Public Information Session | 28 February 2017

Bragg Creek Flood Mitigation Project

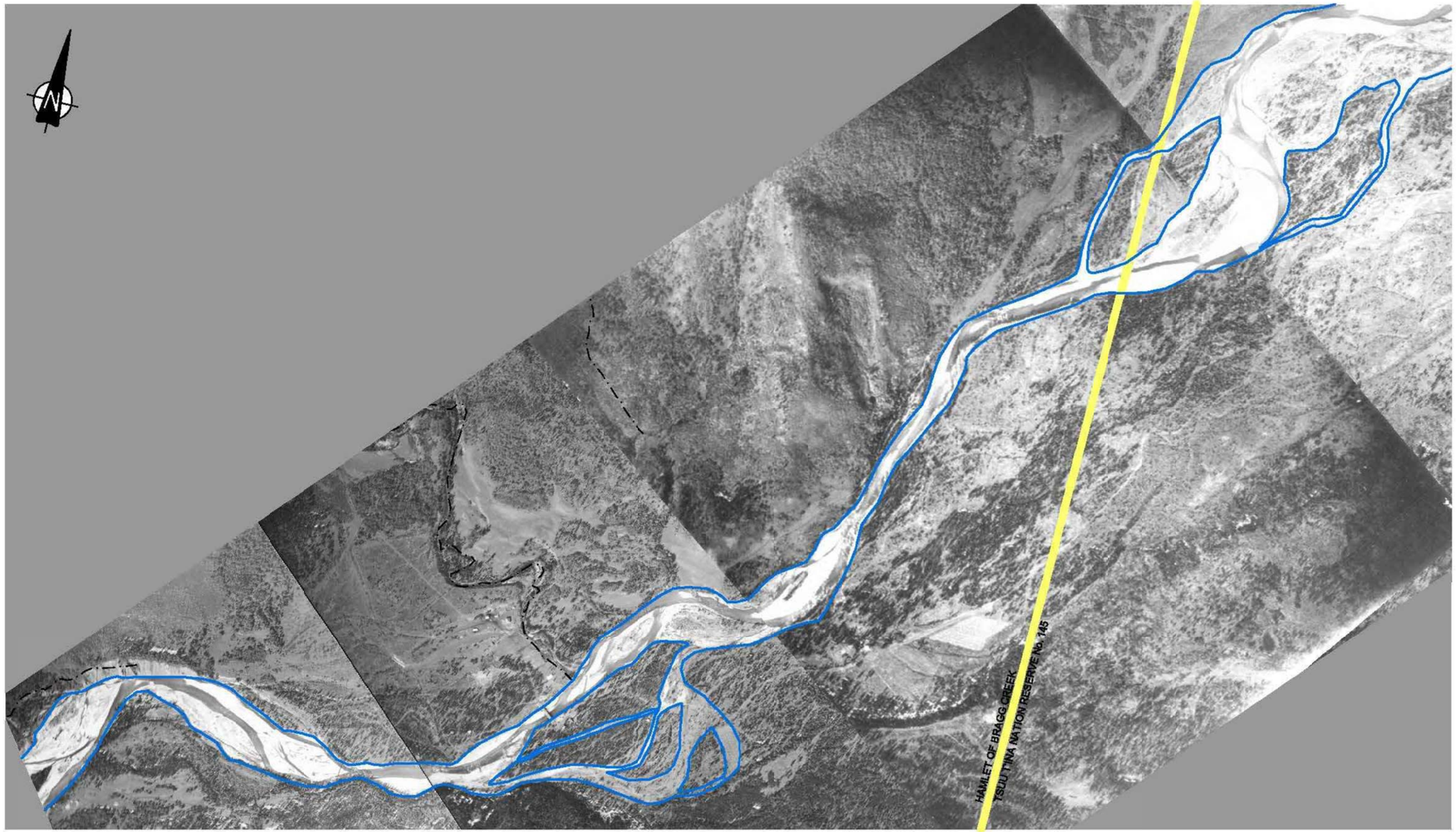
ROCKY VIEW COUNTY
Cultivating Communities

amec foster wheeler

CARSON • McCULLOCH ASSOCIATES LTD

evolve
SURFACE STRATEGIES INC.

ROCKY VIEW COUNTY
Cultivating Communities



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1:10000 Meters

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PROJECT NAME: BRAGG CREEK FLOOD MITIGATION

SHEET TITLE: COMPARATIVE AIR PHOTOS 1924

PROJECT NUMBER: CT160213

FIGURE NUMBER: 1

ISSUE/REVISION: A

Elbow River Banks (1924)

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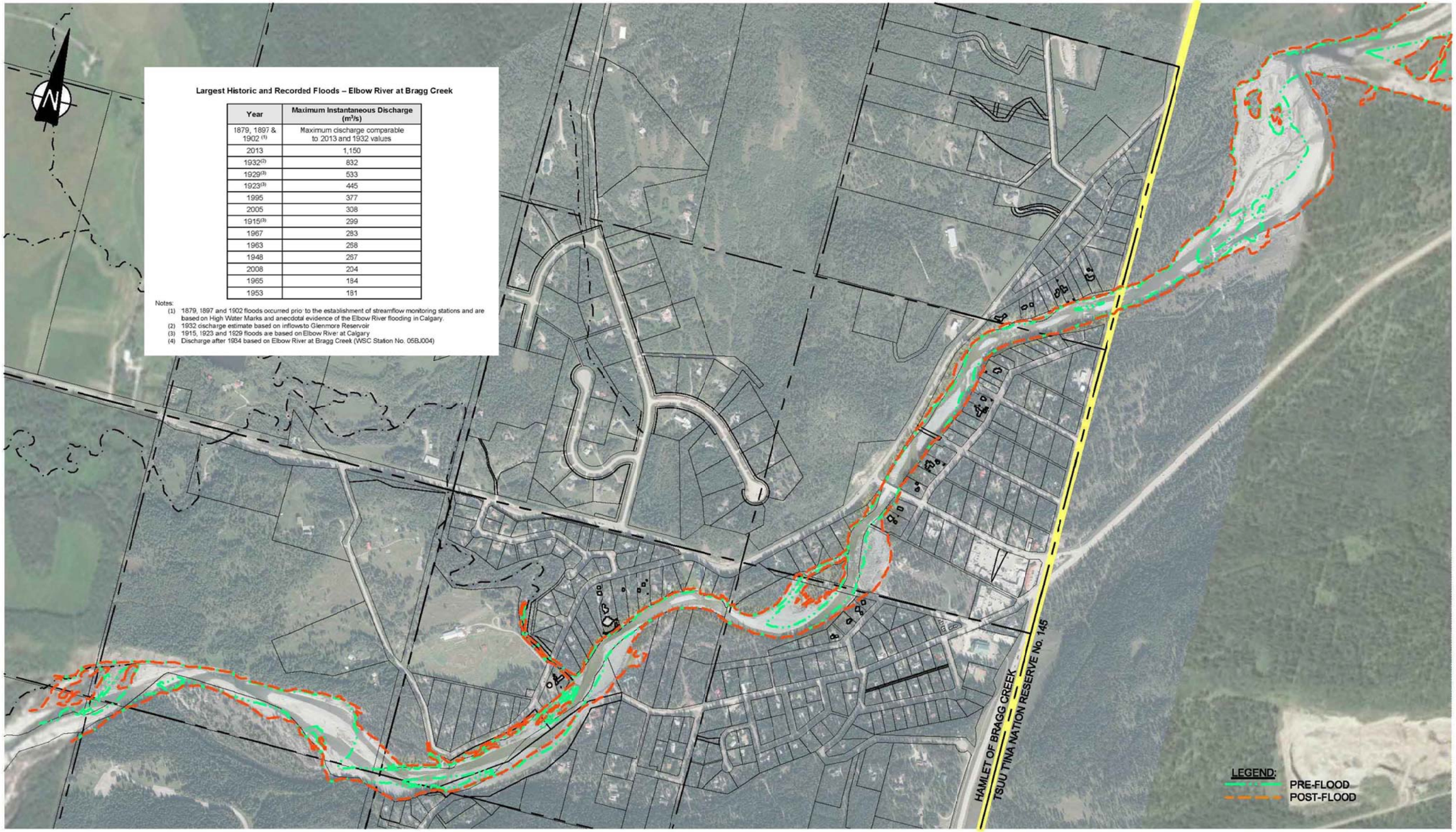

