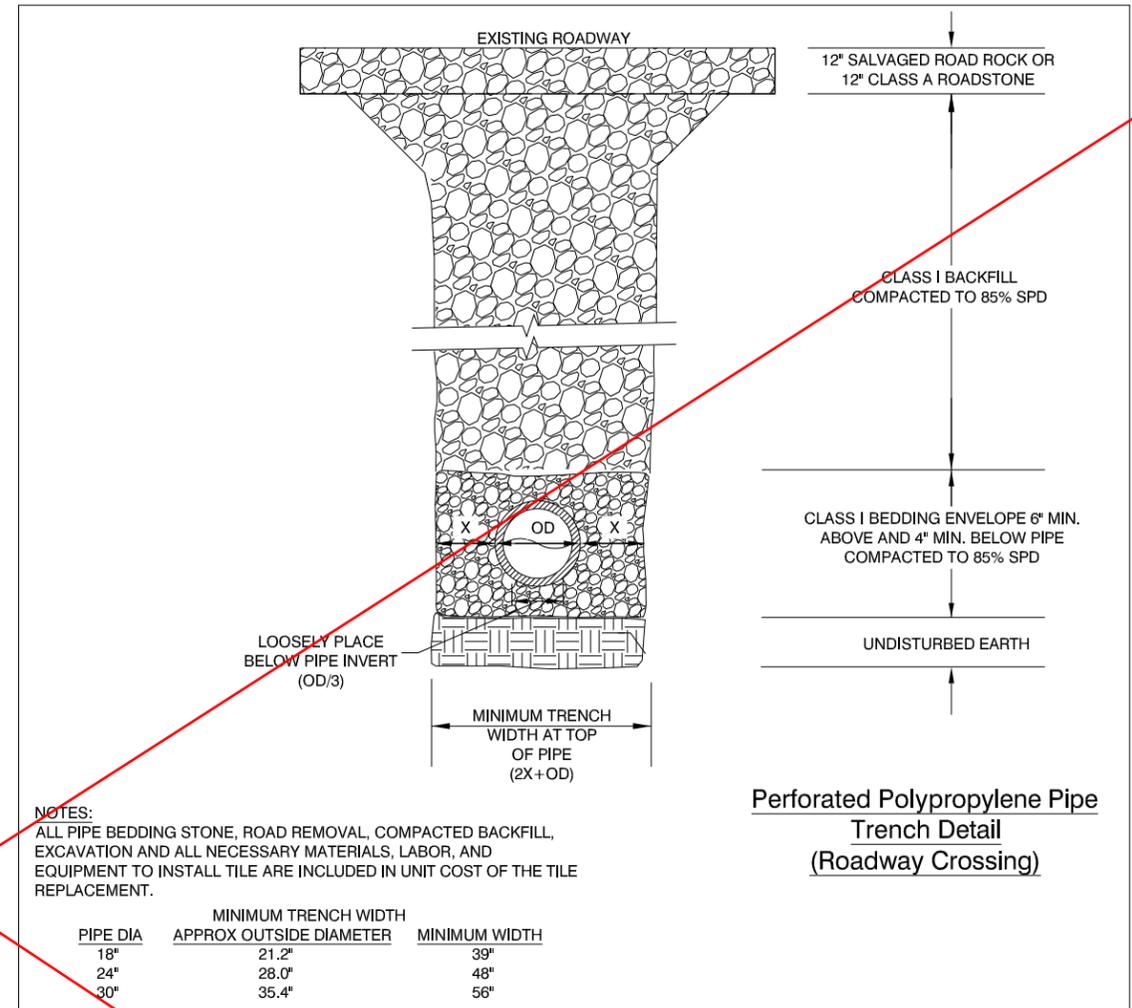
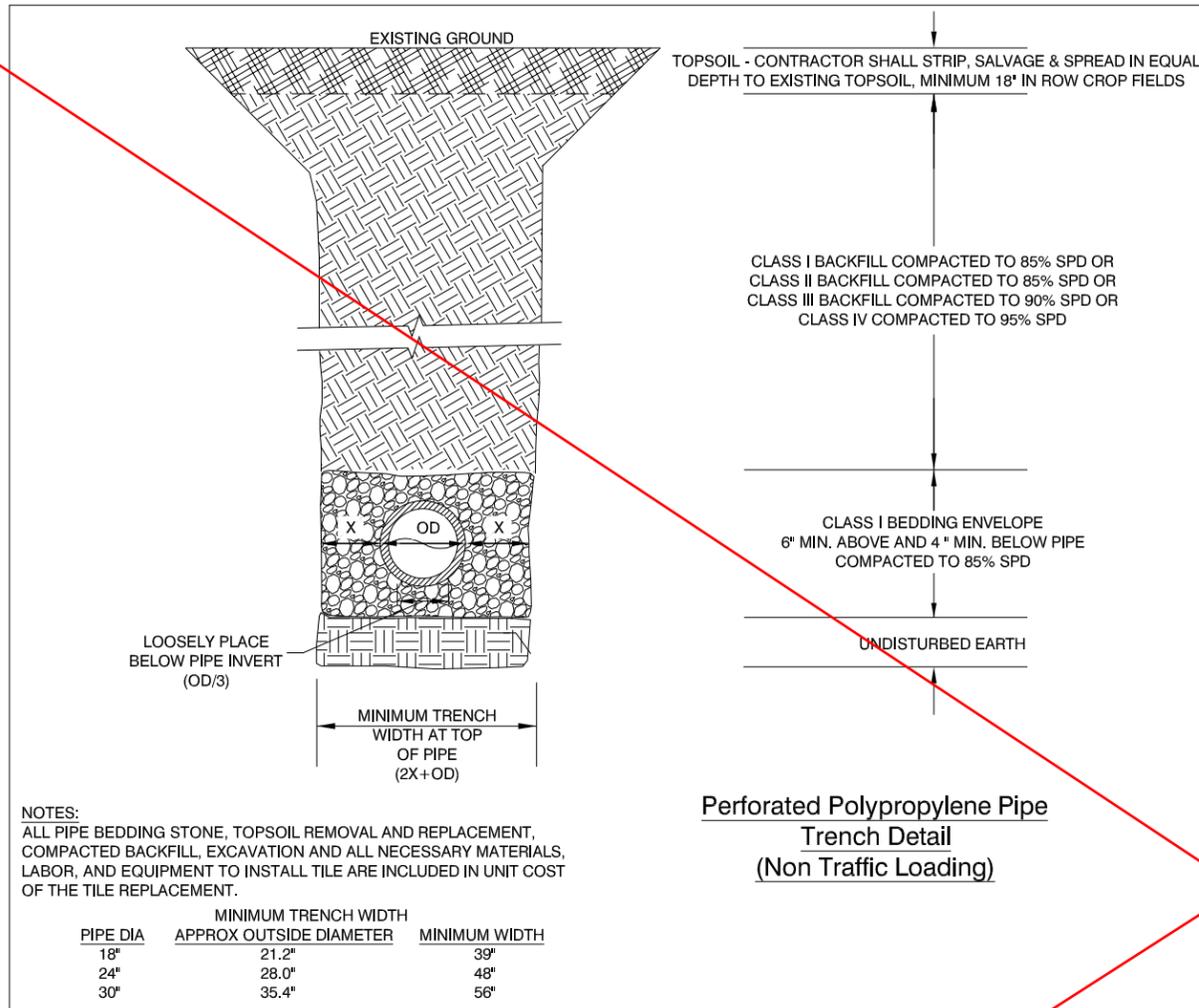
CGA Clapsaddle-Garber Associates, Inc.
739 Park Avenue
Ackley, Iowa 50001
Phone: 641-947-9373
www.cgaconsultants.com

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APPROVED: #### DATE: ####

MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

CROP DAMAGE

PROJECT NO.
8712
SHEET NO.
A.04



NOTE:
MINIMUM TRENCH WIDTHS SHOWN ARE MINIMUM. CONTRACTOR MAY REQUIRE GREATER WIDTH IN ORDER TO ADEQUATELY COMPACT HAUNCH SUPPORT.

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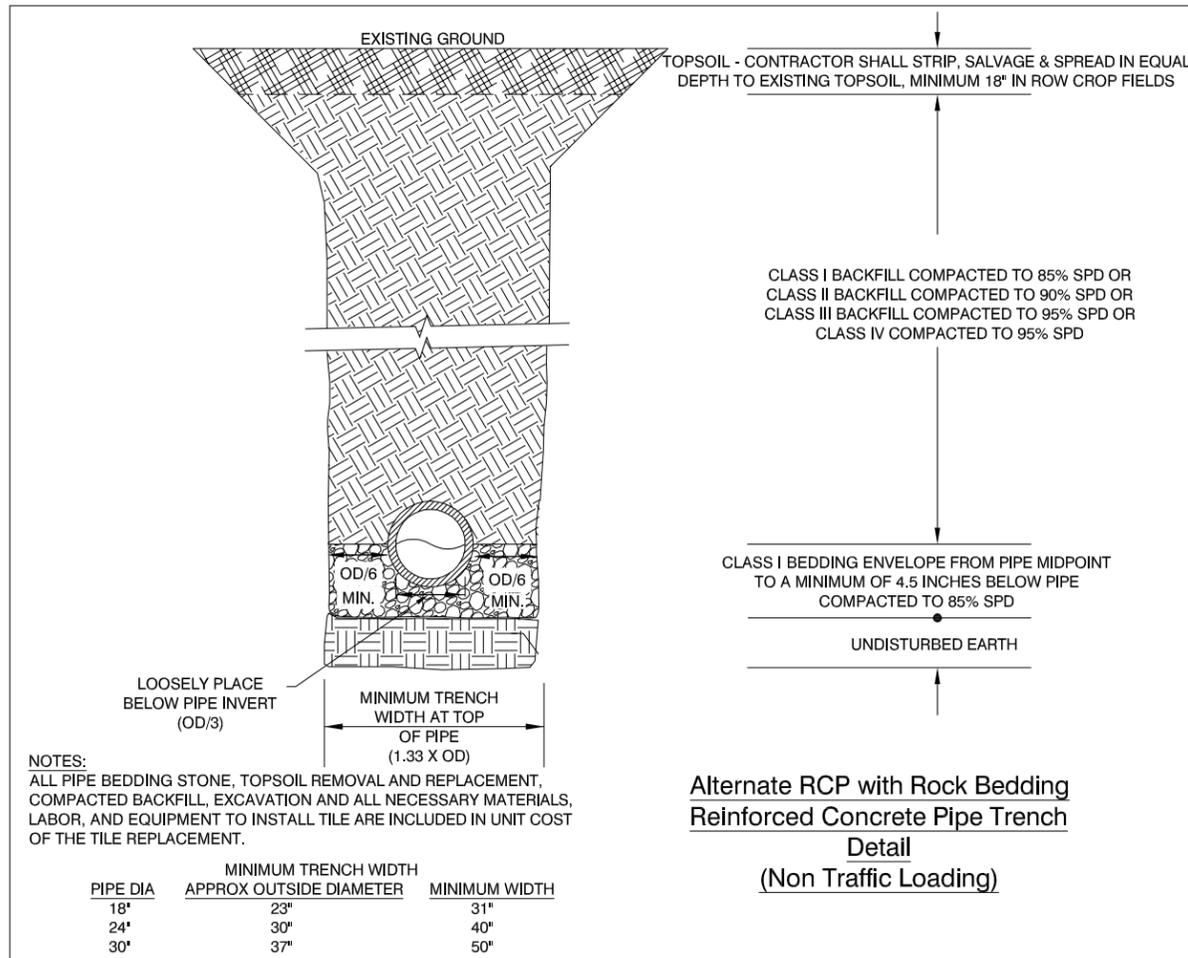
CGA Clapsaddle-Garber Associates, Inc.
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Ackley, Iowa 50601
Ph 641-947-3273
www.cgaconsultants.com

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MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

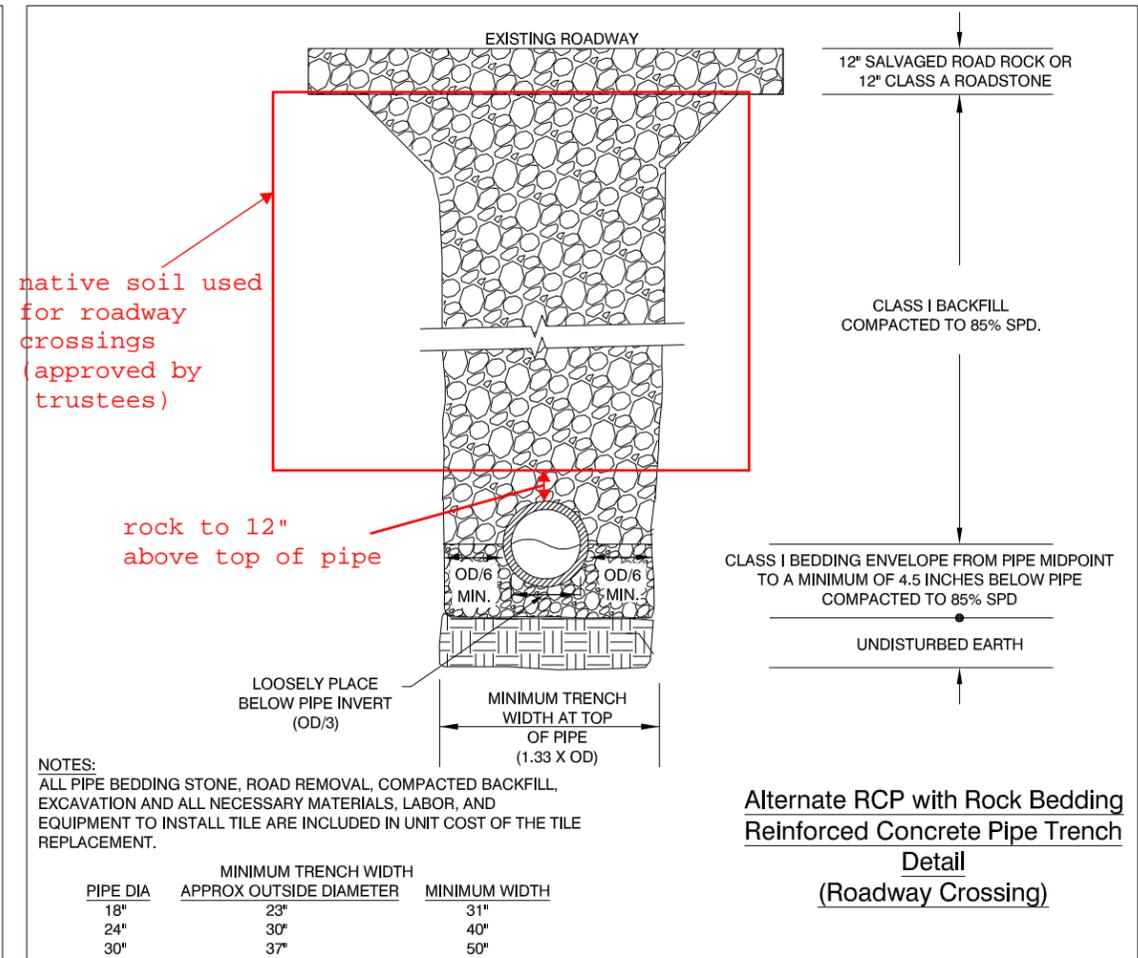
DETAILS: POLYPROPYLENE PIPE

PROJECT NO. 8712
SHEET NO. B.01



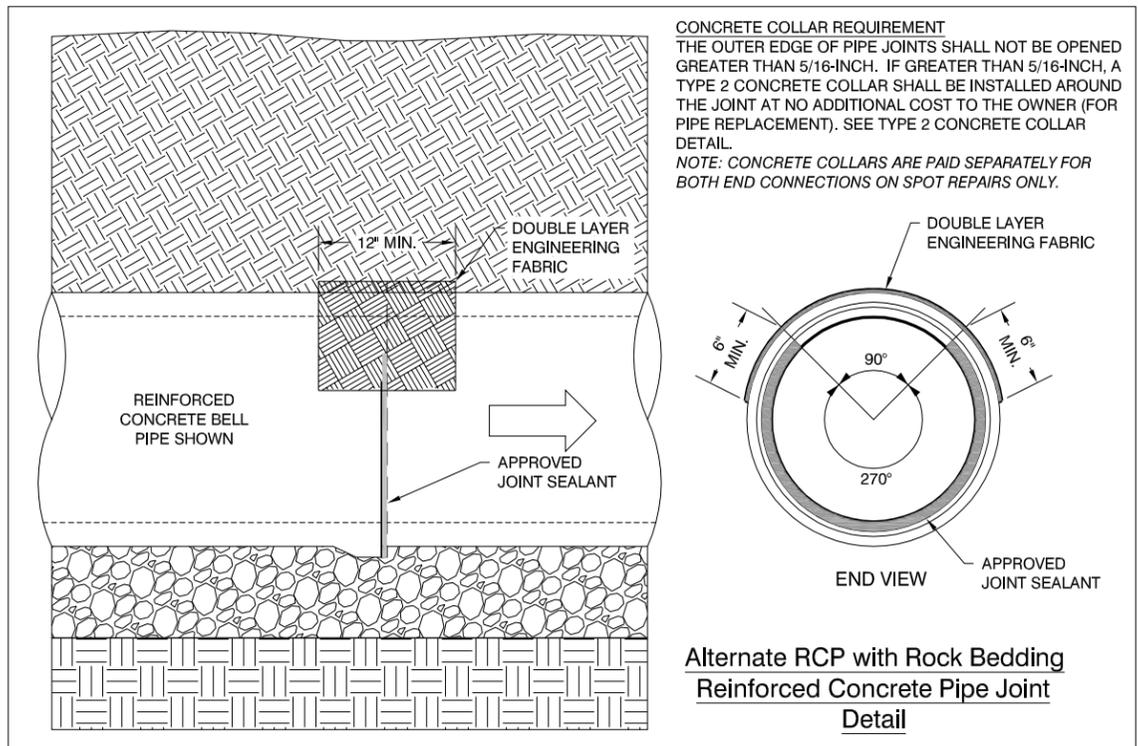
NOTES:
ALL PIPE BEDDING STONE, TOPSOIL REMOVAL AND REPLACEMENT, COMPACTED BACKFILL, EXCAVATION AND ALL NECESSARY MATERIALS, LABOR, AND EQUIPMENT TO INSTALL TILE ARE INCLUDED IN UNIT COST OF THE TILE REPLACEMENT.

| PIPE DIA | MINIMUM TRENCH WIDTH APPROX OUTSIDE DIAMETER | MINIMUM WIDTH |
|----------|--|---------------|
| 18" | 23" | 31" |
| 24" | 30" | 40" |
| 30" | 37" | 50" |



NOTES:
ALL PIPE BEDDING STONE, ROAD REMOVAL, COMPACTED BACKFILL, EXCAVATION AND ALL NECESSARY MATERIALS, LABOR, AND EQUIPMENT TO INSTALL TILE ARE INCLUDED IN UNIT COST OF THE TILE REPLACEMENT.

| PIPE DIA | MINIMUM TRENCH WIDTH APPROX OUTSIDE DIAMETER | MINIMUM WIDTH |
|----------|--|---------------|
| 18" | 23" | 31" |
| 24" | 30" | 40" |
| 30" | 37" | 50" |



CONCRETE COLLAR REQUIREMENT
THE OUTER EDGE OF PIPE JOINTS SHALL NOT BE OPENED GREATER THAN 5/16-INCH. IF GREATER THAN 5/16-INCH, A TYPE 2 CONCRETE COLLAR SHALL BE INSTALLED AROUND THE JOINT AT NO ADDITIONAL COST TO THE OWNER (FOR PIPE REPLACEMENT). SEE TYPE 2 CONCRETE COLLAR DETAIL.
NOTE: CONCRETE COLLARS ARE PAID SEPARATELY FOR BOTH END CONNECTIONS ON SPOT REPAIRS ONLY.

NOTE:
MINIMUM TRENCH WIDTHS SHOWN ARE MINIMUM. CONTRACTOR MAY REQUIRE GREATER WIDTH IN ORDER TO ADEQUATELY COMPACT HAUNCH SUPPORT.

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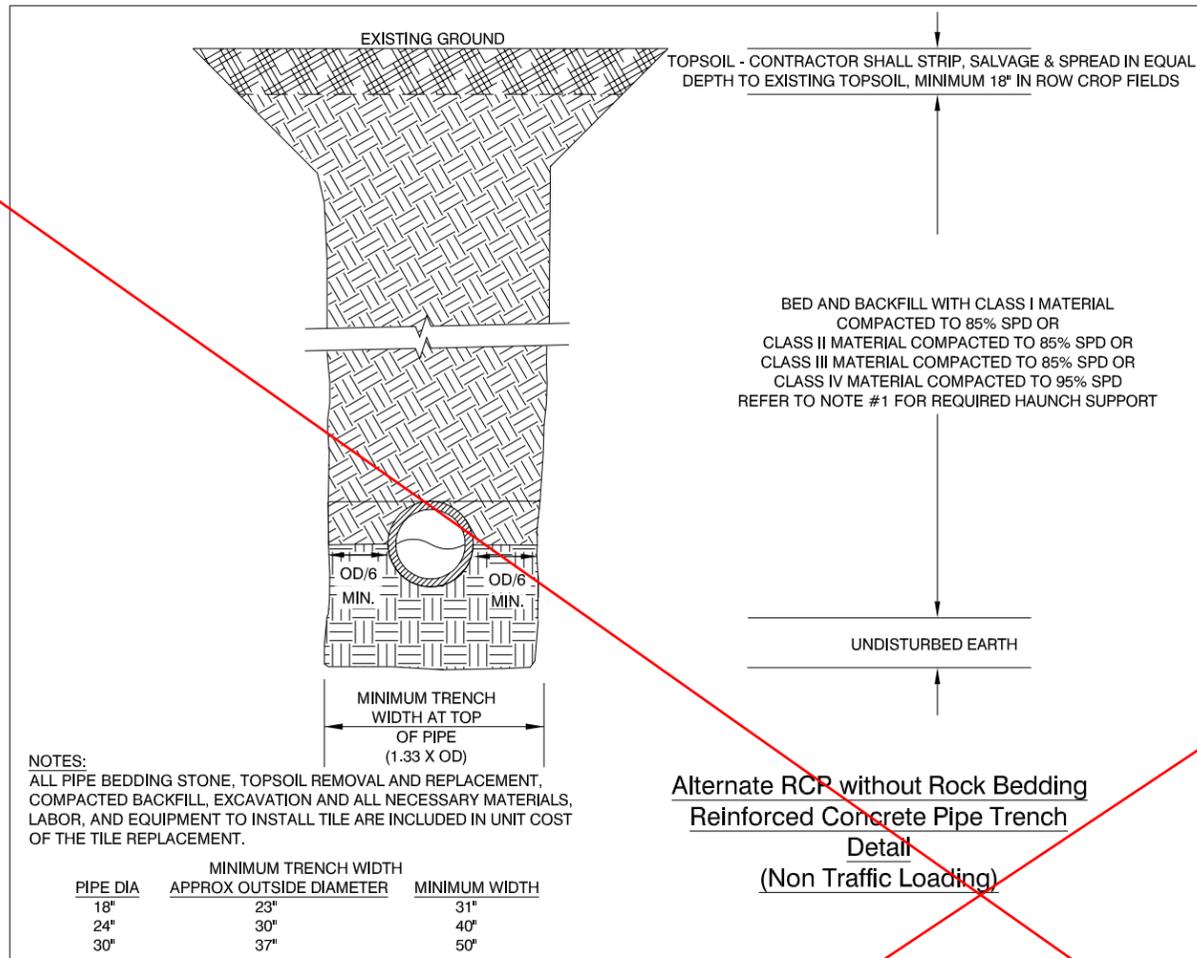
CGA Clapsaddle-Garber Associates, Inc.
739 Park Avenue
Ackley, Iowa 50611
Ph 641-947-3273
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DESIGNED: _____ DATE: _____
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APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

**DETAILS: ALTERNATE RCP
WITH ROCK BEDDING**

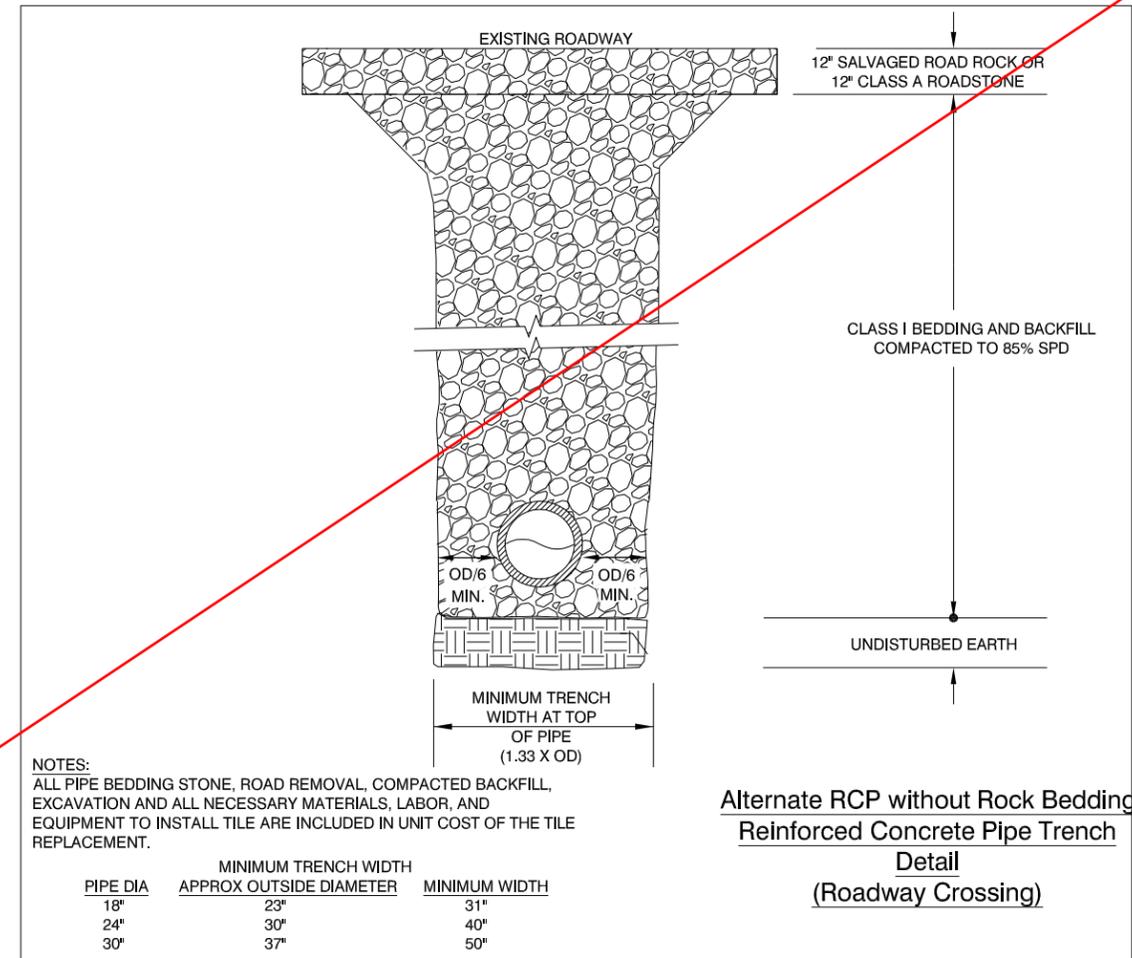
PROJECT NO. 8712
SHEET NO. B.02



NOTES:
ALL PIPE BEDDING STONE, TOPSOIL REMOVAL AND REPLACEMENT, COMPACTED BACKFILL, EXCAVATION AND ALL NECESSARY MATERIALS, LABOR, AND EQUIPMENT TO INSTALL TILE ARE INCLUDED IN UNIT COST OF THE TILE REPLACEMENT.

