



ANOKA RAMSEY JUDICIAL DITCH 1 REPAIR REPORT

Blaine/Mounds View, MN

ANOKA RAMSEY JUDICIAL DITCH 1 (ARJD 1) REPAIR REPORT

July 14, 2026
Blaine / Mounds View, MN



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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

A handwritten signature in black ink, appearing to read "Chris Otterness", is written over a horizontal line.

Christopher C. Otterness
Reg. No. 41961

July 14, 2026

Date

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1 INTRODUCTION AND EXECUTIVE SUMMARY

The purpose of this memorandum is to provide the Rice Creek Watershed District (District) with an analysis and description of proposed repair alternatives to portions of Anoka Ramsey Judicial Ditch (ARJD) 1, including a preliminary opinion of probable cost for the recommended repairs.

In 2014, the District completed a proceedings under M.S. 103.101 Subd. 4a to reestablish the public drainage system record. This included adoption of the As Constructed and Subsequently Improved Condition (ACSIC) of the ARJD 1 public drainage system. During that process, several deficiencies in the system were noted that required repair. Repairs to ARJD 1 were then prioritized with respect to other District public drainage system need and identified within the Watershed Management Plan.

The primary issue identified for ARJD 1 is tree growth along the open channel which makes most of the drainage system inaccessible for maintenance and leads to blockages from deadfalls. In addition, sediment and vegetation build-up in the channel is causing a reduction in conveyance capacity along several of the branches. Recommended repairs are primarily comprised of tree clearing, sediment cleanout in the ditches, and revegetation.

Additionally, alternatives were reviewed to address a segment of Branch 2, Lateral 1 on top of which a building was constructed. To address a realignment of a segment of storm sewer in Branch 2, Lateral 1 is recommended.

2 BACKGROUND / EXISTING CONDITIONS

2.1 LOCATION

The ARJD 1 public drainage system is located within the Lower Rice Creek subwatershed of the District in Sections 26, 27, 33, 34, and 35 of T 31N, R 23W of Anoka County and in Sections 4, 5 and 6 of T 30N, R 23W of Ramsey County as displayed in **Figure 1**. The Cities of Blaine, Lexington, Mounds View, and Shoreview, all contain portions of the ARJD 1 watershed, which is approximately 2,820 acres in size and includes several different land uses such as wetlands, industrial, commercial, and urban residential.

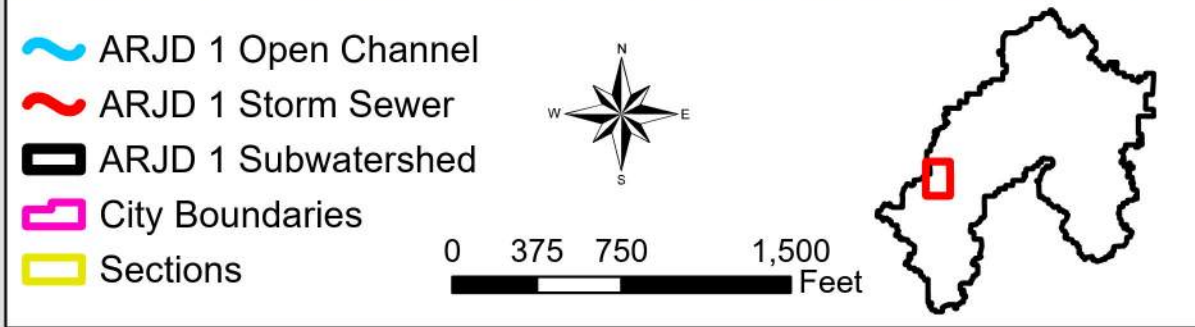
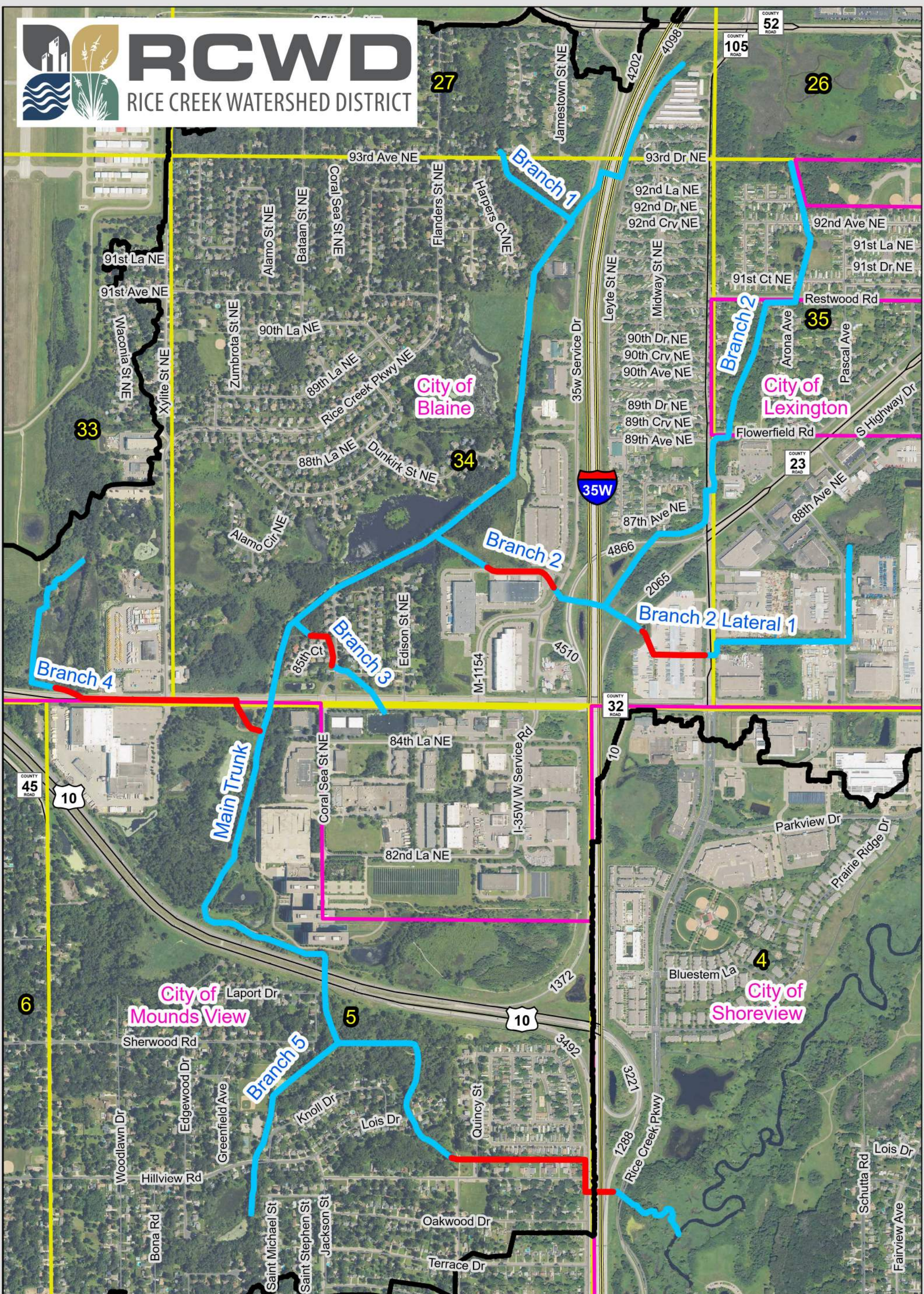


Figure 1: ARJD 1 General Location

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HOUSTON
engineering, inc.

The ditch alignment begins at Station 0+00 at Rice Creek, approximately 720 feet east of I-35W and 840 feet north of North of County Road I. Near Station 9+00, the alignment continues to the northwest as storm sewer, crossing Interstate 35W at Station 11+00 until it daylights back into an open channel at Station 28+50. It then passes through both a residential area and wooded area before it intersects with Branch 5 at Station 48+88. The Main Trunk continues north under U.S. Highway 10 and under County Road J (85th Avenue NE), where it intersects with Branch 4 at Station 89+34 and Branch 3 at Station 100+51. The Main Trunk continues north until it intersects with Branch 2 at Station 116+84, just west (downstream) of I-35W. After crossing I-35W and continuing north along the east side of I-35W, a private ditch enters the Main Trunk shortly before the end of the Main Trunk at Station 172+16.

Branch 1 begins at its intersection with the Main Trunk (Station 152+42), just west of I-35W and proceeds to the northwest where it crosses 93rd Avenue NE and ends north of the 93rd Avenue at Station 12+36. At that location, the open channel is no longer public, but continues to the north as a privately owned channel.

The Branch 2 alignment begins at its intersection with the Main Trunk (Station 116+84) within the City of Blaine, proceeding to the southeast where it crosses I-35W. Just to the east of I-35W at Station 18+80, Branch 2 intersects with Branch 2 Lateral 1. Branch 2 then continues to the northeast, crossing Lake Drive, Naples Street NE, Flowerfield Road, Arona Avenue, 91st Court NE, and 92nd Avenue NE and ends at Station 76+38.

Branch 2, Lateral 1 begins at Branch 2 Station 18+80 and proceeds to the southeast crossing the I-35W ramp to Lake Drive. Lateral 1 continues on to the east as a storm sewer through an industrial property (and underneath a building) and then crosses Naples Street. It continues to the east as an open channel until it crosses Rendova Street NE. At this point, it heads north through a series of driveway entrances to an industrial area, ending at Station 36+96, where it serves as the outlet for a public water wetland (PW #02-0046).

Branch 3 begins at its intersection with the Main Trunk (Station 100+51) within the City of Blaine and extends to the southeast under 85th Court NE, Coral Sea Street NE, and Dunkirk Court NE. It then crosses County Road J (85th Avenue NE), where it serves as the outlet for a stormwater pond at its upstream end at Station 12+75.

Branch 4 begins at its intersection with the Main Trunk (Station 89+34) and consistent almost entirely of stormsewer along County Road J. It serves as the outlet for a public water wetland. Repairs were made to the wetland outlet in 2015. As this branch has already been repaired, it is not within the scope of this report.

Branch 5 begins at its intersection with the Main Trunk in the City of Mounds View (Station 48+88) and proceeds to the southwest through Greenfield Park, crossing the Greenfield Park access road and

Hillview Road. Upstream of Hillview Road, Branch 5 continues south approximately 550 ft, ending at Station 20+64.,

2.2 ECOLOGICAL RESOURCES ALONG SYSTEM

A variety of ecological resources exist along ARJD 1, including public waters, wetlands, and plant/animal species. Proposed repair actions must consider the presence of these resources and associated regulatory requirements and restrictions. **Figure 2** shows public waters and wetlands adjacent to the drainage system.

2.2.1 PUBLIC WATERS

Wetlands that meet the definition of “public waters” under MN Statute 103G are administered by the DNR under MS 103G rather than under WCA. DNR public waters inventory mapping identifies one public water wetland, PWW #02-046, at the upstream side of ARJD 1 Branch 2, Lateral 1. In addition, the Main Trunk of ARJD 1 from County Road J to Rice Creek is identified in DNR’s inventory as a “public watercourse.”

2.2.2 WETLANDS

HEI completed a preliminary desktop wetland inventory using the National Wetland Inventory (NWI) and several years of aerial photography (**Figure 2**). These wetlands all appear to have existed for more than 25 years.

2.2.3 THREATENED AND ENDANGERED SPECIES

The Minnesota Natural Heritage Information System identifies eight species classified as “threatened” in the vicinity of the project: *tutelina formicaria* (a jumping spider), *flava var* (Tubercled rein orchid), *Emydoidea blandingii* (Blanding turtle), *Rubus fulleri* (Fuller’s bristle-berry), *Rubus semisetosus* (Swamp blackberry), *Sceptridium oneidense* (Blunt-lobed grapefern), *Viola lanceolata* (Lance-leaf violet), and *Trichophorum clintonii* (Clinton’s bulrush). Additionally eight species classified as “endangered” are in the vicinity of the project: *Rubus missouricus* (Missouri bristle-berry), *Rubus stipulatus* (a Bristle-berry), *Polygala cruciata* (Cross-leaved milkwort), *Scleria triglomerata* (Tall nutrush), *Xyris torta* (Twisted yellow-eyed grass), *Aristida longespica var. geniculate* (Slimspike three-awn), *Centronyx henslowii* (Henslow’s sparrow), and *Juncus marginatus* (Marginated rush).

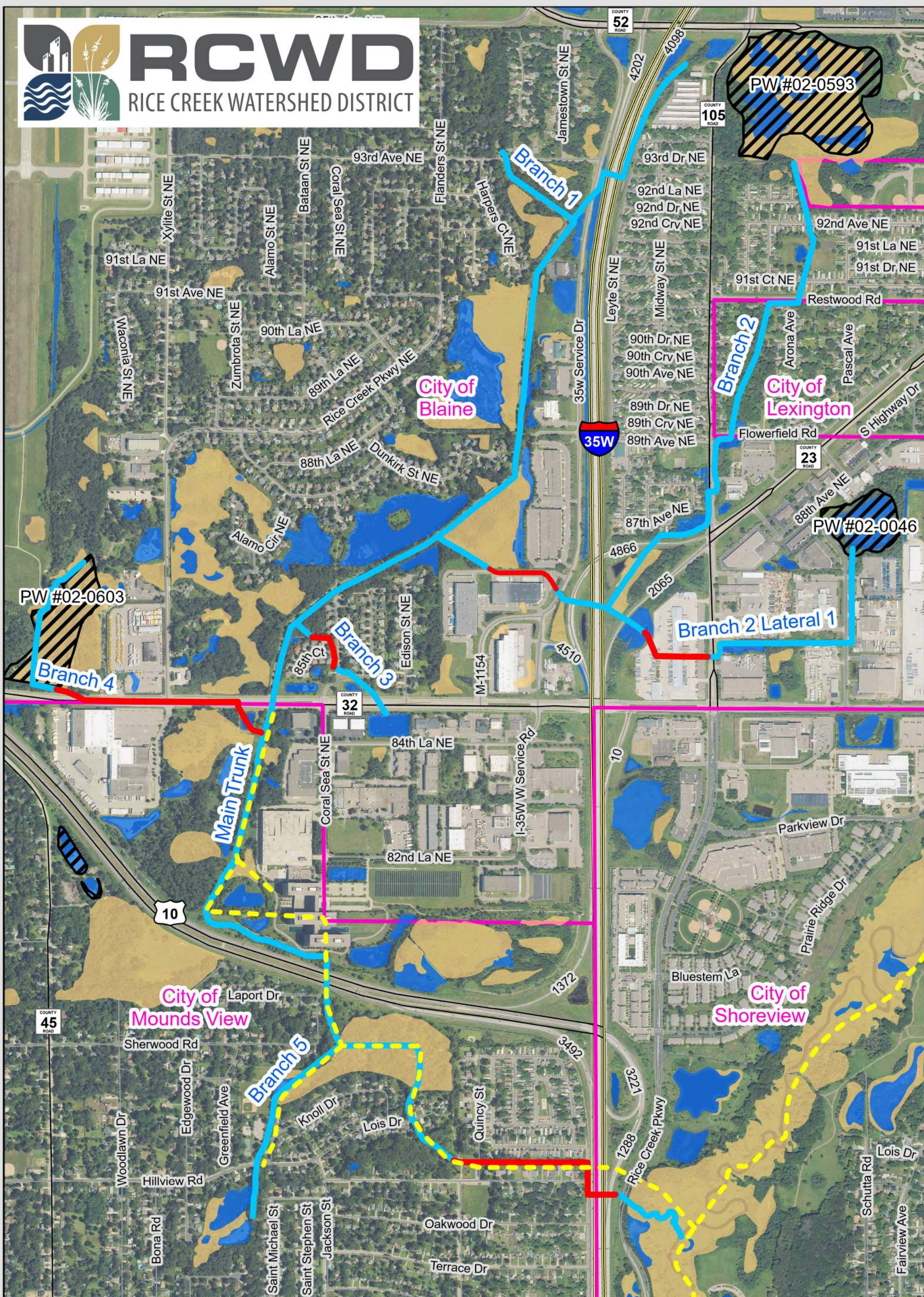


Figure 2: Wetlands and Public Waters along ARJD 1

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2.3 NOTED SYSTEM DEFICIENCIES

Houston Engineering, Inc. (HEI) completed a ground survey of ARJD 1 on December 3, 2025 and December 15, 2025. The existing ditch bottom profile is depicted in the Plan and Profile drawings (Appendix A). Drone survey completed in April 2026 provided ditch inspection and visually confirmed conditions of the drainage system.

Additionally, the storm sewer section of Branch 2 from Station 4+74 to Station 11+75 was televised by Empire Pipe Services on April 6th, 2026 to determine its condition and ascertain if there are any hydraulic obstructions. A copy of the televising report is provided as **Attachment D**.

2.3.1 SITE ACCESS / TREES

Along open channel portions of ARJD 1, trees or brush are prevalent along both sides of the ditch. This creates challenges for access to maintain the ditch and creates added risk for deadfalls that reduce the capacity and efficiency of the system. The tree canopy can also shade out understory growth which leaves the ditch side slopes susceptible to erosion.

Due to the urban nature of this drainage system, several man-made obstructions exist along the ditch that may restrict maintenance access. These obstructions either run directly adjacent to the ditch banks or are positioned close enough to prohibit access to large segments of the system. Identified obstructions include the following:

- Kane Meadows Open Space Trail is located adjacent to the Main Trunk and runs parallel to the ditch from approximately Station 94+00 to Station 152+00. The trail also parallels Branch 1 from approximately Station 0+00 to Station 9+00. The proximity of the trail increases the chance that it will be damaged during repairs. To the extent feasible, repair activities should be conducted on the side opposite of the trail to preserve its integrity. Coordination with the City of Blaine (as owner of the trail) will be necessary prior to any repair activities in this area.
- ARJD 1 traverses various greenspaces within the Cities of Blaine and Mounds View. Multiple trails intersect or run parallel to the system at various locations. Trail crossings occur along the Main Trunk at approximately Stations 40+50, 70+15, and 130+39. Coordination with both cities will be required before repair activities occur in the vicinity of these trails.
- A large stormwater pond within Kane Meadows Open Space lies directly adjacent to the Main Trunk from approximately Station 106+00 to Station 122+00 and is connected to the ditch system at two locations. The proximity of this pond limits available workspace and will require coordination with the City of Blaine prior to performing repair operations in this area.
- Along Branch 2, from approximately Station 27+50 to Station 31+50, and along Branch 2, Lateral 1, from approximately Station 13+00 to Station 26+00, the ditch runs immediately adjacent to private properties with landowner fencing running right up to the ditch banks.

Access to the ditch in within these segments may require temporary removal of the fencing, and coordination with adjacent landowners will be critical.

- Along Branch 2, several segments of the ditch run parallel to overhead power lines, specifically from approximately Station 33+00 to Station 36+00 and from Station 56+50 to Station 59+00. The proximity of these overhead lines will require caution when accessing the channel during construction to prevent damage and ensure safe operations.
- Along Branch 2, from approximately Station 43+00 to Station 57+00 (from Flowerfield Road to Aaron Avenue), the ditch runs through a residential housing area. Access in this segment may require temporary removal of the fencing. In addition, the proximity of structures near ditch at the road intersections may limit available access points. Coordination with adjacent landowners will be required prior to performing a repair.
- Along Branch 2, from approximately Station 61+00 to Station 66+00 (from 91st Court NE to 92nd Avenue NE), the ditch runs through a mobile home park, where access is limited due to the proximity of the buildings to the ditch. This likely will require multiple mobilizations for the contractor to access on either side of the obstructing buildings. Coordination with landowners will be required prior to repair activities.
- Greenfield Park is located adjacent to Branch 5 from approximately Station 8+00 to Station 15+00. The proximity of this public park including site fencing to the ditch may limit work to the opposite (east) side of the ditch. Coordination with the City of Mounds View as the park owner will be required prior to repair activities in this area.

2.3.2 OPEN DITCHES

ARJD 1 Main Trunk and Branches 1, 2, 3, and 5 contain approximately 4.7 miles of open-channel ditch throughout the system. Survey results indicate that all open-channel segments contain excess vegetation and/or deadfall obstructions within the channel, which are impeding hydraulic conveyance. In addition, long segments of the system contain significant sediment accumulation that has built up over several years above the ACSIC. Areas with notable sediment deposition include the following locations:

- South of County Road 10 along the Main Trunk
- North of the I-35W service road along the Main Trunk
- The majority of the upstream reach of Branch 2, beginning just north of the I-35W on-ramp
- Upstream of Rendova Street NE along Branch 2, Lateral 1
- South of Greenfield Park along Branch 5

Refer to **Attachment B** for the extent of areas requiring excavation to restore the ditch to the design bottom.

The banks were generally observed to be in good condition with no noted instances of erosion, sloughing or bank washout. However, ground survey was conducted under winter conditions and

deep snowpacks and frozen conditions may have obscured some bank erosion. Any erosion areas identified during tree clearing and ditch cleanout may be addressed at that time with minor resloping and vegetation reestablishment

A weir wall was installed over 30 years ago across the Main Trunk just downstream of its intersection with Branch 2. The purpose of this weir appears to be for the diversion of stormwater from the upper portion of the ditch to a large stormwater pond on the west side of the ditch for water quality treatment. However, the value of the weir for water quality treatment appears to be minimal (see 3.2.2 *Water Quality*), and the structure acts as an obstruction to flow, particularly when the pond outlet becomes clogged. Further, the weir is an attractive location for the building of beaver dams.

2.3.3 CULVERTS AND BRIDGES

A total of thirty-eight culverts of various sizes and materials on the system cross under private driveways, city, county, and federal roads. In addition, eleven bridges intersect the drainage system, ranging from a trail bridge to small private footbridges. Of these, three bridge crossings are located on the Main Trunk, six along Branch 2, Lateral 1 and two along Branch 5. A detailed inventory of all culvert and bridge crossings, along with recommended actions for each is provided in Section 3.1.4. and **Table 1**.

2.3.4 STORMSEWER

There are four sections of ARJD 1 where the system transitions from an open channel to a storm sewer. Of those, three segments are adequately sized and in good condition. On the Main Trunk, the storm sewer begins East of I-35W at Station 9+27 and runs to Station 27+80, just upstream of residential areas and north of Hillview Road. On Branch 2, the storm sewer starts at Station 5+79 and runs to Station 14+44, east of the I35W Service Road. On Branch 3, the storm sewer starts north of 85th Court NE at Station 2+17 and outlets east of Coral Sea St at Station 6+29.

The fourth stormsewer location is more problematic. On Branch 2, Lateral 1, the storm sewer starts at Station 4+74, east of I-35W. The system runs underneath a freight dispatch building owned by TForce Freight, Inc. before terminating at Station 11+02 west of Naples Street. The date of construction is unknown (likely prior to 1985 based on aerial photography), and no RCWD permit exists for the site. Due to its location beneath a private building, maintenance of this segment is infeasible, and a significant risk exists for upstream properties and roadways if the pipe were to clog or deteriorate.

This section of stormsewer was televised in April 6, 2026. The televising report indicated that the portion of the stormsewer under the building appeared to be in good condition. The portion of the stormsewer downstream (west) of the building was partially obstructed by debris that were preventing flow from flowing freely and displaying signs of structural wear.

