

MAP LIBRARY

Open Water Flood Inundation Map Library

Red Deer River Hazard Study

Submitted to:

Alberta Environment and Parks

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11th Floor Oxbridge Place
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Submitted by:

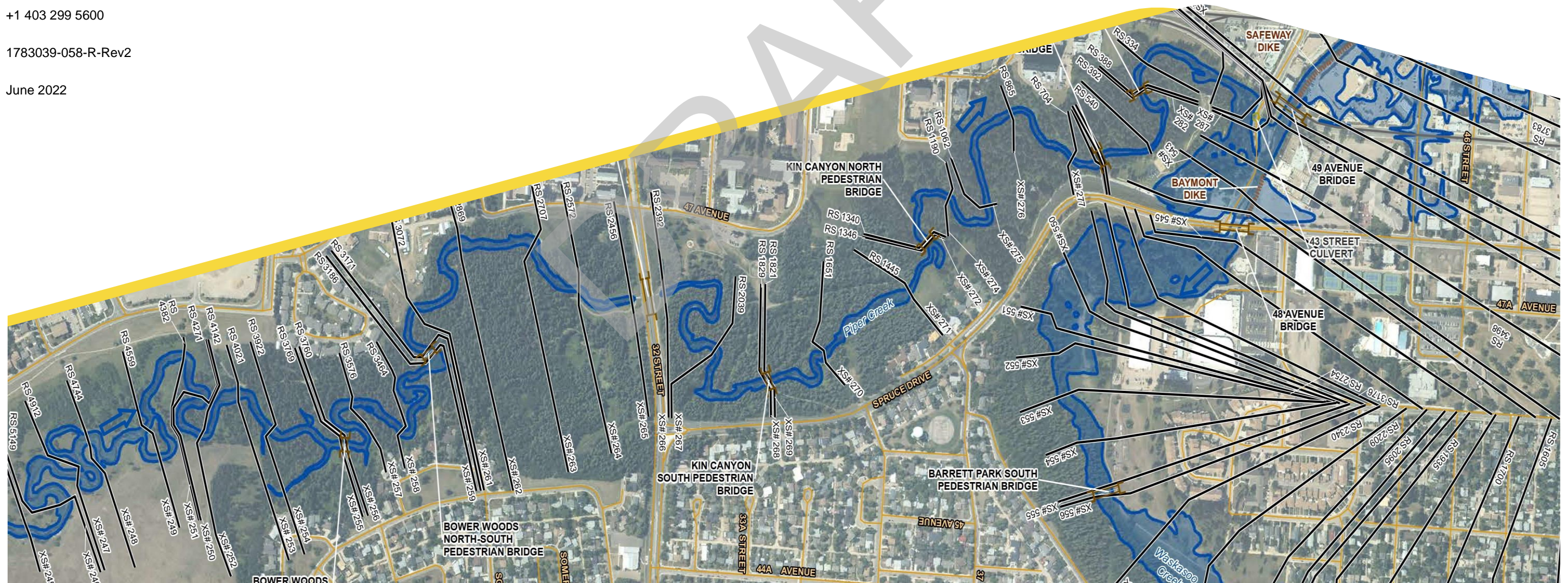
Golder Associates Ltd.

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1783039-058-R-Rev2

June 2022



Distribution List

1 Digital Copy - Alberta Environment and Parks

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50-Year Flood Inundation Extent

75-Year Flood Inundation Extent

100-Year Flood Inundation Extent

200-Year Flood Inundation Extent

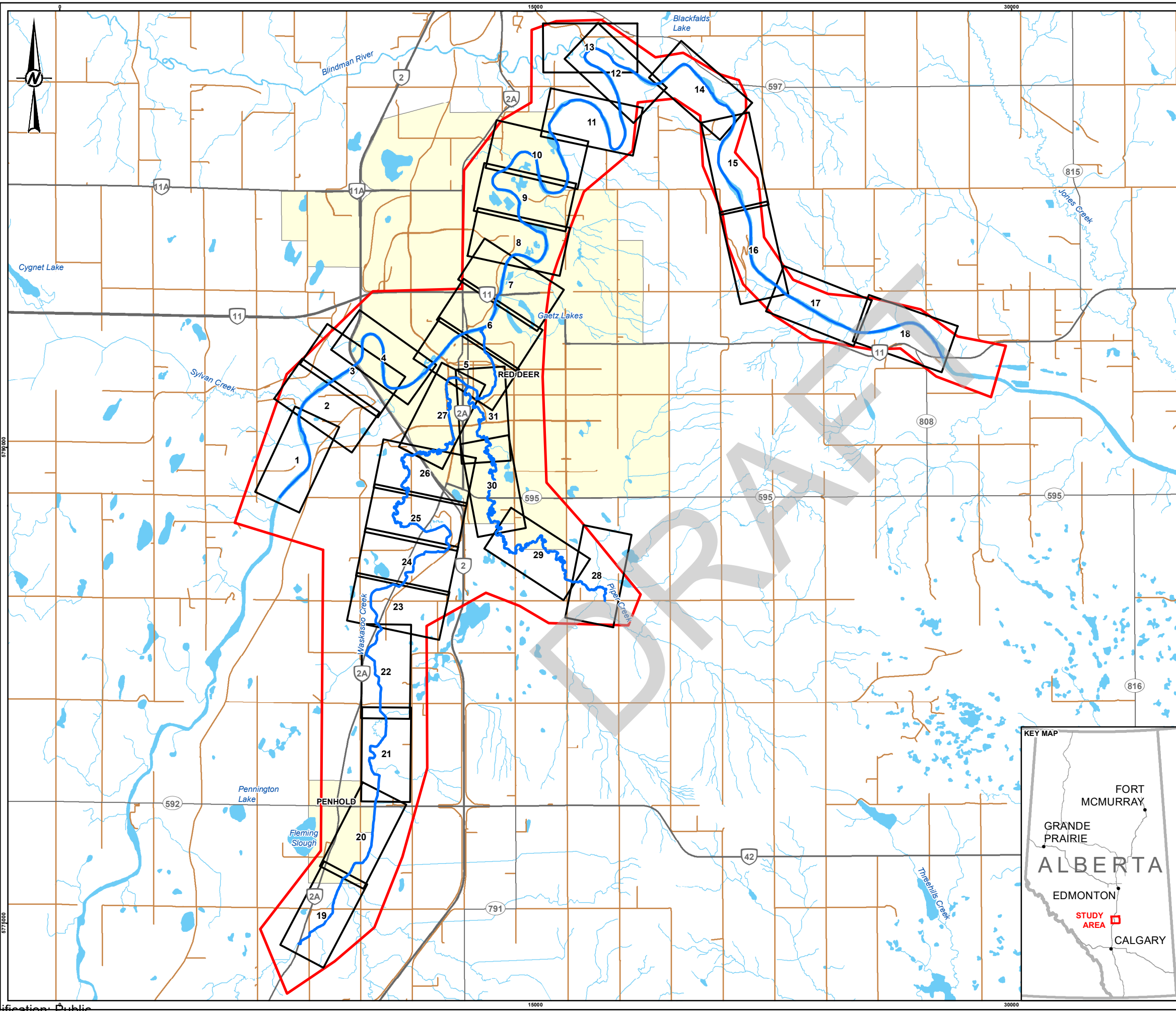
350-Year Flood Inundation Extent

500-Year Flood Inundation Extent

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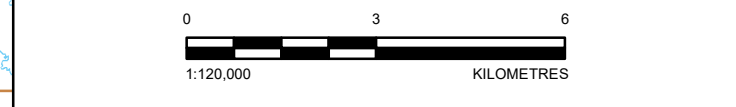
1000-Year Flood Inundation Extent

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LEGEND

- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- LOCAL ROAD
- WATERCOURSE
- WATERBODY
- POPULATED PLACE
- SURVEY REACH
- MAPBOOK EXTENT
- RIVER HAZARD STUDY AREA



NOTE(S)

1. PLEASE REFER TO THE ACCOMPANYING RED DEER RIVER HAZARD STUDY – HYDRAULIC MODELLING AND CALIBRATION, AND OPEN WATER FLOOD INUNDATION MAPPING REPORT FOR IMPORTANT INFORMATION CONCERNING THESE MAPS
2. TO DETERMINE WHETHER OR NOT A PARTICULAR SITE IS SUBJECT TO FLOODING, REFERENCE SHOULD BE MADE TO THE COMPUTED FLOOD LEVELS IN CONJUNCTION WITH SITE-SPECIFIC SURVEYS WHERE DETAILED DEFINITION IS REQUIRED.
3. NON-RIVERINE AND LOCAL SOURCES OF WATER HAVE NOT BEEN CONSIDERED. CHANNEL OBSTRUCTION, LOCAL STORMWATER INFLOW, GROUNDWATER SEEPAGE OR OTHER LAND DRAINAGE CAN CAUSE FLOOD LEVELS TO EXCEED THOSE INDICATED ON THE MAP. LANDS ADJACENT TO A FLOODED AREA MAY BE SUBJECT TO FLOODING FROM TRIBUTARY STREAMS NOT INDICATED ON THE MAPS.
4. LINE WORK FOR BRIDGES AND FLOOD CONTROL STRUCTURES IS SHOWN ABOVE FLOOD INUNDATION AREAS, EVEN IN CASES WHERE BRIDGES OR FLOOD CONTROL STRUCTURES ARE INUNDATED.

DEFINITIONS:

FLOOD INUNDATION MAPPING - DELINEATES FLOOD INUNDATION AREAS, SHOWING THE EXTENT OF ONE OR MORE FLOOD SCENARIOS UNDER EXISTING CONDITIONS. DEPENDING ON THE PARTICULAR FLOOD SCENARIO, THE MAPPING MAY BE DIVIDED INTO MULTIPLE ZONES. FLOOD INUNDATION MAPPING IS TYPICALLY USED FOR NEAR REAL-TIME EMERGENCY RESPONSE PLANNING AND OPERATIONS.

FLOOD INUNDATION AREA - THE AREA INUNDATED DURING A PARTICULAR FLOOD SCENARIO UNDER EXISTING CONDITIONS. THE FLOOD INUNDATION AREA MAY BE DIVIDED INTO MULTIPLE ZONES. INCLUDED AREAS INUNDATED DUE TO POTENTIAL FLOOD CONTROL STRUCTURE FAILURE. FLOOD INUNDATION AREAS MAY CHANGE AS A RESULT OF FUTURE DEVELOPMENT OR FLOW OBSTRUCTIONS.

FLOOD SCENARIO - FLOW CONDITIONS THAT DESCRIBE A PARTICULAR FLOOD EVENT. FLOOD SCENARIOS TYPICALLY REPRESENT A RANGE OF FLOWS, BASED EITHER ON FLOOD FREQUENCY ANALYSIS OR SET FLOW INTERVALS. THE FLOOD SCENARIOS INCLUDED WITH THIS MAP SET INCLUDED THE 2-YEAR, 5-YEAR, 10-YEAR, 20-YEAR, 35-YEAR, 50-YEAR, 75-YEAR, 100-YEAR, 200-YEAR, 350-YEAR, 500-YEAR, 750-YEAR AND 1000-YEAR FLOOD EVENTS.

REFERENCE(S)

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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**OPEN WATER FLOOD INUNDATION INDEX MAP
 REGULATED FLOWS**

CONSULTANT	YYYY-MM-DD	2022-05-02
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

PROJECT NO. 1783039 CONTROL 4000 REV. 1 FIGURE 1



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SHEETS 1-31

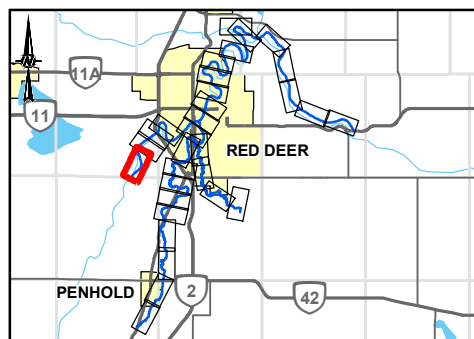
2-Year Flood Inundation Extent

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SHEET 2 ↓

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER ABOVE WASKASOO CREEK = 282 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	



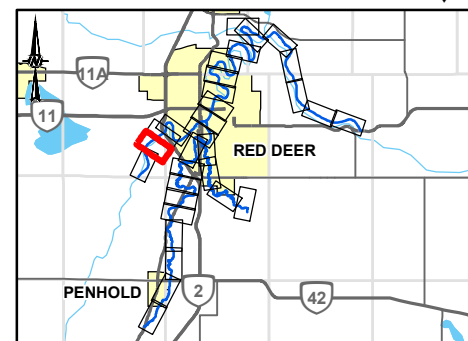
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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31

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LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	2-YEAR FLOOD INUNDATION EXTENT	
	▬ 2-YEAR FLOOD EXTENT	
	▬ 2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER ABOVE WASKASOO CREEK = 282 M ³ /S	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

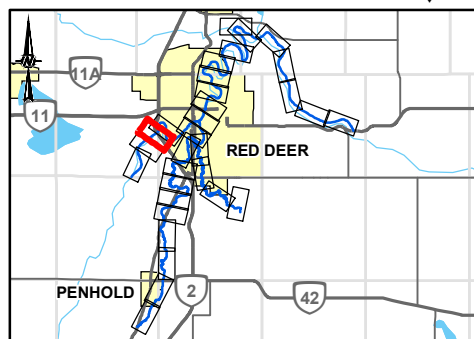
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		2-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 282 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

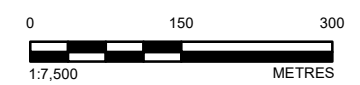
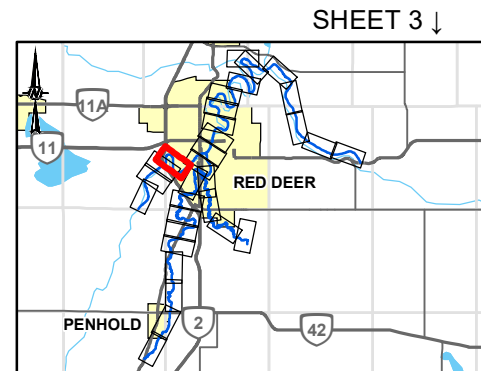
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LEGEND	
	CROSS SECTION
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	2-YEAR FLOOD INUNDATION EXTENT
	2-YEAR FLOOD EXTENT
	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 282 M ³ /S

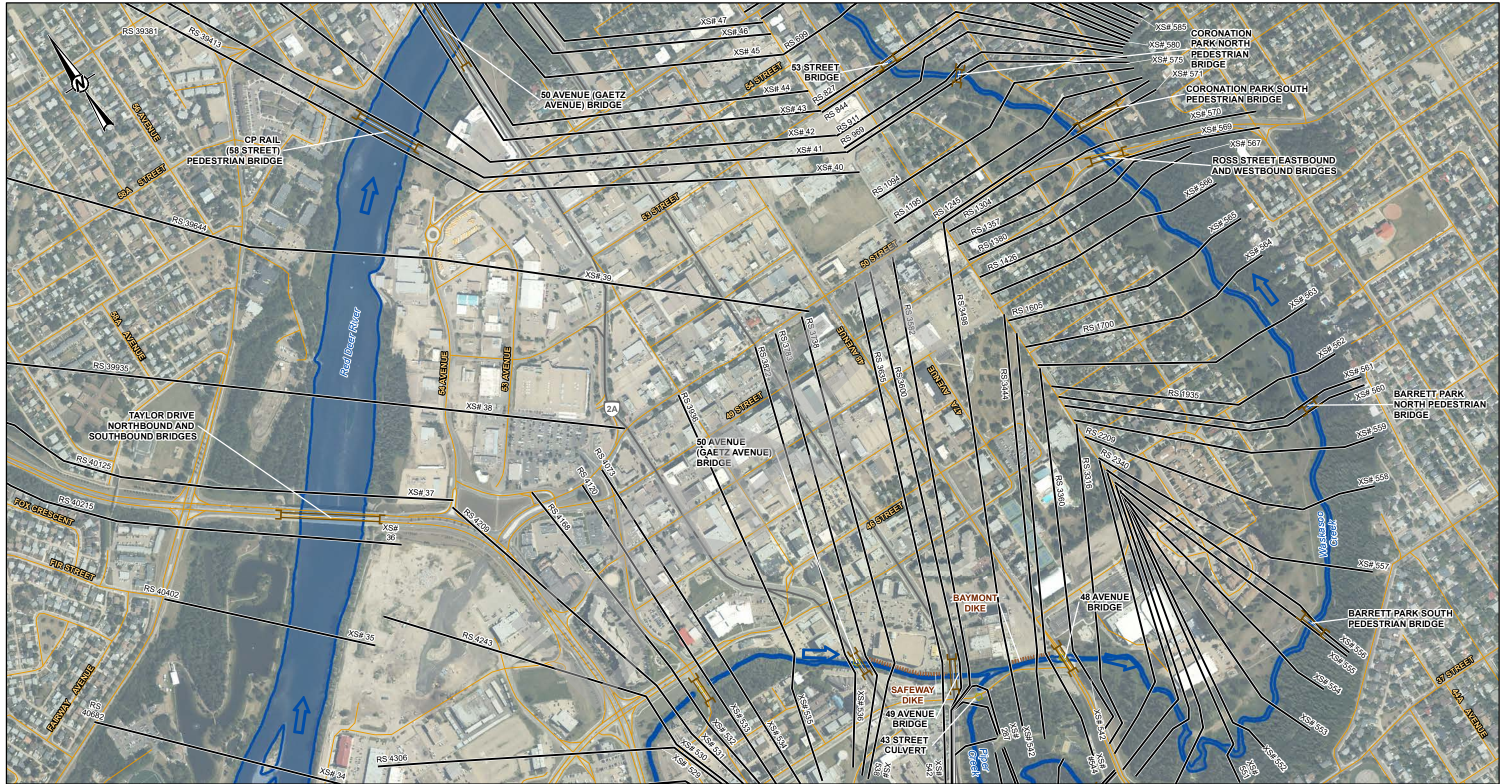


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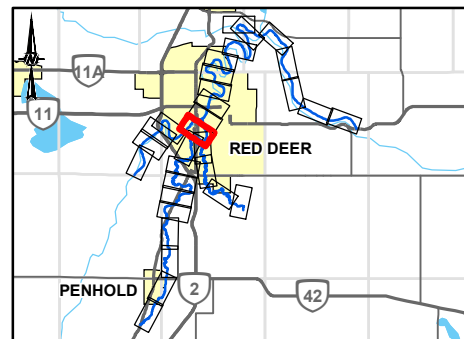
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
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LEGEND		2-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	2-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	FLOOD CONTROL STRUCTURE
■	STUDY BOUNDARY	○	CULVERT
➔	FLOW DIRECTION	—	BRIDGE
—	LOCAL ROAD	DISCHARGE	
—	PRIMARY HIGHWAY	RED DEER RIVER ABOVE WASKASOO CREEK = 282 M ³ /S	
—	SECONDARY HIGHWAY	WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M ³ /S	
+	RAILWAY	WASKASOO CREEK BELOW PIPER CREEK = 5.16 M ³ /S	
		PIPER CREEK ABOVE WASKASOO CREEK = 1.73 M ³ /S	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

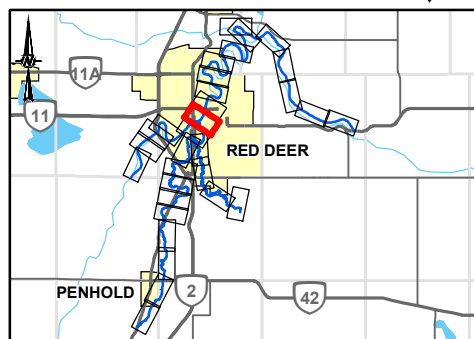
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		2-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 282 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 283 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 5.16 M³/S



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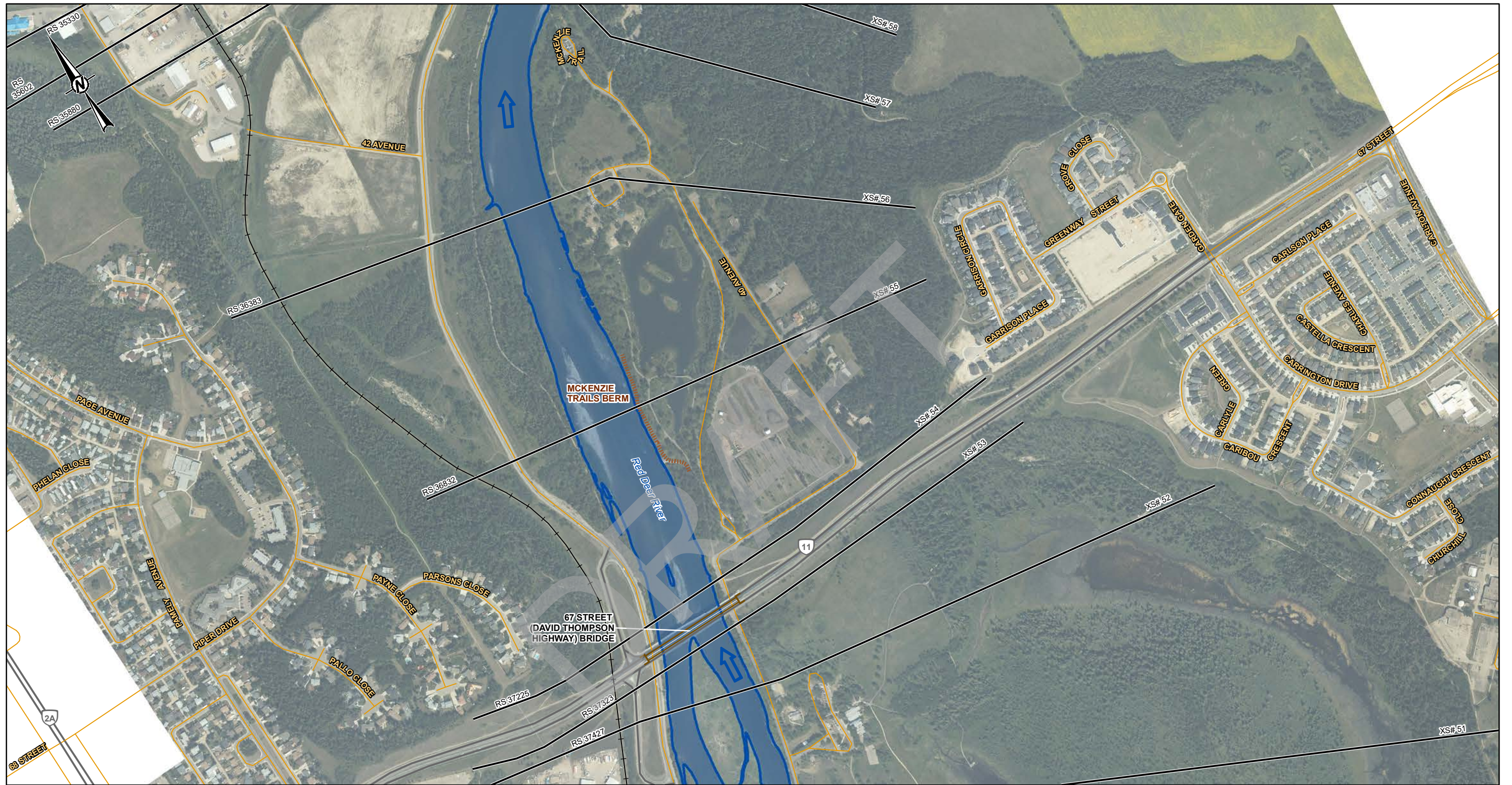
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PROJECT
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TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

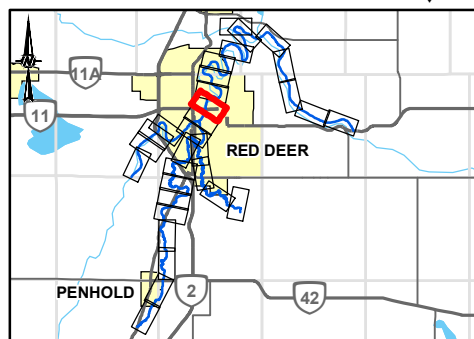
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31



