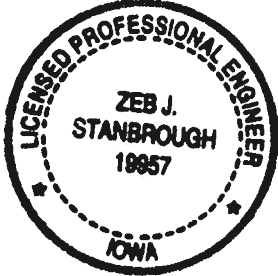





**SUPPLEMENT TO  
ENGINEER'S REPORT  
ON IMPROVEMENTS TO  
THE MAIN TILE  
DRAINAGE DISTRICT  
NO. 3  
HARDIN COUNTY,  
IOWA**

	<p>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</p>
	<p><i>Zeb J. Stanbrough</i>      <i>9-3-2021</i></p> <p>ZEB J. STANBROUGH, P.E.      DATE</p> <p>LICENSE NUMBER: 19957 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2021 PAGES OR SHEETS COVERED BY THIS SEAL: SHOWN ON TABLE OF CONTENTS</p>

	<p><b>CLAPSADDLE-GARBER ASSOCIATES OFFICE LOCATIONS</b></p> <p>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</p>	<p><b>Project Office</b> 739 Park Avenue Ackley, IA. 50601 Phone: 641-847-3273 Fax: 641-847-2303</p>
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**Supplement to Engineer's Report on Improvements  
to the Main Tile, Drainage District No. 3  
Hardin County, Iowa**

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# Supplement to Engineer's Report on Improvements To the Main Tile, Drainage District No. 3 Hardin County, Iowa

## 1.0 INTRODUCTION

- SCOPE OF WORK – The District Trustees, requested Clapsaddle-Garber Associates to investigate and report concerning improvements to the Main Tile of Drainage District No. 3. At the Public Hearing for the Engineer's report on repairs or improvements to Main Tile of Drainage District 3 held on August 16, 2021, the original Engineer's Report was discussed and reviewed by the District Trustees. As a result of this meeting, the District Trustees requested Clapsaddle-Garber Associates to move ahead with a supplemental report concerning reversion of a portion of the Main tile back to an open ditch.
- LOCATION – The area of investigation was limited to a portion of Main tile. Said Main tile is located in Sections 26, 27, and 35, Township 89 North (T89N), Range 21 West (R21W), Hardin County, Iowa. Specifically, the downstream limit of investigation for the Main tile is from the tile outlet in Section 35 approximately 70 feet south of 150<sup>th</sup> Street and 400 feet east of JJ Avenue. Going upstream, the tile then proceeds northwesterly and then crosses 150<sup>th</sup> Street approximately 220 feet east of JJ Avenue. The tile then continues northwesterly across Section 26 then crosses JJ Avenue approximately 75 feet north of 150<sup>th</sup> Street. The tile then continues northwesterly for approximately ½ mile across Section 26 before turning westerly across Section 27, approximately ¼ mile west of JJ Avenue and a ⅝ mile south of 140<sup>th</sup> Street. The tile then proceeds westerly across Section 27 for approximately ½ mile before turning northwesterly, with the upstream limits of the investigation ending at the south railroad right of way in Section 27, approximately ¾ mile west of JJ Avenue and ⅝ mile south of 140<sup>th</sup> Street. For reference, a map showing the limits of investigation is included in Appendix F.

2.0 INVESTIGATION –The field investigation for this report was performed at the request of the Drainage District Trustees. Said investigation was limited to visual observation only along with survey data and pictures gathered. No tile blowouts could be located as the entire length of the investigation area was covered with tall vegetation, hindering the investigation. For reference, a copy of the pictures is included in Appendix E and a map showing the investigation limits is included in Appendix F.

3.0 IMPROVEMENT METHOD – To improve the drainage capacity for the existing Main tile, the following option is the most straight forward available:

Open Ditch

- Remove and replace 5,682± feet of the Main tile with a Main Open Ditch.
- Typically, the Main Open Ditch would be in the same location as the existing Main tile in order to locate and outlet private tile and district lateral tile. For reference, the route and locations are shown on the map included in Appendix F.
- Outlet all private and lateral tile encountered to discharge into the Main Open Ditch.

With the above-mentioned possible improvement, the following should be noted in addition to the notes in repair methods section:

- This option would probably involve obtaining of right of way.
- The replacement of the Main tile with a Main Open Ditch increases drainage capacity, which has traditionally fit the Iowa Code definition of improvement. However, the replacement is not being suggested to increase drainage capacity, but is being offered solely to extend the lifecycle of the district facility and the original design for the Main in this area was an open ditch. Legal counsel should be consulted to provide advice concerning this.
- If this option is deemed a repair by legal counsel, repairs have historically been viewed as not having an impact on jurisdictional wetlands. As such, individual landowners should consult with applicable staff at the Hardin County NRCS offices to verify the existence of said jurisdictional wetlands and that there will be no impact on them.
- If this option is deemed an improvement by legal counsel, improvements have historically been viewed as having an impact on jurisdictional wetlands. As such, individual landowners should consult with applicable staff at the Hardin County NRCS offices to verify the existence of said jurisdictional wetlands and what said impact may be on them.

If legal counsel considers the above option a repair, it is our opinion that the following is applicable. A hearing will be required. Per Iowa Code Chapter 468.126.1.g, the right of remonstrance does not apply to the proposed repairs.

If legal counsel considers the above option an improvement, it is our opinion that the following is applicable. A hearing will be required. Per Iowa Code Chapter 468.126.4.e, the right of remonstrance may apply to the proposed improvements.

4.0 OPINION OF PROBABLE CONSTRUCTION COSTS – Using the above method of improvement, an itemized list of project quantities and associated opinions of probable construction cost for each option were compiled and are included in Appendix G of this report. A summary of said costs are as follows:

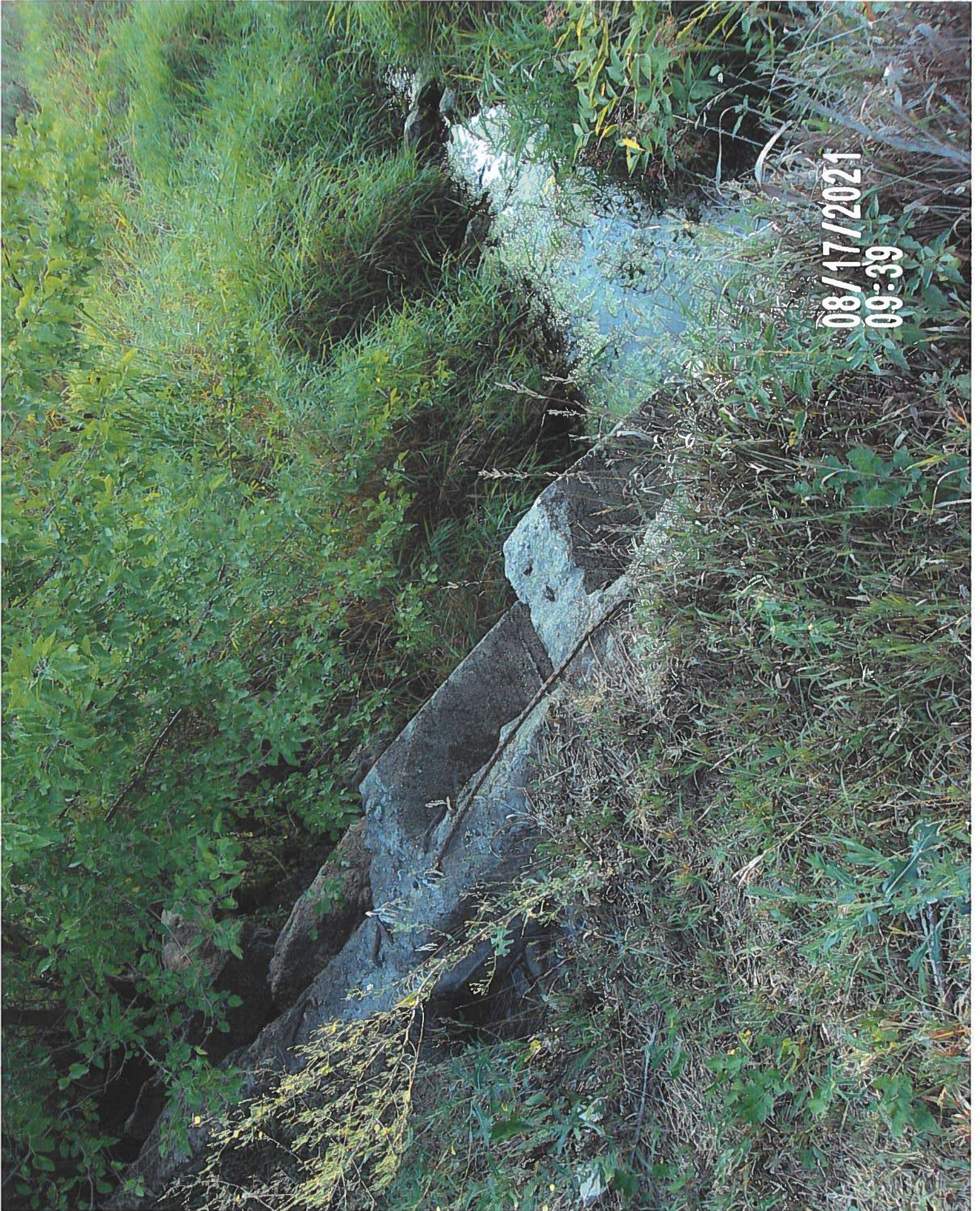
<b>METHOD</b>	<b>TOTAL COST</b>	<b>CONSTRUCTION COST</b>	<b>ROAD CROSSING COST</b>
Improvement - Open Ditch	\$1,330,240.94	\$466,490.31	\$863,750.63

It should be noted that said costs include materials, labor, and equipment supplied by the contractor to complete the necessary repair or improvement and include applicable engineering, construction observation, and project administration fees by Clapsaddle-Garber Associates. However, said costs do not include any interest, legal fees, county administrative fees, crop damages, other damages, previous repairs, engineering fees to date, wetland mitigation fees, or reclassification fees (if applicable). As always, all costs shown are opinions of Clapsaddle-Garber Associates based on previous lettings on other projects. Said costs are just a guideline and are not a guarantee of actual costs.

5.0 RECOMMENDATIONS – There is a need to perform the above-mentioned actions. The actions would remove the current restrictions to the Main tile and extend the lifespan of the same. Therefore, it is recommended that the District Trustees, should take action to accomplish the following:

- Approve the Supplement Engineer’s Report as prepared by Clapsaddle-Garber Associates.
- Seek advice from legal counsel as to whether the Open Ditch is a repair or improvement.
- Hold the required hearing on the proposed improvement.
- Adopt of the recommendations of the Supplement Engineer’s Report.
- Seek advice from NRCS and the County Engineer to see if an alternate route from the Main Open ditch around the intersection of JJ Avenue and 150<sup>th</sup> Street is acceptable.
- Direct plans and specifications for the proposed improvement be prepared by Clapsaddle-Garber Associates.
- Proceed with receiving bids from interested contractors by Clapsaddle-Garber Associates.
- Award contract to the lowest responsible contractor.
- If desired or required by Iowa Code, proceed with reclassification proceedings after seeking legal advice concerning the same.

Top Old HOWL @ TIVE OUTLET



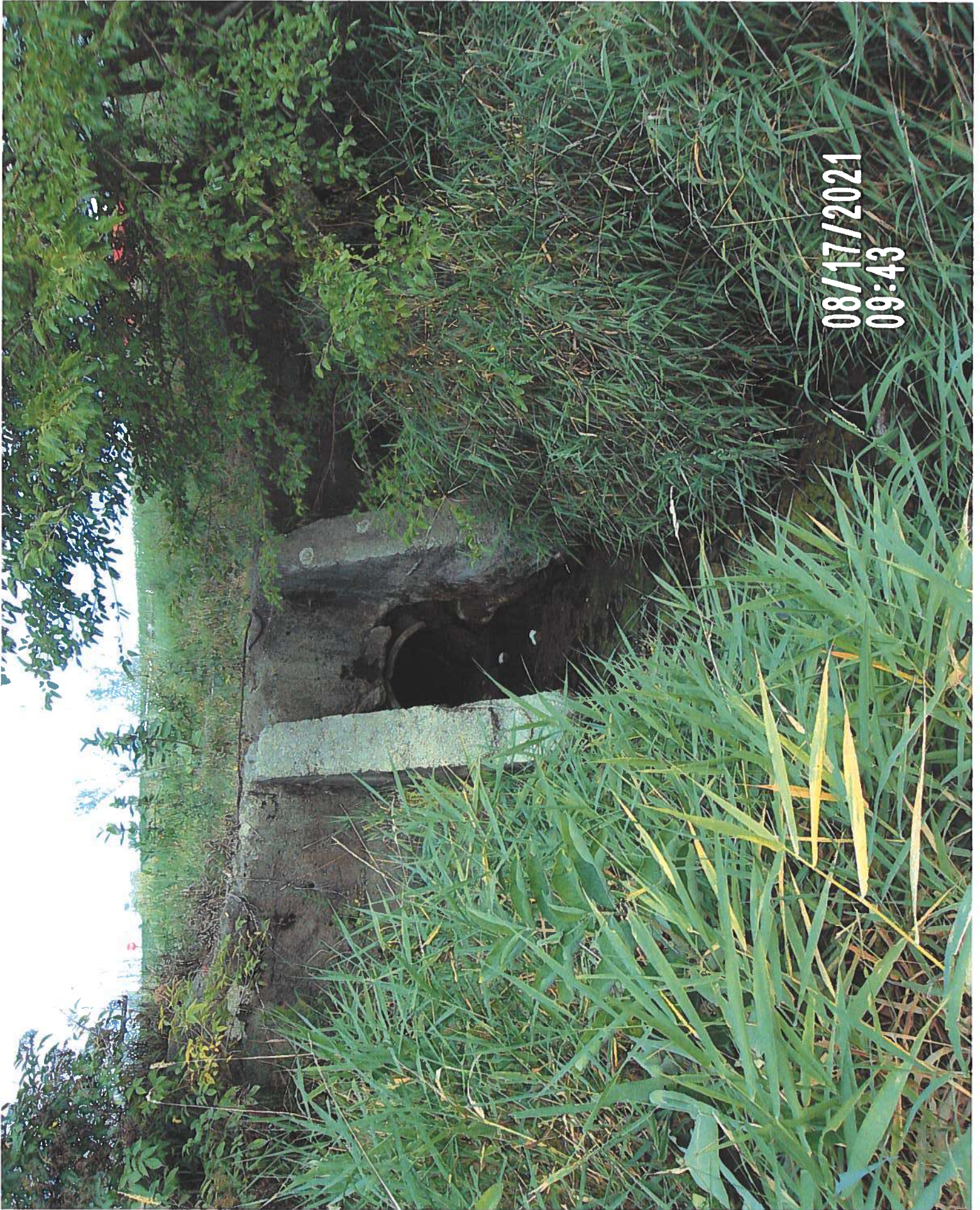
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LOOKING DOWN @ OUTLET