3 PROPOSED REPAIRS

3.1 REPAIR COMPONENTS

3.1.1 TREE, BRUSH, AND WOODY VEGETATION CLEARING

Several segments of the ditch system selective tree clearing to provide adequate access for construction equipment and ongoing maintenance activities. Clearing trees from one side of the ditch only, within the designated work-limit side identified on the plans, in most cases is sufficient to allow safe and reliable access while minimizing impacts to adjacent properties and vegetation. Clearing both sides of the ditch is not anticipated to be necessary on this system. Tree removal is recommended along the work-limit side of the ditch in the following locations:

- All of Branch 5
- Branch 3 between Dunkirk Road and 85th Avenue NE
- Branch 3 north of 85th Court NE
- Branch 2, Lateral 1 between Rendova Street NE and Naples Street NE
- Branch 2 between the I-35W on-ramp and Naples Street NE
- Branch 2 between Flowerfield Road and Restwood Road
- Branch 2 between 91st Court NE and 92nd Avenue NE
- All of Branch 1
- Main Trunk between 85th Avenue NE and U.S. Highway 10
- Main Trunk between U.S. Highway 10 and the storm sewer inlet at Quincy Street
- Main Trunk between County Road 10 and I35 Service Dr

Clearing will generally be from bank-to-bank within the ditch, and a 25-foot width from the top of bank along the working side of the ditch. In some cases, individual trees within this corridor may be preserved at the landowners' request, if access is not impaired by the tree preservation and if the tree is not at risk of blocking the ditch in the near future. Due to the urban setting and proximity to residential, commercial, and public areas, all cleared vegetation and debris should be disposed of offsite in accordance with applicable local, state, and environmental regulations. Onsite stockpiling or chipping is not recommended due to space limitations and potential conflicts with adjacent land uses. Refer to **Attachment B** for the extent of areas requiring tree clearing.

The City of Mounds View has expressed interest in having tree clearing performed on both sides of the ditch. An analysis of the portions of the ditch within the city limits indicates that expanding clearing to both sides would result in an additional construction cost of approximately \$94,000.

Although fences exist within several portions of the public drainage system right-of-way, it appears that repairs may be completed without removing the fencing. However, if conditions are found during repairs that prevent the work from being completed without removing the fencing, RCWD may need

to coordinate with the landowner to relocate the fencing outside of the right-of-way. Early coordination with these landowners ahead of construction is advisable.

3.1.2 DITCH CLEANING

Several portions of the ditch have experienced significant vegetation growth within the channel that is restricting hydraulic capacity within the open channel. To restore the system to its original design conveyance, the channel bottom in all open channel portions must be cleared of all obstructive vegetation.

Extensive sedimentation has also been observed along multiple long stretches of the open channel. In these areas, we recommend that the ditch be excavated down to the established ACSIC elevation to re-establish proper grade and flow capacity. Excavated spoils should be placed along the ditch banks and leveled in a manner that does not impede future maintenance access and builds up the ditch banks. In a few locations, spoils will have to be disposed of offsite due to space restrictions. Specific locations requiring excavation or bottom vegetation clearing are identified in **Attachment B**.

3.1.3 WEIR REMOVAL

The weir located at Station 116+58 of the Main Trunk is obstructing the function of the drainage system and creates maintenance challenges (including an attractive nuisance for beaver). As such, we recommend removing this weir as a component of the repair. The sheet piling should be pulled and/or cut-off below the ditch grade, with the metal disposed of off-site. See 3.2.2 *Water Quality* for discussions on the effects of the weir removal.

3.1.4 CULVERT REPLACEMENT

Two modification or replacement of crossings are being recommended at this time. All culverts were evaluated within a hydraulic model for adequacy in terms of meeting a minimal size for the crossings.

Minimum culvert sizes were evaluated based on meeting the following criteria:

- 1) The ability to pass the 2-year discharge (calculated with USGS Regression Equations¹) without exceeding the banks into adjacent land;
- 2) Ability to pass the design discharge without overtopping the crossing. For State and Federal Highways, this is the 100-year event. For County Roads, this is the 50-year event². For township roads, this is the 10-year event. For private crossings, this is the 2-year event.
- 3) Ability to pass a 100-year event without impacting structures (buildings)

Other considerations include similarity with upstream and downstream culvert sizes, and the potential to reduce the risk of structural damage with a larger size culvert. The owner of the crossing may elect to install a culvert larger than what is currently in place, at their own cost.

¹ Lorenz, D.L., Sanocki, C.A., and Kocian, M.J., 2010, Techniques for estimating the magnitude and frequency of peak flows on small streams in Minnesota based on data through water year 2005: U.S. Geological Survey Scientific Investigations Report 2009–5250, 54 p.

² Since the 50-year event has not been run in the District Wide Model, County Road crossings were conservatively compared to the 100-year event.

Existing culverts that are significantly higher than the ACSIC grade were evaluated to determine whether they meaningfully obstruct the public drainage system. While the long-term design preference is for culverts to be placed at or below the ACSIC, some culverts were reviewed for potential near-term replacement (under three years) to mitigate degradation of the system function. The evaluation considered several factors, including:

- A) How much higher the culvert is from the ACSIC grade (>1.0 deviation potentially requires replacement and/or lowering)
- B) The gradient of the upstream channel (steeper gradients are less impacted by culvert grade deviations)
- C) The cost and impact of replacing or lowering the culvert.

Because the established ACSIC was derived from historical records from the original 1911 construction – records that relied on an assumed, non-sea level datum—the evaluation prioritized weighing the hydraulic benefits against the cost of lowering culverts to the ACSIC elevation. Although several culverts met the criterion for being too high (greater than 1.0 ft deviation), the analysis showed that lowering them would provide minimal additional hydraulic utility. Therefore, no culverts are recommended for adjustment to the ACSIC elevation currently.

While all the bridge crossings appear to be in good condition, each should be assessed if they are in use. If they are not in use, they should be removed. High flow events could damage a bridge crossing resulting in an obstruction in the channel that constricts hydraulic capacity causing flooding. See **Table 1** for full details on individual crossings and recommended actions.

Table 1: ARJD 1 Culverts

Authority	Crossing	Location	Existing Crossing	Analysis	Recommendation
City of Mounds View	Rice Creek Parkway	Main Trunk Station 3+07	60" RCP	Existing Crossing is adequately sized and below the ACSIC grade (-0.1).	No replacement is recommended.
City of Mounds View	Lois Dr	Main Trunk Station 34+05	48"x82" CMPA	Existing Crossing is adequately sized, in good condition, and is within tolerance of ACSIC grade (+0.8).	No replacement is recommended.
City of Mounds View	Trail Crossing	Main Trunk Station 40+51	36" CMP	Existing Crossing is in fair condition and below the ACSIC grade (-1.1). While the crossing meets design criteria of passing a 2-year event, it produces a significant amount of hydraulic head loss during a 10-year event which adversely impacts overall system performance. Replacing the culvert with a 48" culvert would substantially reduce head loss. Increasing the culvert size beyond this range would yield diminishing hydraulic benefits. Upsizing the culvert from the existing will require adding embankment to the crossing to ensure minimum cover is maintained over the culvert.	Replace with 48" CMP or larger at existing grade. Add embankment to ensure minimum cover over culvert.
MnDOT	US HWY 10	Main Trunk Station 55+66	2 Lines of 54"x88" RCPA	Existing Crossing is adequately sized, in good condition, but above the ACSIC grade (+1.1). The elevation of the culverts is not significantly affecting upstream peak water levels. When these culverts are replaced in the future, they should be installed at the ACSIC grade. One barrel is partially obstructed with sediment. Cleanout is recommended to facilitate free flowing conditions.	No replacement is recommended. Cleanout is recommended
City of Mounds View	Trail Crossing	Main Trunk Station 70+17	Bridge (Span 40')	Crossing appears to be adequately sized and in good condition.	No replacement is recommended.
Ramsey County	85 th Ave/ County Road J	Main Trunk Station 92+27	48" RCP	Existing Crossing is adequately sized, in good condition and below the ACSIC grade (-1.7). Upstream grate is partially obstructed with vegetation. Recommend removing the vegetation on the grate. We	No replacement is recommended. Cleaning of grate is recommended.

Authority	Crossing	Location	Existing Crossing	Analysis	Recommendation
				recommend the Road Authority consider alternative grate spacing or removing the grate altogether to avoid debris from collecting.	
City of Blaine	Trail Crossing	Main Trunk Station 105+50	Bridge (Span 45')	Crossing appears to be adequately sized and in good condition.	No replacement is recommended.
City of Blaine	Trail Crossing	Main Trunk Station 112+10	Foot Bridge (Span 20')	Crossing appears to be adequately sized and in good condition.	No replacement is recommended.
City of Blaine	Trail Crossing	Main Trunk Station 130+39	36" RCP	Existing Crossing is adequately sized, appears to be in fair condition and below the ACSIC grade (-0.7). Since the 2-year event passes without overtopping immediate replacement is not necessary.	No replacement is recommended
MnDOT	I35 Service Road	Main Trunk Station 155+24	36" RCP	Existing Crossing is adequately sized, in fair condition and below the ACSIC grade (-0.8).	No replacement is recommended
MnDOT	I35	Main Trunk Station 159+00	2 Lines of 30" RCP	Existing Crossing is adequately sized and appears in fair condition but above the ACSIC grade (+1.5). However the deviation is not problematic, as hydraulic analysis indicates that the crossing conveys the 100 year event without overtopping and does not contribute to upstream overbank flooding.	Consider lowering the culvert when road is reconstructed in future
City of Blaine	93 rd Ave NE	Branch 1 Station 9+20	24" RCP	Existing crossing is adequately sized and within the ACSIC grade tolerance (+0.2 ft). Crossing passes a 10 year event and meets drainage authority criteria.	No replacement is recommended
MnDOT	I35 Service Road	Branch 2 Main Station 11+99	2 Lines of 48" RCP	Existing Crossing is adequately sized, is in good condition and within tolerance of the ACSIC grade (+0.4).	No replacement is recommended.
MnDOT	I35 West Ramp	Branch 2 Main Station 14+62	2 Lines of 42" RCP	Existing Crossing is adequately sized, appears in fair condition and within tolerance of the ACSIC grade (+0.6).	No replacement is recommended.
MnDOT	I35	Branch 2 Main Station 17+26	2 Lines of 42" RCP	Existing Crossing is adequately sized, appears in good condition and within tolerance of the ACSIC grade (+0.4)	No replacement is recommended.
MnDOT	I35 West Ramp	Branch 2 Main Station 25+76	48" RCP	Existing Crossing is adequately sized and appears in fair condition but above the ACSIC grade (+1.4). However the deviation is not problematic, as hydraulic analysis indicates that the crossing conveys the 100 year event without overtopping and does not affect upstream peak water levels.	Consider lowering the culvert when road is reconstructed in future.

Authority	Crossing	Location	Existing Crossing	Analysis	Recommendation
Private	Foot Bridge Crossing	Branch 2 Main Trunk 33+68	Bridge (Span 21')	Crossing appears to be adequately sized and in fair condition. If not in use, recommend removal	Discuss usage of bridge with landowner
City of Blaine	Naples St	Branch 2 Main Station 35+58	38"x57" CMPA	Existing Crossing is adequately sized and appears in fair condition but above the ACSIC grade (+1.1).	Consider lowering the culvert when road is reconstructed in future.
Private	Driveway	Branch 2 Main Station 36+74	36"x58" CMPA	Existing Crossing is adequately sized and appears in fair condition but above the ACSIC grade (+1.0). Vegetation is obstructing the grate. Recommend cleaning out of grates.	No replacement is recommended.
City of Lexington	Flowerfield Rd	Branch 2 Main Station 42+37	48" RCP	Existing Crossing is adequately sized, appears in fair condition and within tolerance of the ACSIC grade (+0.2). The crossing meets the established drainage authority design criteria. However, an existing structure located upstream of the crossing may be at risk during the 100 year event. Future roadway modifications may consider increased pipe sizes at this crossing and the crossings directly downstream to address potential for flooding in the area.	Consider resizing when road is reconstructed in future.
Private	Foot Bridge Crossing	Branch 2 Main Station 45+24	Bridge (Span 23')	Crossing appears to be adequately sized and in fair condition. If not in use, recommend removal	Discuss usage of bridge with landowner
Private	Foot Bridge Crossing	Branch 2 Main Station 45+96	Bridge (Span 35')	Crossing appears to be adequately sized and in fair condition. If not in use, recommend removal	Discuss usage of bridge with landowner
Private	Foot Bridge Crossing	Branch 2 Main Station 46+73	Bridge (Span 14')	Crossing appears to be adequately sized and in fair condition. If not in use, recommend removal	Discuss usage of bridge with landowner
Private	Foot Bridge Crossing	Branch 2 Main Station 53+03	Bridge (Span 24')	Crossing appears to be adequately sized and in fair condition. If not in use, recommend removal	Discuss usage of bridge with landowner



Authority	Crossing	Location	Existing Crossing	Analysis	Recommendation
Private	Foot Bridge Crossing	Branch 2 Main Station 54+52	Bridge (Span 29')	Crossing appears to be adequately sized and in fair condition. If not in use, recommend removal	Discuss usage of bridge with landowner
City of Lexington	Aaron Ave	Branch 2 Main Station 57+58	48" CMP	Existing Crossing is adequately sized, appears in fair condition but above the ACSIC grade (+1.4). However, the deviation is not problematic, as hydraulic analysis indicates that the crossing conveys low frequency events, to include the 100 year event, without overtopping and does not affect upstream peak water levels.	No replacement is recommended
City of Blaine	Restwood Rd	Branch 2 Main Station 58+79	48" RCP	Existing Crossing is adequately sized and appears in fair condition but above the ACSIC grade (+1.3).	No replacement is recommended
City of Blaine	91 st Ct NE	Branch 2 Main Station 60+47	48" CMP	Existing Crossing is adequately sized, appears in fair condition, and below the ACSIC grade (-0.2). Crossing meets drainage authority design criteria.	No replacement is recommended
City of Blaine	92 nd Ave NE	Branch 2 Main Station 66+25	18" RCP	Existing Crossing is adequately sized, appears in fair condition and within tolerance of the ACSIC grade (+0.8). Crossing meets drainage authority design criteria.	No replacement is recommended
MnDOT	I35 East Ramp	Branch 2 Lateral 1 Station 2+00	2 Lines of 22"x36" RCPA	Existing Crossing is adequately sized, appears in fair condition and within tolerance of the ACSIC grade (+0.7)	No replacement is recommended .
City of Blaine	Naples St	Branch 2 Lateral 1 Station 11+49	36" CPP	Existing Crossing is adequately sized, in good condition and within tolerance of the ACSIC grade (+0.3)	No replacement is recommended
City of Blaine	Rendova St NE	Branch 2 Lateral 1 Station 25+61	48" CMP	Existing Crossing is adequately sized, in good condition and at ACSIC grade	No replacement is recommended
Private	Driveway	Branch 2 Lateral 1 Station 26+61	48" CMP	Existing Crossing is adequately sized, in good condition and within tolerance of the ACSIC grade (+0.8).	No replacement is recommended
Private	Driveway	Branch 2 Lateral 1 Station 28+91	36" CMP	Existing Crossing is adequately sized, in fair condition and within tolerance of the ACSIC grade (+0.9).	No replacement is recommended
Private	Driveway	Branch 2 Lateral 1 Station 30+65	48" CPP	Existing Crossing is adequately sized, in good condition and within tolerance of the ACSIC grade (+0.2)	No replacement is recommended



Authority	Crossing	Location	Existing Crossing	Analysis	Recommendation
Private	Driveway	Branch 2 Lateral 1 Station 62+59	48" CMP	Existing Crossing is adequately sized, appears in fair condition and below the ACSIC grade (-0.1). Vegetation is obscuring the upstream end. Reassess condition after a repair.	No replacement is recommended
City of Blaine	Dunkirk Ct NE	Branch 3 Station 7+71	24" RCP	Existing Crossing is adequately sized, appears in fair condition and below the ACSIC grade (-2.0).	No replacement is recommended
Ramsey County	85 th Ave/ County Road J	Branch 3 Station 11+00	36" RCP	Existing Crossing is adequately sized and in good condition but has one invert significantly above the ACSIC (+3.0). However, the deviation is not problematic, as hydraulic analysis indicates that the crossing conveys low frequency events, to include the 100 year event, without overtopping and is not significantly affecting upstream peak water levels. Vegetation is obstructing the grates. Recommend cleaning out of grates.	No replacement is recommended at this time. Consider lowering the culvert at the time of the next road reconstruction
City of Mounds View	Trail Crossing	Branch 5 Station 2+61	Foot Bridge (Span 19')	Crossing appears to be adequately sized and in fair condition.	No replacement is recommended
City of Mounds View	Trail Crossing	Branch 5 Station 3+94	Bridge (Span 57')	Crossing appears to be adequately sized and in fair condition. However, the City has requested replacement of the existing bridge with a culvert crossing. Replacing the bridge will ease future maintenance of the ditch and provide an additional location to cross the ditch for inspection and maintenance	Replace with 36" RCP at ACSIC grade. Add embankment to match bridge deck elevation.
City of Mounds View	Greenfield Park	Branch 5 Station 13+24	36" RCP	Existing Crossing is adequately sized, in good condition and within tolerance of the ACSIC grade (+0.7)	No replacement is recommended
City of Mounds View	Hillview Rd	Branch 5 Station 14+88	36" RCP	Existing Crossing is adequately sized, in good condition and within tolerance of the ACSIC grade (+0.5)	No replacement is recommended
City of Mounds View	Trail Crossing	Branch 5 Station 20+00	36" RCP	Existing Crossing is adequately sized and in good condition but above the ACSIC grade (+1.5) However, the deviation is not problematic, as it is not significantly affecting upstream peak water levels.	No replacement is recommended

3.1.5 BRANCH 2, LATERAL 1 REALIGNMENT

The storm sewer located on Branch 2, Lateral 1 lies directly beneath a private industrial building (Tforce Freight), making any future maintenance activities infeasible and placing upstream infrastructure at risk should the stormsewer fail. As a result, a realignment of the public drainage system around the building was evaluated that would avoid the risk and enable the existing storm sewer to be abandoned in place. The realignment generally begins west of Naples Street, proceeds north past the north entrance into the TForce parking lot, then continues west through the grassy area at the north end of the TForce property, then south near the I-35W right-of-way and into a pond that is drained by Branch 2 Lateral 1. See **Sheet 18 of Attachment B**.

The remaining stormsewer under the Tforce building and in the paved lot areas east and west of the building would be abandoned in place. This could be accomplished by grouting closed the eastern portion of stormsewer and then blowing sand or flowable grout into the portion of the stormsewer under the building (to avoid future collapse). The westernmost portion of the stormsewer is connected to intakes in the paved lot area and would be left in place and become private infrastructure for the Tforce site.

The northern and western portions of this realignment are proposed to be open channel. The eastern portion of the realignment is situated in a location where only a small portion of greenspace (i.e. the Naples St. roadway ditch) exists. As such, three alternatives were evaluated at this location to convey stormwater to the north:

- Alternative 1 consists of new storm sewer with drop inlets following the bottom of the Naples Street road ditch.
- Alternative 2 consists of a deepening of the existing open-channel ditch along Naples Street, including a deeper culvert under the north TForce driveway.
- Alternative 3 consists of new storm sewer routed under the TForce parking lot.

See **Sheet 18 of Attachment B** for a depiction of all three alternatives.

Each alternative presents distinct challenges. Alternative 3 would require disruption of the TForce parking lot and as a result would be the most costly option. Due to the limited space between the TForce parking lot and the Naples Street roadway and clear zone requirements for county highways, Alternative 2 would require steep side slopes adjacent to the TForce parking lot and possibly a retaining wall, which adds significant cost and created additional risk for erosion.

Considering constructability, impacts, and cost, Alternative 1 is the most practical and cost-effective option for realigning the public drainage system around the Tforce building. Implementation of Alternative 1 requires obtaining easements from the landowner, as portions of the proposed alignment would be located on the private property. Additionally, Anoka County holds a 25-foot easement adjacent to Naples Street; therefore, coordination with Anoka County will be required prior to construction. The proposed realignment is illustrated in detail on **Sheet 18 of Attachment B**.

The proposed realignment will require initiation of a realignment proceeding pursuant to Minnesota Statute 103E.227

3.2 EFFECTS OF REPAIR

3.2.1 HYDRAULIC EFFICIENCY

As noted above, nearly all of the ARJD 1 channel bottom is heavily vegetated or has significant sedimentation. The proposed repair will remove these obstructions to restore the hydraulic efficiency of the system and provide a reliable outlet for urban drainage. The open channel repairs will substantially reduce peak water levels for smaller and more frequent rain events such as the 2-year rainfall (2.9"). The repairs are not anticipated to substantially increase capacity for low-frequency, high volume events such as the 100-year (7.2-ich) rainfall, but it will reduce the risk of culvert and channel clogging that can cause flooding for a variety of rainfall events. I.e. the repairs will restore the predictability of drainage system function.

3.2.2 WATER QUALITY

The proposed repair will not have a significant adverse impact on overall water quality. Existing tree and brush cover currently limit ground vegetative growth that would otherwise provide pretreatment of runoff; however, planned tree clearing combined with subsequent restoration efforts will promote the establishment of a vegetated buffer. Runoff will traverse this buffer and receive pretreatment prior to entering the ditch. Restoration efforts will include seeding and mulching activities using Type 3 straw mulch and a Mesic In-Slope seed mix.

The original purpose of the weir located in the Main Trunk downstream of its intersection with Branch 2 was to divert low-flow runoff into a large stormwater pond west of the Main Trunk for water-quality treatment. However, due to the short hydraulic residence time within the pond and the relatively small pond volume compared to the contributing sub watershed, the effectiveness of this diversion for water-quality improvement is likely minimal. In addition, hydraulic modeling indicates that flows from frequent storm events overtop the weir, negating the intended diversion function. Given these factors, removal of the weir is not expected to have any adverse impact on water quality.

3.2.3 WETLANDS AND PUBLIC WATERS

Discharges of dredge or fill material into federally regulated wetlands for the purpose of maintenance of drainage ditches is exempt from CWA Section 404 permitting requirements. USACE Regulatory Guidance Letter No. 07-02, dated July 4, 2007, defines "maintenance of drainage ditches" to include excavating accumulated sediments back to the original contours and culvert replacement, where the original function and capacity is not increased (consistent with the definition of repair in MS 103E.701). Since the work considered as part of this repair report meets the definition of maintenance, it will not require permitting or engagement with the USACE.

Under the state WCA, repairs to public drainage systems, as defined by MS 103E.701, carry exemptions for impacts resulting from the maintenance or repair of existing public drainage systems, if conducted by the authorized Drainage Authority under MN Statutes 103E. An exception to this exemption is impact to wetlands that have existed for more than 25 years before the proposed impact. In this case, nearly all of the wetlands adjacent to the proposed repairs have existed for more than 25 years.