Elbow River Banks (Pre & Post 2013 Flood)

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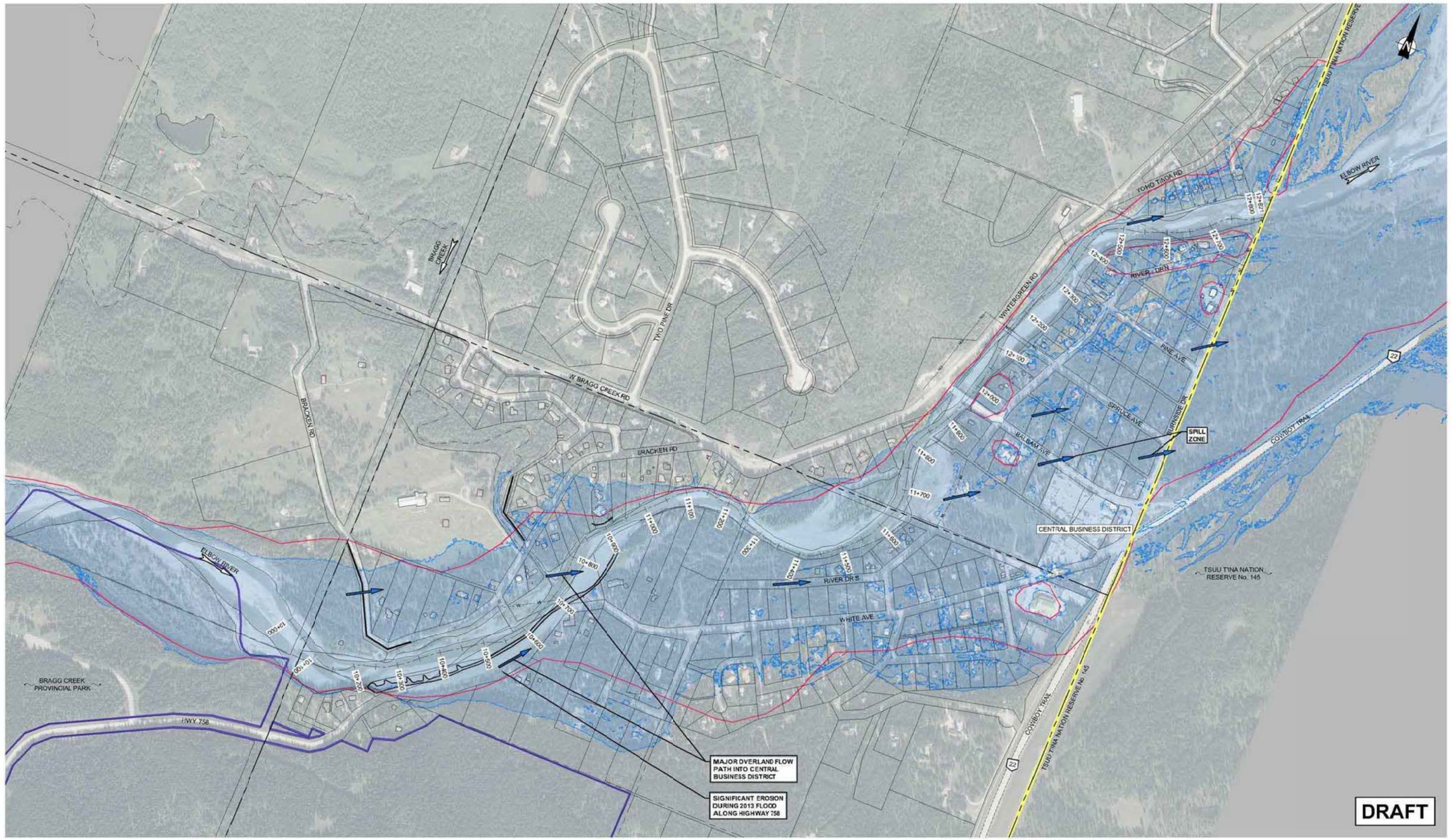

Clarification following Information Session on 28 February 2017:
The 2013 Flood Extents (red line) shown on the image above is approximate. It was only used to check general flood inundation extents and flow patterns obtained from the model. It was not used to calibrate the model or for the design of the proposed flood mitigation structure.

0 100 200
1:4000 Meters

LEGEND:
- 2013 FLOOD CALIBRATION INUNDATION EXTENTS
- 2013 FLOOD EXTENT BASED ON AEP 2013 NEAR FLOOD PEAK AERIAL IMAGERY
- FLOW DIRECTION

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CLIENT: ROCKY VIEW COUNTY Cultivating Communities

PROJECT NAME: BRAGG CREEK FLOOD MITIGATION
PROJECT NUMBER: CT160213
SHEET TITLE: HYDRAULIC MODEL CALIBRATION 2013 FLOOD
FIGURE NUMBER: 5.1
ISSUE/REVISION: A

