

Briarcliff Road at Echo Lake

Concept Alternatives Briefing





Agenda

- Project Overview
- Utility and Traffic Impacts
- Alternatives
- Summary



Project Overview

- Reduce the frequency of flooding of Briarcliff Road at Briarlake Road



December 24, 2015 (Source: Echo Lake HOA)



- **South Culvert**
 - 10'x7' RCB with weir control structure at inlet
 - Overtops in the 5-yr event
 - Primary source of overtopping to be addressed
- **North Culvert**
 - 2-8'x10' RCB
 - Overtops in the 50-yr event
 - Not a focus since it's not the primary source due to the lower probability



Project Overview

- South Culvert
 - 732 Acres
 - 12-pct Impervious
 - 71-pct Developed
- North Culvert
 - 634 Acres
 - 15-pct Impervious
 - 72-pct Developed
- Echo Lake (Total)
 - 1464 Acres
 - 13-pct Impervious
 - 72-pct Developed





Project Overview

South Culvert: 10'x7' RCB with weir control structure at inlet



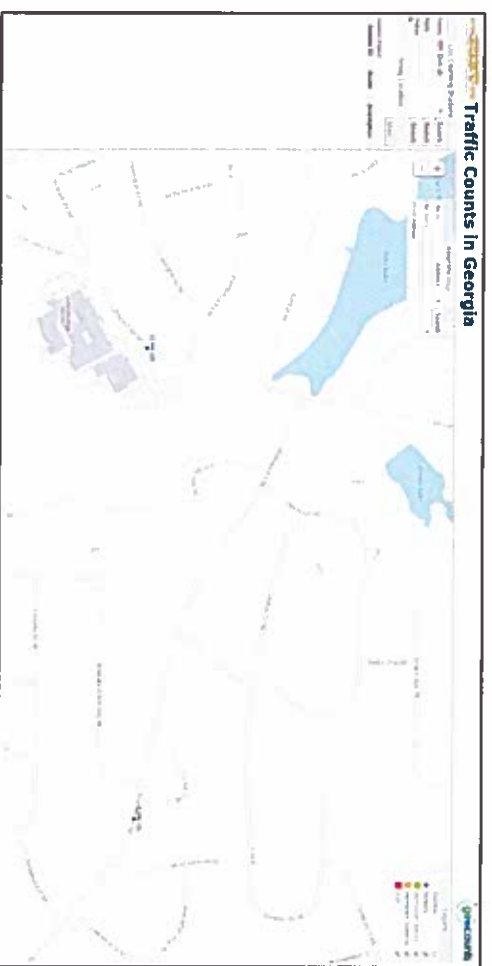
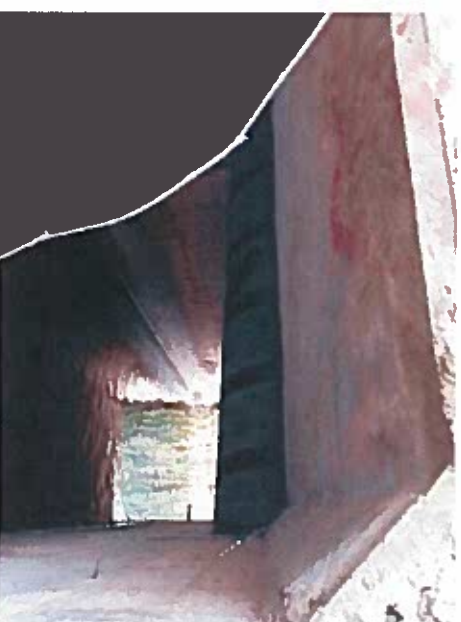
North Culvert: 2-8'x10' RCB