TIDE OUTLET DD3 MAIN

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09:43





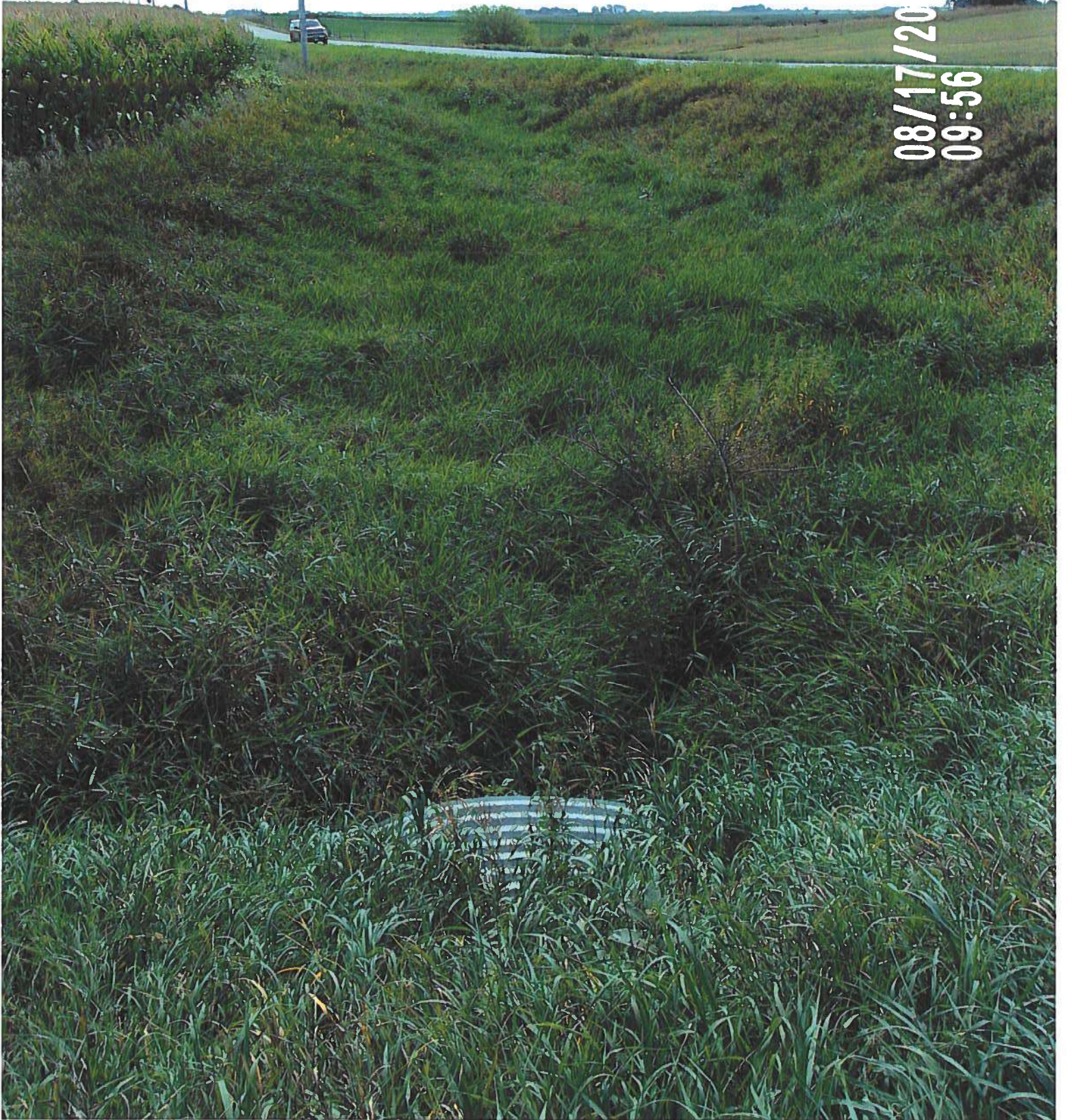
LOOKING UPSTREAM @ JB AVE.



08/17/2021  
09:56

Looking downstream From JJ Ave.

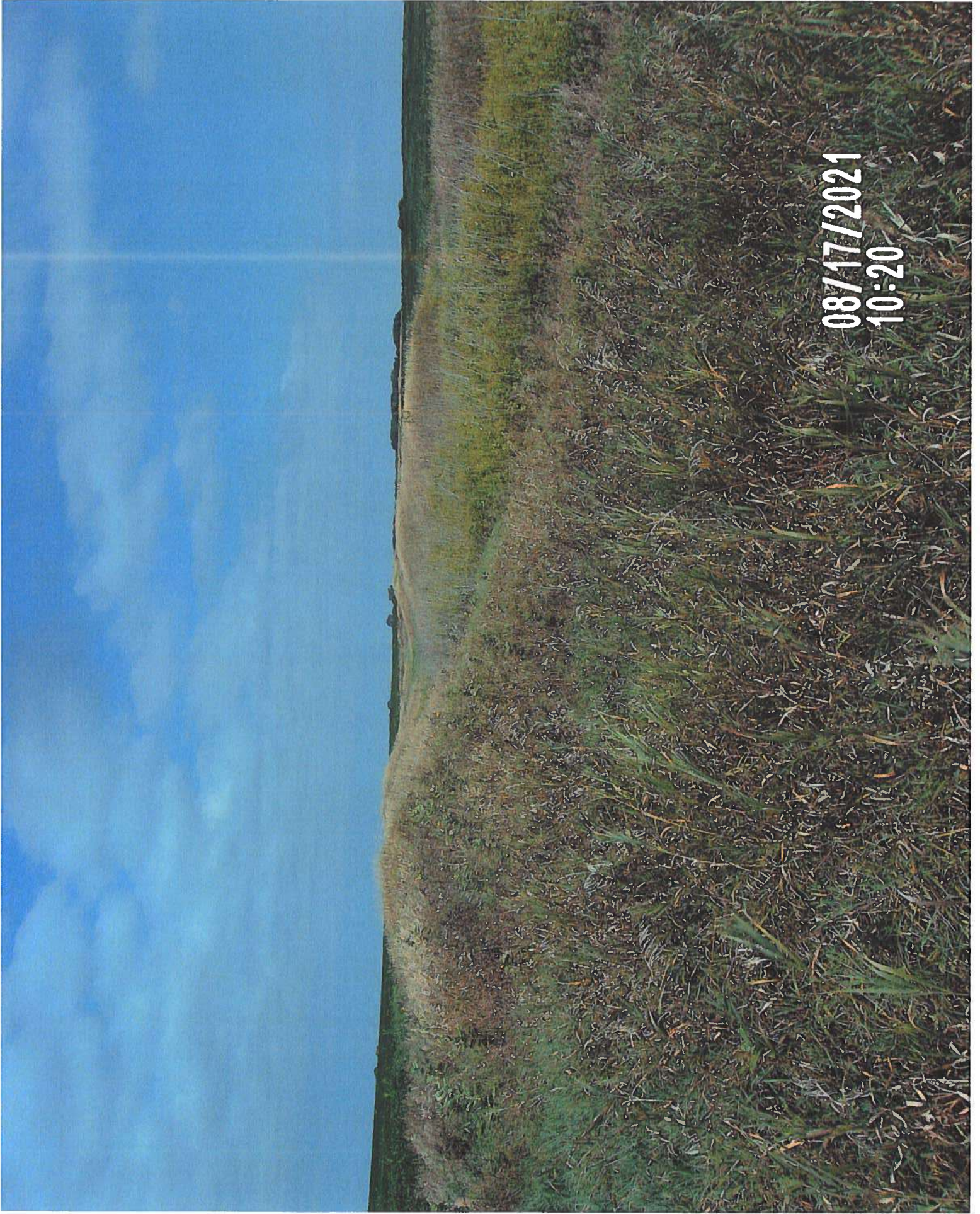
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LOOKING UPSTREAM