2013 Flood Inundation & Flow Path

ROCKY VIEW COUNTY
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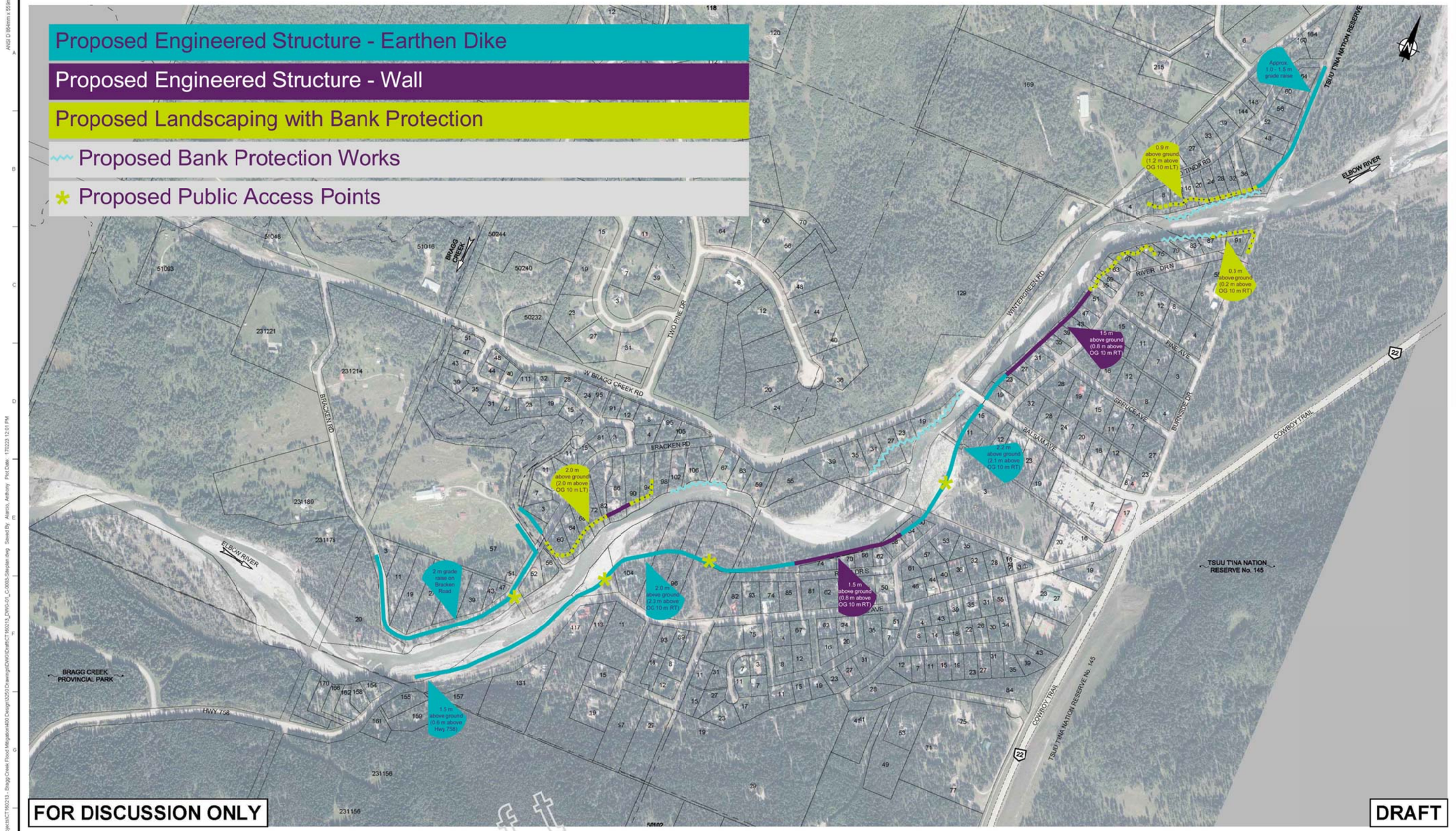

SCALE
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1:4000 Meters
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PROFESSIONAL AUTHENTICATION

draft

B	17	02	39	ISSUED FOR INFORMATION	AA	JK			
A	16	11	38	ISSUED FOR INFORMATION	AA	JK			
I/R	YY	MM	DD	ISSUE/REVISION DESCRIPTION	DRN	CHK	DES	RVW	

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CLIENT
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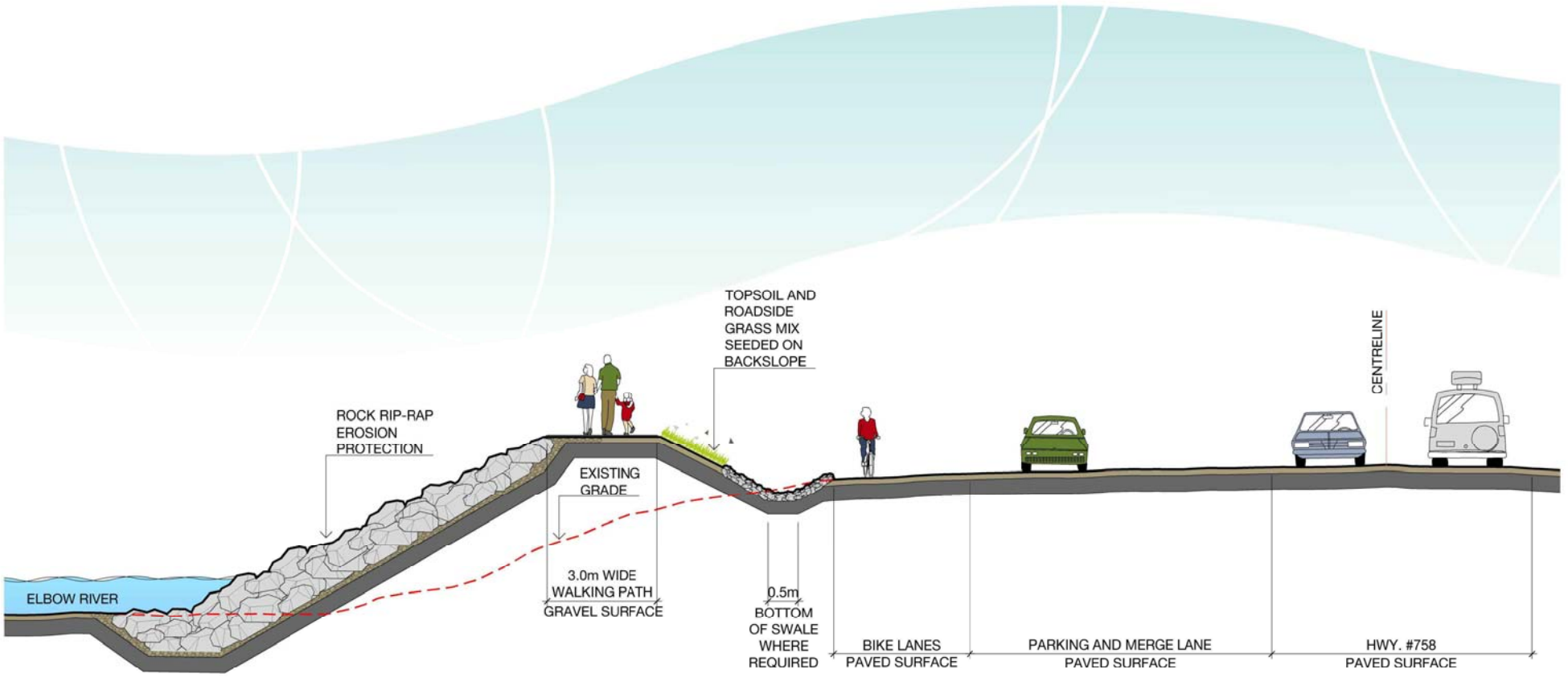
Cultivating Communities