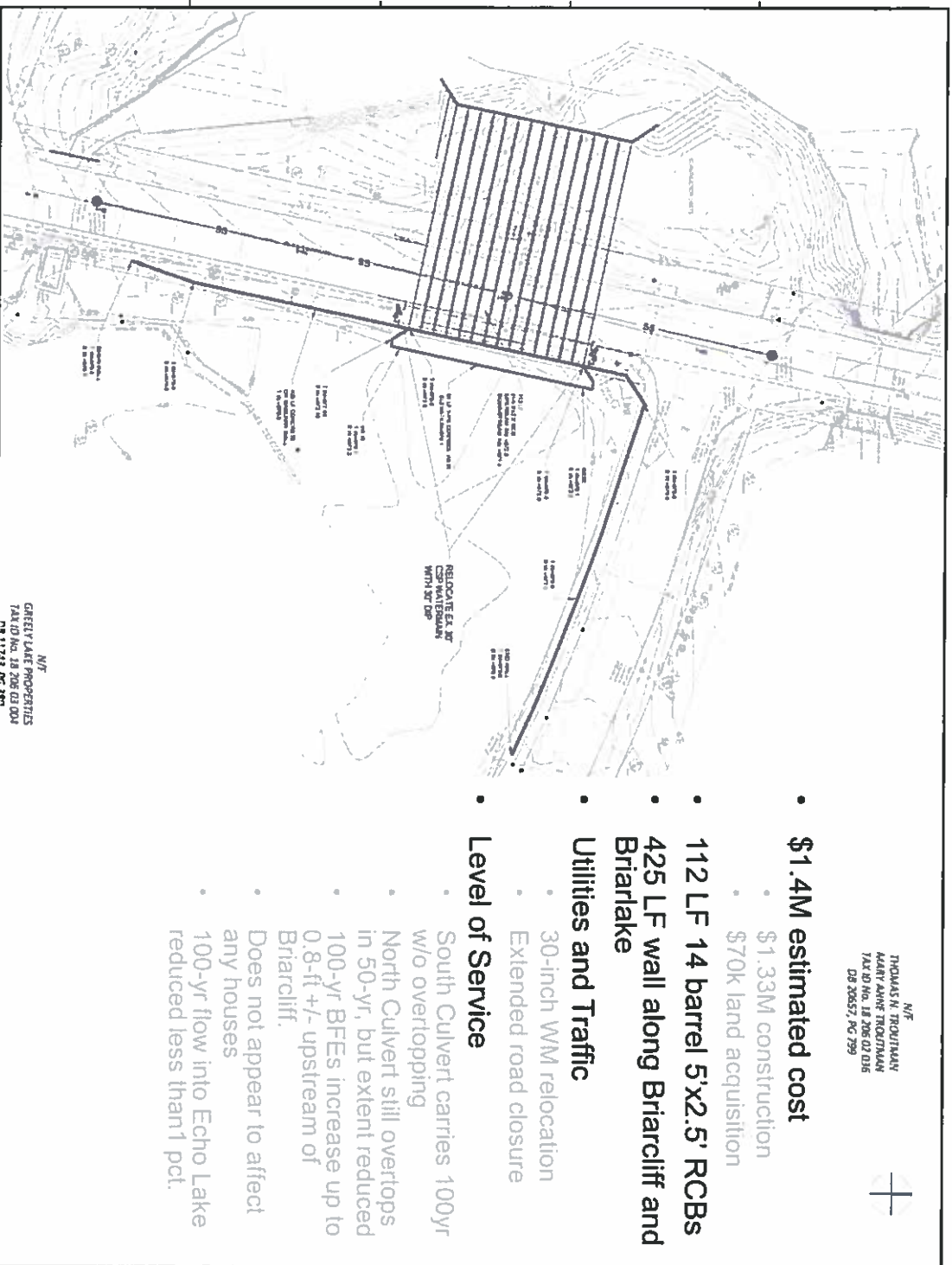
Utility and Traffic Impacts

- 30-inch Watermain
 - Portion would have to be relocated for any culvert solution
- 12-inch DIP Gravity Sewer
 - Cannot be relocated due to tie-in with 18-inch SS main
- Traffic
 - 12,600 ADT on Briarcliff
 - 6,400 ADT on Briarlake
 - Lakeside High School
 - Extended road closure for culvert construction





Alternative 1: 14 - 5'x2.5' RCBS



N/E
 THOMAS N. TROUTMAN
 MARY ANN TROUTMAN
 TAX ID No. 18 206 02 035
 DB 20657, PG 299

- \$1.4M estimated cost
 - \$1.33M construction
 - \$70k land acquisition
- 112 LF 14 barrel 5'x2.5' RCBS
- 425 LF wall along Briarcliff and Briarlake
- Utilities and Traffic
 - 30-inch WM relocation
 - Extended road closure
- Level of Service
 - South Culvert carries 100yr w/o overtopping
 - North Culvert still overtops in 50-yr, but extent reduced
 - 100-yr BFEs increase up to 0.8-ft +/- upstream of Briarcliff.
 - Does not appear to affect any houses
 - 100-yr flow into Echo Lake reduced less than 1 pct.