08/17/2021  
10:17

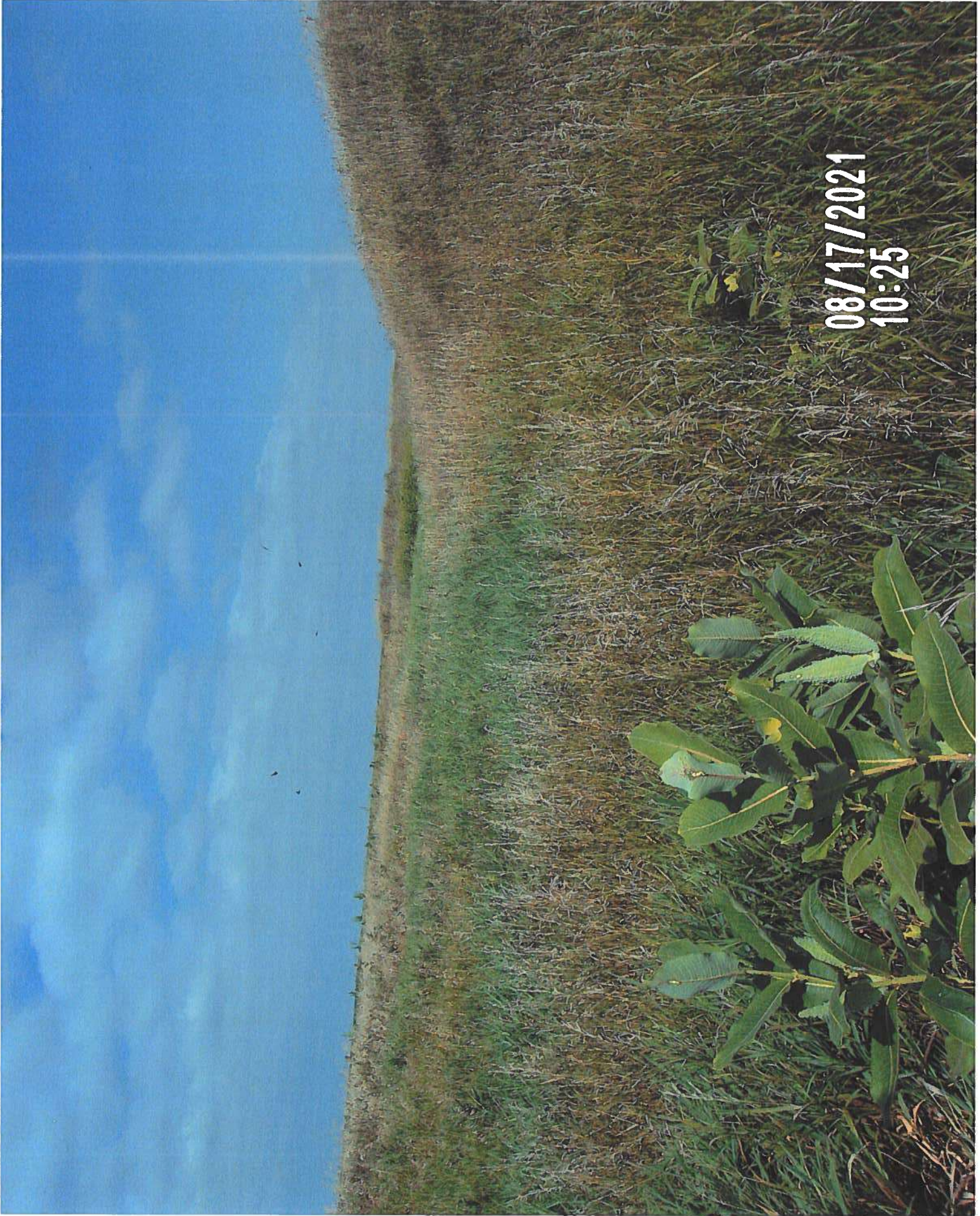




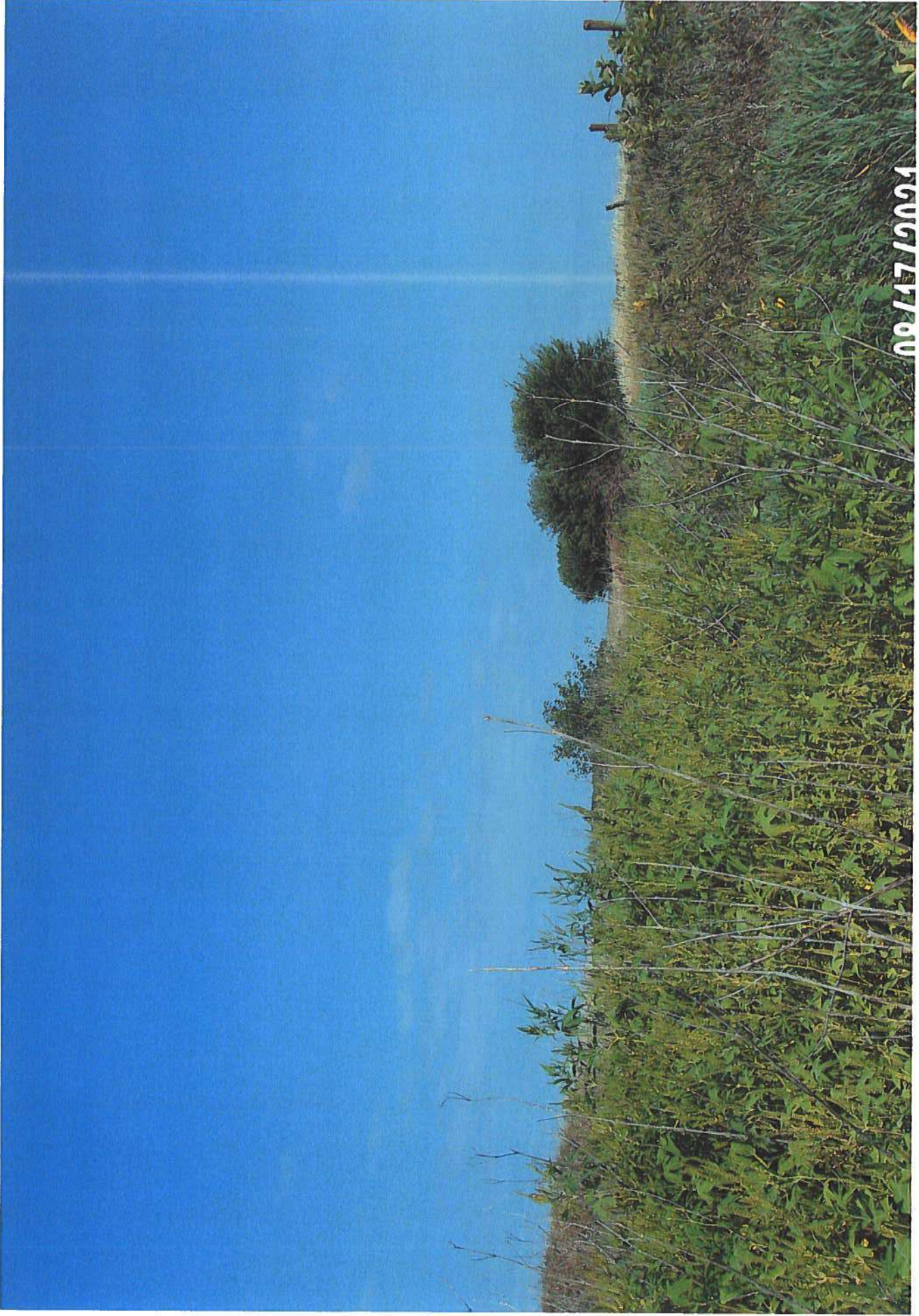
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08/17/2021  
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08/17/2021  
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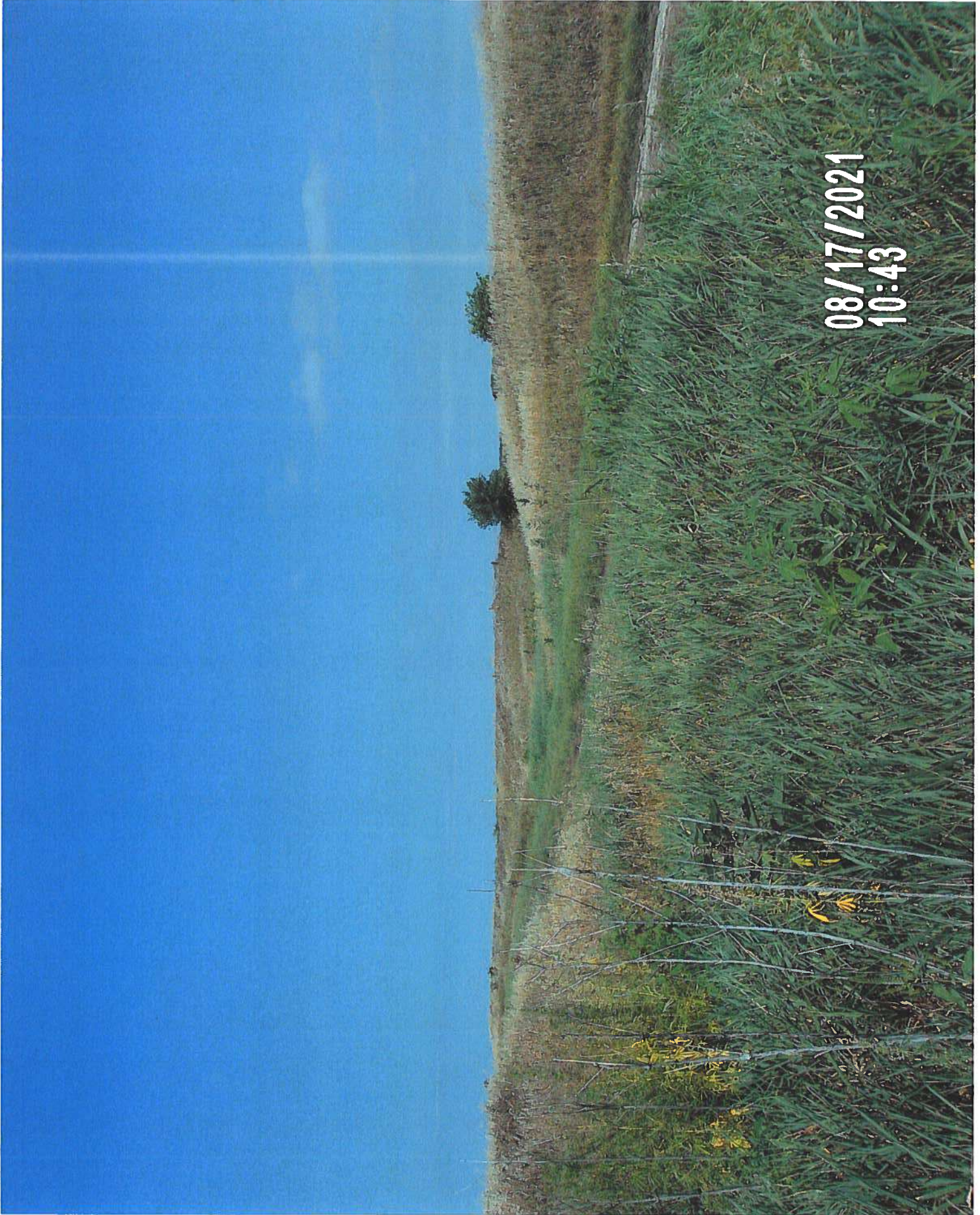
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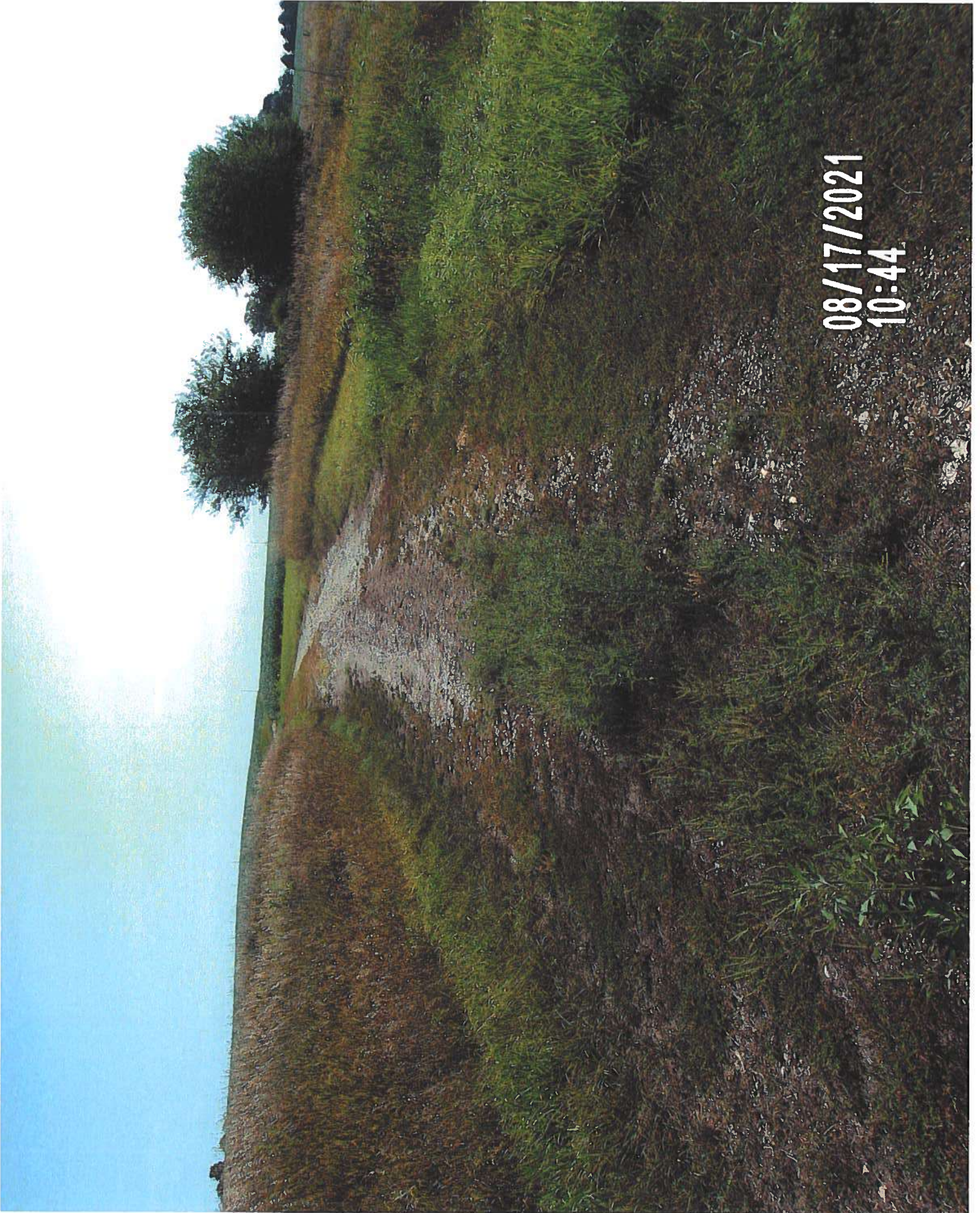


FIELD DRIVE (E-W) SOUTH OF TURN TO WEST



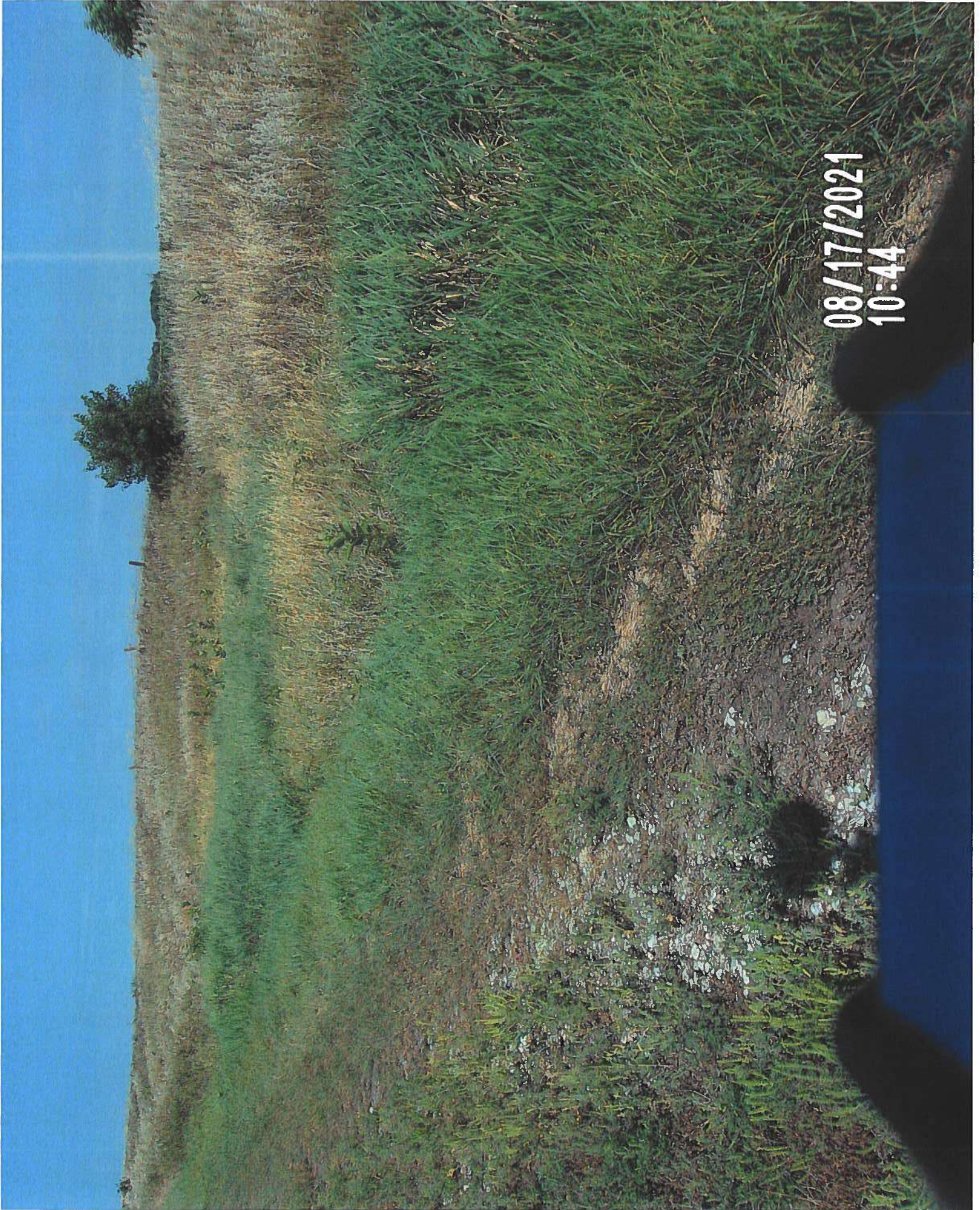
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LOOKING EAST @ DRIVE