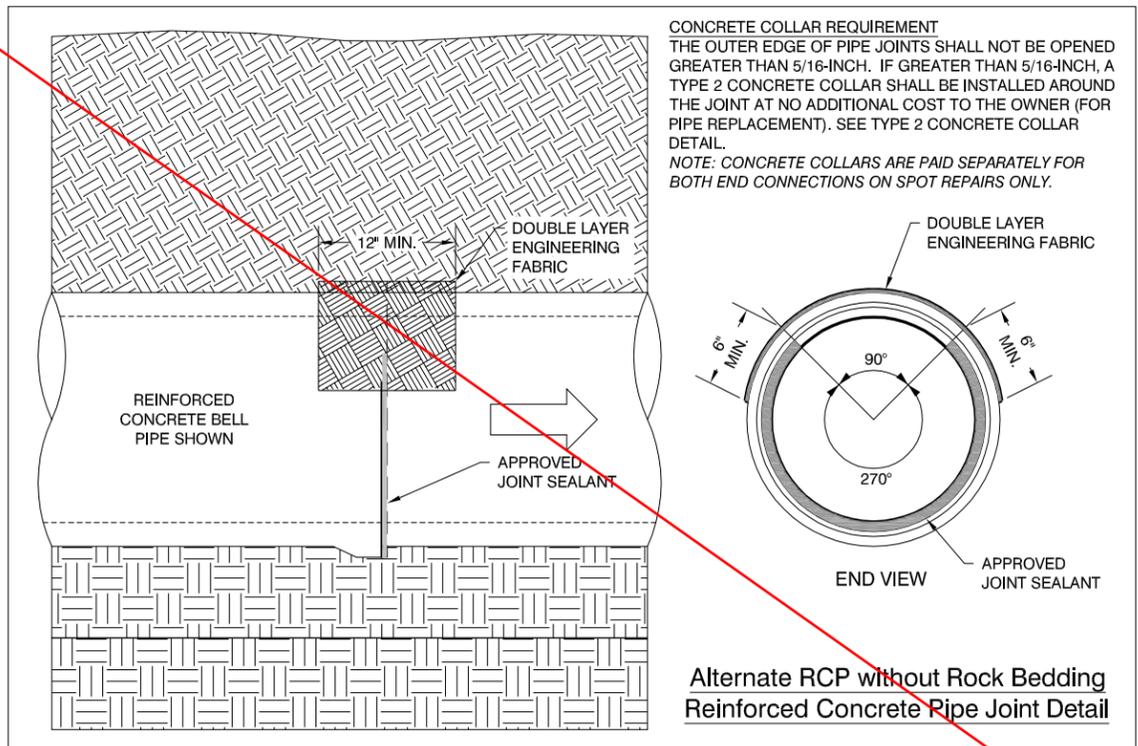
| PIPE DIA | MINIMUM TRENCH WIDTH APPROX OUTSIDE DIAMETER | MINIMUM WIDTH |
|----------|--|---------------|
| 18" | 23" | 31" |
| 24" | 30" | 40" |
| 30" | 37" | 50" |

- NOTES:
- SUPPORT THE PIPE BY ADEQUATELY COMPACTING BEDDING AND HAUNCH SUPPORT. USE SPOONING OR OTHER METHODS TO PROVIDE FIRM BEARING SURFACE FOR PIPE.
 - MINIMUM TRENCH WIDTHS SHOWN ARE MINIMUM. CONTRACTOR MAY REQUIRE GREATER WIDTH IN ORDER TO ADEQUATELY COMPACT HAUNCH SUPPORT



NOTES:
ALL PIPE BEDDING STONE, ROAD REMOVAL, COMPACTED BACKFILL, EXCAVATION AND ALL NECESSARY MATERIALS, LABOR, AND EQUIPMENT TO INSTALL TILE ARE INCLUDED IN UNIT COST OF THE TILE REPLACEMENT.

| PIPE DIA | MINIMUM TRENCH WIDTH APPROX OUTSIDE DIAMETER | MINIMUM WIDTH |
|----------|--|---------------|
| 18" | 23" | 31" |
| 24" | 30" | 40" |
| 30" | 37" | 50" |



CONCRETE COLLAR REQUIREMENT
THE OUTER EDGE OF PIPE JOINTS SHALL NOT BE OPENED GREATER THAN 5/16-INCH. IF GREATER THAN 5/16-INCH, A TYPE 2 CONCRETE COLLAR SHALL BE INSTALLED AROUND THE JOINT AT NO ADDITIONAL COST TO THE OWNER (FOR PIPE REPLACEMENT). SEE TYPE 2 CONCRETE COLLAR DETAIL.
NOTE: CONCRETE COLLARS ARE PAID SEPARATELY FOR BOTH END CONNECTIONS ON SPOT REPAIRS ONLY.

J:\8712\dwg\Sheets\8712 - B.01-8.06 (Details).dwg - B.03 - 06-29-18 - 9:23am - cap288

| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
|-----|----------|----|------|-----|----------|----|------|
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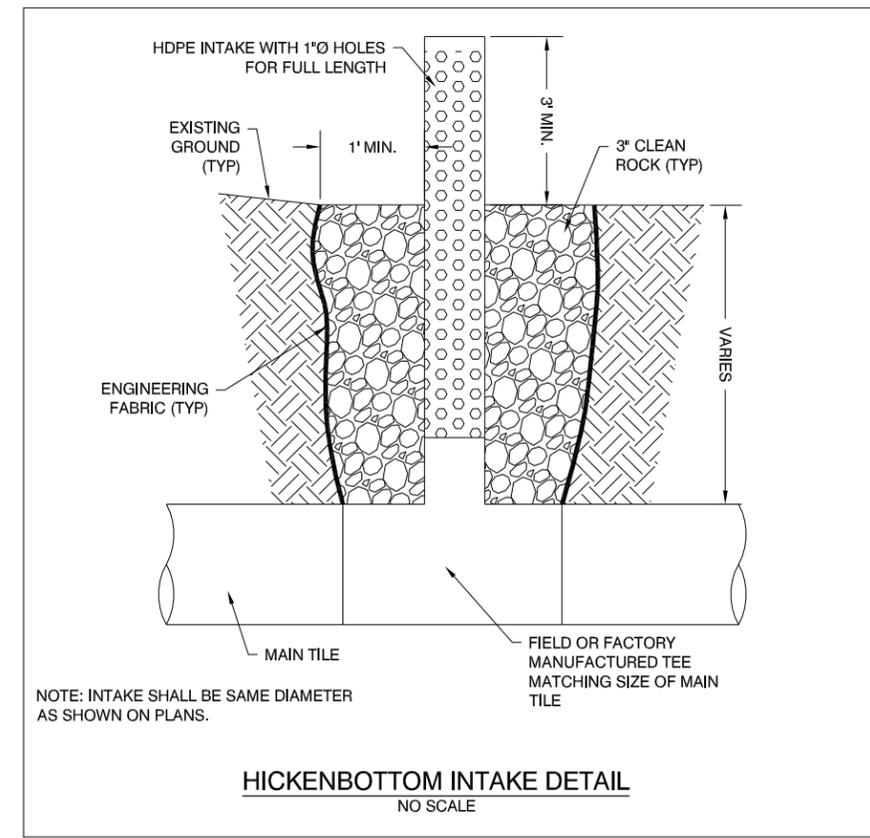
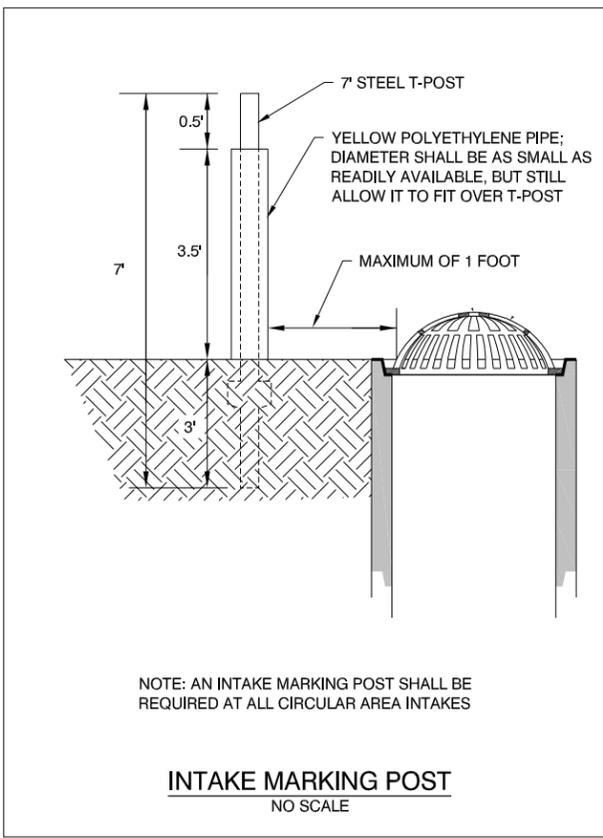
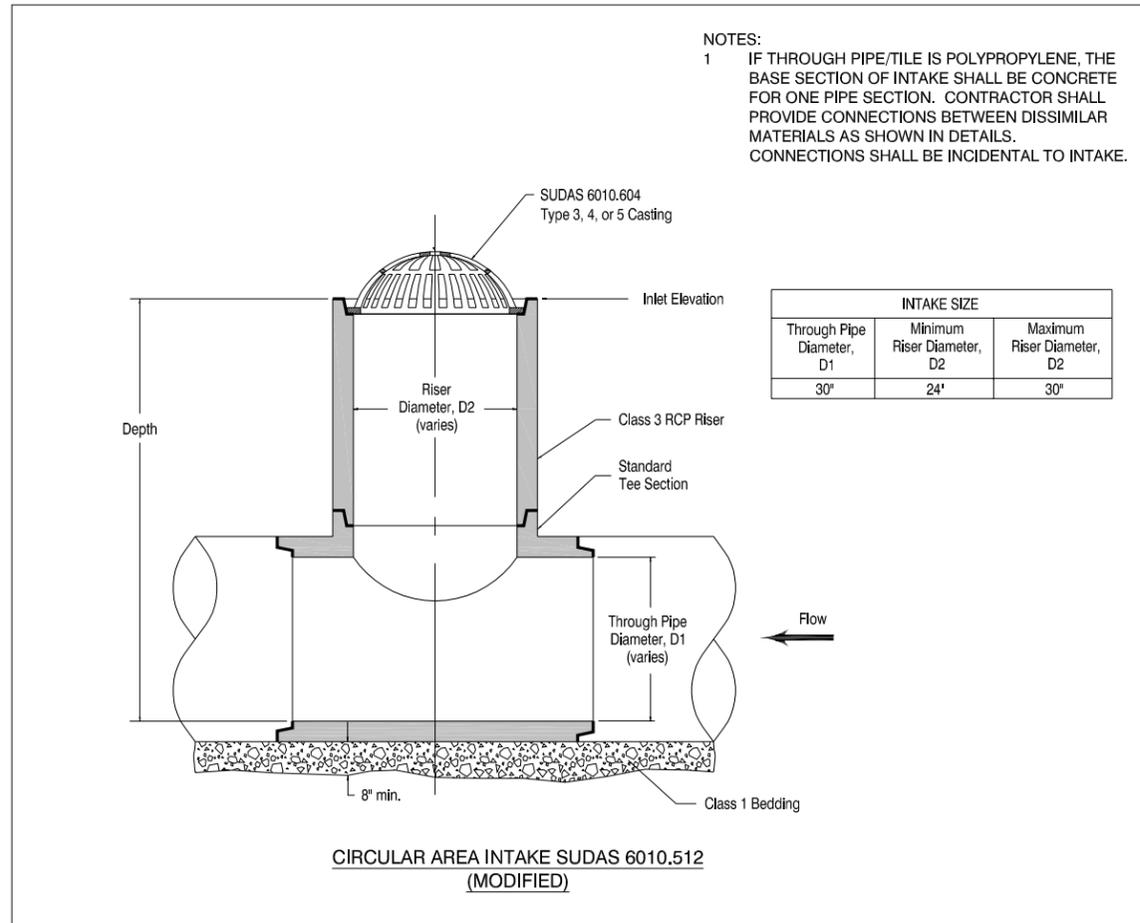
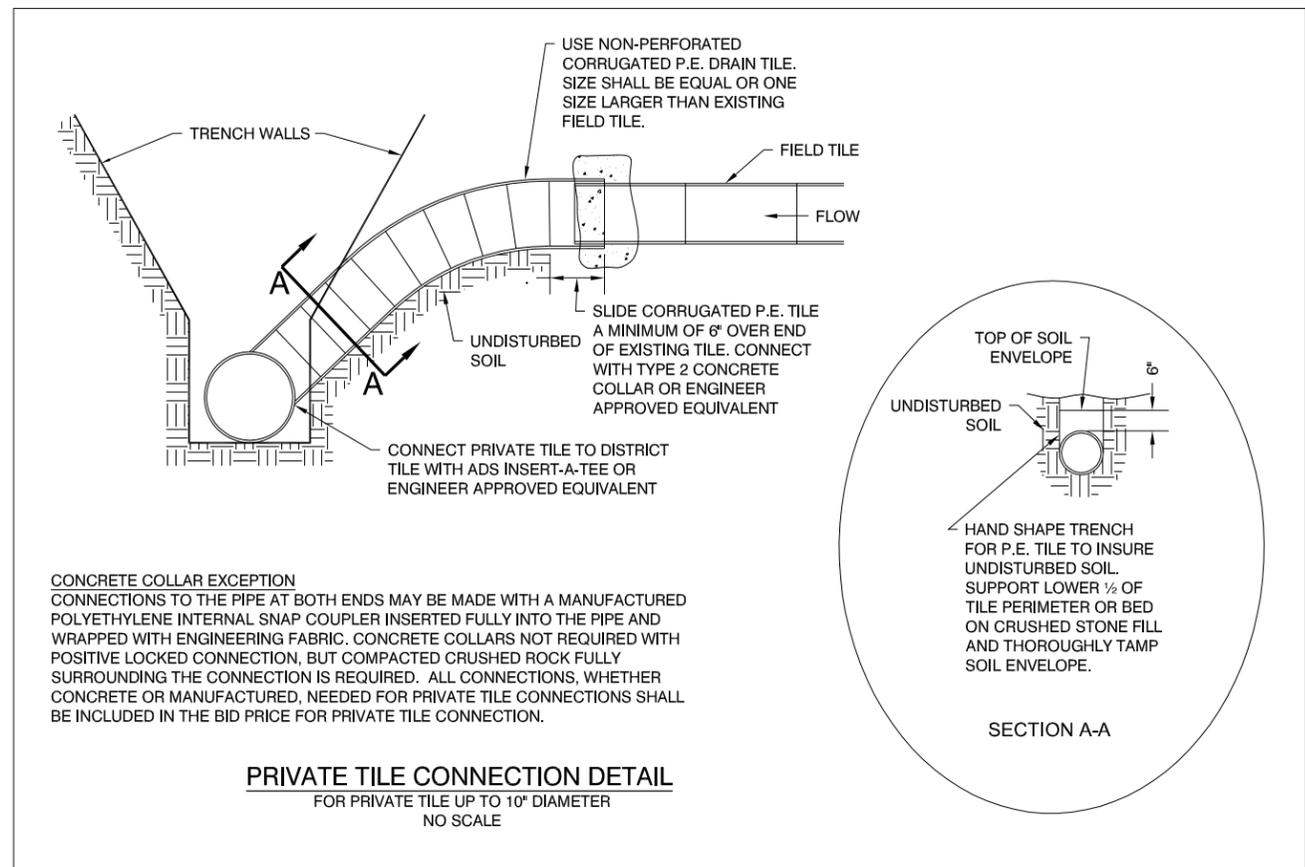
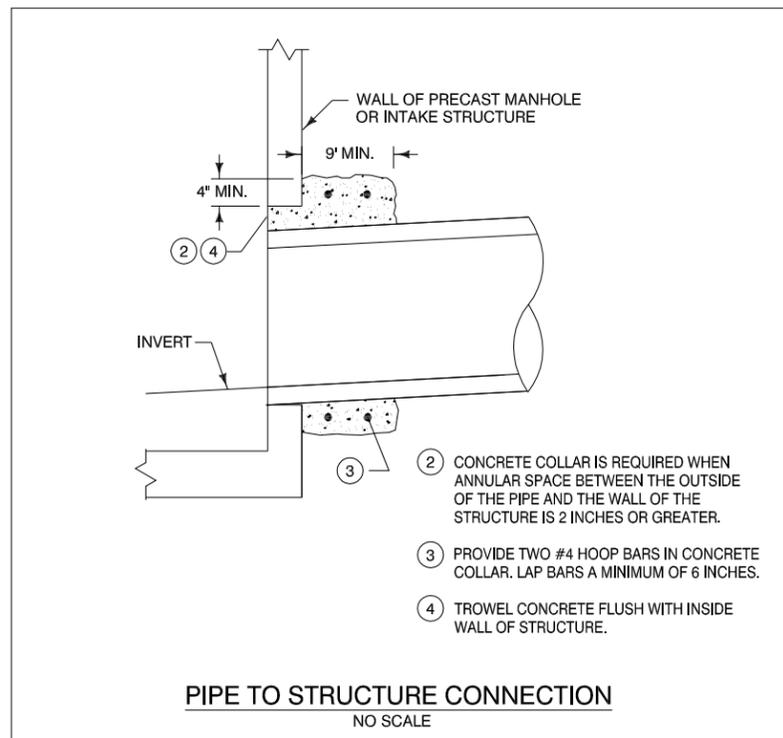
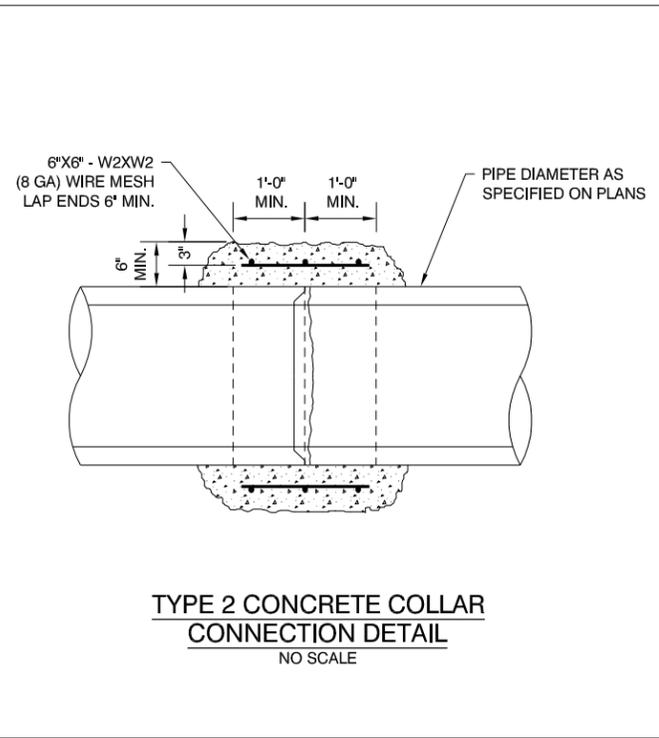
CGA Clapsaddle-Garber Associates, Inc.
739 Park Avenue
Arling, Iowa 50611
Ph 641-947-3273
www.cgaconsultants.com

DESIGNED: _____ DATE: _____
DRAWN: _____ DATE: _____
CHECKED: _____ DATE: _____
APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

**DETAILS: ALTERNATE RCP
WITHOUT ROCK BEDDING**

PROJECT NO. 8712
SHEET NO. B.03



J:\8712.dwg\Sheets\8712 - B.01-B.06 (Details).dwg - B.04 - 06-28-18 - 1:37pm - cap288

| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
|-----|----------|----|------|-----|----------|----|------|
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Arling, Iowa 50601
Ph 641-947-3273
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DESIGNED: _____ DATE: _____
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CHECKED: _____ DATE: _____
APPROVED: _____ DATE: _____

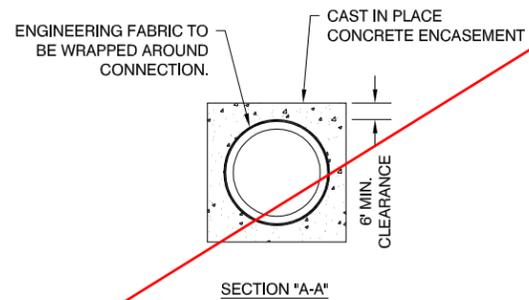
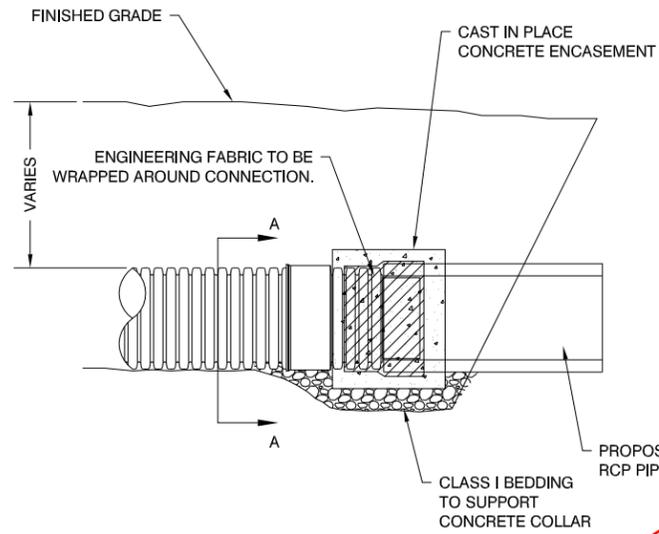
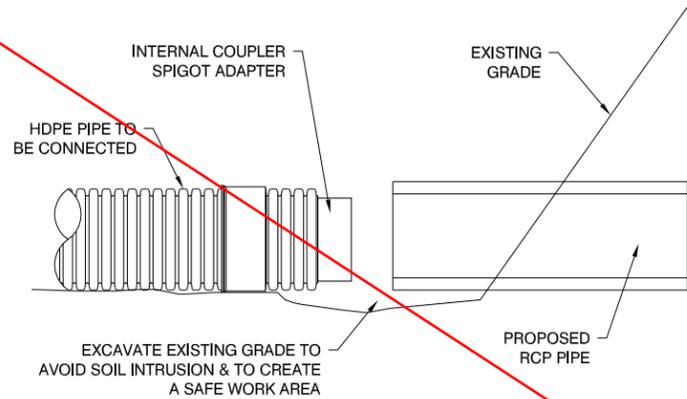
MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

DETAILS

PROJECT NO. 8712
SHEET NO. B.04

NOTES:

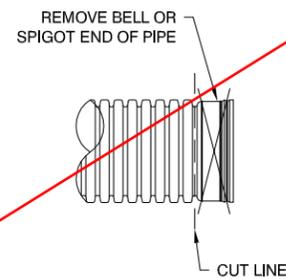
1. CONNECTION AND PIPE TO BE BACKFILLED PER ASTM D2321.
2. INTERNAL CYLINDER ADAPTER IS NOT RECOMMENDED FOR DOWNSTREAM CONNECTIONS.
3. DETAIL IS FOR UPSTREAM CONNECTIONS ONLY. DOWNSTREAM CONNECTIONS SHALL BE MADE WITH TYPE 2 CONCRETE COLLAR CONNECTION.