N/E
 GREENE LAKE PROPERTIES
 TAX ID No. 18 206 02 001
 DB 11243, PG 300



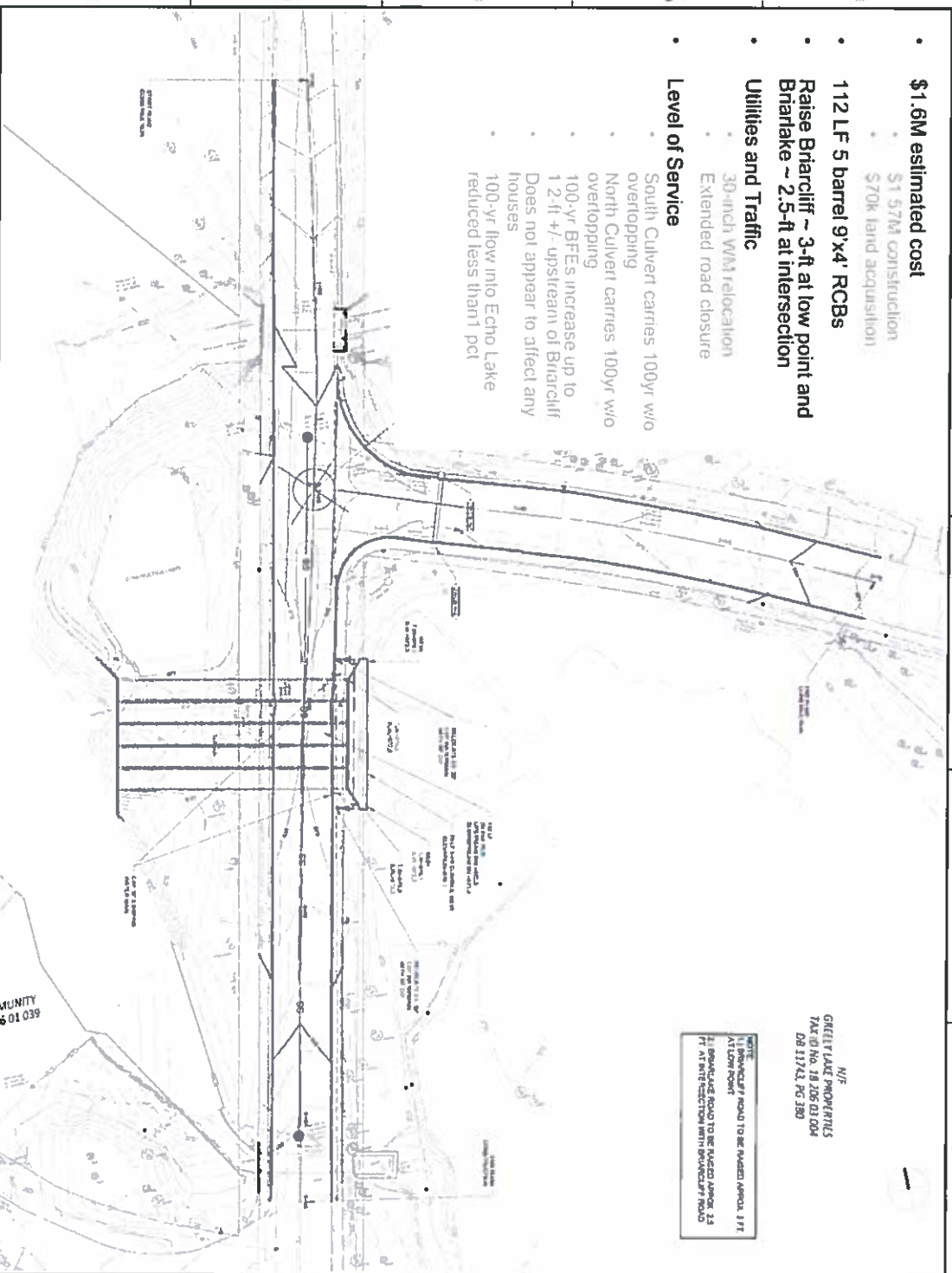
ROAD & DRAINAGE
 BRIARCLIFF AND BRIARLAKE ROAD
 CULVERT IMPROVEMENTS
 ECHO LAKE
 DEKALB COUNTY