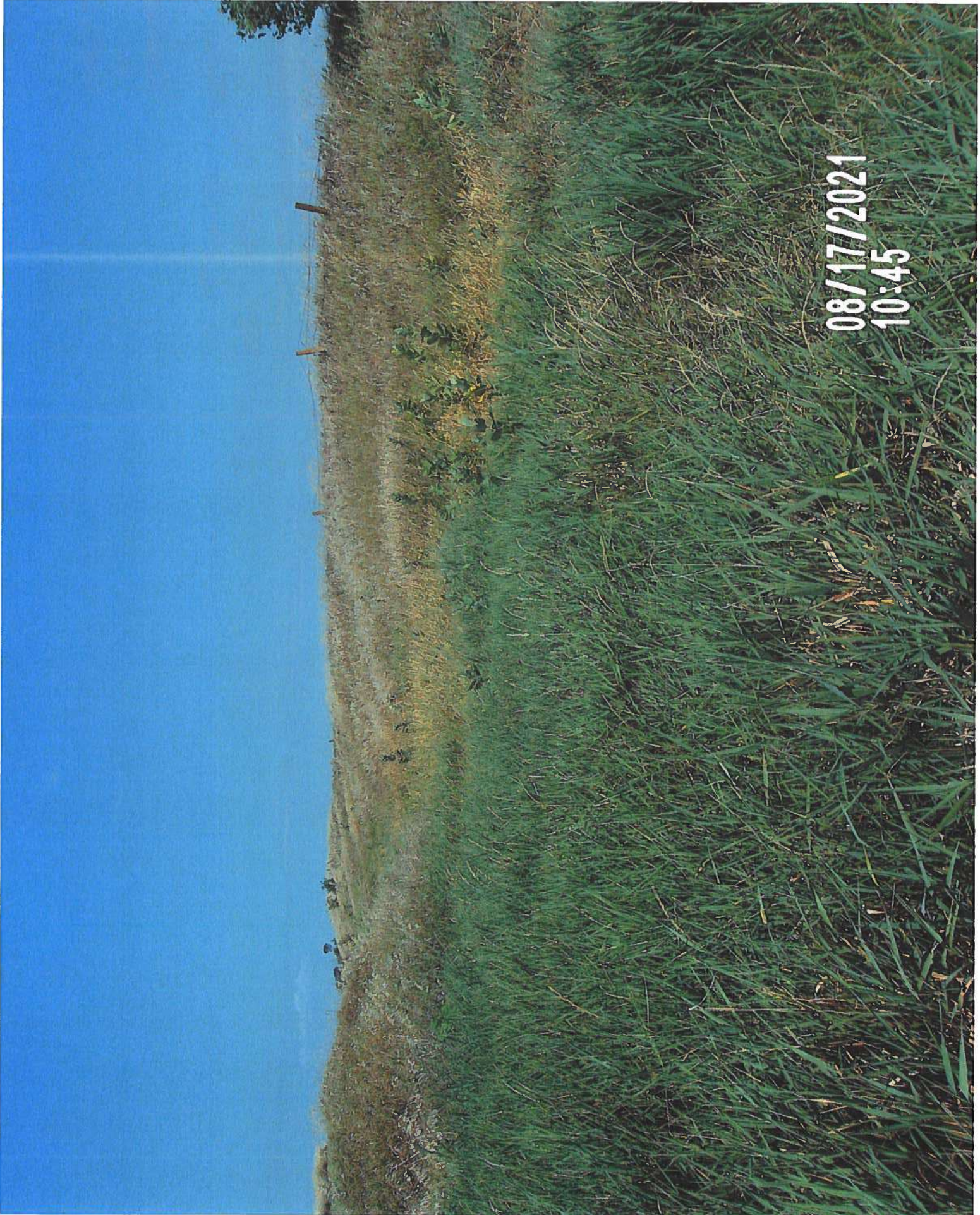
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STANDING ON DRIVE LOOKING NW @ TURN TO WEST



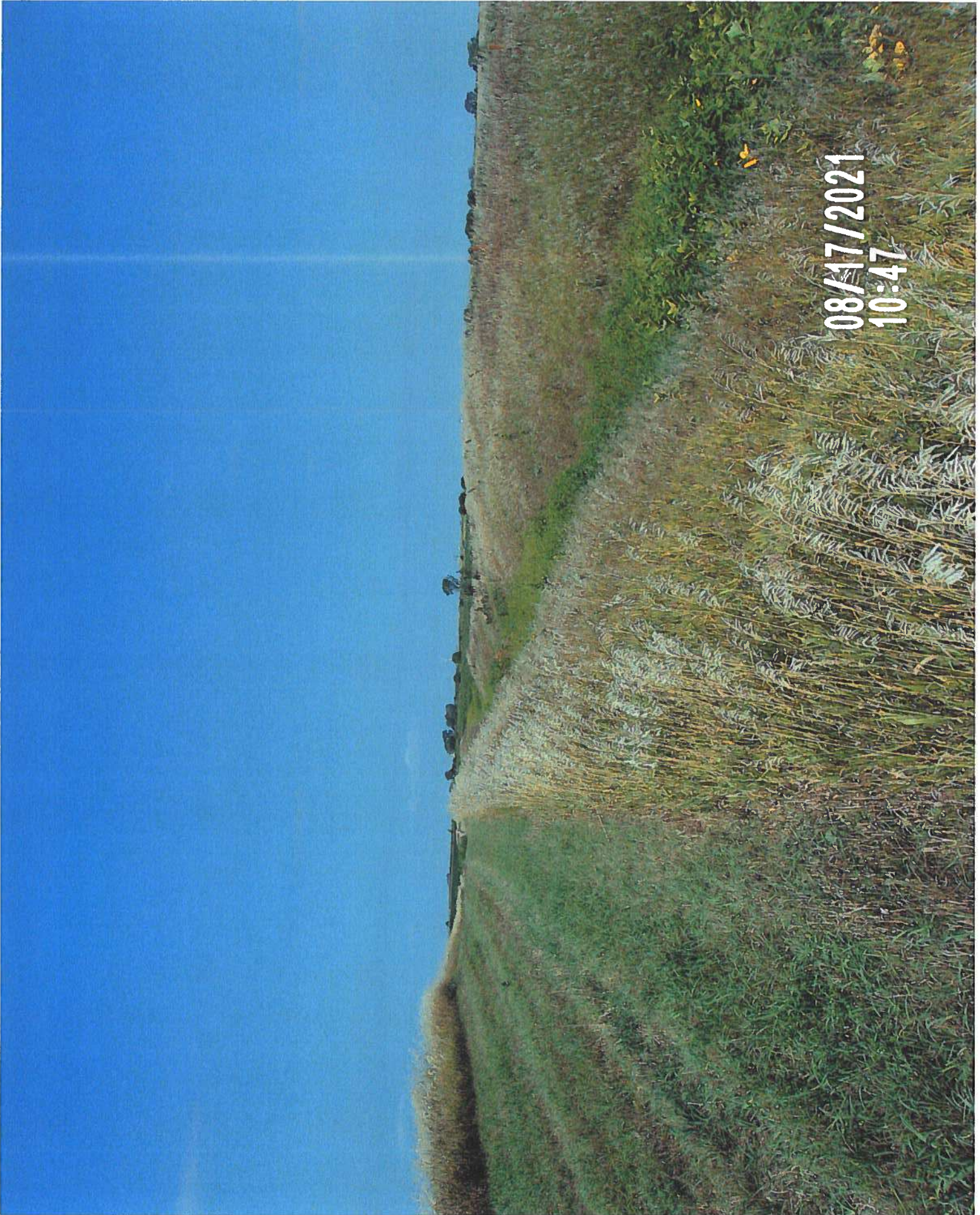
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LOOKING due West, upstream

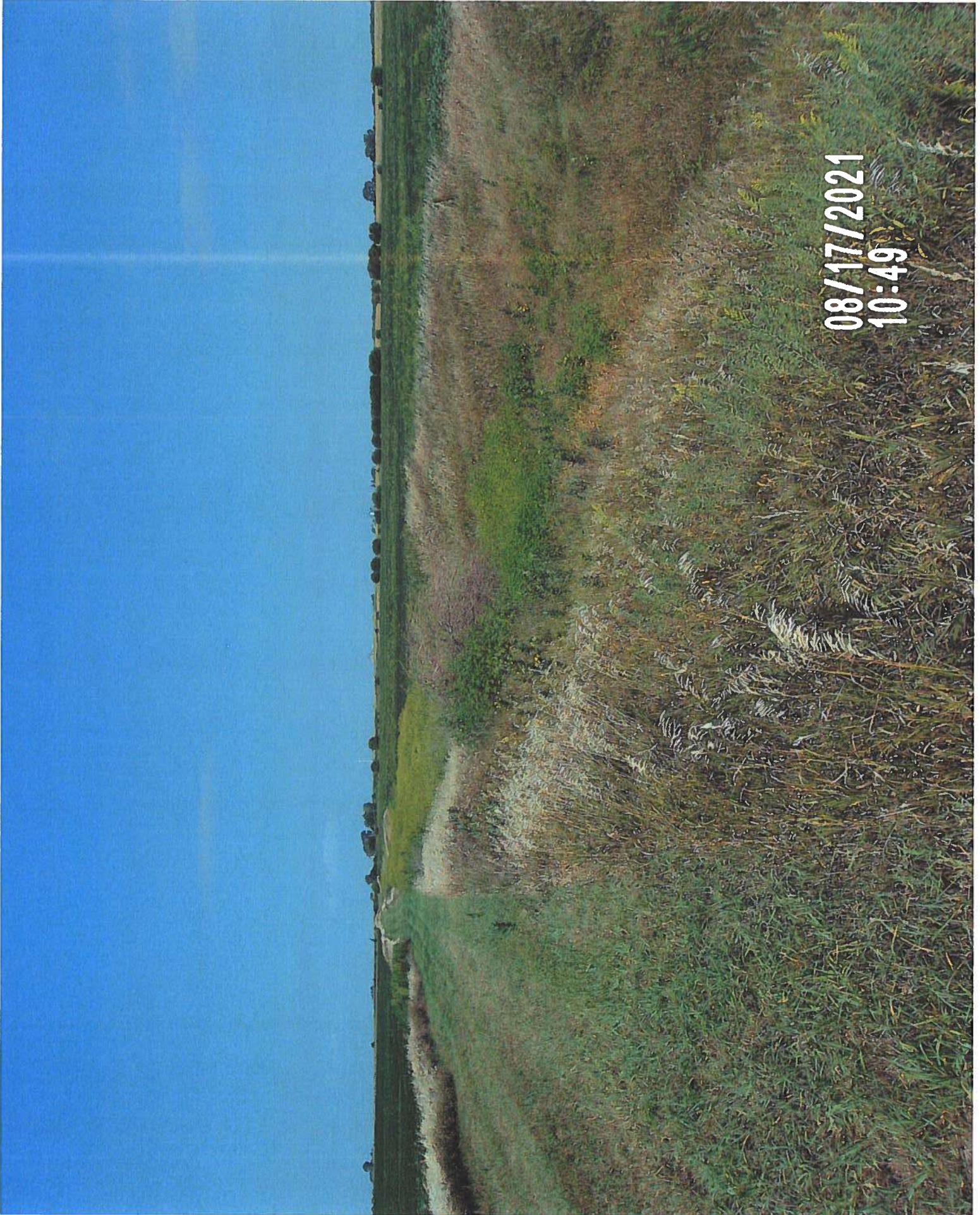


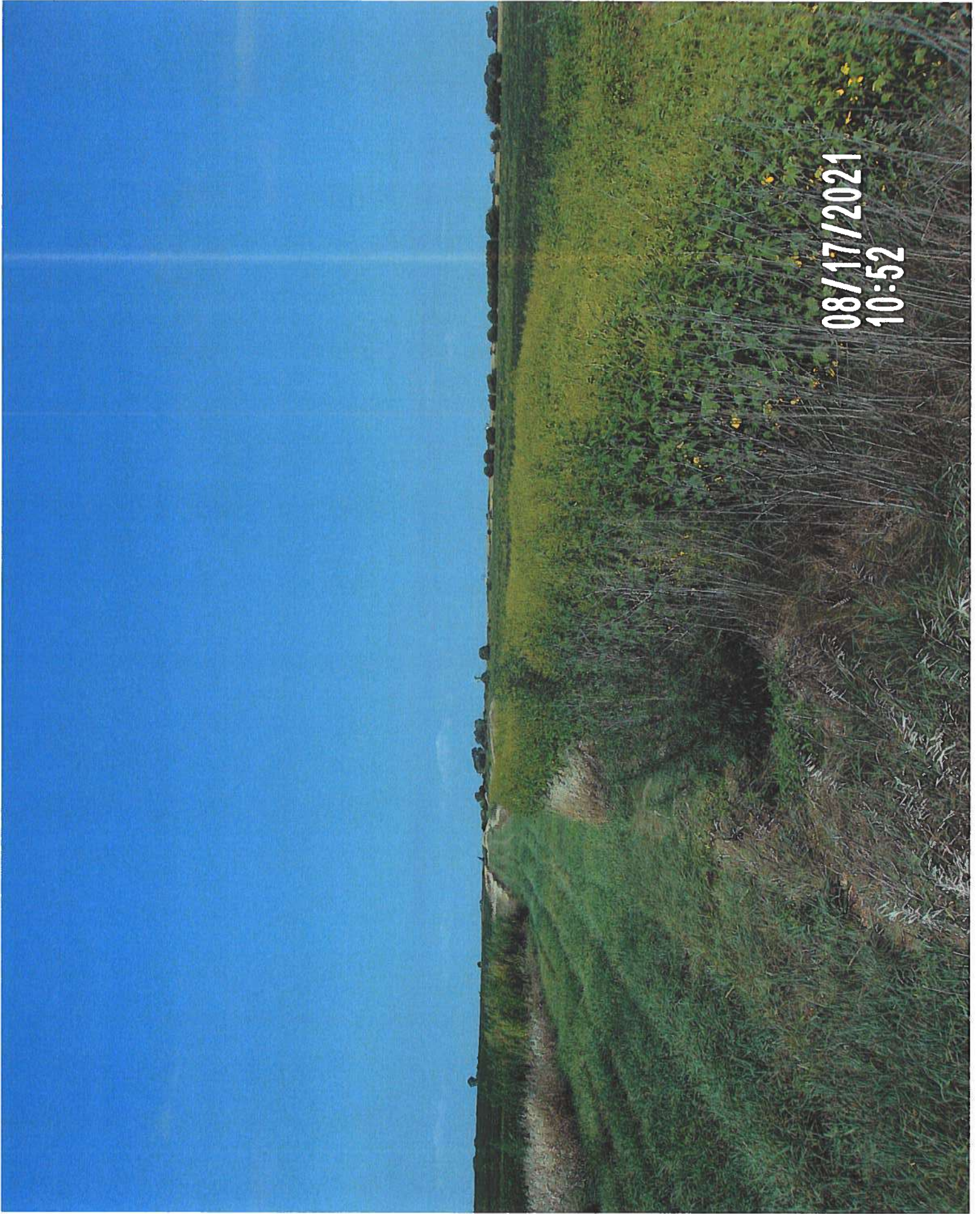
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10:49