However, the proposed work is not anticipated to result in impact of the wetlands; i.e. converting portions of wetland into non-wetland or inherently different wetlands. The ditch currently has minimal lateral drainage effect, as evidenced by current and historic extents of wetland adjacent to the ditch. As such, cleaning the ditch to historic grades will not by itself induce lateral drainage sufficient to create upland. Accordingly, the project is anticipated to meet the “no-loss” standard under the Wetland Conservation Act (WCA). Additionally, no wetlands have been identified within the area of the proposed realignment of Branch 2, Lateral 1, and so the realignment is not anticipated to impact wetlands.

There will be no impact to Public Water (PW #02-0046) located upstream of Branch 2, Lateral 1.

3.2.4 THREATENED AND ENDANGERED SPECIES

Per MN Statute 94.0895 Subd 2, a person may not “take” any portion of an endangered species; however, Subd. 2 indicates that this does not apply to plants on a ditch except for ground not previously disturbed by construction or maintenance. The original establishment of ARJD 1 included the excavation of the ditch and spreading of spoils on both banks of the ditch. The footprint of the original ditch construction is likely to include the bank-to-bank width of the ditch plus a 20-foot width at the top of bank on both sides.

The proposed repairs are largely anticipated to be completed within the original footprint of the ditch, and thus exempt from takings requirements for threatened and endangered plant species.

Exceptions to this are the proposed realignment of Branch 2 Lateral 1, access points from public roadways (though public road right-of-way is likewise exempt from takings requirements) and locations where access is diverted from the top of bank to avoid high-value trees, utilities, or private structures.

Although state statute exempts most if not all of the proposed work from takings prohibitions, the repairs should avoid takings where possible. The habitat conditions associated with the ditch system may be particularly suitable for certain sensitive plant and animal species. Activities within the habitat such as sediment removal, sediment placement, vegetation clearing, and operation of heavy equipment alternatively could have the potential to adversely affect these species or further propagate them.

To better understand potential impacts and inform mitigation requirements, a pre-construction plant survey is being conducted. Mitigation efforts may include avoidance measures to minimize impacts

on susceptible species. Due to the likely presence of rare species it is likely that some avoidance measures such as temporary construction fencing will be required during repair activities. Associated costs with these anticipated avoidance measures has been considered within the budget.

3.3 PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST

3.3.1 PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COST (POPCC)

A Preliminary Opinion of Probable Construction Cost (POPCC) was developed for the recommended repairs and is included as **Attachment C. Table 2** displays a summary of project costs for the roadway authorities and benefiting landowners.

Table 2: POPCC for the Recommended Repair

	System-wide Drainage Repairs	Branch 2, Lateral 1 Realignment	TOTAL REPAIR COSTS
Construction Cost	\$938,926	\$203,400	\$1,142,326
Contingency (~15%)	\$141,074	\$30,600	\$171,674
Engineering and Administrative (Estimate 20%)	\$188,000	\$41,000	\$229,000
Total Cost	\$1,268,000	\$275,000	\$1,543,000

The work included in the cost estimate for the system-wide drainage repair includes tree clearing, weir removal, excavation of sediment from the ditch bottom, spreading of spoil and seeding of the buffer. This cost estimate does not include the additional cost associated with conducting tree clearing on both sides of the ditch within the City of Mounds View.

4 RECOMMENDATION

4.1 RECOMMENDED REPAIR

To restore the function of the ARJD 1 public drainage system, we recommend that the District complete repairs to the open channel portions of the system to the ACSIC, as depicted in **Attachment B**. Excavation and clearing of vegetation within the open channels will facilitate increased hydraulic efficiency. Additionally, conducting tree clearing operations will improve maintenance access to the system and reduce the potential for future obstructions in the form of deadfall or excessive vegetative growth.

Several culverts are currently above the ACSIC; however, they are not negatively affecting the performance of the drainage system. As such, these culverts do not need to be replaced or lowered at this time, but the elevation of these culverts should be reviewed when roadway improvements are undertaken in the future.

To facilitate maintenance access and prevent future maintenance issues, we recommend that the Branch 2, Lateral 1 realignment be completed. While this segment is not at immediate risk of failure, completing the realignment now would be beneficial to the District in advance of further deterioration. Implementation of this realignment will require extensive coordination with the landowner, which may be time-intensive. It would be preferable to complete the realignment concurrently with other repair activities on the ARJD 1 system; however, if landowner coordination does not progress in a timely manner, the efforts may need to be separated to allow other repairs to proceed without delay.

4.2 ALLOCATING PROJECT COST

Per the RCWD Watershed Management Plan, cost of public drainage system repairs are split between the District as a whole (ad valorem spending) and the landowners contributing drainage to the system (via a Water Management District – WMD – charge). Historically, system repair component costs related to regulatory compliance (e.g. wetland avoidance and mitigation) have been allocated to ad valorem spending, while other direct component costs to restore system function have been allocated to the WMD. Where breakdown of cost between regulatory compliance and other repair costs is unclear, the District has typically utilized a 60/40 (WMD/ad valorem) split. For the ARJD 1 repairs, it will be challenging if not infeasible to allocate costs of all individual project components to District benefit vs. local benefit.

The Board should note that the conditions necessitating the Branch 2, Lateral 1 realignment were not caused by the landowners within the WMD as a whole; this should be considered when determining cost allocations.

We recommend that the Board and District initiate coordination with relevant public entities—including Anoka County, Ramsey County, the City of Blaine, the City of Mounds View, and the City of Lexington, ahead of or in conjunction with a repair hearing.

To assist the Board of Managers, preliminary design and cost information are provided in this memorandum. However, detailed construction plans, bid documents, and technical specifications will need to be developed following the Board's authorization of the project. The Board of Managers retains the authority to accept, reject, or modify the Engineer's recommendations. The recommended repairs are consistent with the objectives and policies identified in the current Watershed Management Plan.

5 ATTACHMENTS

LIST OF ATTACHMENTS

Attachment A: Survey Photos

Attachment B: Plan and Profile Drawings

Attachment C: Preliminary Opinion of Probable Construction Cost

Attachment D: Storm Sewer Televising Report

ATTACHMENT A: SURVEY PHOTOS



Photo #1: Heavy Vegetation near ditch, Main Trunk STA: 31+00



Photo #3: Sheet pile weir with 2x12 board on top, Main Trunk STA: 116+58



Photo #2: Heavy Vegetation in ditch, Main Trunk STA: 53+00



Photo #4: Heavy in channel vegetation, trees on east side of ditch, Kane Meadows Open Space Trail on west side of ditch, Main Trunk STA: 137+00



Photo #5: Heavy vegetation in ditch, trees to one side and Kane Meadows Open Space Trail on other side, looking upstream, Branch 1 STA: 1+00



Photo #7: Overhead Power Lines next to ditch, Branch 2 STA: 33+50



Photo #6: Heavy trees near ditch, chain link fence, Branch 2 STA: 29+00



Photo #8: Block wall, buildings, and fence near ditch, Branch 2 STA: 56+00



Photo #9: Ditch next to mobile homes, Branch 2 STA: 61+50



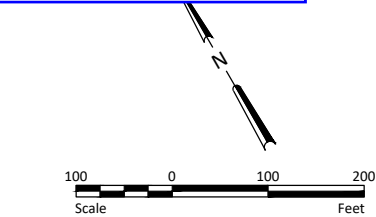
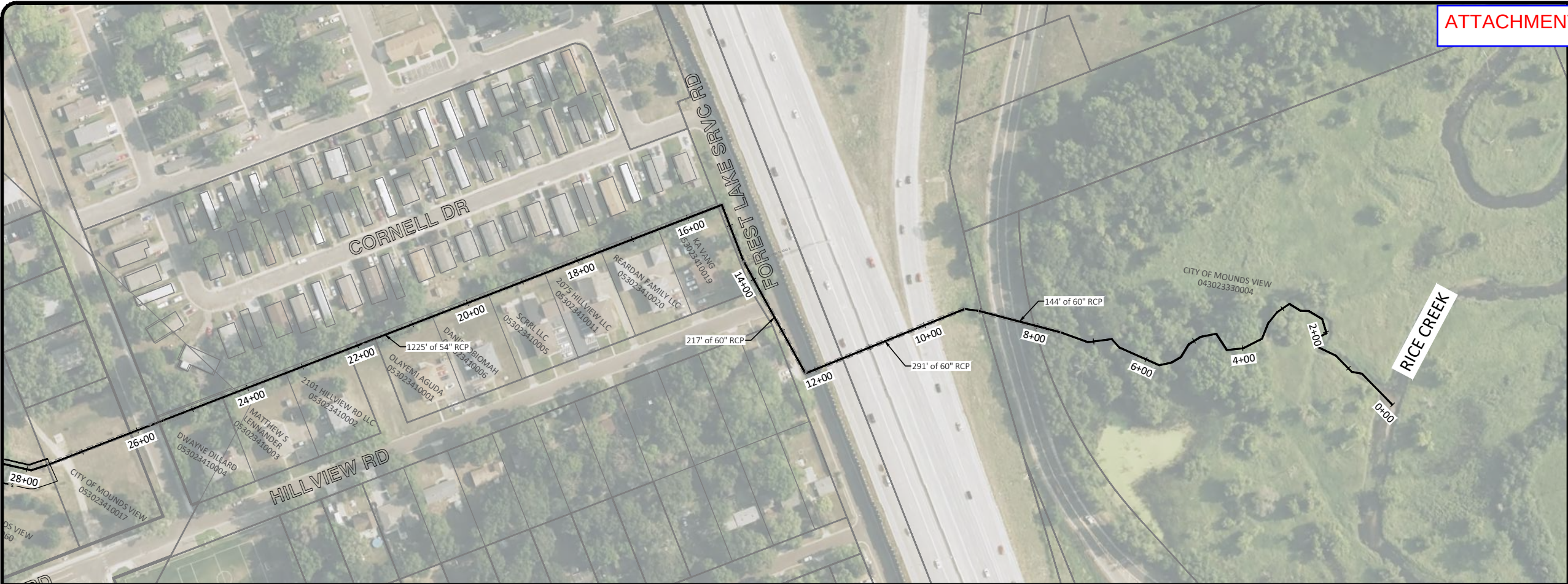
Photo #11: Deadfall in channel, Branch 3 STA: 1+00



Photo #10: Chain Link Fence Next to Ditch, Branch 2 Lateral 1 STA: 16+00



Photo #12: Deadfall in channel, Branch 5 STA: 17+00

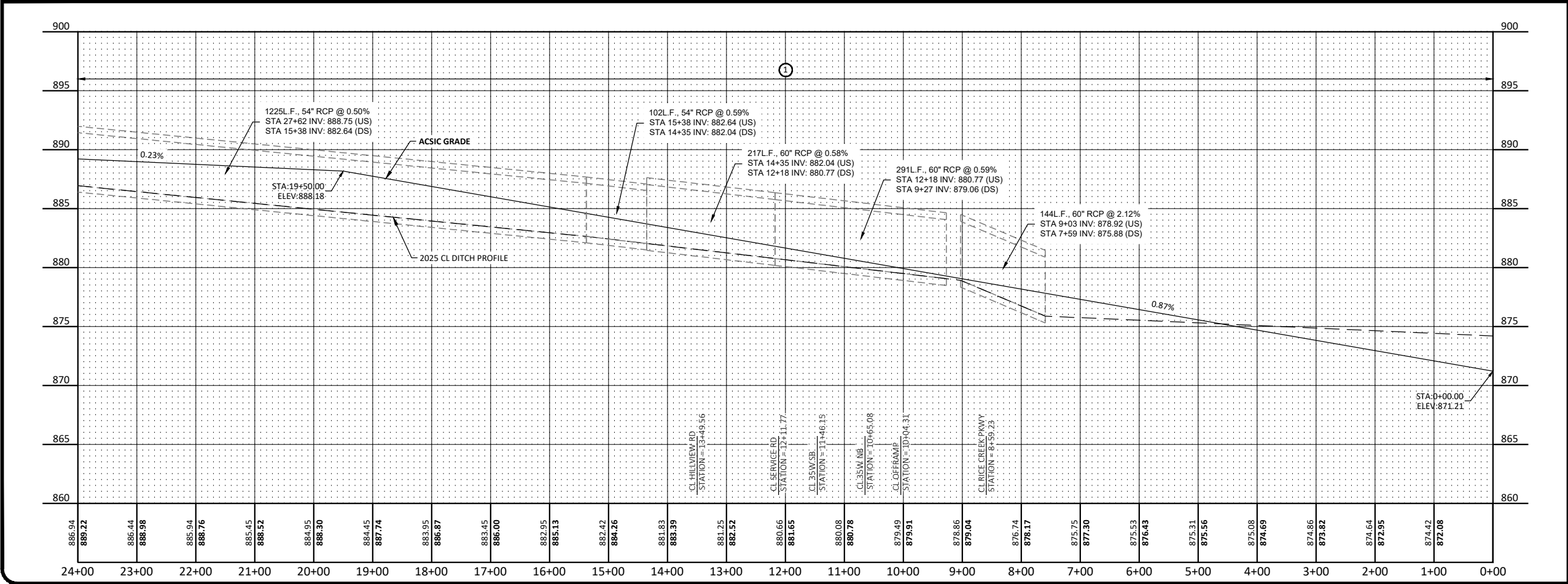


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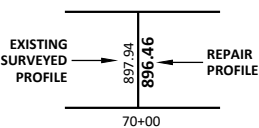
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③ DITCH EXCAVATION TO ACSIC GRADE
④ DITCH BOTTOM VEGETATION AND ROOT MASS REMOVAL
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LEGEND FOR PROFILE ELEVATIONS