PROJECT NO.	C1.0
DATE	7/5/17
SCALE	AS SHOWN
DRAWN BY	
CHECKED BY	
DATE	
PROJECT	BRIARCLIFF ROAD ALTERNATIVE 1



Alternative 2: 5 - 9'x4' RCBS

- \$1.6M estimated cost
 - \$1.57M construction
 - \$70k land acquisition
- 112 LF 5 barrel 9'x4' RCBS
- Raise Briarcliff ~ 3-ft at low point and Briarlake ~ 2.5-ft at intersection
- Utilities and Traffic
 - 30-inch WMM relocation
 - Extended road closure
- Level of Service
 - South Culvert carries 100-yr w/o overtopping
 - North Culvert carries 100-yr w/o overtopping
 - 100-yr BFEs increase up to 1.2-ft +/- upstream of Briarcliff
 - Does not appear to affect any houses
 - 100-yr flow into Echo Lake reduced less than 1 pct



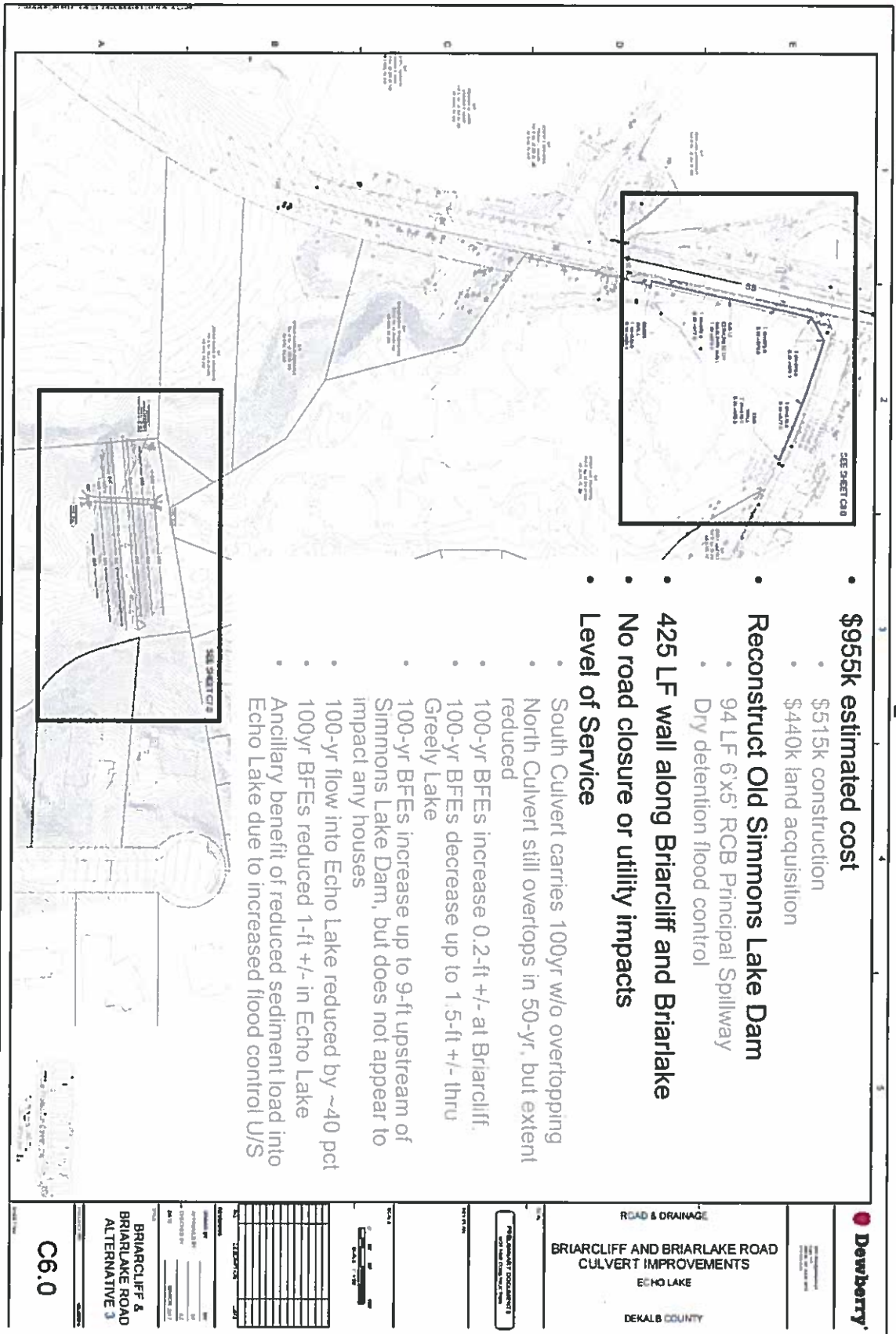
NOTE:
 1) BRIARCLIFF ROAD TO BE RAISED APPROX. 1.8 FT AT LOW POINT
 2) BRIARLAKE ROAD TO BE RAISED APPROX. 2.5 FT AT INTERSECTION WITH BRIARCLIFF ROAD

