

# Faribault County, Minnesota

## Judicial Ditch #6F

## Staff Repair Report

March 2022

**FARIBAULT COUNTY**  
*Drainage Dept*

Phone 507.526.2388  
415 South Grove Street, Suite 8  
Blue Earth, MN 56013  
[www.co.faribault.mn.us/drainage](http://www.co.faribault.mn.us/drainage)



## JD6F Repair

### BACKGROUND

JD6F was established in 1913 as an all-tile system. A 1967 improvement established the Main and Open Ditch as they exist today. Beaver dam, trees, and sediment issues were observed in the upper reaches of JD6F Branch A in 2020. This prompted a tree removal project to quell beaver dam issues and create better access to the Branch A open ditch. The entire JD6F system was inspected in 2021 and an inventory of the existing structures was logged.

Three field crossings have failed on JD6F over the past 2 years; two were replaced with polypropylene (PP) triple wall plastic pipe and one was removed and abandoned. It is likely that like the field crossings that have already failed, many other crossings on JD6F are from the original 1967 improvement that established the open ditch. Many other crossings have also likely reached their effective life. Some crossings that are in poor condition are no longer necessary since parcels severed by the open ditch have consolidated into larger tracts. Table 1 shows an inventory of existing crossings, their elevation relative to the legal grade, and any proposed repair activities.

**Table 1. Existing open ditch crossings on JD6F.**

Branch	Station	Existing	Existing Elevation	Legal Grade	Diff. (ft)	Comments
Main	1+50	96" CMP	1072.14	1074.08	-1.94	Field Crossing. OK condition. Some erosion around pipe
Main	10+50	96" CMP	1074.36	1074.53	-0.17	120th St. Crossing. Fair condition. RR tie inverted in pipe
Main	18+50	96" CMP	1073.6	1074.94	-1.34	Field Crossing. OK condition but not in use. Plan to remove.
Main	28+50	96" CMP	1074.6	1075.43	-0.83	Field Crossing. OK condition
Main	76+00	60" CMP	1078.67	1079.62	-0.95	130th St. Fair condition
Main	102+40	54" CMP	1087.21	1087.69	-0.48	135th St. OK condition. Rocks deposited in pipe
A	14+40	84" CMP	1077.82	1077.22	0.60	Field Crossing. Fair condition
A	33+30	84" CMP	1078.51	1078.17	0.34	Field Crossing. Poor condition . Plan to remove.
A	42+50	84" CMP	1078.77	1078.63	0.14	CR109. OK condition. Pipe deflected.
A	92+00	72" CMP	1084.62	1083.66	0.96	Field Crossing. Poor condition. Deflected, causing joint separation.
		60" PP				
A	126+55	Triple Wall	1087.7	1087.89	-0.19	Field Crossing. Replaced in 2020.
A	141+75	60" CMP	1089.86	1089.26	0.60	135th St. OK condition
A	154+80	60" CMP	1090.71	1090.43	0.28	Field Crossing. Poor condition & not in use. Plan to remove.
A	168+25	60" CMP	1092.44	1091.64	0.80	Field Crossing. Plan to replace with 60 LF of 60" CMP
A	183+80	60" CMP	1093.28	1092.93	0.35	Field Crossing. Poor condition. Not needed. Plan to remove
		48" PP				
A	230+90	Triple Wall	1096.51	1095.75	0.76	Crossing replaced in 2018. Plan to lower to legal grade

## DATA COLLECTION

The JD6F Main and Branch A open ditches were surveyed in the summer of 2021. A 1974 repair report by Bolton & Menk gave a correction value of +975.00 to convert the local datum of the 1967 Improvement to mean sea level datum. This provided a good fit based on the elevation of the existing culverts and headwalls on the Main Open Ditch.

## PROPOSED REPAIR DETAILS

Open Ditch Cleaning: Remove sediment from

1. Main Open Ditch Station 10+50 to 18+50
2. Branch A Open Ditch Station 115+00 to 241+00

Field Crossing Repair: Remove, replace, or lower existing field crossings. See Detail

- |                            |   |
|----------------------------|---|
| 1. Main Station 18+50      | Remove & dispose of existing 96" CMP. Restore ditch banks |
| 2. Branch A Station 33+00  | Remove & dispose of existing 84" CMP. Restore ditch banks |
| 3. Branch A Station 154+50 | Remove & dispose of existing 60" CMP. Restore ditch banks |
| 4. Branch A Station 168+00 | Replace existing 60" CMP with 60 LF of 60" CMP            |
| 5. Branch A Station 183+50 | Remove & dispose of existing 60" CMP. Restore ditch banks |
| 6. Branch A Station 230+50 | Lower existing 48" Triple Wall Plastic pipe.              |

Tile Outlet Repair: Repair tile outlets with 20" of non-perforated HDPE dual wall tile. See Detail