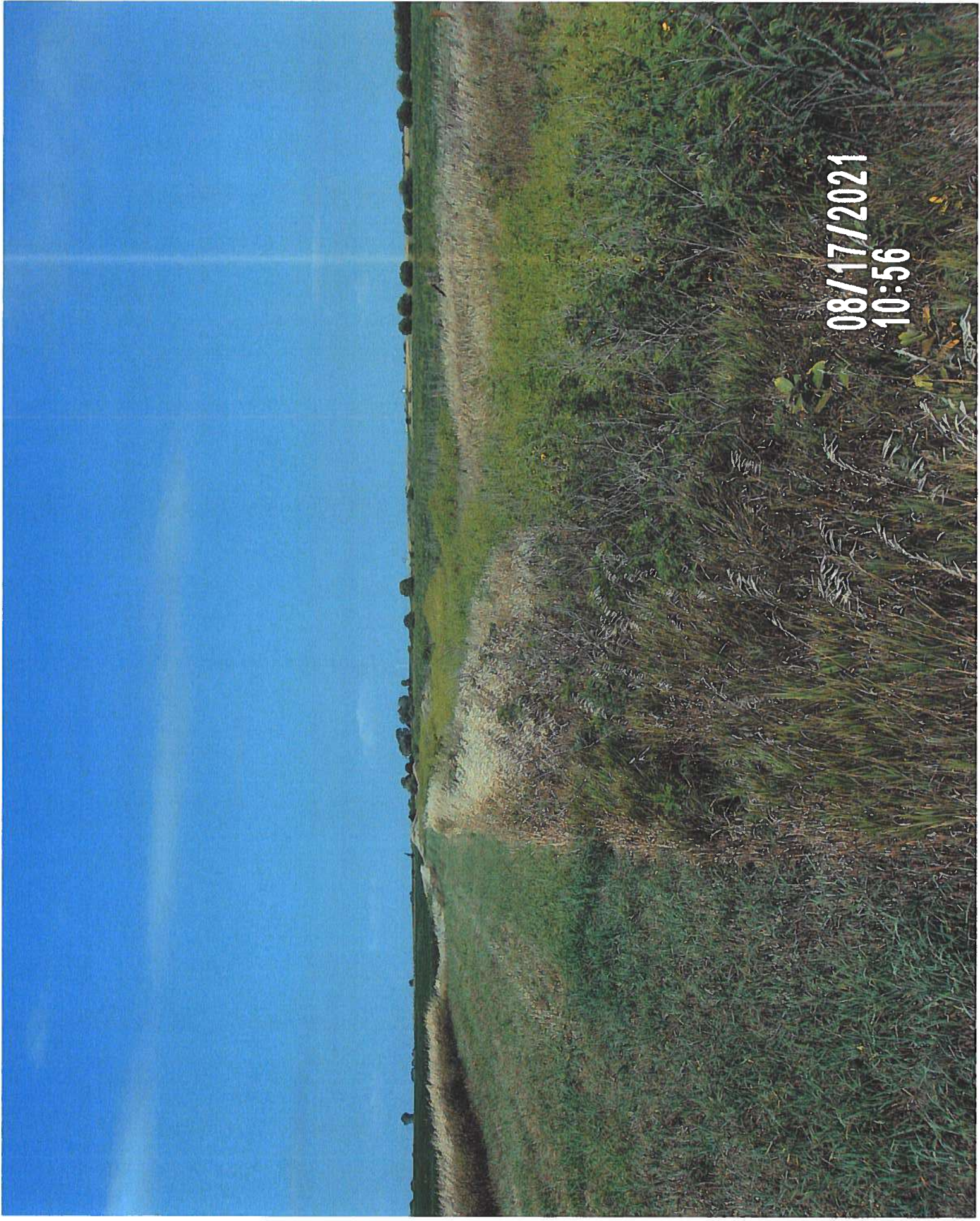
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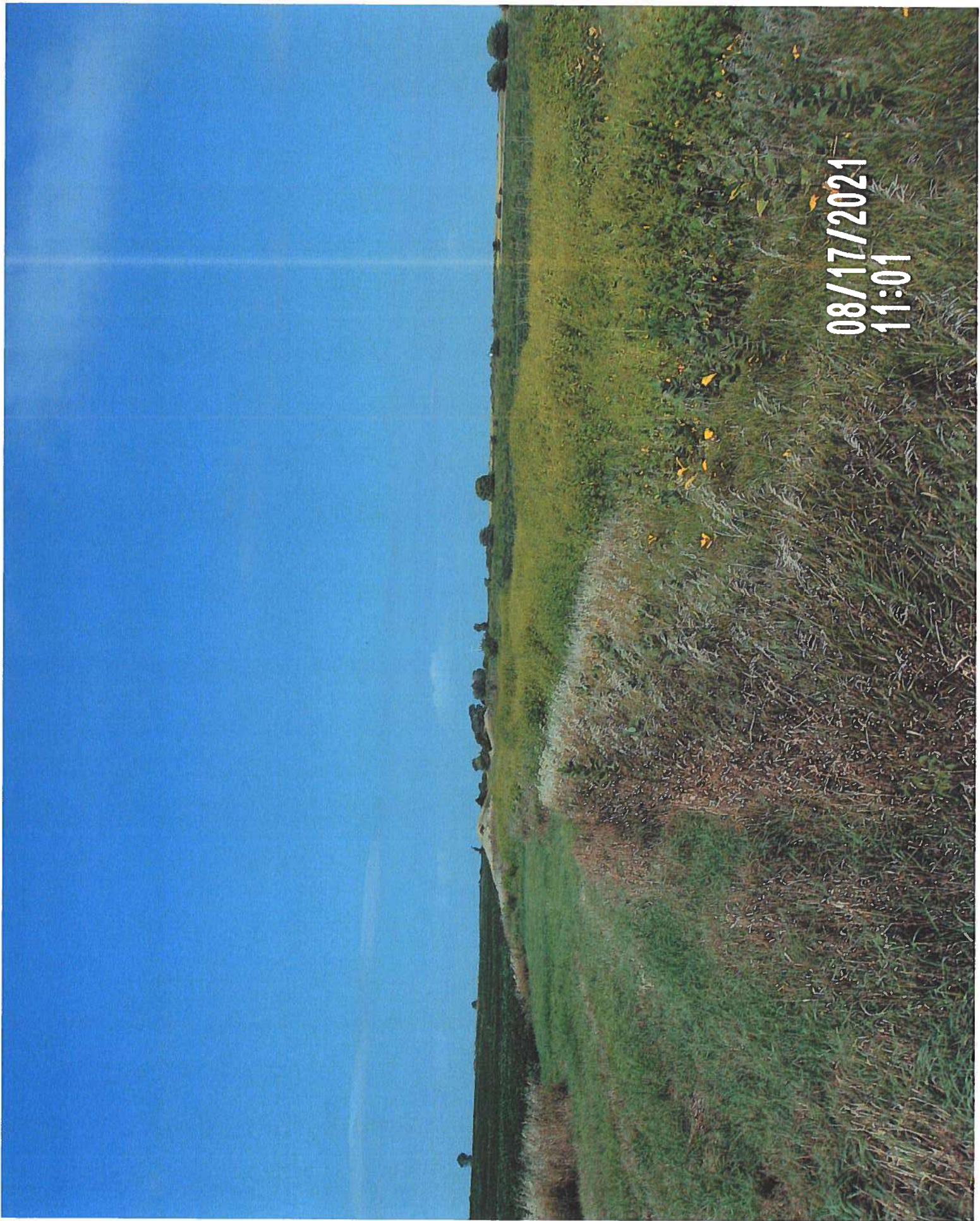
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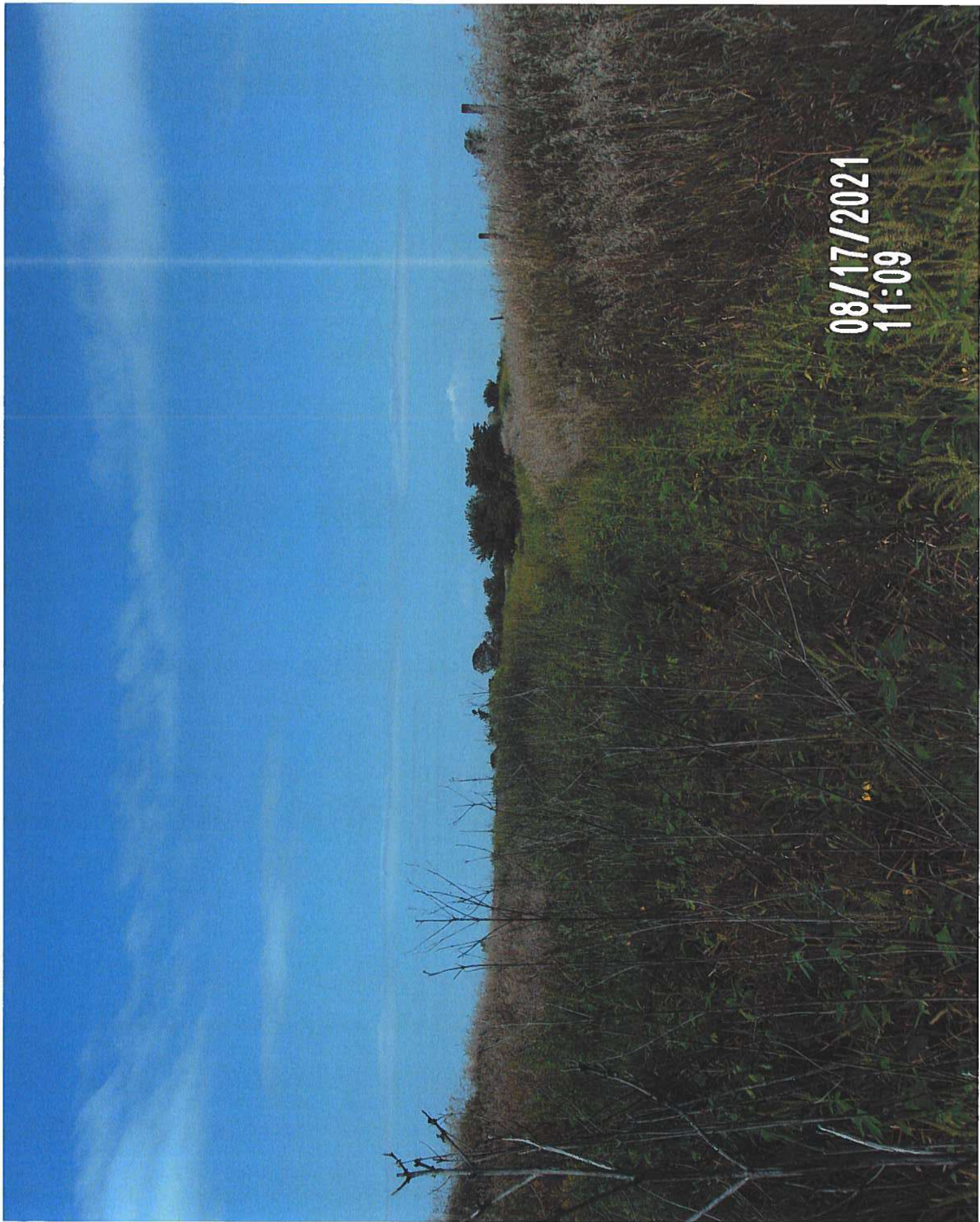
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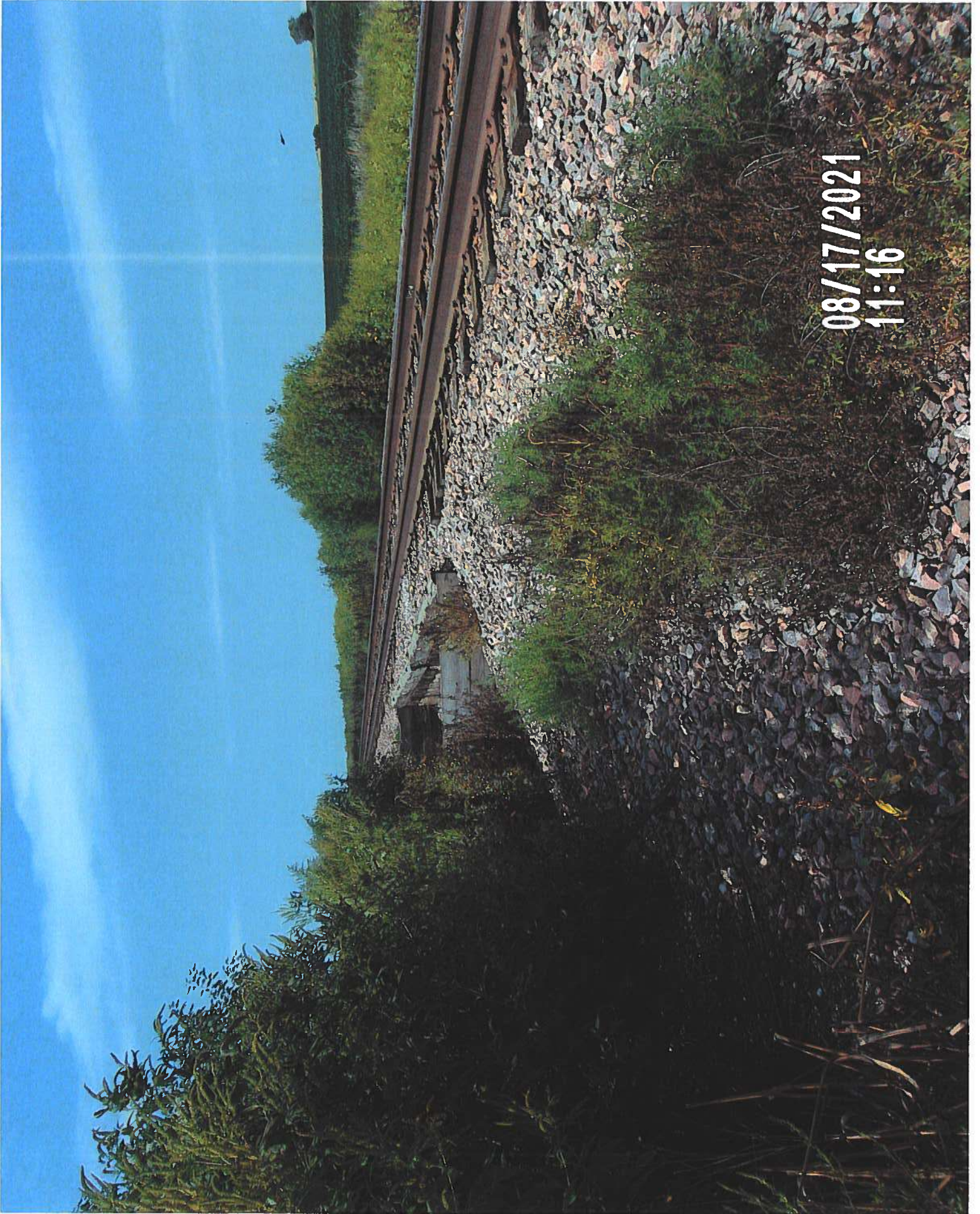
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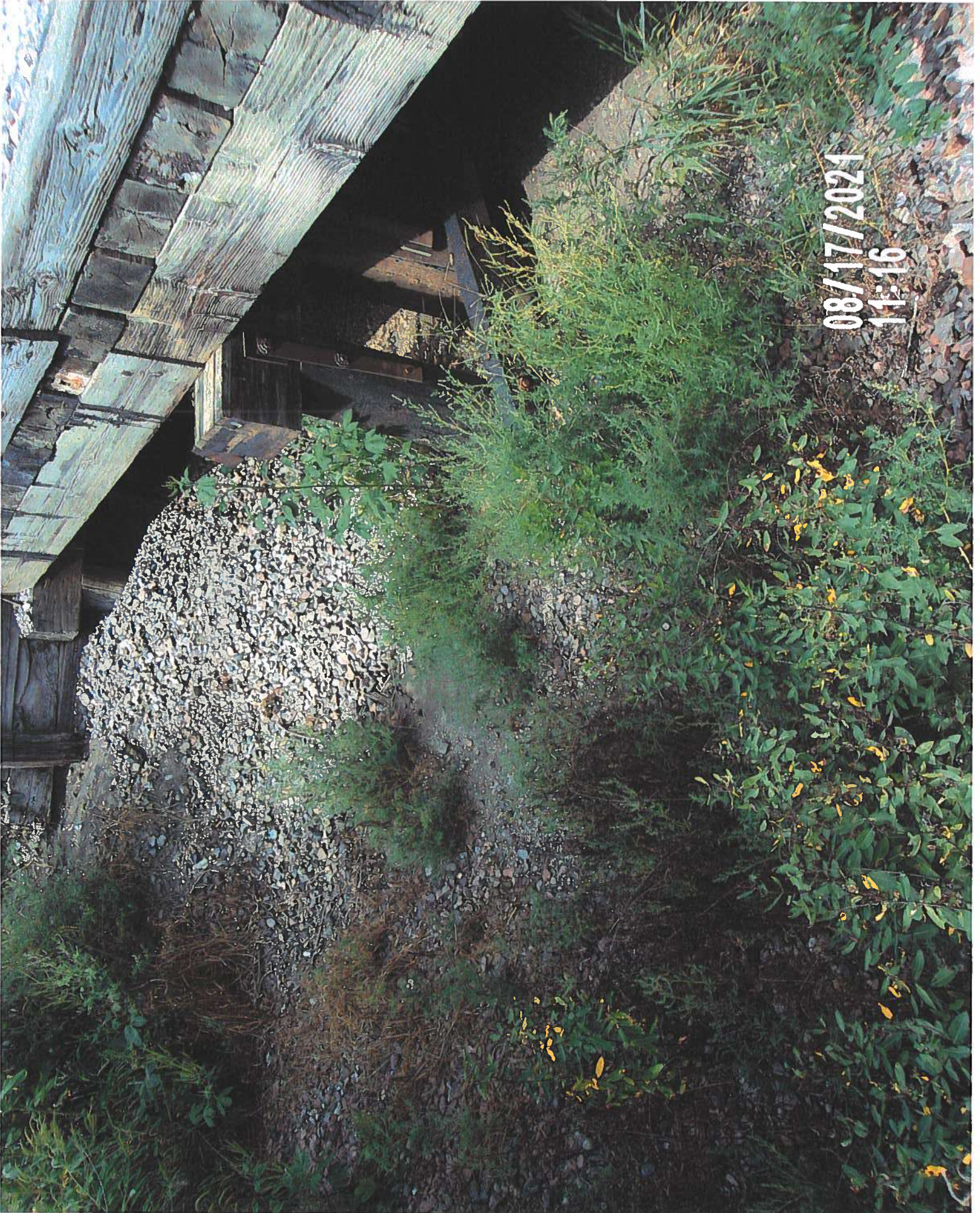