PROJECT NAME: BRAGG CREEK FLOOD MITIGATION
SHEET TITLE: PROJECT SITE PLAN
PROJECT NUMBER: CT160213
DRAWING NUMBER: C-0003 WRKG
ISSUE/REVISION: B

File Name: \\pnpws.jlRockyview\2016 Projects\CT160213 - Bragg Creek Flood Mitigation\400 Design\320 Drawings\DWG\Draft\CT160213_DWG-01_C-0003-Siteplan.dwg Saved By: Alarcio, Anthony Plot Date: 17/02/23 12:01 PM

Proposed Design Overview

ROCKY VIEW COUNTY
Cultivating Communities



DRAFT

PRELIMINARY - FOR DISCUSSION PURPOSES ONLY

BRAGG CREEK FLOOD MITIGATION PROJECT • TYPICAL DIKE ADJACENT HIGHWAY 758
SCALE 1:100

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Section1.1

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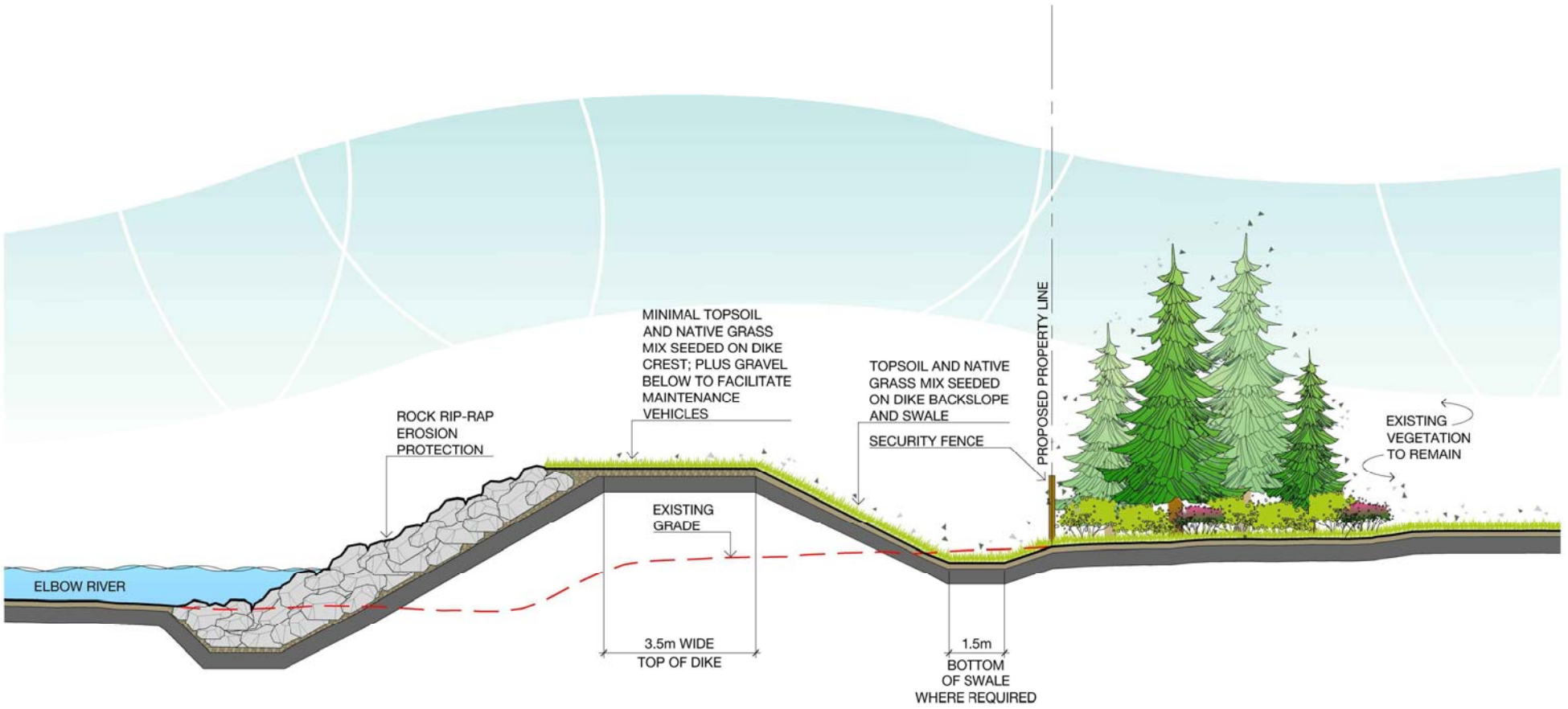

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PRELIMINARY - FOR DISCUSSION PURPOSES ONLY

Proposed Engineered Structure - Earthen Dike

BRAGG CREEK FLOOD MITIGATION PROJECT • TYPICAL DIKE ON RIVER BANK
SCALE 1:100

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Typical Cross-Sections

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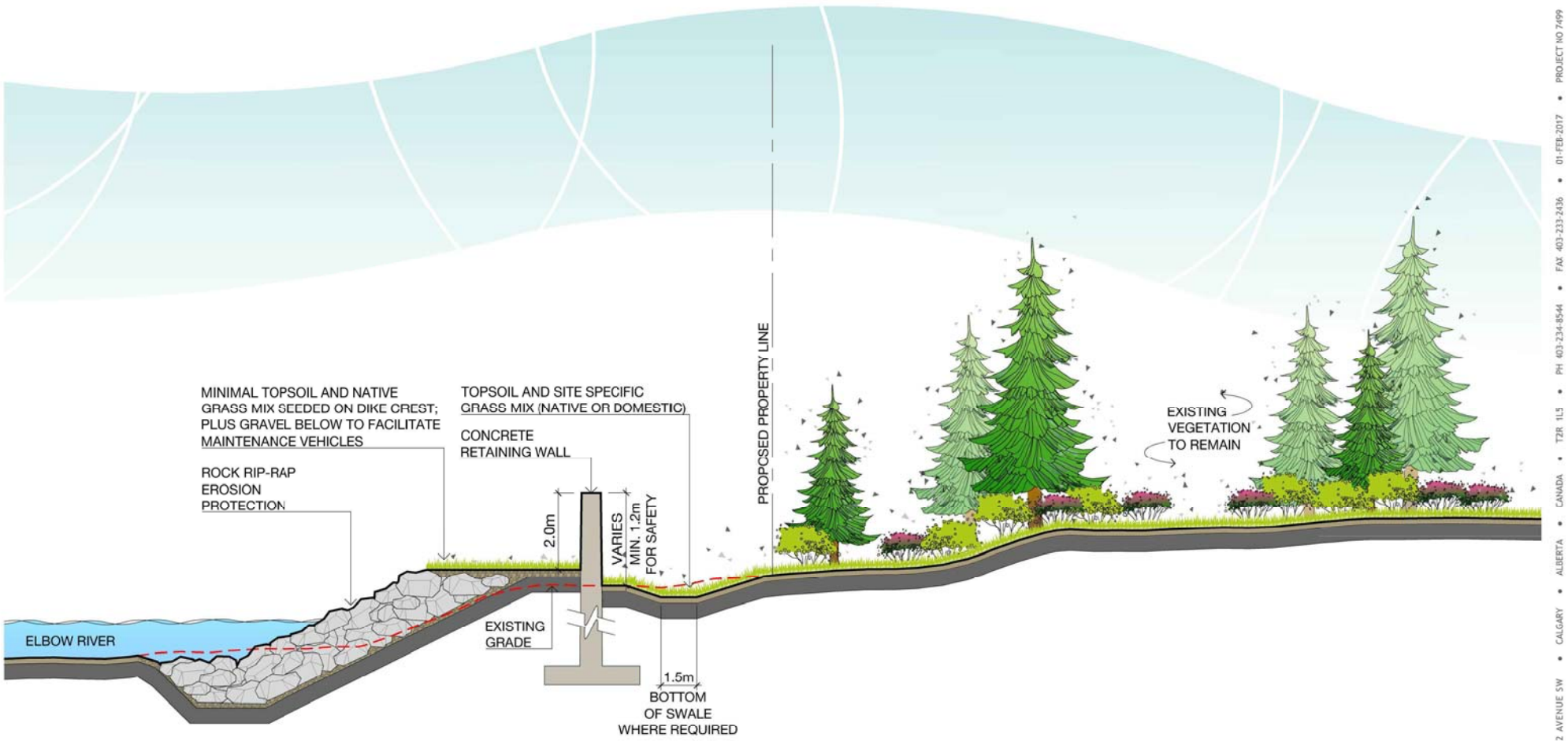
Cultivating Communities