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| 1. Main Station 15+50 (W)       | Replace 6" CMP                    |
| 2. Main Station 18+50 (E)       | Repair 24" Clay Main Tile         |
| 3. Main Station 43+65 (W)       | Replace 18" CMP Main              |
| 4. Main Station 45+50 (E)       | Replace 16" CMP                   |
| 5. Main Station 47+50 (W)       | Repair 8" HDPE                    |
| 6. Main Station 50+60 (W)       | Replace 10" CMP                   |
| 7. Main Station 50+80 (E)       | Replace 8" CMP                    |
| 8. Main Station 92+50 (E)       | Replace 10" CMP                   |
| 9. Main Station 98+30 (E)       | Repair 6" Clay tile               |
| 10. Branch A Station 16+50 (E)  | Repair 24" CMP Branch A           |
| 11. Branch A Station 27+50 (W)  | Repair 6" CMP                     |
| 12. Branch A Station 31+20 (N)  | Repair 10" CMP                    |
| 13. Branch A Station 72+00 (S)  | Repair 6" Lateral A-59 tile       |
| 14. Branch A Station 82+50 (E)  | Repair 15" Branch A tile          |
| 15. Branch A Station 150+30 (E) | Repair 15" CMP Lateral B-46+89    |
| 16. Branch A Station 159+00 (W) | Repair 6" clay tile               |
| 17. Branch A Station 172+00 (E) | Repair 8" CMP                     |
| 18. Branch A Station 175+00 (W) | Repair 12" CMP                    |
| 19. Branch A Station 179+00 (E) | Repair 10" CMP                    |
| 20. Branch A Station 184+50 (W) | Repair 6" CMP                     |
| 21. Branch A Station 186+00 (E) | Repair 15" CMP Branch B           |
| 22. Branch A Station 196+30 (E) | Repair 12" CMP                    |
| 23. Branch A Station 197+00 (E) | Repair 15" CMP                    |
| 24. Branch A Station 202+00 (W) | Repair 10" HDPE Lateral B-93+38-5 |
| 25. Branch A Station 204+20 (W) | Repair 10" CMP                    |
| 26. Branch A Station 240+50 (E) | Repair 15" CMP Lateral B-93+38    |
| 27. Branch A Station 252+50 (W) | Repair 10" CMP                    |

Side Inlet Repair: Replace side inlet pipes with Alternative Side Inlet. See ASI/ASIRO detail

- |                                 |   |
|---------------------------------|---|
| 1. Main Station 8+00 (W)        | Replace 12" CMP with 12" ASI with Hickenbottom        |
| 2. Main Station 16+00 (E)       | Replace 10" CMP with 10" ASI with trash grate         |
| 3. Main Station 31+50 (E)       | Replace 12" CMP with 12" ASI with trash grate         |
| 4. Main Station 34+00 (W)       | Replace 12" CMP with 12" ASI with trash grate         |
| 5. Main Station 49+00 (E)       | Replace 12" CMP with 24" ASI with trash grate         |
| 6. Main Station 69+50 (W)       | Replace 12" CMP with 12" ASI with trash grate         |
| 7. Main Station 99+20 (E)       | Replace 15" CMP with 15" ASI with trash grate         |
| 8. Main Station 104+75 (W)      | Replace 24" CMP with 15" ASI with trash grate         |
| 9. Branch A Station 4+20 (N)    | Replace 12" CMP with 10" ASI with trash grate         |
| 10. Branch A Station 46+00 (S)  | Replace 12" CMP with 12" ASI with trash grate         |
| 11. Branch A Station 50+00 (N)  | Replace 12" CMP with 18" ASI with trash grate         |
| 12. Branch A Station 52+00 (S)  | Replace 12" CMP with 18" ASI with trash grate         |
| 13. Branch A Station 62+30 (E)  | Replace 12" CMP with 10" ASI with trash grate         |
| 14. Branch A Station 73+50 (N)  | Replace 24" CMP with 24" ASI with trash grate         |
| 15. Branch A Station 99+00 (S)  | Replace 12" CMP with 12" ASI with trash grate         |
| 16. Branch A Station 119+50 (E) | Replace 15" CMP with 12" ASI with trash grate         |
| 17. Branch A Station 150+00 (E) | Replace 10" CMP with 15" ASI with trash grate         |
| 18. Branch A Station 163+50 (E) | Replace 12" CMP with 12" ASI with Hickenbottom        |
| 19. Branch A Station 165+40 (W) | Replace 12" CMP with 18" ASI with trash grate         |
| 20. Branch A Station 168+50 (E) | Replace 12" CMP with 12" ASI with trash grate         |
| 21. Branch A Station 179+00 (E) | Replace 12" CMP with 10" ASI with trash grate         |
| 22. Branch A Station 183+80 (E) | Replace 12" and 20" CMP with 15" ASI with trash grate |
| 23. Branch A Station 197+00 (E) | Replace 15" CMP with 18" ASI with trash grate         |
| 24. Branch A Station 198+00 (W) | Replace 12" CMP with 10" ASI with trash grate         |
| 25. Branch A Station 203+00 (W) | Replace 12" CMP with 24" ASI with trash grate         |
| 26. Branch A Station 210+00 (W) | Replace 15" CMP with 12" ASI with trash grate         |
| 27. Branch A Station 219+00 (N) | Replace 15" CMP with 15" ASI with trash grate         |
| 28. Branch A Station 233+00 (N) | Replace 12" CMP with 10" ASI with trash grate         |
| 29. Branch A Station 237+50 (S) | Replace 12" CMP with 12" ASI with Hickenbottom        |
| 30. Branch A Station 238+50 (N) | Replace 12" CMP with 10" ASI with trash grate         |
| 31. Branch A Station 240+50 (E) | Replace 15" CMP with 15" ASI with trash grate         |
| 32. Branch A Station 251+30 (E) | Replace 12" CMP with 24" ASI with trash grate         |
| 33. Branch A Station 253+50 (S) | Replace 12" CMP with 18" ASI with trash grate         |