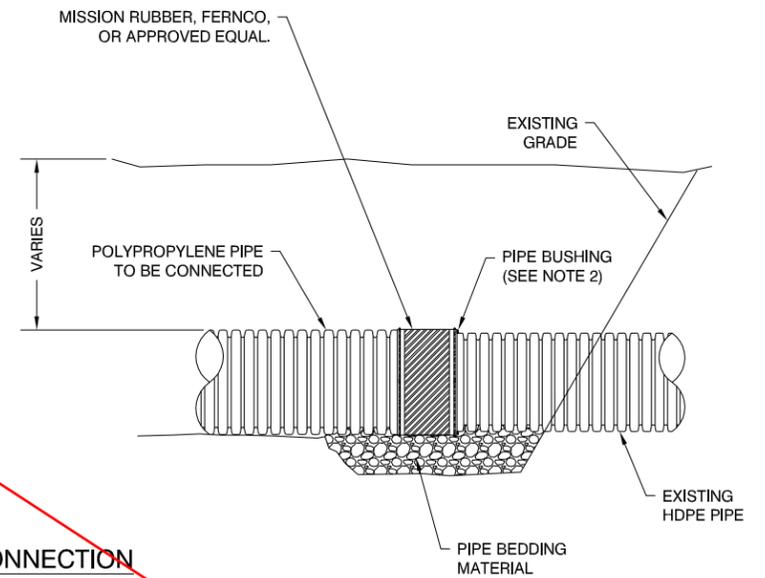
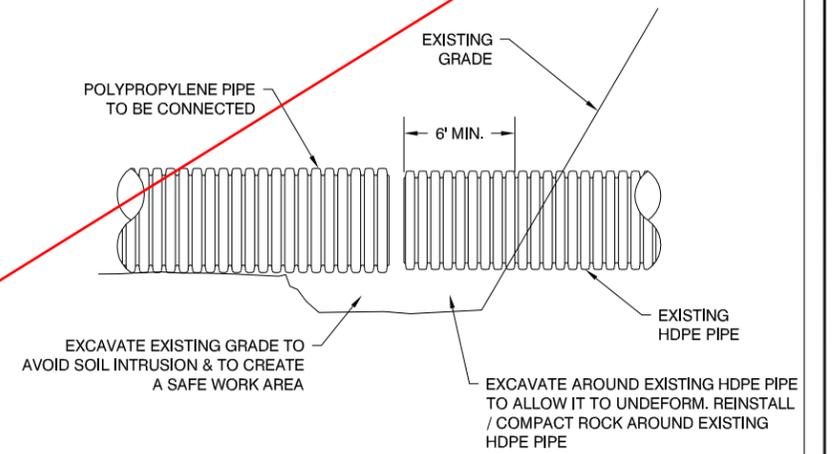
**UPSTREAM CONNECTIONS
RCP TO HDPE OR POLYPROPELENE
PIPE CONNECTION**

NOTES:

1. CONNECTION AND PIPE TO BE BACKFILLED PER ASTM D2321.
2. FOR CONNECTIONS WHERE THE OUTSIDE DIAMETERS OF THE TWO CONNECTING PIPES ARE DIFFERENT, THE COUPLER MANUFACTURER MAY RECOMMEND THE USE OF A PIPE BUSHING. THE PIPE BUSHING SIZE WILL BE AT THE DISCRETION OF THE COUPLER MANUFACTURER AND IS BASED ON THE PIPE DIMENSIONS.
3. IF THE HDPE IS DEFORMED AND DOES NOT SPRING BACK TO THE ORIGINAL SHAPE WITHIN 24 HOURS, THE CONNECTION SHALL BE MADE WITH A TYPE 2 CONCRETE COLLAR CONNECTION.



POLYPROPYLENE PIPE TO HDPE PIPE CONNECTION



| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
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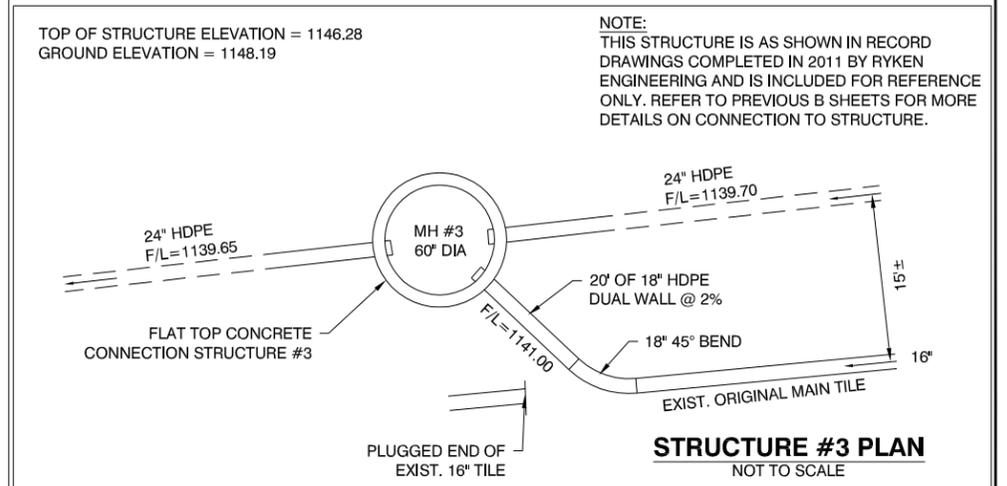
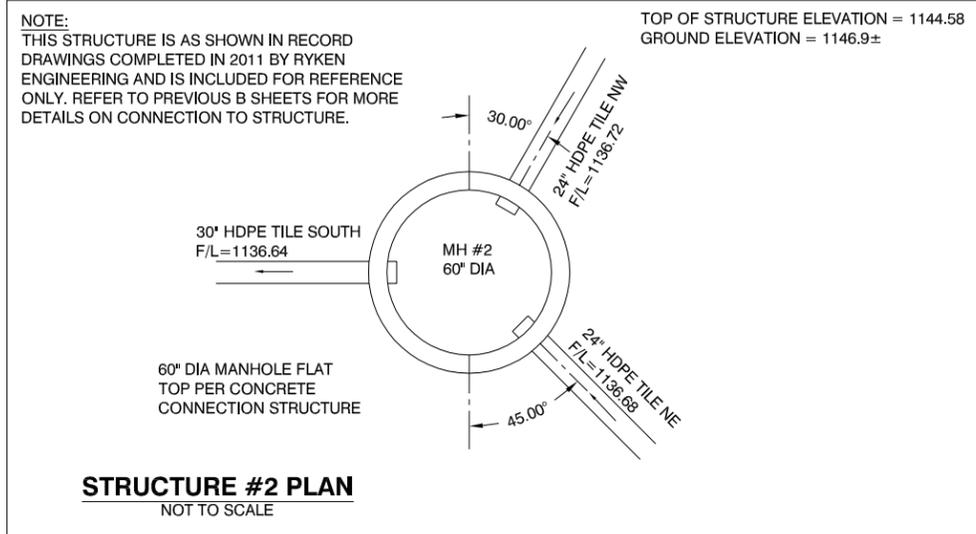
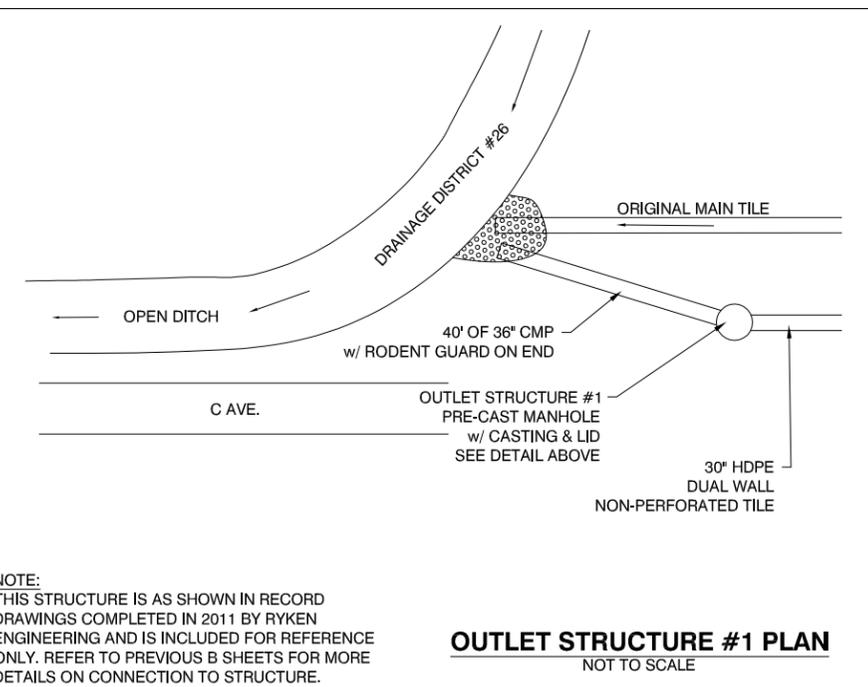
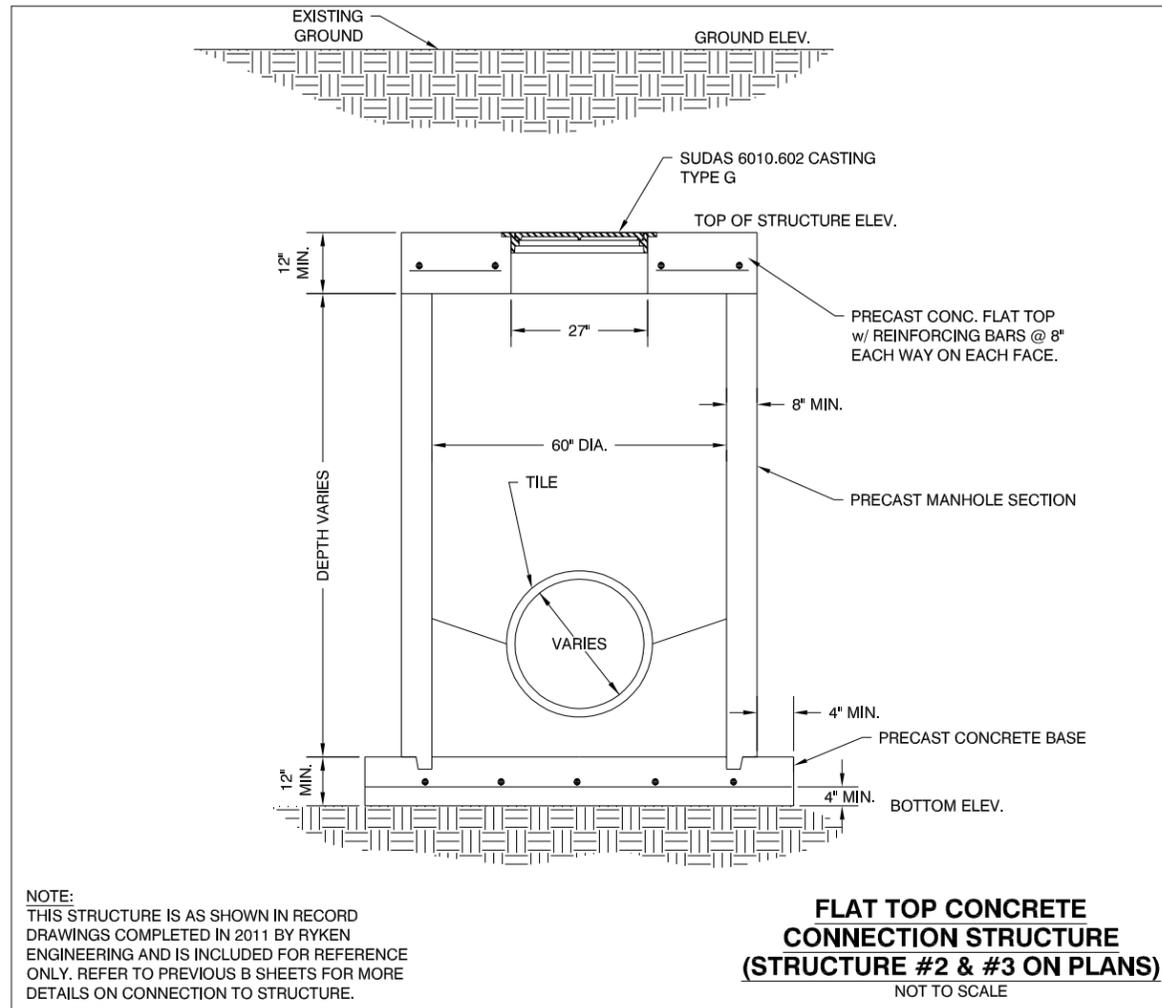
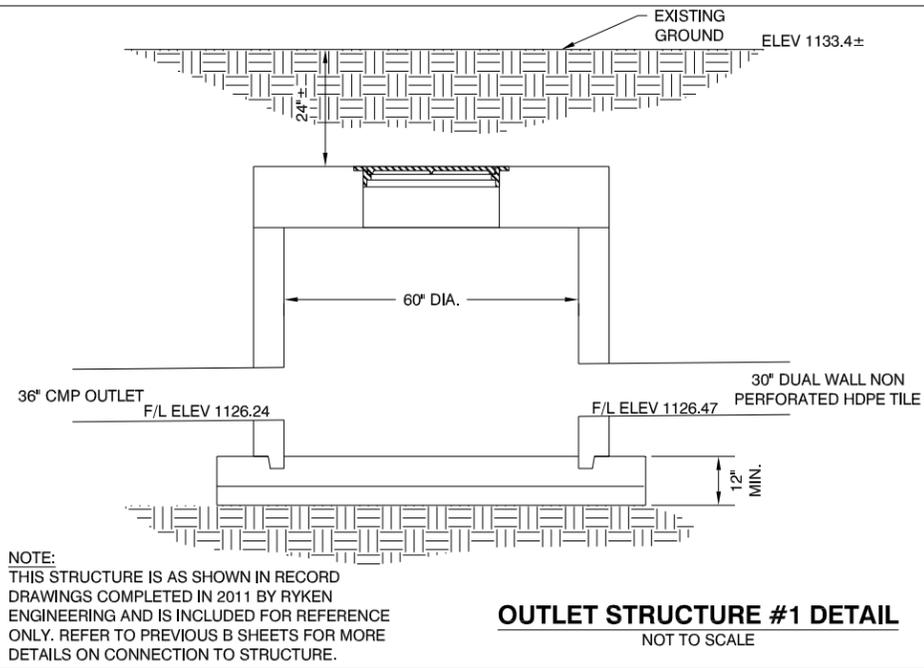
CGA Clapsaddle-Garber Associates, Inc.
739 Park Avenue
Arling, Iowa 50601
Ph 641-947-3273
www.cgaconsultants.com

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CHECKED: _____ DATE: _____
APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

DETAILS

PROJECT NO. 8712
SHEET NO. B.05



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| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
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| | | | | | | | |

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739 Park Avenue
Arling, Iowa 50601
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DESIGNED: _____ DATE: _____
DRAWN: _____ DATE: _____
CHECKED: _____ DATE: _____
APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

DETAILS
PROJECT NO. 8712
SHEET NO. B.06

| BASE BID PROJECT QUANTITIES | | | | |
|-----------------------------|--|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 1 | 30" Ø, POLYPROPYLENE TILE, PERFORATED - FOR TILE REPLACEMENT | LF | 6087 | |
| 2 | 30" Ø, POLYPROPYLENE TILE ROAD CROSSING, PERFORATED - FOR TILE REPLACEMENT | LF | 310 | |
| 3 | CCTV INSPECTION OF ROADWAY CROSSING TILE - FOR TILE REPLACEMENT | LF | 310 | |
| 4 | CONNECTION TO ROAD CROSSING TILE TO REMAIN - FOR TILE REPLACEMENT | EACH | 10 | |
| 5 | REMOVAL AND DISPOSAL OF SUPPLEMENTAL TILE - FOR TILE REPLACEMENT | LF | 6397 | |
| 6 | 24" Ø POLYPROPYLENE TILE, PERFORATED - FOR SPOT REPAIRS | LF | 689 | |
| 7 | 18" Ø POLYPROPYLENE TILE, PERFORATED - FOR SPOT REPAIRS | LF | 666 | |
| 8 | 18" Ø POLYPROPYLENE TILE ROAD CROSSING, PERFORATED - FOR SPOT REPAIRS | LF | 50 | |
| 9 | 24" x 18" POLYPROPYLENE WYE - FOR SPOT REPAIRS | EACH | 1 | |
| 10 | 24" x 18" POLYPROPYLENE REDUCER - FOR SPOT REPAIRS | EACH | 1 | |
| 11 | TYPE 2 CONCRETE COLLAR - FOR SPOT REPAIRS | EACH | 51 | |
| 12 | CONNECTION TO EXISTING STRUCTURE | EACH | 2 | |
| 13 | PRIVATE TILE CONNECTION | EACH | 15 | |
| 14 | INTAKE, 30" Ø CIRCULAR AREA | EACH | 5 | |
| 15 | INTAKE, 12" Ø HICKENBOTTOM | EACH | 5 | |
| 16 | INTAKE, 8" Ø HICKENBOTTOM | EACH | 2 | |
| 17 | CLEANUP, SHAPING, AND PERMANENT SEEDING | LS | 1 | |
| 18 | SEEDING WARRANTY | LS | 1 | |

| RCP WITHOUT ROCK BEDDING ALTERNATE BID PROJECT QUANTITIES | | | | |
|---|---|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 1B | 30" Ø, RCP TILE WITHOUT ROCK BEDDING, PERFORATED - FOR TILE REPLACEMENT | LF | 6087 | |
| 2B | 30" Ø, RCP TILE ROAD CROSSING, PERFORATED - FOR TILE REPLACEMENT | LF | 310 | |
| 3B | CCTV INSPECTION OF ROADWAY CROSSING TILE - FOR TILE REPLACEMENT | LF | 310 | |
| 4B | CONNECTION TO ROAD CROSSING TILE TO REMAIN - FOR TILE REPLACEMENT | EACH | 10 | |
| 5B | REMOVAL AND DISPOSAL OF SUPPLEMENTAL TILE - FOR TILE REPLACEMENT | LF | 6397 | |
| 6B | 24" Ø RCP TILE WITHOUT ROCK BEDDING, PERFORATED - FOR SPOT REPAIRS | LF | 689 | |
| 7B | 18" Ø RCP TILE WITHOUT ROCK BEDDING, PERFORATED - FOR SPOT REPAIRS | LF | 666 | |
| 8B | 18" Ø RCP TILE ROAD CROSSING, PERFORATED - FOR SPOT REPAIRS | LF | 50 | |
| 9B | 24" x 18" RCP WYE WITHOUT ROCK BEDDING - FOR SPOT REPAIRS | EACH | 1 | |
| 10B | 24" x 18" RCP REDUCER WITHOUT ROCK BEDDING - FOR SPOT REPAIRS | EACH | 1 | |
| 11B | TYPE 2 CONCRETE COLLAR - FOR SPOT REPAIRS | EACH | 51 | |
| 12B | CONNECTION TO EXISTING STRUCTURE | EACH | 2 | |
| 13B | PRIVATE TILE CONNECTION | EACH | 15 | |
| 14B | INTAKE, 30" Ø CIRCULAR AREA | EACH | 5 | |
| 15B | INTAKE, 12" Ø HICKENBOTTOM | EACH | 5 | |
| 16B | INTAKE, 8" Ø HICKENBOTTOM | EACH | 2 | |
| 17B | CLEANUP, SHAPING, AND PERMANENT SEEDING | LS | 1 | |
| 18B | SEEDING WARRANTY | LS | 1 | |

| RCP WITH ROCK BEDDING ALTERNATE BID PROJECT QUANTITIES | | | | |
|--|---|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 1A | 30" Ø, RCP TILE, PERFORATED - FOR TILE REPLACEMENT | LF | 6087 | |
| 2A | 30" Ø, RCP TILE ROAD CROSSING, PERFORATED - FOR TILE REPLACEMENT | LF | 310 | |
| 3A | CCTV INSPECTION OF ROADWAY CROSSING TILE - FOR TILE REPLACEMENT | LF | 310 | |
| 4A | CONNECTION TO ROAD CROSSING TILE TO REMAIN - FOR TILE REPLACEMENT | EACH | 10 | |
| 5A | REMOVAL AND DISPOSAL OF SUPPLEMENTAL TILE - FOR TILE REPLACEMENT | LF | 6397 | |
| 6A | 24" Ø RCP TILE, PERFORATED - FOR SPOT REPAIRS | LF | 689 | |
| 7A | 18" Ø RCP TILE, PERFORATED - FOR SPOT REPAIRS | LF | 666 | |
| 8A | 18" Ø RCP TILE ROAD CROSSING, PERFORATED - FOR SPOT REPAIRS | LF | 50 | |
| 9A | 24" x 18" RCP WYE - FOR SPOT REPAIRS | EACH | 1 | |
| 10A | 24" x 18" RCP REDUCER - FOR SPOT REPAIRS | EACH | 1 | |
| 11A | TYPE 2 CONCRETE COLLAR - FOR SPOT REPAIRS | EACH | 51 | |
| 12A | CONNECTION TO EXISTING STRUCTURE | EACH | 2 | |
| 13A | PRIVATE TILE CONNECTION | EACH | 15 | |
| 14A | INTAKE, 30" Ø CIRCULAR AREA | EACH | 5 | |
| 15A | INTAKE, 12" Ø HICKENBOTTOM | EACH | 5 | |
| 16A | INTAKE, 8" Ø HICKENBOTTOM | EACH | 2 | |
| 17A | CLEANUP, SHAPING, AND PERMANENT SEEDING | LS | 1 | |
| 18A | SEEDING WARRANTY | LS | 1 | |

SEE NEXT SHEET FOR AS BUILT QUANTITIES

| ADD ALTERNATE 1: CCTV INSPECTION OF TILE REPLACEMENT - 1 MONTH POST CONSTRUCTION PROJECT QUANTITIES | | | | |
|---|---|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 100 | CCTV INSPECTION OF TILE REPLACEMENT - 1 MONTH POST CONSTRUCTION | LF | 6397 | |

| ADD ALTERNATE 2: CCTV INSPECTION OF TILE REPLACEMENT - 12 MONTHS POST CONSTRUCTION PROJECT QUANTITIES | | | | |
|---|---|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 200 | CCTV INSPECTION OF TILE REPLACEMENT - 12 MONTHS POST CONSTRUCTION | LF | 6397 | |

| ADD ALTERNATE 3: PP CROSS CONNECTION ADDITION PROJECT QUANTITIES | | | | |
|--|---|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 300 | 18" Ø POLYPROPYLENE TILE, PERFORATED - FOR SPOT REPAIRS | LF | 40 | |
| 301 | 18" x 18" POLYPROPYLENE WYE - FOR SPOT REPAIRS | EACH | 1 | |
| 302 | TYPE 2 CONCRETE COLLAR - FOR SPOT REPAIRS | EACH | 3 | |

| ADD ALTERNATE 4: RCP WITH ROCK BEDDING CROSS CONNECTION ADDITION PROJECT QUANTITIES | | | | |
|---|---|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 400 | 18" Ø RCP TILE, PERFORATED - FOR SPOT REPAIRS | LF | 40 | |
| 401 | 18" x 18" RCP WYE - FOR SPOT REPAIRS | EACH | 1 | |
| 402 | TYPE 2 CONCRETE COLLAR - FOR SPOT REPAIRS | EACH | 3 | |

SEE NEXT SHEET FOR AS BUILT QUANTITIES

| ADD ALTERNATE 5: RCP WITHOUT ROCK BEDDING CROSS CONNECTION ADDITION PROJECT QUANTITIES | | | | |
|--|--|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 500 | 18" Ø RCP TILE WITHOUT ROCK BEDDING, PERFORATED - FOR SPOT REPAIRS | LF | 40 | |
| 501 | 18" x 18" RCP WYE WITHOUT ROCK BEDDING - FOR SPOT REPAIRS | EACH | 1 | |
| 502 | TYPE 2 CONCRETE COLLAR - FOR SPOT REPAIRS | EACH | 3 | |

UTILITY COMPANIES

THE FOLLOWING UTILITIES ARE PRESENT ON THIS PROJECT

| | | | | | |
|--|--------------|---|--------------|---|--------------|
| Windstream Communications Locate Desk | 800-289-1901 | Midland Power Cooperative Bruce Keeney | 515-386-4111 | Radcliffe Telephone Company Ed Drake | 515-899-2341 |
|--|--------------|---|--------------|---|--------------|

| ADD ALTERNATE 6: 2 YEAR MAINTENANCE BOND PROJECT QUANTITIES | | | | |
|---|-------------------------|------|--------------------|-------------------|
| ITEM NO. | ITEM | UNIT | ESTIMATED QUANTITY | AS-BUILT QUANTITY |
| 600 | 2 YEAR MAINTENANCE BOND | LS | 1 | |

SEE NEXT SHEET FOR AS BUILT QUANTITIES

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| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
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DESIGNED: _____ DATE: _____
 DRAWN: _____ DATE: _____
 CHECKED: _____ DATE: _____
 APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