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PRELIMINARY - FOR DISCUSSION PURPOSES ONLY

Proposed Engineered Structure - Wall

BRAGG CREEK FLOOD MITIGATION PROJECT • TYPICAL DIKE WITH RETAINING WALL
SCALE 1:100

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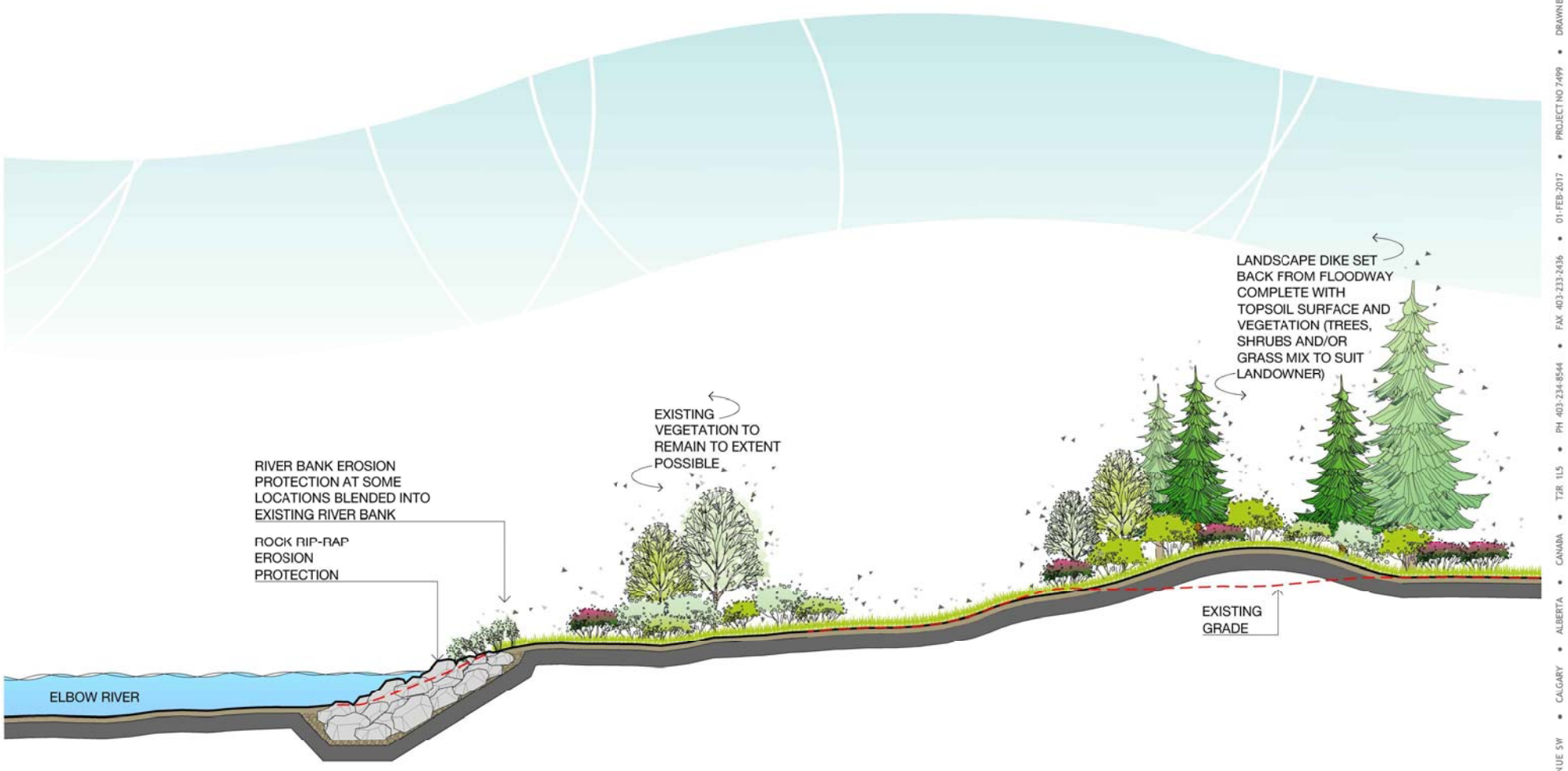

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PRELIMINARY - FOR DISCUSSION PURPOSES ONLY

Proposed Landscaping with Bank Protection

BRAGG CREEK FLOOD MITIGATION PROJECT • TYPICAL LANDSCAPE DIKE
SCALE 1:100

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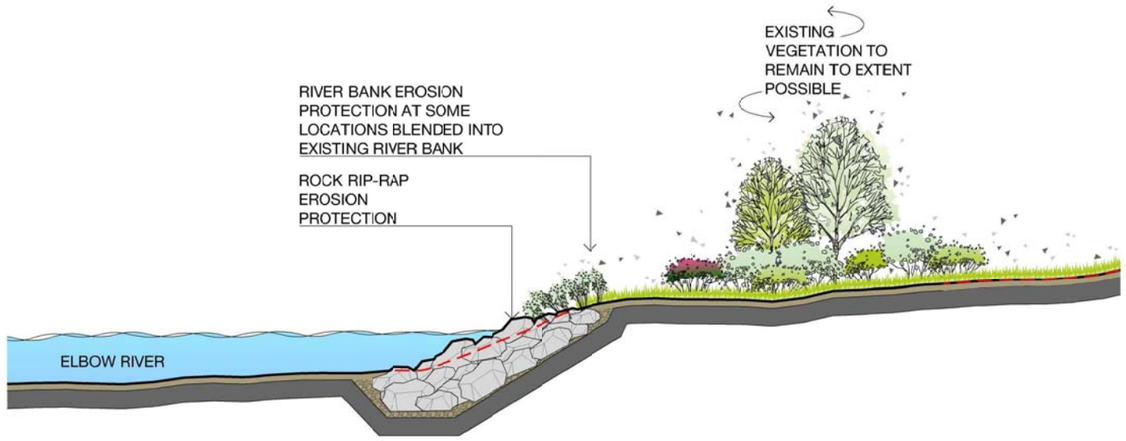
Typical Cross-Sections