**TIMELINE**

---

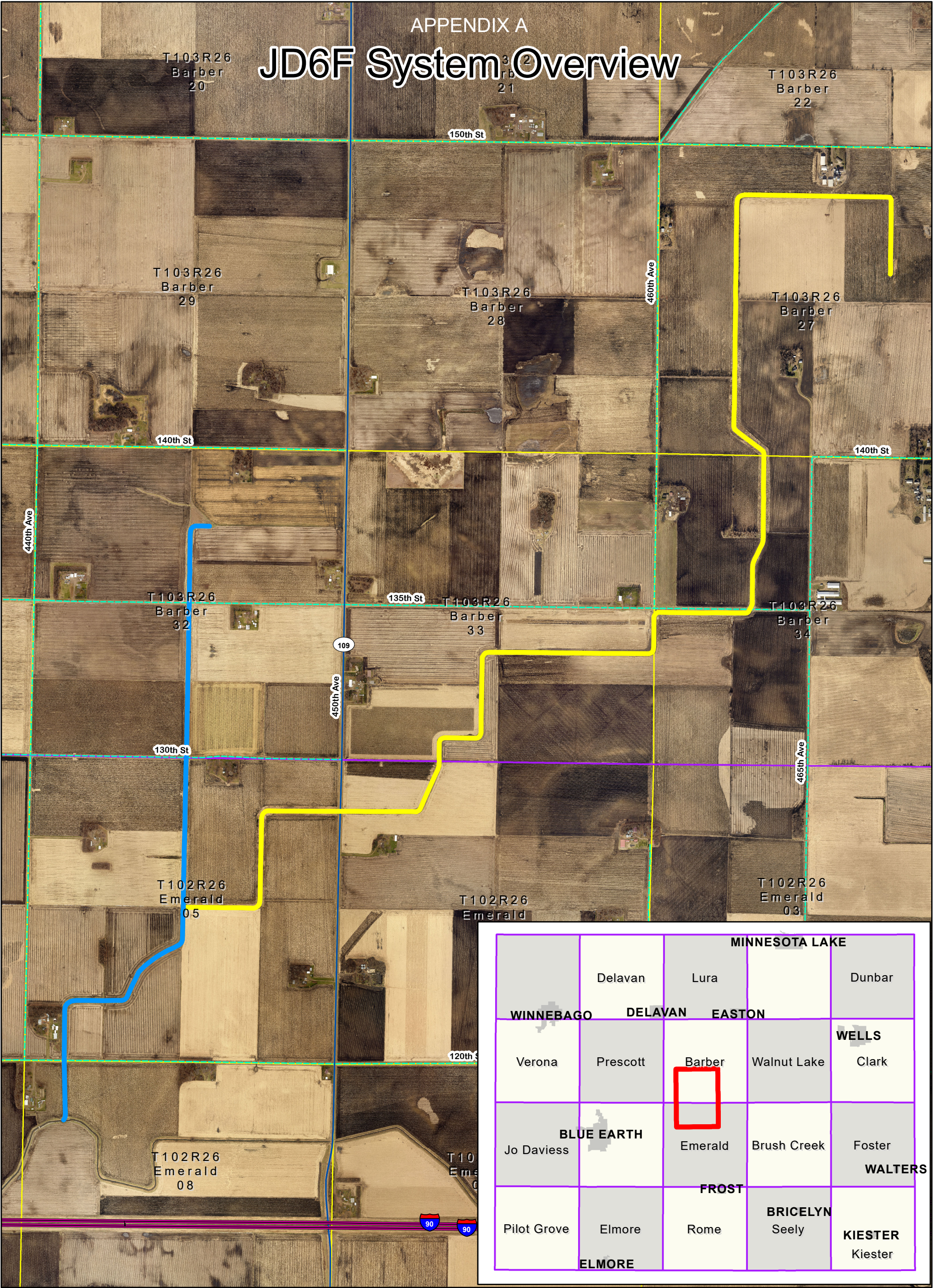
The deadline to complete the project is December 31, 2022