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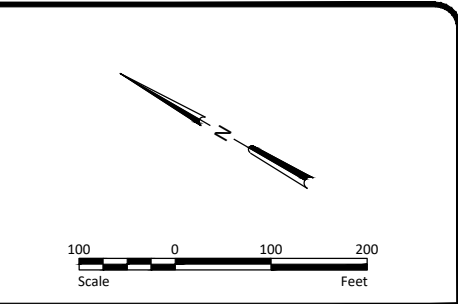
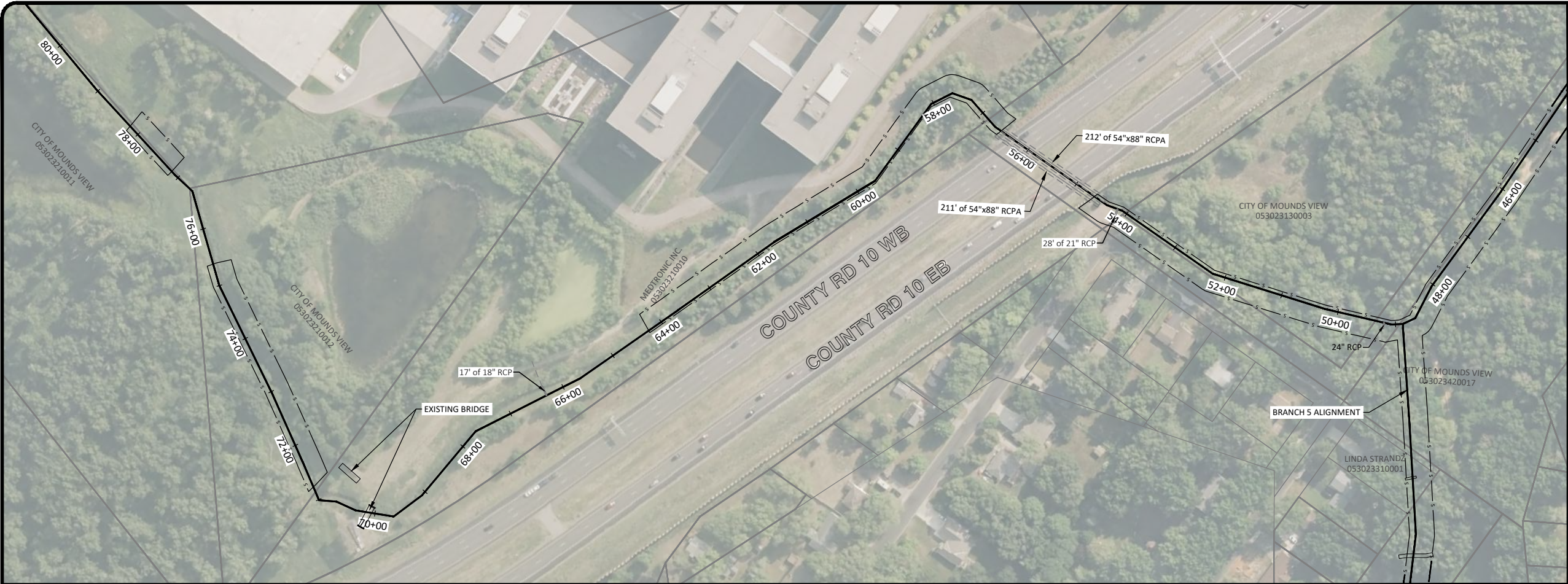
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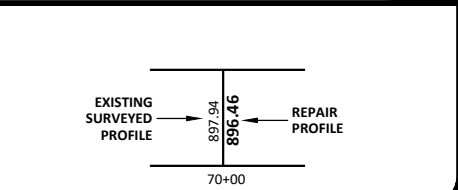
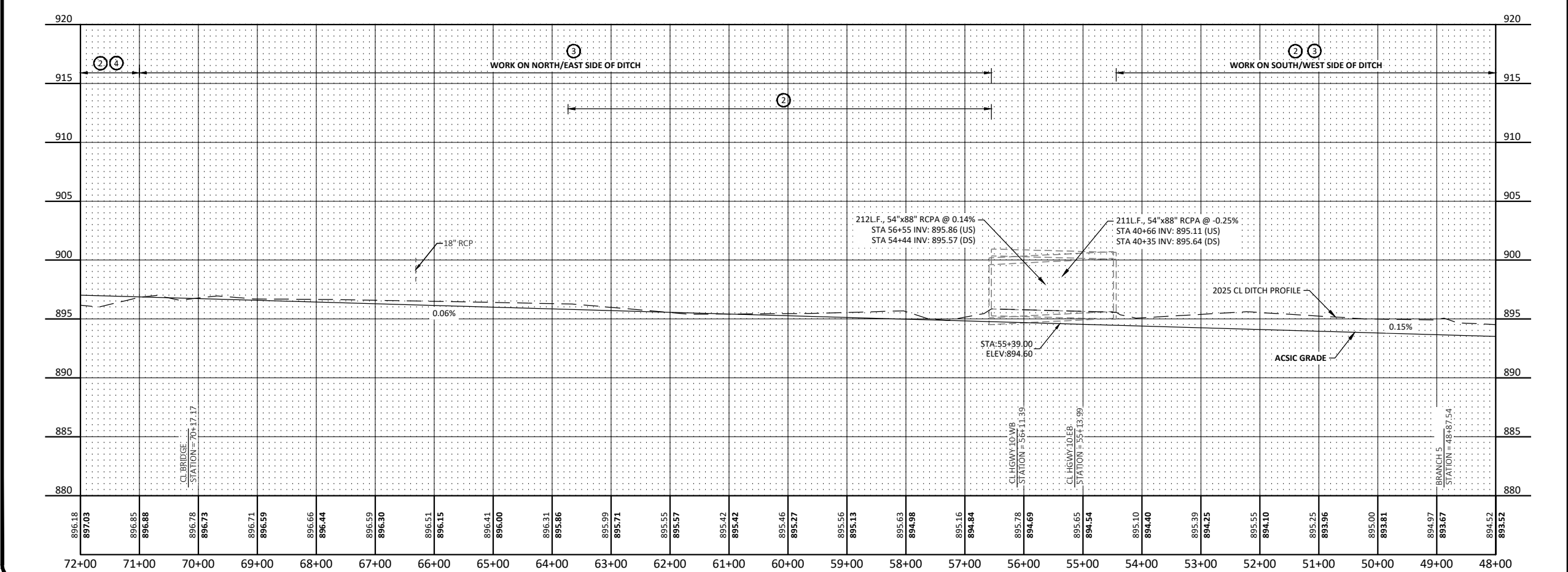
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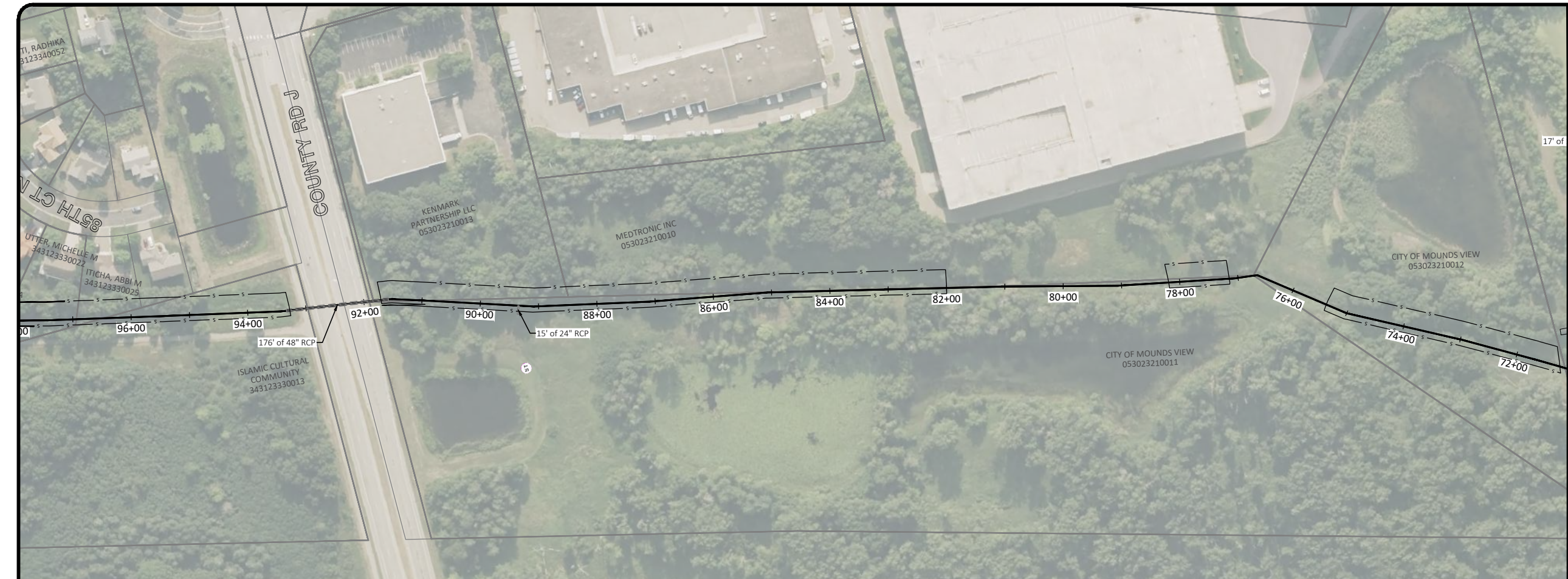
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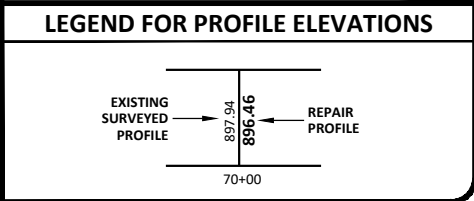
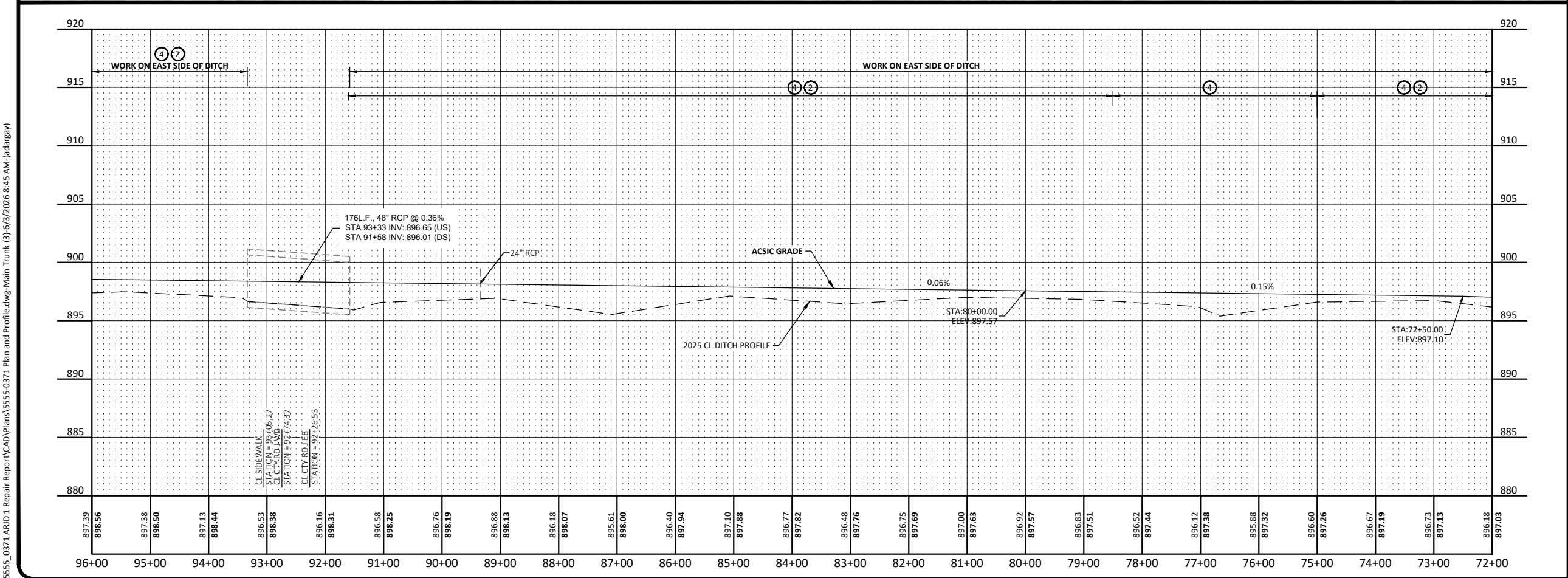
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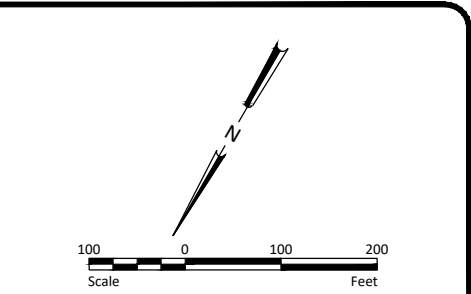
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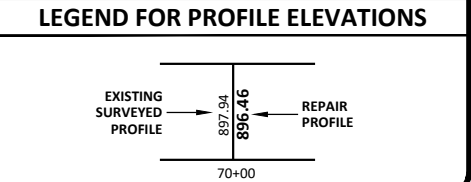
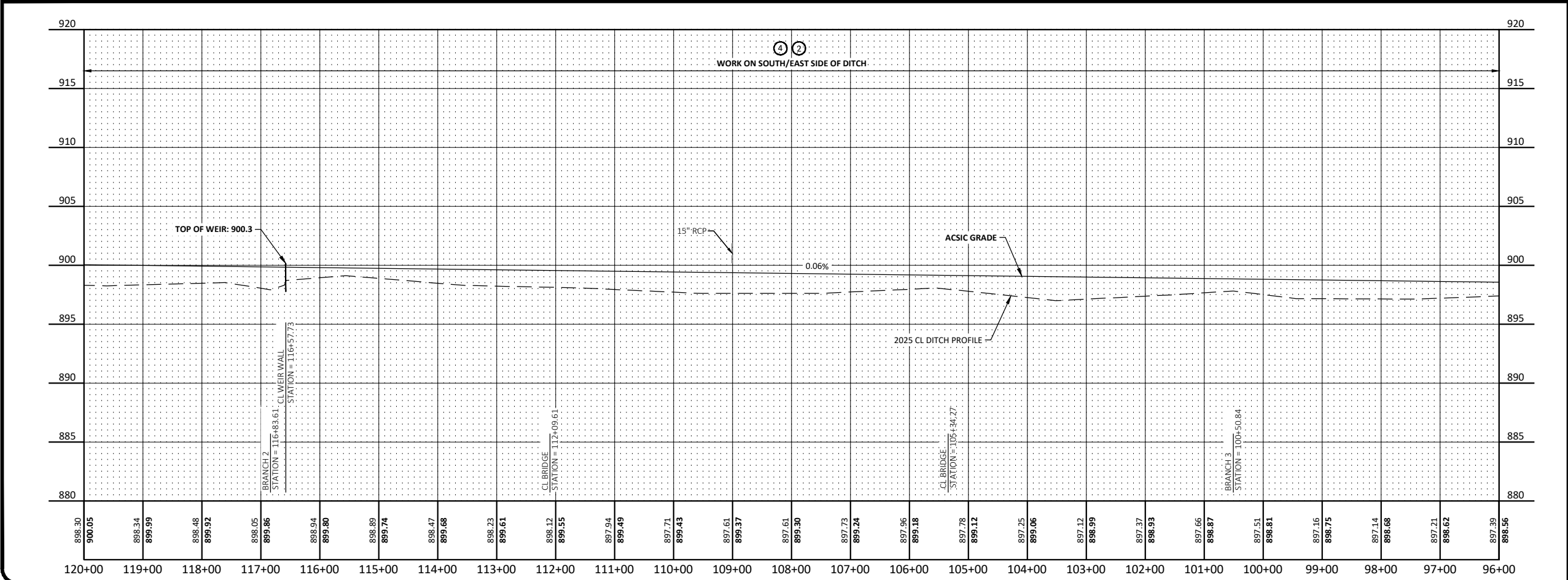
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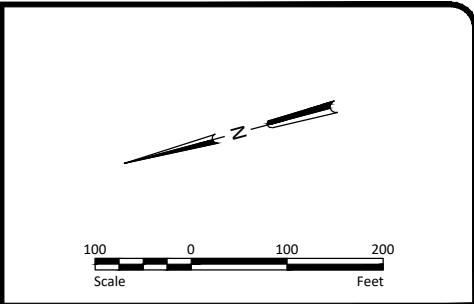
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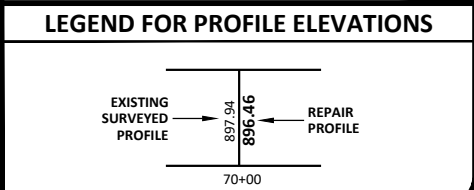
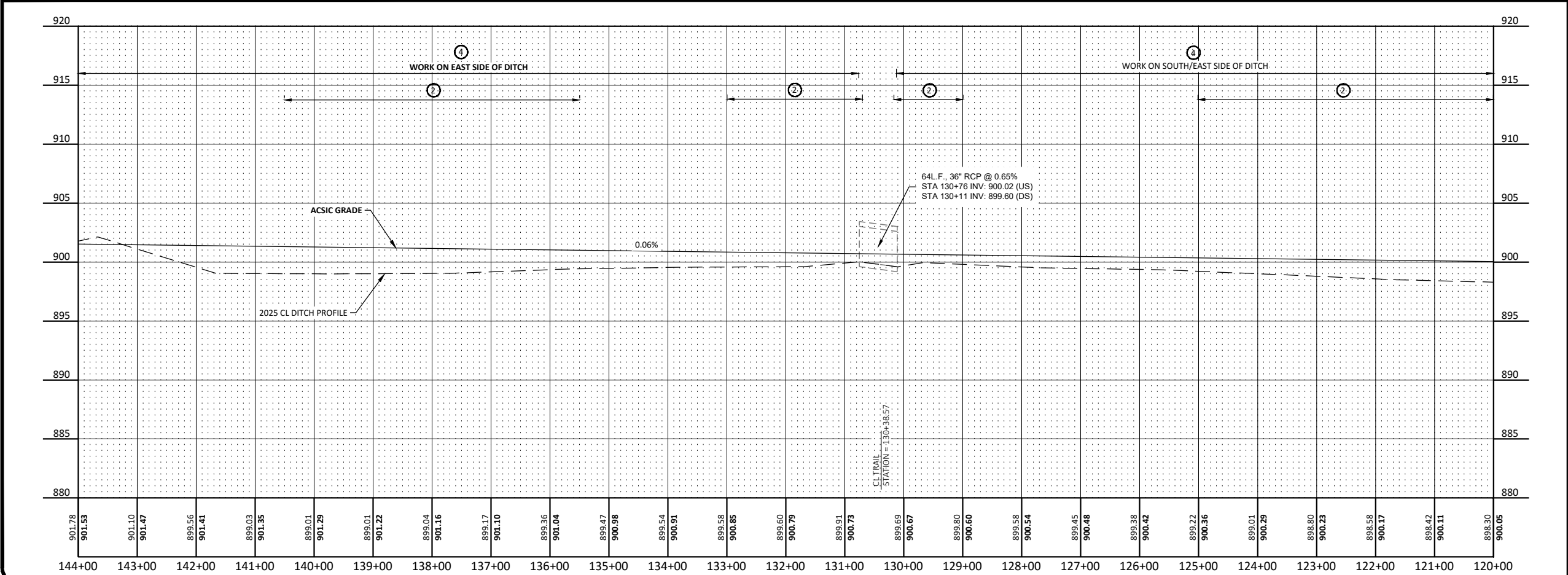
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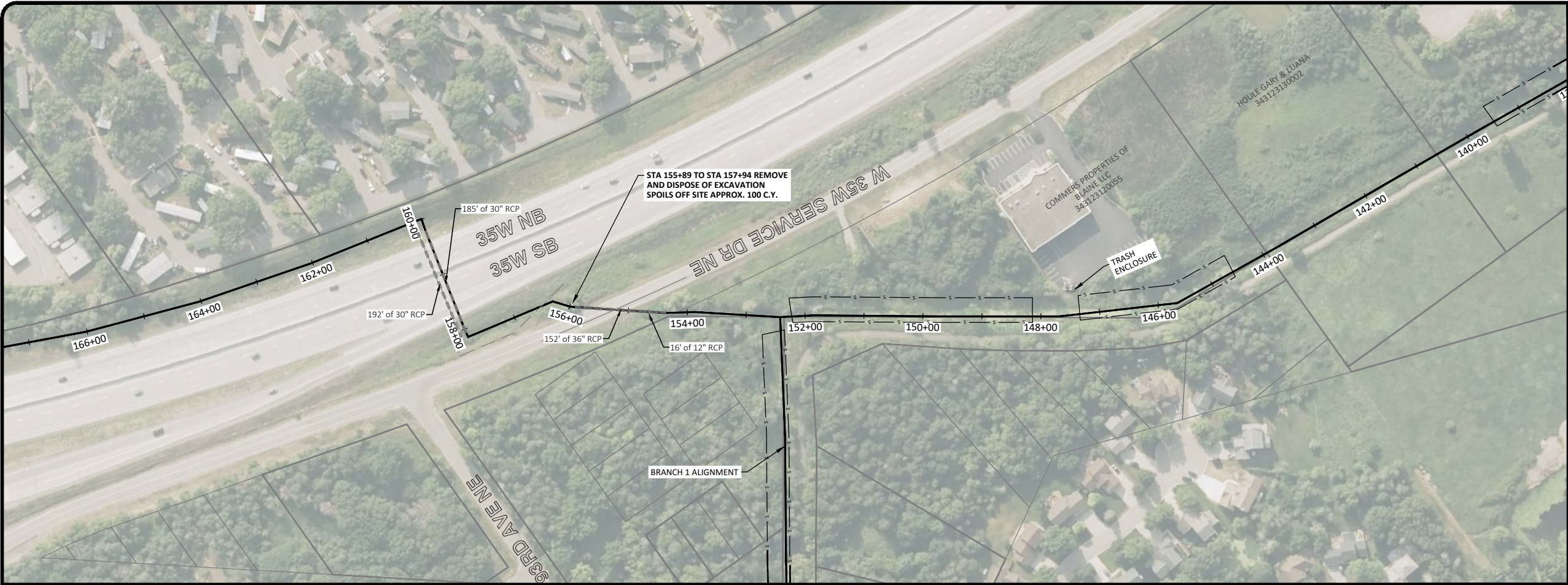
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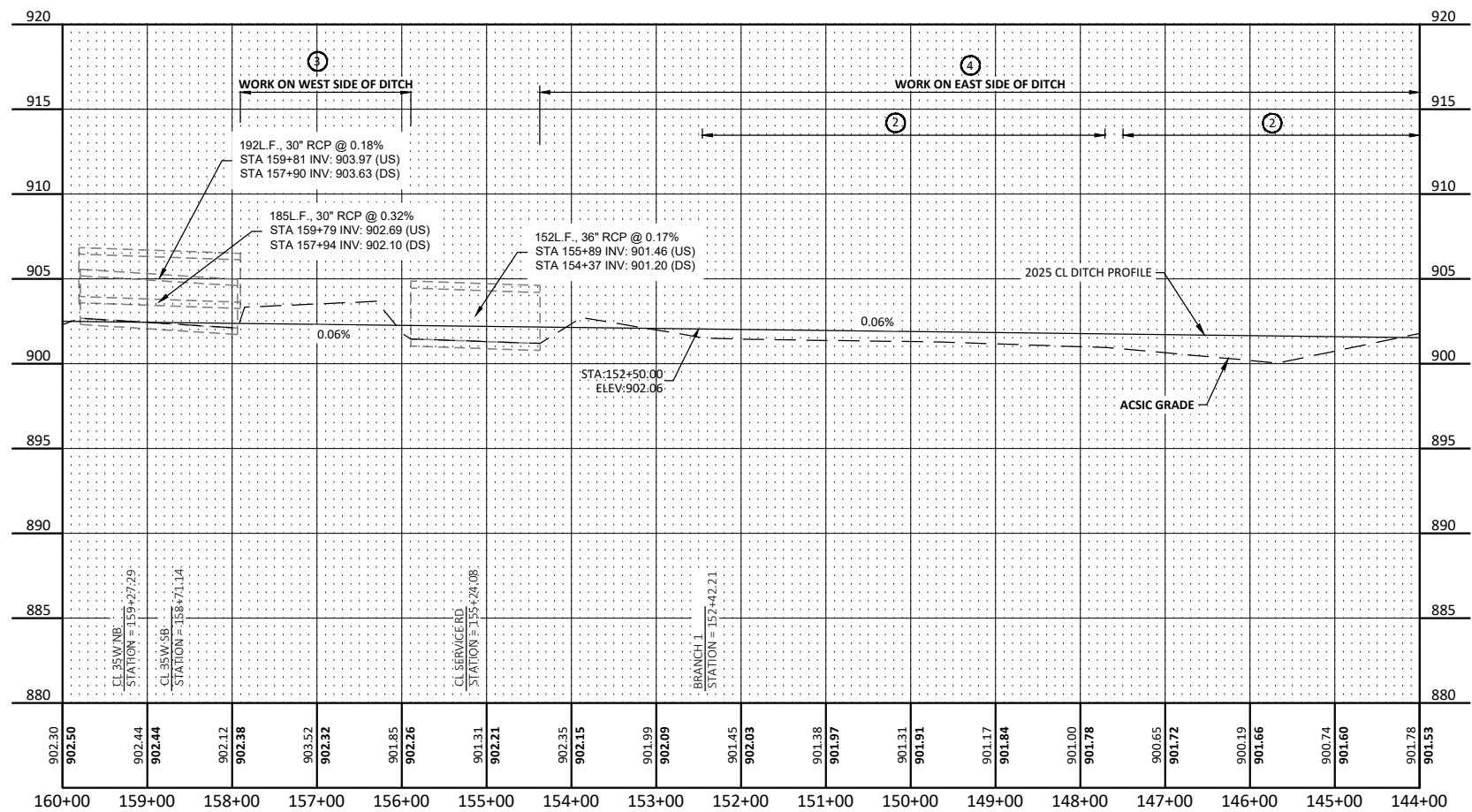


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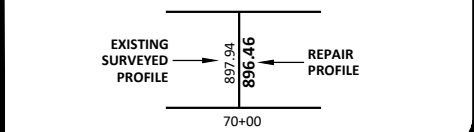
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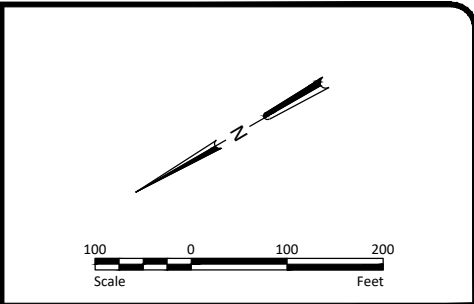
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MAIN TRUNK PLAN AND
PROFILE
PROJECT NO. 5555-0371

SHEET
7

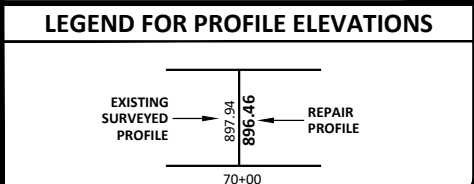
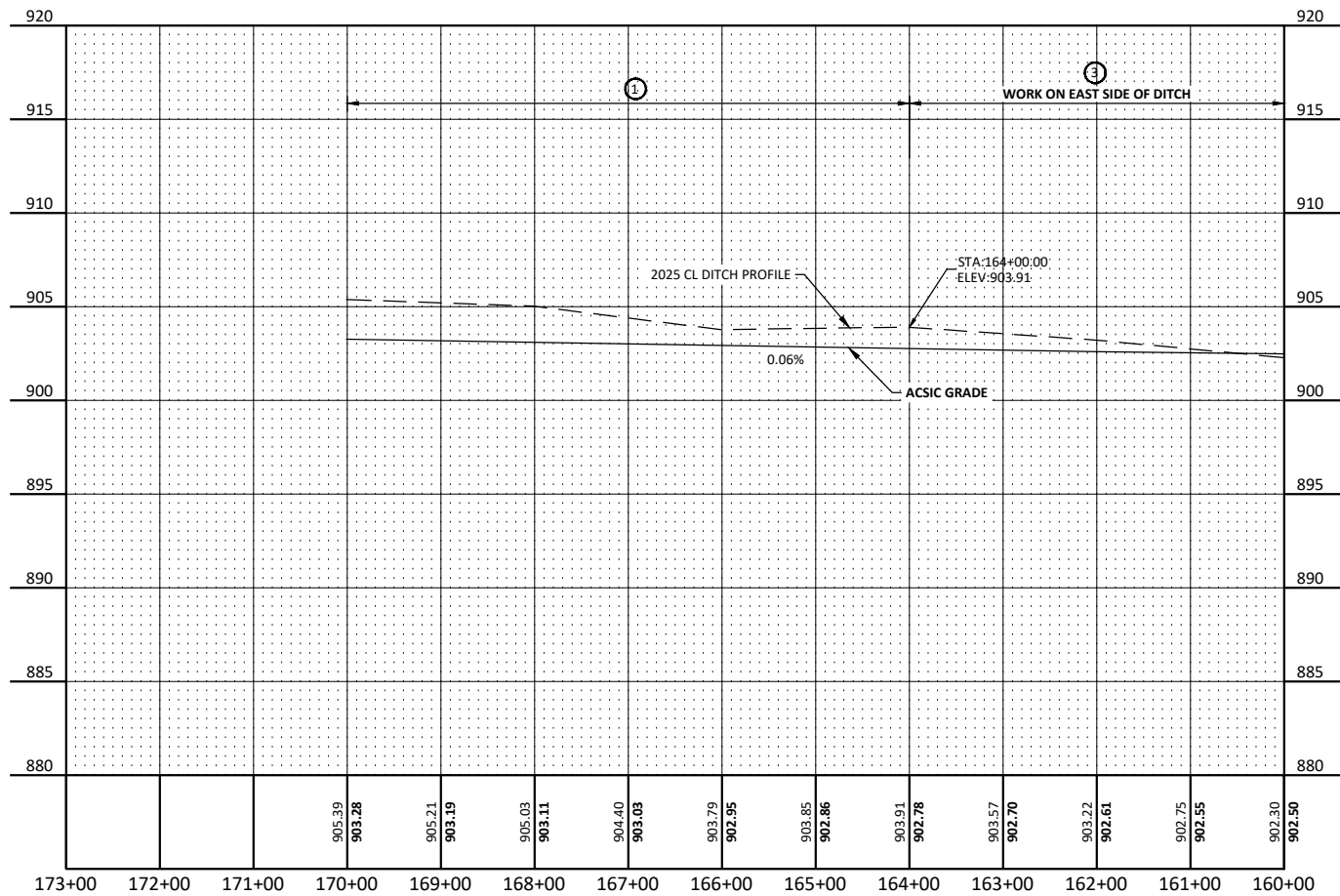
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NOTES

1. ACSIC GRADE IS BASED ON THE AS-CONSTRUCTED PROFILE ESTABLISHED IN THE 2013 ARJD 1 HISTORIC REVIEW MEMORANDUM.

- LEGEND**
- ① NO WORK
 - ② TREE, BRUSH, AND WOODY VEGETATION CLEARING AND REMOVAL
 - ③ DITCH EXCAVATION TO ACSIC GRADE
 - ④ DITCH BOTTOM VEGETATION AND ROOT MASS REMOVAL
- s — TREE REMOVAL LIMITS