SOUTH SIDE OF RR BRIDGE



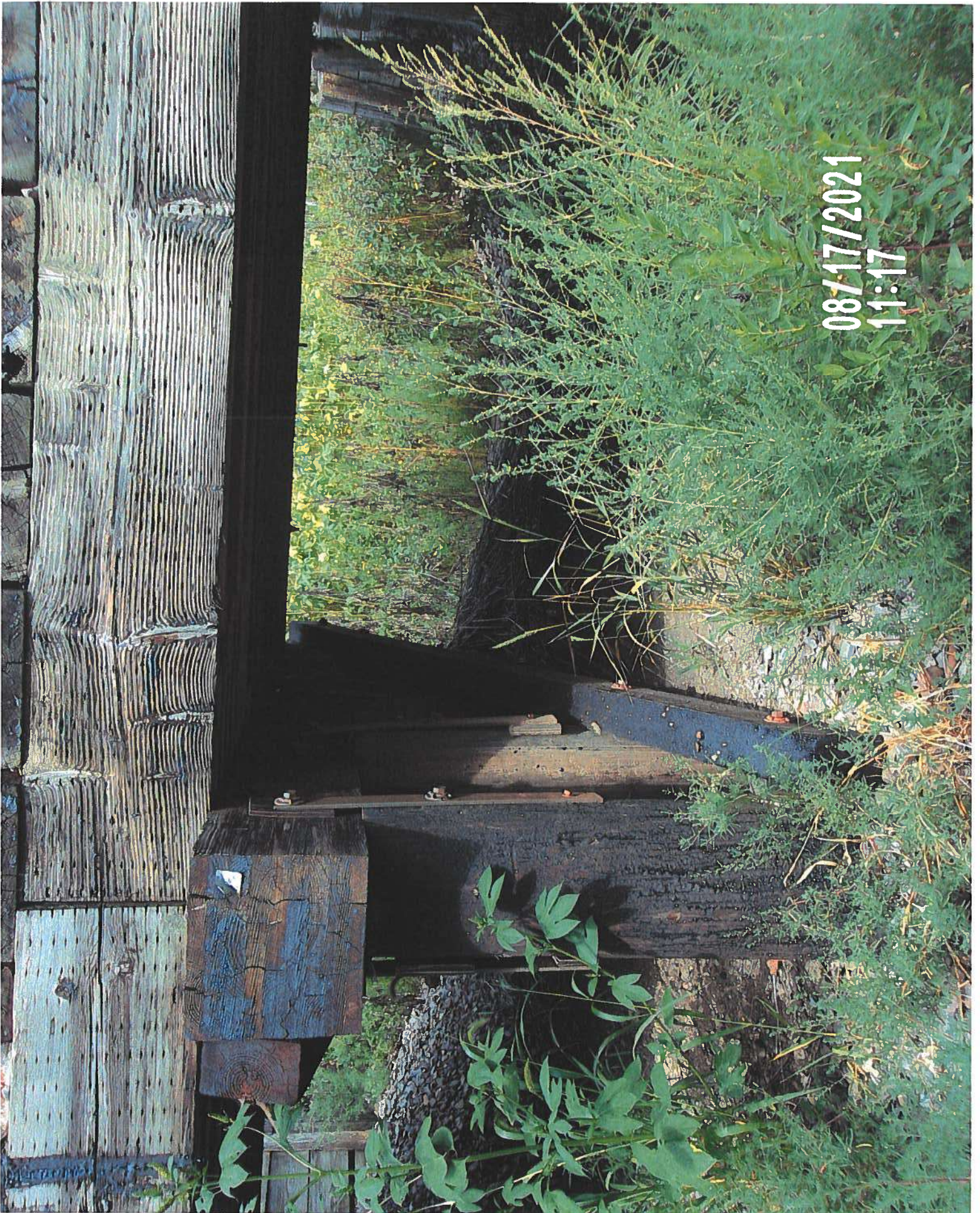
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SOUTH SIDE RR BRIDGE



08/17/2021  
11:16

SE BENT, LOOKING UPSTREAM



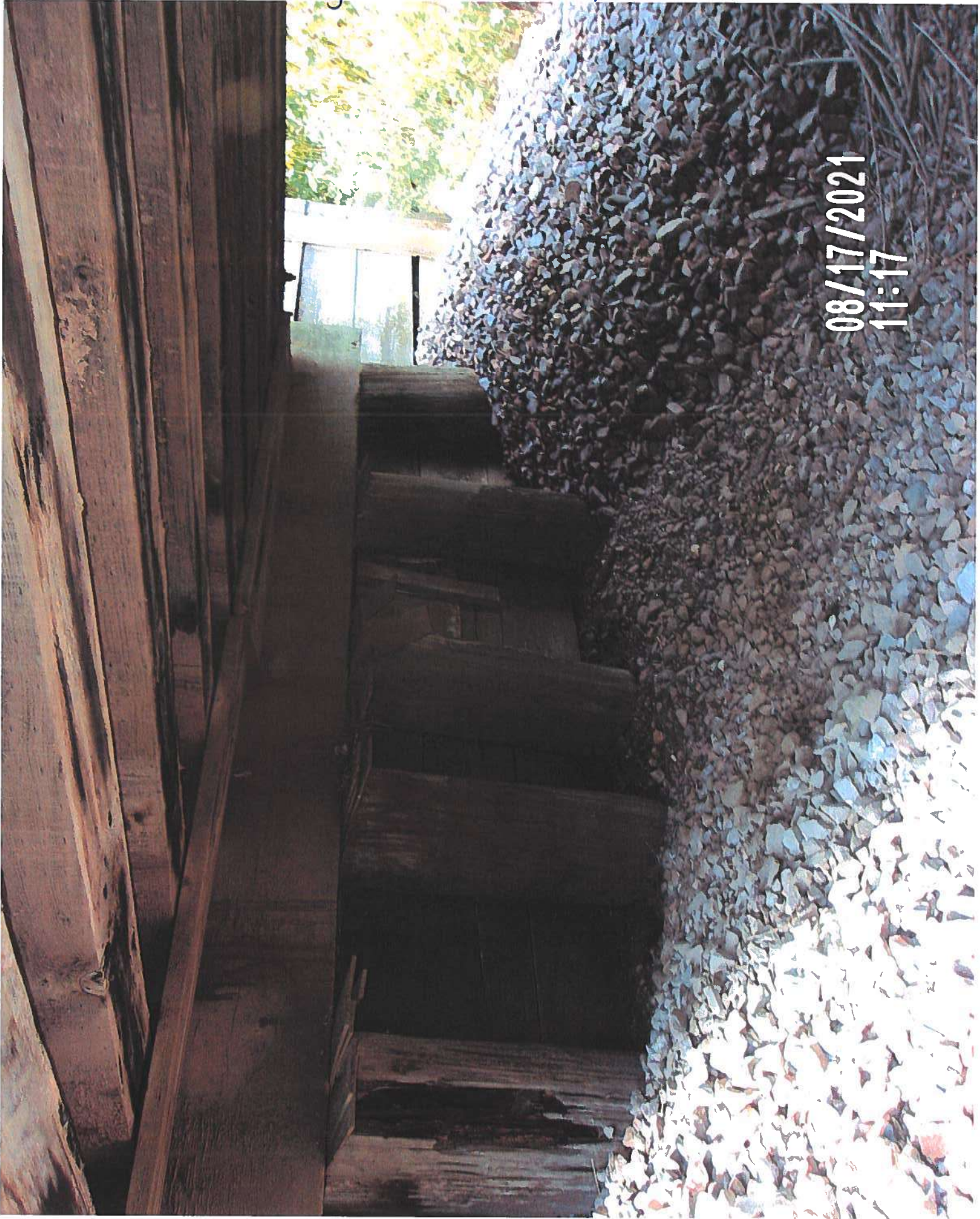
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EASTERLY ABUTMENT