N/P
 GULLEY LAKE PROPERTIES
 TAX ID NO. 18 206 01 004
 DB 11743, PG 380

	BRIARCLIFF AND BRIARLAKE ROAD CULVERT IMPROVEMENTS DEKALB COUNTY
PROJECT NO. _____ SHEET NO. _____	BRIDGE 10211 THE 100' BRIDGE THE 100' BRIDGE
PREPARED BY: _____ CHECKED BY: _____ DATE: _____	DRAWN BY: _____ DATE: _____
PROJECT: BRIARCLIFF & BRIARLAKE PLAN ALTERNATIVE 2	SCALE: _____
SHEET: C3.0	TOTAL SHEETS: _____



Alternative 3: Upstream Dam



- **\$955k estimated cost**
 - \$515k construction
 - \$440k land acquisition
- **Reconstruct Old Simmons Lake Dam**
 - 94 LF 6'x5' RCB Principal Spillway
 - Dry detention flood control
- **425 LF wall along Briarcliff and Briarlake**
- **No road closure or utility impacts**
- **Level of Service**
 - South Culvert carries 100yr w/o overtopping
 - North Culvert still overtops in 50-yr, but extent reduced
 - 100-yr BFEs increase 0.2-ft +/- at Briarcliff.
 - 100-yr BFEs decrease up to 1.5-ft +/- thru Greely Lake
 - 100-yr BFEs increase up to 9-ft upstream of Simmons Lake Dam, but does not appear to impact any houses
 - 100-yr flow into Echo Lake reduced by ~40 pct
 - 100yr BFEs reduced 1-ft +/- in Echo Lake
 - Ancillary benefit of reduced sediment load into Echo Lake due to increased flood control U/S

Dewberry

ROAD & DRAINAGE

BRIARCLIFF AND BRIARLAKE ROAD CULVERT IMPROVEMENTS

ECHO LAKE

DEKALB COUNTY

PROJECT DOCUMENTS

DATE: 7/5/2017

SCALE: 1" = 100'