ESTIMATE OF QUANTITIES AND REFERENCE INFORMATION

PROJECT NO. 8712
SHEET NO. C.01

| Tabulation of Construction Quantities | | | | | | | | |
|---|---|------|----------------|-------------------|---------------------|-----------|---------------------|--|
| Main Tile Repairs to Drainage District 22 Facilities | | | | | | | | |
| Hardin County, Iowa | | | | | | | | |
| Period Ending: August 28, 2020 | | | | | | | | |
| Item No | Description | Unit | Unit Bid Price | Adjusted Contract | | Completed | | |
| | | | | Quantity | Amount | Quantity | Amount | |
| 1A | 30" Ø RCP Tile, Perforated - For Tile Replacement | LF | \$53.00 | 6,155 | \$326,215.00 | 6,155 | \$326,215.00 | |
| 2A | 30" Ø RCP Tile Road Crossing, Perforated - For Tile Replacement | LF | \$46.00 | 280 | \$12,880.00 | 280 | \$12,880.00 | |
| 3A | CCTV Inspection Of Roadway Crossing Tile - For Tile Replacement | LF | \$3.00 | 0 | \$0.00 | - | \$0.00 | |
| 4A | Connection To Road Crossing Tile To Remain - For Tile Replacement | Each | \$400.00 | 0 | \$0.00 | - | \$0.00 | |
| 5A | Removal And Disposal Of Supplemental Tile - For Tile Replacement | LF | \$6.50 | 6,435 | \$41,827.50 | 6,435 | \$41,827.50 | |
| 6A | 24" Ø RCP Tile, Perforated - For Spot Repairs | LF | \$78.00 | ** ,*** | \$43,992.00 | 564 | \$43,992.00 | |
| 7A | 18" Ø RCP Tile, Perforated - For Spot Repairs | LF | \$67.00 | *** ,"" | \$34,907.00 | 521 | \$34,907.00 | |
| 8A | 18" Ø RCP Tile Road Crossing, Perforated - For Spot Repairs | LF | \$134.50 | 50 | \$6,725.00 | 50 | \$6,725.00 | |
| 9A | 24" X 18" RCP Wye - For Spot Repairs | Each | \$600.00 | 1 | \$600.00 | 1 | \$600.00 | |
| 10A | 24" X 18" RCP Reducer - For Spot Repairs | Each | \$800.00 | * | \$0.00 | - | \$0.00 | |
| 11A | Type 2 Concrete Collar - For Spot Repairs | Each | \$358.00 | *** ,*** ,"" ,"" | \$18,974.00 | 53 | \$18,974.00 | |
| 12A | Connection To Existing Structure | Each | \$2,000.00 | "" | \$8,000.00 | 4 | \$8,000.00 | |
| 13A | Private Tile Connection | Each | \$500.00 | "" | \$13,000.00 | 26 | \$13,000.00 | |
| 14A | Intake, 30" Ø Circular Area | Each | \$1,000.00 | 5 | \$5,000.00 | 5 | \$5,000.00 | |
| 15A | Intake, 12" Ø Hickenbottom | Each | \$1,100.00 | 5 | \$5,500.00 | 5 | \$5,500.00 | |
| 16A | Intake, 8" Ø Hickenbottom | Each | \$525.00 | 2 | \$1,050.00 | 2 | \$1,050.00 | |
| 17A | Cleanup, Shaping, And Permanent Seeding | LS | \$8,300.00 | 1 | \$8,300.00 | 1 | \$8,300.00 | |
| 18A | Seeding Warranty | LS | \$300.00 | 1 | \$300.00 | 1 | \$300.00 | |
| 400 | 18" Ø RCP Tile with Rock Bedding, Perforated - For Spot Repairs | LF | \$67.00 | "" | \$1,474.00 | 22 | \$1,474.00 | |
| 401 | 18" X 18" RCP Wye with Rock Bedding - For Spot Repairs | Each | \$800.00 | 1 | \$800.00 | 1 | \$800.00 | |
| 402 | Type 2 Concrete Collar - For Spot Repairs | Each | \$358.00 | 3 | \$1,074.00 | 3 | \$1,074.00 | |
| 600 | 2 Year Maintenance Bond | LS | \$5,000.00 | 1 | \$5,000.00 | 1 | \$5,000.00 | |
| CO1 | Exploratory Excavation | HR | \$300.00 | ^ ,"" | \$2,349.00 | 7.83 | \$2,349.00 | |
| CO2 | Septic Repair | LS | \$1,650.00 | ^^ | \$1,650.00 | 1 | \$1,650.00 | |
| CO3 | Private Tile Replacement, 6" Dual Wall Tile | LF | \$9.00 | ^^^ | \$3,150.00 | 350 | \$3,150.00 | |
| CO4 | 3-inch Bedding Rock | Tons | \$24.00 | " | \$360.00 | 15 | \$360.00 | |
| CO5 | 12" Dia. Dual Wall HDPE Tile w/ Rock, Perforated | LF | \$241.00 | "" | \$14,460.00 | 60 | \$14,460.00 | |
| Total | | | | | \$557,587.50 | | \$557,587.50 | |
| *denotes quantity adjustment made in Approved Equivalent #1 | | | | | | | | |
| ** denotes quantity adjustment made in Change Order #2 | | | | | | | | |
| *** denotes quantity adjustment made in Change Order #3 | | | | | | | | |
| ^ denotes quantity adjustment made in Change Order #5 | | | | | | | | |
| ^^ denotes quantity adjustment made in Change Order #7 | | | | | | | | |
| ^^^ denotes quantity adjustment made in Change Order #8 | | | | | | | | |
| " denotes quantity adjustment made in Change Order #9 | | | | | | | | |
| "" denotes quantity adjustment made in Change Order #10 | | | | | | | | |
| """" denotes quantity adjustment made in Change Order #12 | | | | | | | | |
| Prepared by | | | | | | | | |
| Clapsaddle-Garber Associates, Inc. | | | | | | | | |
| Marshalltown, Iowa | | | | | | | | |

* THIS INFORMATION IS PROVIDED FOR REFERENCE ONLY BASED ON RECORD DRAWINGS COMPLETED AT THE TIME THE TILE WAS INITIALLY INSTALLED. CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS AND DEPTHS PRIOR TO ORDERING MATERIALS, SUCH AS INTAKES, WHERE DEPTH IS CRITICAL.

| SUPPLEMENTAL MAIN TILE REPLACEMENT - AVERAGE DEPTHS* | |
|--|-------------------------------|
| STATION TO STATION | AVERAGE DEPTH TO FLOWLINE(FT) |
| 0+50 TO 1+00 | 6.8 |
| 1+00 TO 2+00 | 6.8 |
| 2+00 TO 3+00 | 6.9 |
| 3+00 TO 4+00 | 7.0 |
| 4+00 TO 5+00 | 7.2 |
| 5+00 TO 6+00 | 7.4 |
| 6+00 TO 7+00 | 7.5 |
| 7+00 TO 8+00 | 7.7 |
| 8+00 TO 9+00 | 7.8 |
| 9+00 TO 10+00 | 7.9 |
| 10+00 TO 11+00 | 8.0 |
| 11+00 TO 12+00 | 8.4 |
| 12+00 TO 13+00 | 8.8 |
| 13+00 TO 14+00 | 8.7 |
| 14+00 TO 15+00 | 8.6 |
| 15+00 TO 16+00 | 8.6 |
| 16+00 TO 17+00 | 8.7 |
| 17+00 TO 18+00 | 8.7 |
| 18+00 TO 19+00 | 8.6 |
| 19+00 TO 20+00 | 8.5 |
| 20+00 TO 21+00 | 8.6 |
| 21+00 TO 22+00 | 8.6 |
| 22+00 TO 23+00 | 8.6 |
| 23+00 TO 24+00 | 8.4 |
| 24+00 TO 25+00 | 8.0 |
| 25+00 TO 26+00 | 8.2 |
| 26+00 TO 27+00 | 8.6 |
| 27+00 TO 28+00 | 8.7 |
| 28+00 TO 29+00 | 9.0 |
| 29+00 TO 30+00 | 10.0 |
| 30+00 TO 31+00 | 10.7 |
| 31+00 TO 32+00 | 11.1 |
| 32+00 TO 33+00 | 11.2 |
| 33+00 TO 34+00 | 10.7 |
| 34+00 TO 35+00 | 11.1 |
| 35+00 TO 36+00 | 10.8 |
| 36+00 TO 37+00 | 10.5 |
| 37+00 TO 38+00 | 10.7 |
| 38+00 TO 39+00 | 11.6 |
| 39+00 TO 40+00 | 12.4 |
| 40+00 TO 41+00 | 12.1 |
| 41+00 TO 42+00 | 11.5 |
| 42+00 TO 43+00 | 10.9 |
| 43+00 TO 44+00 | 10.4 |
| 44+00 TO 45+00 | 10.0 |
| 45+00 TO 46+00 | 9.6 |
| 46+00 TO 47+00 | 9.4 |
| 47+00 TO 48+00 | 9.3 |
| 48+00 TO 49+00 | 9.3 |
| 49+00 TO 50+00 | 9.4 |
| 50+00 TO 51+00 | 9.6 |
| 51+00 TO 52+00 | 10.0 |
| 52+00 TO 53+00 | 10.2 |
| 53+00 TO 54+00 | 9.7 |
| 54+00 TO 55+00 | 9.4 |
| 55+00 TO 56+00 | 9.7 |
| 56+00 TO 57+00 | 9.1 |
| 57+00 TO 58+00 | 9.1 |
| 58+00 TO 59+00 | 9.2 |
| 59+00 TO 60+00 | 9.3 |
| 60+00 TO 61+00 | 9.5 |
| 61+00 TO 62+00 | 9.5 |
| 62+00 TO 63+00 | 9.3 |
| 63+00 TO 64+00 | 9.3 |
| 64+00 TO 64+50 | 9.2 |

← flipped locations

| TILE INTAKES* | | | | | | | |
|------------------------|--------------|--------------|------------------------------|--------------------------------------|------------------------------------|------------------------------|---|
| TILE | ROAD | SIDE OF ROAD | APPROXIMATE DITCH STATIONING | APPROXIMATE DITCH FLOWLINE ELEVATION | APPROXIMATE TILE FLOWLINE AT DITCH | DIFFERENCE IN ELEVATION (FT) | PROPOSED TYPE OF INTAKE |
| SUPPLEMENTAL MAIN TILE | C AVENUE | WEST | 11+20.9 | 1133.0 | 1127.9 | 5.1 | 30" CIRCULAR AREA INTAKE SUDAS 6010.512 |
| SUPPLEMENTAL MAIN TILE | C AVENUE | EAST | 11+88.1 | 1133.0 | 1128.0 | 5.0 | 12" HICKENBOTTOM INTAKE |
| SUPPLEMENTAL MAIN TILE | C AVENUE | EAST | 23+28.7 | 1137.3 | 1129.6 | 7.7 | 30" CIRCULAR AREA INTAKE SUDAS 6010.512 |
| SUPPLEMENTAL MAIN TILE | C AVENUE | WEST | 23+88.8 | 1137.3 | 1129.7 | 7.6 | 12" HICKENBOTTOM INTAKE |
| SUPPLEMENTAL MAIN TILE | 200TH STREET | SOUTH | 26+00.7 | 1137.0 | 1130.0 | 7.0 | 12" HICKENBOTTOM INTAKE |
| SUPPLEMENTAL MAIN TILE | 200TH STREET | NORTH | 26+49.5 | 1137.0 | 1130.0 | 7.0 | 30" CIRCULAR AREA INTAKE SUDAS 6010.512 |
| SUPPLEMENTAL MAIN TILE | C AVENUE | WEST | 33+25.0 | 1138.0 | 1131.0 | 7.0 | 12" HICKENBOTTOM INTAKE |
| SUPPLEMENTAL MAIN TILE | C AVENUE | EAST | 33+79.0 | 1138.0 | 1131.1 | 6.9 | 30" CIRCULAR AREA INTAKE SUDAS 6010.512 |
| SUPPLEMENTAL MAIN TILE | C AVENUE | EAST | 55+43.4 | 1142.0 | 1134.7 | 7.3 | 30" CIRCULAR AREA INTAKE SUDAS 6010.512 |
| SUPPLEMENTAL MAIN TILE | C AVENUE | WEST | 56+16.4 | 1142.0 | 1134.8 | 7.2 | 12" HICKENBOTTOM INTAKE |
| ORIGINAL MAIN TILE | C AVENUE | WEST | DOWNSTREAM GPS #70 | FIELD DETERMINE | FIELD DETERMINE | FIELD DETERMINE | 8" HICKENBOTTOM INTAKE |
| ORIGINAL MAIN TILE | C AVENUE | EAST | DOWNSTREAM GPS #70 | FIELD DETERMINE | FIELD DETERMINE | FIELD DETERMINE | 8" HICKENBOTTOM INTAKE |

J:\8712.dwg\Sheets\8712 - C.01 (Phys & Ref Info).dwg - C.02 - 06-26-16 - 1:47pm - cap288

| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
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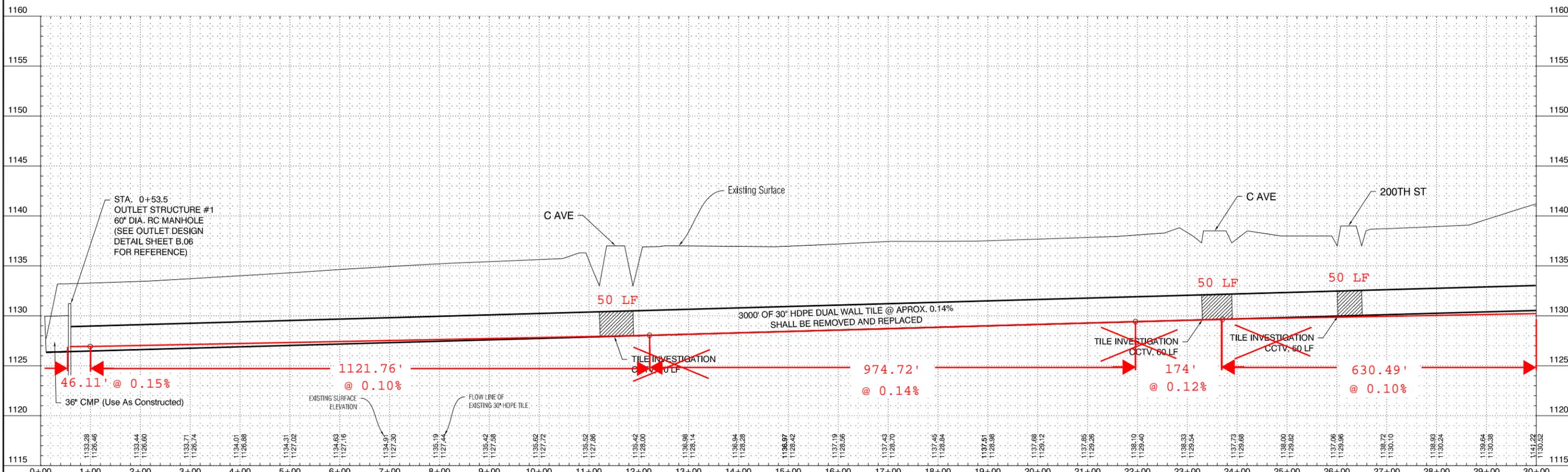
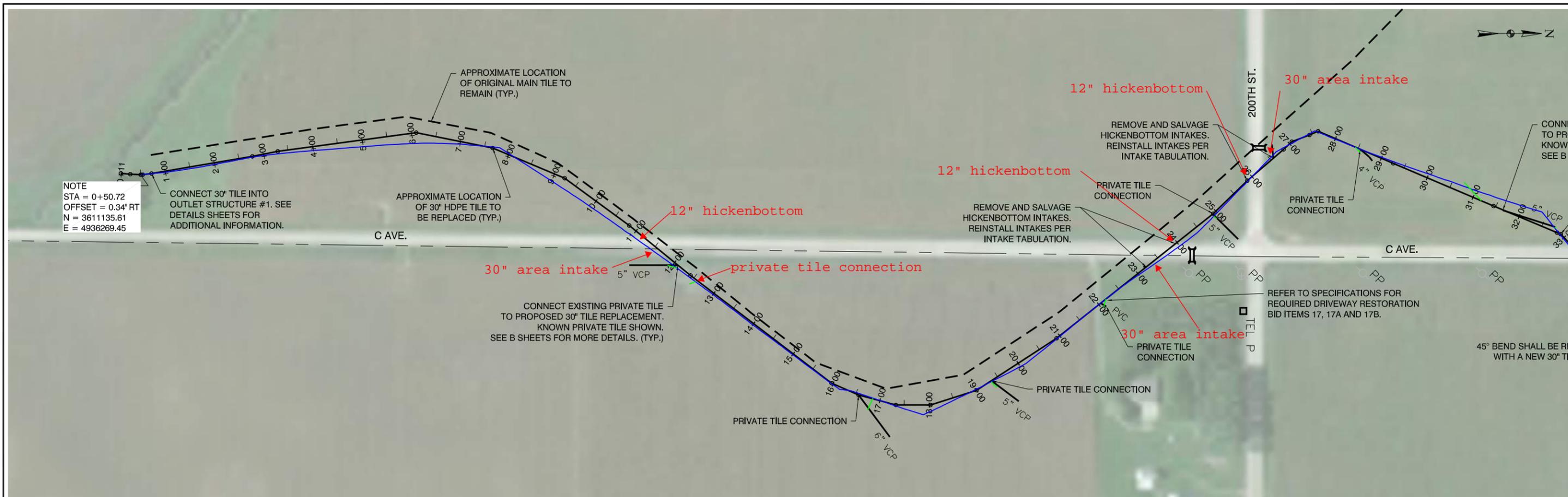
CGA Clapsaddle-Garber Associates, Inc
 16 East Main Street
 Marshalltown, Iowa 50158
 Ph 641-752-6701
 www.cgaconsultants.com

DESIGNED: _____ DATE: _____
 DRAWN: _____ DATE: _____
 CHECKED: _____ DATE: _____
 APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
 HARDIN COUNTY, IOWA

ESTIMATE OF QUANTITIES AND REFERENCE INFORMATION

PROJECT NO. 8712
 SHEET NO. C.02



| | | | | | | | | |
|---------------------------------|-----|----------|----|------|-----|----------|----|------|
| GRAPHIC SCALE 0 100 200 300' | NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
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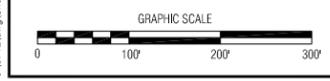
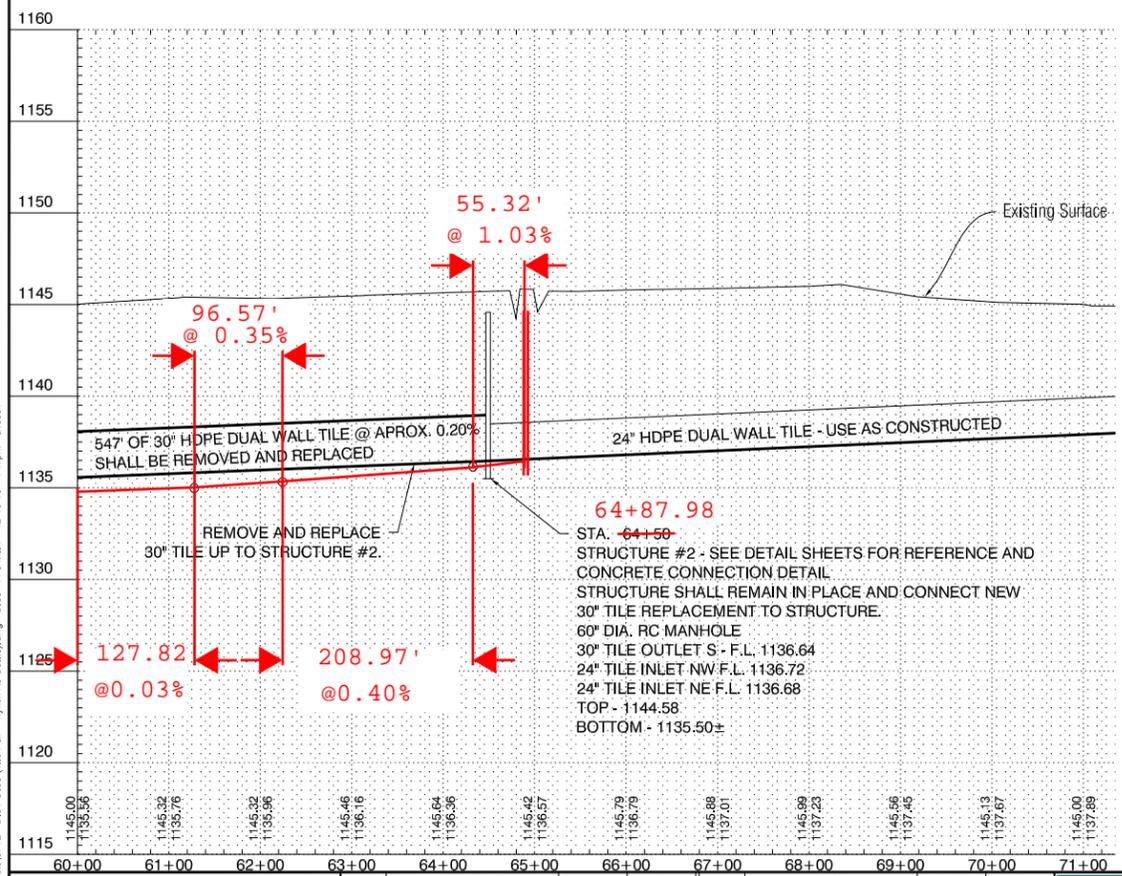
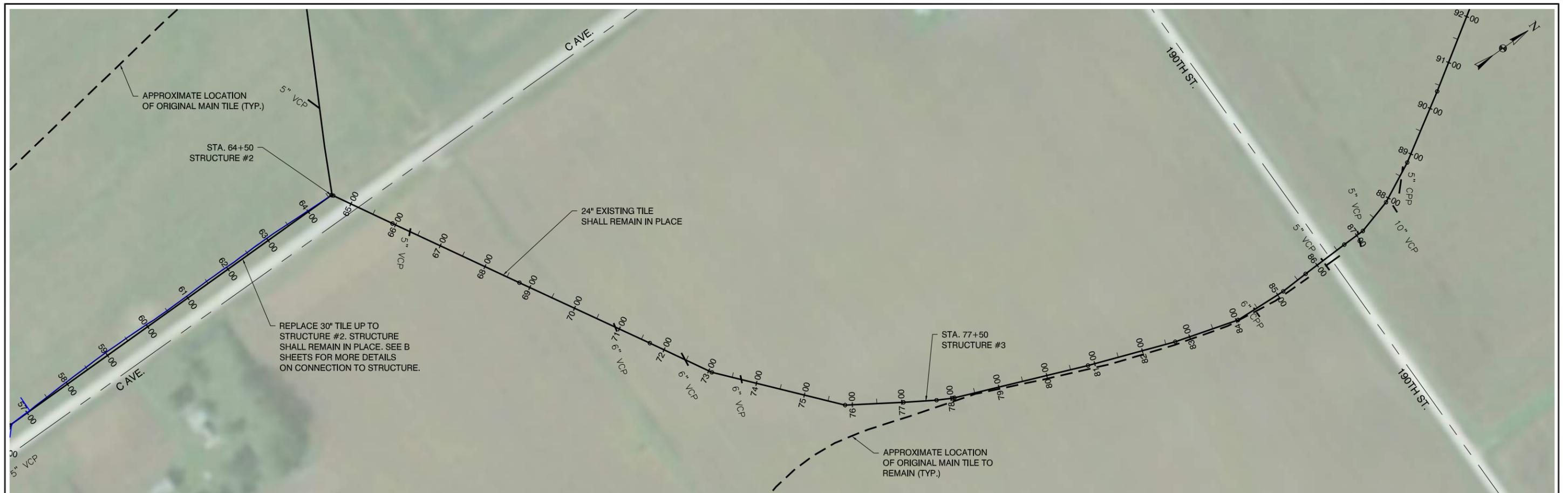
Clapsaddle-Garber Associates, Inc.
739 Park Avenue
Arling, Iowa 50601
Ph 515-947-3273
www.cgaconsultants.com

DESIGNED: _____ DATE: _____
 DRAWN: _____ DATE: _____
 CHECKED: _____ DATE: _____
 APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
 HARDIN COUNTY, IOWA

**TILE REPLACEMENT
 PLAN AND PROFILE**

PROJECT NO. 8712
 SHEET NO. 0.01



| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
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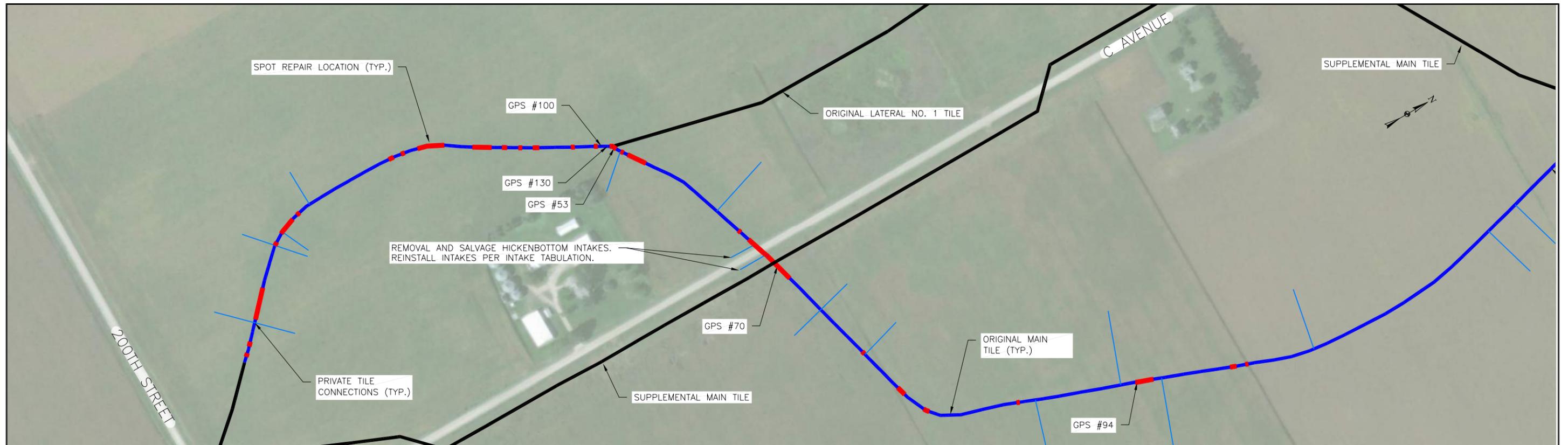
CGA Clapsaddle-Garber Associates, Inc.
739 Park Avenue
Arling, Iowa 50601
Ph 541-947-3273
www.cgaconsultants.com