ROCKY VIEW COUNTY
Cultivating Communities



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PRELIMINARY - FOR DISCUSSION PURPOSES ONLY

Proposed Bank Protection Works

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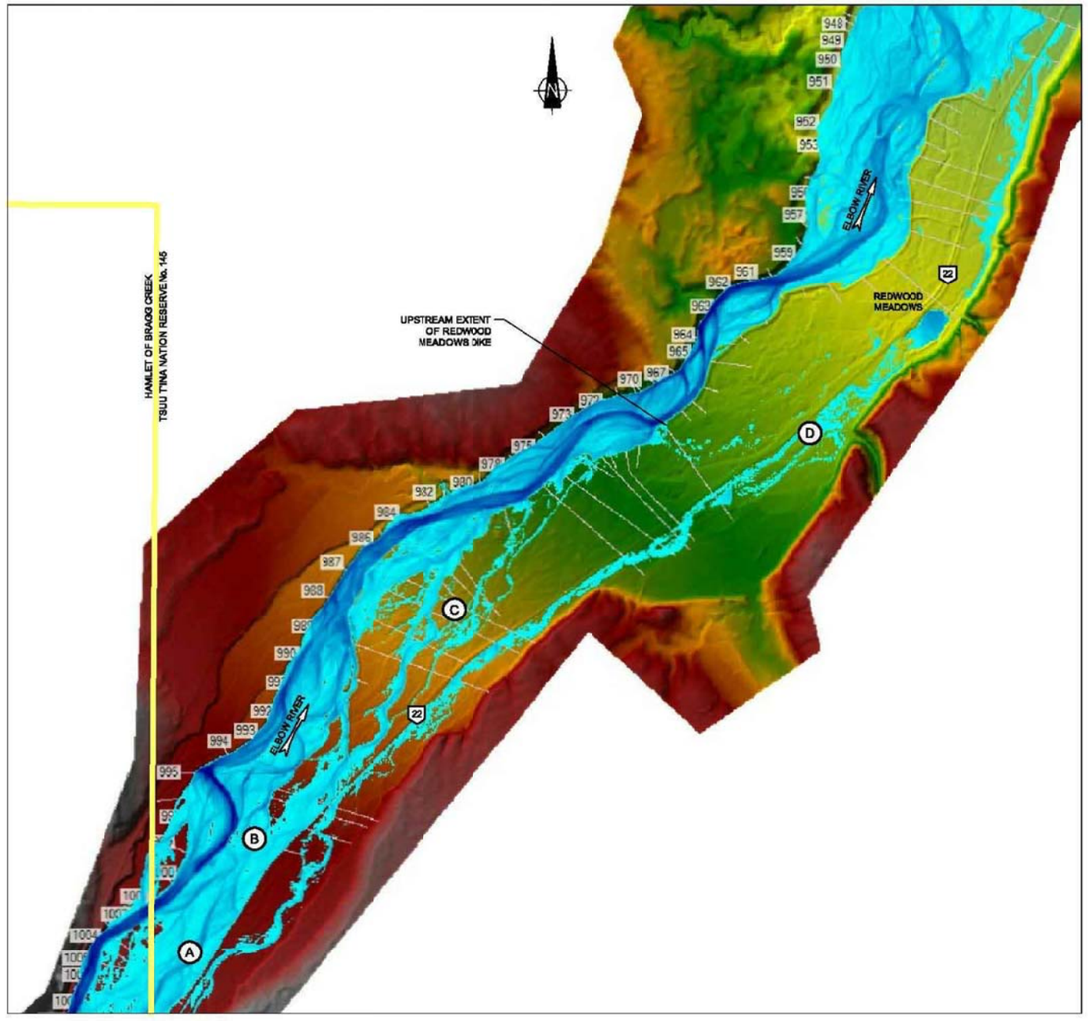
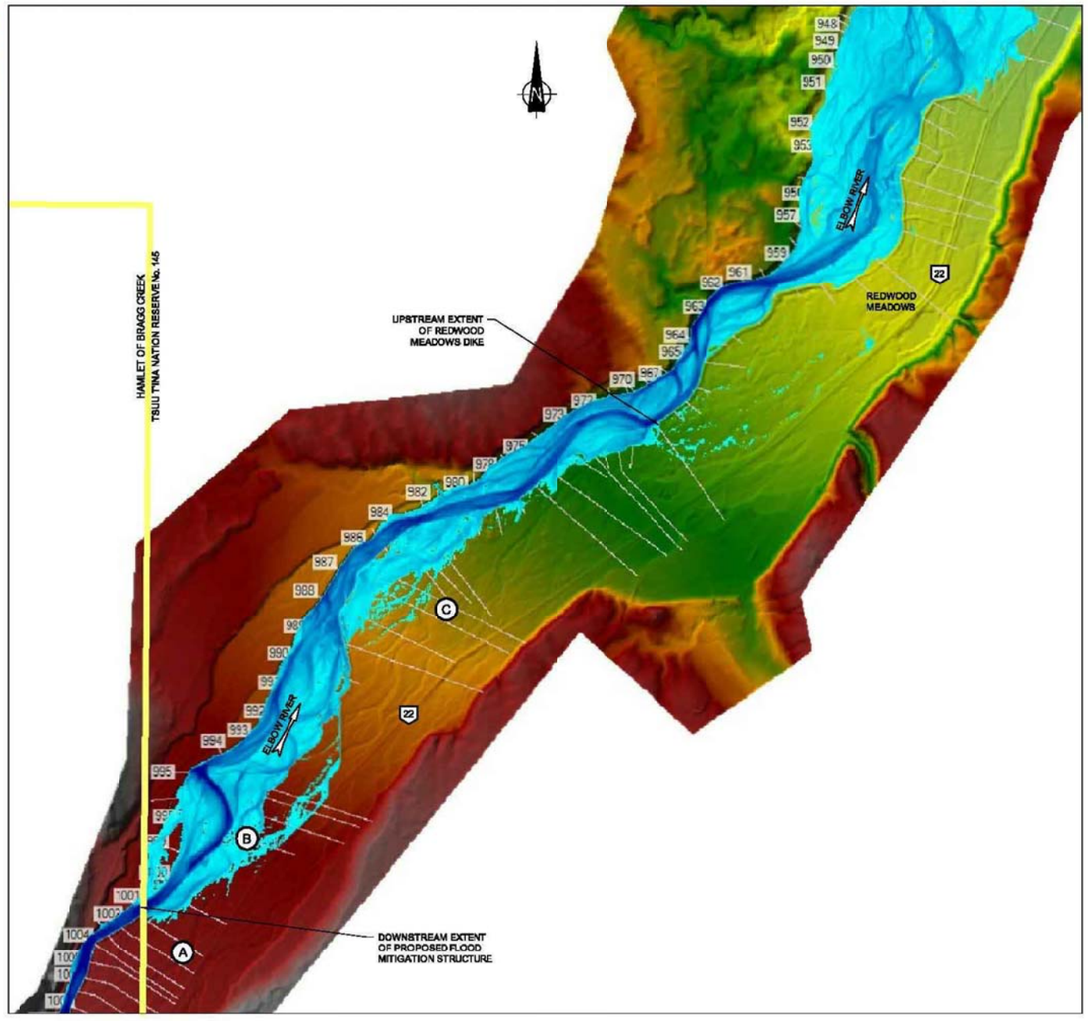