No.	Revision	Date	By

PRELIMINARY

NOT FOR CONSTRUCTION

Drawn by
APD

Checked by
CCO

Date
12/23/2025

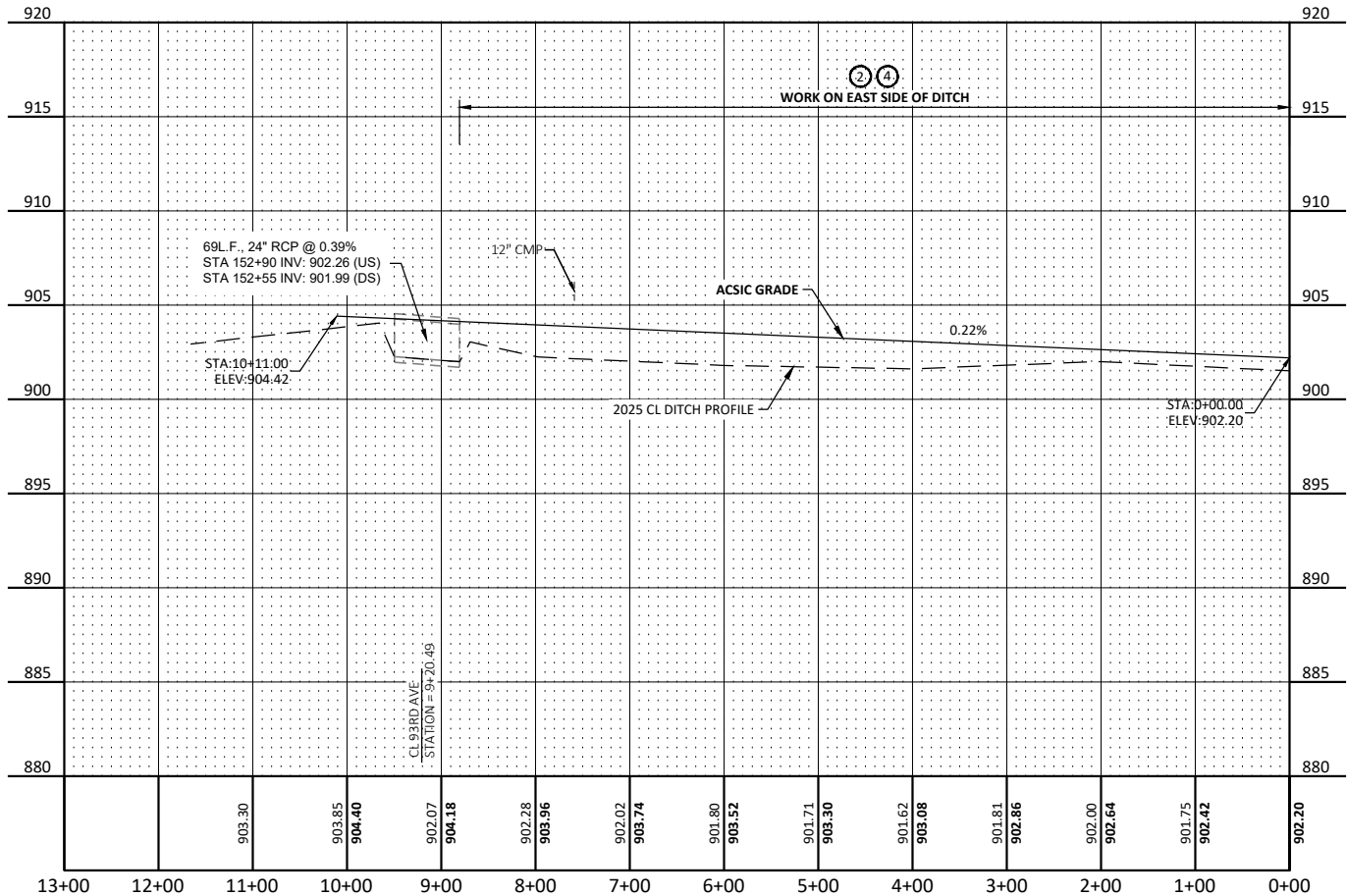
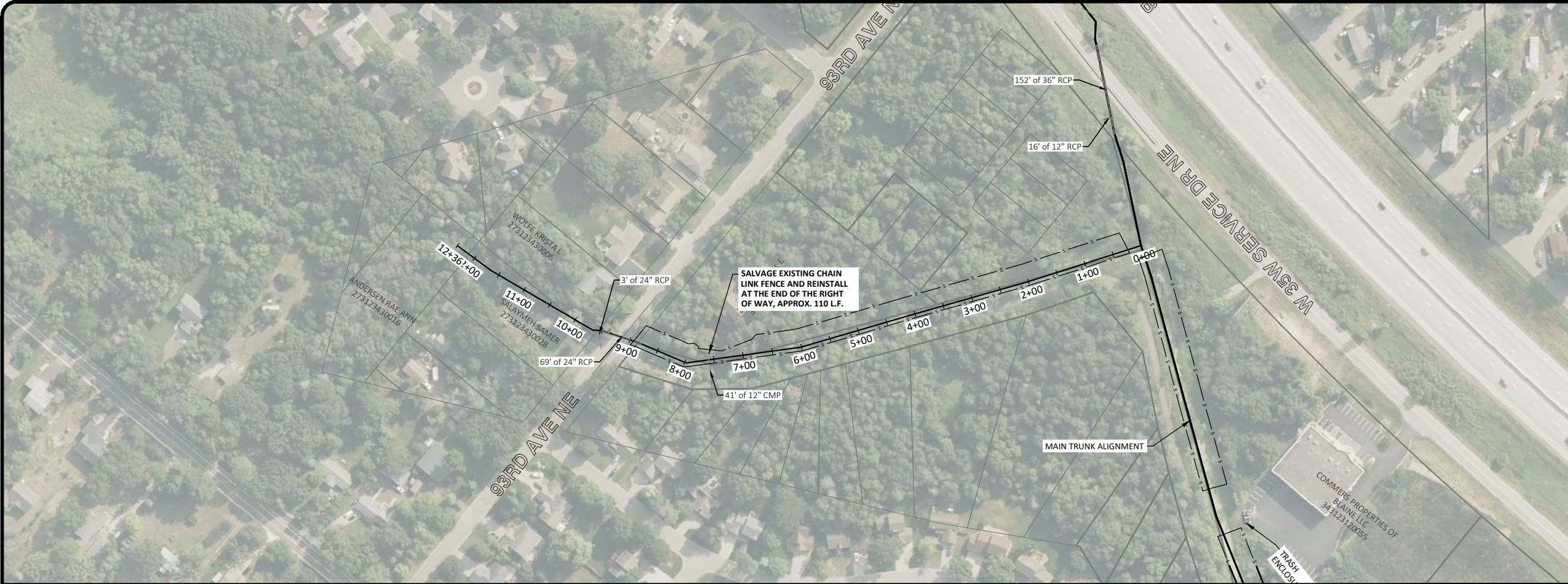
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ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

MAIN TRUNK PLAN AND PROFILE
PROJECT NO. 5555-0371

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8

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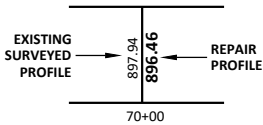
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NOT FOR CONSTRUCTION



Drawn by APD	Date 12/23/2025
Checked by CCO	Scale AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

LEGEND FOR PROFILE ELEVATIONS



BRANCH 1 PLAN
AND PROFILE
PROJECT NO. 5555-0371

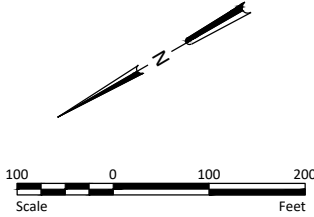
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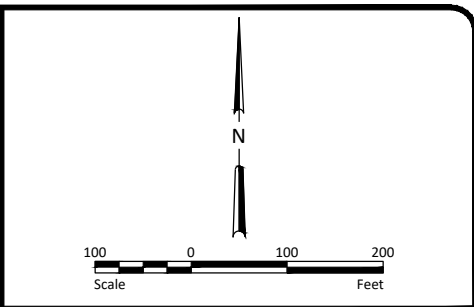
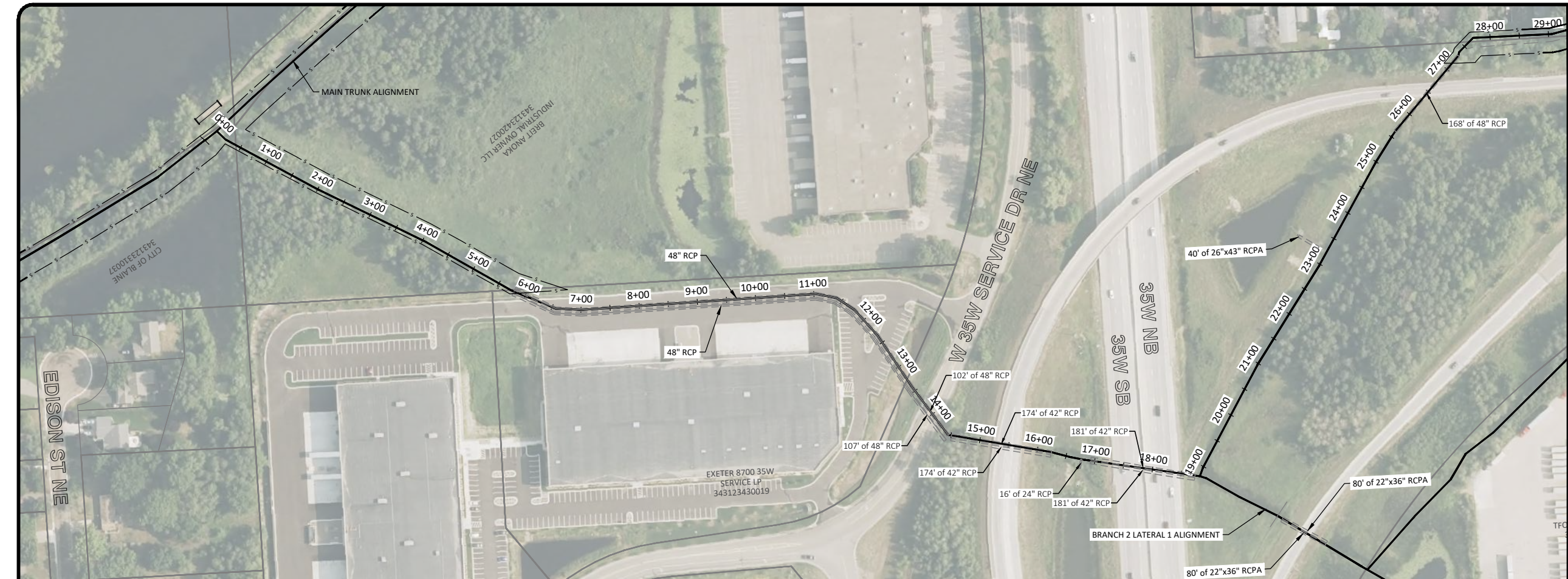
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LEGEND

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 - ② TREE, BRUSH, AND WOODY VEGETATION CLEARING AND REMOVAL
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- TREE REMOVAL LIMITS



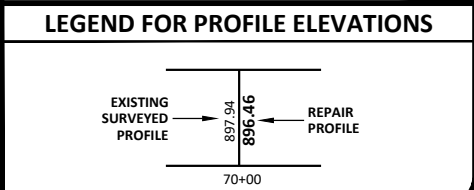
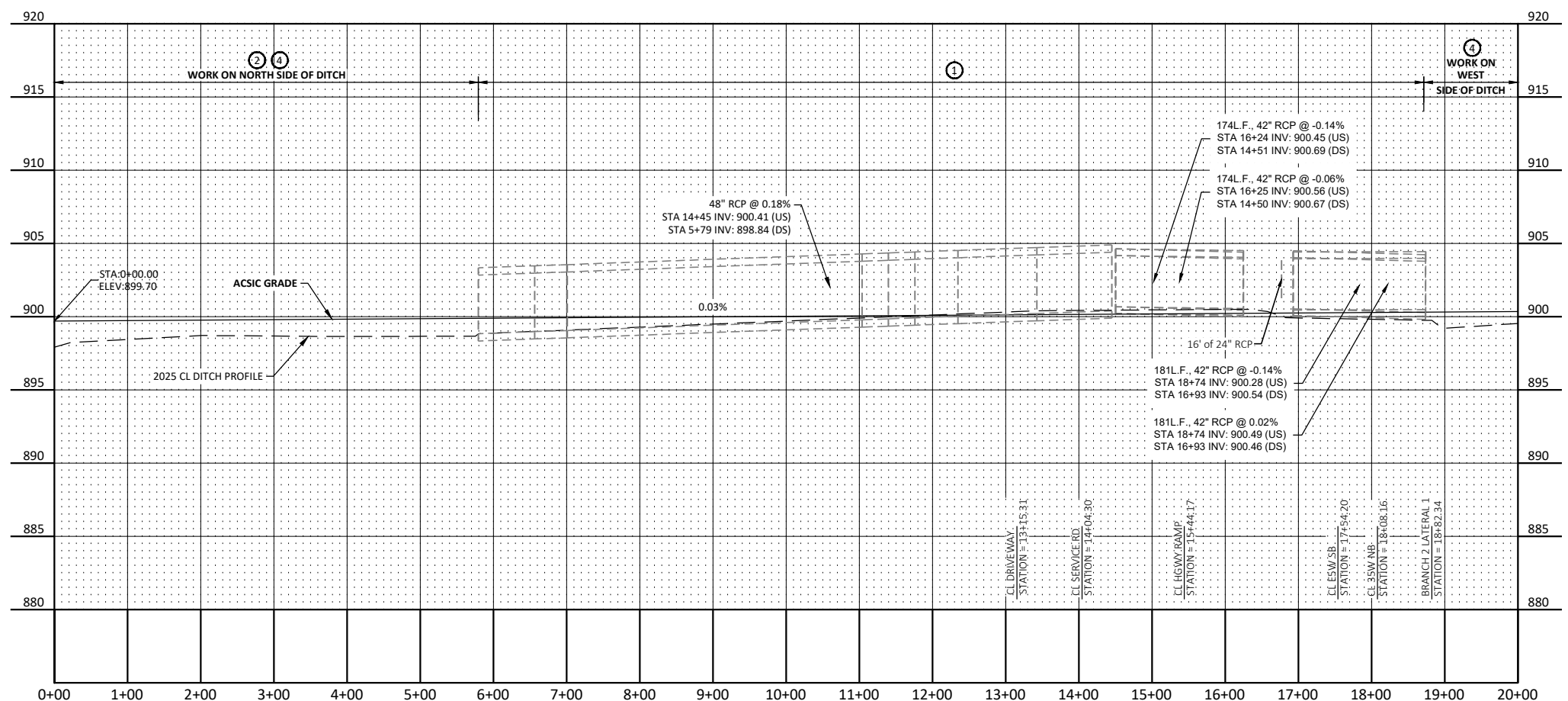
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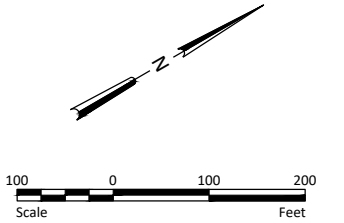
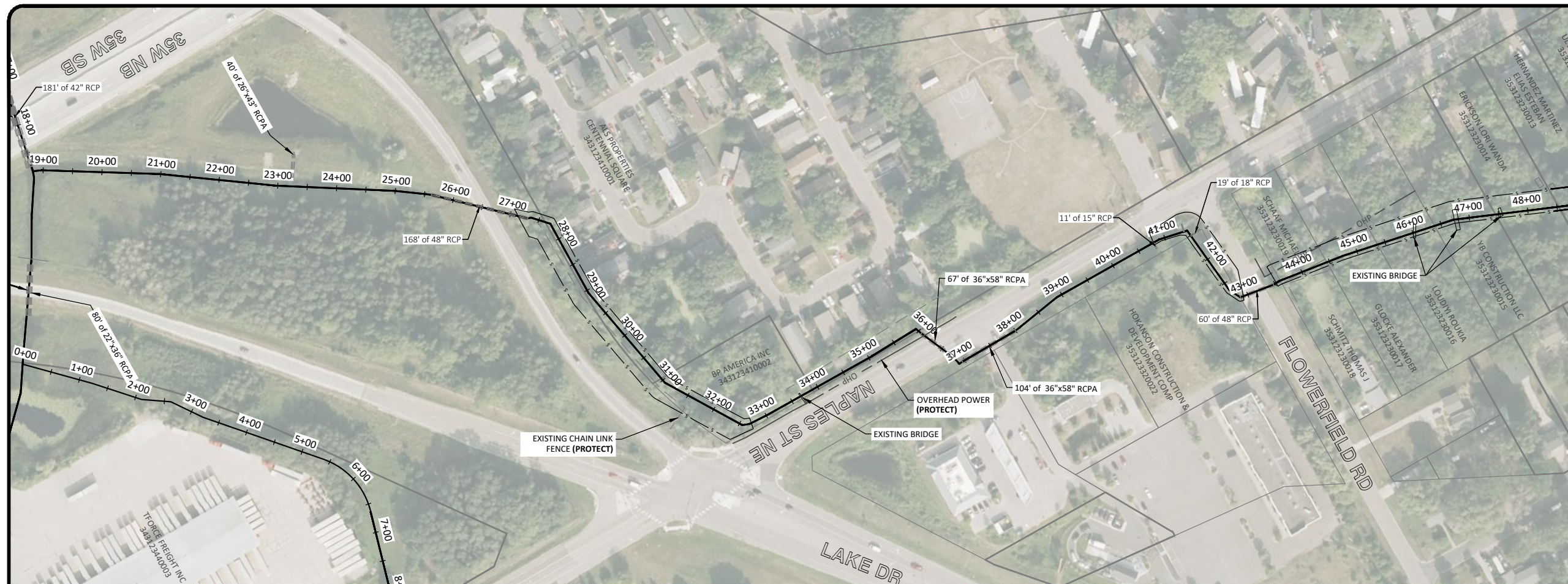
NOTES

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				PRELIMINARY NOT FOR CONSTRUCTION		HOUSTON engineering, inc.		Drawn by APD	Date 12/23/2025	ARJD1 REPAIRS RICE CREEK WATERSHED DISTRICT BLAINE/MOUNDS VIEW, MN				BRANCH 2 PLAN AND PROFILE PROJECT NO. 5555-0371		SHEET 10
No.	Revision			Date	By			Checked by	Scale	AS SHOWN						
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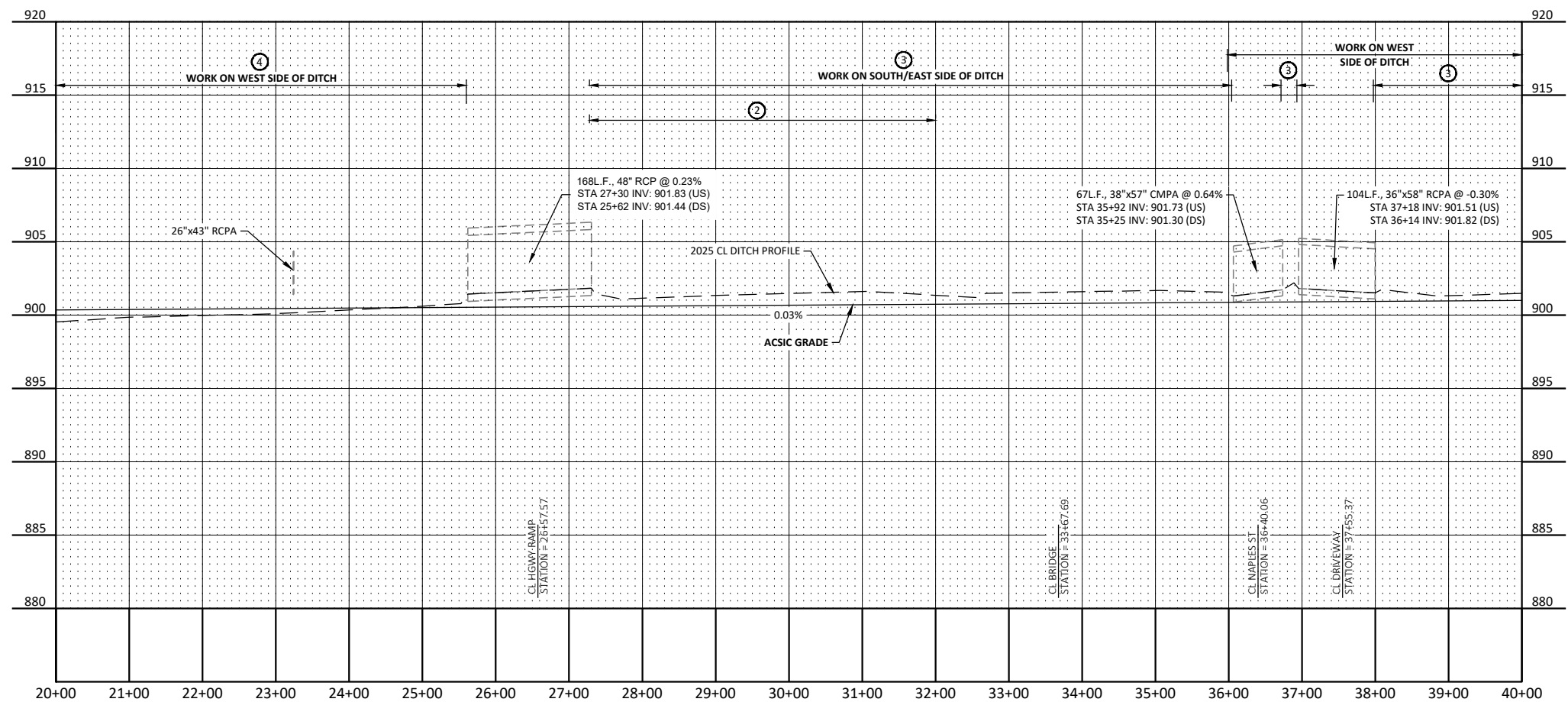


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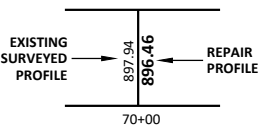
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LEGEND

- 1 NO WORK
- 2 TREE, BRUSH, AND WOODY VEGETATION CLEARING AND REMOVAL
- 3 DITCH EXCAVATION TO ACSIC GRADE
- 4 DITCH BOTTOM VEGETATION AND ROOT MASS REMOVAL
- 5 TREE REMOVAL LIMITS



LEGEND FOR PROFILE ELEVATIONS



PRELIMINARY
NOT FOR CONSTRUCTION

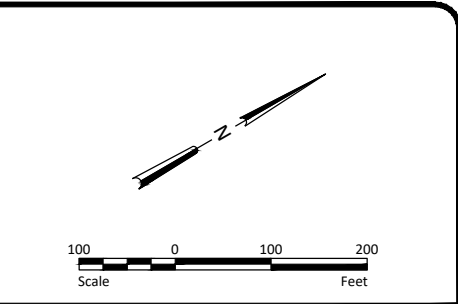
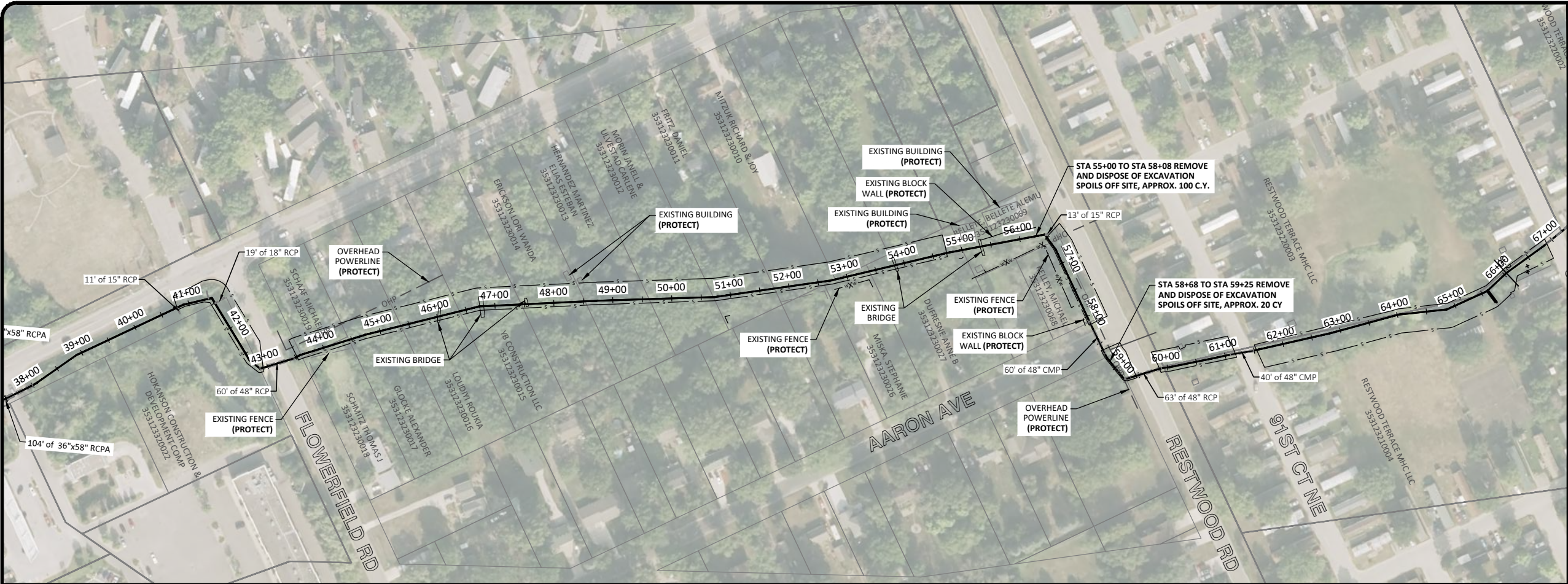