WESTERLY ACQUIMENT, BAD SHADE



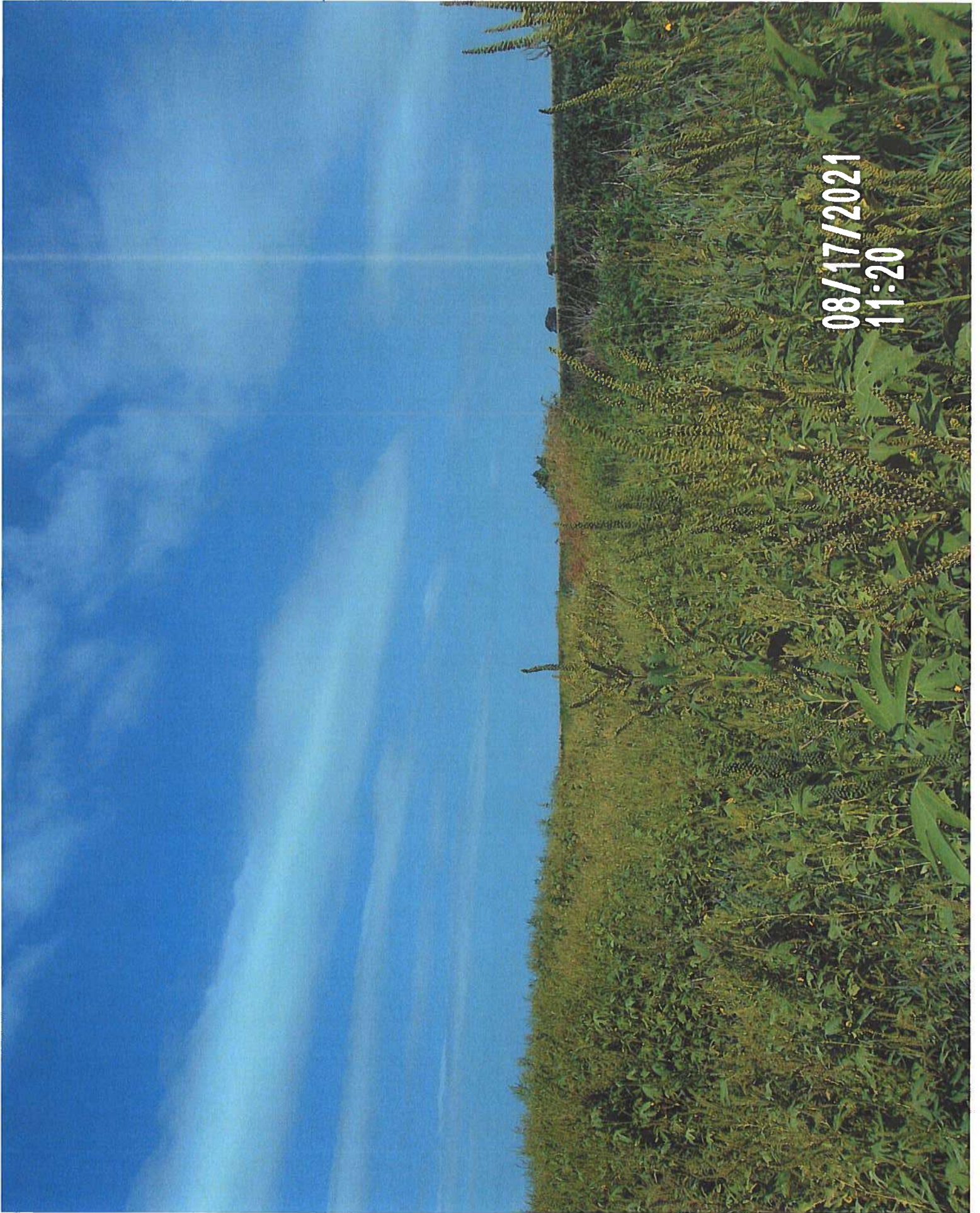
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LOOKING DOWNSTREAM @ BRIDGE



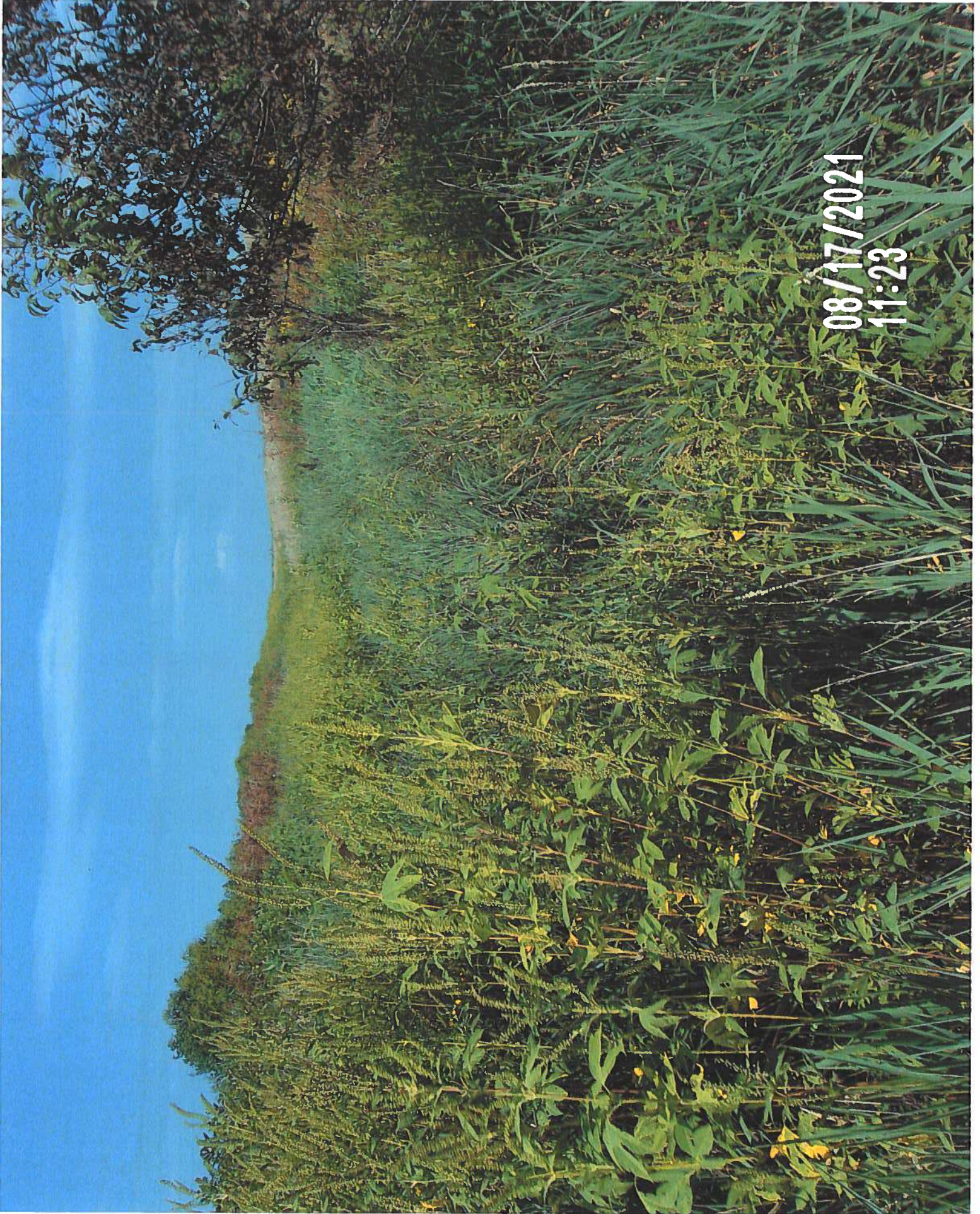
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LOOKING UPSTREAM FROM BRIDGE



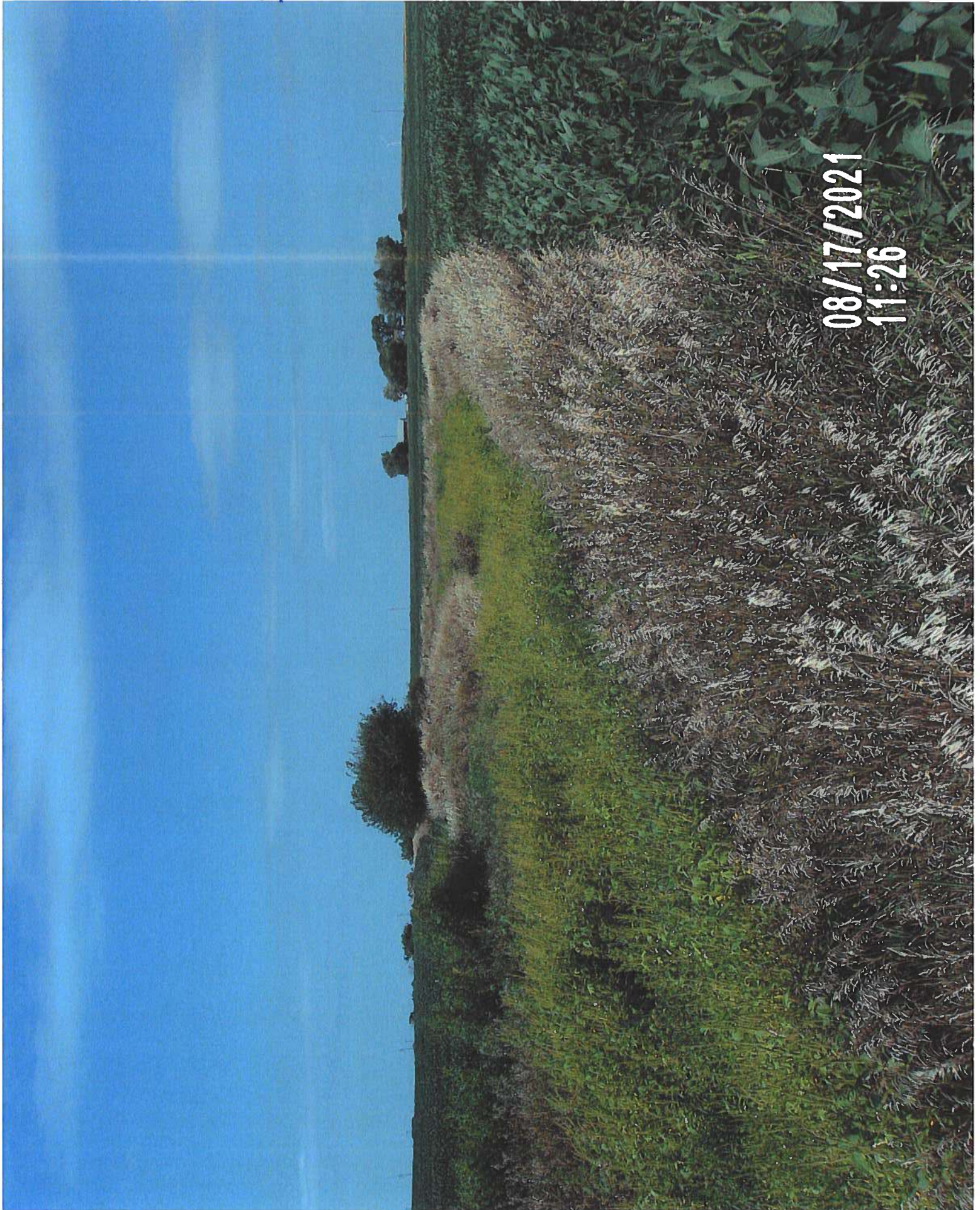
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LOOKING UPSTREAM