LEGEND

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XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)		CULVERT		
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 283 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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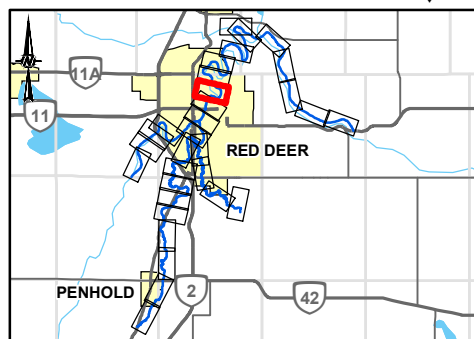
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LEGEND

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XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 283 M³/S



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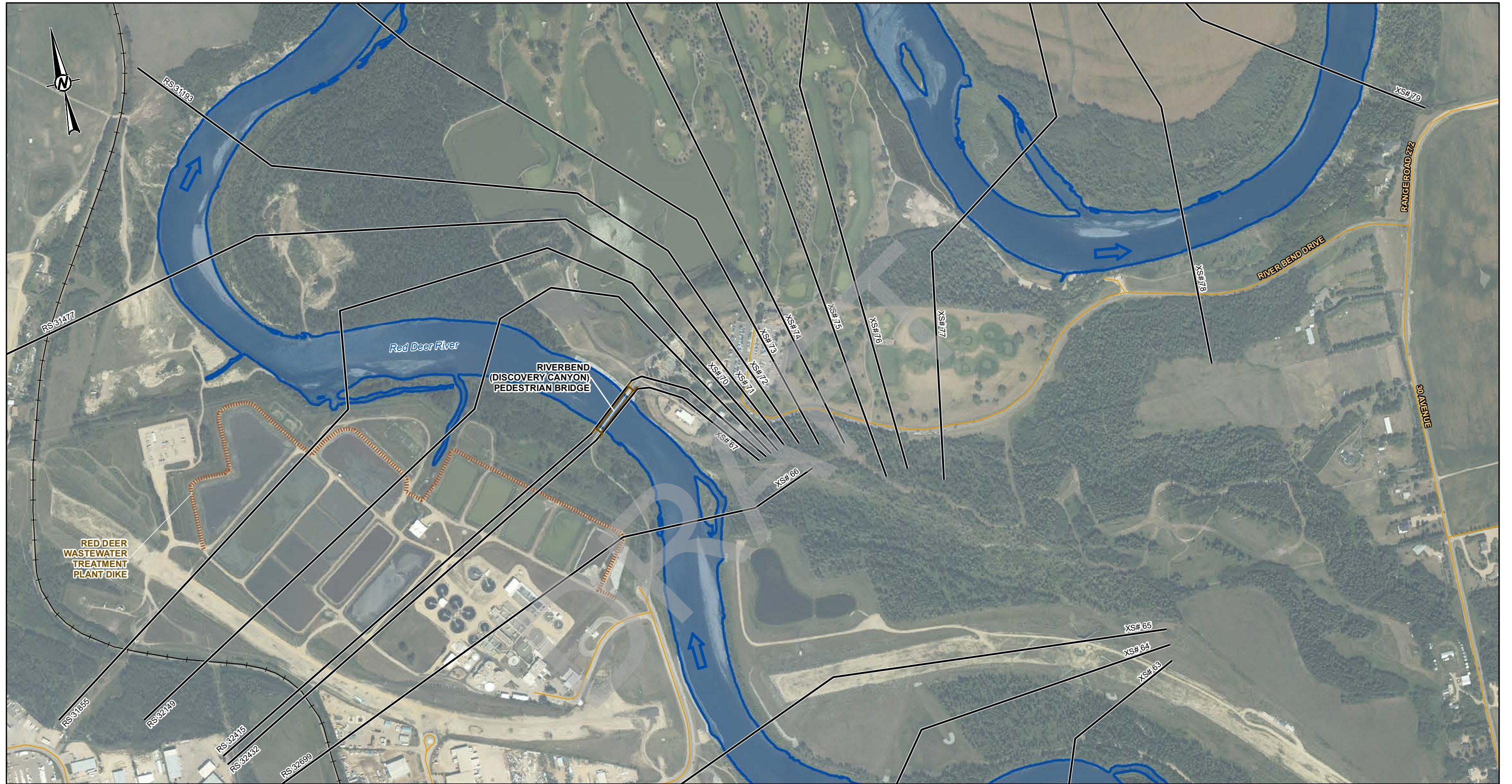
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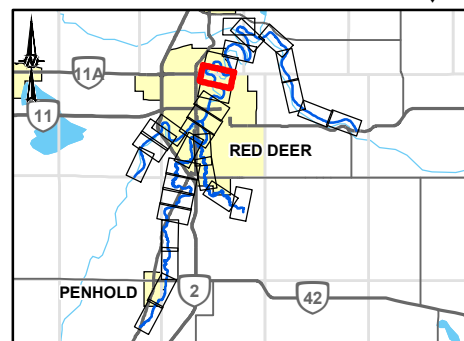
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	2-YEAR FLOOD INUNDATION EXTENT
	2-YEAR FLOOD EXTENT
	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	CROSS SECTION NUMBER
	RIVER STATION (M)
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 283 M ³ /S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

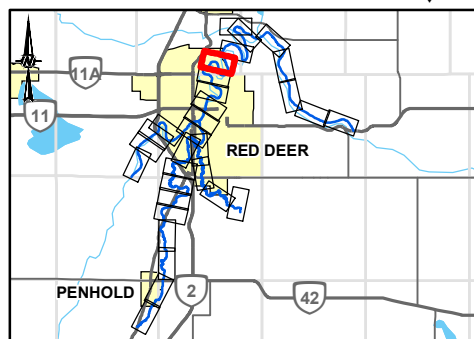
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		2-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 283 M³/S



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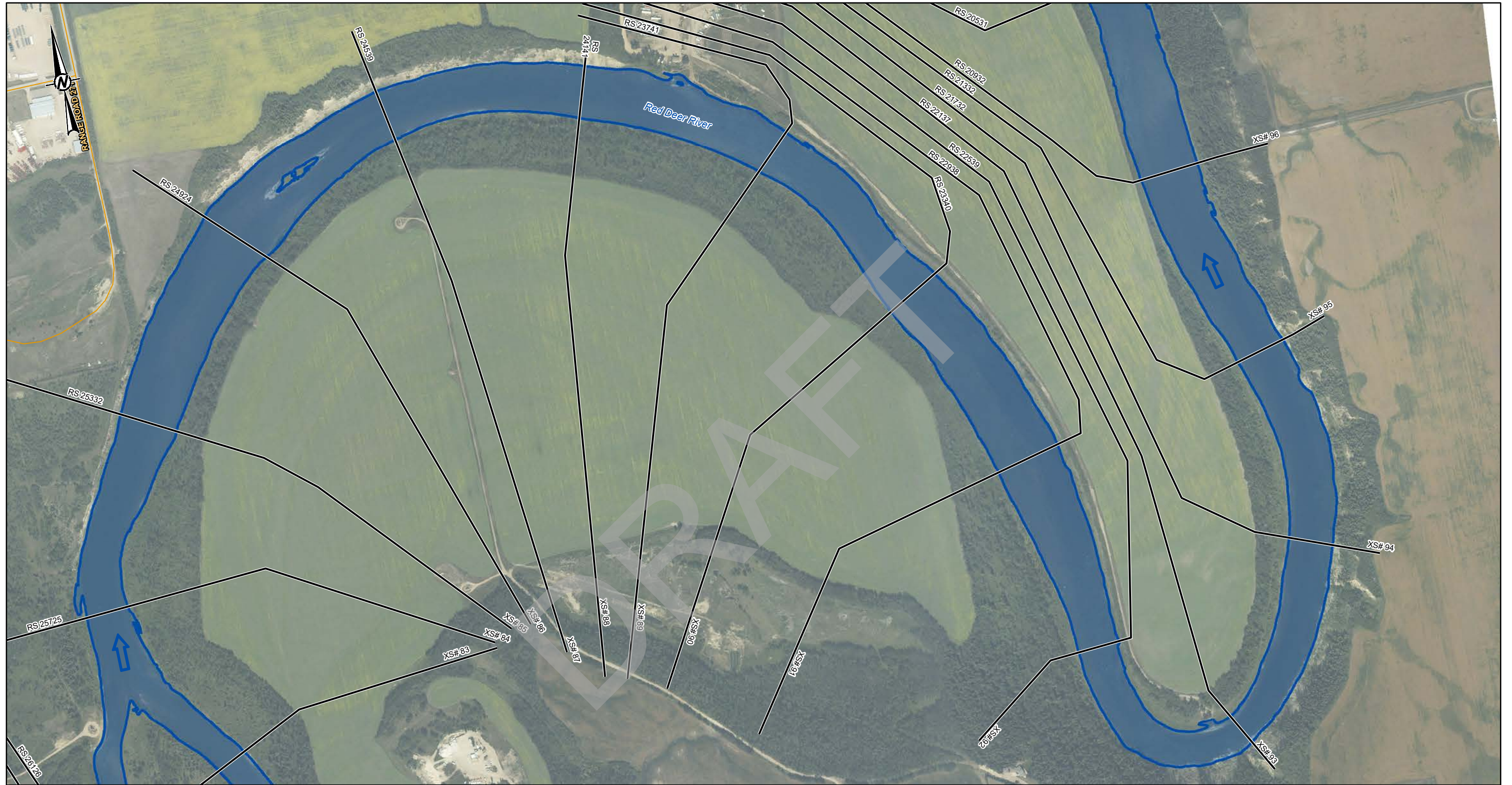
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TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

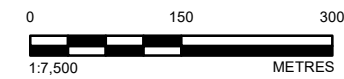
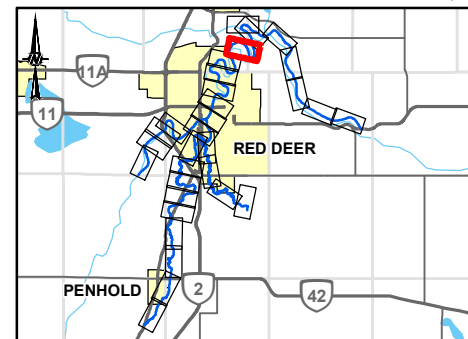
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

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LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	2-YEAR FLOOD INUNDATION EXTENT
	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER BELOW WASKASOO CREEK = 283 M ³ /S	

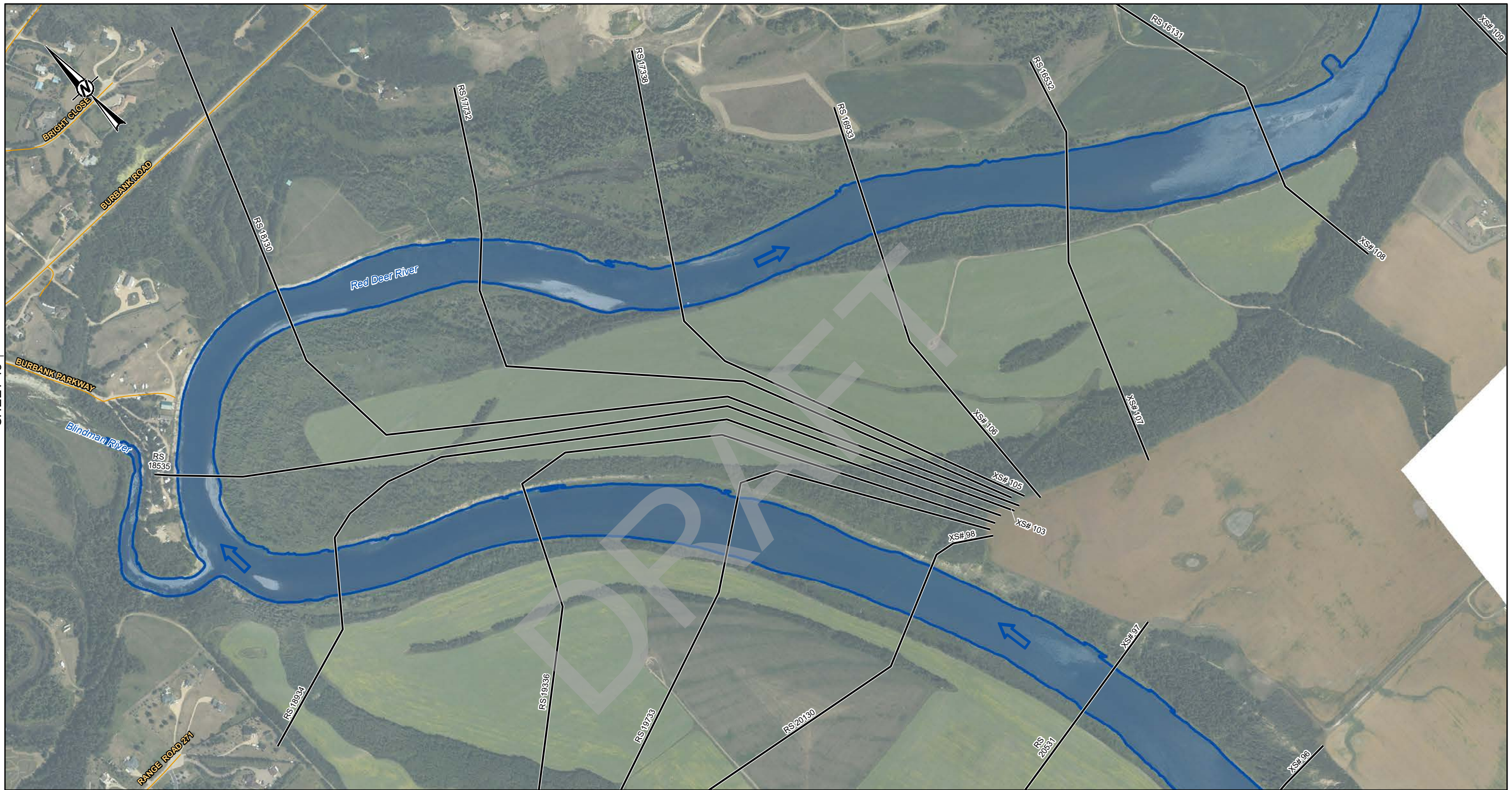


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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT RED DEER RIVER HAZARD STUDY			
TITLE 2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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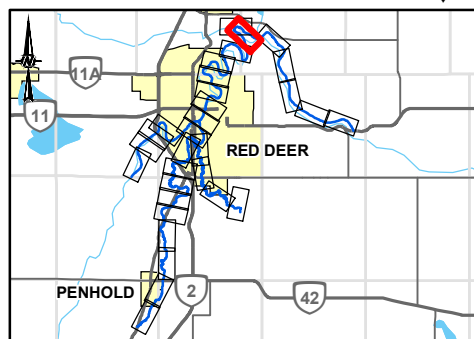
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SHEET 13 ↑

↓ SHEET 14

LEGEND	
	CROSS SECTION
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	2-YEAR FLOOD INUNDATION EXTENT
	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 283 M ³ /S	
RED DEER RIVER BELOW BLINDMAN RIVER = 320 M ³ /S	



↓ SHEET 11



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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT		RED DEER RIVER HAZARD STUDY	
TITLE		2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 12 OF 31

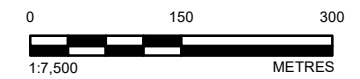
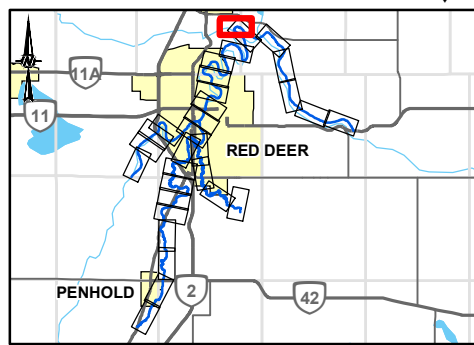
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SHEET 14 ↓

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	2-YEAR FLOOD INUNDATION EXTENT	
	■ 2-YEAR FLOOD EXTENT	
	■ 2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW WASKASOO CREEK = 283 M ³ /S	
	RED DEER RIVER BELOW BLINDMAN RIVER = 320 M ³ /S	

SHEET 12 ↓



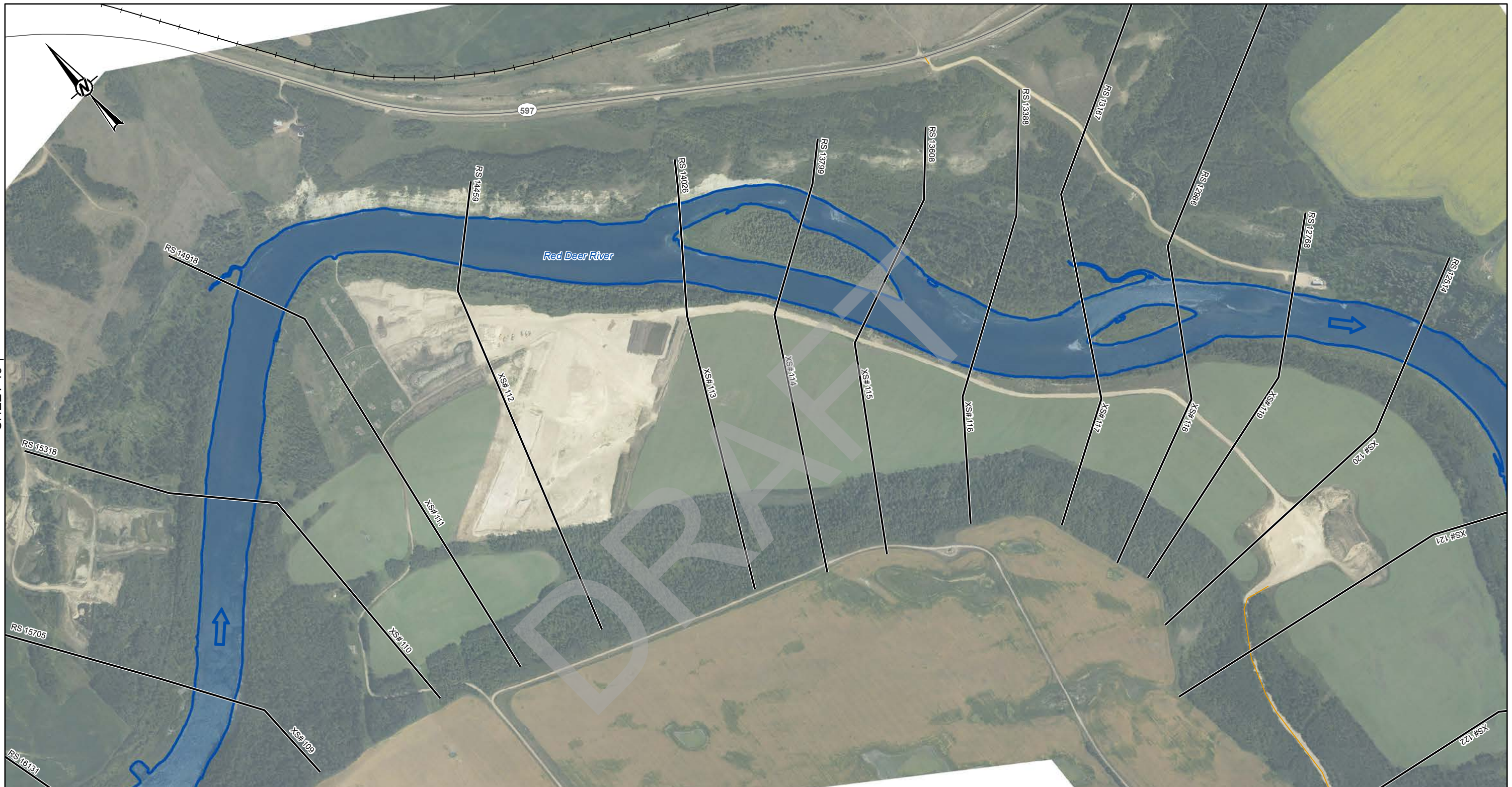
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CONSULTANT	GOLDER	
DESIGNED	YYYY-MM-DD	2022-11-23
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 13 OF 31	

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

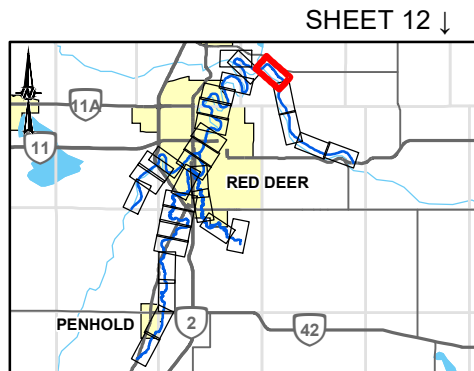
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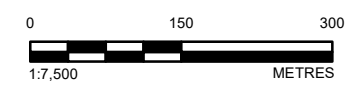
SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	2-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 320 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



SHEET 12 ↓



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CONSULTANT	GOLDER	
DATE	2022-11-23	
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PREPARED	NB	
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 14 OF 31

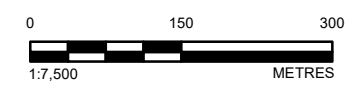
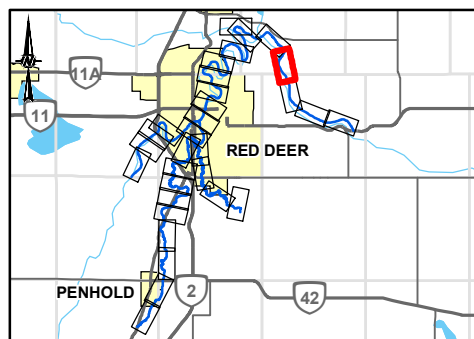
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	2-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	2-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW BLINDMAN RIVER = 320 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

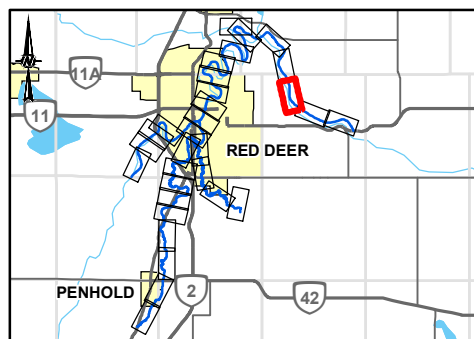
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	2-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY		
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		
FLOOD CONTROL STRUCTURE		
CULVERT		
BRIDGE		
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 320 M ³ /S	



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CONSULTANT	GOLDER	
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APPROVED	WP	

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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 16 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

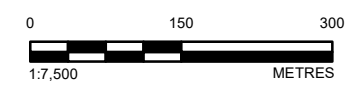
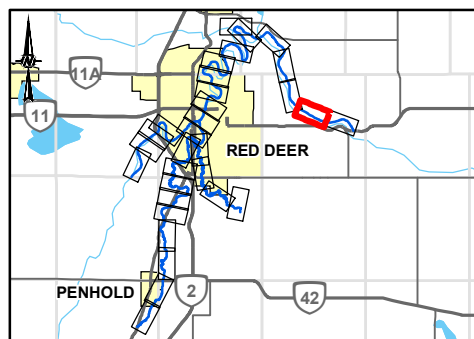
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	2-YEAR FLOOD INUNDATION EXTENT	
	▬ 2-YEAR FLOOD EXTENT	
	▬ 2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 320 M ³ /S	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

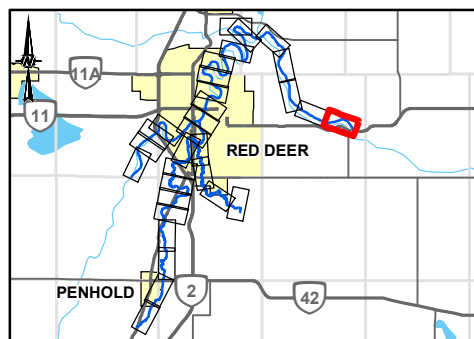
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SHEET 17 ↑



LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	2-YEAR FLOOD INUNDATION EXTENT	
	■ 2-YEAR FLOOD EXTENT	
	■ 2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 320 M ³ /S	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