## ESTIMATED COST

Item	Unit	Quant	Unit Price	Amount
Mobilization	LS	1	\$ 3,000.00	\$ 3,000.00
Open Channel Excavation	LF	13400	\$ 2.75	\$ 36,850.00
Remove and Dispose of CMP Crossing, Restore Banks	EA	4	\$ 750.00	\$ 3,000.00
F&I 60" CMP for Field Crossing	LF	60	\$ 220.00	\$ 13,200.00
Salvage & Reinstall 60 LF of 48" PP Triple Wall	EA	1	\$ 5,000.00	\$ 5,000.00
Granular Foundation for Field Crossings	TON	62	\$ 30.00	\$ 1,860.00
Class III Riprap for Field Crossings	TON	80	\$ 35.00	\$ 2,800.00
Tile Outlet Repair (6-12" diameter)	EA	18	\$ 850.00	\$ 15,300.00
Tile Outlet Repair (15-30" diameter)	EA	9	\$ 1,500.00	\$ 13,500.00
Alternative Side Inlet (8-12" diameter)	EA	18	\$ 1,700.00	\$ 30,600.00
Alternative Side Inlet (15-24" diameter)	EA	14	\$ 2,300.00	\$ 32,200.00
Contingency 10%				\$ 15,731.00
				<b>\$ 173,041.00</b>

## APPENDICES

- A: JD6F System Overview Map
- B: Main Open Ditch Repair Map
- C: Branch A Open Ditch Repair Map
- D: Open Ditch Profiles



**Faribault County**  
**Drainage Department**  
[www.co.faribault.mn.us](http://www.co.faribault.mn.us)

## Legend

- Main Branch
- Branch A

1 inch = 1,500 feet



Disclaimer: Faribault County and Faribault County SWCD do not warrant or guarantee accuracy of the GIS data. The data is meant for reference purposes only and should not be used for official decisions. The data contained in the maps were compiled from the best available records that could be found and may contain errors or omissions.