DESIGNED: _____ DATE: _____
DRAWN: _____ DATE: _____
CHECKED: _____ DATE: _____
APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
HARDIN COUNTY, IOWA

**TILE REPLACEMENT
PLAN AND PROFILE**

PROJECT NO. 8712
SHEET NO. D.03



| ORIGINAL MAIN TILE SPOT REPAIR SCHEDULE | | | | | | | | | |
|---|------------|--------------|------------|----------------------|-----------------------|-----------------------|------------------|---|--------------------------------|
| START LOCATION | | END LOCATION | | FROM REFERENCE POINT | REPLACE WITH 18" TILE | REPLACE WITH 24" TILE | CONCRETE COLLARS | MISCELLANEOUS FITTING | REASON FOR REPLACEMENT |
| LF | LOCATION | LF | LOCATION | GPS POINT # | LF | LF | EACH | | |
| 1447 | DOWNSTREAM | 1435 | DOWNSTREAM | GPS 100 | 16.6 | 12 | 2 | | VCP PARTIALLY COLLAPSED |
| 1414 | DOWNSTREAM | 1399 | DOWNSTREAM | GPS 100 | 16.75 | 15 | 2 | | VCP PARTIALLY COLLAPSED |
| 1330 | DOWNSTREAM | 1231 | DOWNSTREAM | GPS 100 | 104.97 | 99 | 2 | | VCP PARTIALLY COLLAPSED |
| 1098 | DOWNSTREAM | 1086 | DOWNSTREAM | GPS 100 | 96.4 | 12 | X 1 | (2) PRIVATE TILE CONNECTION | VCP PARTIALLY COLLAPSED |
| 1057 | DOWNSTREAM | 1000 | DOWNSTREAM | GPS 100 | | 57 | X 1 | (1) PRIVATE TILE CONNECTION | VCP PARTIALLY COLLAPSED |
| 971 | DOWNSTREAM | 959 | DOWNSTREAM | GPS 100 | 10.99 | 12 | 2 | | VCP PARTIALLY COLLAPSED |
| 655 | DOWNSTREAM | 638 | DOWNSTREAM | GPS 100 | 20.96 | 17 | 2 | | VCP PARTIALLY COLLAPSED |
| 614 | DOWNSTREAM | 602 | DOWNSTREAM | GPS 100 | 13.16 | 12 | 2 | | VCP PARTIALLY COLLAPSED |
| 561 | DOWNSTREAM | 479 | DOWNSTREAM | GPS 100 | 78.42 | 82 | 2 | | VCP PARTIALLY COLLAPSED |
| 393 | DOWNSTREAM | 334 | DOWNSTREAM | GPS 100 | 57.06 | 59 | 2 | | VCP PARTIALLY COLLAPSED |
| 303 | DOWNSTREAM | 287 | DOWNSTREAM | GPS 100 | 18.75 | 16 | 2 | | VCP PARTIALLY COLLAPSED |
| 253 | DOWNSTREAM | 241 | DOWNSTREAM | GPS 100 | 25.17 | 12 | 2 | | VCP PARTIALLY COLLAPSED |
| 209 | DOWNSTREAM | 189 | DOWNSTREAM | GPS 100 | 19.03 | 20 | 2 | | VCP PARTIALLY COLLAPSED |
| 93 | DOWNSTREAM | 81 | DOWNSTREAM | GPS 100 | 13.16 | 12 | 2 | | VCP PARTIALLY COLLAPSED |
| 23 | DOWNSTREAM | 11 | DOWNSTREAM | GPS 100 | | 12 | 2 X | (1) 24"x18" WYE (1) 24"x18" REDUCER | VCP PARTIALLY COLLAPSED |
| 7 | UPSTREAM | 105 | UPSTREAM | GPS 53 | 13 110.76 | | 2 | | VCP PARTIALLY COLLAPSED |
| 457 | UPSTREAM | 467 | UPSTREAM | GPS 53 | 10 12.69 | | 2 | | VCP PARTIALLY COLLAPSED |
| 498 | UPSTREAM | 54 | UPSTREAM | GPS 70 | 13 180.90 | | 2 | (2) 8" HICKENBOTTOM INTAKES & ROAD CROSSING | VCP & HDPE PARTIALLY COLLAPSED |
| 367 | UPSTREAM | 377 | UPSTREAM | GPS 70 | 30 10.69 | | 2 | | VCP PARTIALLY COLLAPSED |
| 521 | UPSTREAM | 551 | UPSTREAM | GPS 70 | 30 35.69 | | 2 | | VCP PARTIALLY COLLAPSED |
| 623 | UPSTREAM | 642 | UPSTREAM | GPS 70 | 16 15.60 | | 2 | | VCP PARTIALLY COLLAPSED |
| 814 | UPSTREAM | 924 | UPSTREAM | GPS 70 | 10 114.30 | | 2 | | VCP PARTIALLY COLLAPSED |
| 0 | UPSTREAM | 51 | UPSTREAM | GPS 94 | 51 51.81 | | 2 | | VCP PARTIALLY COLLAPSED |
| 287 | UPSTREAM | 307 | UPSTREAM | GPS 94 | 20 23.03 | | 2 | | VCP PARTIALLY COLLAPSED |
| 334 | UPSTREAM | 344 | UPSTREAM | GPS 94 | 10 10.42 | | 2 | | VCP PARTIALLY COLLAPSED |
| TOTALS | | | | | 565.89 | 491.42 | 51 48 | | |

13.00' done at contractor's expense

includes the 13.00' done at contractor's expense

NOTE:
1. PIPE LENGTH QUANTITIES SHOWN ARE BASED ON REPAIRS NEEDED FROM CCTV FOOTAGE. ADDITIONAL QUANTITIES RESULTING FROM LENGTHENING THE SPOT REPAIR SHALL BE AUTHORIZED BY THE OWNER OR OWNER'S ON-SITE REPRESENTATIVE. BID QUANTITIES INCLUDE AN ALLOWANCE OF AN ADDITIONAL 160 LINEAR FEET OF 18-INCH AND 240 LINEAR FEET OF 24-INCH TILE FOR AUTHORIZED ADDITIONAL SPOT REPAIRS.

J:\8712\img\Sheets\8712 - D.04 (Spot Repairs)\img - Spot Repairs - 06-28-18 - 2:01 pm - car288



| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
|-----|----------|----|------|-----|----------|----|------|
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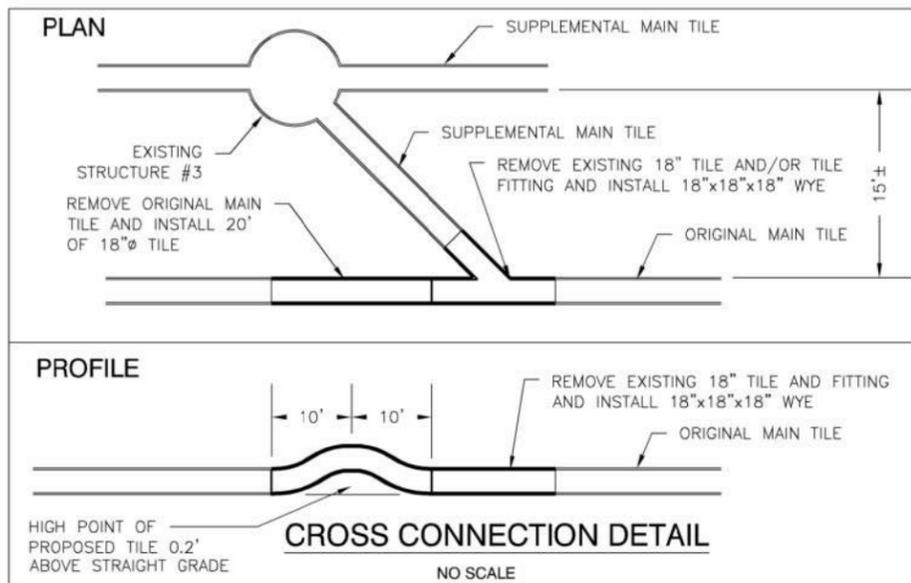
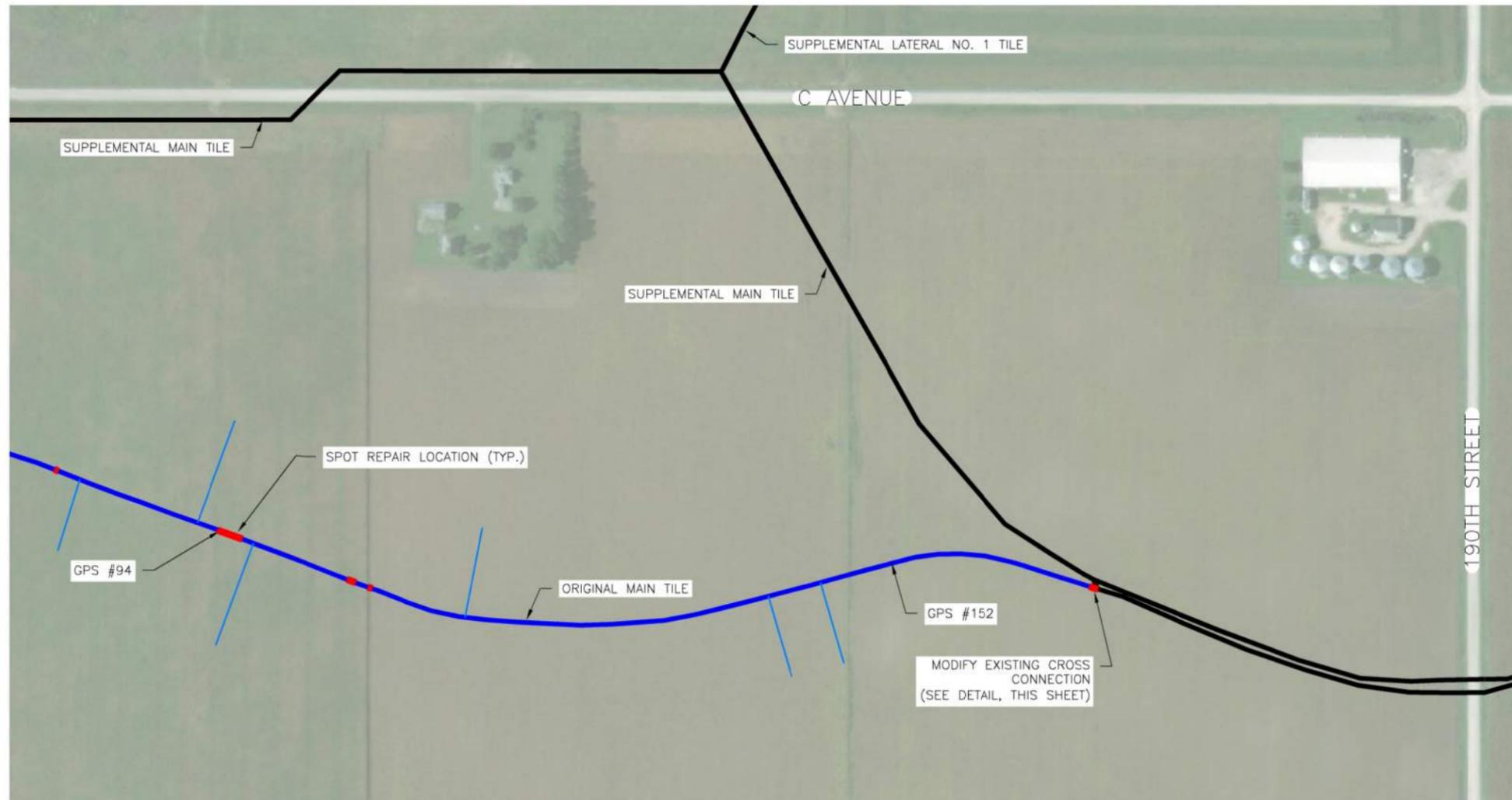


DESIGNED: _____ DATE: _____
 DRAWN: _____ DATE: _____
 CHECKED: _____ DATE: _____
 APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
 HARDIN COUNTY, IOWA

TILE SPOT REPAIRS

PROJECT NO. 8712
 SHEET NO. D.04



| CROSS CONNECTION ADDITION | | | | | | | | |
|---------------------------|----------|--------------|----------|----------------------|-----------------------|------------------|-----------------------|-------------------------|
| START LOCATION | | END LOCATION | | FROM REFERENCE POINT | REPLACE WITH 18" TILE | CONCRETE COLLARS | MISCELLANEOUS FITTING | REASON FOR REPLACEMENT |
| LF | LOCATION | LF | LOCATION | GPS POINT # | LF | EACH | | |
| 418± | UPSTREAM | 438± | UPSTREAM | GPS 152 | 20 | 3 | (1) 18"x18" WYE | ADDING CROSS CONNECTION |
| TOTALS | | | | | 20 | 3 | | |

NOTES:

1. PIPE LENGTH QUANTITIES SHOWN ARE BASED ON CROSS CONNECTION DETAIL AS SHOWN. ADDITIONAL QUANTITIES RESULTING FROM LENGTHENING THE SPOT REPAIR SHALL BE AUTHORIZED BY THE OWNER OR OWNER'S ON-SITE REPRESENTATIVE. BID QUANTITIES INCLUDE AN ALLOWANCE OF AN ADDITIONAL 20 LINEAR FEET OF 18-INCH TILE FOR AUTHORIZED ADDITIONAL SPOT REPAIRS.
2. CONNECTIONS BETWEEN PROPOSED CROSS CONNECTION AND EXISTING PIPE MAY BE MADE WITH MANUFACTURED FITTINGS/COUPLINGS. IF DISSIMILAR PIPE SIZE/MATERIAL OR GAPS REQUIRE THE USE OF A CONCRETE COLLAR, THEY SHALL BE PAID FOR IN THE APPLICABLE BID ITEM.

SEE NEXT SHEET FOR AS-BUILT CROSS CONNECTION AND CALCULATIONS.



| NO. | REVISION | BY | DATE | NO. | REVISION | BY | DATE |
|-----|----------|----|------|-----|----------|----|------|
| | | | | | | | |



DESIGNED: _____ DATE: _____
 DRAWN: _____ DATE: _____
 CHECKED: _____ DATE: _____
 APPROVED: _____ DATE: _____

MAIN TILE REPAIRS - DD #22
 HARDIN COUNTY, IOWA

TILE SPOT REPAIRS

PROJECT NO. 8712
 SHEET NO. D.05



Clapsaddle-Garber Associates, Inc.

16 East Main Street, Marshalltown, Iowa 50158, ph 641-752-6701
 1523 South Bell Avenue, Suite 101, Ames, Iowa 50010, ph 515-232-1784
 5106 Nordic Drive, Cedar Falls, Iowa 50613, ph 319-266-0258
 739 Park Avenue, Ackley, Iowa 50601, ph 641-847-3273
 511 Bank Street, Webster City, Iowa 50595, ph 515-832-1876
 103 East State Street, Suite 430, Mason City, Iowa 50402, ph 641-423-1451
 800-542-7981, www.cgaconsultants.com

PN 8712
 Computed By G.T.J. Date 12/16/19
 Checked By _____ Date _____
 Subject _____



Clapsaddle-Garber Associates, Inc.

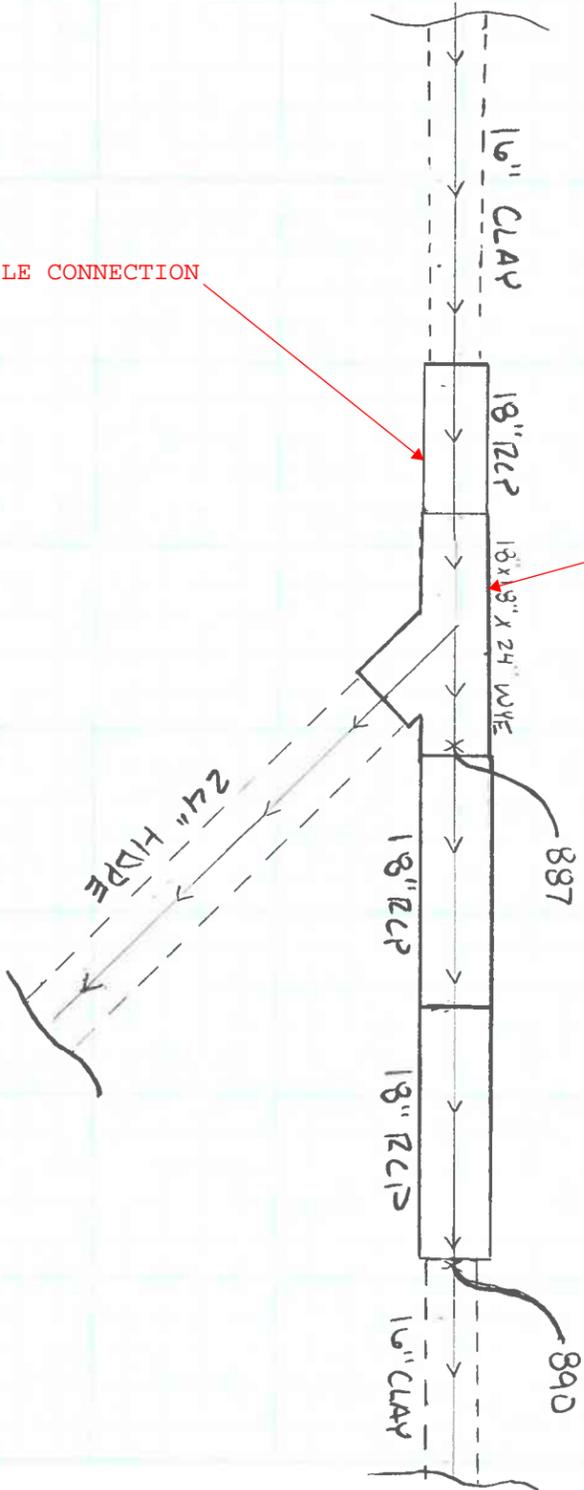
16 East Main Street, Marshalltown, Iowa 50158, ph 641-752-6701
 1523 South Bell Avenue, Suite 101, Ames, Iowa 50010, ph 515-232-1784
 5106 Nordic Drive, Cedar Falls, Iowa 50613, ph 319-266-0258
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 800-542-7981, www.cgaconsultants.com

PN 8712
 Computed By G.T.J. Date 12/16/19
 Checked By _____ Date _____
 Subject _____