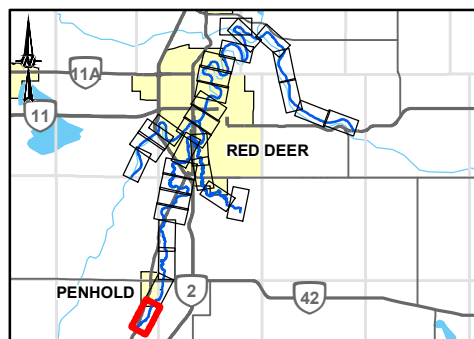


SHEET 20

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	2-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	2-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 2.97 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



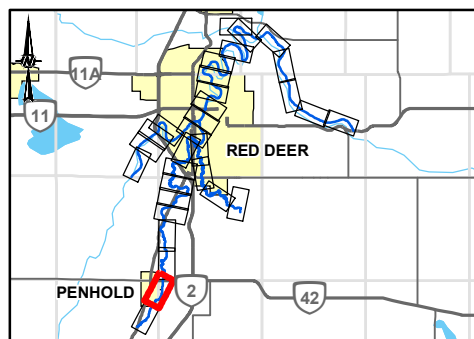
SHEET 19 ↑

↓ SHEET 21

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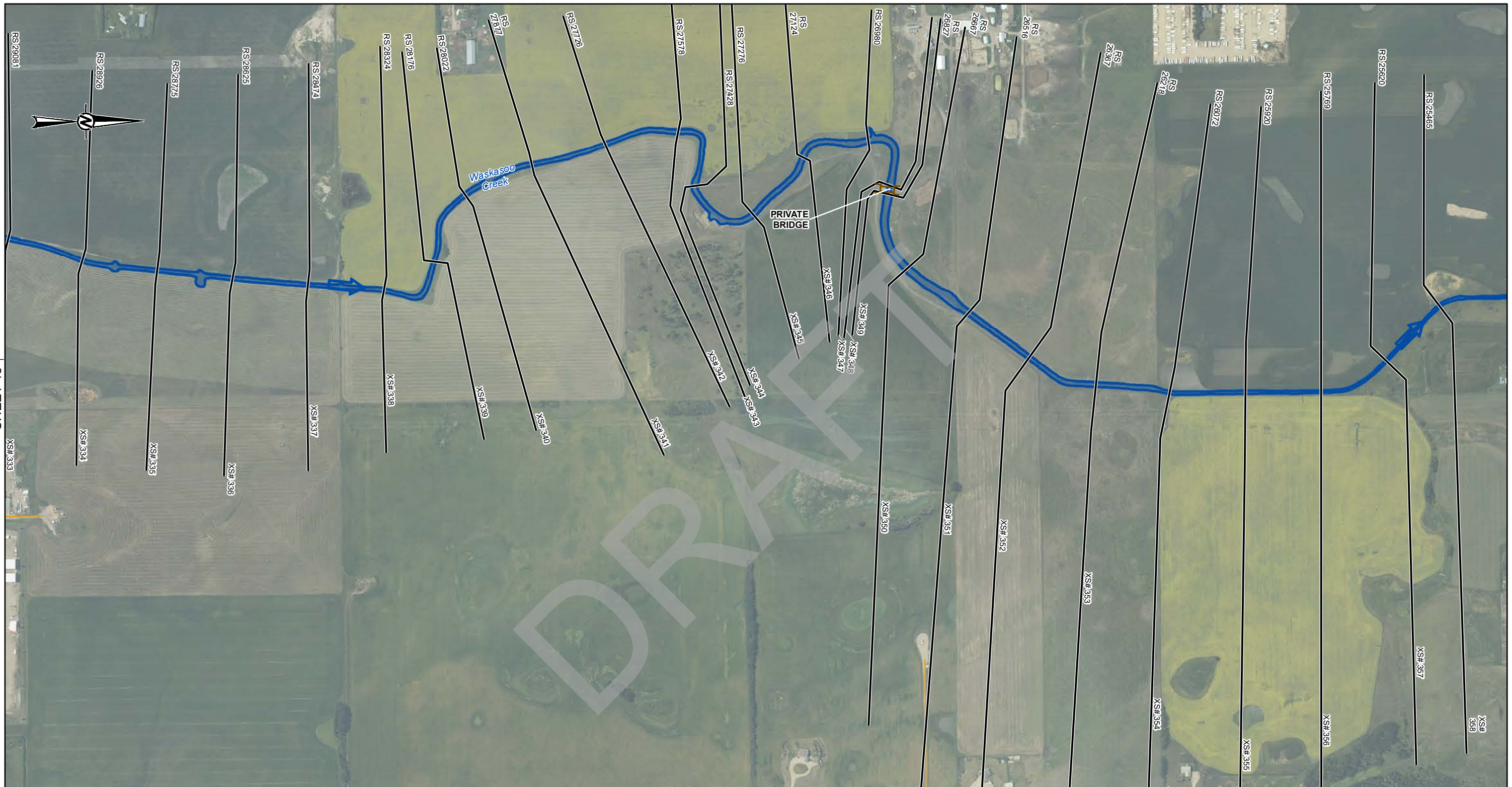
LEGEND		
	CROSS SECTION	
	FLOOD CONTROL STRUCTURE	
	2-YEAR FLOOD INUNDATION EXTENT	
	2-YEAR FLOOD EXTENT	
	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	STUDY BOUNDARY	
	CULVERT	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	PRIVATE CULVERT	
	RIVER STATION (M)	
	CROSS SECTION NUMBER	
	BRIDGE	
	DISCHARGE	
	WASKASOO CREEK ABOVE HIGHWAY 42 = 2.97 M ³ /S	
	WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M ³ /S	



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
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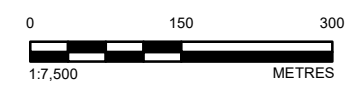
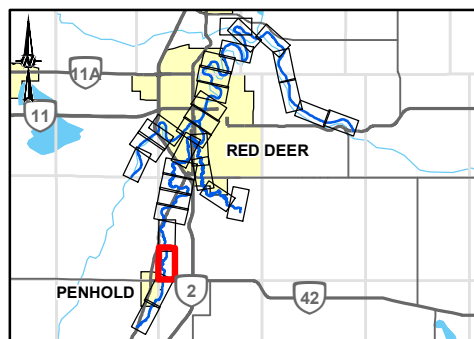
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	2-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	2-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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CONSULTANT
GOLDER

Alberta Government

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PREPARED	NB
REVIEWED	GT
APPROVED	WP

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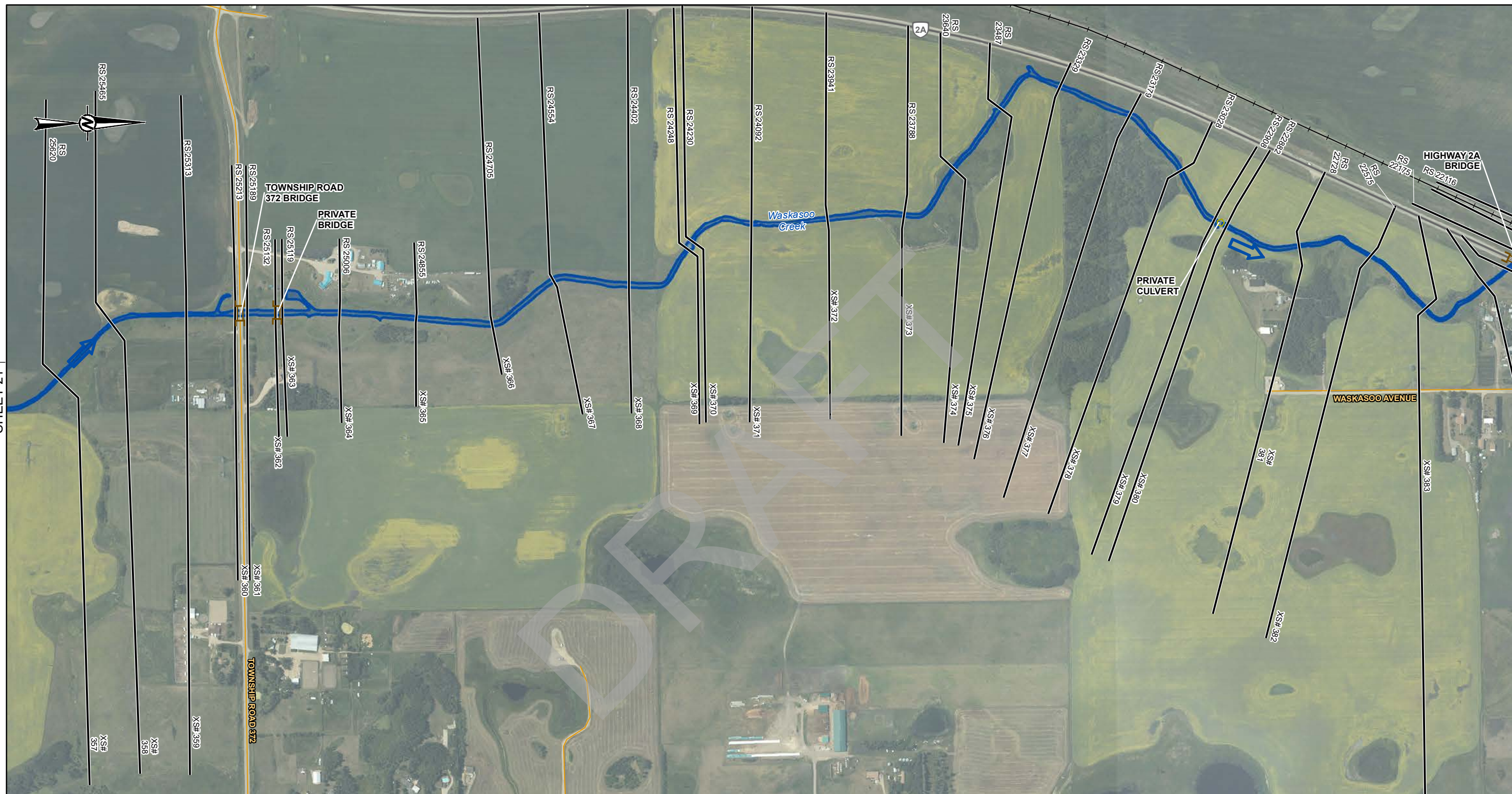
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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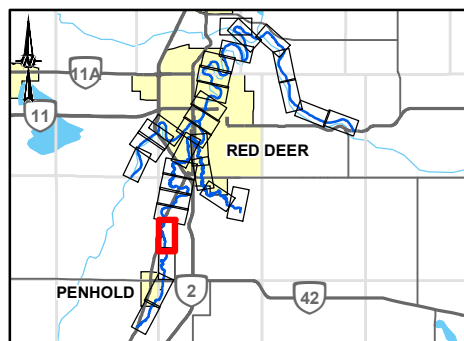
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	2-YEAR FLOOD INUNDATION EXTENT	
	■ 2-YEAR FLOOD EXTENT	
	■ 2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M ³ /S	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

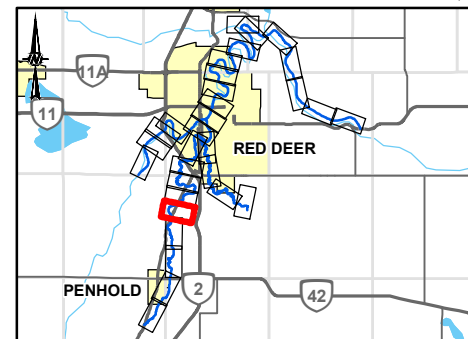
TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	2-YEAR FLOOD EXTENT
	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M ³ /S	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

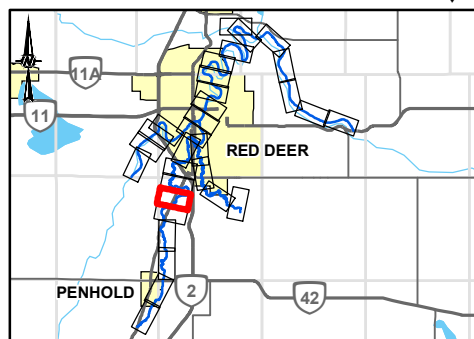
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		2-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M³/S



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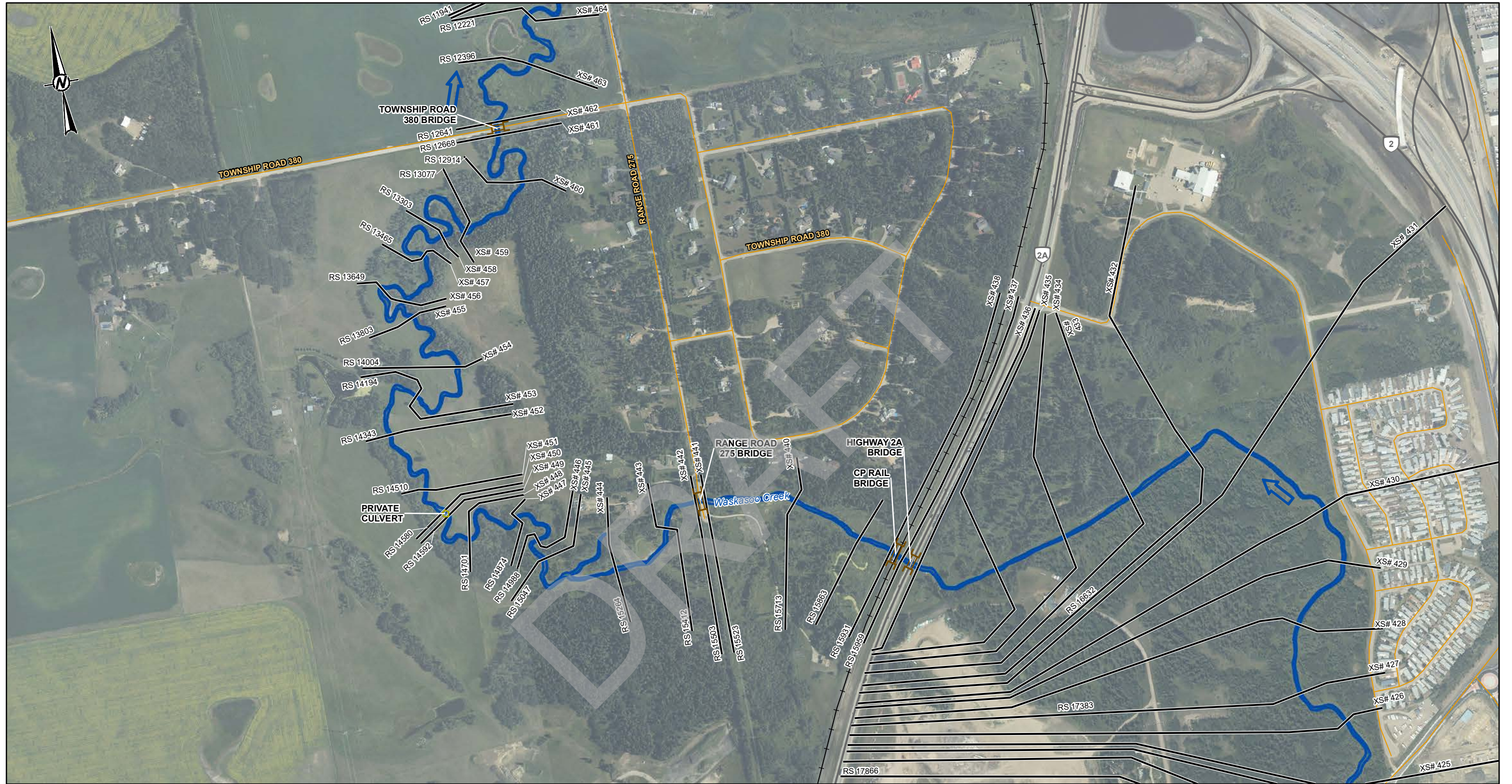
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

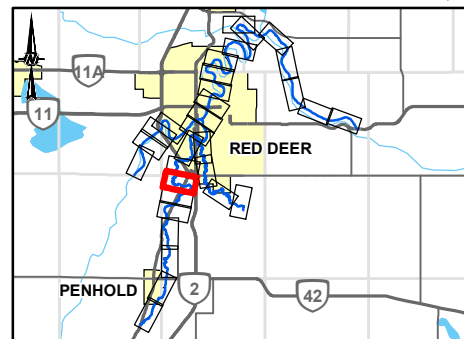
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31

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LEGEND		2-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	2-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	FLOOD CONTROL STRUCTURE
■	STUDY BOUNDARY	○	CULVERT
➔	FLOW DIRECTION	—	BRIDGE
—	LOCAL ROAD		
—	PRIMARY HIGHWAY		
—	SECONDARY HIGHWAY		
+	RAILWAY		
		DISCHARGE	
		WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M ³ /S	



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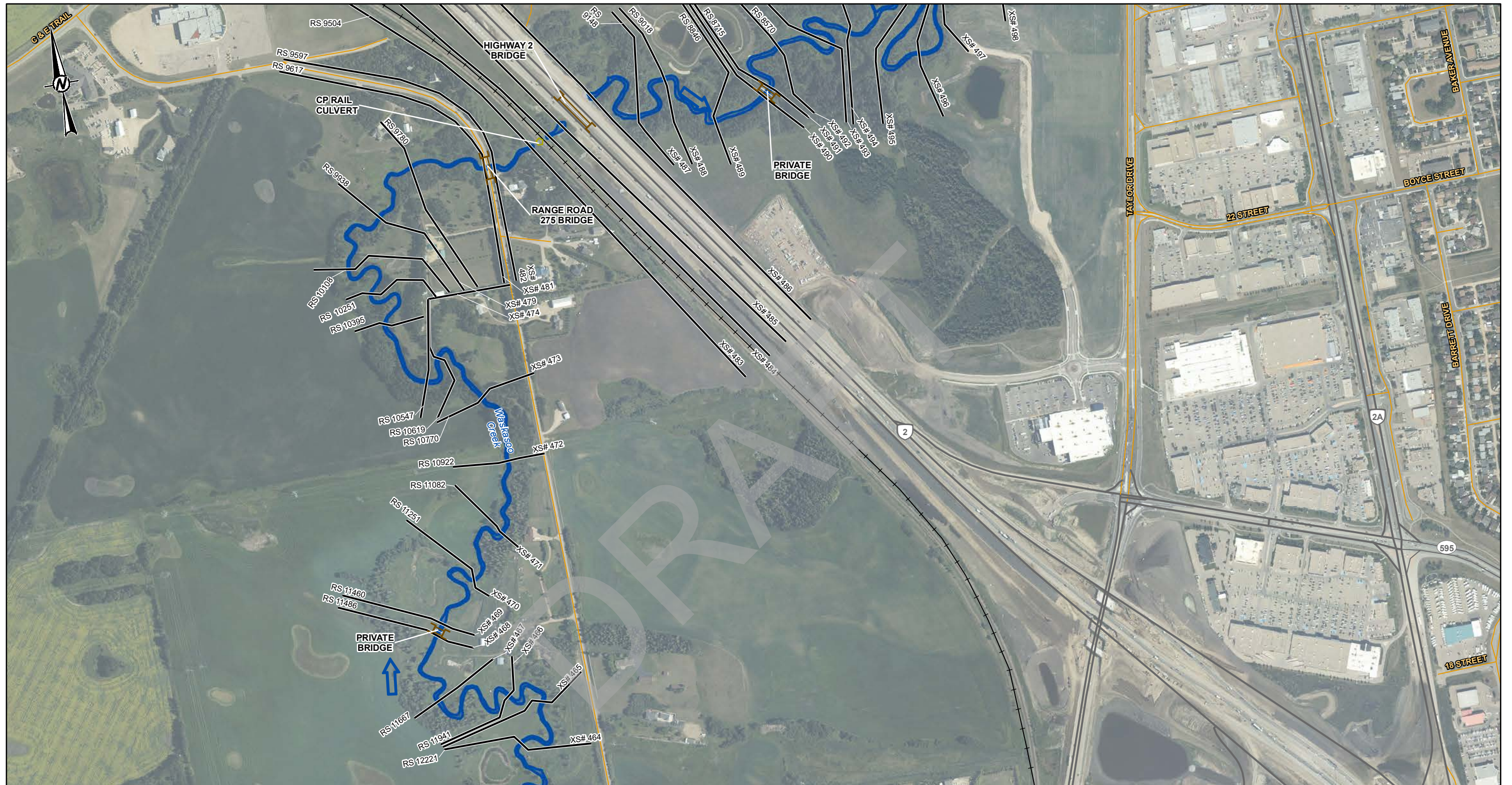
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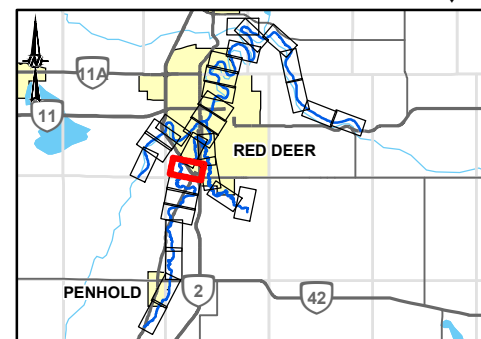
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31



LEGEND		2-YEAR FLOOD INUNDATION EXTENT	
	CROSS SECTION		2-YEAR FLOOD EXTENT
	FLOOD CONTROL STRUCTURE		2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER		DISCHARGE
	RIVER STATION (M)		WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M ³ /S
	STUDY BOUNDARY		
	FLOW DIRECTION		
	LOCAL ROAD		
	PRIMARY HIGHWAY		
	SECONDARY HIGHWAY		
	RAILWAY		
	CULVERT		
	BRIDGE		



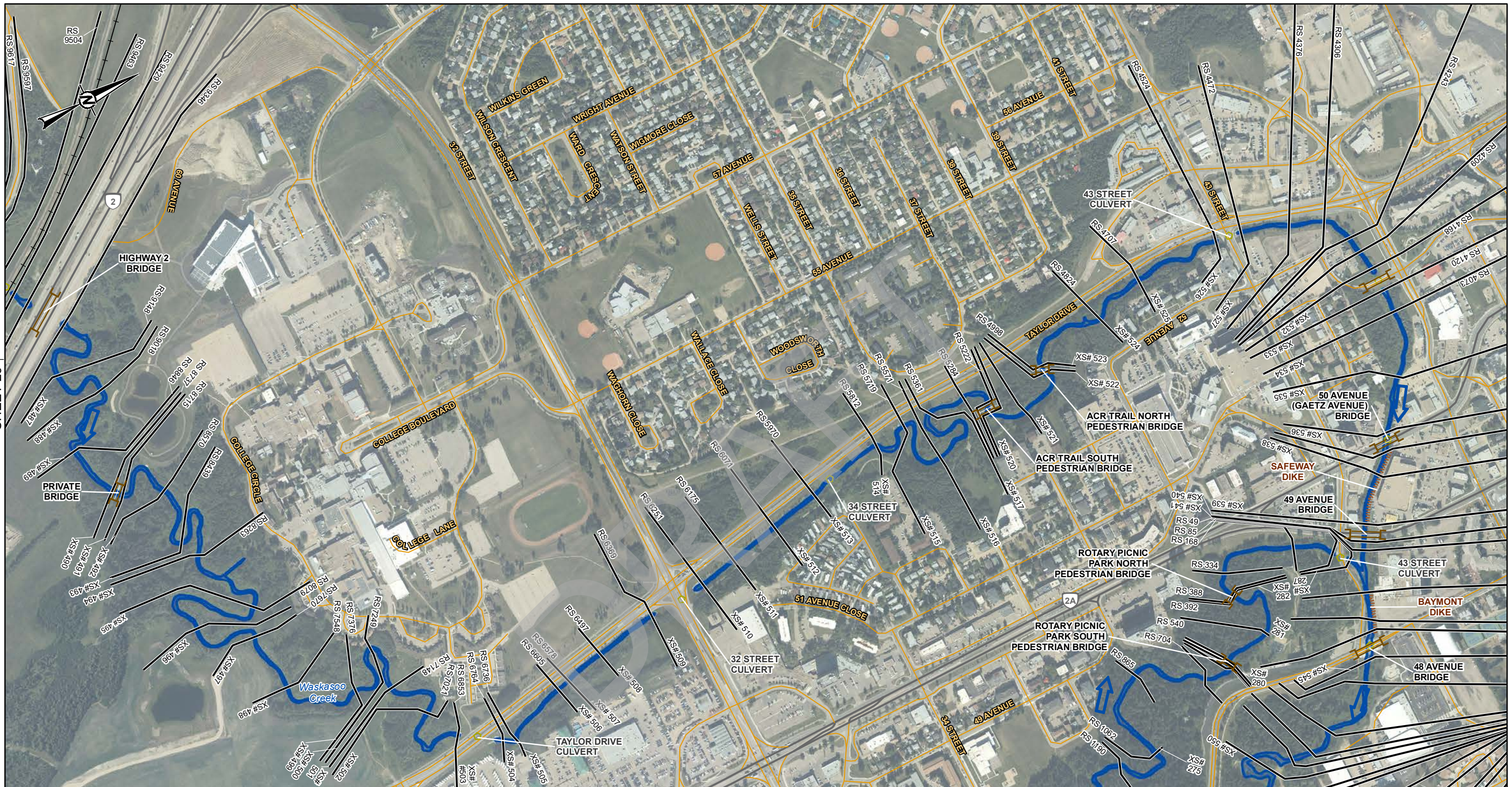
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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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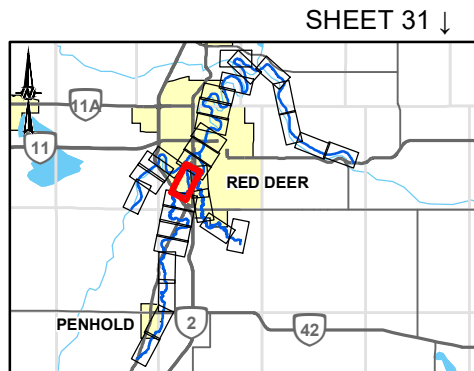
SHEET 26 ↑