# JD6F Main Branch Repair Map

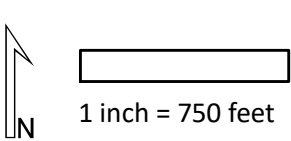
APPENDIX B



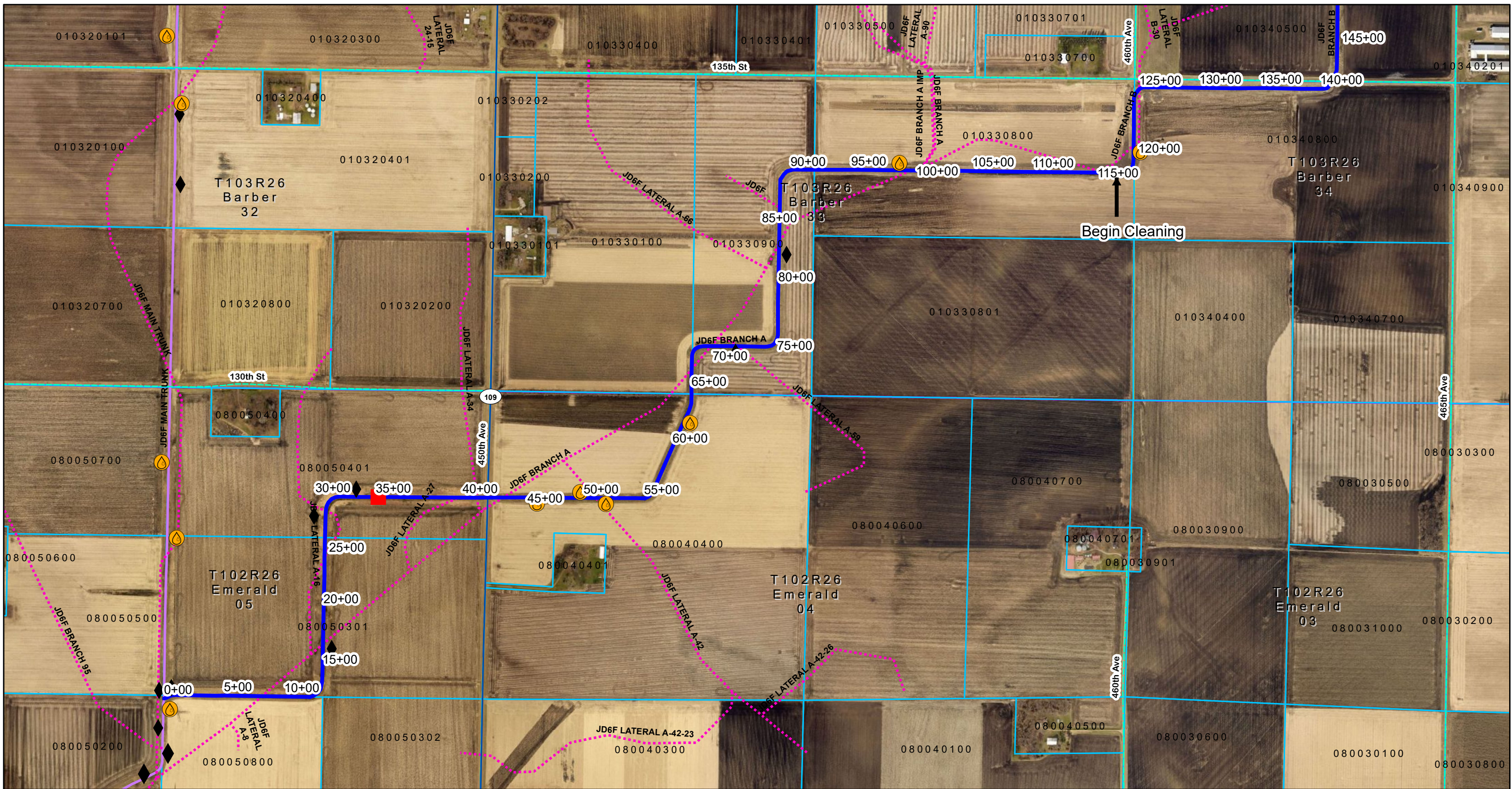
## Legend

- JD6F Main Open Ditch
- Public Open Ditch
- Public Tile
- Parcels

- Salvage & Lower Field Crossing
- Replace Field Crossing
- Remove Field Crossing
- Alternative Side Inlet
- Tile Outlet Repair

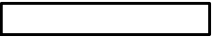



Disclaimer: Faribault County and Faribault County SWCD do not warrant or guarantee accuracy of the GIS data. The data is meant for reference purposes only and should not be used for official decisions. The data contained in the maps were compiled from the best available records that could be found and may contain errors or omissions.



### Legend

- Branch A Open Ditch
- Public Open Ditch
- Public Tile
- Parcels
- Salvage & Lower Field Crossing
- Replace Field Crossing
- Remove Field Crossing
- Alternative Side Inlet
- Tile Outlet Repair



1 inch = 750 feet

Disclaimer: Faribault County and Faribault County SWCD do not warrant or guarantee accuracy of the GIS data. The data is meant for reference purposes only and should not be used for official decisions. The data contained in the maps were compiled from the best available records that could be found and may contain errors or omissions.