Drawn by APD	Date 12/23/2025
Checked by CCO	Scale AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

BRANCH 2 PLAN
AND PROFILE
PROJECT NO. 5555-0371

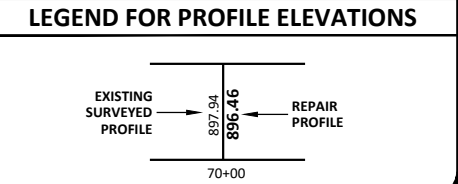
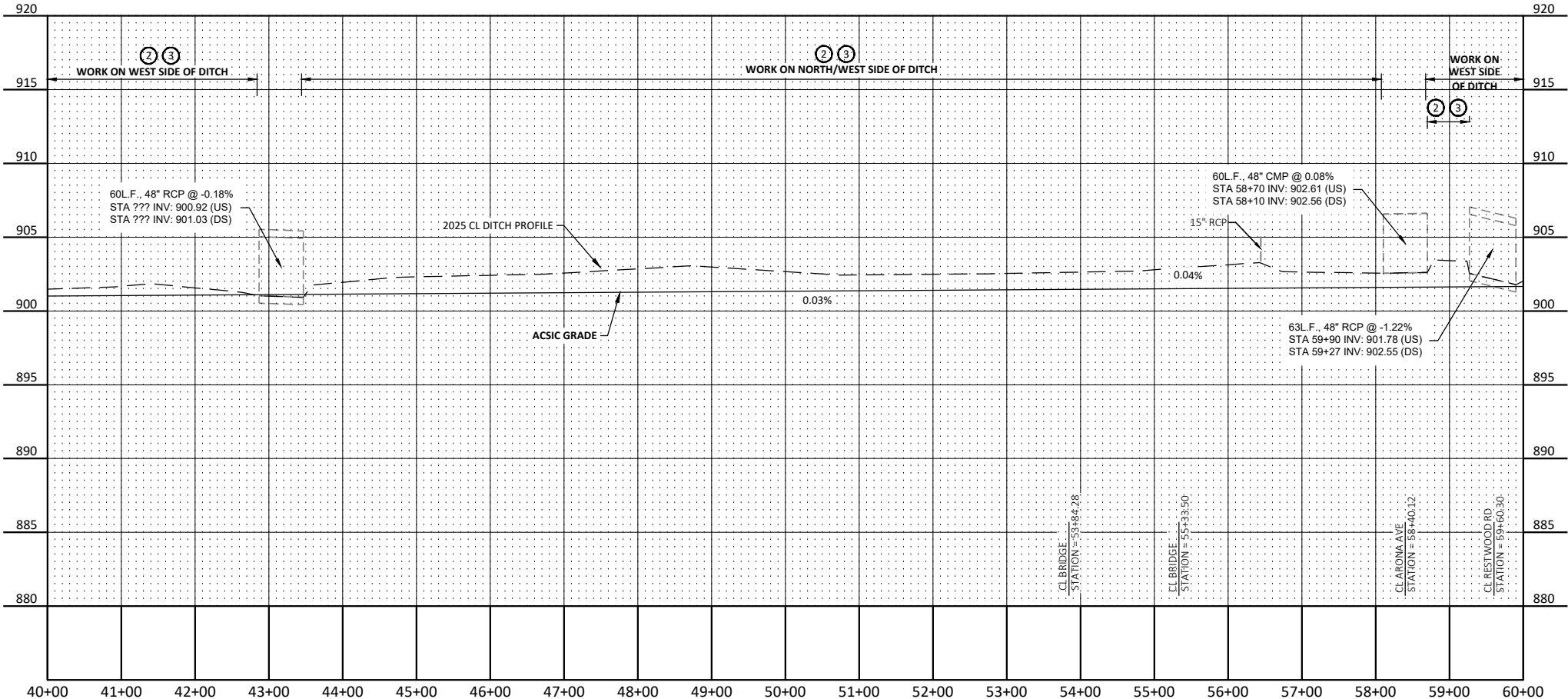
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NOTES

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No.	Revision	Date	By

PRELIMINARY

NOT FOR CONSTRUCTION

Drawn by
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Checked by
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Date
12/23/2025

Scale
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ARJD1 REPAIRS

RICE CREEK WATERSHED DISTRICT

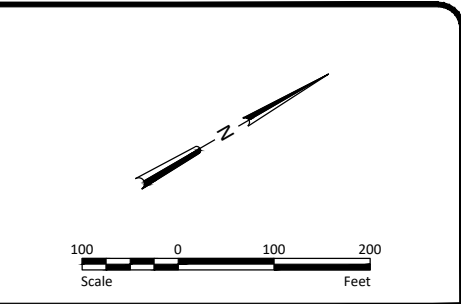
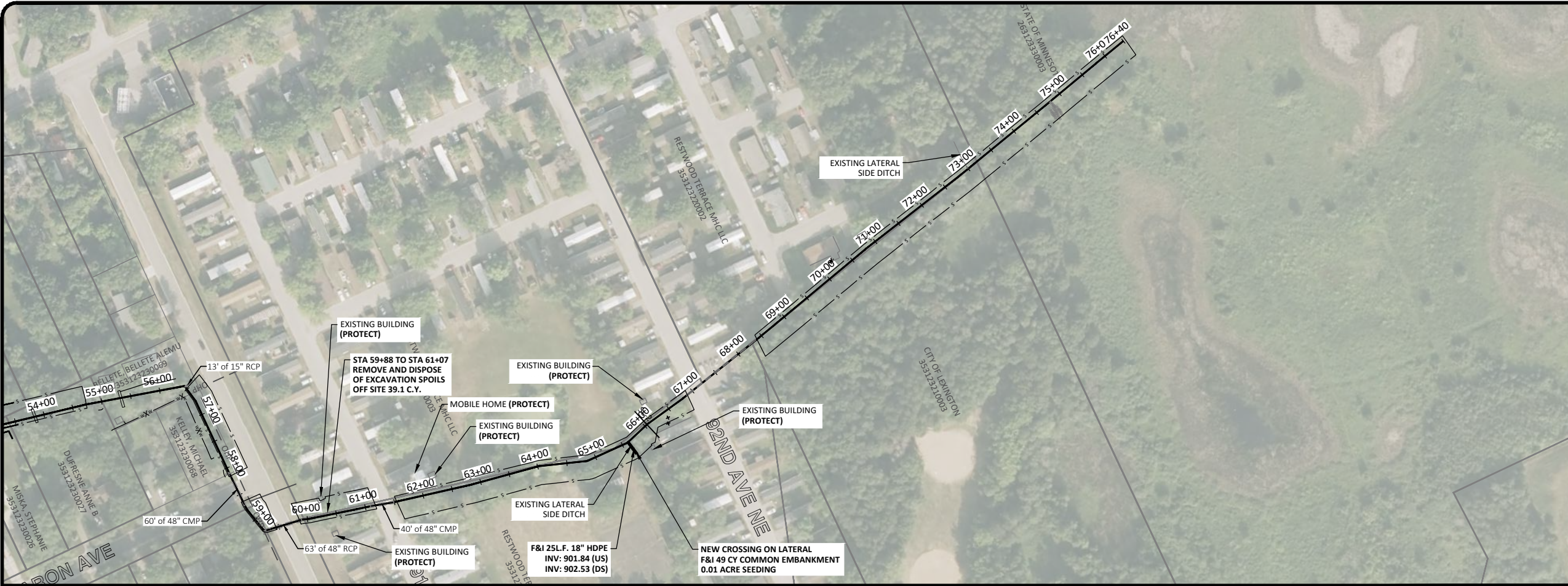
BLAINE/MOUNDS VIEW, MN

BRANCH 2 PLAN
AND PROFILE

PROJECT NO. 5555-0371

SHEET

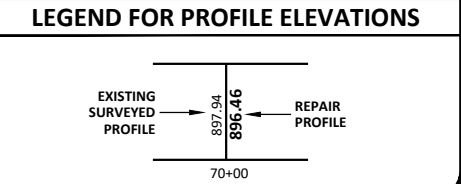
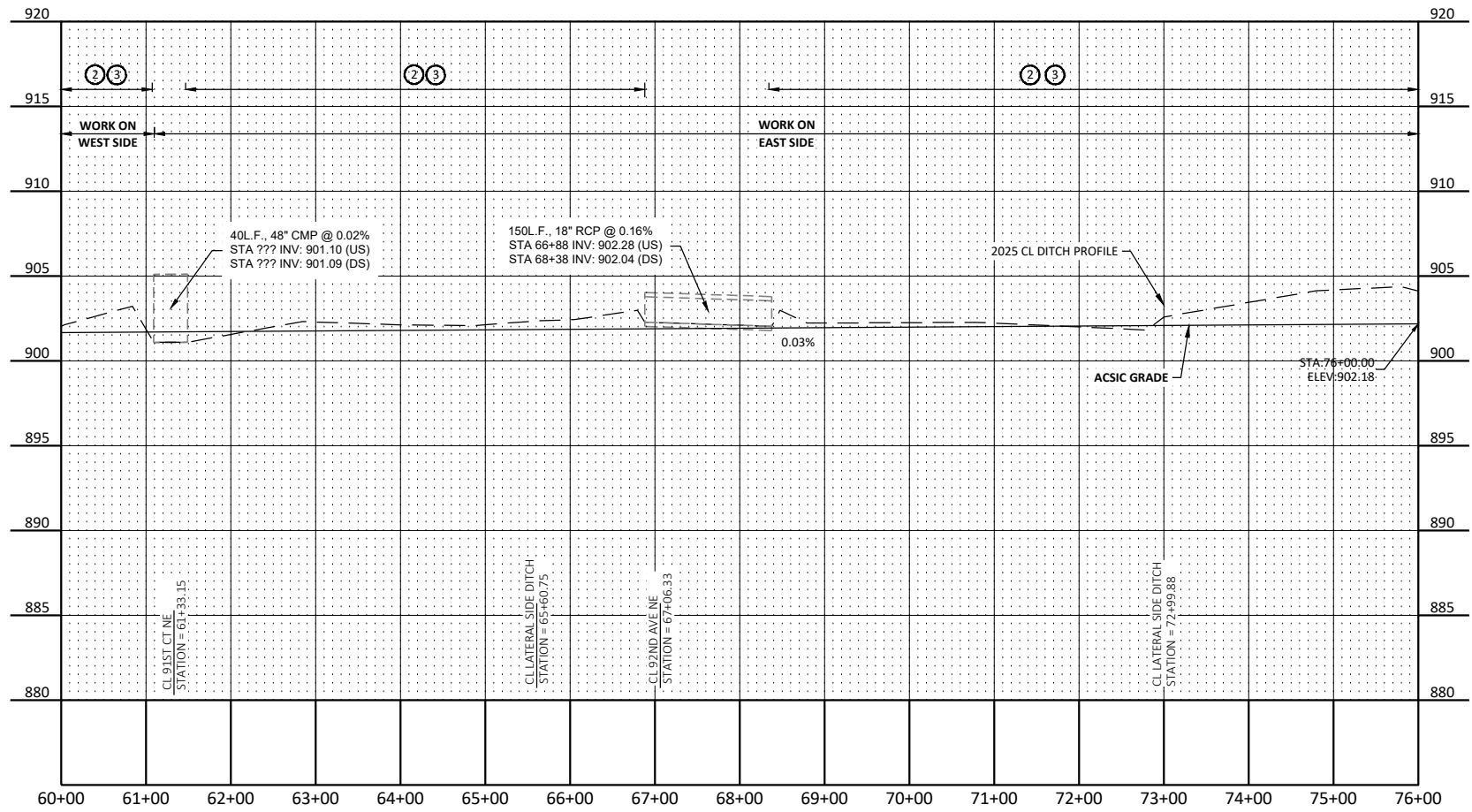
12



NOTES

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PRELIMINARY
NOT FOR CONSTRUCTION

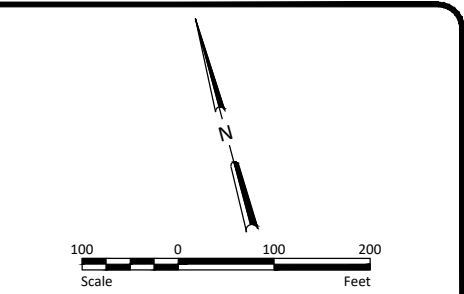
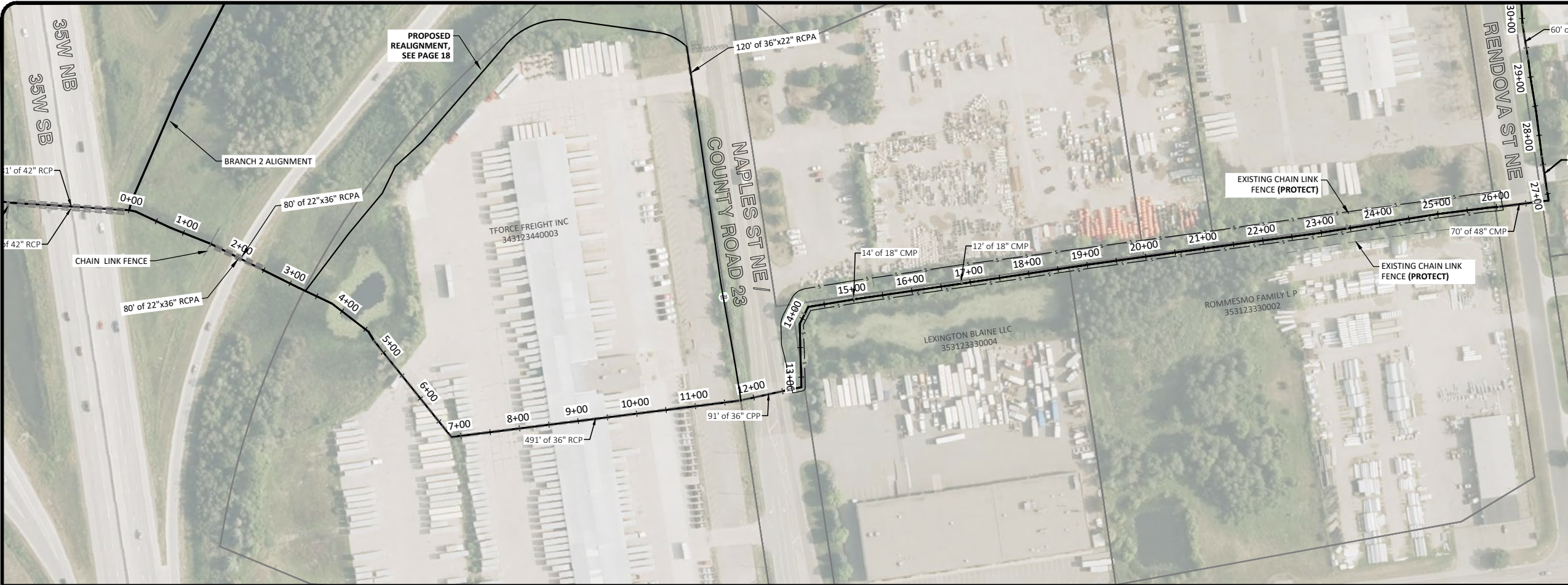


Drawn by APD	Date 12/23/2025
Checked by CCO	Scale AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

BRANCH 2 PLAN
AND PROFILE
PROJECT NO. 5555-0371

SHEET
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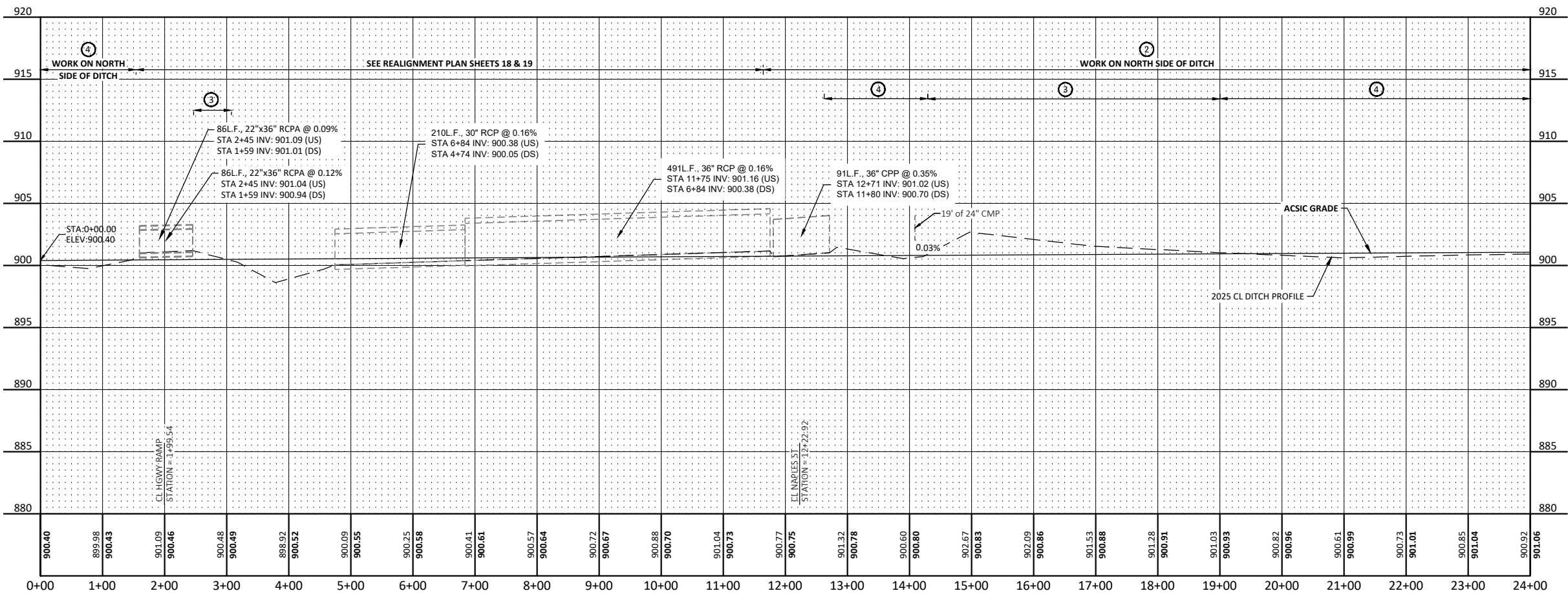


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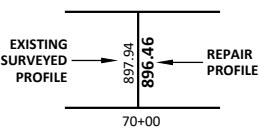
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LEGEND FOR PROFILE ELEVATIONS