AS BUILT CROSS CONNECTION



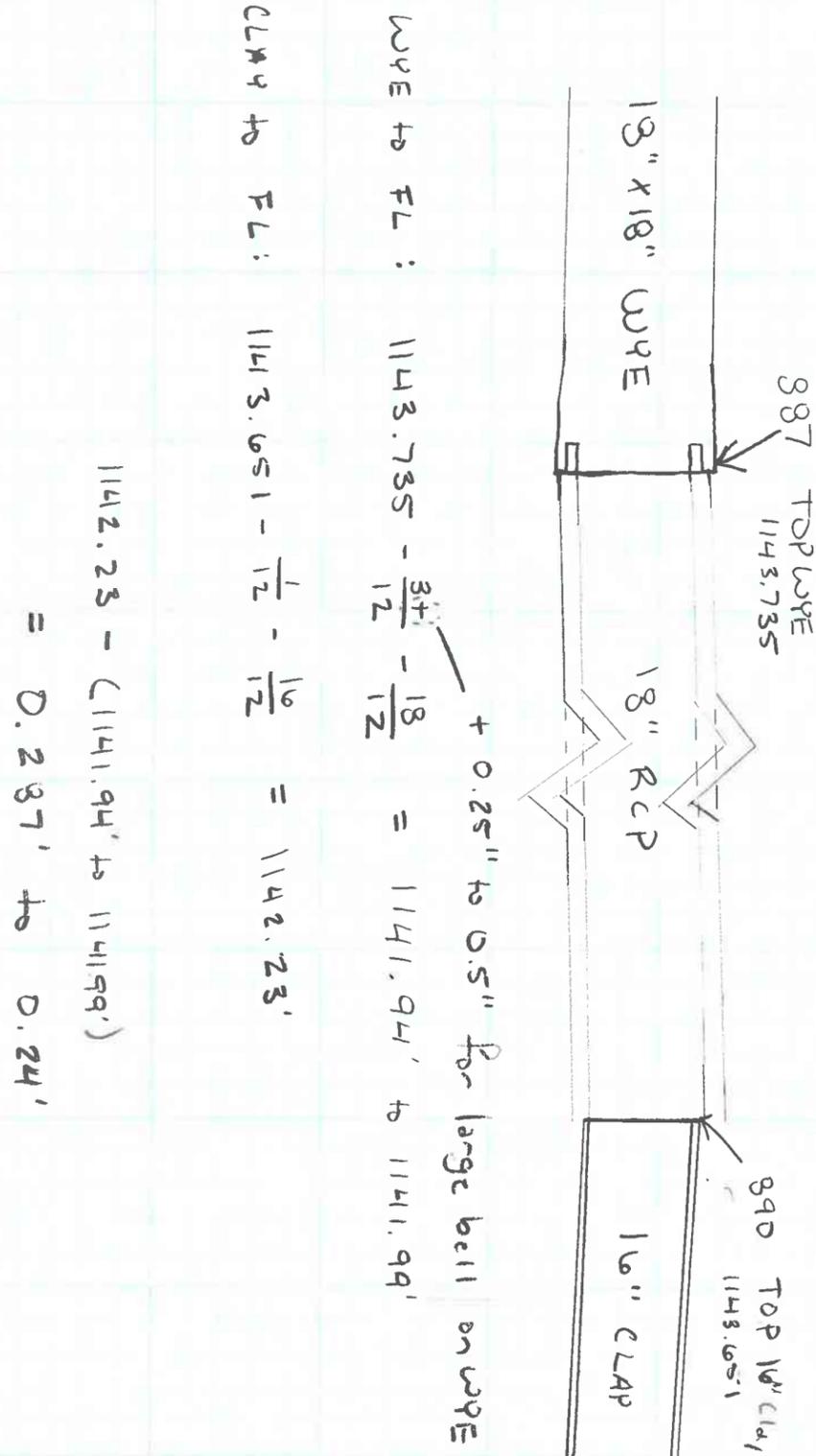
PRIVATE TILE CONNECTION



PRIVATE TILE CONNECTION

* SEE SHEET 2 FOR CALCULATIONS

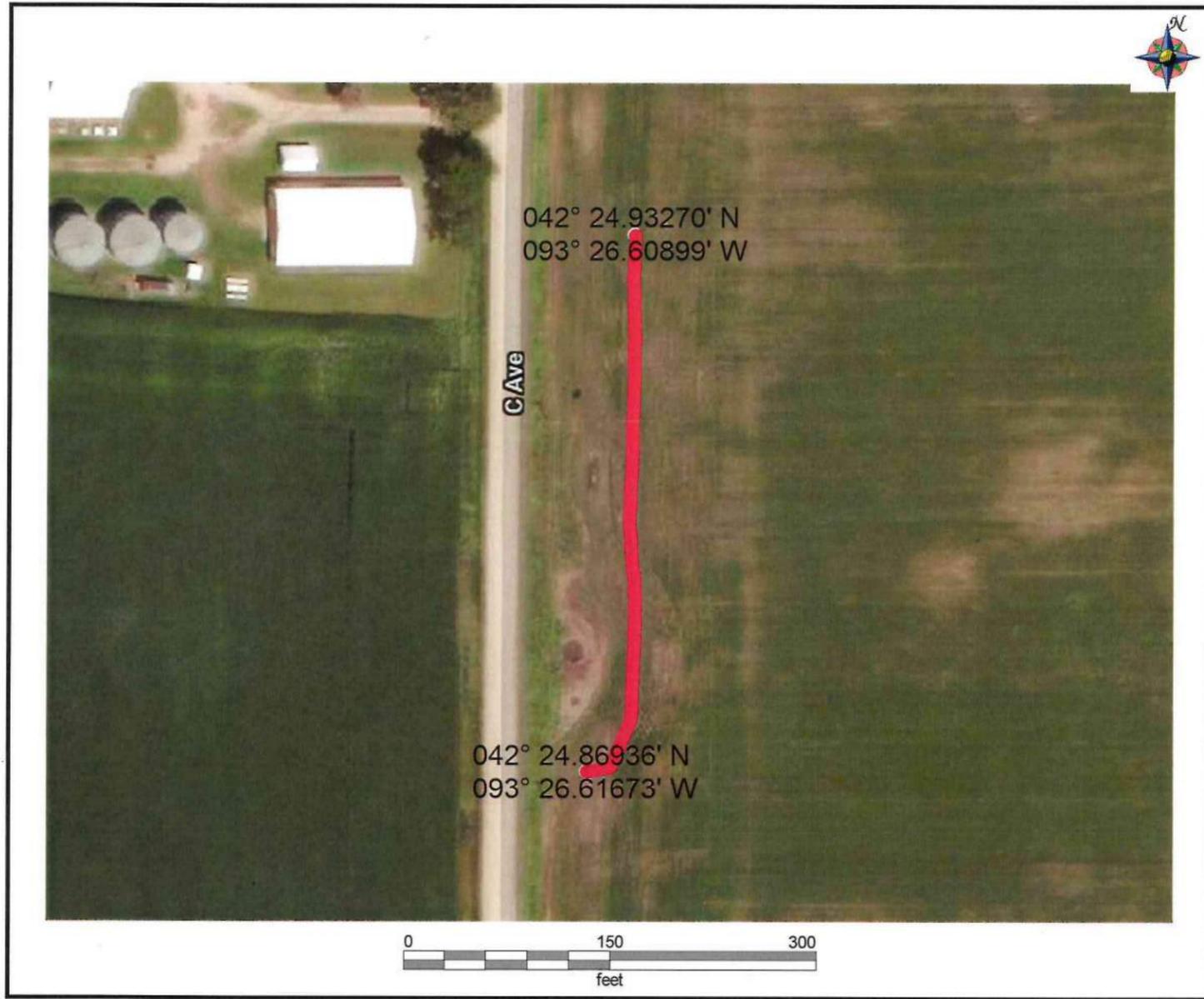
AS - BUILT CROSS CONNECTION



CLAY TO FL: $1143.651 - \frac{1}{2} - \frac{1}{2} = 1142.23'$

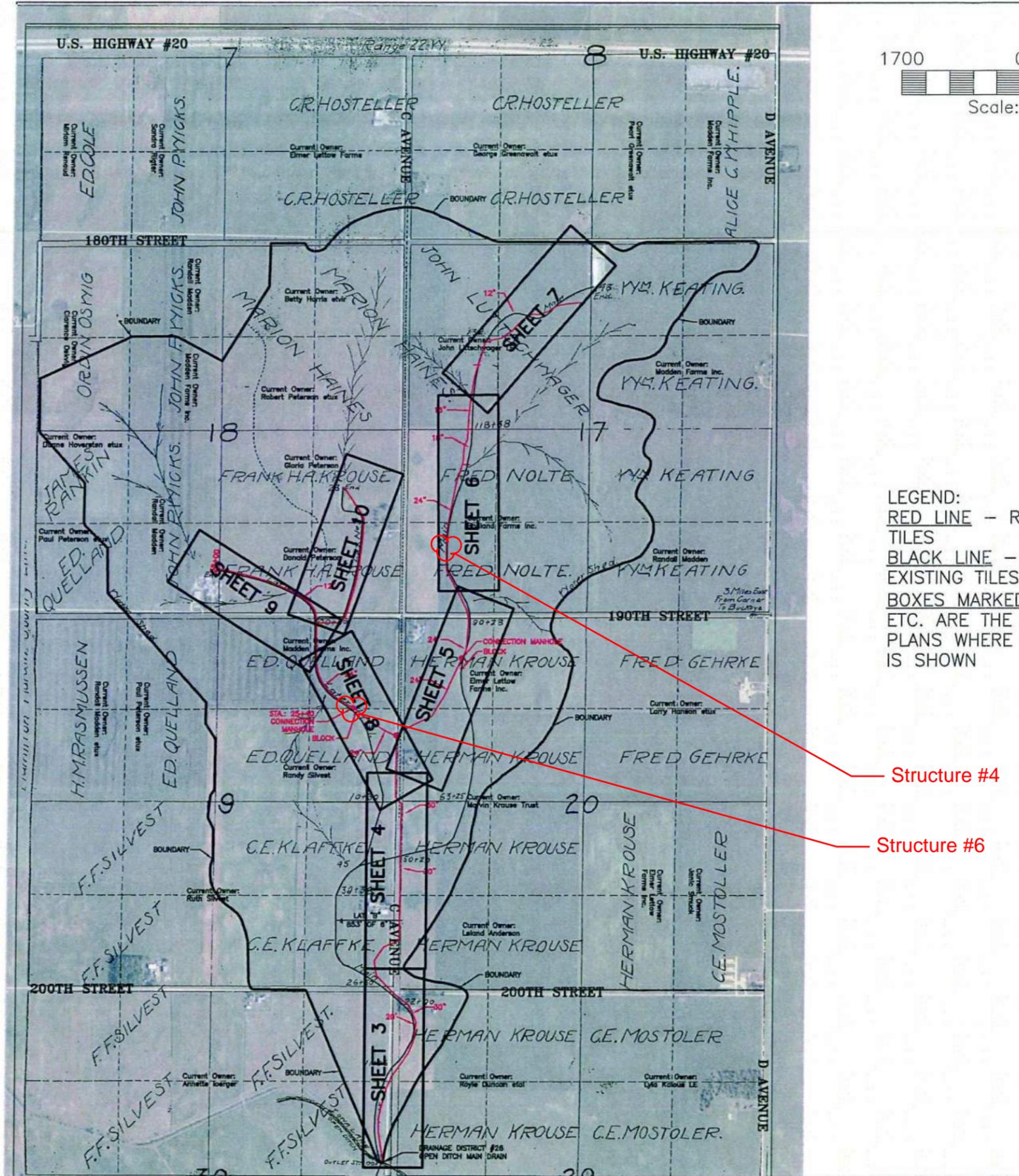
WYE TO FL: $1143.735 - \frac{3}{12} - \frac{18}{12} + 0.25" \text{ to } 0.5" \text{ for large bell on wye} = 1141.94' \text{ to } 1141.99'$

$1142.23 - (1141.94' \text{ to } 1141.99') = 0.237' \text{ to } 0.24'$



Hardin Co.
DD #22
6" Tile

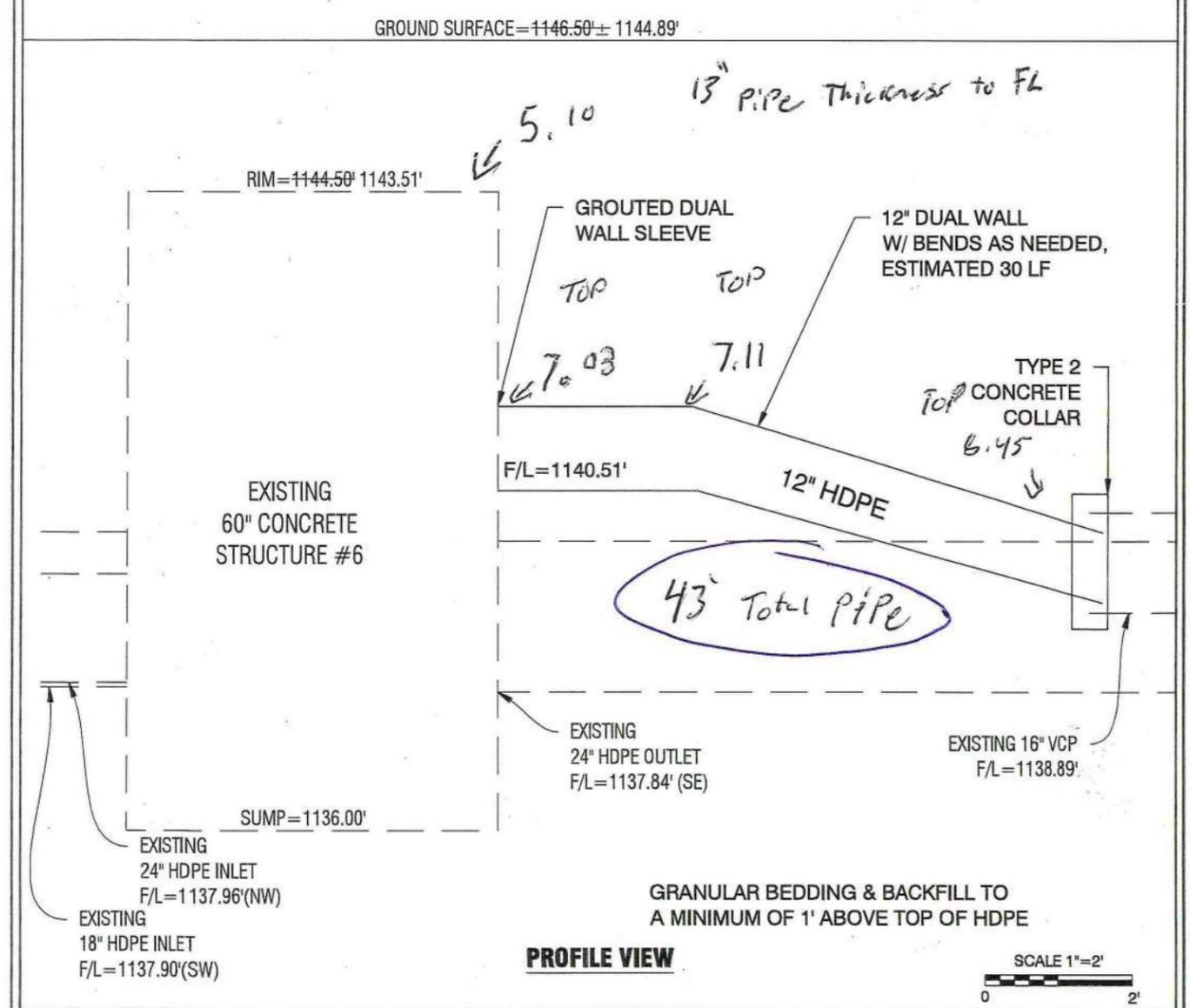
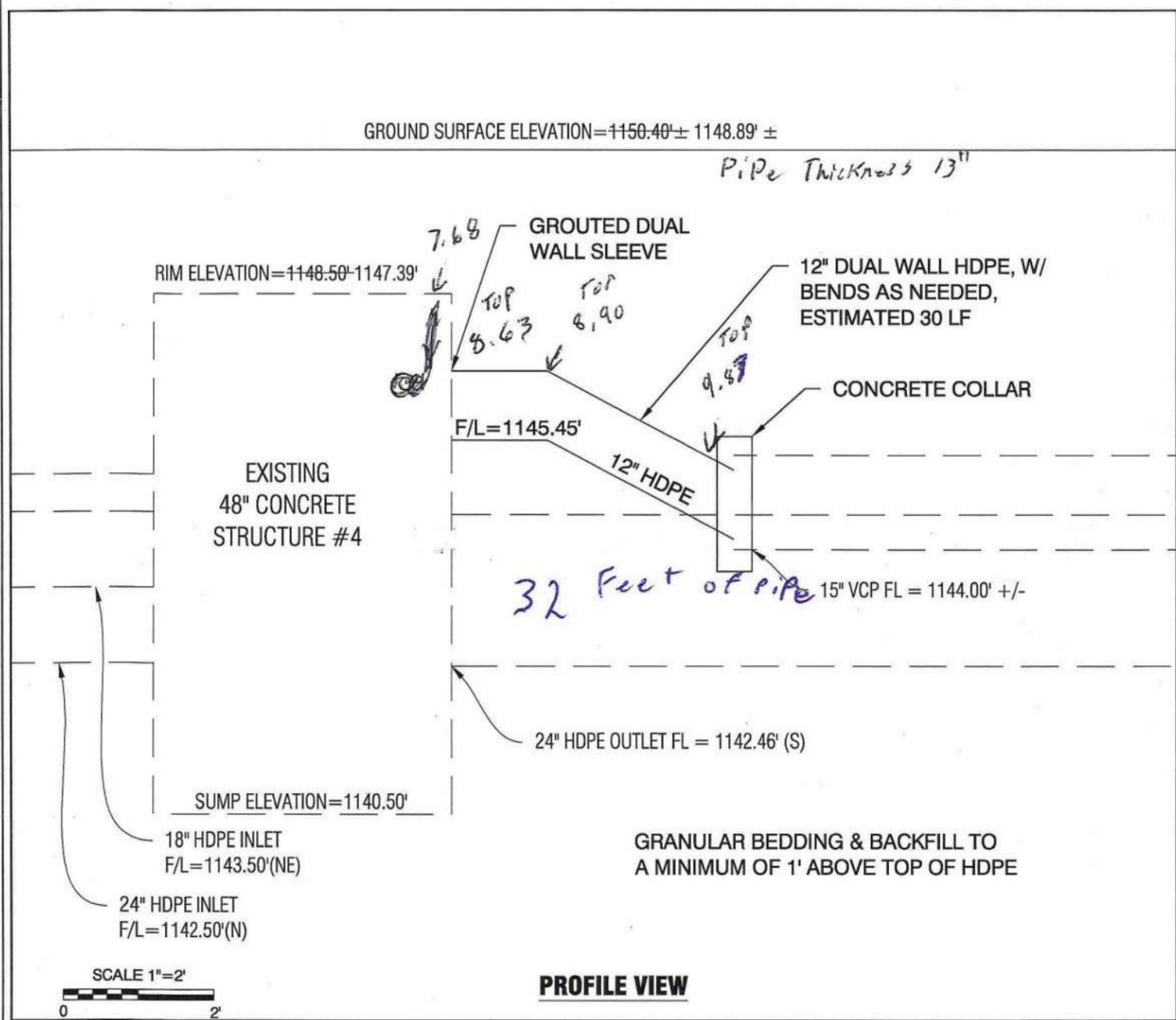
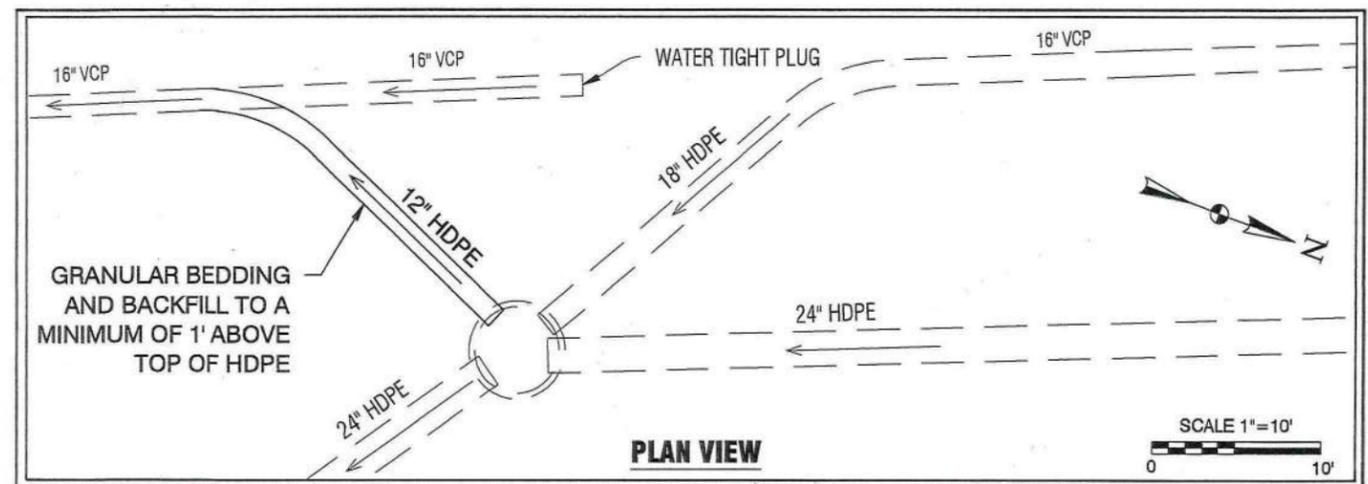
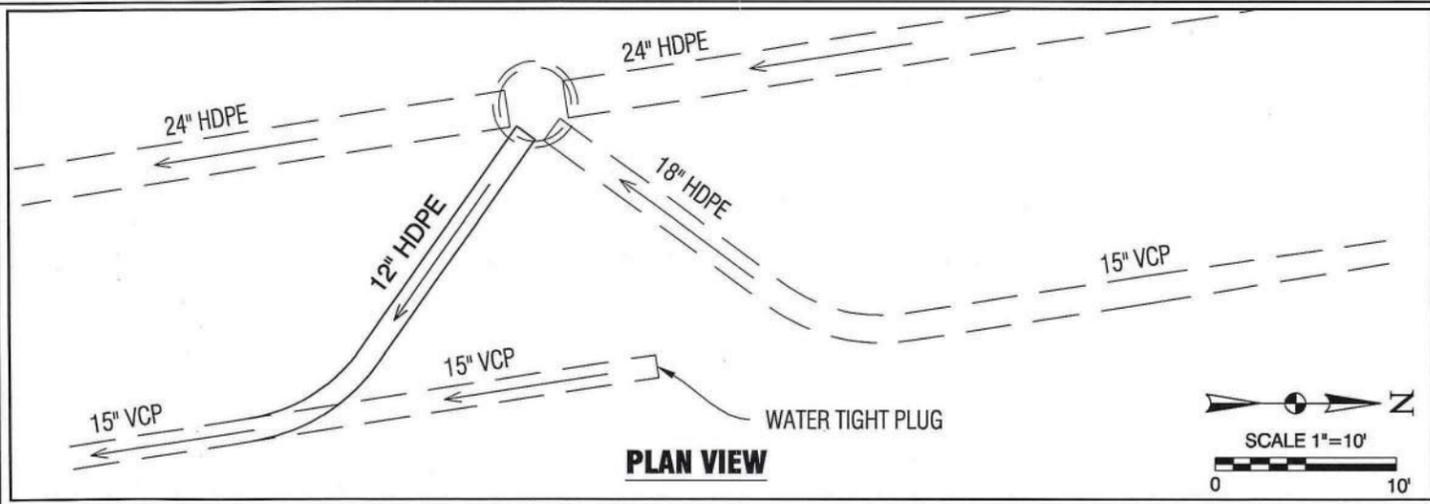
█ 12/21/2019



LEGEND:
RED LINE - R...
BLACK LINE - EXISTING TILES
BOXES MARKED ETC. ARE THE PLANS WHERE IS SHOWN

Structure #4
Structure #6

THIS AS BUILT INFORMATION IS DIRECT FROM GEHRKE, INC.
CGA NOT PRESENT FOR THIS WORK. - AS BUILT ADD SHEET 20



CGA Clapsaddle-Garber Associates, Inc
 16 East Main Street
 Marshalltown, Iowa 50158
 Ph 641-752-6701
 www.cgaconsultants.com

STRUCTURE #4
 N: 3,619,576
 E: 4,937,209

CGA Clapsaddle-Garber Associates, Inc
 16 East Main Street
 Marshalltown, Iowa 50158
 Ph 641-752-6701
 www.cgaconsultants.com

STRUCTURE #6
 N: 3,617,336
 E: 4,935,891

THIS AS BUILT INFORMATION IS DIRECT FROM GEHRKE, INC.
 CGA NOT PRESENT FOR THIS WORK. - AS BUILT ADD SHEET 21

J:\8712\dwg\Exhibits\Cross Connections 9-13-19.dwg - Structure #4 - 12-03-19 - 9:26am - HAT323

APPENDIX B

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 2 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease | | |
|---|---|----------------|-------|
| <p><u>Additional Spot Repair Necessary Due to Lack of Field Alignment Knowledge</u></p> <p>Minimal horizontal alignment information of the Original Main (clay) Tile and Parallel Main (HDPE) Tile is available. The known locations of what survey information we were able to obtain from Ryken Engineering are staked in the field; however, there are a lot of curves and the Parallel Main was installed with significant snaking of the pipe.</p> <p>The 2011 installed Parallel Main was specified to be located at a 15' offset from the Original Main. Conditions found in the field have locations where that separation is not present and is less than 10-foot.</p> <p>While installing new RCP Tile adjacent to the Parallel Main (HDPE), the 24" Original Main (clay) Tile was struck. In this location, the Original Main was almost directly under the assumed alignment of the Parallel Main based on the survey stakes. It was also determined the Parallel HDPE and Original Clay had less than the minimal separation.</p> <p>This resulted in a repair, similar to those accounted for in the Spot Repair portion of this project. Because of the lack of knowledge as to the precise alignment of the Clay and HDPE Tiles, this is a justifiable extra work.</p> <ul style="list-style-type: none"> • Item No. 6A – 24" RCP Tile, Perforated – For Spot Repairs Increase 6 LF @ \$78.00 / LF • Item No. 11A – Type 2 Concrete Collar – For Spot Repairs Increase 2 EA @ \$358.00 / EA <p>Additional field exploratory excavation was completed to lessen the chance of this occurring again. Due to snaking of the HDPE, the specified replacement alignment being directly in-line or at a minimum offset in lieu of installing RCP in a straighter configuration with field bends as necessary.</p> | <p>Increase \$468.00</p> <p>Increase \$716.00</p> | | |
| Net Change This Order (+ or -) | + \$1,184.00 | | |
| Net Changes Previous Approved Orders (#1): | - \$ 442.00 | | |
| Total Net Changes to Date: | + \$ 742.00 | | |
| Total Contract Time (Days) | Days Increased | Days Decreased | Total |

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|-----------------------------|--|------------------------|---------------|
| Contractor: Gehrke, Inc. | | Date: 9/10/19 | |
| By: <i>Serena M. Thomas</i> | | Title: <i>V.P.</i> | |
| Recommended | By: <i>Heather Thomas</i> Heather Thomas, PE | Title: Project Manager | Date: 9/10/19 |
| Approved | By: | Title: | Date: |

Clapsaddle-Garber Associates, Inc.
Engineers & Land Surveyors
P.O. Box 754
Marshalltown, IA 50158

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 3 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease | | |
|---|---|----------------|-------|
| <p><u>Adjust Contract Quantities to reflect field installed quantities for spot repairs (1 Spot Repair in progress and remains to be completed)</u></p> <p>The allowed spot repair quantities were greater than what was determined needed in the field. The contract quantities shall be adjusted as follows:</p> <ul style="list-style-type: none"> • Item No. 6A – 24” RCP Tile, Perforated – For Spot Repairs Decrease 131 LF @ \$78.00 / LF • Item No. 7A – 18” RCP Tile, Perforated – For Spot Repairs Decrease 100 LF @ \$67.00 / LF • Item No. 11A – Type 2 Concrete Collar – For Spot Repairs Decrease 3 EA @ \$358.00 / EA <p>Additional adjustments will be made once the 18-inch spot repair that remains to be finished is completed. This is not anticipated until the Parallel Main is replaced in the same vicinity.</p> | <p>Decrease (\$10,218.00)</p> <p>Decrease (\$6,700.00)</p> <p>Decrease (\$1,074.00)</p> | | |
| Net Change This Order (+ or -) | - \$ 17,992.00 | | |
| Net Changes Previous Approved Orders (#1, #2): | + \$ 742.00 | | |
| Total Net Changes to Date: | - \$ 17,250.00 | | |
| Total Contract Time (Days) | Days Increased | Days Decreased | Total |

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|--------------------------|--|------------------------|---------------|
| Contractor: Gehrke, Inc. | | Date: 9/10/19 | |
| By: <i>Seremy Adams</i> | | Title: <i>V.P.</i> | |
| Recommended | By: <i>Heather Thomas</i> Heather Thomas, PE | Title: Project Manager | Date: 9/10/19 |
| Approved | By: | Title: | Date: |

Clapsaddle-Garber Associates, Inc.
 Engineers & Land Surveyors
 P.O. Box 754
 Marshalltown, IA 50158

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 4 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease |
|---|-----------------------------|
| <p><u>Allow native backfill be utilized for Road Crossings</u></p> <p>Defer recommendation to support Hardin County Engineer's recommendation.</p> <p>Current discussion for allowance is as follows. The specified detail is shown below. Allow the Class 1 material to be used for bedding and backfill to 1' above the top of pipe. From there, allow native soil to be used to backfill if compacted it with a vibratory plate compactor in 1-foot lifts and then top it with 12-inches of road rock.</p> <div style="text-align: center;"> </div> <p>The current contract in regards to this bid item is as follows:</p> <ul style="list-style-type: none"> Item No. 2A – 30” RCP Tile Road Crossing, Perf – Tile Replacement Contract: 310 LF @ \$46.00 / LF | <p>\$ 0.00</p> |

| | |
|--|----------------|
| Net Change This Order (+ or -) | \$ 0.00 |
| Net Changes Previous Approved Orders (#1, #2, #3): | - \$ 17,250.00 |
| Total Net Changes to Date: | - \$ 17,250.00 |

| Total Contract Time (Days) | Days Increased | Days Decreased | Total |
|----------------------------|----------------|----------------|-------|
| | | | |

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|------------------------------------|-------------------------------------|---------------|---------------|
| Contractor: Gehrke, Inc. | | Date: 9/10/19 | |
| By: <i>Jeremy M... [Signature]</i> | Title: <i>V.P.</i> | | |
| Recommended | By: Defer to Hardin County Engineer | Title: | Date: 9/10/19 |
| Approved | By: | Title: | Date: |

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 5 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease |
|---|-----------------------------------|
| <p>Exploratory Excavation</p> <p>Refer to additional information included in Change Order #2. Exploratory Excavation was used to lessen chance of hitting Main (clay) Tile in areas where its location was unknown.</p> <p>This was done by a means of using a locating device run as far as it would go through the exposed tile and marking it on the ground with flags as well as potholing in various spots with a backhoe and another crew member probing for the line.</p> <p>Friday, August 30th (<i>The day the Main was hit that required spot repair.</i>) Locating (20 Minutes) Potholing/Excavation (3 Hours)</p> <p>Tuesday, September 3rd Locating (15 Minutes)</p> <p>Wednesday, September 4th Potholing/Excavation (2 Hours, 15 Minutes)</p> <p>A total of 5.83 hours were spent performing exploratory excavation and Gehrke successfully avoided the main since.</p> <p>The following is the anticipated impact to construction costs which will be made by this item addition:</p> <ul style="list-style-type: none"> CO1 - Exploratory Excavation Increase 5.83 HRS @ \$300 / HR | <p>Increase (\$1,749.00)</p> |
| Net Change This Order (+ or -) | + \$1,749.00 |
| Net Changes Previous Orders (#1, #2, #3, #4): | - \$ 17,250.00 |
| Total Net Changes to Date: | - \$ 15,501.00 |

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|----------------------------|----------------|----------------|-------|
| Total Contract Time (Days) | Days Increased | Days Decreased | Total |
|----------------------------|----------------|----------------|-------|

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|-------------------------------|---------------------------|------------------------|---------------|
| Contractor: Gehrke, Inc. | | Date: 9/10/19 | |
| By: <i>Jeremy [Signature]</i> | Title: Design Engineer | | |
| Recommended | By: <i>Heather Thomas</i> | Title: Project Manager | Date: 9/10/19 |
| Approved | By: | Title: | Date: |