# JD6F Branch A Repair Map

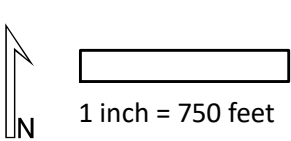
APPENDIX C



## Legend

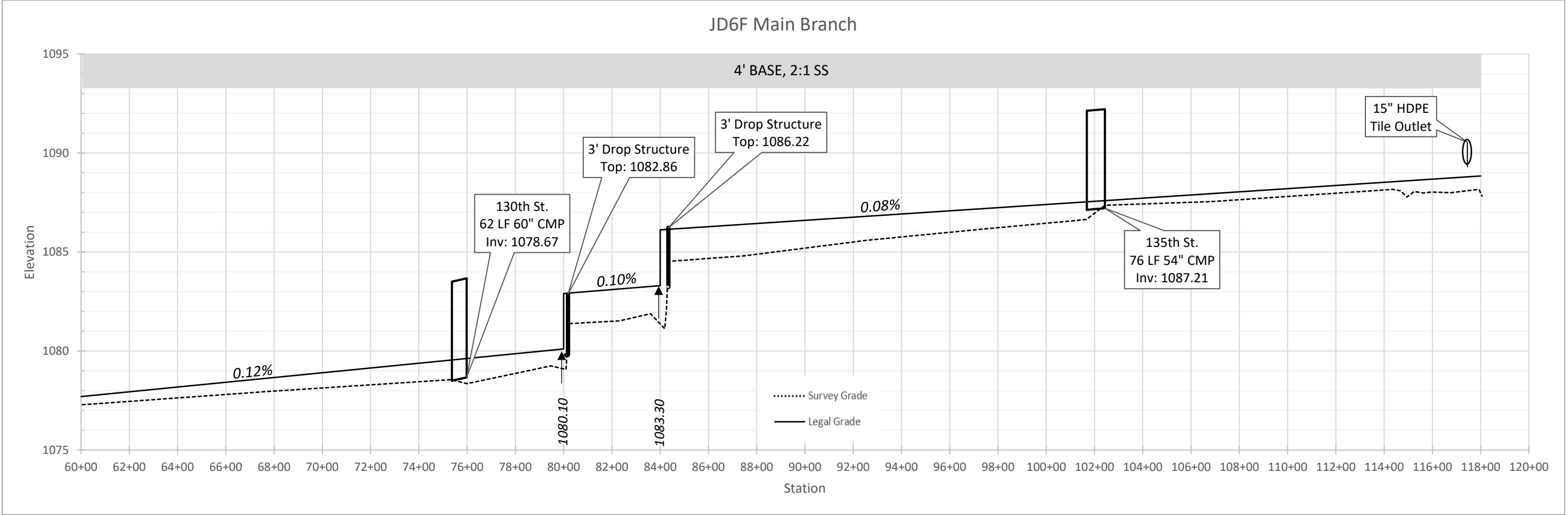
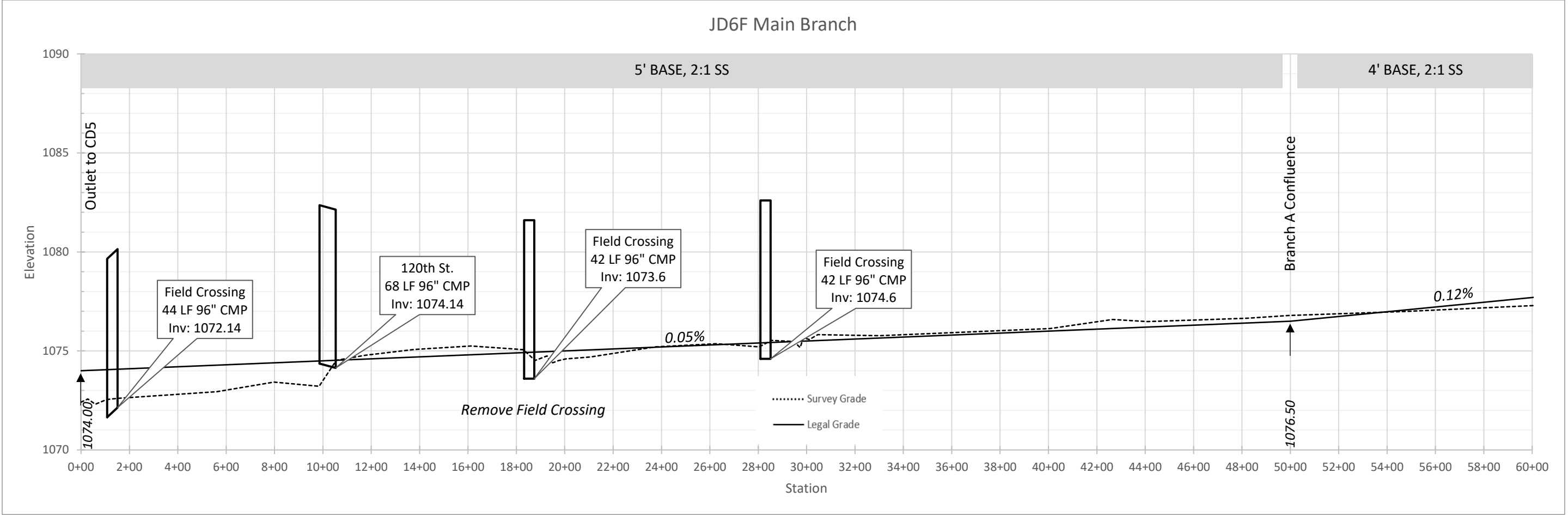
- Branch A Open Ditch
- Public Open Ditch
- Public Tile
- Parcels