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No.	Revision	Date	By

PRELIMINARY
NOT FOR CONSTRUCTION



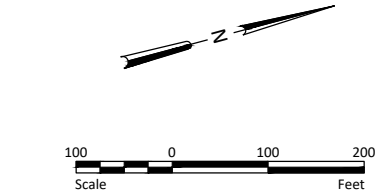
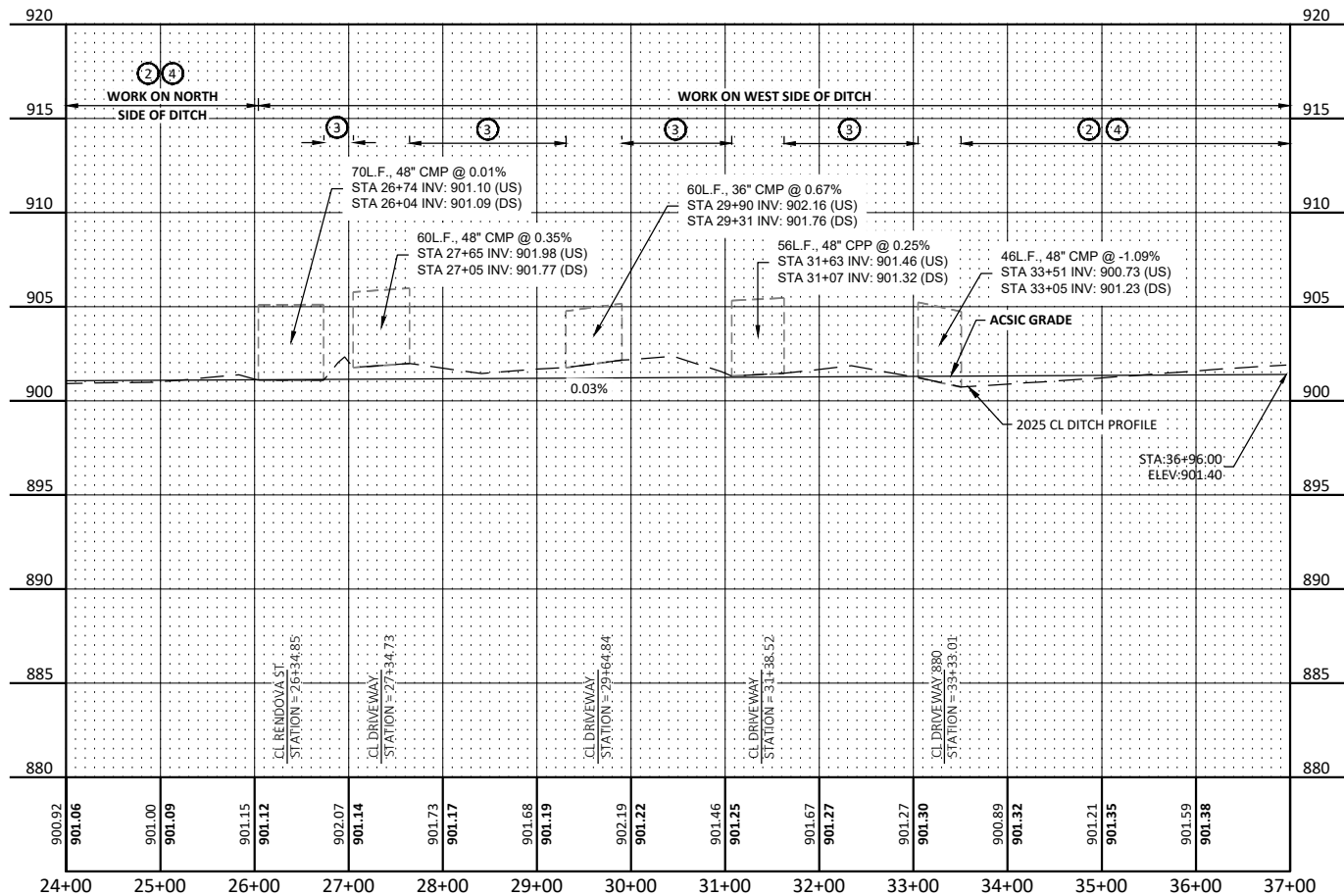
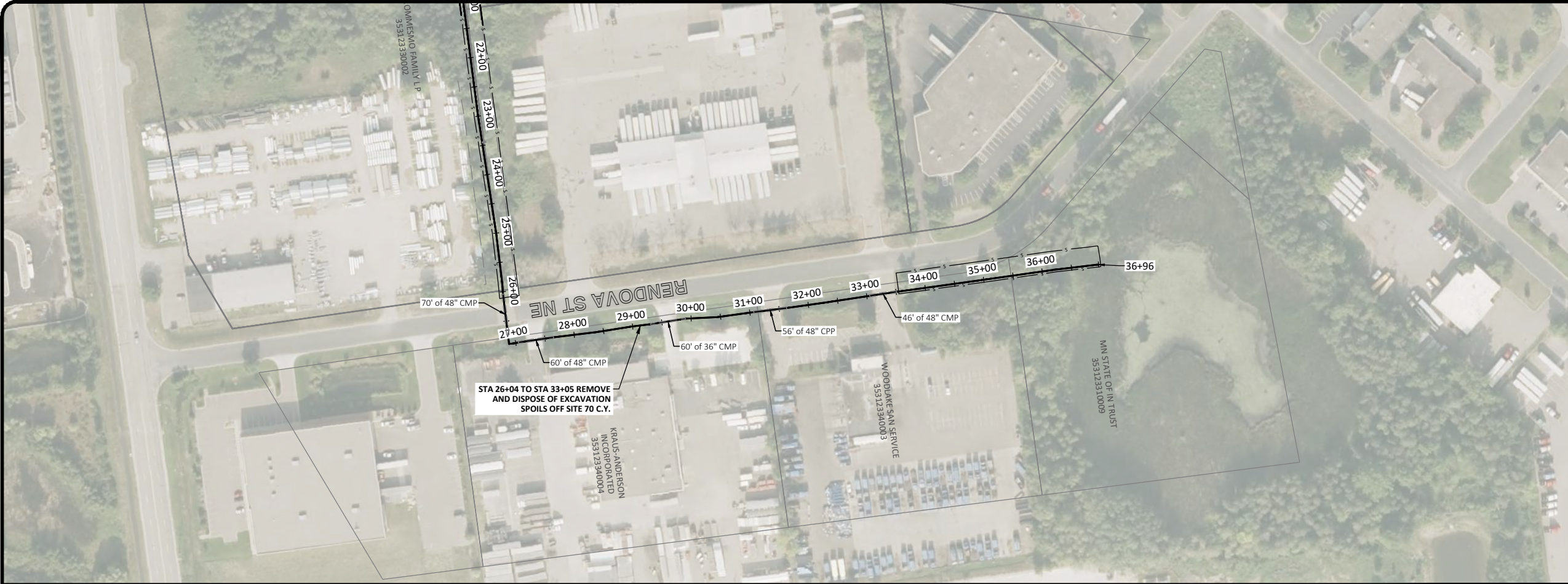
Drawn by APD	Date 12/23/2025
Checked by CCO	Scale AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

BRANCH 2 LATERAL 1
PLAN AND PROFILE
PROJECT NO. 5555-0371

SHEET
14

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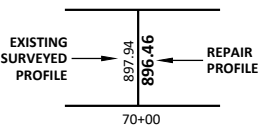
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LEGEND FOR PROFILE ELEVATIONS



PRELIMINARY
NOT FOR CONSTRUCTION



Drawn by
APD
Checked by
CCO
Date
12/23/2025
Scale
AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

BRANCH 2 LATERAL 1
PLAN AND PROFILE
PROJECT NO. 5555-0371

SHEET
15

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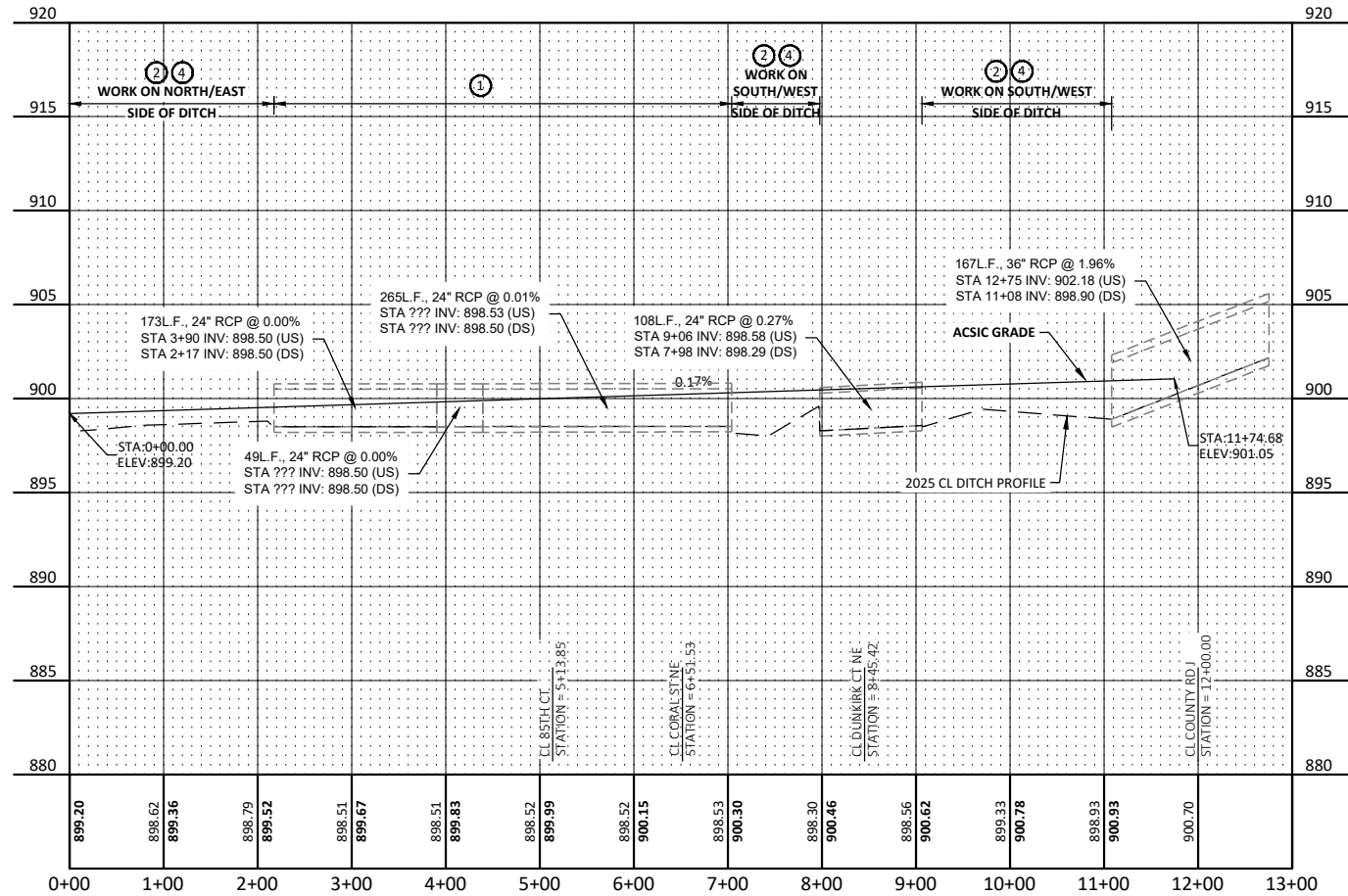


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LEGEND FOR PROFILE ELEVATIONS

No.	Revision	Date	By

PRELIMINARY
NOT FOR CONSTRUCTION

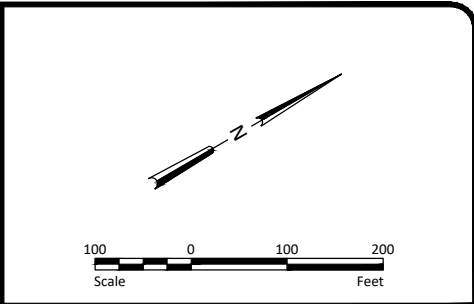
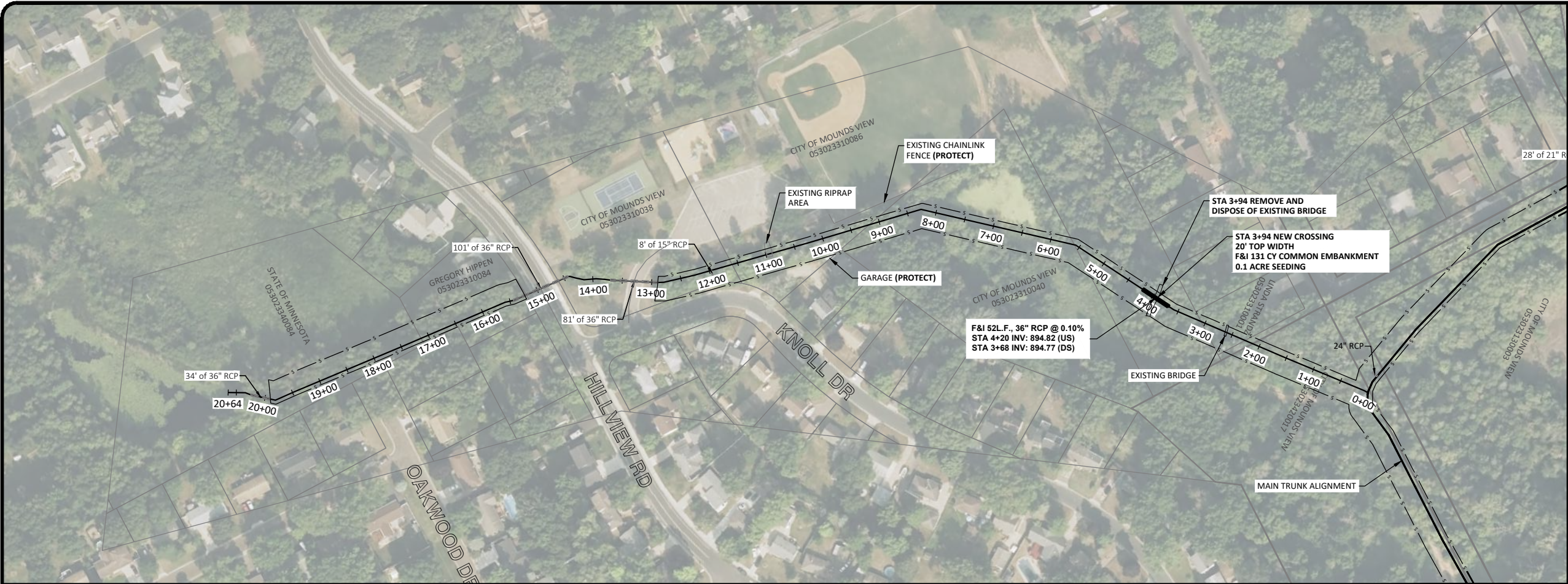


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APD	12/23/2025
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CCO	AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

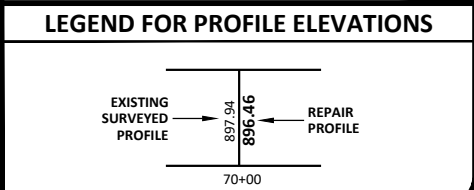
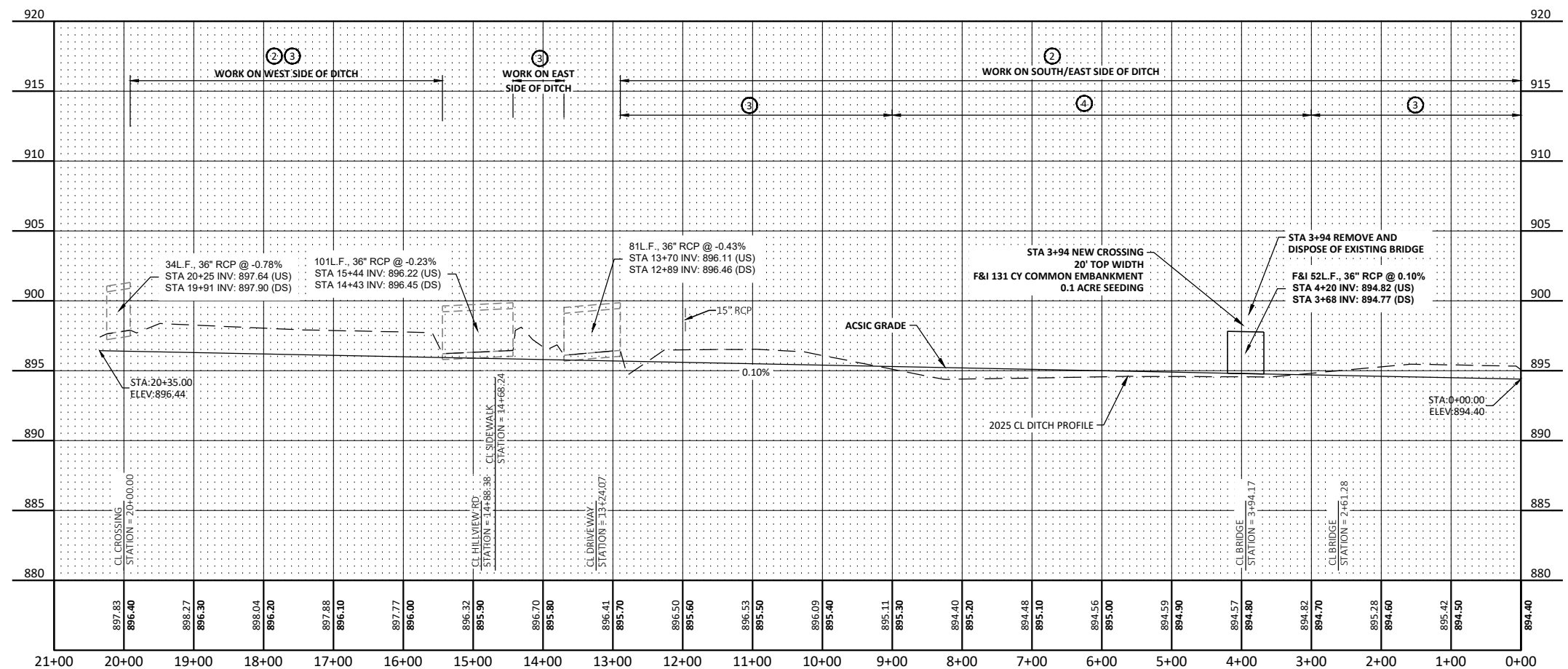
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- NOTES**
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No.	Revision	Date	By

PRELIMINARY
NOT FOR CONSTRUCTION

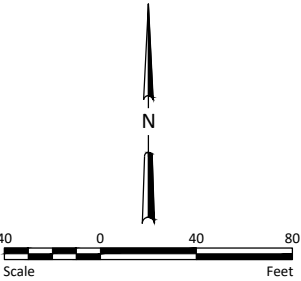
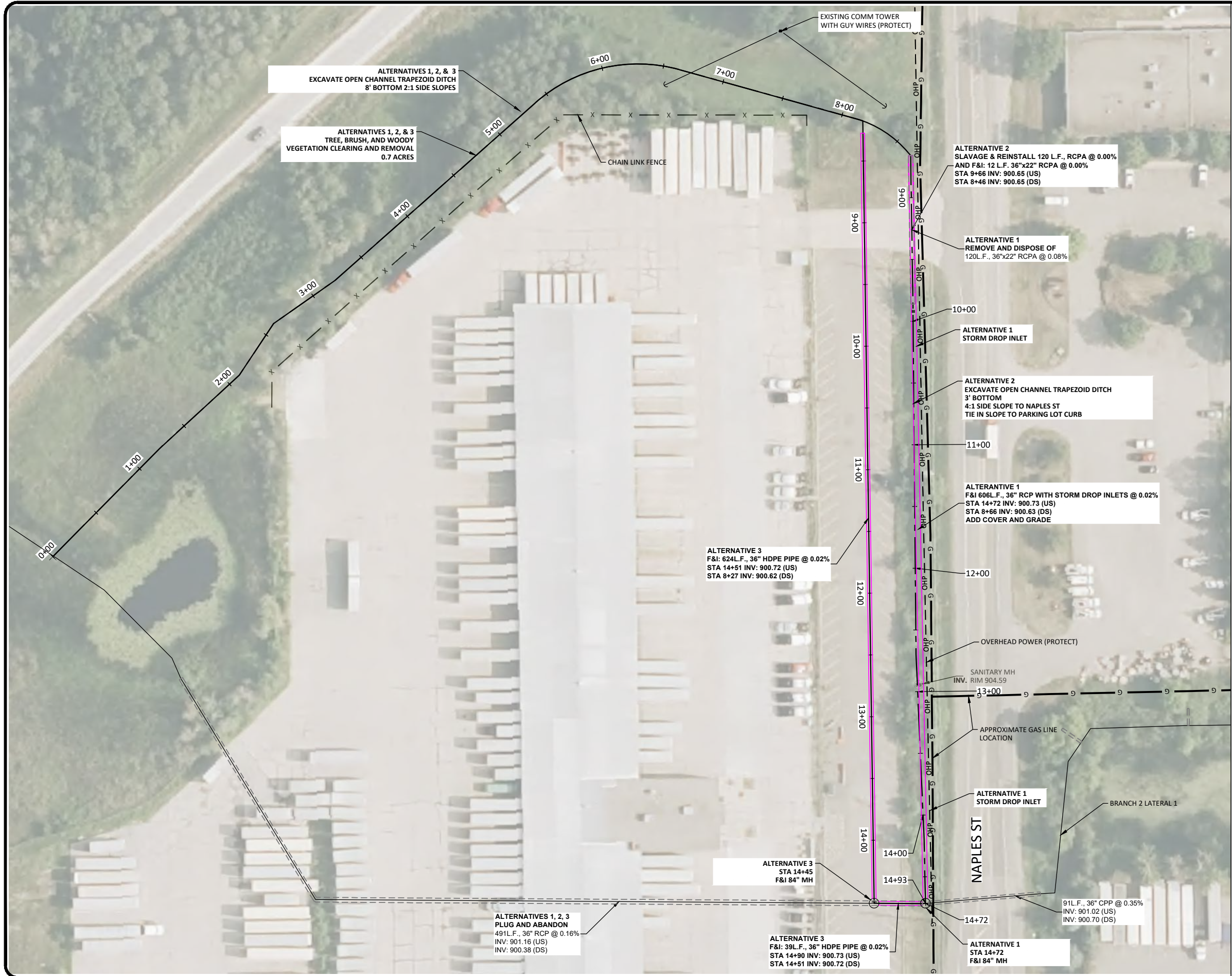


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ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

BRANCH 5 PLAN
AND PROFILE
PROJECT NO. 5555-0371
SHEET
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H:\JBM\5500\5555\5555_0371.ARD1 Repair Report\CAD\Plans\5555-0371 Alternatives Plans.dwg-19 BRANCH 2 LATERAL 1 ALTERNATIVES-6/3/2026 11:30 AM-(justin.phillips)



LEGEND

GAS LINE

OVERHEAD POWER

ALTERNATIVE ALIGNMENT 1 & 2

ALTERNATIVE ALIGNMENT 3

No.	Revision	Date	By

PRELIMINARY
NOT FOR CONSTRUCTION



Drawn by	Date
JWP	1-21-2026
Checked by	Scale
CCO	AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