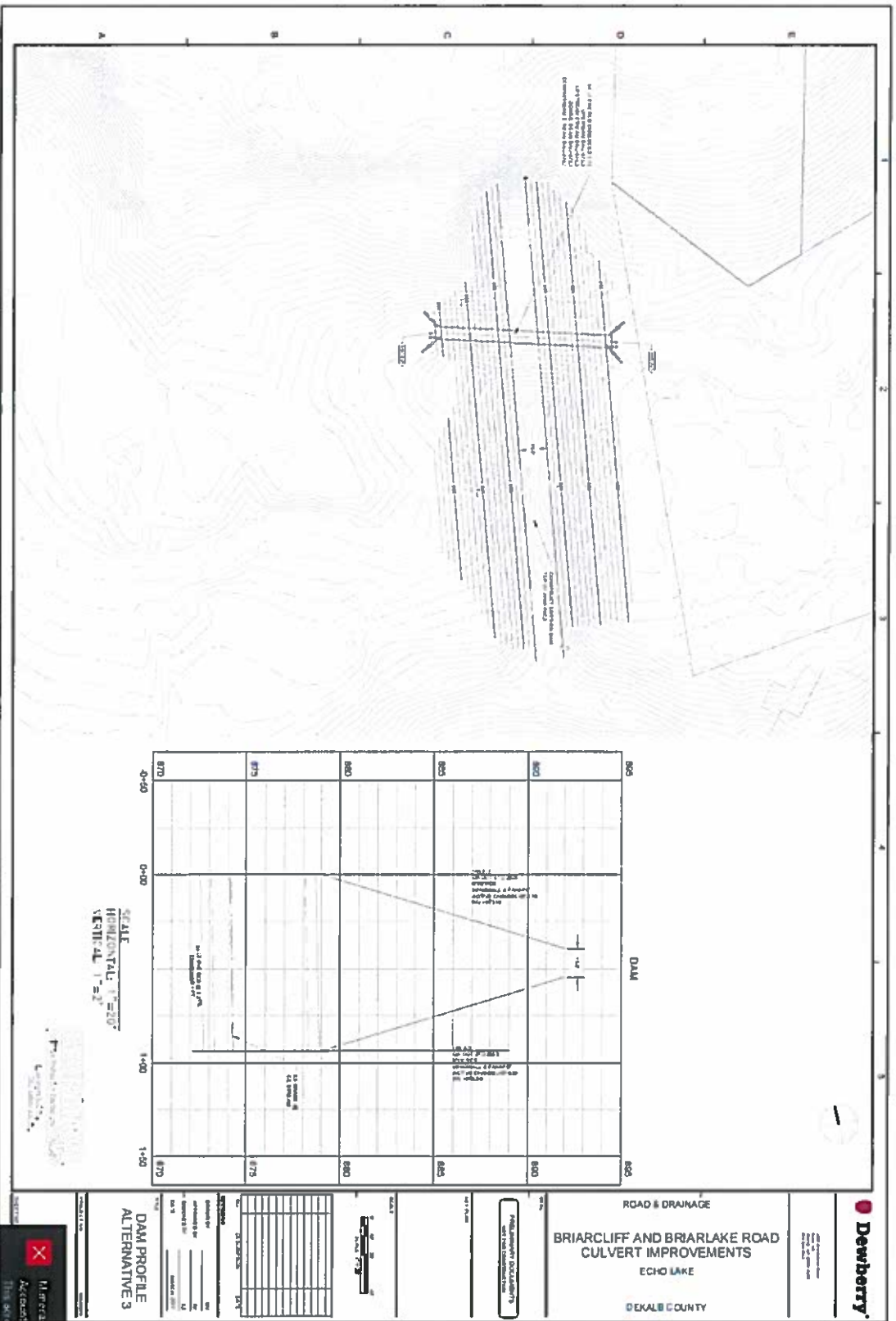
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BRIARCLIFF & BRIARLAKE ROAD ALTERNATIVE 3

C6.0



Alternative 3: Upstream Dam



Alternative 3: Upstream Dam





Summary

- **Alternate 1 – 14 5'x2.5' RCBS**
 - \$1.4 M estimated cost
 - Pros
 - 100-yr LOS for Briarcliff
 - Cons
 - Increased BFEs upstream of Briarcliff
 - Traffic and Utility Impacts
 - Cost
- **Alternate 2 – 5 9'x4' RCBS**
 - \$1.57 M estimate cost
 - Pros
 - 100-yr LOS for Briarcliff and Briarlake
 - Cons
 - Increased BFEs upstream of Briarcliff
 - Traffic and Utility Impacts
 - Cost
- **Alternative 3 – Upstream Dam**
 - \$955k estimated cost
 - Pros
 - Least costly alternative
 - 100-yr LOS for Briarcliff
 - ~40-pct decrease in peak flow into Echo Lake
 - Ancillary benefit of reducing sediment load into Echo Lake
 - No roadway improvements or utility impacts required
 - Cons
 - Increased BFEs upstream of proposed dam
 - Land acquisition