SHEET 5 ↓

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	2-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	2-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
 WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 5.16 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 1.73 M³/S



SHEET 31 ↓



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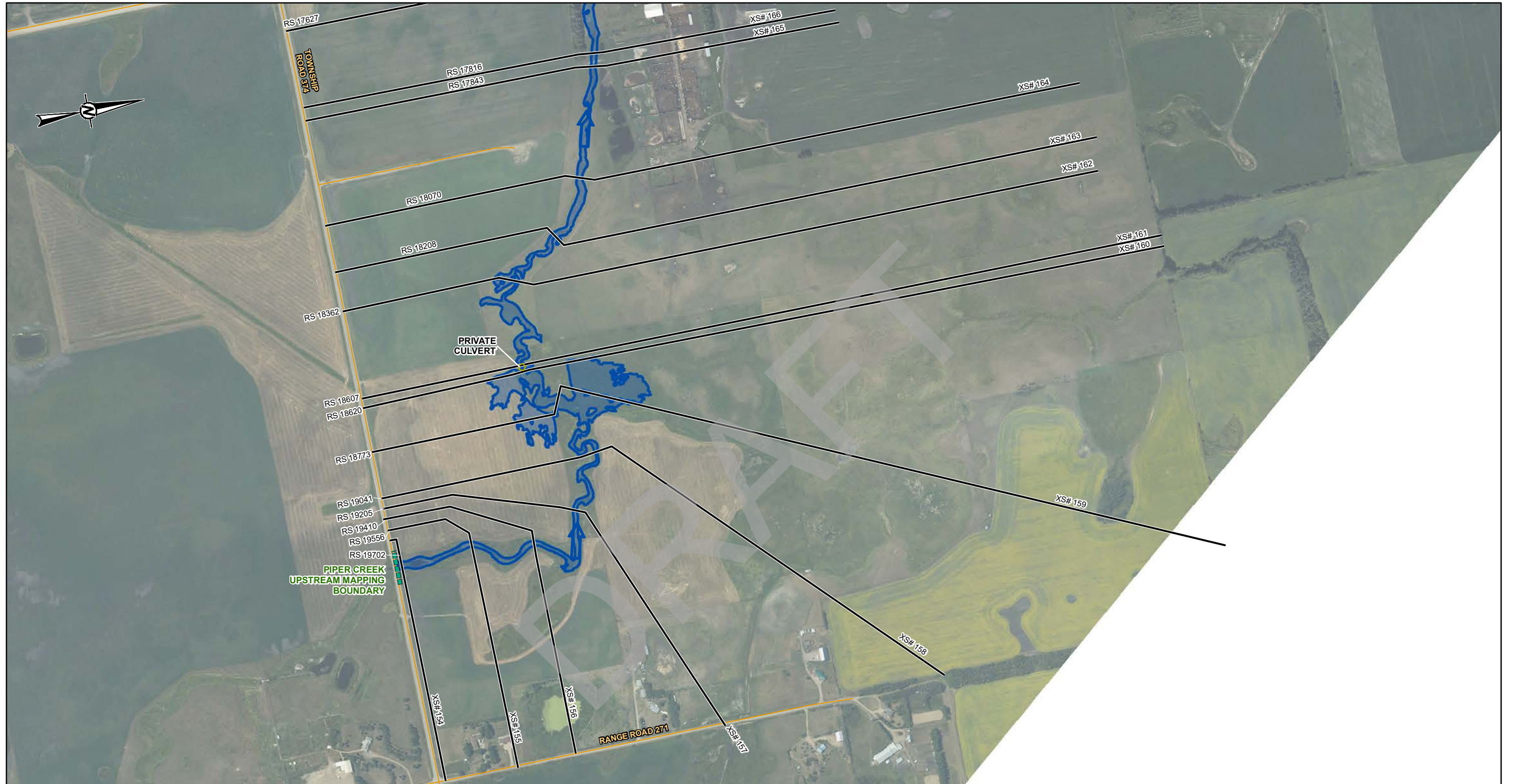
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PROJECT
RED DEER RIVER HAZARD STUDY

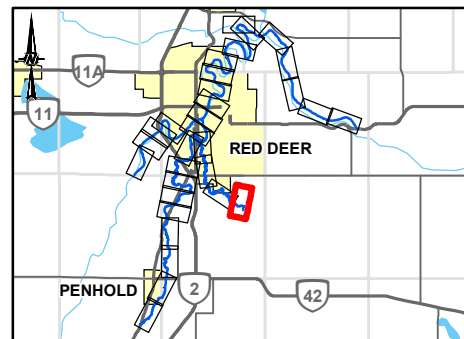
TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	2-YEAR FLOOD INUNDATION EXTENT
	2-YEAR FLOOD EXTENT
	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
DISCHARGE PIPER CREEK ABOVE HIGHWAY 595 = 1.56 M ³ /S	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**2-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31



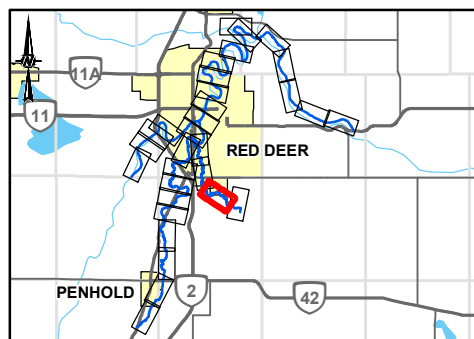
SHEET 28 ↑

↑ SHEET 30

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LEGEND		
—	CROSS SECTION	2-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	2-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	
		DISCHARGE
		PIPER CREEK ABOVE HIGHWAY 595 = 1.56 M ³ /S



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31



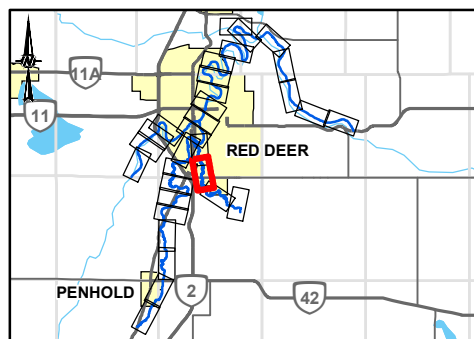
SHEET 30

SHEET 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	2-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	2-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 1.56 M ³ /S
PRIMARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 1.73 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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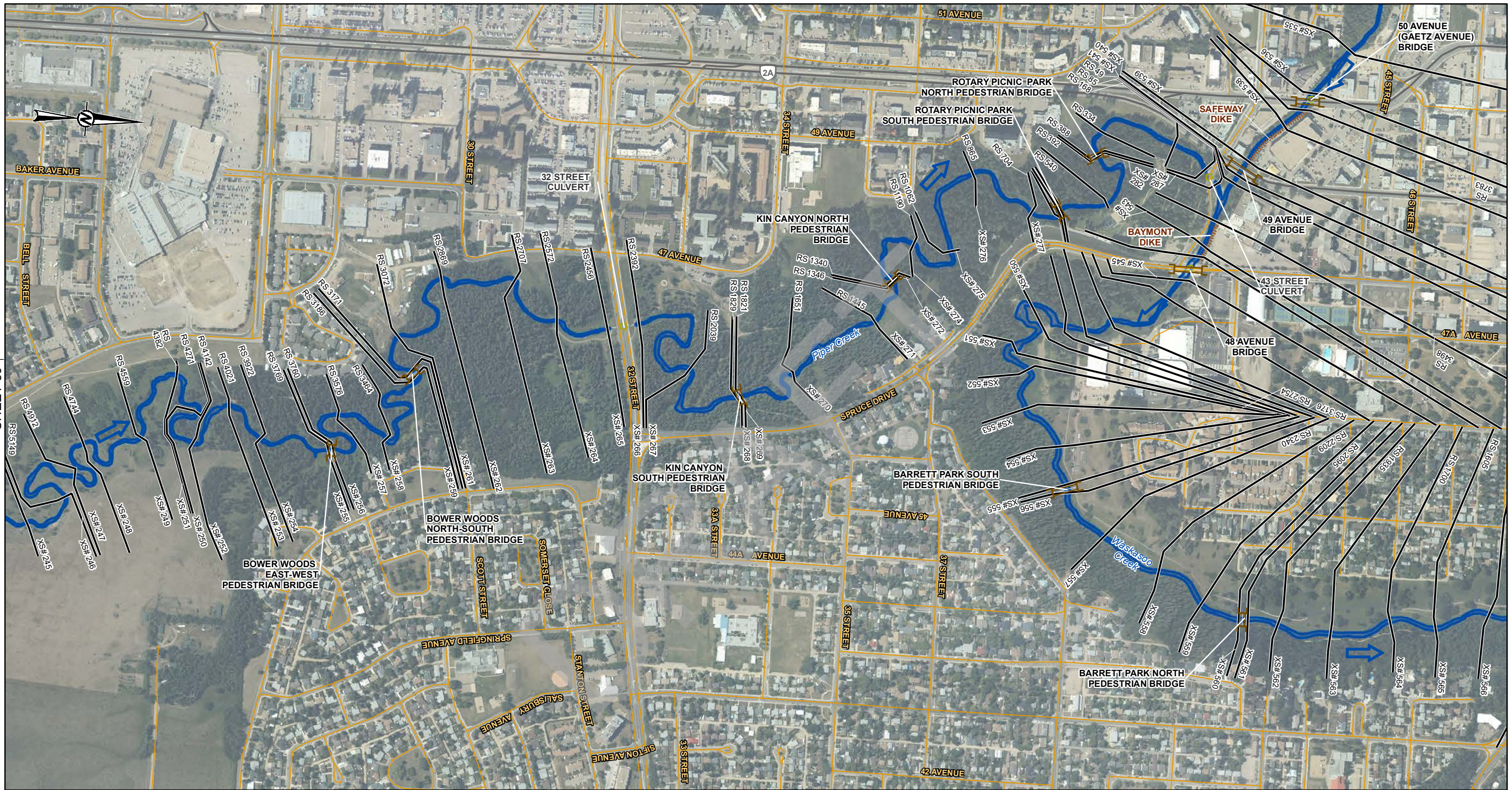
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31



↑ SHEET 30

↑ SHEET 5

LEGEND

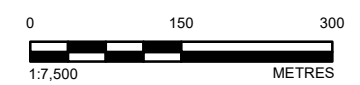
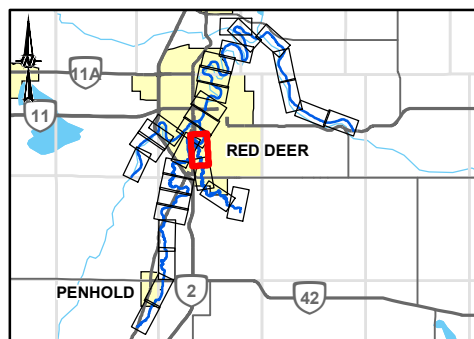
- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- ▬ BRIDGE

2-YEAR FLOOD INUNDATION EXTENT

- 2-YEAR FLOOD EXTENT
- 2-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE

PIPER CREEK ABOVE WASKASOO CREEK = 1.73 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 3.47 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 5.16 M³/S



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PROJECT
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TITLE
2-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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SHEETS 1-31

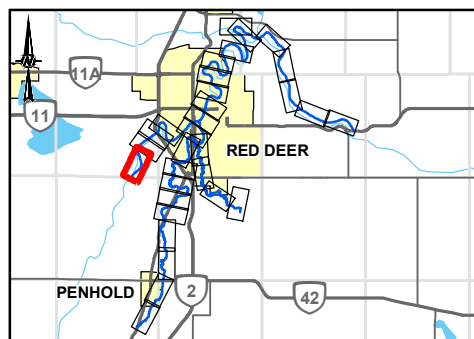
5-Year Flood Inundation Extent

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SHEET 2 ↓

LEGEND		
—	CROSS SECTION	5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	5-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	HYDRAULIC STRUCTURES	
—	CULVERT	
—	BRIDGE	
		DISCHARGE
		RED DEER RIVER ABOVE WASKASOO CREEK = 457 M ³ /S



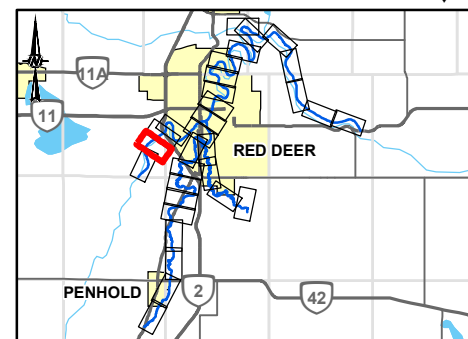
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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31

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LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	5-YEAR FLOOD INUNDATION EXTENT	
	▬ 5-YEAR FLOOD EXTENT	
	▬ 5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER ABOVE WASKASOO CREEK = 457 M ³ /S	



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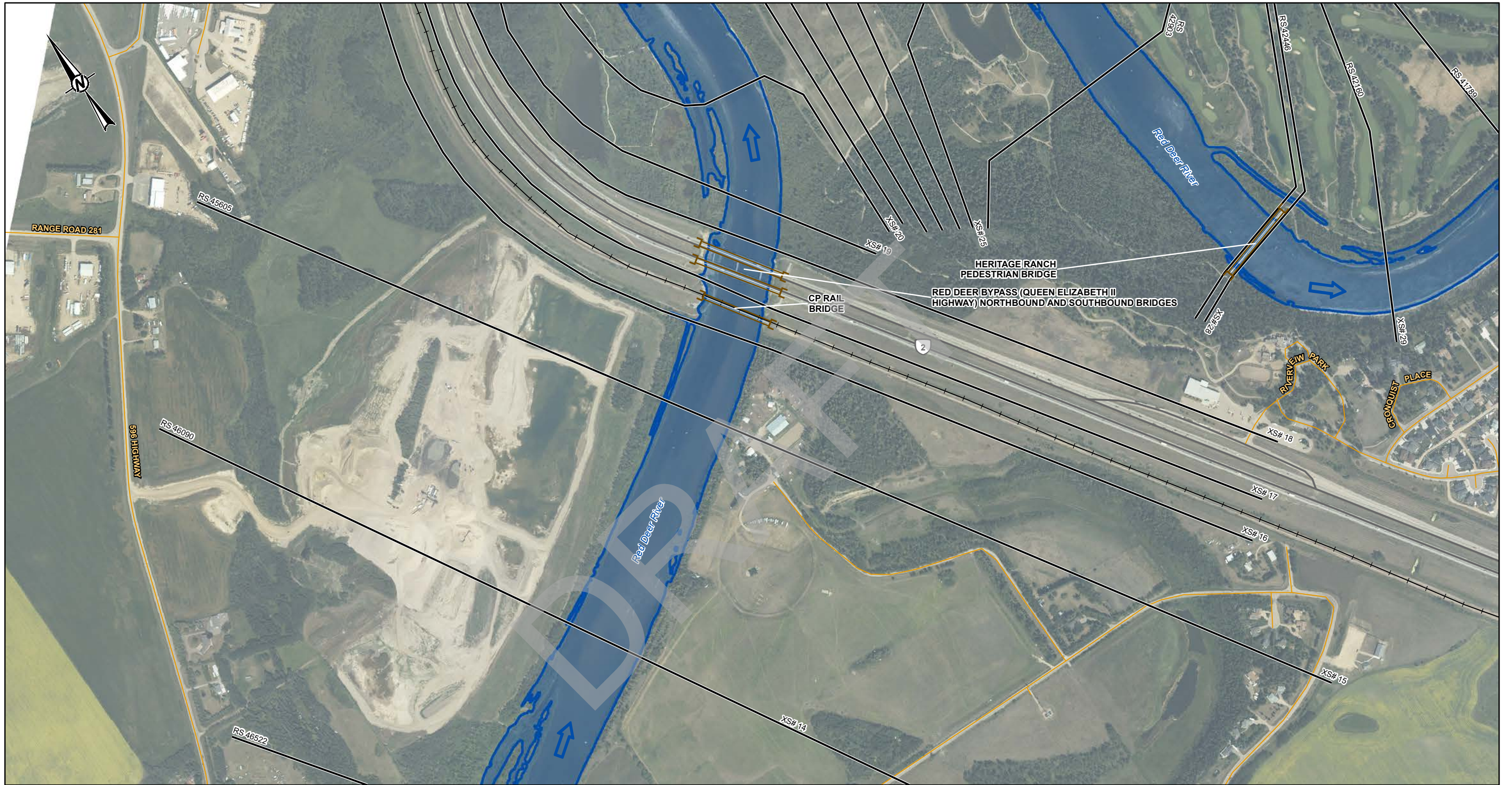
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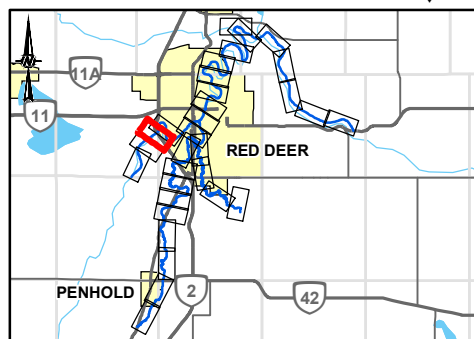
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**5-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31



LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
▬▬▬	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
—+—	RAILWAY	
	5-YEAR FLOOD INUNDATION EXTENT	
	■ 5-YEAR FLOOD EXTENT	
	▨ 5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER ABOVE WASKASOO CREEK = 457 M ³ /S	



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

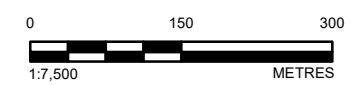
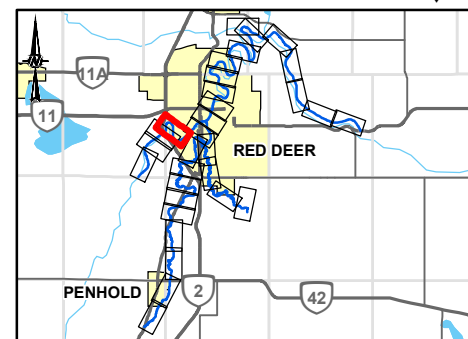
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31

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LEGEND	
	CROSS SECTION
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	5-YEAR FLOOD EXTENT
	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 457 M ³ /S

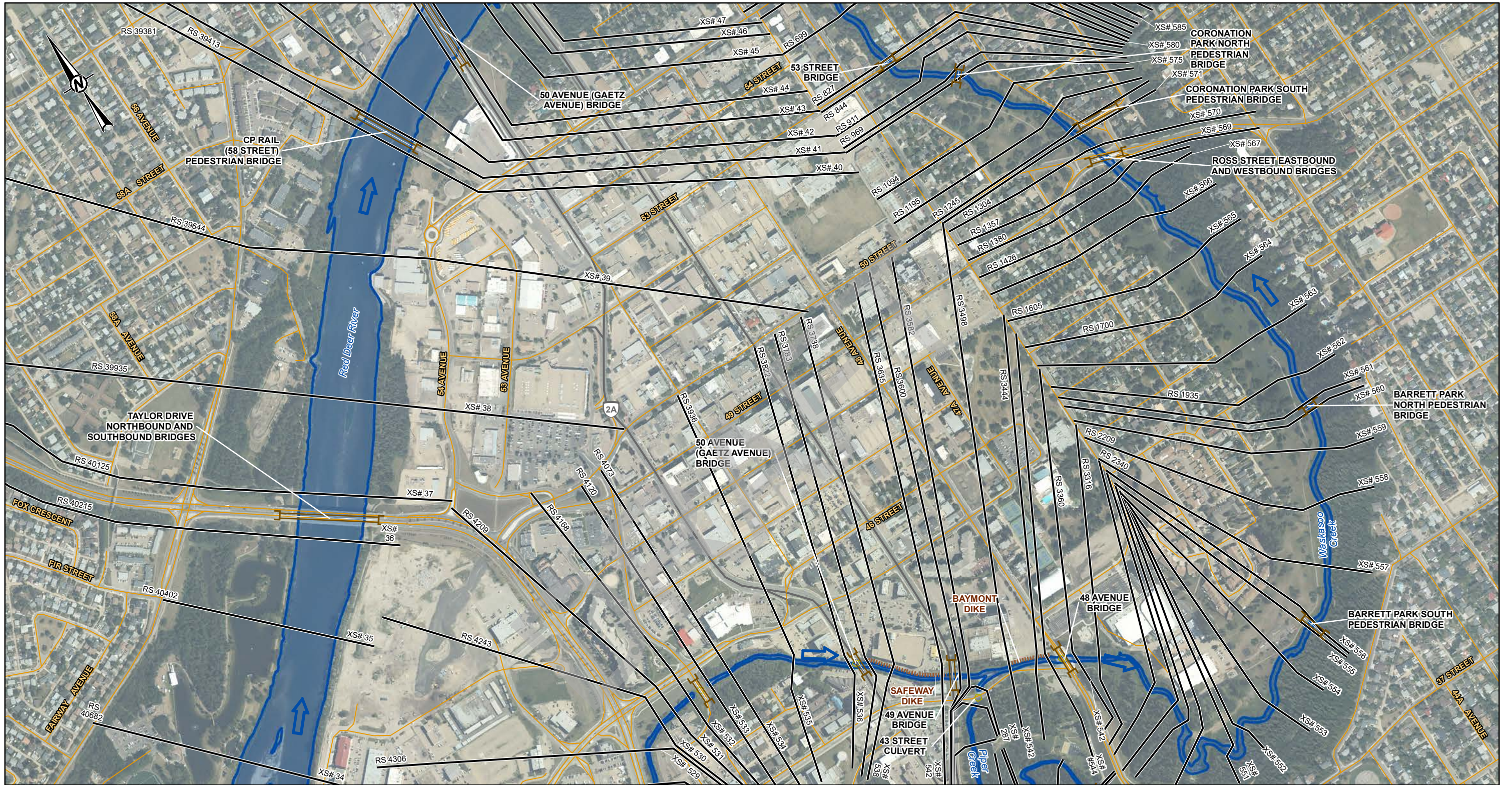


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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

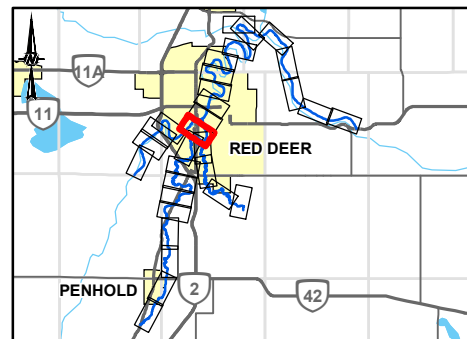
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31