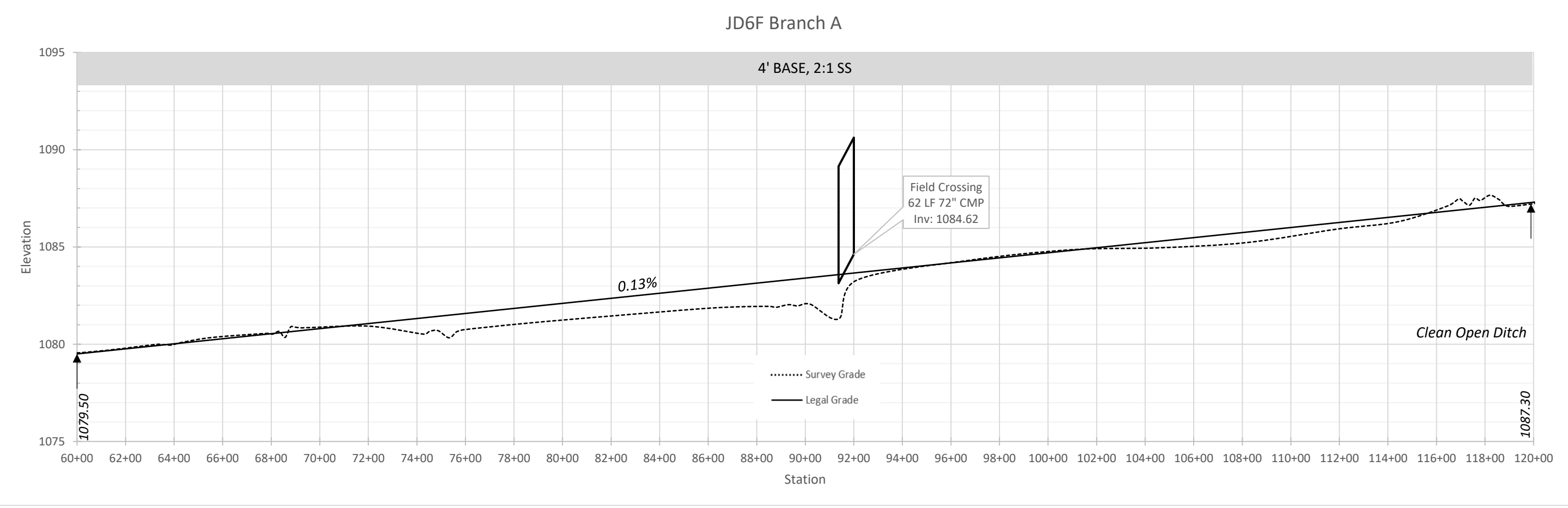
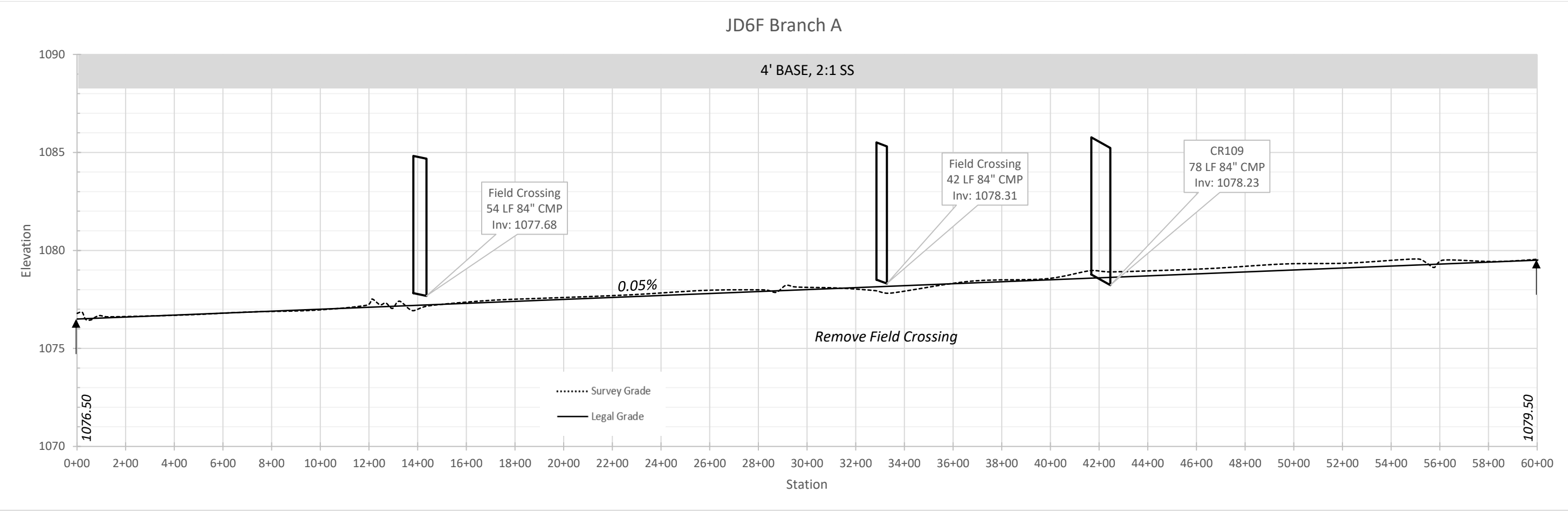
- Salvage & Lower Field Crossing
- Replace Field Crossing
- Remove Field Crossing
- Alternative Side Inlet
- Tile Outlet Repair