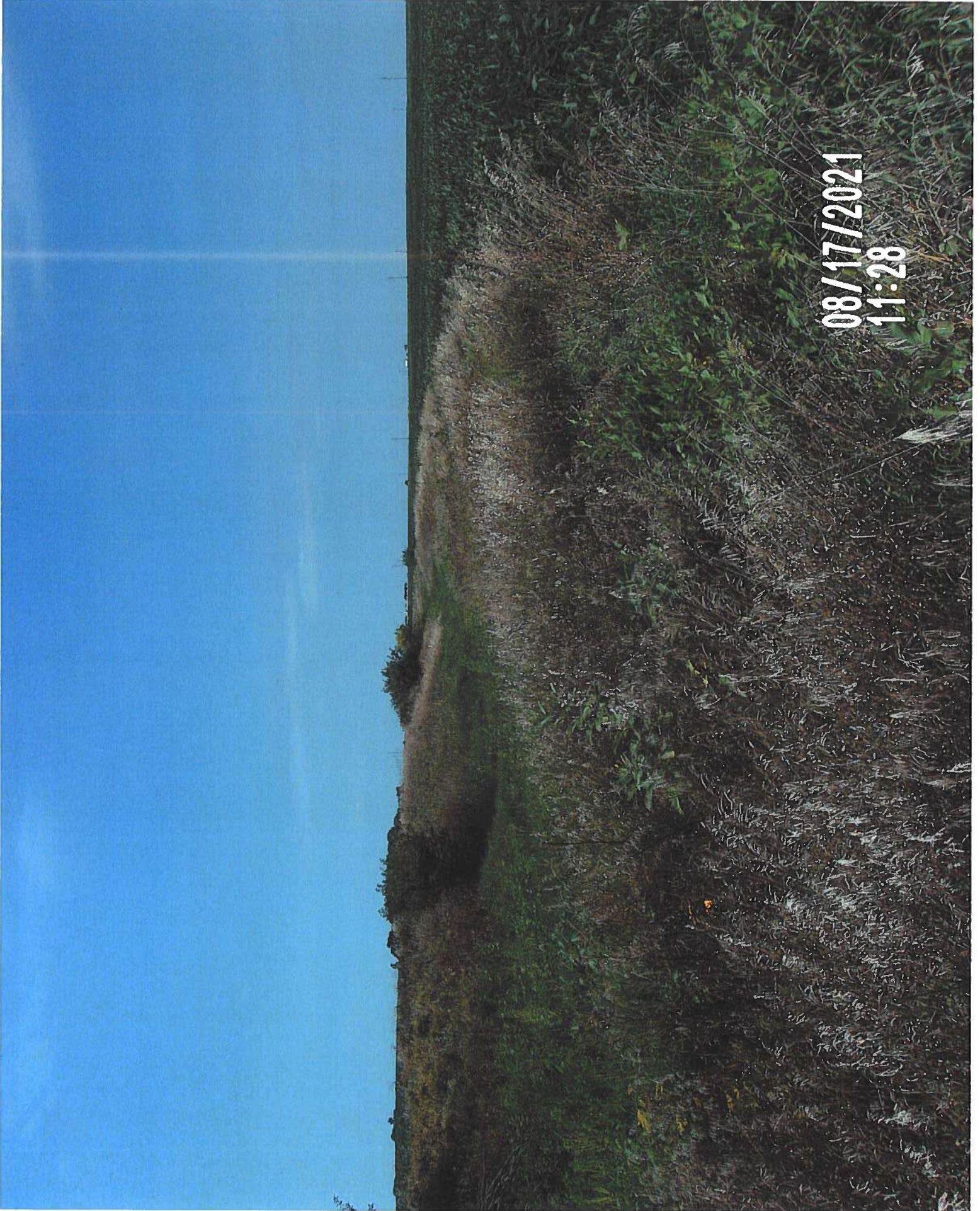
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LOOKING UPSTREAM @ CURVE IN SWALE/TILE



08/17/2021  
11:26

CURVE TO SW



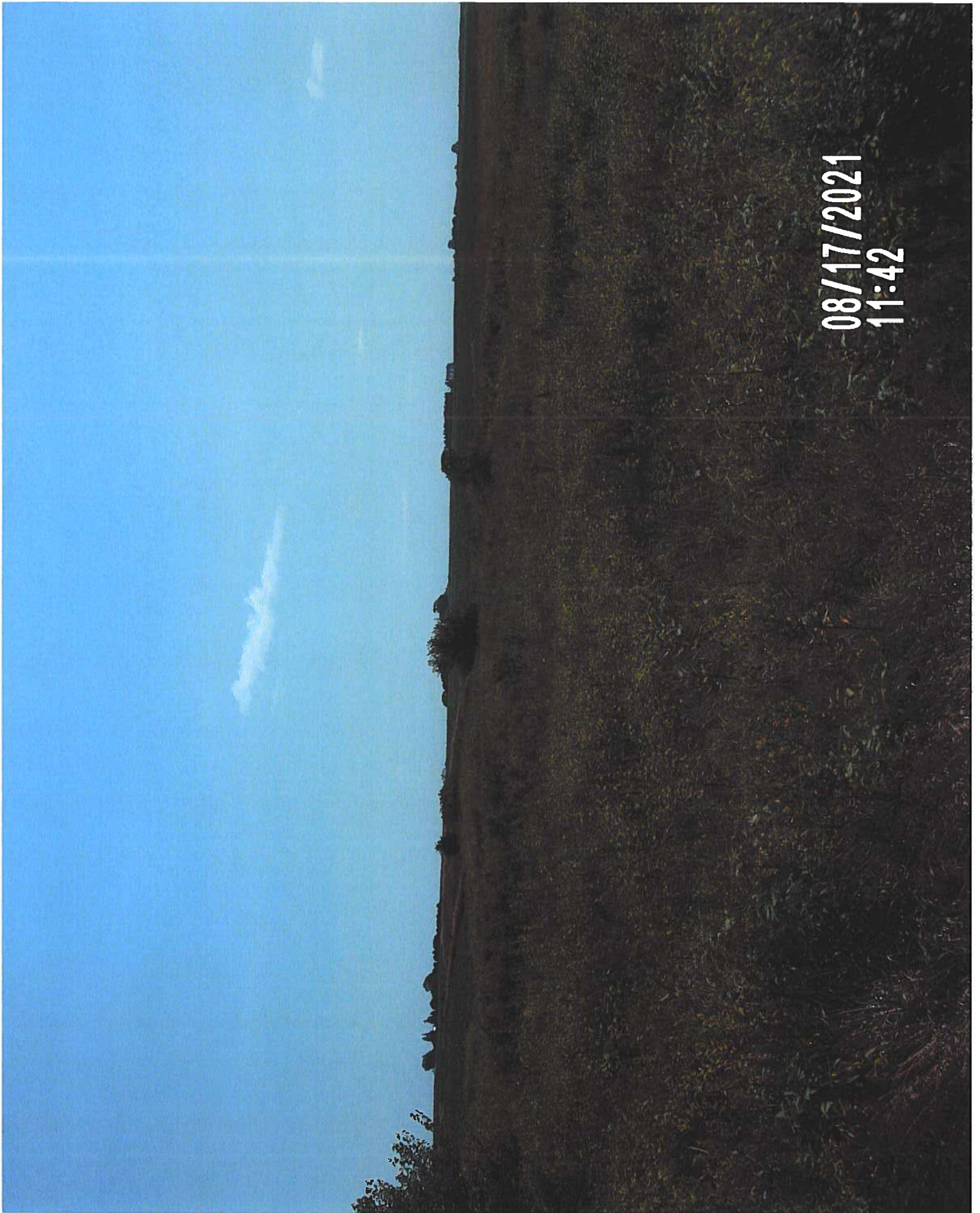
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LOOKING SW down UPRR



08/17/2021  
11:42

Looking downstream From RR Bridge



08/17/2021  
11:42

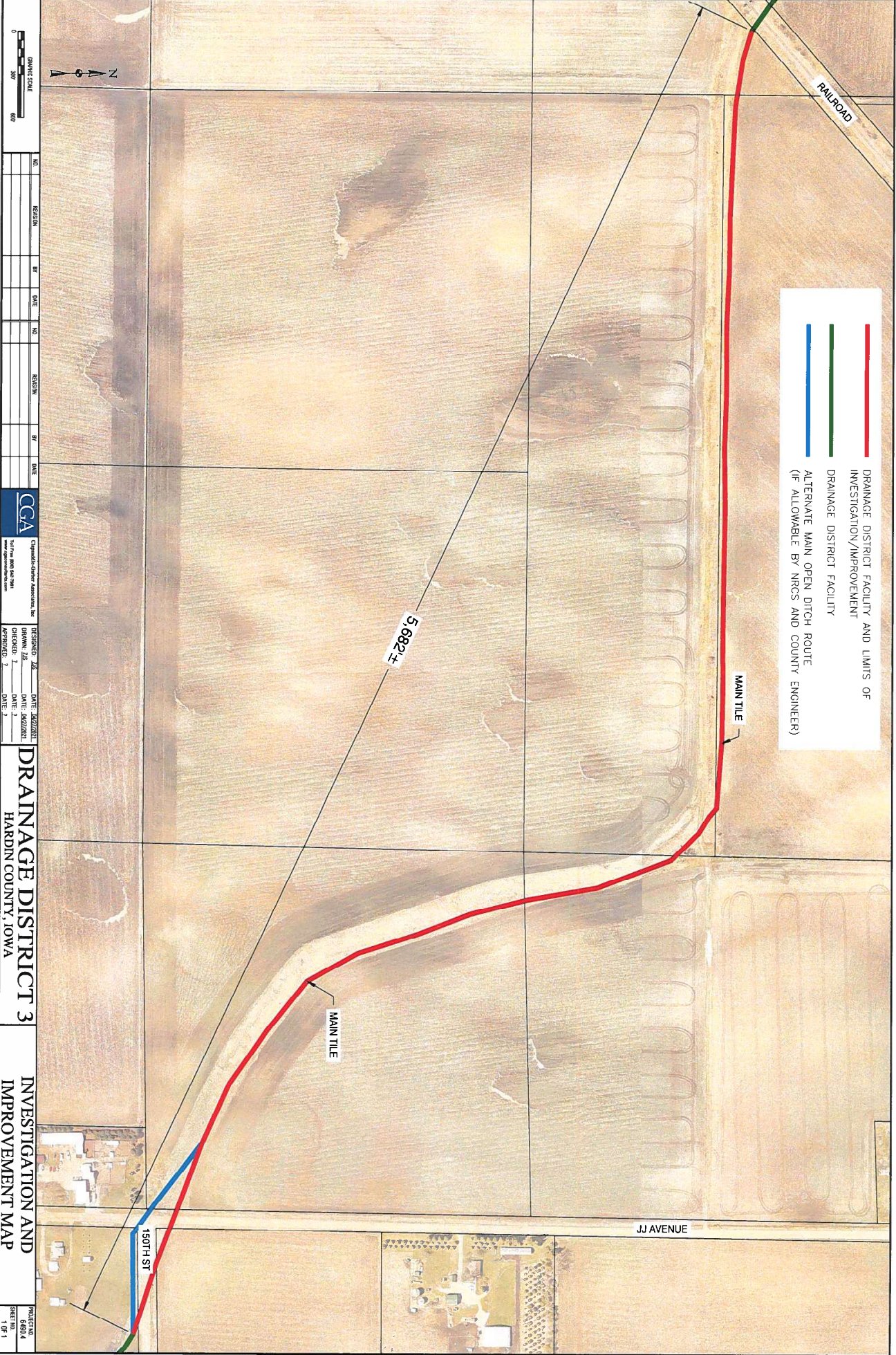


6490 DD3 8-17-21RB

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6490 DD3 8-17-21RB

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- DRAINAGE DISTRICT FACILITY AND LIMITS OF INVESTIGATION/IMPROVEMENT
- DRAINAGE DISTRICT FACILITY
- ALTERNATE MAIN OPEN DITCH ROUTE (IF ALLOWABLE BY NRCS AND COUNTY ENGINEER)

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

**CGA**  
 Civil Groundwater & Associates, Inc.  
 1001 First Street, Suite 200  
 Ames, Iowa 50010

DESIGNED BY	DATE	DESIGNED BY	DATE
CHECKED BY	DATE	CHECKED BY	DATE
APPROVED BY	DATE	APPROVED BY	DATE

**DRAINAGE DISTRICT 3**  
 HARDIN COUNTY, IOWA

**INVESTIGATION AND IMPROVEMENT MAP**

PROJECT NO.	6490 4
SHEET NO.	1 OF 1



By: Z.J.S.  
 Date: 9/1/2021  
 Checked By: L.O.G.  
 Date: 9/2/2021

**Engineer's Opinion of Probable Construction Cost**  
**Project: Main tile Improvement for D.D. #3**  
 Location: Sections 26, 27 and 35, T89N, R21W, Hardin County, Iowa

ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost
<b>OPEN DITCH CONSTRUCTION COSTS</b>						
301	OPEN DITCH CONSTRUCTION	\$ 2,000.00	STA	53.15	STA	\$ 106,300.00
302	30" CMP OUTLET	\$ 75.00	LF	80	LF	\$ 6,000.00
303	SHEET PILE HEADWALL	\$ 35,000.00	EA	1	EA	\$ 35,000.00
304	RIP-RAP	\$ 50.00	TN	250	TN	\$ 12,500.00
305	SURFACE DRAINS	\$ 2,000.00	EA	16	EA	\$ 32,000.00
306	PRIVATE TILE OUTLETS	\$ 1,500.00	EA	26	EA	\$ 39,000.00
307	PERMANENT SEEDING AND WARRANTY	\$ 1,000.00	STA	53.95	STA	\$ 53,950.00
308	HEADWALL REMOVAL	\$ 2,000.00	EA	1	EA	\$ 2,000.00
309	TILE REMOVAL	\$ 7.00	LF	5395	LF	\$ 37,765.00
<b>CONSTRUCTION SUBTOTAL</b>						\$ 324,515.00
Contingency (15%)						\$ 48,677.25
<b>CONSTRUCTION TOTAL</b>						\$ 373,192.25
Engr. & Const. Observation (25%)						\$ 93,298.06
<b>TOTAL COST</b>						\$ 466,490.31
<b>ROAD CROSSING CONSTRUCTION COSTS</b>						
310	RCP BOX CULVERT (JJ AVE.)	\$ 2,000.00	LF	70	LF	\$ 140,000.00
311	RCP BOX CULVERT (150TH ST.)	\$ 2,000.00	LF	139	LF	\$ 278,000.00
312	OPEN DITCH CONSTRUCTION	\$ 2,000.00	STA	78	STA	\$ 156,000.00
313	TILE REMOVAL	\$ 10.00	LF	287	LF	\$ 2,870.00
314	SURFACE DRAINS	\$ 2,000.00	EA	4	EA	\$ 8,000.00
315	PERMANENT SEEDING AND WARRANTY	\$ 3,000.00	LOC	2	LOC	\$ 6,000.00
316	TRAFFIC CONTROL	\$ 5,000.00	LOC	2	LOC	\$ 10,000.00
<b>CONSTRUCTION SUBTOTAL</b>						\$ 600,870.00
Contingency (15%)						\$ 90,130.50
<b>CONSTRUCTION TOTAL</b>						\$ 691,000.50
Engr. & Const. Observation (25%)						\$ 172,750.13
<b>TOTAL COST</b>						\$ 863,750.63

OPEN DITCH REPLACEMENT

Note: Per Iowa Code, road crossings (highlighted red) are not typically district expense