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LEGEND		5-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	5-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	FLOOD CONTROL STRUCTURE
■	STUDY BOUNDARY	○	CULVERT
➔	FLOW DIRECTION	—	BRIDGE
—	LOCAL ROAD	DISCHARGE	
—	PRIMARY HIGHWAY	RED DEER RIVER ABOVE WASKASOO CREEK = 457 M ³ /S	
—	SECONDARY HIGHWAY	WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S	
+	RAILWAY	WASKASOO CREEK BELOW PIPER CREEK = 12.7 M ³ /S	
		PIPER CREEK ABOVE WASKASOO CREEK = 4.55 M ³ /S	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**5-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

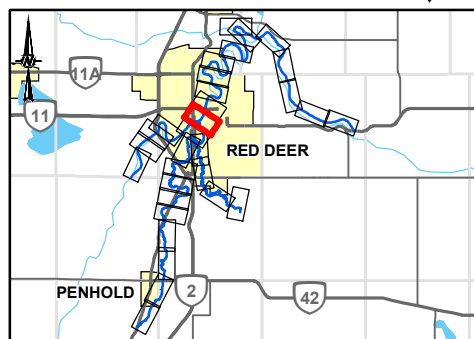
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		5-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 457 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 458 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 12.7 M³/S



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Alberta Government

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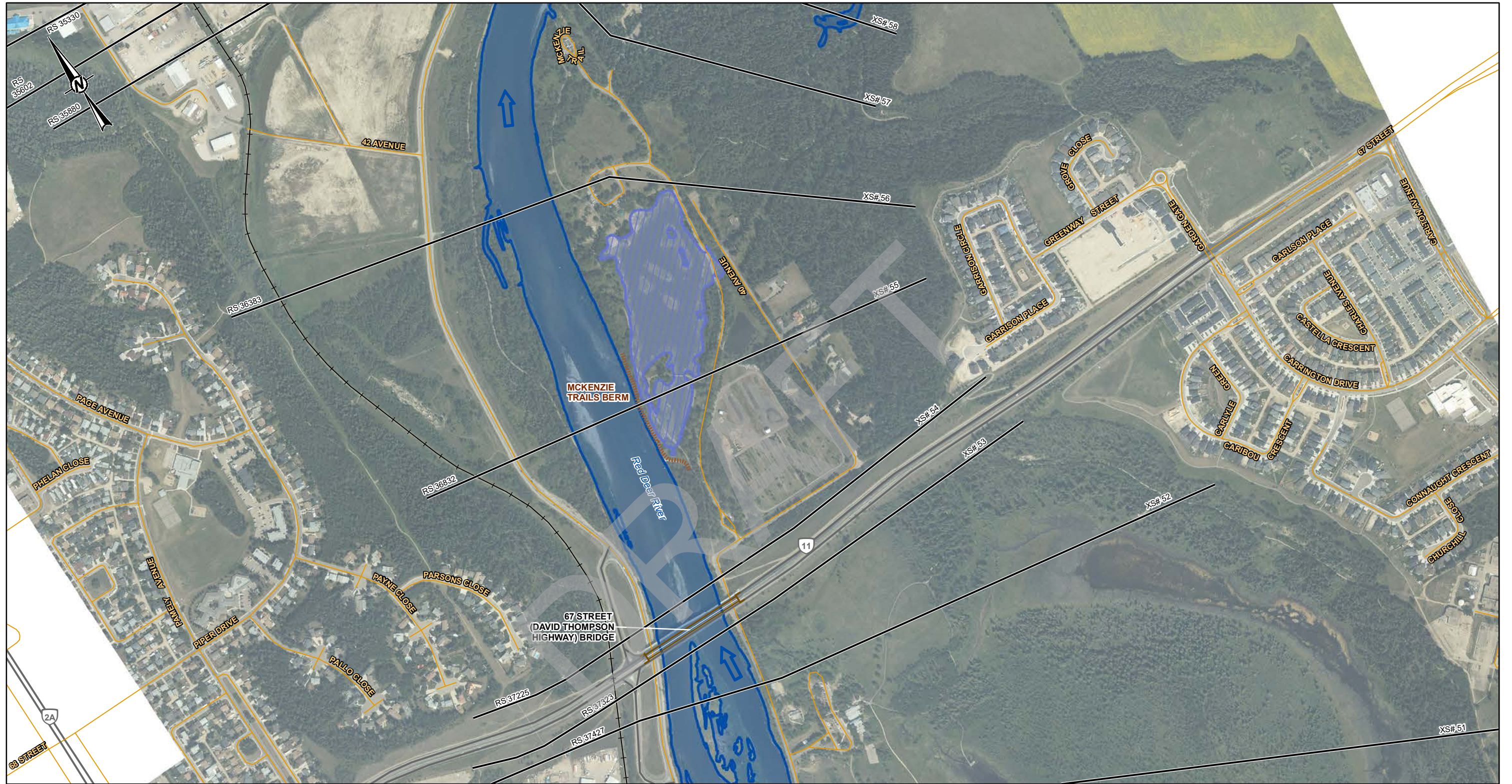
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

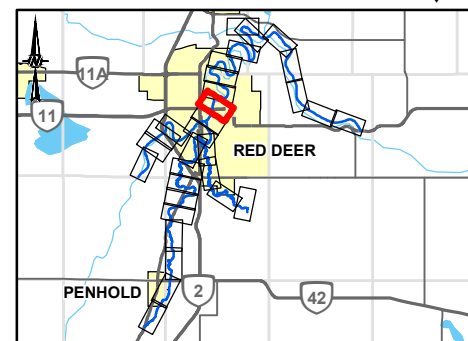
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31

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LEGEND		5-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	5-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER BELOW WASKASOO CREEK = 458 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**5-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

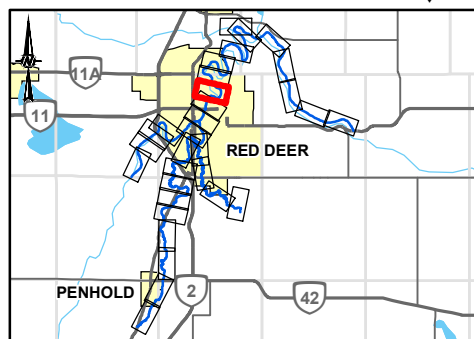
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		5-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 458 M³/S



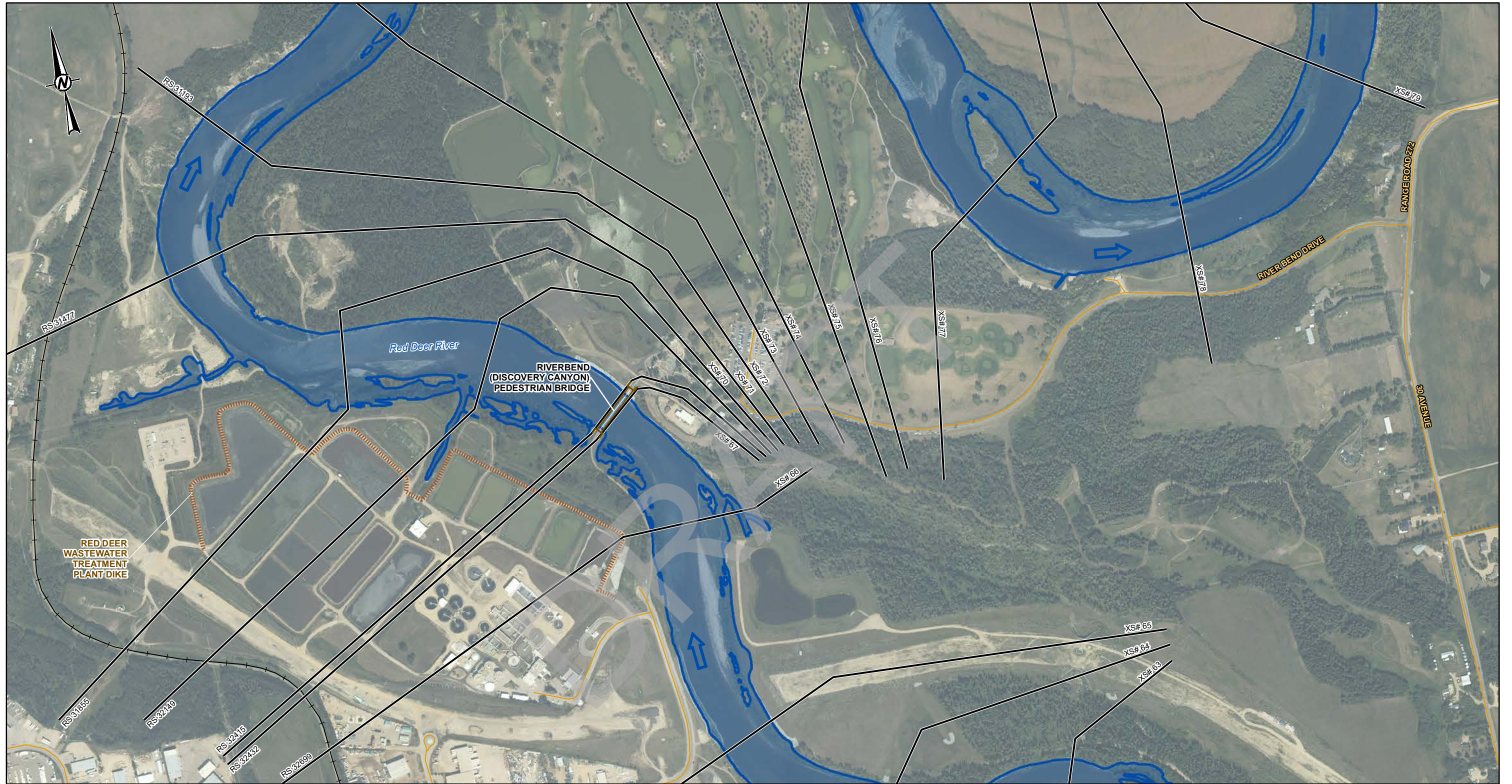
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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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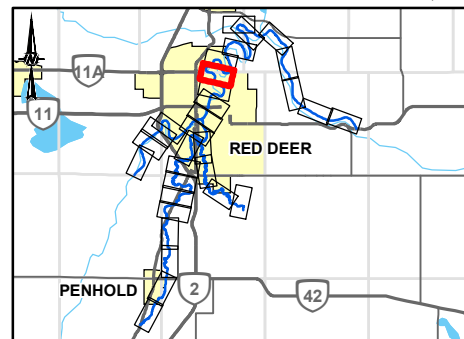
PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 8 OF 31

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LEGEND		5-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	5-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	DISCHARGE
■	STUDY BOUNDARY	—	RED DEER RIVER BELOW WASKASOO CREEK = 458 M ³ /S
➔	FLOW DIRECTION	—	
—	LOCAL ROAD	—	
—	PRIMARY HIGHWAY	—	
—	SECONDARY HIGHWAY	—	
+	RAILWAY	—	
—	FLOOD CONTROL STRUCTURE		
—	HYDRAULIC STRUCTURES		
—	CULVERT		
—	BRIDGE		



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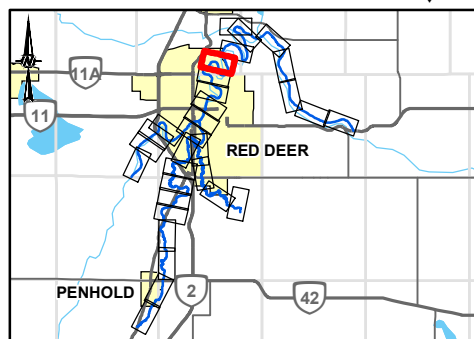
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**5-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31



LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	5-YEAR FLOOD INUNDATION EXTENT
	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER BELOW WASKASOO CREEK = 458 M ³ /S	



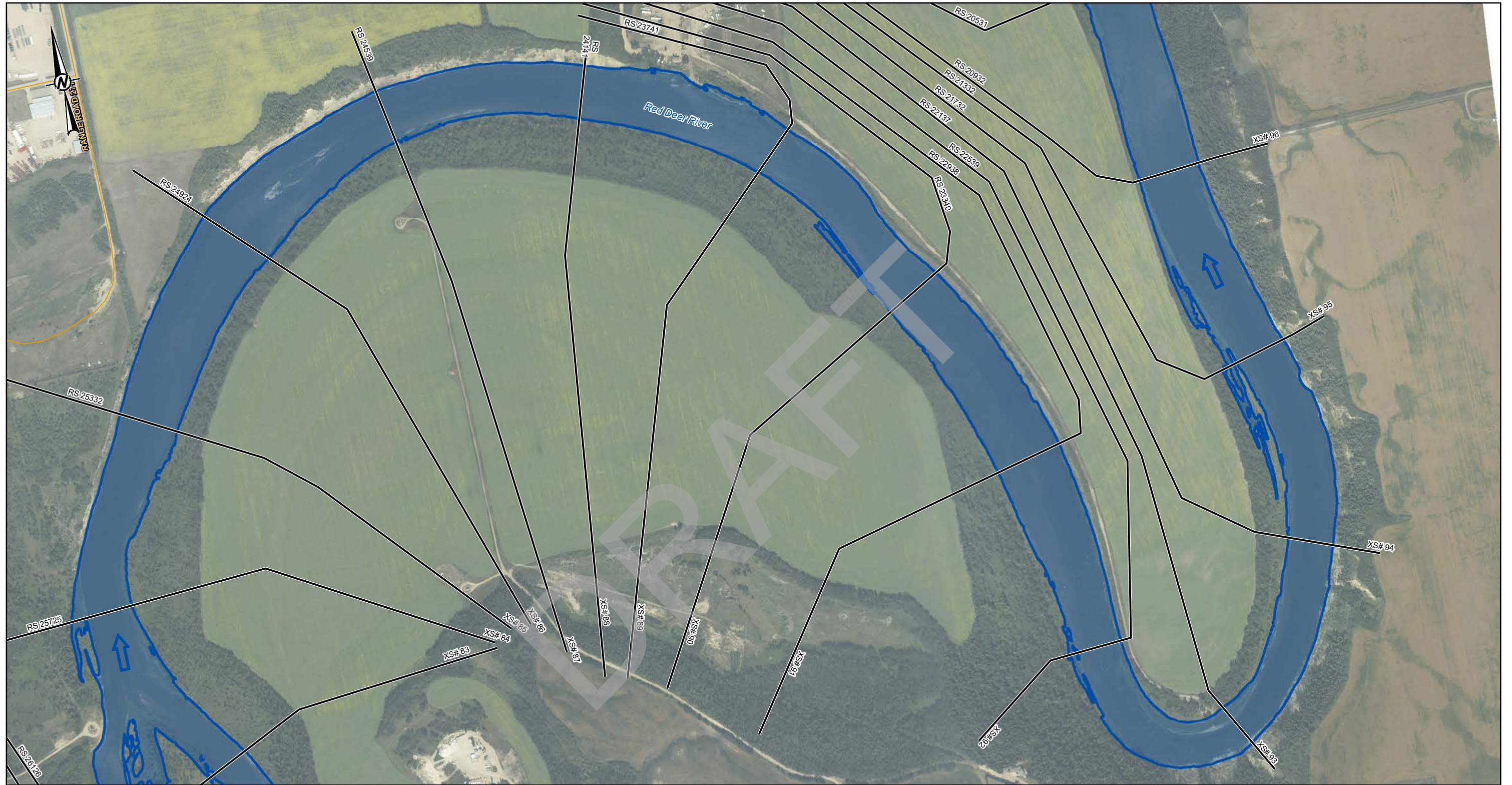
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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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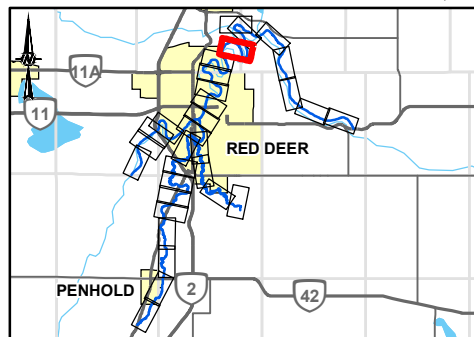
PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 10 OF 31	

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LEGEND	
	CROSS SECTION
	5-YEAR FLOOD INUNDATION EXTENT
	5-YEAR FLOOD EXTENT
	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CROSS SECTION NUMBER
	RIVER STATION (M)
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 458 M ³ /S



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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 11 OF 31	

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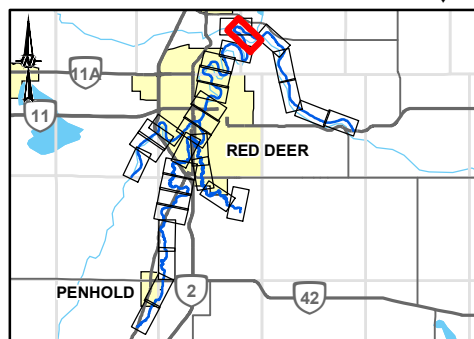
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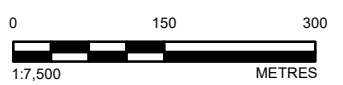
SHEET 13 ↑

↓ SHEET 14

LEGEND	
	CROSS SECTION
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	5-YEAR FLOOD EXTENT
	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 458 M ³ /S
	RED DEER RIVER BELOW BLINDMAN RIVER = 512 M ³ /S



↓ SHEET 11



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 12 OF 31

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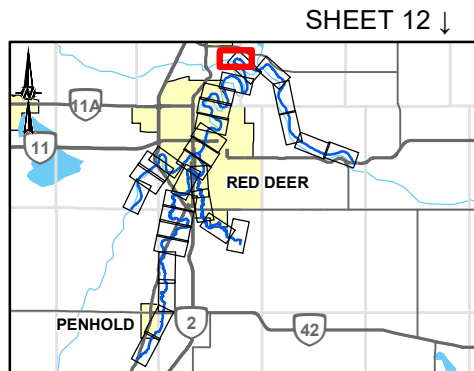


SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	 	5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	 	HYDRAULIC STRUCTURES	 	5-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	 	 	 	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
 	STUDY BOUNDARY	 	 		
➔	FLOW DIRECTION	 	 		
	LOCAL ROAD	 	 		
	PRIMARY HIGHWAY	 	 		
	SECONDARY HIGHWAY	 	 		
	RAILWAY	 	 		

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 458 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 512 M³/S



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CONSULTANT
GOLDER

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APPROVED	WP

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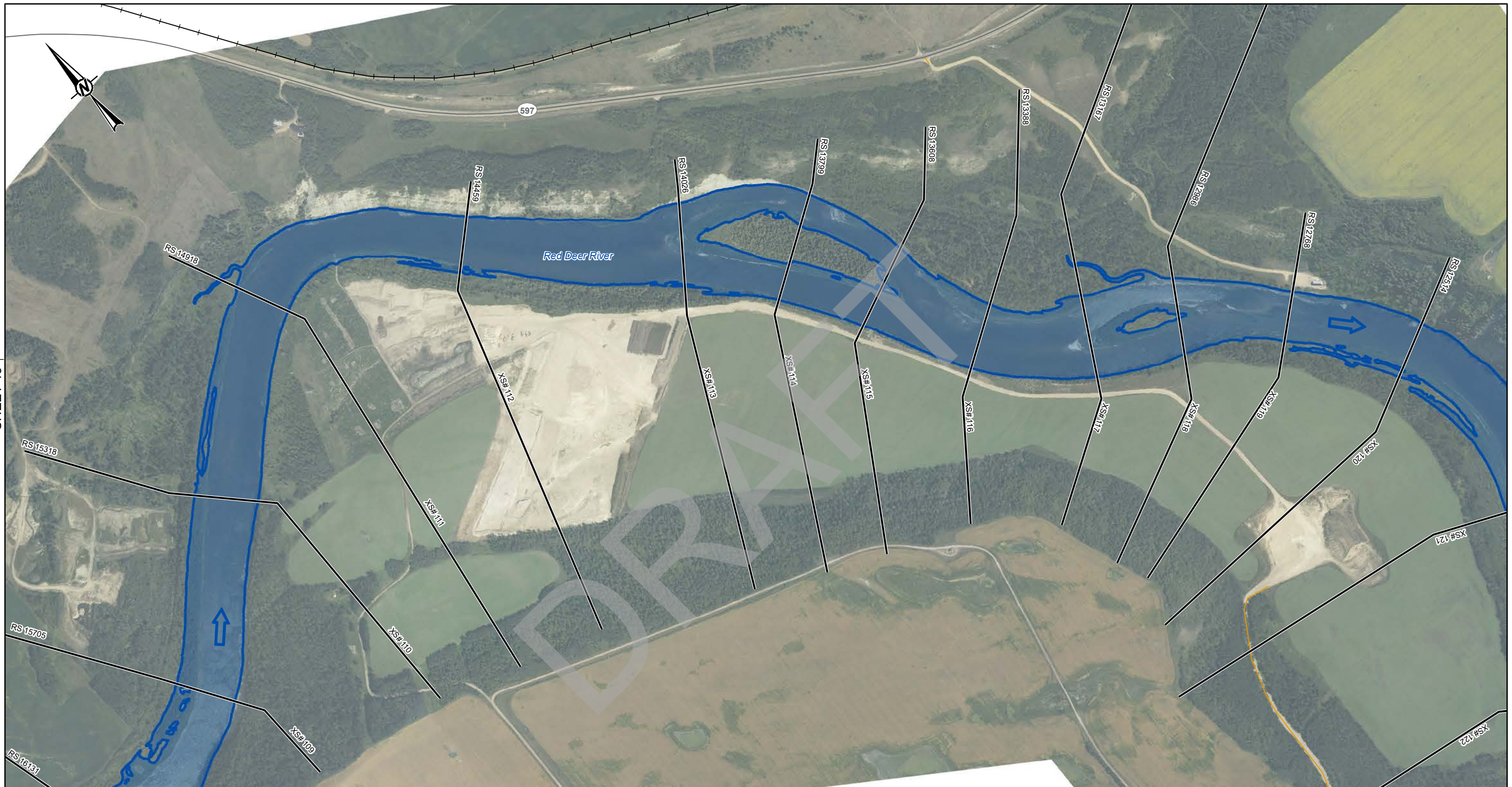
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 13 OF 31

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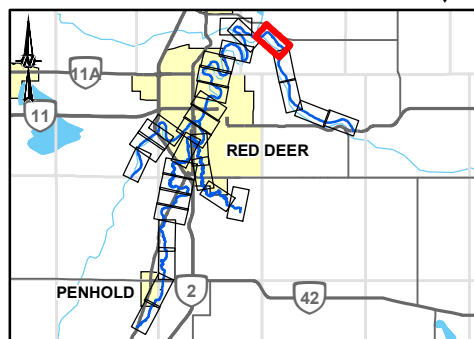
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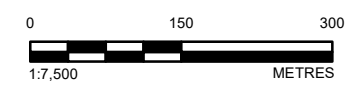
SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	RED DEER RIVER BELOW BLINDMAN RIVER = 512 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



SHEET 12 ↓



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CONSULTANT	GOLDER	
DATE	2022-11-23	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 14 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A4 (210x297mm)

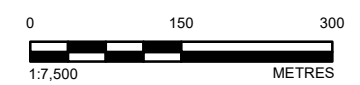
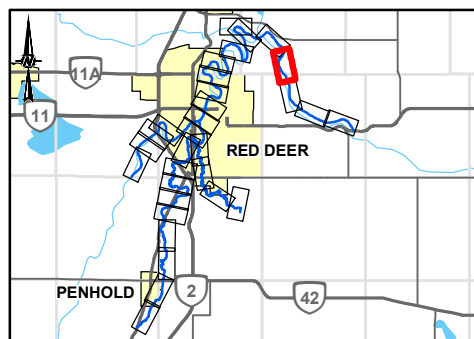
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	HYDRAULIC STRUCTURES
—	STUDY BOUNDARY	◊ CULVERT
→	FLOW DIRECTION	— — BRIDGE
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		5-YEAR FLOOD INUNDATION EXTENT
		■ 5-YEAR FLOOD EXTENT
		■ 5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 512 M ³ /S