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 6 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease |
|--|--|
| <p>Adjust Contract Completion Date; Current Contract Completion Language: <i>Once started, the Contractor shall remain on the job and make continuous progress until work is completed or until work is suspended due to winter-shut down. As winter approaches, the Contractor shall stage work appropriately to complete all areas of work that had been started prior to shut down and also allow the tile to operate through winter shut down. Any construction that interferes with crop production shall be limited to a single crop season for each individual field. Substantial completion shall be prior to <u>September 1, 2019</u>. Substantial completion shall be when all bid items, with the exception of Add Alternate 2 (CCTV Inspection of Tile Replacement – 12 Months Post Construction) have been completed. The Contractor shall pay said District Five Hundred (\$500.00) per day as liquidated damages for each calendar day the work remains uncompleted after the completion date stated above in addition to additional expenses to the District for crop damage, engineering, observation, or construction surveying services, as noted in Article 4.03B of the Agreement between District and Contractor.</i></p> <p>Contractor requests extension due to weather conditions. *NOAA reports the period of June 2018 – May 2019 was the wettest 12-month period in Iowa since official records began in 1895. NOAA issued precipitation ranks on September 6th stating that despite recent dry conditions, Iowa precipitation from September 2018-August 2019 still ranked 122 (out of 124) for the wettest 12-months.</p> <ul style="list-style-type: none"> • Gehrke started spot repairs 07/26/19. • Gehrke started tile replacement 08/16/19. • From the period 08/16/19 – 09/07/19 (23 Calendar Days, 16 Tile Install Days), Gehrke has installed 2,438 feet tile. (106 ft tile / calendar day & 152 ft tile / tile install day). • An estimated 3,960 feet remain, in addition to private tile connections, intakes, seeding, and cross connection. | <p>Extend Project Completion to December 1, 2019</p> |
| Net Change This Order (+ or -) | \$ 0.00 |
| Net Changes Previous Orders (#1, #2, #3, #4, #5): | - \$ 15,501.00 |
| Total Net Changes to Date: | - \$ 15,501.00 |

| | | | |
|--|---------------------------|----------------|---------------------------------|
| Total Contract Time (Days) Completion: 09/01/2019 | Days Increased 91 Days | Days Decreased | Total Completion: 12/01/2019 |
|--|---------------------------|----------------|---------------------------------|

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|--------------------------|--|------------------------|---------------|
| Contractor: Gehrke, Inc. | | Date: 9/10/19 | |
| By: <i>Serena Mace</i> | Title: <i>V.P.</i> | | |
| Recommended | By: <i>Heather Thomas</i> Heather Thomas, PE | Title: Project Manager | Date: 9/10/19 |
| Approved | By: | Title: | Date: |

Clapsaddle-Garber Associates, Inc.
Engineers & Land Surveyors
P.O. Box 754
Marshalltown, IA 50158

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 7 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease |
|--|-----------------------------|
| <p>The 30-inch tile replacement in the front yard of Travis Ryerson impacted the existing septic system leach field. Gehrke shall perform repair to the septic system in coordination and with approval of the County Environmental Health Department.</p> <p>Initial Estimate of Repair: Gehrke, Inc to repair septic lines on the Ryerson property with an estimated cost of \$3,680. The Contractor will investigate the laterals to determine consistent spacing to reinstall the two laterals that were excavated out; it is estimated that each lateral will be 60 feet or less and will be bed in 1-inch clean rock. Hardin County Environmental Health Department also has an Onsite Wastewater Treatment System Application w/ \$250 fee. Drainage District Trustees authorized up to \$4,000 at their December 4th, 2019 meeting.</p> <p>During construction and further investigation into the laterals that were impacted, we coordinated with Jessica Sheridan to perform the required repair, which was less than initially estimated. Total cost of the repair</p> <ul style="list-style-type: none"> • Add Item CO2 – Septic Repair (Lump Sum) | +\$1,650.00 |
| Net Change This Order (+ or -) | + \$ 1,650.00 |
| Net Changes Previous Orders (#1, #2, #3, #4, #5, #6): | - \$ 15,501.00 |
| Total Net Changes to Date: | - \$ 13,851.00 |

| | | | |
|----------------------------|----------------|----------------|------------------------------|
| Total Contract Time (Days) | Days Increased | Days Decreased | Total Completion: 12/01/2019 |
|----------------------------|----------------|----------------|------------------------------|

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|--------------------------|-------------------------|------------------------|------------------|
| Contractor: Gehrke, Inc. | | Date: 1-22-2020 | |
| By: | Title: V.P. | | |
| Recommended | By: Heather Thomas, PE | Title: Project Manager | Date: 01/22/2020 |
| Approved | By: | Title: | Date: |

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 8 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease |
|---|-----------------------------|
| <p>Additional tile replacement necessary due to existing private tile being located above the excavation for a portion of the 30-inch tile replacement. Unit price includes mobilization, private tile connection to the main, and providing/installing the tile.</p> <p>Trustees authorized up to 400 LF of private tile replacement at \$9/LF at the December 16, 2019 meeting. Actual installed quantity was 350 LF.</p> <ul style="list-style-type: none"> Add Item CO3 – Private Tile Replacement, 6” Dual Wall Tile Add 350 LF @ \$9.00 / LF | +\$3,150.00 |
| Net Change This Order (+ or -) | + \$ 3,150.00 |
| Net Changes Previous Orders (#1, #2, #3, #4, #5, #6, #7): | - \$ 13,851.00 |
| Total Net Changes to Date: | - \$ 10,701.00 |

| | | | |
|----------------------------|----------------|----------------|------------------------------|
| Total Contract Time (Days) | Days Increased | Days Decreased | Total Completion: 12/01/2019 |
|----------------------------|----------------|----------------|------------------------------|

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|--------------------------|-------------|--------------------|------------------------|
| Contractor: Gehrke, Inc. | | Date: 1-22-2020 | |
| By: | Title: V.P. | | |
| Recommended | By: | Heather Thomas, PE | Title: Project Manager |
| Approved | By: | Title: | Date: 01/22/2020 |

| | | |
|---|---|------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 9 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease |
|---|-----------------------------|
| <p>Beginning on Saturday, November 16, 2019, the Contractor got into an area where the blue clay at the bottom of the trench for the 30-inch tile replacement was disappearing and what remained was a very soupy sand that was not able to provide adequate support for the concrete tile. The Contractor requested authorization to put a layer of larger rock (3") approximately 6-inches along the bottom of the trench to provide an adequate bottom for pipe support at a cost of \$24 / ton. Trustees authorized its use as needed and verified need/placement by CGA.</p> <p>Approximately 12 Tons were needed and placed on November 18th and 3 Tons were needed and placed on November 19th.</p> <ul style="list-style-type: none"> Add Item CO4 – 3-inch Bedding Rock Add 15 Tons @ \$24.00 / Ton | +\$ 360.00 |
| Net Change This Order (+ or -) | + \$ 360.00 |
| Net Changes Previous Orders (#1, #2, #3, #4, #5, #6, #7, #8): | - \$ 10,701.00 |
| Total Net Changes to Date: | - \$ 10,341.00 |

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|----------------------------|----------------|----------------|------------------------------|
| Total Contract Time (Days) | Days Increased | Days Decreased | Total Completion: 12/01/2019 |
|----------------------------|----------------|----------------|------------------------------|

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

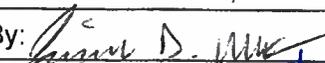
| | | | |
|--------------------------|-------------|------------------------|------------------|
| Contractor: Gehrke, Inc. | | Date: 1-22-2020 | |
| By: | Title: V.P. | | |
| Recommended | By: | Title: Project Manager | Date: 01/22/2020 |
| Approved | By: | Title: | Date: |

| | | |
|---|---|-------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 10 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | Amount Increase or Decrease | | |
|---|---|----------------|------------------------------|
| The original contract, as bid, was largely completed (with the exception of seeding, clean-up, and other miscellaneous work that was unable to be completed with the winter weather/frozen ground conditions) as of January 13 th , 2020. The quantities installed to date and the anticipated work remaining for the Spring was compiled to determine the projected final quantities. The contract quantities are hereby adjusted as follows: | | | |
| <ul style="list-style-type: none"> • Increase Item 1A – 30" Ø RCP Tile, Perforated - For Tile Replacement <ul style="list-style-type: none"> ○ 68.0 LF @ \$53.00 / LF • Decrease Item 2A – 30" Ø RCP Tile Road Crossing, Perforated - For Tile Replacement <ul style="list-style-type: none"> ○ 30.0 LF @ \$46.00 / LF • Decrease Item 3A – CCTV Inspection of Roadway Crossing Tile - For Tile Replacement <ul style="list-style-type: none"> ○ 310.0 LF @ \$3.00 / LF • Decrease Item 4A – Connection to Road Crossing Tile to Remain - For Tile Replacement <ul style="list-style-type: none"> ○ 10 Each @ \$400.00 / Each • Increase Item 5A – Removal and Disposal of Supplemental Tile - For Tile Replacement <ul style="list-style-type: none"> ○ 38.0 LF @ \$6.50 / LF • Decrease Item 7A – 18" Ø RCP Tile, Perforated - For Spot Repairs <ul style="list-style-type: none"> ○ 45.0 LF @ \$67.00 / LF • Decrease Item 11A – Type 2 Concrete Collar - For Spot Repairs <ul style="list-style-type: none"> ○ 2 Each @ \$358.00 / Each • Increase Item 13A – Private Tile Connection <ul style="list-style-type: none"> ○ 11 Each @ \$500.00 / Each • Decrease Item 400 – 18" Ø RCP Tile with Rock Bedding, Perforated - For Spot Repairs <ul style="list-style-type: none"> ○ 18.0 LF @ \$67.00 / LF | <ul style="list-style-type: none"> + \$ 3,604.00 - \$ 1,380.00 - \$ 930.00 - \$ 4,000.00 + \$ 247.00 - \$ 3,015.00 - \$ 716.00 + \$ 5,500.00 - \$ 1,206.00 | | |
| Net Change This Order (+ or -) | - \$ 1,896.00 | | |
| Net Changes Previous Orders (#1, #2, #3, #4, #5, #6, #7, #8, #9): | - \$ 10,341.00 | | |
| Total Net Changes to Date: | - \$ 12,237.00 | | |
| Total Contract Time (Days) | Days Increased | Days Decreased | Total Completion: 12/01/2019 |

If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based.

| | | | |
|---|--|------------------------|------------------|
| Contractor: Gehrke, Inc. | | Date: 1-22-2020 | |
| By:  | Title: V.P. | | |
| Recommended | By:  Heather Thomas, PE | Title: Project Manager | Date: 01/22/2020 |
| Approved | By: | Title: | Date: |

| | | |
|---|---|-------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 11 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

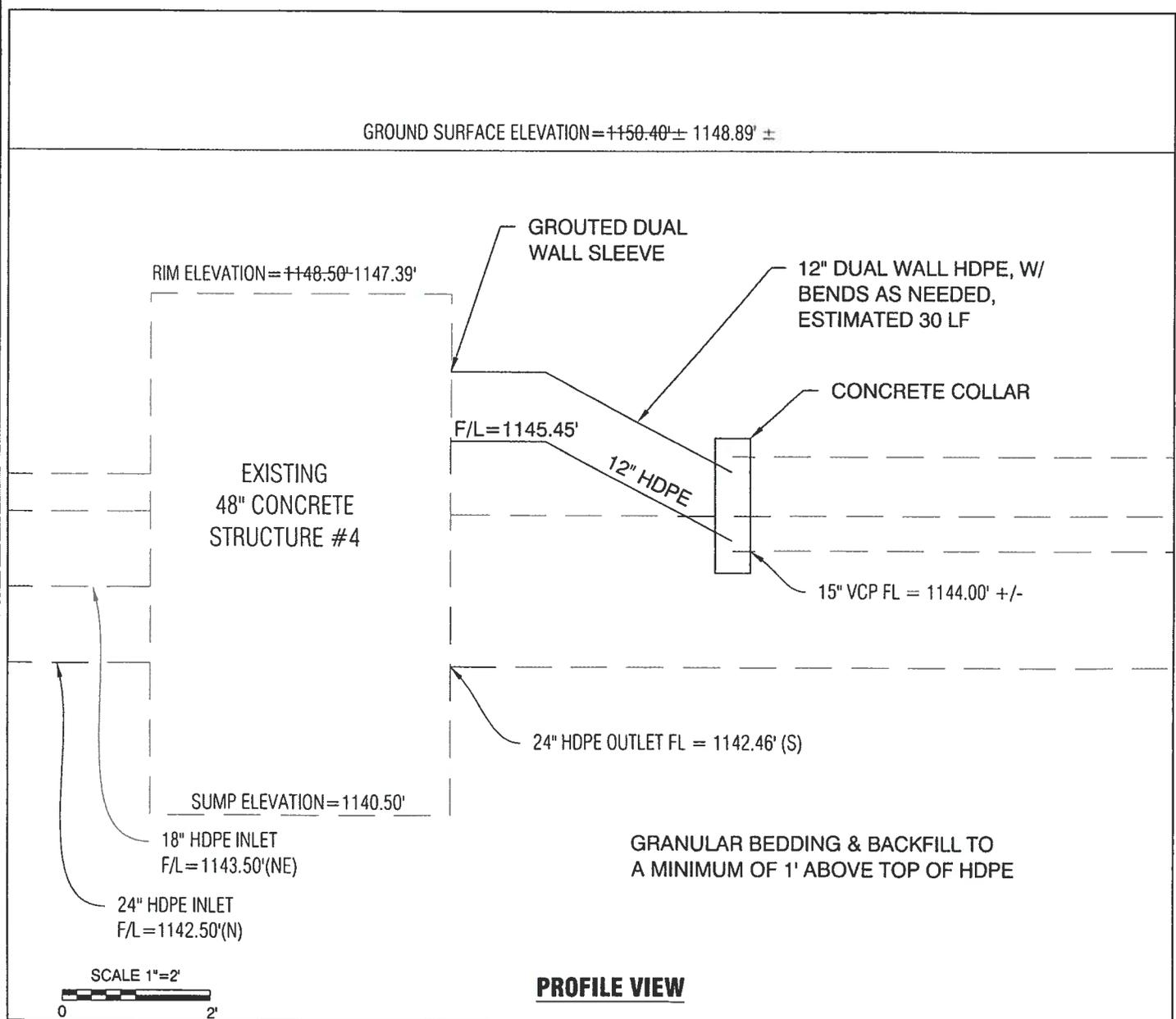
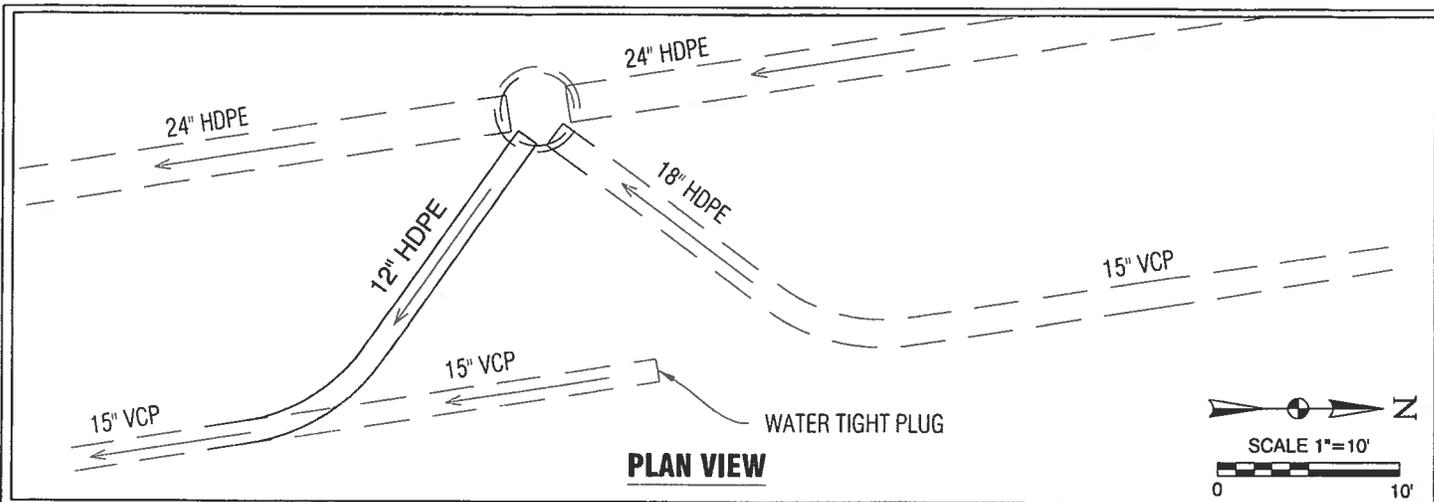
List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

| PROPOSED CHANGES | | | Amount Increase or Decrease |
|--|--|------------------------|--|
| <p>The original contract, as bid, was largely completed (with the exception of seeding, clean-up, and other miscellaneous work) as of January 13th, 2020. The delays throughout 2019 were a result of the abnormally wet conditions experienced in the first half of 2019. Weather and field conditions are not suitable for final clean-up, finish grading, and seeding in January; therefore, the contract shall be extended to May 31st, 2020 to complete this work.</p> <p>Approximately \$6,950 of work remains as part of the original contract as amended with Change Orders #1-#10. Therefore, the Trustees agree to release a portion of the retainage in the amount equal to a reduction from 10% to 2% of the completed work.</p> <p>The 2 Year Maintenance Bond shall become effective/active at the completion of the remaining \$6,950 anticipated in Spring 2020.</p> <p>During a Landowner Meeting held on December 16th, 2019, it was voted to add two overflow connections to the Contractor through change order. This work is as described in Change Order #12. Due to field conditions, this work is best done at dry periods with low flow. The Landowners agreed to a completion date of November 30, 2020 for this additional work. The Landowners also agreed for this work to be performed without CGA observation; however, CGA may provide staking at Gehrke's request.</p> | | | <p>Extend Project Completion to May 31, 2020.</p> <p>Establish Extra Work (CO #12) Completion to November 30, 2020</p> |
| Net Change This Order (+ or -) | | | \$ 0.00 |
| Net Changes Previous Orders (#1, #2, #3, #4, #5, #6, #7, #8, #9, #10): | | | - \$ 12,237.00 |
| Total Net Changes to Date: | | | - \$ 12,237.00 |
| Total Contract Time (Days) Completion: 12/01/2019 | Days Increased 365 Days | Days Decreased | Total Completion: 11/30/2020 |
| If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based. | | | |
| Contractor: Gehrke, Inc. | | | Date: 1-22-2020 |
| By: <i>Grinn D. W...</i> | | Title: V.P. | |
| Recommended | By: <i>Heather Thomas</i> Heather Thomas, PE | Title: Project Manager | Date: 01/20/2020 |
| Approved | By: | Title: | Date: |

| | | |
|---|---|-------------------|
| Project: Main Tile Repairs to Drainage District 22 Facilities | CGA PN: 8712 | Change Order # 12 |
| Owner: Hardin County, Iowa | Contract Date: August 16 th , 2018 | |
| Contractor: Gehrke, Inc. | Contract Amount: \$549,332.50 | |

List below or on a separate sheet each change proposed in this order describing briefly and giving reasons for the changes. Attach copy of supplemental agreement covering any contract amendment.

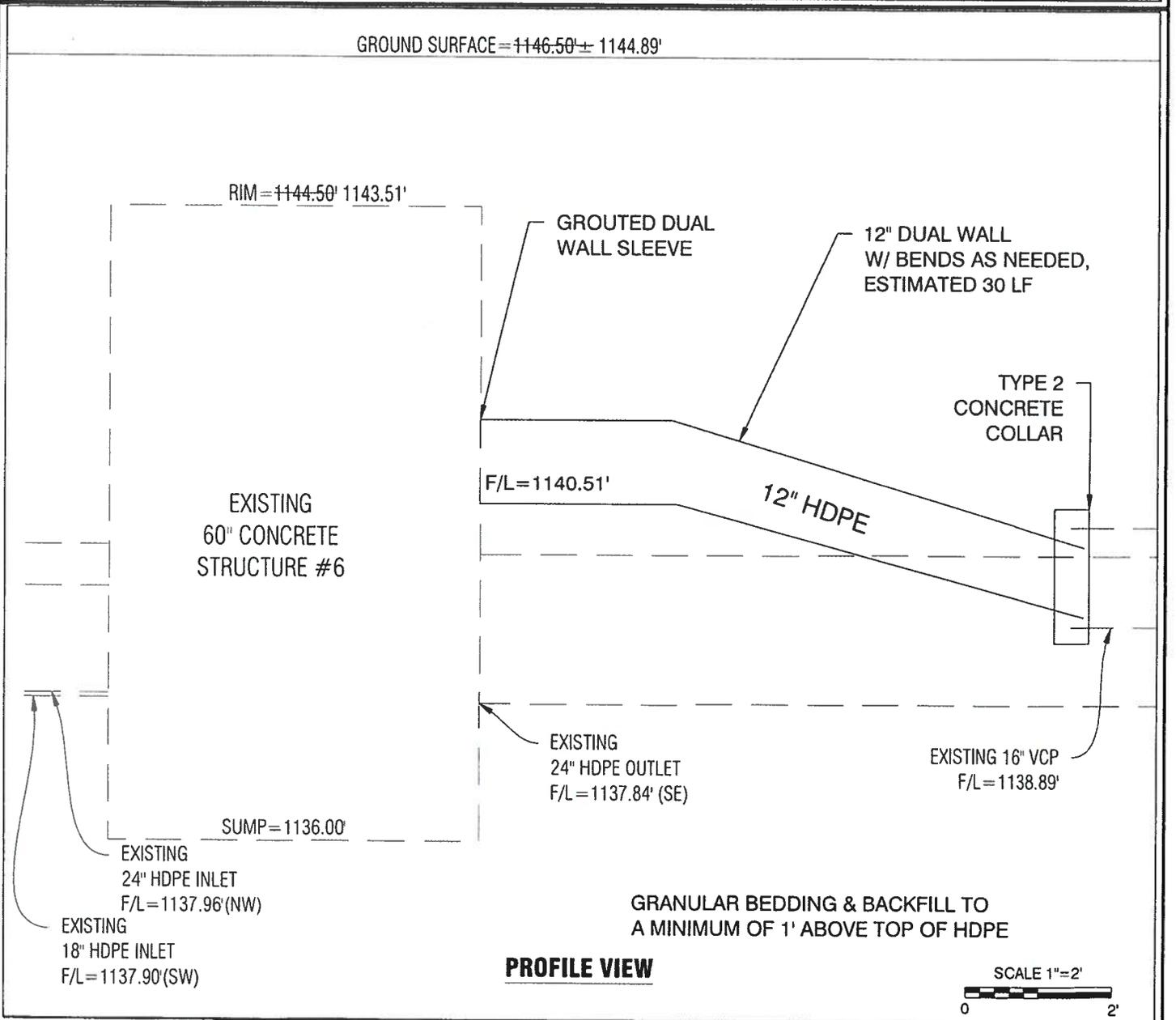
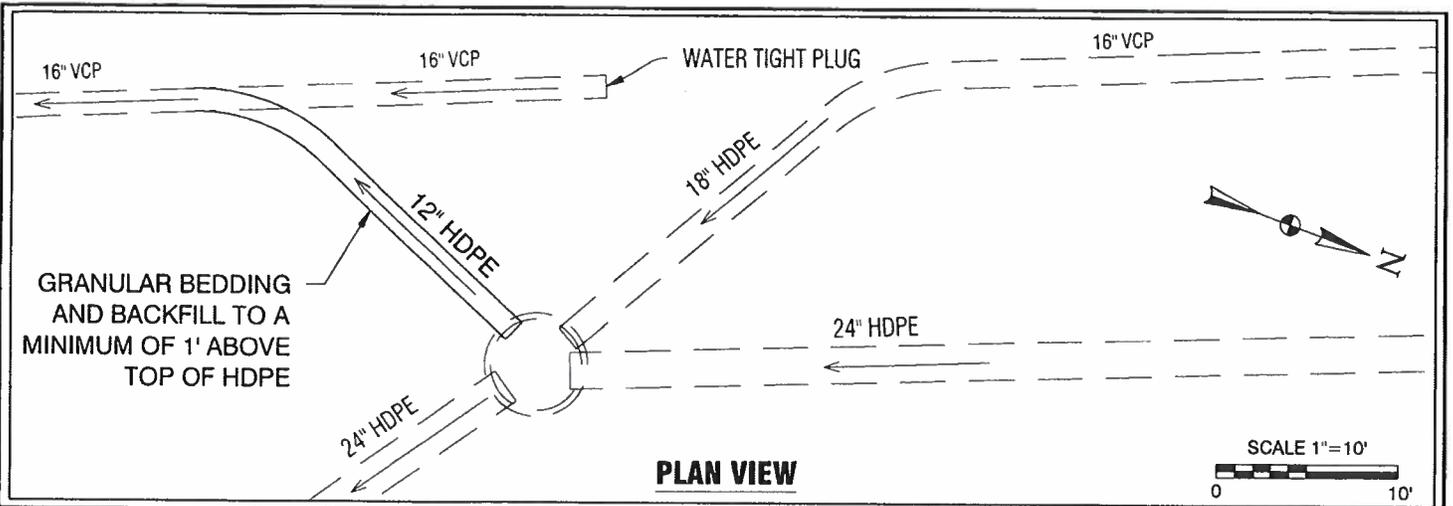
| PROPOSED CHANGES | | | Amount Increase or Decrease |
|---|--|------------------------|------------------------------|
| Refer to attached exhibits for additional information. Note: Quantities below are estimates. | | | |
| <u>Overflow Connection @ Structure #4</u> | | | |
| 11A) Increase 'Type 2 Concrete Collar – For Spot Repairs' – 2 Each | | | \$ 716.00 |
| 12A) Increase 'Connection to Existing Structure' – 1 Each | | | \$ 2,000.00 |
| CO1) Increase 'Exploratory Excavation' – 1 HR | | | \$ 300.00 |
| CO3) Add 12" Dia. Dual Wall HDPE Tile w/ Rock, Perforated – Est. 30 LF at \$241.00/LF | | | \$ 7,230.00 |
| <u>Overflow Connection @ Structure #6</u> | | | |
| 11A) Increase 'Type 2 Concrete Collar – For Spot Repairs' – 2 Each | | | \$ 716.00 |
| 12A) Increase 'Connection to Existing Structure' – 1 Each | | | \$ 2,000.00 |
| CO1) Increase 'Exploratory Excavation' – 1 HR | | | \$ 300.00 |
| CO3) Add 12" Dia. Dual Wall HDPE Tile w/ Rock, Perforated – Est. 30 LF at \$241.00/LF | | | \$ 7,230.00 |
| Net Change This Order (+ or -) | | | + \$ 20,492.00 |
| Net Changes Previous Orders (#1, #2, #3, #4, #5, #6, #7, #8, #9, #10) | | | - \$ 12,237.00 |
| Total Net Changes to Date: | | | + \$ 8,255.00 |
| Total Contract Time (Days) | Days Increased | Days Decreased | Total Completion: 11/30/2020 |
| If and when approved, I hereby accept this order both as to work to be performed and prices on which payment shall be based. | | | |
| Contractor: Gehrke, Inc. | | | Date: 1-22-2020 |
| By: <i>Jim D. Weger</i> | | Title: V.P. | |
| Recommended | By: <i>Heather Thomas</i> Heather Thomas, PE | Title: Project Manager | Date: 01/22/2020 |
| Approved | By: | Title: | Date: |