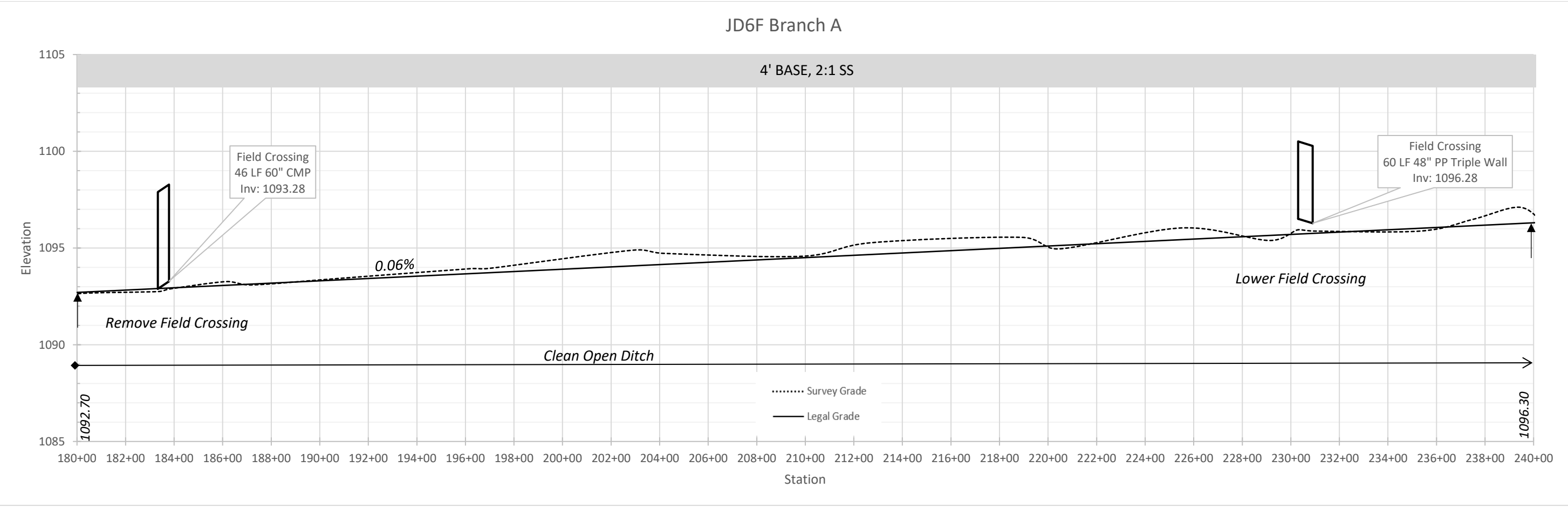
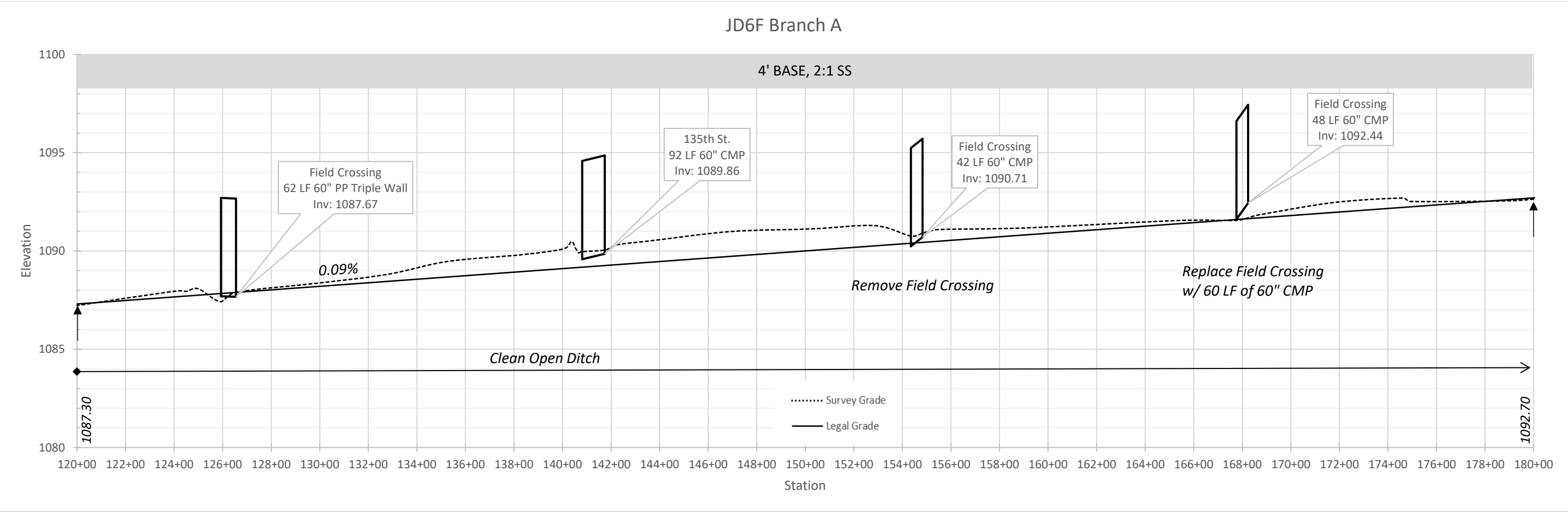


Disclaimer: Faribault County and Faribault County SWCD do not warrant or guarantee accuracy of the GIS data. The data is meant for reference purposes only and should not be used for official decisions. The data contained in the maps were compiled from the best available records that could be found and may contain errors or omissions.

APPENDIX D







JD6F Branch A