EXISTING CONDITIONS

Scale 1:15 000



FLOOD MITIGATION STRUCTURE CONDITIONS

Scale 1:15 000

FOR DISCUSSION ONLY

0 375 750
1:15000 Meters

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draft

FEATURES IDENTIFIED ON FIGURES

A - AREA ADJACENT TO RESERVE BOUNDARY THAT WOULD NOT BE SUBJECT TO INUNDATION FOR FLOOD MITIGATION STRUCTURE SCENARIOS.

B - HYDRAULIC CONDITIONS AT AND DOWNSTREAM OF THIS POINT ARE GENERALLY SIMILAR FOR EXISTING AND FLOOD MITIGATION STRUCTURE SCENARIOS.

C - FLOOD MITIGATION STRUCTURE RESULTS IN REDUCED FLOODING IN THIS GOLF COURSE AREA.

D - MODEL MAY OVERESTIMATE EXTENT OF FLOODING ON SOUTHEAST SIDE OF HWY 22 AS INFORMATION REGARDING CULVERTS AND DITCH BLOCKS THAT DIRECTS FLOW BACK TO THE RIVER WAS NOT AVAILABLE AND NOT INCLUDED IN MODEL.

NOTES:

1. NUMBERS ON FIGURE IDENTIFY MODEL CROSS SECTION NUMBERS.

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CLIENT: ROCKY VIEW COUNTY Cultivating Communities

PROJECT NAME: BRAGG CREEK FLOOD MITIGATION	PROJECT NUMBER: CT160213
SHEET TITLE: 1:100 YEAR FLOOD INUNDATION EXTENTS AT TSUU T'INA RESERVE AND REDWOOD MEADOWS	FIGURE NUMBER: 6.5
	ISSUE/REVISION: A

File Name: P:\CT\160213\Deliverables\2 Figures\CT160213_FIG6.5_C-0004.dwg Saved By: Brown, Shelley Plot Date: 1/7/20 3:51 PM
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Downstream Impacts

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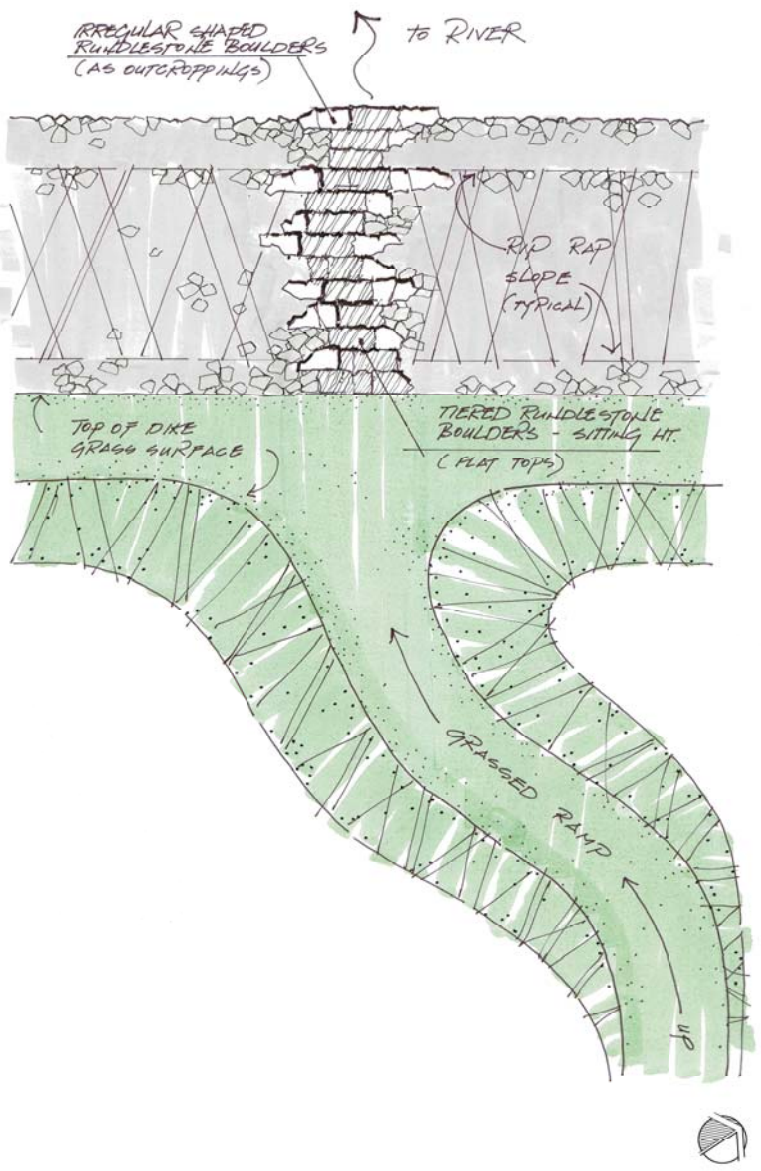
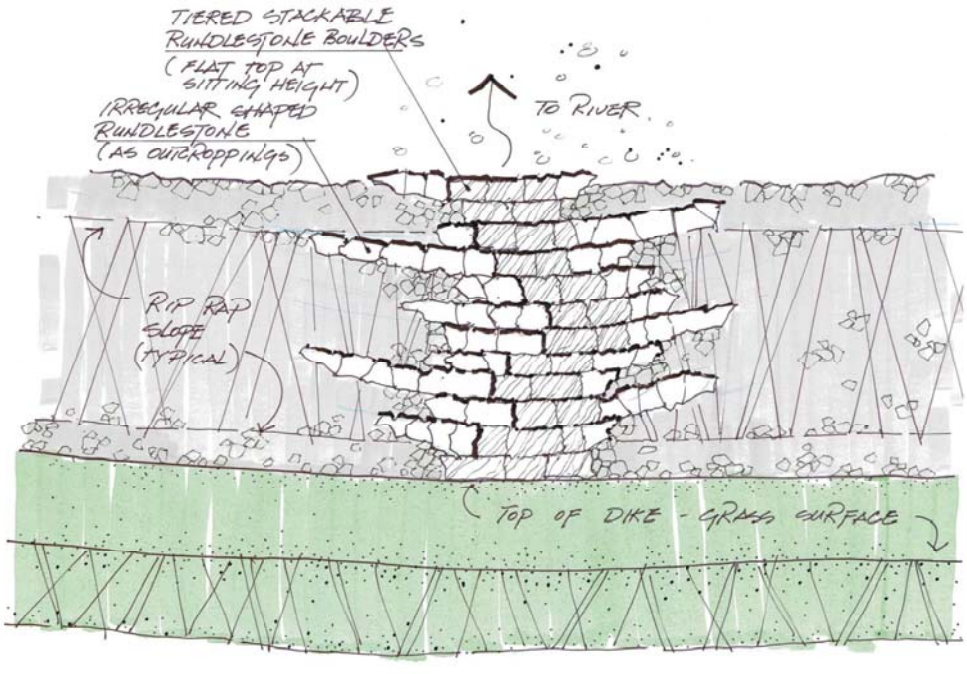
PROPOSED LANDSCAPE DIKE CROSSINGS (PRELIMINARY) - PLAN VIEW