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APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

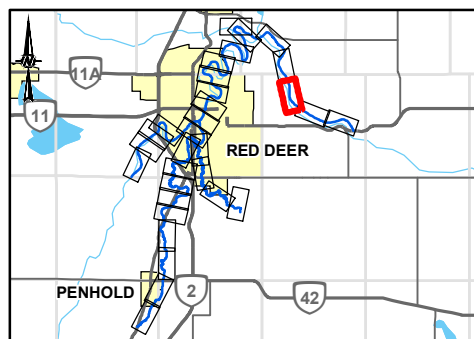
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	HYDRAULIC STRUCTURES
—	STUDY BOUNDARY	○ CULVERT
→	FLOW DIRECTION	— BRIDGE
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		5-YEAR FLOOD INUNDATION EXTENT
		■ 5-YEAR FLOOD EXTENT
		■ 5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 512 M ³ /S



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CONSULTANT	GOLDER	
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 16 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

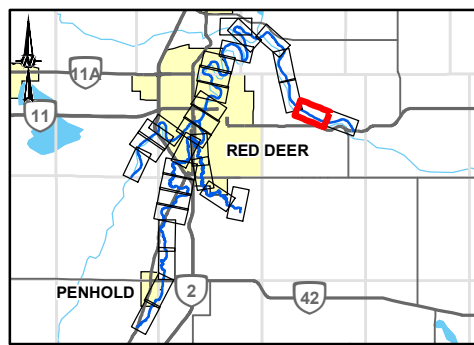
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	5-YEAR FLOOD INUNDATION EXTENT	
	▬ 5-YEAR FLOOD EXTENT	
	▬ 5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 512 M ³ /S	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

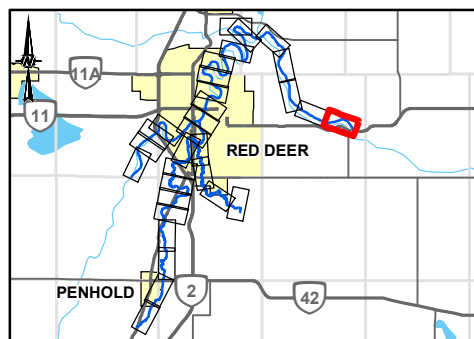
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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SHEET 17 ↑



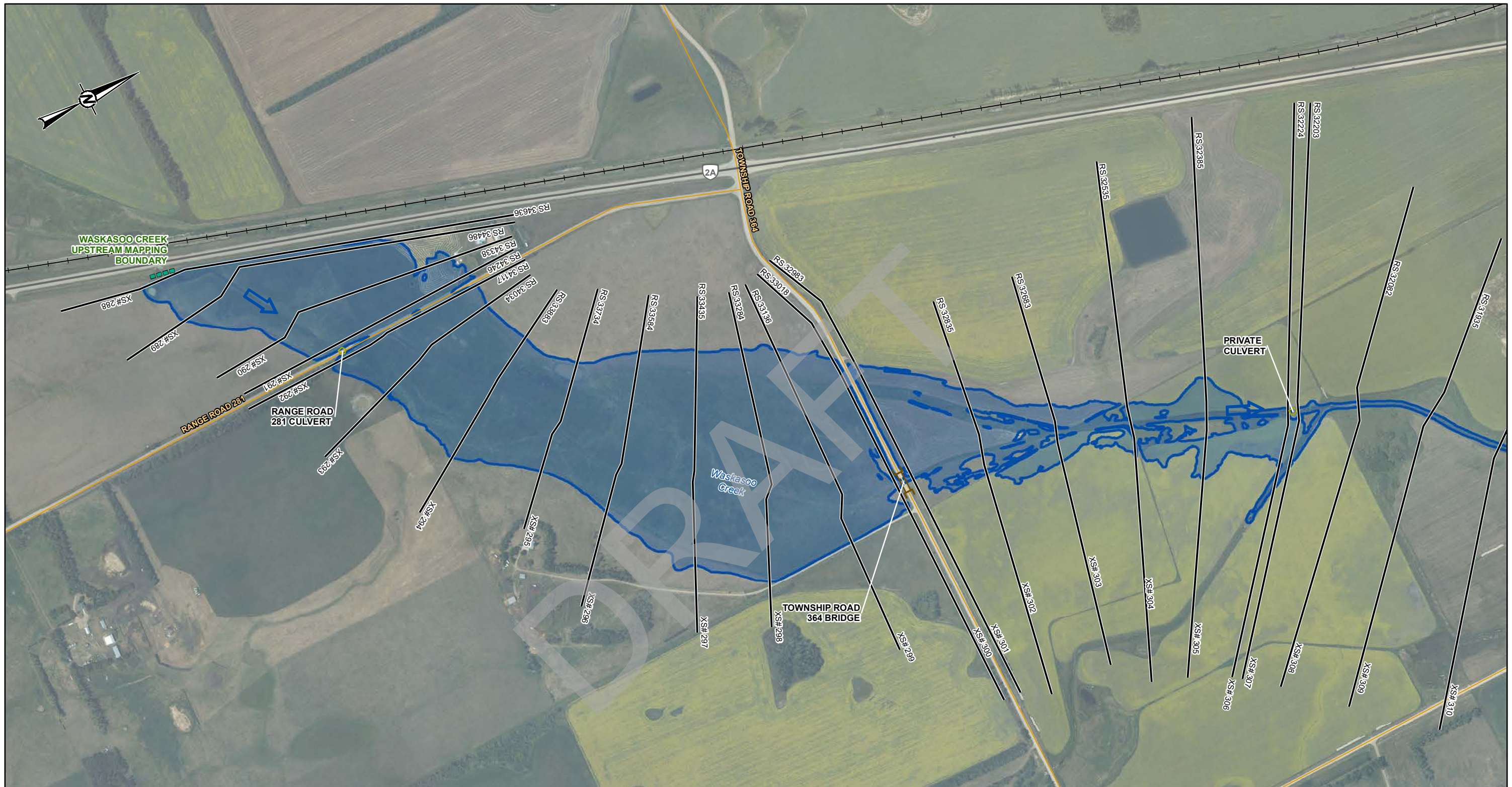
LEGEND		
—	CROSS SECTION	5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER BELOW BLINDMAN RIVER = 512 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
HYDRAULIC STRUCTURES		
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

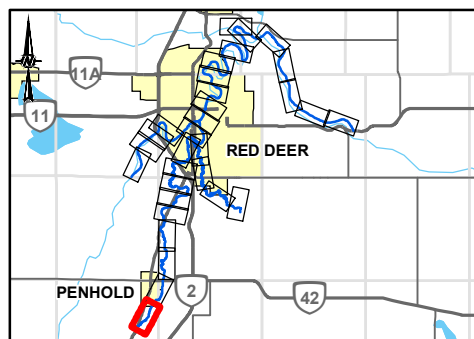


SHEET 20

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	5-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	5-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 7.54 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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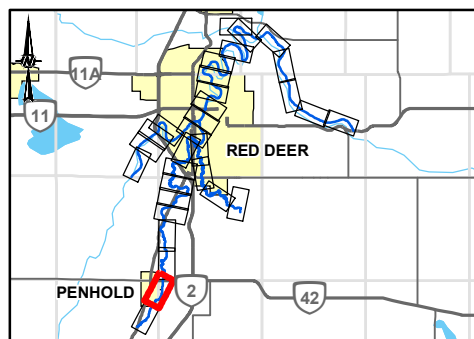
SHEET 19 ↑

↓ SHEET 21

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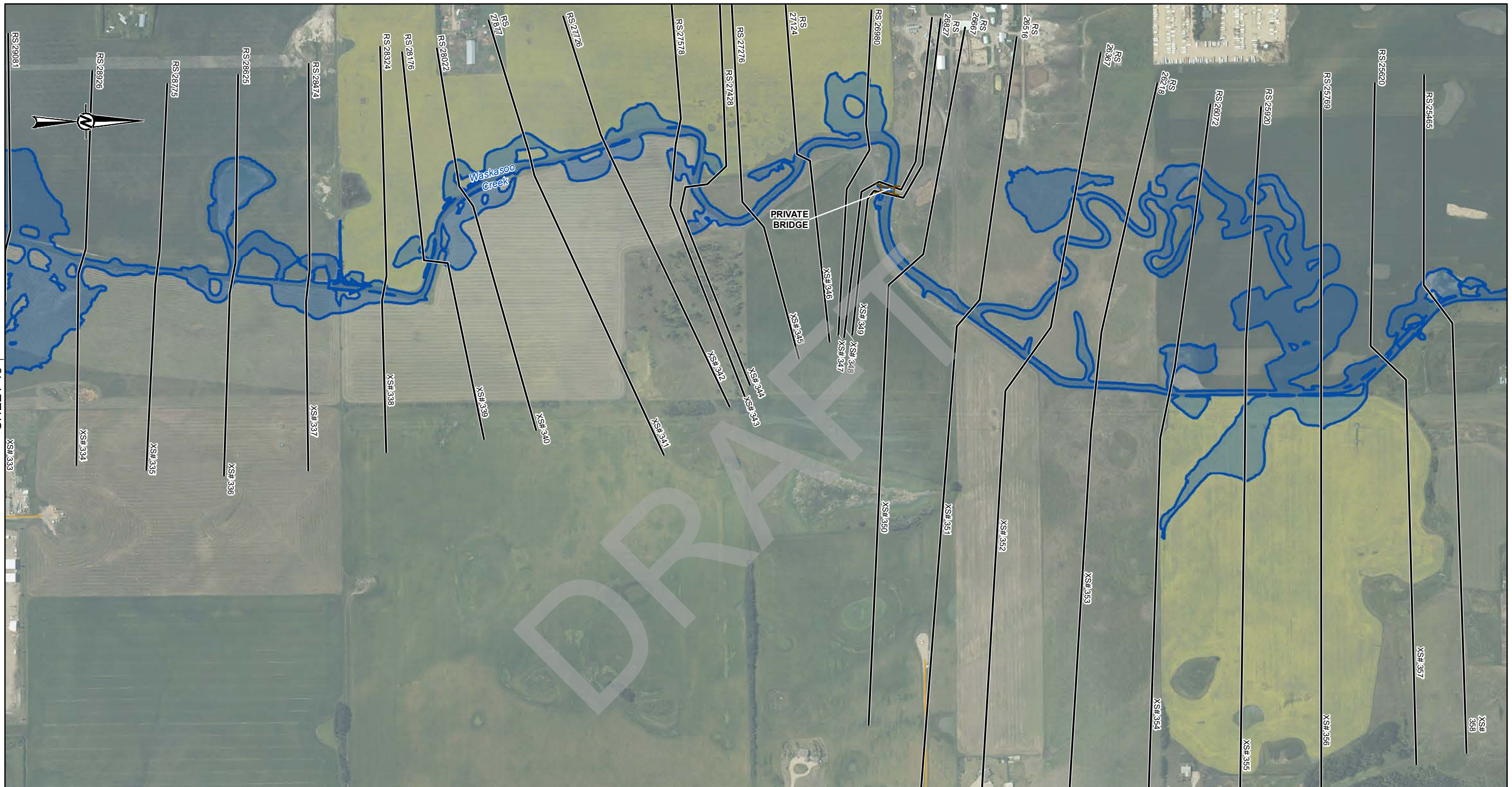
LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	5-YEAR FLOOD EXTENT
	STUDY BOUNDARY	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	WASKASOO CREEK ABOVE HIGHWAY 42 = 7.54 M ³ /S
	PRIMARY HIGHWAY	WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	



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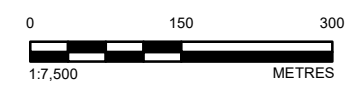
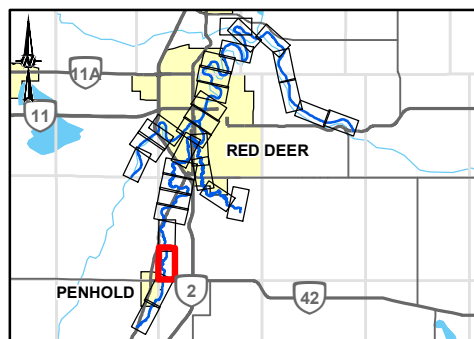
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	5-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	5-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

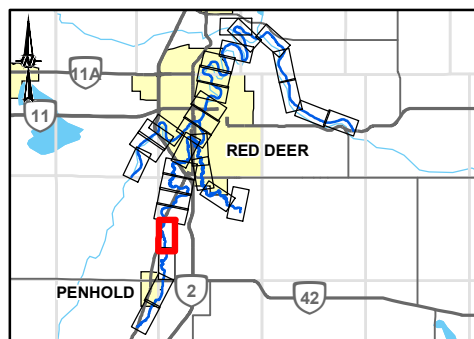
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	5-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



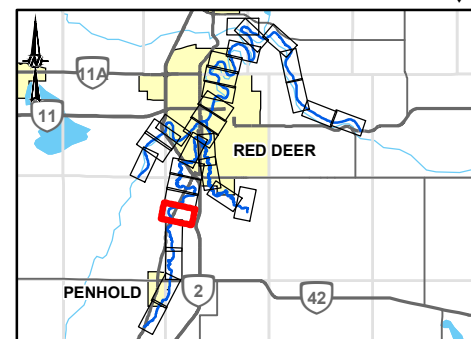
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CONSULTANT	GOLDER	
DATE	2022-11-23	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND		5-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	▬▬▬▬	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	▬▬▬▬	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊	CULVERT
▬▬▬▬	STUDY BOUNDARY	— —	BRIDGE
➔	FLOW DIRECTION	▬▬▬▬	5-YEAR FLOOD EXTENT
—	LOCAL ROAD	▬▬▬▬	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	PRIMARY HIGHWAY		
—	SECONDARY HIGHWAY		
+	RAILWAY		
		DISCHARGE	
		WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S	



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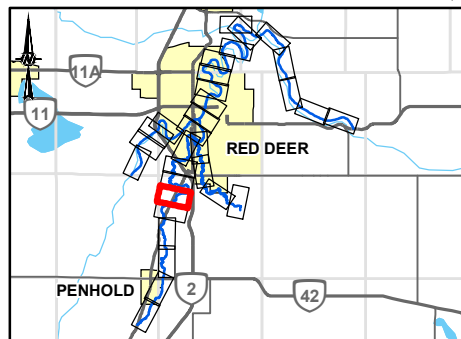
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	5-YEAR FLOOD INUNDATION EXTENT
	5-YEAR FLOOD EXTENT
	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	HYDRAULIC STRUCTURES
	CULVERT
	BRIDGE
	DISCHARGE
	WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**5-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

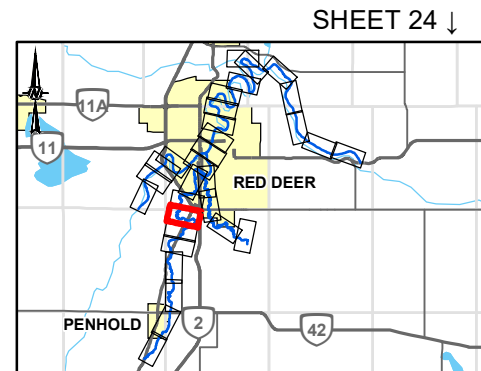
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		5-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M³/S



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

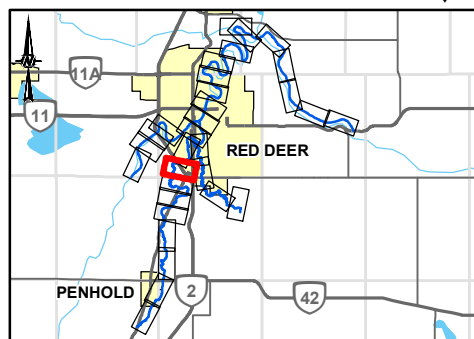
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31

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LEGEND		5-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	5-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	DISCHARGE
■	STUDY BOUNDARY	—	WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S
➔	FLOW DIRECTION	—	
—	LOCAL ROAD	—	
—	PRIMARY HIGHWAY	—	
—	SECONDARY HIGHWAY	—	
—	RAILWAY	—	
—	FLOOD CONTROL STRUCTURE	—	
—	HYDRAULIC STRUCTURES	—	
—	CULVERT	—	
—	BRIDGE	—	



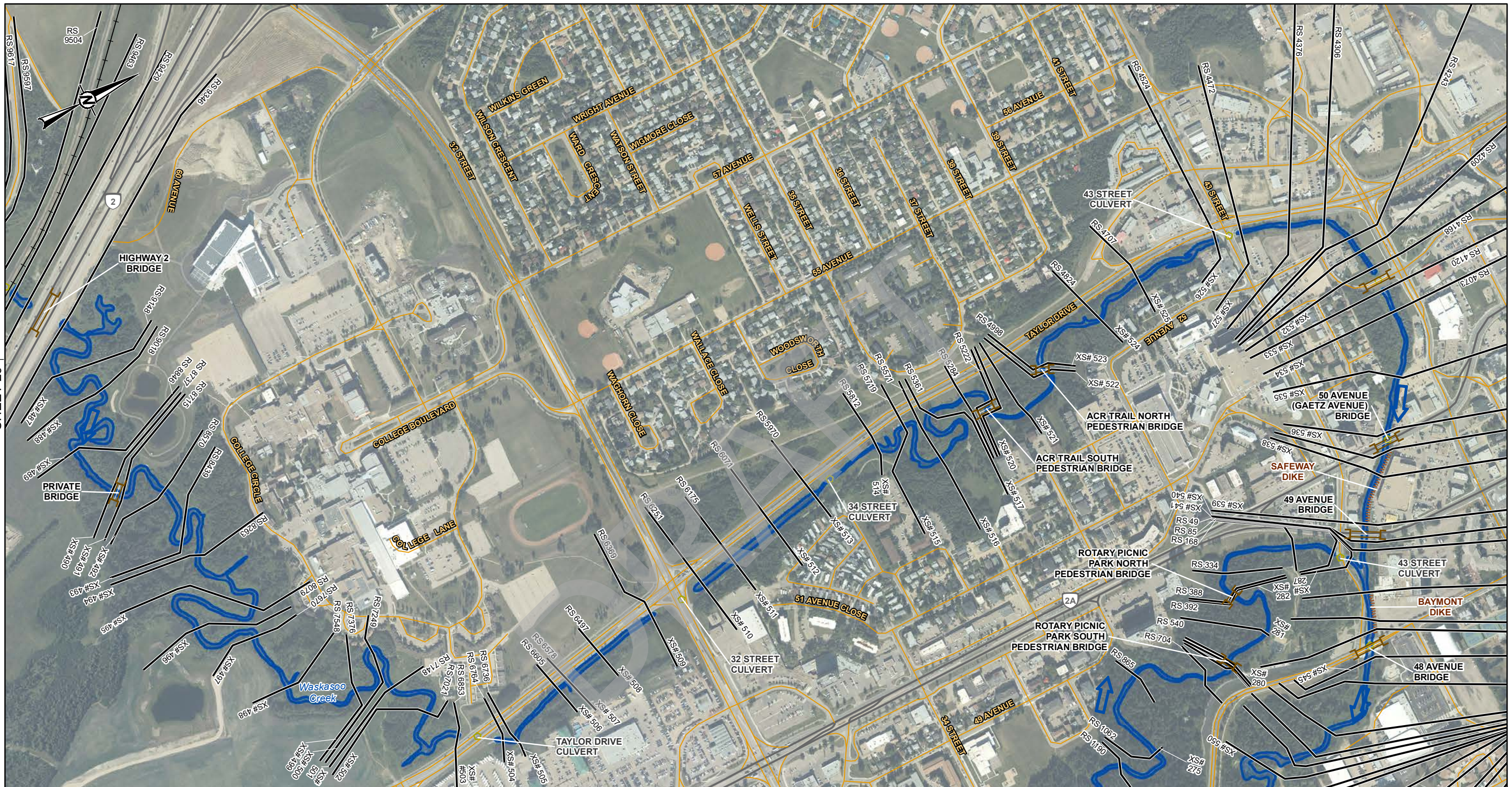
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CONSULTANT	GOLDER	
DATE	2022-11-23	
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PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 26 OF 31

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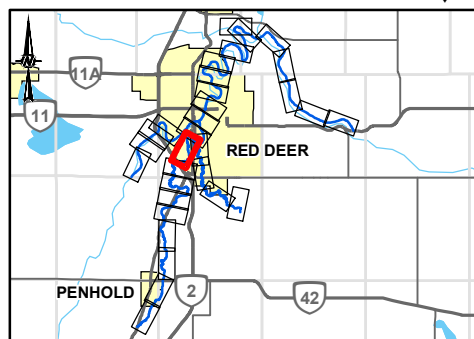
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SHEET 26 ↑

↓ SHEET 5

LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
—	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	5-YEAR FLOOD INUNDATION EXTENT
■	5-YEAR FLOOD EXTENT
■	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S	
WASKASOO CREEK BELOW PIPER CREEK = 12.7 M ³ /S	
PIPER CREEK ABOVE WASKASOO CREEK = 4.55 M ³ /S	



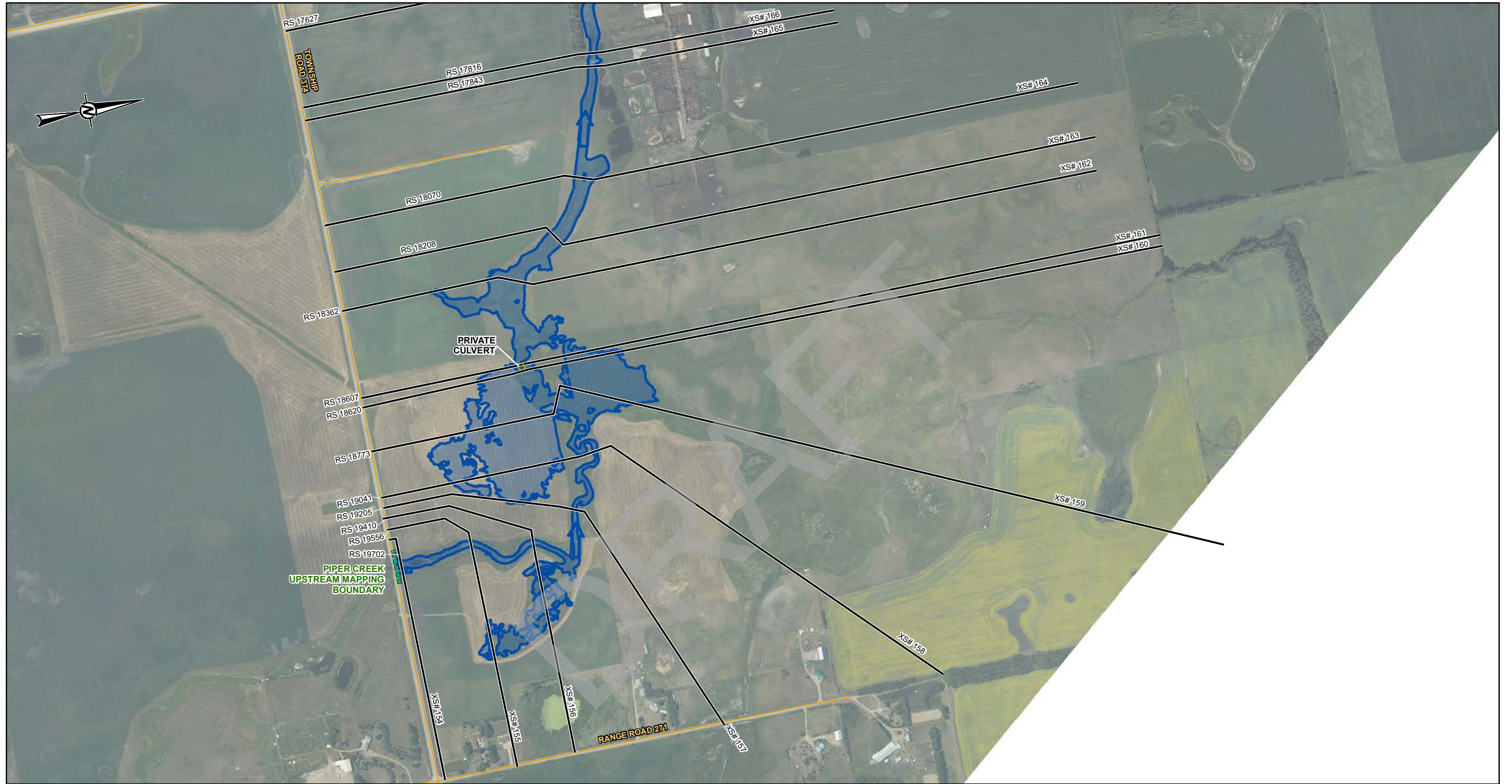
SHEET 31 ↓



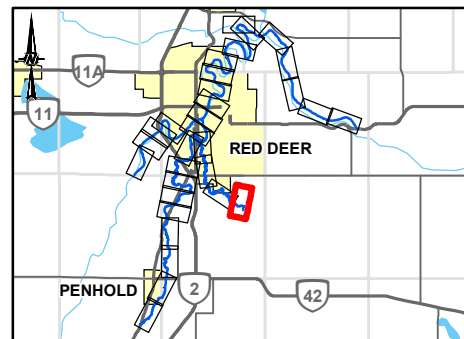
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
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REVIEWED	GT	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	5-YEAR FLOOD INUNDATION EXTENT
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	5-YEAR FLOOD EXTENT
DISCHARGE PIPER CREEK ABOVE HIGHWAY 595 = 4.13 M ³ /S	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**5-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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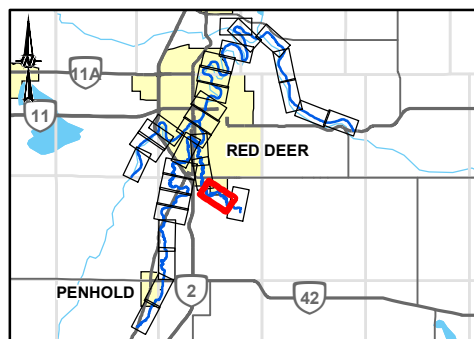
SHEET 28 ↑