Clapsaddle-Garber Associates, Inc
 16 East Main Street
 Marshalltown, Iowa 50158
 Ph 641-752-6701
 www.cgaconsultants.com

STRUCTURE #4

N: 3,619,576
 E: 4,937,209



CGA Clapsaddle-Garber Associates, Inc
 16 East Main Street
 Marshalltown, Iowa 50158
 Ph 641-752-6701
 www.cgaconsultants.com

STRUCTURE #6

N: 3,617,336
 E: 4,935,891

APPENDIX C

CONSTRUCTION PROGRESS REPORT

Project Description: Main Tile Repairs to Drainage District 22 Facilities
Hardin County, Iowa
Project Nos. DD-6532.2 and 8712

Estimate: No. 6

Date of Contract: August 16, 2018

Completion Date: 9/1/2019 - Updated to 12/1/2019 per Change Order #6 - Updated to 11/30/2020 per Change Order #11

Contractor: Gehrke, Inc.
Eldora, IA

Owner: Hardin County Trustees
of Drainage District 22

| | | | |
|------------------------------|---------------------|---|---------------------|
| Base Contract Price | \$549,332.50 | Construction Completed (See Attached Tab) | \$557,587.50 |
| Approved Equivalent #1 | -\$442.00 | Total Amount Earned | \$557,587.50 |
| Change Order #2 | \$1,184.00 | | |
| Change Order #3 | -\$17,992.00 | Less 2% Retainage | <u>\$11,151.75</u> |
| Change Order #4 | \$0.00 | (Note Retainage % Reduced per CO #11) | |
| Change Order #5 | \$1,749.00 | | |
| Change Order #6 | \$0.00 | Subtotal | \$546,435.75 |
| Change Order #7 | \$1,650.00 | | |
| Change Order #8 | \$3,150.00 | Less Previous Payment | <u>\$519,542.59</u> |
| Change Order #9 | \$360.00 | | |
| Change Order #10 | -\$1,896.00 | AMOUNT DUE THIS ESTIMATE | \$26,893.16 |
| Change Order #11 | \$0.00 | | |
| Change Order #12 | \$20,492.00 | | |
| Total Contract Amount | \$557,587.50 | | |

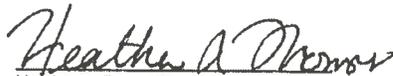
Requested by Contractor:


Gehrke, Inc.

Vice President
Title

4-22-2020
Date

Recommended by Engineer:


Heather A. Thomas
Clapsaddle-Garber Associates, Inc.

Project Engineer
Title

4/22/2020
Date

Approved by Owner:


Hardin County Supervisors

Trustee Chairperson
Title

4/29/20
Date

Prepared by:
Clapsaddle-Garber Associates
Marshalltown, Iowa 50158

CGA Project No. 8712 06
January 13, 2020

| Tabulation of Construction Quantities | | | | | | | | |
|---|---|------|----------------|-------------------|--------|---------------------|--------|---------------------|
| Main Tile Repairs to Drainage District 22 Facilities | | | | | | | | |
| Hardin County, Iowa | | | | | | | | |
| Period Ending: April 20, 2020 | | | | | | | | |
| Item No | Description | Unit | Unit Bid Price | Adjusted Contract | | Completed | | |
| | | | | Quantity | Amount | Quantity | Amount | |
| 1A | 30" Ø RCP Tile, Perforated - For Tile Replacement | LF | \$53.00 | "" | 6,155 | \$326,215.00 | 6,155 | \$326,215.00 |
| 2A | 30" Ø RCP Tile Road Crossing, Perforated - For Tile Replacement | LF | \$46.00 | "" | 280 | \$12,880.00 | 280 | \$12,880.00 |
| 3A | CCTV Inspection Of Roadway Crossing Tile - For Tile Replacement | LF | \$3.00 | "" | 0 | \$0.00 | - | \$0.00 |
| 4A | Connection To Road Crossing Tile To Remain - For Tile Replacement | Each | \$400.00 | "" | 0 | \$0.00 | - | \$0.00 |
| 5A | Removal And Disposal Of Supplemental Tile - For Tile Replacement | LF | \$6.50 | "" | 6,435 | \$41,827.50 | 6,435 | \$41,827.50 |
| 6A | 24" Ø RCP Tile, Perforated - For Spot Repairs | LF | \$78.00 | ** *** | 564 | \$43,992.00 | 564 | \$43,992.00 |
| 7A | 18" Ø RCP Tile, Perforated - For Spot Repairs | LF | \$67.00 | ***, "" | 521 | \$34,907.00 | 521 | \$34,907.00 |
| 8A | 18" Ø RCP Tile Road Crossing, Perforated - For Spot Repairs | LF | \$134.50 | | 50 | \$6,725.00 | 50 | \$6,725.00 |
| 9A | 24" X 18" RCP Wye - For Spot Repairs | Each | \$600.00 | | 1 | \$600.00 | 1 | \$600.00 |
| 10A | 24" X 18" RCP Reducer - For Spot Repairs | Each | \$800.00 | * | 0 | \$0.00 | - | \$0.00 |
| 11A | Type 2 Concrete Collar - For Spot Repairs | Each | \$358.00 | * ** *** "" "" | 53 | \$18,974.00 | 53 | \$18,974.00 |
| 12A | Connection To Existing Structure | Each | \$2,000.00 | "" | 4 | \$8,000.00 | 4 | \$8,000.00 |
| 13A | Private Tile Connection | Each | \$500.00 | "" | 26 | \$13,000.00 | 26 | \$13,000.00 |
| 14A | Intake, 30" Ø Circular Area | Each | \$1,000.00 | | 5 | \$5,000.00 | 5 | \$5,000.00 |
| 15A | Intake, 12" Ø Hickenbottom | Each | \$1,100.00 | | 5 | \$5,500.00 | 5 | \$5,500.00 |
| 16A | Intake, 8" Ø Hickenbottom | Each | \$525.00 | | 2 | \$1,050.00 | 2 | \$1,050.00 |
| 17A | Cleanup, Shaping, And Permanent Seeding | LS | \$8,300.00 | | 1 | \$8,300.00 | 1 | \$8,300.00 |
| 18A | Seeding Warranty | LS | \$300.00 | | 1 | \$300.00 | 1 | \$300.00 |
| 400 | 18" Ø RCP Tile with Rock Bedding, Perforated - For Spot Repairs | LF | \$67.00 | "" | 22 | \$1,474.00 | 22 | \$1,474.00 |
| 401 | 18" X 18" RCP Wye with Rock Bedding - For Spot Repairs | Each | \$800.00 | | 1 | \$800.00 | 1 | \$800.00 |
| 402 | Type 2 Concrete Collar - For Spot Repairs | Each | \$358.00 | | 3 | \$1,074.00 | 3 | \$1,074.00 |
| 600 | 2 Year Maintenance Bond | LS | \$5,000.00 | | 1 | \$5,000.00 | 1 | \$5,000.00 |
| CO1 | Exploratory Excavation | HR | \$300.00 | ^, "" | 7.83 | \$2,349.00 | 7.83 | \$2,349.00 |
| CO2 | Septic Repair | LS | \$1,650.00 | ^^ | 1 | \$1,650.00 | 1 | \$1,650.00 |
| CO3 | Private Tile Replacement, 6" Dual Wall Tile | LF | \$9.00 | ^^^ | 350 | \$3,150.00 | 350 | \$3,150.00 |
| CO4 | 3-inch Bedding Rock | Tons | \$24.00 | " | 15 | \$360.00 | 15 | \$360.00 |
| CO5 | 12" Dia. Dual Wall HDPE Tile w/ Rock, Perforated | LF | \$241.00 | "" | 60 | \$14,460.00 | 60 | \$14,460.00 |
| Total | | | | | | \$557,587.50 | | \$557,587.50 |
| *denotes quantity adjustment made in Approved Equivalent #1 | | | | | | | | |
| ** denotes quantity adjustment made in Change Order #2 | | | | | | | | |
| *** denotes quantity adjustment made in Change Order #3 | | | | | | | | |
| ^ denotes quantity adjustment made in Change Order #5 | | | | | | | | |
| ^^ denotes quantity adjustment made in Change Order #7 | | | | | | | | |
| ^^^ denotes quantity adjustment made in Change Order #8 | | | | | | | | |
| " denotes quantity adjustment made in Change Order #9 | | | | | | | | |
| "" denotes quantity adjustment made in Change Order #10 | | | | | | | | |
| """" denotes quantity adjustment made in Change Order #12 | | | | | | | | |
| Prepared by | | | | | | | | |
| Clapsaddle-Garber Associates, Inc. | | | | | | | | |
| Marshalltown, Iowa | | | | | | | | |

APPENDIX D

CONSTRUCTION PROGRESS REPORT

Project Description: Main Tile Repairs to Drainage District 22 Facilities
 Hardin County, Iowa
 Project Nos. DD-6532.2 and 8712

Estimate: No. 7

Date of Contract: August 16, 2018

Completion Date: 9/1/2019 - Updated to 12/1/2019 per Change Order #6 - Updated to 11/30/2020 per Change Order #11

Contractor: Gehrke, Inc.
 Eldora, IA

Owner: Hardin County Trustees
 of Drainage District 22

| | | | |
|------------------------------|---------------------|---|---------------------|
| Base Contract Price | \$549,332.50 | Construction Completed (See Attached Tab) | \$557,587.50 |
| Approved Equivalent #1 | -\$442.00 | | |
| Change Order #2 | \$1,184.00 | Total Amount Earned | \$557,587.50 |
| Change Order #3 | -\$17,992.00 | | |
| Change Order #4 | \$0.00 | Less Retainage | <u>\$0.00</u> |
| Change Order #5 | \$1,749.00 | <i>RELEASE RETAINAGE</i> | |
| Change Order #6 | \$0.00 | | |
| Change Order #7 | \$1,650.00 | | |
| Change Order #8 | \$3,150.00 | Subtotal | \$557,587.50 |
| Change Order #9 | \$360.00 | | |
| Change Order #10 | -\$1,896.00 | Less Previous Payment | <u>\$546,435.75</u> |
| Change Order #11 | \$0.00 | | |
| Change Order #12 | \$20,492.00 | AMOUNT DUE THIS ESTIMATE | \$11,151.75 |
| Total Contract Amount | \$557,587.50 | | |

Requested by Contractor:

 Gehrke, Inc.

 Title

 Date

Recommended by Engineer:

 Heather A. Thomas
 Clapsaddle-Garber Associates, Inc.

 Project Engineer
 Title

 Date

Approved by Owner:

 Hardin County Supervisors

 Title

 Date

Prepared by:
 Clapsaddle-Garber Associates
 Marshalltown, Iowa 50158

CGA Project No. 8712.06
 August 28, 2020

| Tabulation of Construction Quantities | | | | | | | | |
|---|---|------|----------------|-------------------|--------|---------------------|--------|---------------------|
| Main Tile Repairs to Drainage District 22 Facilities | | | | | | | | |
| Hardin County, Iowa | | | | | | | | |
| Period Ending: August 28, 2020 | | | | | | | | |
| Item No | Description | Unit | Unit Bid Price | Adjusted Contract | | Completed | | |
| | | | | Quantity | Amount | Quantity | Amount | |
| 1A | 30" Ø RCP Tile, Perforated - For Tile Replacement | LF | \$53.00 | "" | 6,155 | \$326,215.00 | 6,155 | \$326,215.00 |
| 2A | 30" Ø RCP Tile Road Crossing, Perforated - For Tile Replacement | LF | \$46.00 | "" | 280 | \$12,880.00 | 280 | \$12,880.00 |
| 3A | CCTV Inspection Of Roadway Crossing Tile - For Tile Replacement | LF | \$3.00 | "" | 0 | \$0.00 | - | \$0.00 |
| 4A | Connection To Road Crossing Tile To Remain - For Tile Replacement | Each | \$400.00 | "" | 0 | \$0.00 | - | \$0.00 |
| 5A | Removal And Disposal Of Supplemental Tile - For Tile Replacement | LF | \$6.50 | "" | 6,435 | \$41,827.50 | 6,435 | \$41,827.50 |
| 6A | 24" Ø RCP Tile, Perforated - For Spot Repairs | LF | \$78.00 | ** *** | 564 | \$43,992.00 | 564 | \$43,992.00 |
| 7A | 18" Ø RCP Tile, Perforated - For Spot Repairs | LF | \$67.00 | ***, "" | 521 | \$34,907.00 | 521 | \$34,907.00 |
| 8A | 18" Ø RCP Tile Road Crossing, Perforated - For Spot Repairs | LF | \$134.50 | | 50 | \$6,725.00 | 50 | \$6,725.00 |
| 9A | 24" X 18" RCP Wye - For Spot Repairs | Each | \$600.00 | | 1 | \$600.00 | 1 | \$600.00 |
| 10A | 24" X 18" RCP Reducer - For Spot Repairs | Each | \$800.00 | * | 0 | \$0.00 | - | \$0.00 |
| 11A | Type 2 Concrete Collar - For Spot Repairs | Each | \$358.00 | * ** *** "" "" | 53 | \$18,974.00 | 53 | \$18,974.00 |
| 12A | Connection To Existing Structure | Each | \$2,000.00 | "" | 4 | \$8,000.00 | 4 | \$8,000.00 |
| 13A | Private Tile Connection | Each | \$500.00 | "" | 26 | \$13,000.00 | 26 | \$13,000.00 |
| 14A | Intake, 30" Ø Circular Area | Each | \$1,000.00 | | 5 | \$5,000.00 | 5 | \$5,000.00 |
| 15A | Intake, 12" Ø Hickenbottom | Each | \$1,100.00 | | 5 | \$5,500.00 | 5 | \$5,500.00 |
| 16A | Intake, 8" Ø Hickenbottom | Each | \$525.00 | | 2 | \$1,050.00 | 2 | \$1,050.00 |
| 17A | Cleanup, Shaping, And Permanent Seeding | LS | \$8,300.00 | | 1 | \$8,300.00 | 1 | \$8,300.00 |
| 18A | Seeding Warranty | LS | \$300.00 | | 1 | \$300.00 | 1 | \$300.00 |
| 400 | 18" Ø RCP Tile with Rock Bedding, Perforated - For Spot Repairs | LF | \$67.00 | "" | 22 | \$1,474.00 | 22 | \$1,474.00 |
| 401 | 18" X 18" RCP Wye with Rock Bedding - For Spot Repairs | Each | \$800.00 | | 1 | \$800.00 | 1 | \$800.00 |
| 402 | Type 2 Concrete Collar - For Spot Repairs | Each | \$358.00 | | 3 | \$1,074.00 | 3 | \$1,074.00 |
| 600 | 2 Year Maintenance Bond | LS | \$5,000.00 | | 1 | \$5,000.00 | 1 | \$5,000.00 |
| CO1 | Exploratory Excavation | HR | \$300.00 | ^, "" | 7.83 | \$2,349.00 | 7.83 | \$2,349.00 |
| CO2 | Septic Repair | LS | \$1,650.00 | ^^ | 1 | \$1,650.00 | 1 | \$1,650.00 |
| CO3 | Private Tile Replacement, 6" Dual Wall Tile | LF | \$9.00 | ^^^ | 350 | \$3,150.00 | 350 | \$3,150.00 |
| CO4 | 3-inch Bedding Rock | Tons | \$24.00 | " | 15 | \$360.00 | 15 | \$360.00 |
| CO5 | 12" Dia. Dual Wall HDPE Tile w/ Rock, Perforated | LF | \$241.00 | "" | 60 | \$14,460.00 | 60 | \$14,460.00 |
| Total | | | | | | \$557,587.50 | | \$557,587.50 |
| *denotes quantity adjustment made in Approved Equivalent #1 | | | | | | | | |
| ** denotes quantity adjustment made in Change Order #2 | | | | | | | | |
| *** denotes quantity adjustment made in Change Order #3 | | | | | | | | |
| ^ denotes quantity adjustment made in Change Order #5 | | | | | | | | |
| ^^ denotes quantity adjustment made in Change Order #7 | | | | | | | | |
| ^^^ denotes quantity adjustment made in Change Order #8 | | | | | | | | |
| " denotes quantity adjustment made in Change Order #9 | | | | | | | | |
| "" denotes quantity adjustment made in Change Order #10 | | | | | | | | |
| """" denotes quantity adjustment made in Change Order #12 | | | | | | | | |
| Prepared by | | | | | | | | |
| Clapsaddle-Garber Associates, Inc. | | | | | | | | |
| Marshalltown, Iowa | | | | | | | | |

APPENDIX E

| Item No | Description | Unit | Unit Bid Price | Landowner Share | | County Share | |
|---------|---|------|----------------|-----------------|---------------|--------------|--------------|
| | | | | Quantity | Amount | Quantity | Amount |
| 1A | 30" RCP Tile, Perforated - For Tile Replacement | LF | \$ 53.00 | 6029 | \$ 319,537.00 | 126 | \$ 6,678.00 |
| 2A | 30" RCP Tile Road Crossing, Perforated - For Tile Replacement | LF | \$ 46.00 | 0 | \$ - | 280 | \$ 12,880.00 |
| 3A | CCTV Inspection of Roadway Crossing Tile - For Tile Replacement | LF | \$ 3.00 | 0 | \$ - | 0 | \$ - |
| 4A | Connection to Road Crossing Tile to Remain - For Tile Replacement | EA | \$ 400.00 | 0 | \$ - | 0 | \$ - |
| 5A | Removal and Disposal of Supplemental Tile - For Tile Replacement | LF | \$ 6.50 | 6029 | \$ 39,188.50 | 406 | \$ 2,639.00 |
| 6A | 24" RCP Tile, Perforated - For Spot Repairs | LF | \$ 78.00 | 564 | \$ 43,992.00 | 0 | \$ - |
| 7A | 18" RCP Tile, Perforated - For Spot Repairs | LF | \$ 67.00 | 502 | \$ 33,634.00 | 19 | \$ 1,273.00 |
| 8A | 18" RCP Tile Road Crossing, Perforated - For Spot Repairs | LF | \$ 134.50 | 0 | \$ - | 50 | \$ 6,725.00 |
| 9A | 24" x 18" RCP Wye - For Spot Repairs | EA | \$ 600.00 | 1 | \$ 600.00 | 0 | \$ - |
| 10A | 24" x 18" RCP Reducer - For Spot Repairs | EA | \$ 800.00 | 0 | \$ - | 0 | \$ - |
| 11A | Type 2 Concrete Collar - For Spot Repairs | EA | \$ 358.00 | 53 | \$ 18,974.00 | 0 | \$ - |
| 12A | Connection to Existing Structure | EA | \$ 2,000.00 | 4 | \$ 8,000.00 | 0 | \$ - |
| 13A | Private Tile Connection | EA | \$ 500.00 | 25 | \$ 12,500.00 | 1 | \$ 500.00 |
| 14A | Intake, 30" Circular Area | EA | \$ 1,000.00 | 0 | \$ - | 5 | \$ 5,000.00 |
| 15A | Intake, 12" Hickenbottom | EA | \$ 1,100.00 | 0 | \$ - | 5 | \$ 5,500.00 |
| 16A | Intake, 8" Hickenbottom | EA | \$ 525.00 | 0 | \$ - | 2 | \$ 1,050.00 |
| 17A | Cleanup, Shaping, and Permanent Seeding | LS | \$ 8,300.00 | 0.5 | \$ 4,150.00 | 0.5 | \$ 4,150.00 |
| 18A | Seeding Warranty | LS | \$ 300.00 | 0.5 | \$ 150.00 | 0.5 | \$ 150.00 |
| 400 | 18" RCP Tile with Rock Bedding, Perforated - For Spot Repairs | LF | \$ 67.00 | 22 | \$ 1,474.00 | 0 | \$ - |
| 401 | 18" x 18" RCP Wye with Rock Bedding - For Spot Repairs | EA | \$ 800.00 | 1 | \$ 800.00 | 0 | \$ - |
| 402 | Type 2 Concrete Collar - For Spot Repairs | EA | \$ 358.00 | 3 | \$ 1,074.00 | 0 | \$ - |
| 600 | 2 Year Maintenance Bond | LS | \$ 5,000.00 | 0.91 | \$ 4,550.00 | 0.09 | \$ 450.00 |
| CO1 | Exploratory Excavation | HR | \$ 300.00 | 7.83 | \$ 2,349.00 | 0 | \$ - |
| CO2 | Septic Repair | LS | \$ 1,650.00 | 1 | \$ 1,650.00 | 0 | \$ - |
| CO3 | Private Tile Replacement, 6" Dual Wall Tile | LF | \$ 9.00 | 350 | \$ 3,150.00 | 0 | \$ - |
| CO4 | 3-Bedding Rock | Tons | \$ 24.00 | 15 | \$ 360.00 | 0 | \$ - |
| CO5 | 12" Diameter Dual Wall HDPE Tile w/ Rock, Perforated | LF | \$ 241.00 | 60 | \$ 14,460.00 | 0 | \$ - |

| | | |
|---|----------------------|---------------------|
| TOTAL | \$ 510,592.50 | \$ 46,995.00 |
| TOTAL CONSTRUCTION COSTS \$ 557,587.50 | 91.57% | 8.43% |

APPENDIX F

WAIVER OF LIEN

State of Iowa

Date: 6-2-20

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as Main Tile Repairs to DD #22, in Hardin County, State of Iowa.

Description of work or materials provided: Seeding

Amount \$ 3,500.00 to date shown above. Final Partial

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Forest City, Iowa, this 25 day of June 2020.

Lakeside Construction, Inc.
Company Name

[Signature]
By

Quick Supply

WAIVER OF LIEN

State of Iowa

Date: 6-2-20

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as Main Tile Repairs to DD #22, in Hardin County, State of Iowa.

Description of work or materials provided: Geotextile

Amount \$ 2744.36 to date shown above. Final Partial

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Des Moines, Iowa, this 24th day of June 2020.

Quick Supply
Company Name

Jessica Duff
By

Concrete Inc.

WAIVER OF LIEN

State of Iowa

Date: 6-2-20

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as Main Tile Repairs to DD #22, in Hardin County, State of Iowa.

Description of work or materials provided: Concrete

Amount \$ 16,579.14 to date shown above. Final Partial

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Marshalltown, Iowa, this 2nd day of June 2020.

Concrete Inc
Company Name

[Signature]
By

WAIVER OF LIEN

State of Iowa

Date: 6-2-20

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as Main Tile Repairs to DD #22, in Hardin County, State of Iowa.

Description of work or materials provided: Rock / Aggregates

Amount \$ 209.38 to date shown above. Final Partial

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at _____, Iowa, this _____ day of _____ 20__.

Gehrke Quarries
Company Name

[Signature]
By

Forterra

WAIVER OF LIEN

State of Iowa

Date: 6-2-20

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as Main Tile Repairs to DD #22, in Hardin County, State of Iowa.

Description of work or materials provided: Pipe / Fittings

Amount \$ 238,105.86 to date shown above. Final Partial

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Myrtle Grove, ^{Mo}Iowa, this 2 day of June 2020.

Forterra
Company Name

By [Signature]

Brown Supply Co.

WAIVER OF LIEN

State of Iowa

Date: 6-2-20

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as Main Tile Repairs to DD #22, in Hardin County, State of Iowa.

Description of work or materials provided: Pipe + Fittings

Amount \$ 4,108.03 to date shown above. Final Partial

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Ames, Iowa, this 2nd day of June 2020.

Brown Supply Co
Company Name

[Signature]
By

Martin Marietta

WAIVER OF LIEN

State of Iowa

Date: 6-2-20

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as Main Tile Repairs to DD #22, in Hardin County, State of Iowa.

Description of work or materials provided: Rock / Aggregates

Amount \$ 883.61 to date shown above. Final Partial

For and In consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Dallas, ^{Texas}~~Iowa~~, this 5th day of June 2020

Martin Marietta
Company Name

[Signature]
By