NOT TO SCALE



PROPOSED CROSSING A - PLAN VIEW

PRELIMINARY - NOT TO SCALE



PROPOSED CROSSING C - PLAN VIEW

PRELIMINARY - NOT TO SCALE

NOTE: SHOWN FOR ILLUSTRATION PURPOSES ONLY; DESIGN AND IMPLEMENTATION SUBJECT TO BUDGETARY CONSIDERATIONS

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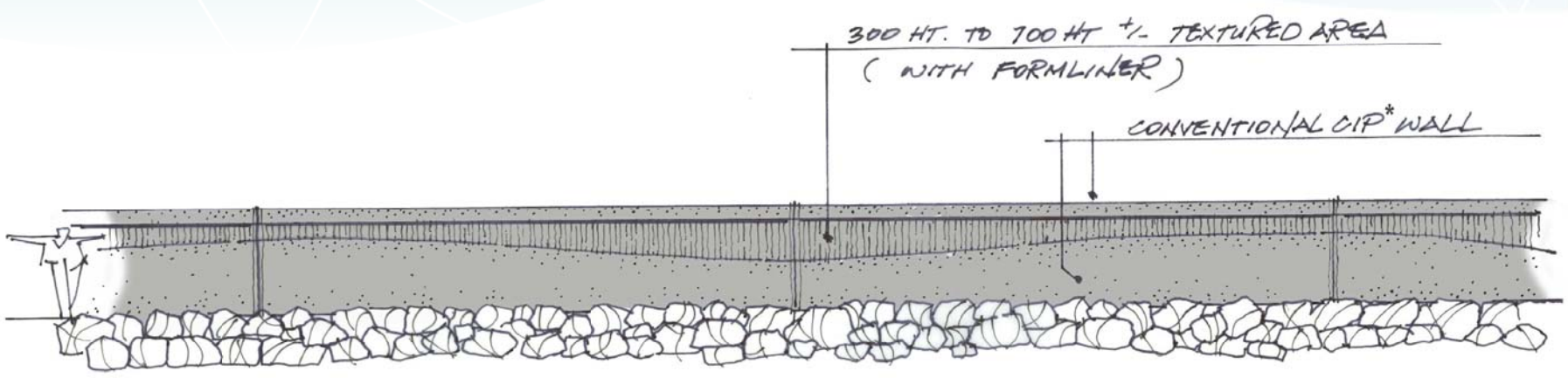
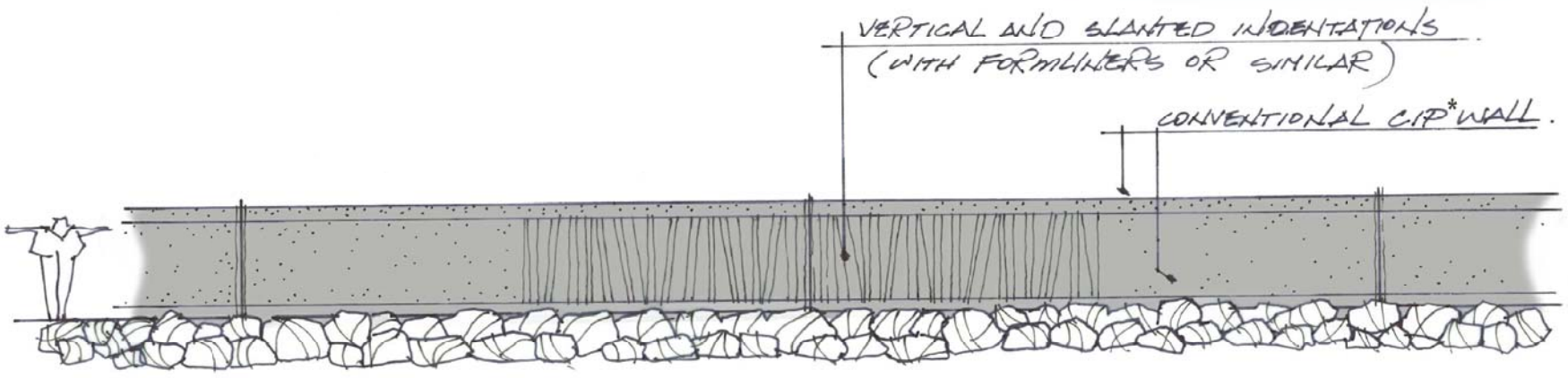


PRELIMINARY OPTION 1 - CONTINUOUS PATTERN

NOT TO SCALE



PRELIMINARY OPTION 2 - REPEATED PATTERN

NOT TO SCALE

PROPOSED CONCRETE RETAINING WALL WITH TEXTURED PATTERN - ELEVATIONS (PRELIMINARY)

* CIP WALL = CAST-IN-PLACE CONCRETE WALL
NOTE: SHOWN FOR ILLUSTRATION PURPOSES ONLY; DESIGN AND IMPLEMENTATION SUBJECT TO BUDGETARY CONSIDERATIONS

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Land Acquisition Type	Purpose	Process	Compensation
Temporary Work Space	• Allows temporary access adjacent to the proposed works during construction only	• Temporary in nature • Agreement is not registered on Certificate of Title	• Lump Sum amount per land parcel
Easement	• Protects **Landscape Structure** • Typically flood structure not adjacent to river bank • Protects house and ancillary buildings on property but not incremental land loss due to erosion	• Encumbered land remains the property of landowner but grants rights / privileges to the County, such as access for inspections and maintenance • Agreement registered on Certificate of Title	• Percentage of Bareland Market Value, as determined by Appraiser • Compensation for other damages as a result of construction • Any future loss of land due to bank erosion will not be compensated by the Province or the County
Partial Land Purchase	• Protects **Engineered Flood Structure** • Typically flood structure is adjacent to river bank • Protects property from future land loss due to erosion	• Land is purchased and surveyed from the original land parcel • Acquired land is re-zoned as environmental reserve or public utility lot	• Market Value for the Land • Compensation for other damages as a result of the purchase
Total Land Purchase	• Protects **Engineered Flood Structure** • Conflict between flood structure and main residence on property • Remnant land not developable	• Entire land parcel is purchased • Land is re-zoned as environmental reserve or public utility lot	• Market Value for Entire Parcel including all Improvements