↑ SHEET 30

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		5-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		5-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 PIPER CREEK ABOVE HIGHWAY 595 = 4.13 M³/S



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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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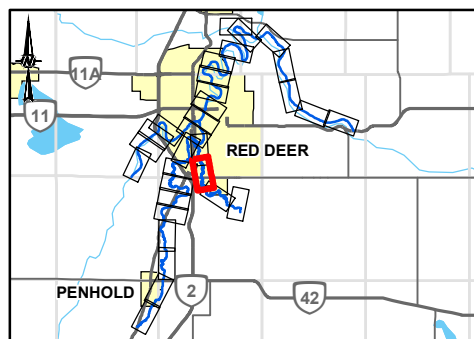
↑ SHEET 62

↑ SHEET 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	5-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	5-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 4.13 M ³ /S
PRIMARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 4.55 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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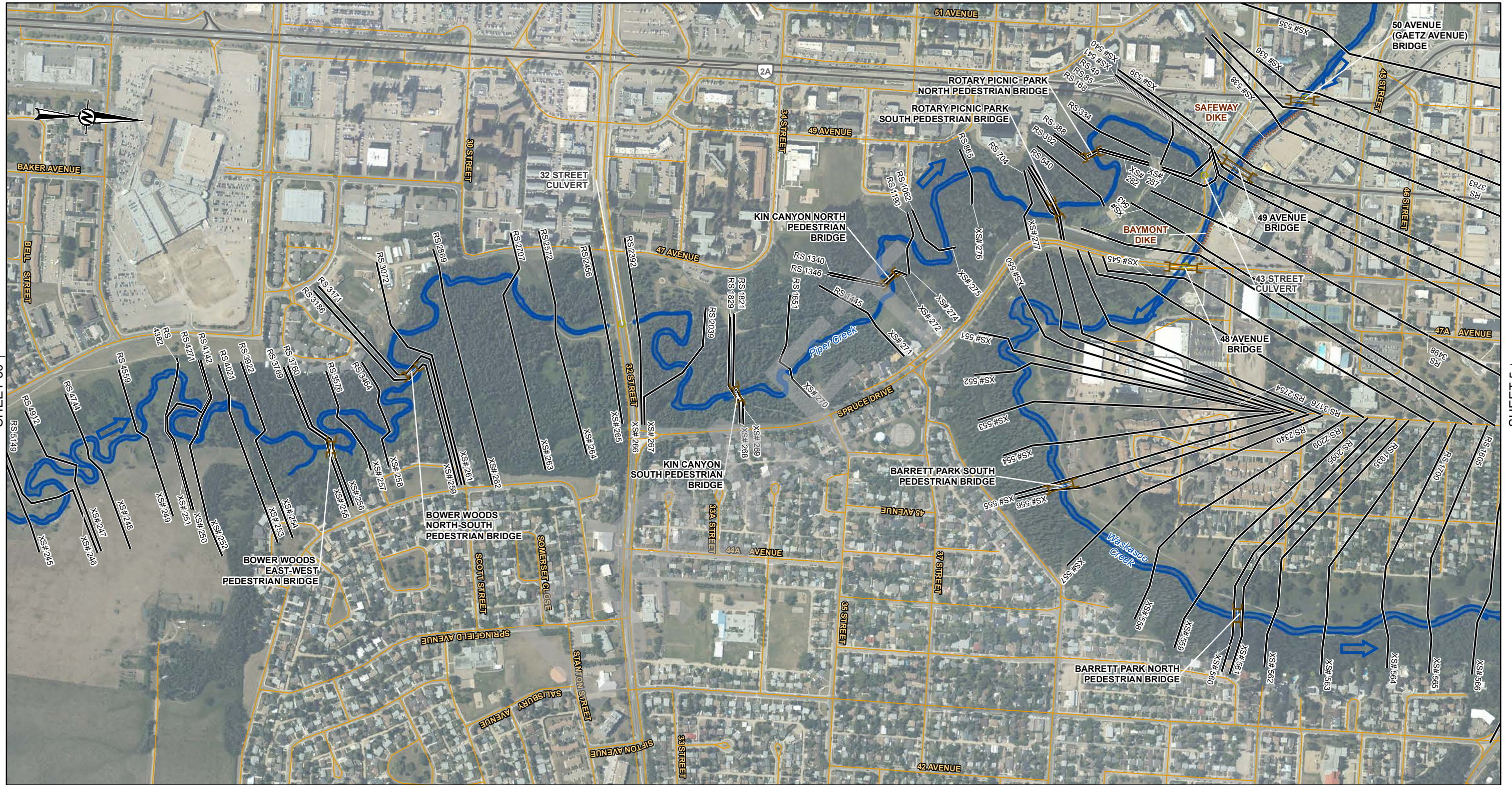
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
5-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

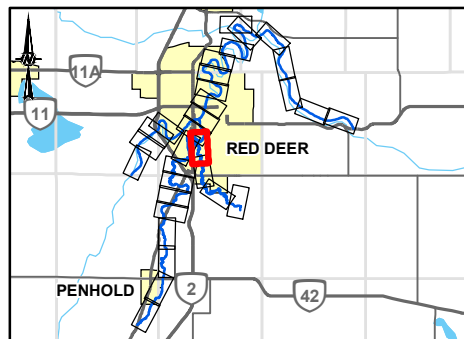
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31



↑ SHEET 30

↑ SHEET 5

LEGEND	5-YEAR FLOOD INUNDATION EXTENT
— CROSS SECTION	5-YEAR FLOOD EXTENT
XS#100 CROSS SECTION NUMBER	5-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304 RIVER STATION (M)	
STUDY BOUNDARY	DISCHARGE
→ FLOW DIRECTION	PIPER CREEK ABOVE WASKASOO CREEK = 4.55 M ³ /S
LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 8.71 M ³ /S
PRIMARY HIGHWAY	WASKASOO CREEK BELOW PIPER CREEK = 12.7 M ³ /S
SECONDARY HIGHWAY	
RAILWAY	
FLOOD CONTROL STRUCTURE	
○ CULVERT	
— BRIDGE	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**5-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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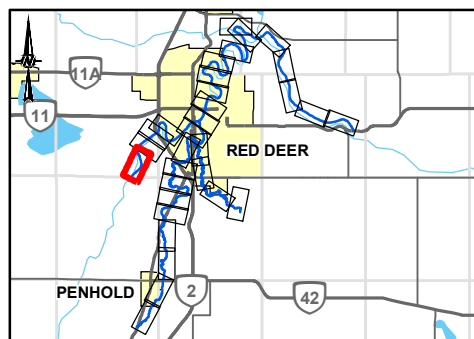
SHEETS 1-31

10-Year Flood Inundation Extent

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LEGEND		
—	CROSS SECTION	10-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER ABOVE WASKASOO CREEK = 586 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	

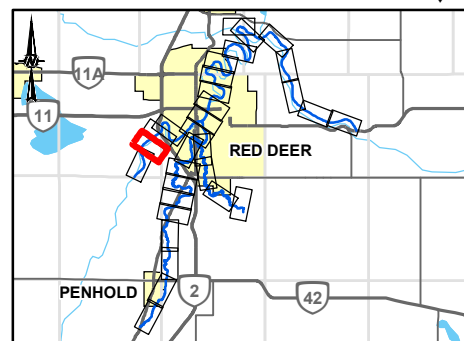


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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31



LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	10-YEAR FLOOD INUNDATION EXTENT
■	10-YEAR FLOOD EXTENT
■	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER ABOVE WASKASOO CREEK = 586 M ³ /S	



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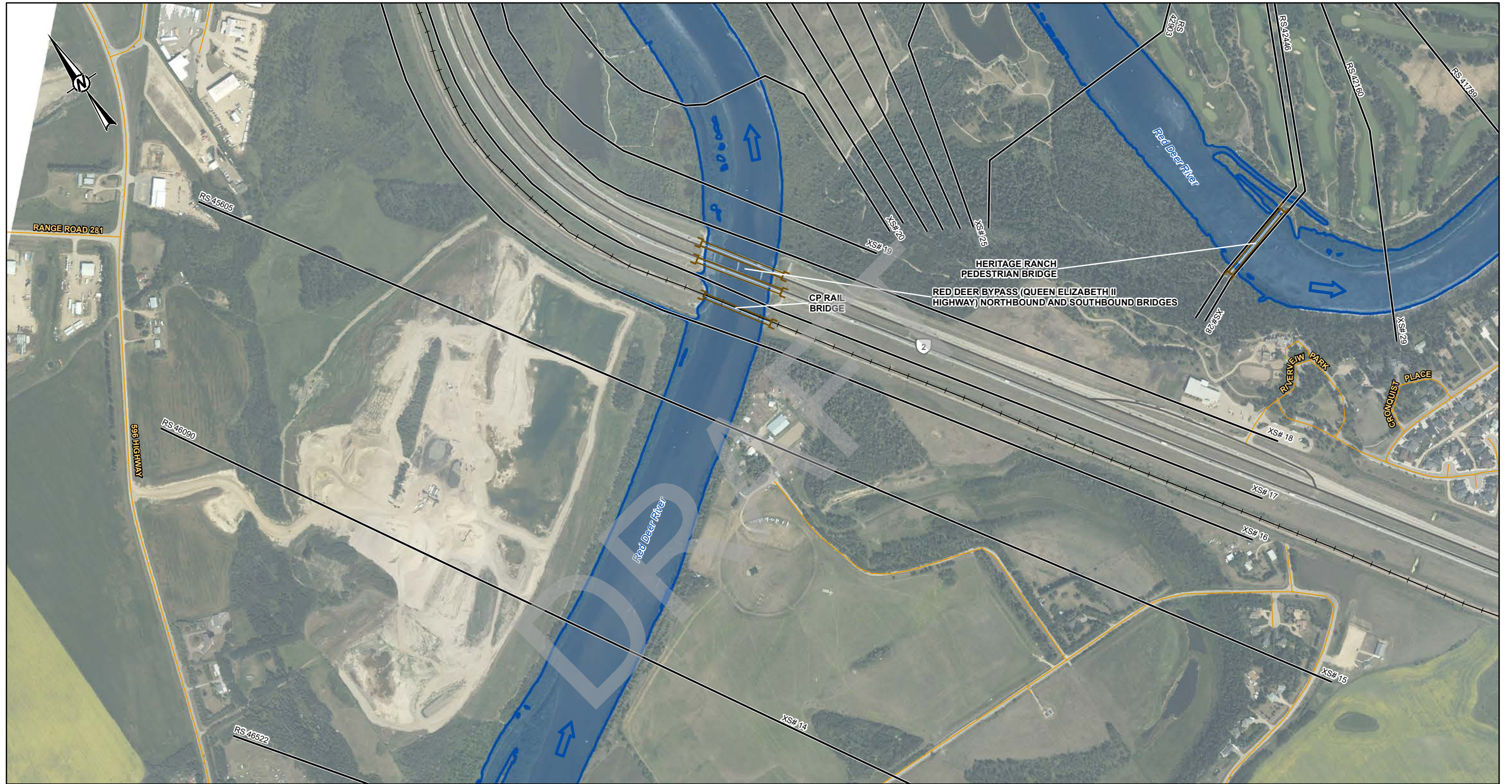
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PROJECT
RED DEER RIVER HAZARD STUDY

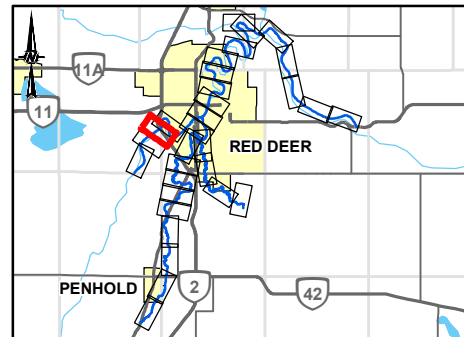
TITLE
**10-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		10-YEAR FLOOD INUNDATION EXTENT
		■ 10-YEAR FLOOD EXTENT
		■ 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER ABOVE WASKASOO CREEK = 586 M ³ /S



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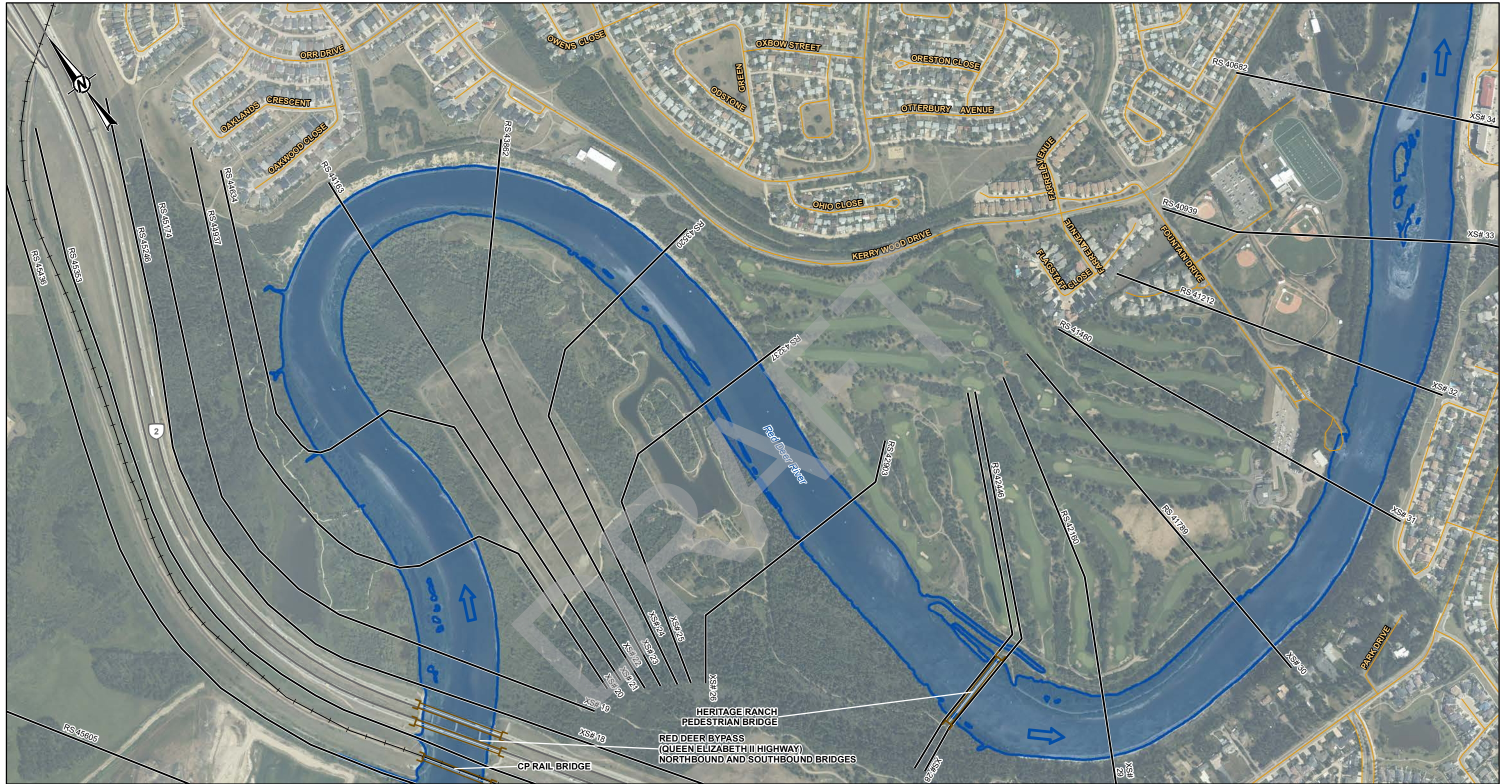
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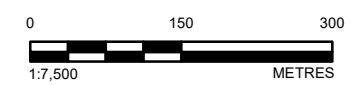
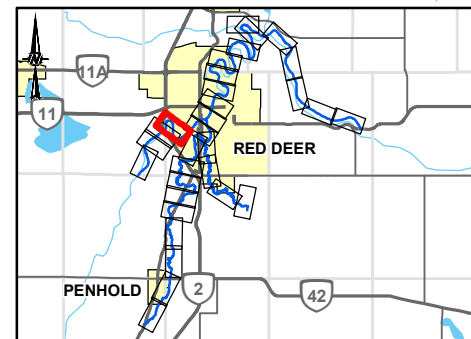
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**10-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31

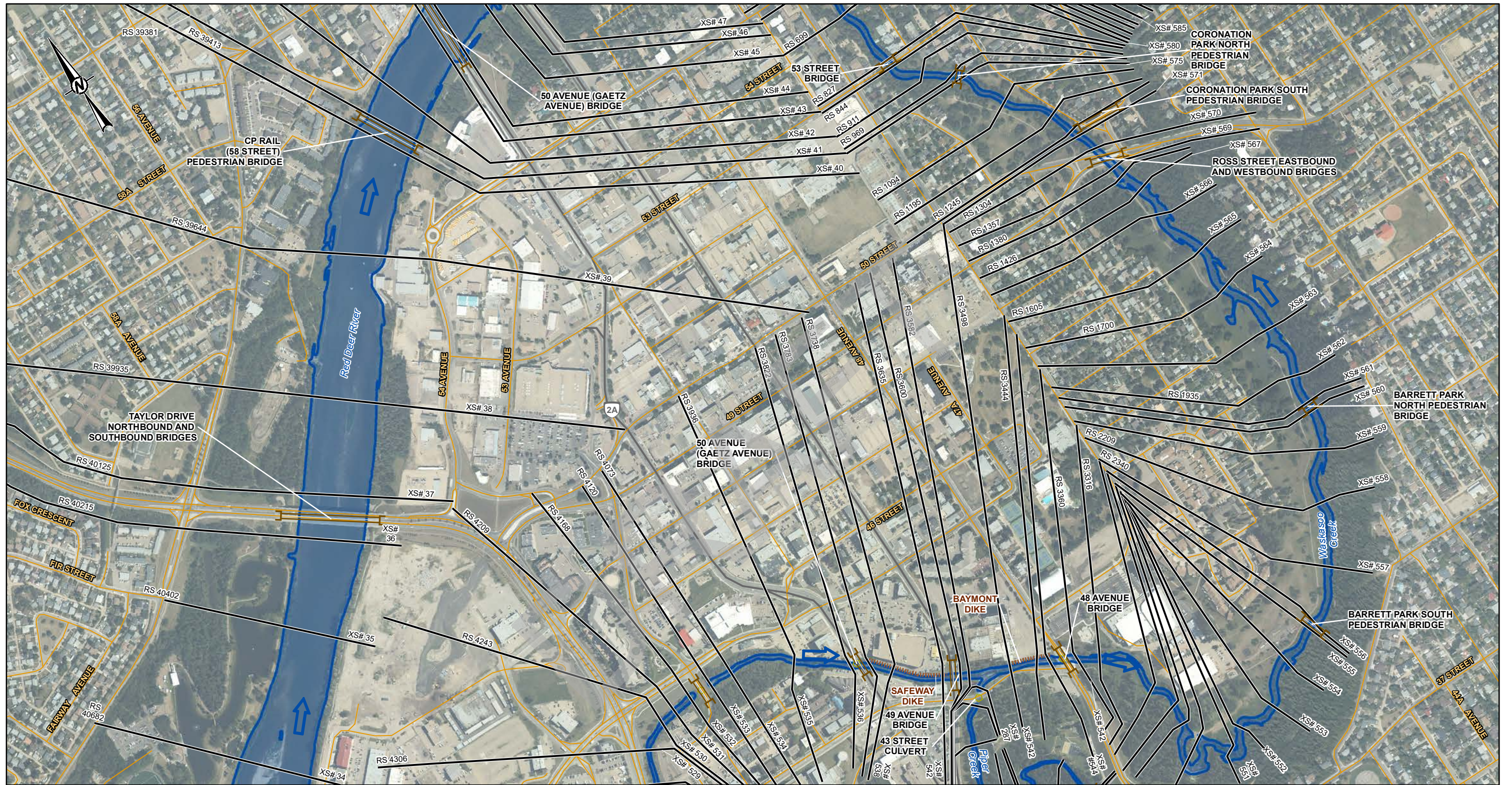


LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
▬▬▬▬	FLOOD CONTROL STRUCTURE
⬡	CULVERT
⌄	BRIDGE
▭	10-YEAR FLOOD INUNDATION EXTENT
▭	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER ABOVE WASKASOO CREEK = 586 M ³ /S	



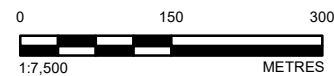
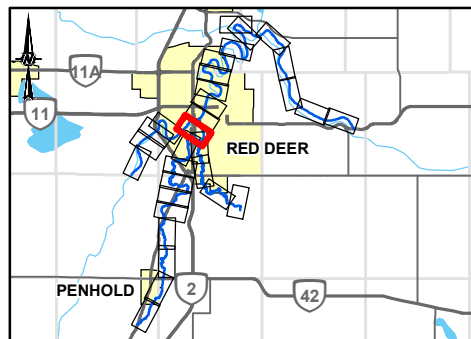
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CONSULTANT	GOLDER
DATE	2022-11-23
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 586 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 19.8 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 7.21 M³/S



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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**10-YEAR FLOOD INUNDATION EXTENT
 REGULATED FLOWS**

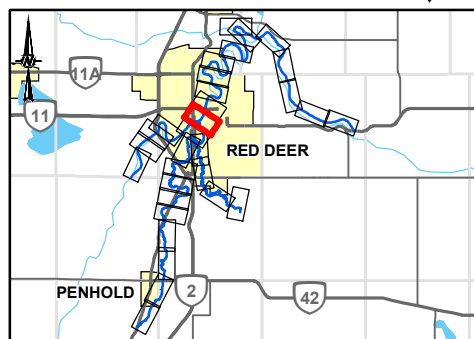
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		10-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		10-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 586 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 587 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 19.8 M³/S