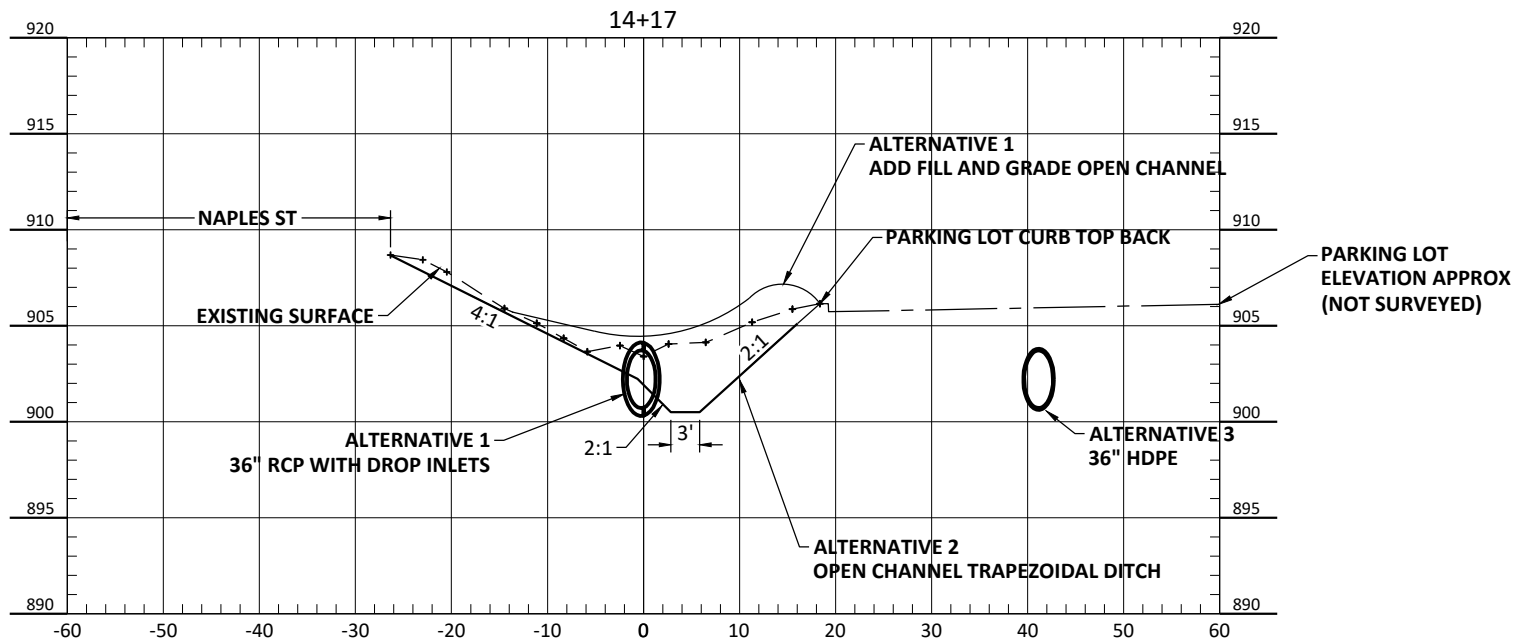
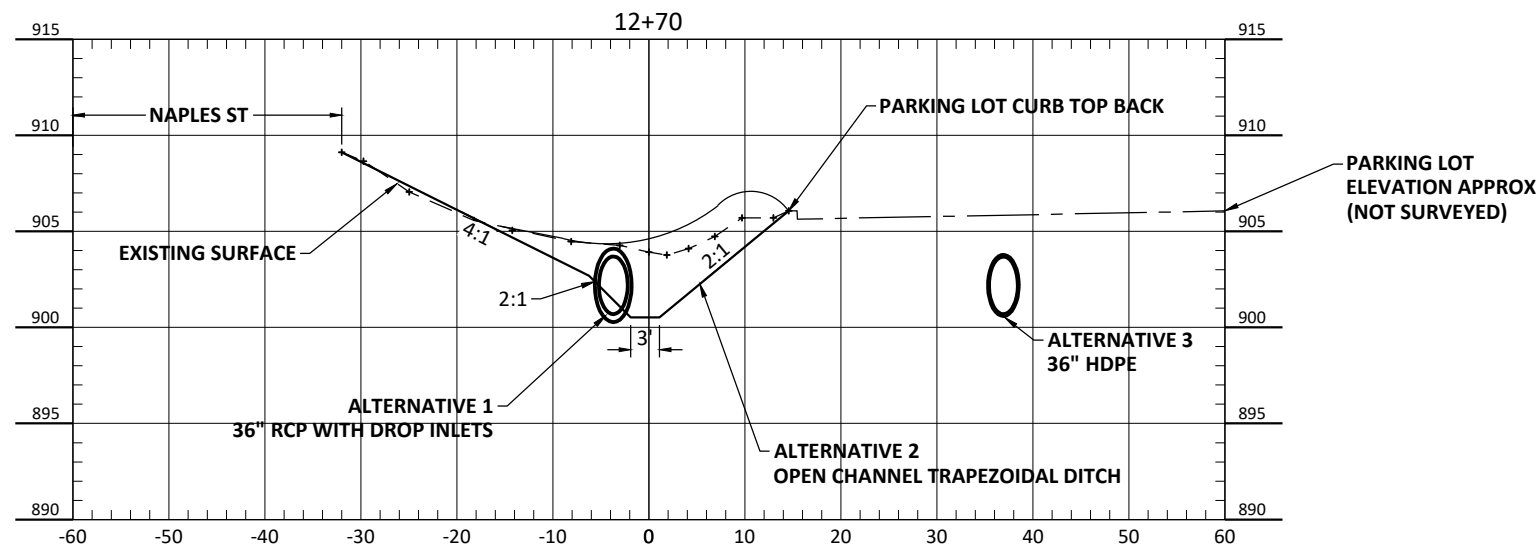
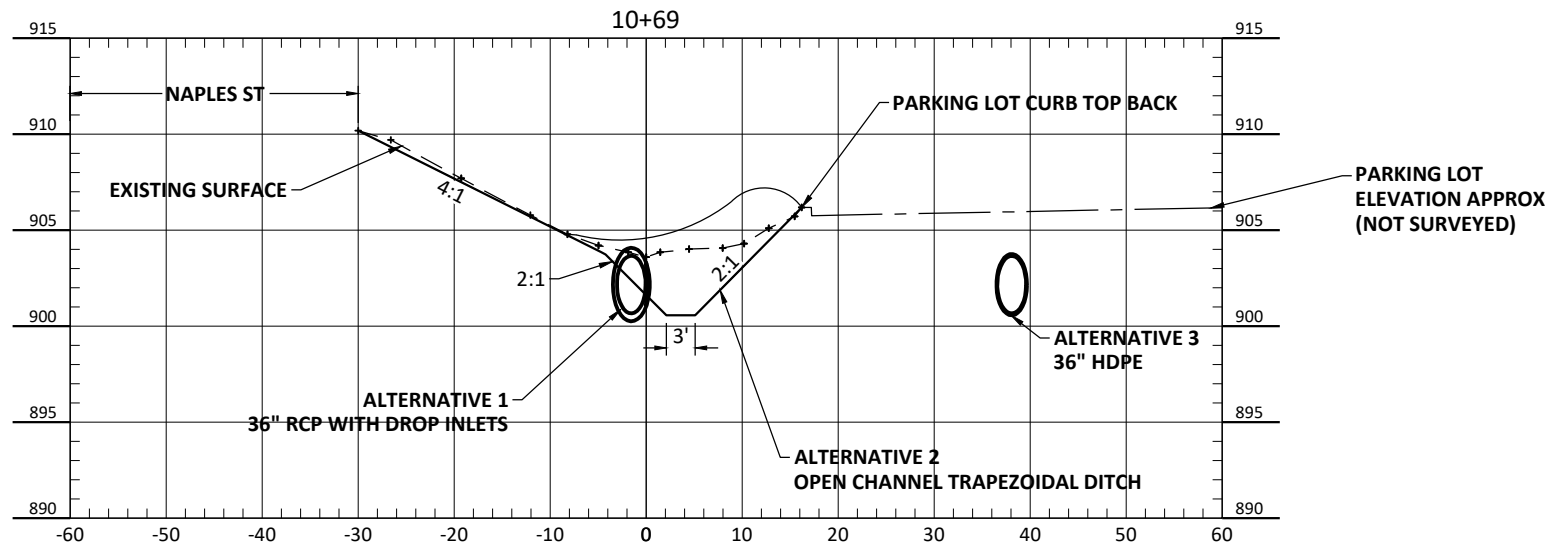
BRANCH 2 LATERAL 1
ALTERNATIVES
PROJECT NO. 5555-0371

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18

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NOTE:

- 1) CROSS SECTION DISPLAYS ALTERNATIVES ADJACENT TO NAPLES STREET
- 2) ALTERNATIVE 1 AND 2 SIDE SLOPES ARE GRADED TO LEAVE EXISTING PARKING LOT AND NAPLES ST AS IS
- 3) COUNTY RIGHT OF WAY OFF NAPLES STREET IS 25 FT AND WILL BE MAINTAINED IN EACH ALTERNATIVE



Drawn by
JWP
Date
1-21-2026
Checked by
CCO
Scale
AS SHOWN

ARJD1 REPAIRS
RICE CREEK WATERSHED DISTRICT
BLAINE/MOUNDS VIEW, MN

BRANCH 2 LATERAL 1 CROSS
SECTIONS
PROJECT NO. 5555-0371

SHEET
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Attachment C: Preliminary Opinion of Probable Construction Cost

7/14/2026

Base Project	Units	Est'd Quantity	Unit Price	Extension
Mobilization	Lump Sum	1	\$45,000.00	\$45,000.00
Traffic Control	Lump Sum	1	\$10,000.00	\$10,000.00
SWPPP documentation and management	Lump Sum	1	\$5,000.00	\$5,000.00
Weir Removal And Disposal	Lump Sum	1	\$15,000.00	\$15,000.00
Tree, Brush, and Woody Vegetation Clearing and Removal	Acre	16.5	\$25,000.00	\$412,500.00
Excavation of Existing Channel (P)	Linear Foot	10977	\$8.00	\$87,816.00
Remove and Dispose of Spoils Offsite	CY	330	\$15.00	\$4,950.00
Ditch Bottom Vegetation and Root Mass Removal	Linear Foot	13203	\$8.00	\$105,624.00
Spoil Management (P)	Linear Foot	24180	\$4.00	\$96,720.00
Remove Bridge and Dispose offsite	Lump Sum	1	\$15,000.00	\$15,000.00
Remove & Dispose of Inplace Culvert	Linear Foot	31	\$25.00	\$775.00
48" CMP Pipe Culvert	Linear Foot	31	\$170.00	\$5,270.00
36" RCP Pipe	Linear Foot	52	\$213.00	\$11,076.00
18" HDPE Pipe	Linear Foot	25	\$43.88	\$1,097.00
Common Embankment (CV)	CY	224	\$17.00	\$3,808.00
Salvage and Reinstall Fence	Linear Foot	110	\$40.00	\$4,400.00
Excavator/Dozer Hours	Each	20	\$400.00	\$8,000.00
Rare Species Avoidance Measures	Lump Sum	1	\$50,000.00	\$50,000.00
Seeding and Mulch (P)	Acre	18.44	\$3,000.00	\$55,320.00
Silt Fence; Type PA	Linear Foot	100	\$6.00	\$600.00
Erosion Control Blanket Cat. 25	Square Yard	100	\$5.00	\$500.00
Sediment Control Log	Linear Foot	100	\$4.70	\$470.00
Construction Cost				\$938,926.00
Contingency (15%)				\$141,074.00
Engineering and Administrative (20%)				\$188,000.00
Total Cost				\$1,268,000.00
Branch 2, Lateral 1 Realignment Alternative				
Plug and Abandon Existing Storm Sewer	Each	1	\$10,000.00	\$10,000.00
Protect Aerial Antenna	Lump Sum	1	\$20,000.00	\$20,000.00
36" RCP Pipe	Linear Foot	606	\$213.00	\$129,078.00
Storm Inlets	Each	2	\$5,000.00	\$10,000.00
Remove and Dispose of 36"x22" RCPA	Linear Foot	120	\$20.00	\$2,400.00
Common Excavation (CV) (P)	CY	1819	\$8.00	\$14,552.00
Tree, Brush, and Woody Vegetation Clearing and Removal	Acre	0.5	\$25,000.00	\$12,500.00
Erosion Control Blanket Cat. 25	Square Yard	50	\$5.00	\$250.00
Seeding and Mulch (P)	Acre	1.54	\$3,000.00	\$4,620.00
Construction Cost				\$203,400.00
Contingency (15%)				\$30,600.00
Engineering and Administrative (20%)				\$41,000.00
Total Cost				\$275,000.00



ATTACHMENT D - TELEVISING REPORT

Empire Pipe Services
415 Truman St, North Mankato, MN, 56003
507-388-2895
swenner@empire-pipe.com

Project	Start Date
Rice Creek Water Shed District TV Tile	04/06/2026

Table of Contents

Legend of Classification	2
Section Profile	3
ST-01 to:Outlet Downstream-Inspection Report	4
ST-01 to:Outlet Downstream-Images	5
Unknown to:ST-02 Upstream-Inspection Report	6
Unknown to:ST-01 Upstream-Inspection Report	7



Legend of Classification

Project

Rice Creek Water Shed District TV Tile

No Grade:

1: Excellent Condition

Minor Defects- Failure unlikely in the foreseeable future.

2: Good Condition

Defects that have not begun to deteriorate- Pipe unlikely to fail for at least 20 years.

3: Fair Condition

Moderate defects that will continue to deteriorate- Pipe may fail in 10-20 years.

4: Poor Condition

Severe Defects that will become Grade 5 defects within the foreseeable future- Pipe will probably fail in 5-10 years

5: Immediate Attention

Defects require immediate attention- Pipe has failed or will likely fail within the next 5 years or sooner.



Section Profile

Project

Rice Creek Water Shed District TV Tile

ID	Street	Upstream MH	Downstream MH	Date	Material	Total length	Surveyed (ft)
839	Parking lot	ST-01	Outlet	04/06/26	RCP	211.40	211.40

30 Circular = 211.4 Total Length(1 Inspections,211.4 Length Surveyed)

ID	Street	Upstream MH	Downstream MH	Date	Material	Total length	Surveyed (ft)
837	Parking lot	Unknown	ST-01	04/06/26	RCP	270.00	270.00
838	Parking lot	Unknown	ST-02	04/06/26	RCP	209.30	209.30

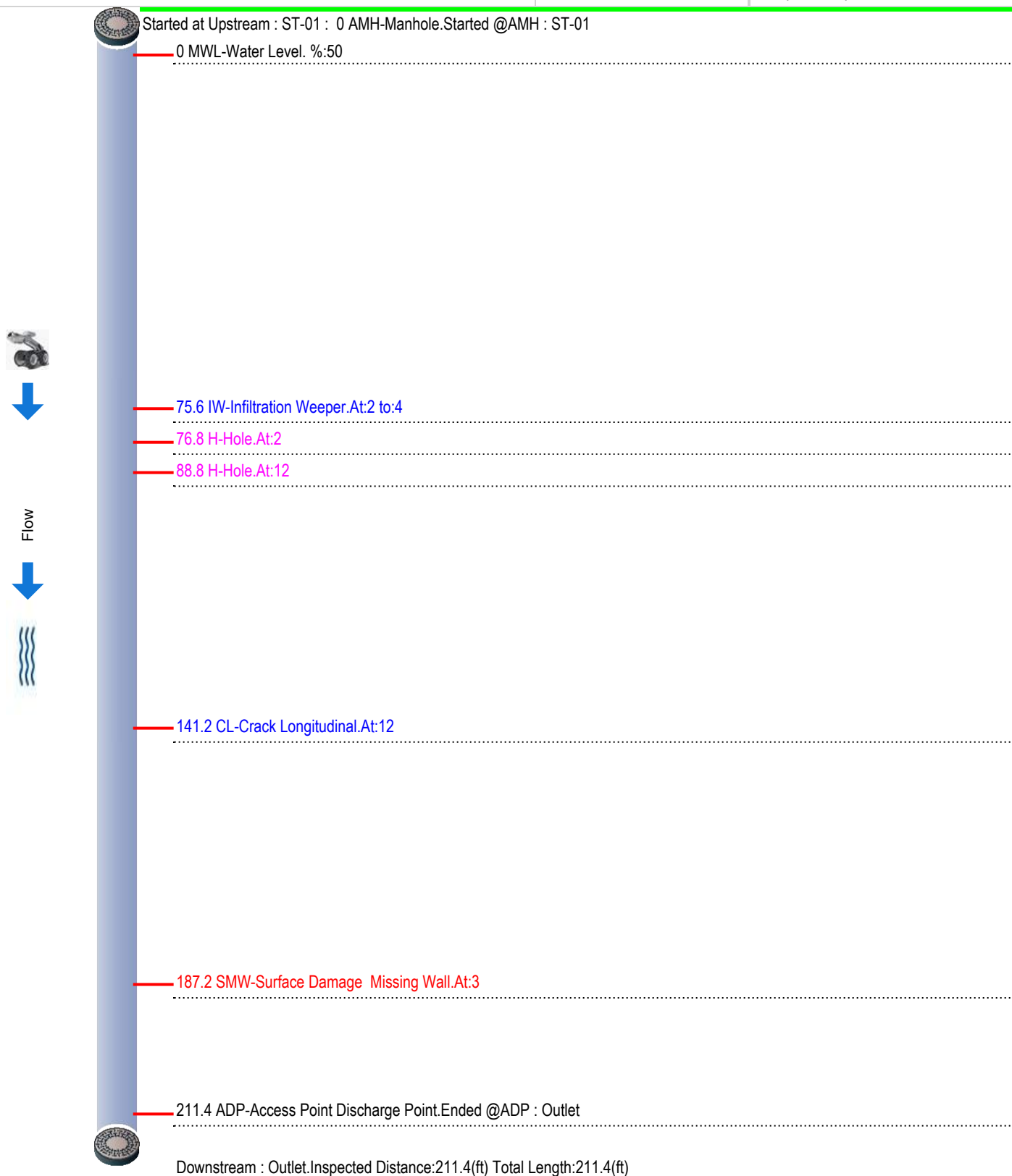
36 Circular = 479.3 Total Length(2 Inspections,479.3 Length Surveyed)

690.7 Total Length(3 Inspections,690.7 Length Surveyed)



Inspection Report

Date:		Work Order:		Weather:		Surveyed By:		Certificate Number		Pipe Segment Ref:	
4/6/2026		4747		Dry Weather/Wet Ground		Ryan B.		U-316-07003575		ST-01 - Outlet	
Date Cleaned:		Pre-cleaning:		Direction:		Total Length:		Length Surveyed:			
N/A		No Pre-Cleaning		Downstream		211.40		211.40			
City:	Blaine Mn				Drainage Area:				Upstream:	ST-01	
Street:	Parking lot				Project:	Rice Creek Water Shed District TV Tile					
Location Details:					Flow Control:	Not Controlled			Up Rim/Invert:	.00	
	ARJD 1 BR2 Lat1				Pipe Use:	Stormwater					
Shape:	Circular				Purpose:	Maintenance related			Downstream:	Outlet	
Size:	30	Width:			Owner:	Rice Creek Watershed District					
Material:	Reinforced Concrete Pipe				Reviewed By:	April Powell			Down Rim/Invert:	.00	
Lining Method:					Certificate :	P0056560-092025					
						Status:		Complete Inspection			





ST-01 - Outlet	
UPSTREAM:	ST-01
DOWNSTREAM:	Outlet
DIRECTION:	Downstream

Empire Pipe Services
415 Truman St,North Mankato,MN,56003
507-388-2895
swenner@empire-pipe.com

STREET:	Parking lot				CITY:	Blaine Mn	
MATERIAL:	Reinforced Concrete Pipe				TOTAL:	.00	SURVEYED: 211.40
SHAPE:	Circular	SIZE:	30.00	PURPOSE	Maintenance related		DATE: 4/6/2026

Additional Information:



Img:1,Distance:76.8
Hole,@:2,Rmk:



Img:2,Distance:88.8
Hole,@:12,Rmk:

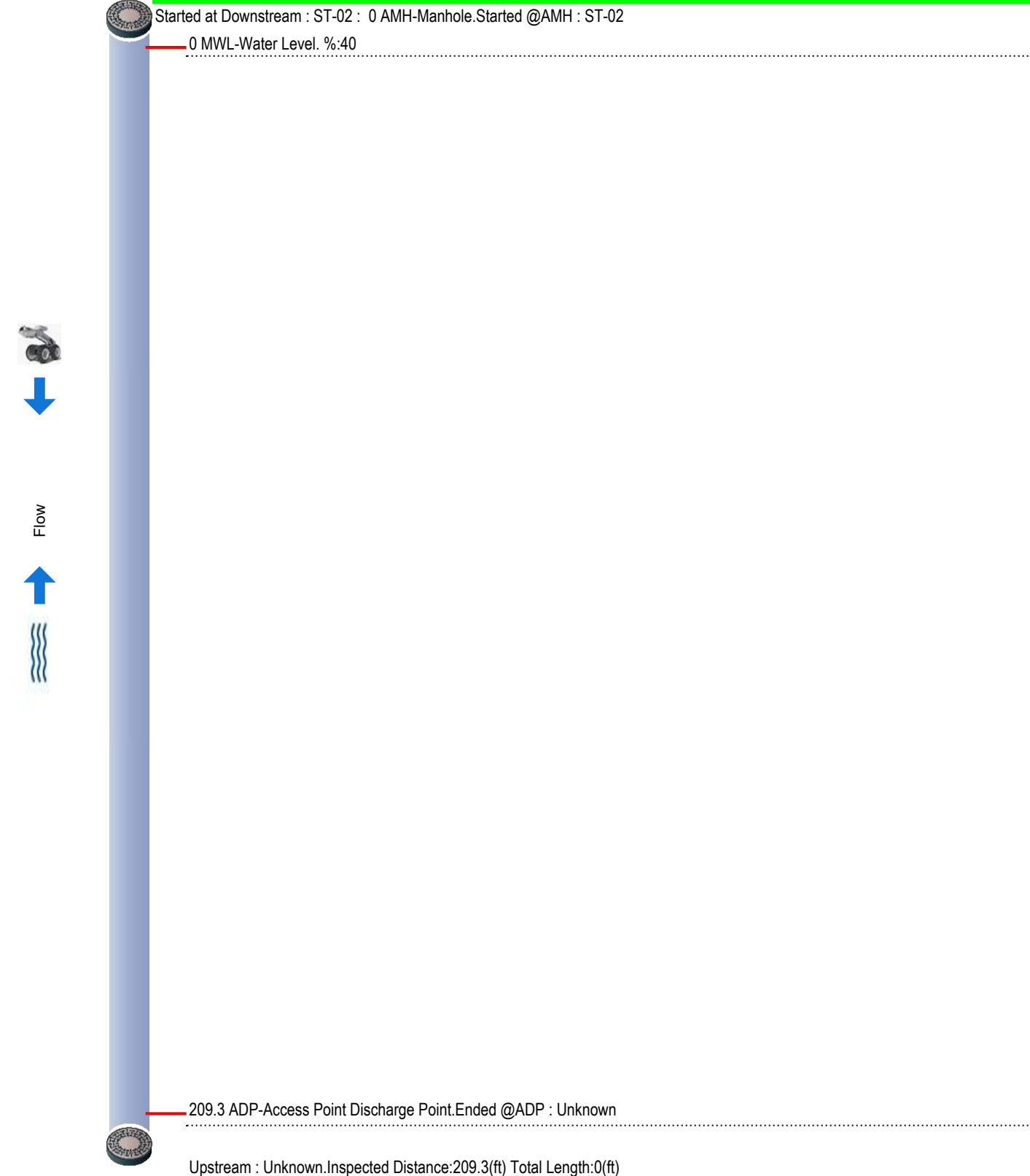


Img:3,Distance:187.2
Surface Damage Missing Wall,@:3,Rmk:



Inspection Report

Date:		Work Order:		Weather:		Surveyed By:		Certificate Number		Pipe Segment Ref:	
4/6/2026		4747		Dry Weather/Wet Ground		Ryan B.		U-316-07003575		Unknown - ST-01	
Date Cleaned:		Pre-cleaning:		Direction:		Total Length:		Length Surveyed:			
N/A		No Pre-Cleaning		Upstream		209.30		209.30			
City:	Blaine Mn				Drainage Area:				Upstream:	Unknown	
Street:	Parking lot				Project:	Rice Creek Water Shed District TV Tile					
Location Details:					Flow Control:	Not Controlled			Up Rim/Invert:	.00	
	ARJD 1 BR2 Lat1				Pipe Use:	Stormwater					
Shape:	Circular				Purpose:	Maintenance related			Downstream:	ST-02	
Size:	36	Width:			Owner:	Rice Creek Watershed District					
Material:	Reinforced Concrete Pipe				Reviewed By:	April Powell			Down Rim/Invert:	.00	
Lining Method:					Certificate :	P0056560-092025					
						Status:	Complete Inspection				





Inspection Report

Date:		Work Order:		Weather:		Surveyed By:		Certificate Number		Pipe Segment Ref:	
4/6/2026		4747		Dry Weather/Wet Ground		Ryan B.		U-316-07003575		Unknown - ST-01	
Date Cleaned:		Pre-cleaning:		Direction:		Total Length:		Length Surveyed:			
N/A		No Pre-Cleaning		Upstream		270.00		270.00			
City:	Blaine Mn			Drainage Area:					Upstream:		Unknown
Street:	Parking lot			Project:		Rice Creek Water Shed District TV Tile					
Location Details:				Flow Control:		Not Controlled			Up Rim/Invert:		.00
	ARJD 1 BR2 Lat1			Pipe Use:		Stormwater					
Shape:	Circular			Purpose:		Maintenance related			Downstream:		ST-01
Size:	36	Width:		Owner:		Rice Creek Watershed District					
Material:	Reinforced Concrete Pipe			Reviewed By:		April Powell			Down Rim/Invert:		.00
Lining Method:				Certificate :		P0056560-092025					
						Status:			Complete Inspection		