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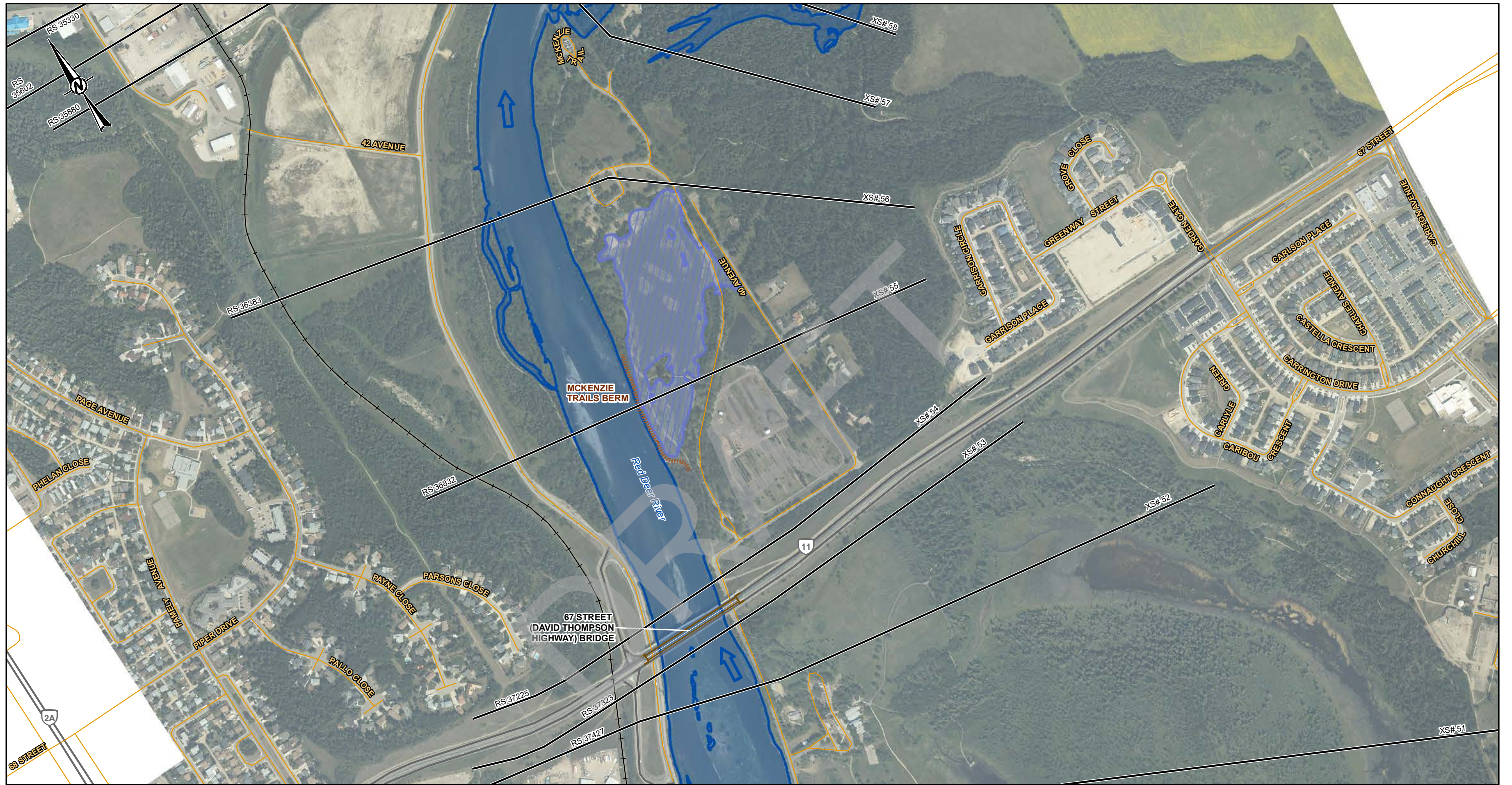
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31

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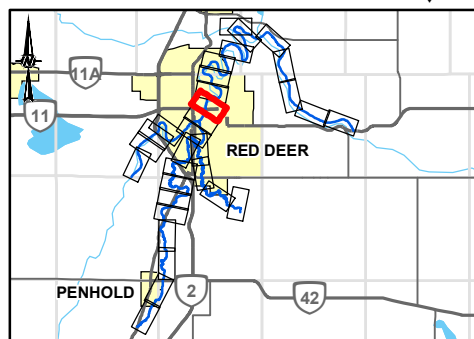
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		10-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		10-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 587 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

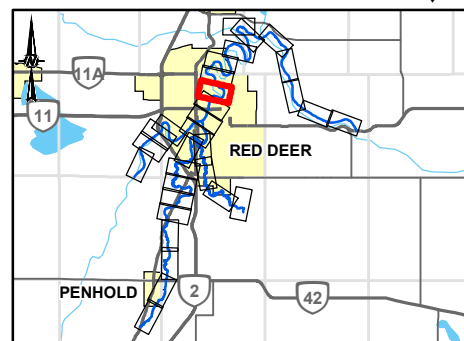
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CULVERT
	BRIDGE
	FLOW DIRECTION
	STUDY BOUNDARY
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CROSS SECTION NUMBER
	RIVER STATION (M)
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 587 M ³ /S



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CONSULTANT



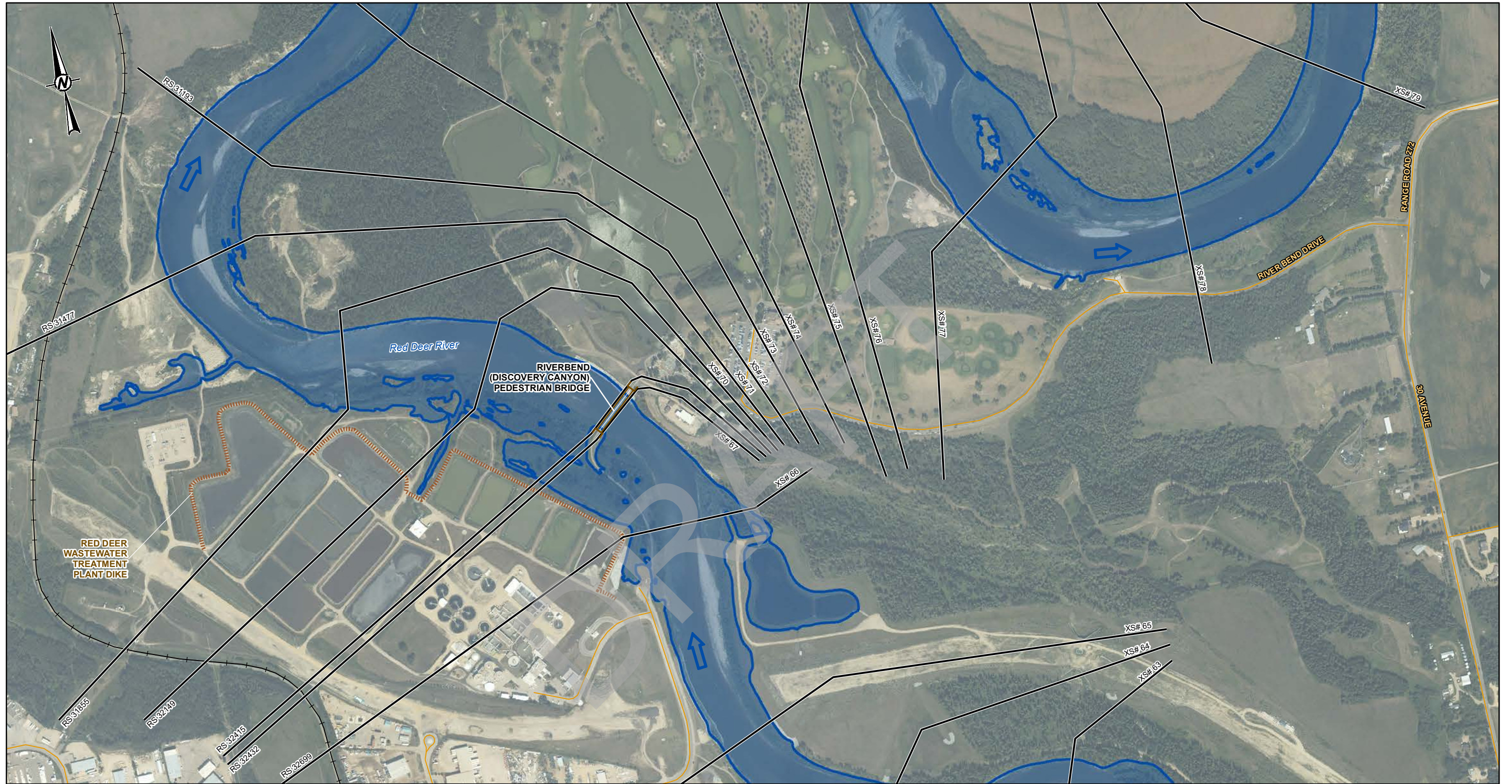
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DESIGNED	PT
PREPARED	NB
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

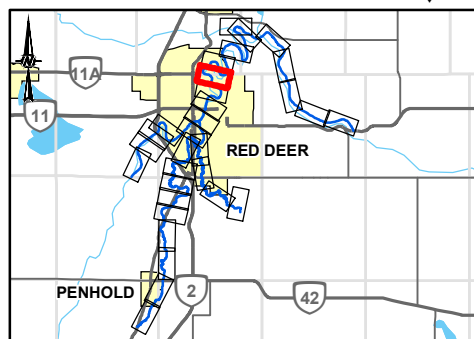
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**10-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	HYDRAULIC STRUCTURES
	10-YEAR FLOOD EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 587 M ³ /S

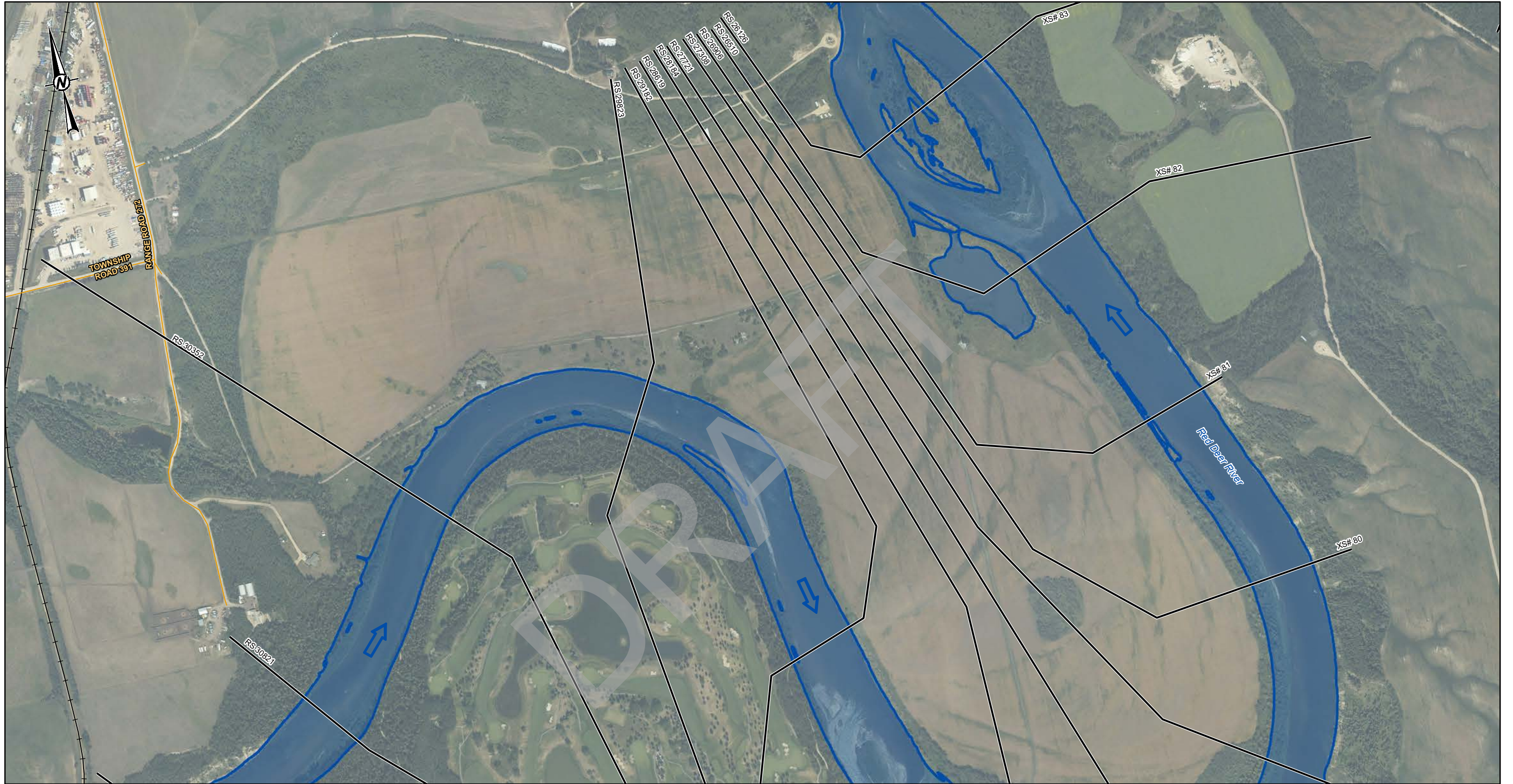


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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

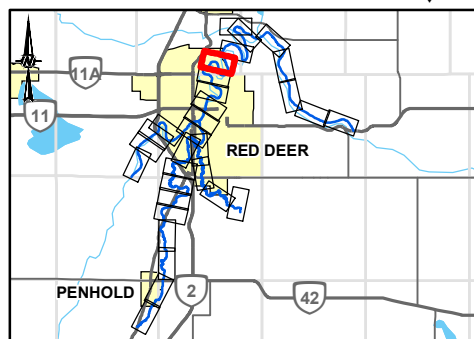
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 9 OF 31

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LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	10-YEAR FLOOD INUNDATION EXTENT	
	▬ 10-YEAR FLOOD EXTENT	
	▬▬ 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW WASKASOO CREEK = 587 M ³ /S	



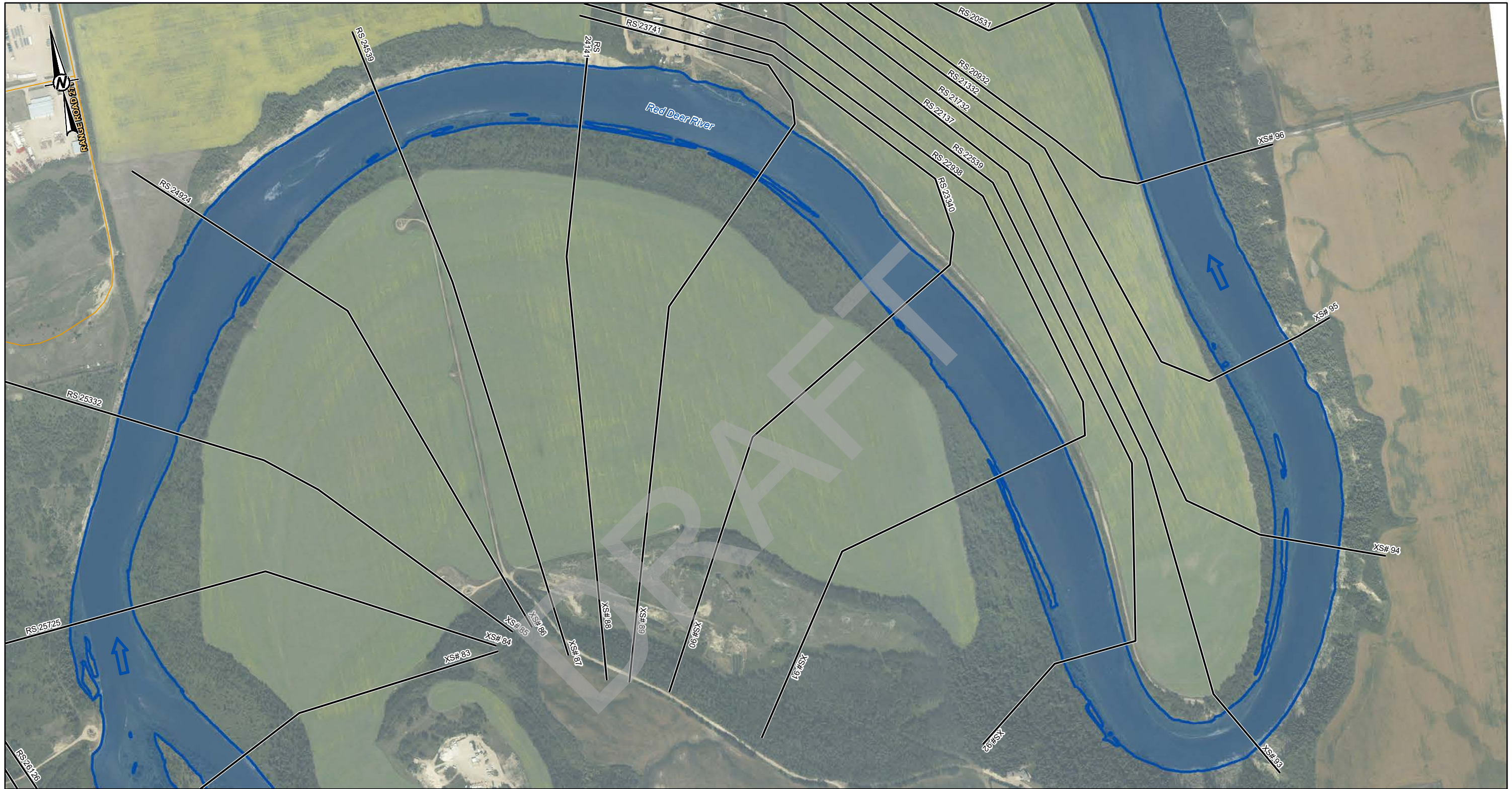
CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
YYYY-MM-DD	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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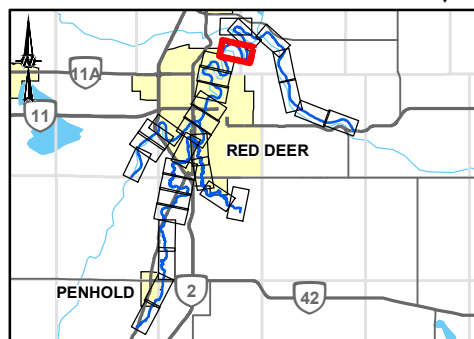
PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 10 OF 31

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LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER BELOW WASKASOO CREEK = 587 M ³ /S	



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PROJECT RED DEER RIVER HAZARD STUDY			
TITLE 10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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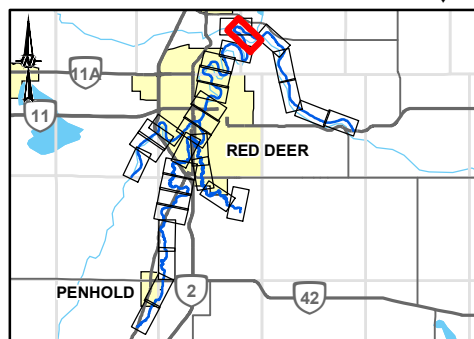
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SHEET 13 ↑

↓ SHEET 14

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
■	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		10-YEAR FLOOD INUNDATION EXTENT
		■ 10-YEAR FLOOD EXTENT
		■ 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW WASKASOO CREEK = 587 M ³ /S
		RED DEER RIVER BELOW BLINDMAN RIVER = 647 M ³ /S



↓ SHEET 11



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 12 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS I

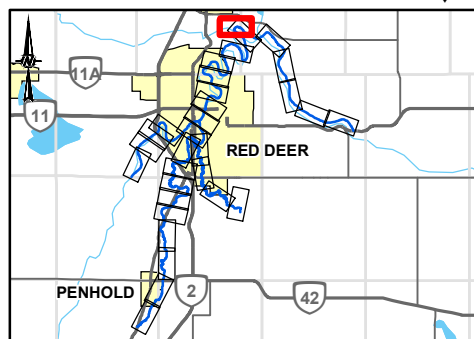
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SHEET 14 ↓

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
DISCHARGE	
	RED DEER RIVER BELOW WASKASOO CREEK = 587 M ³ /S
	RED DEER RIVER BELOW BLINDMAN RIVER = 647 M ³ /S

SHEET 12 ↓



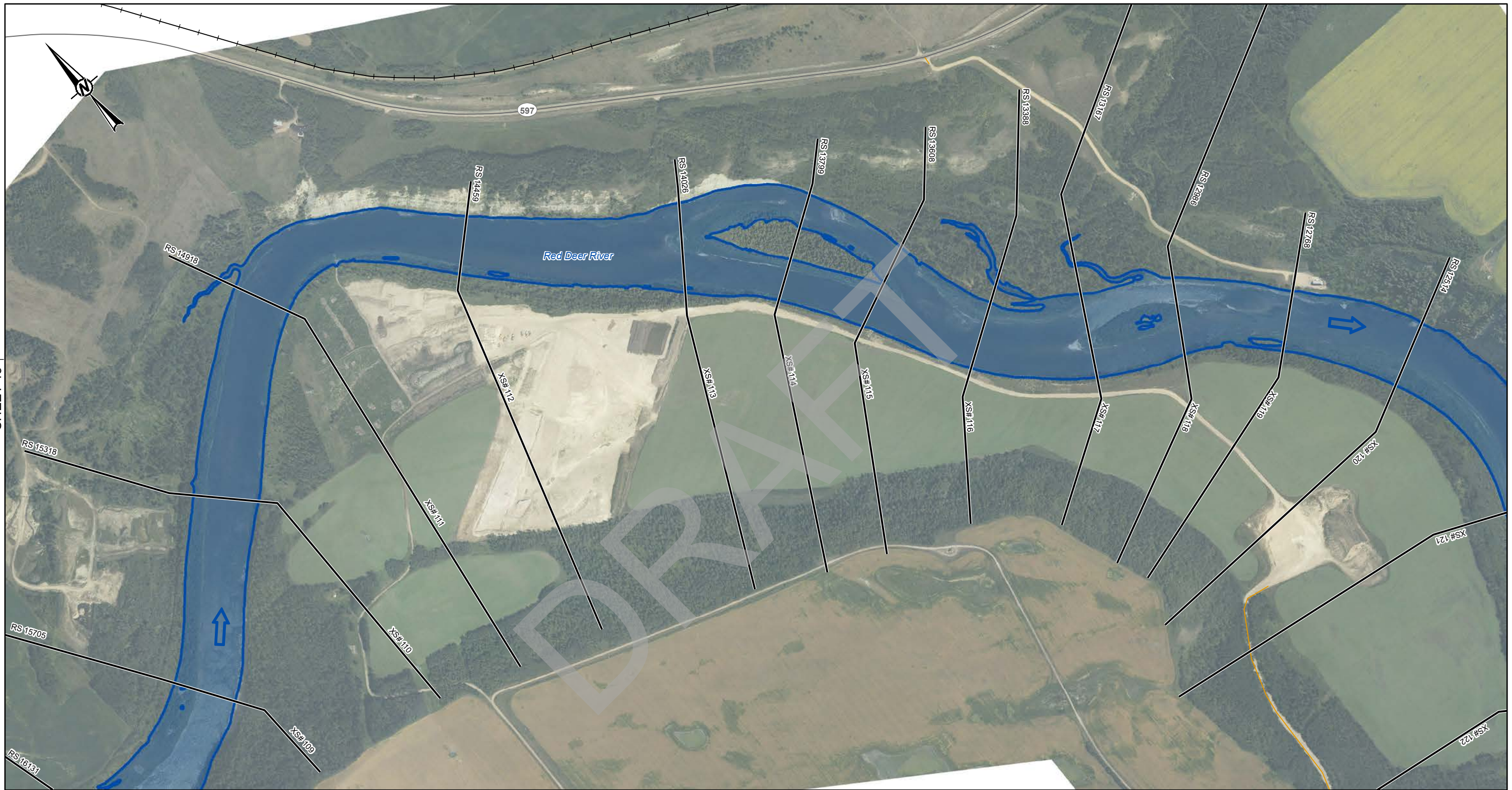
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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 13 OF 31	

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

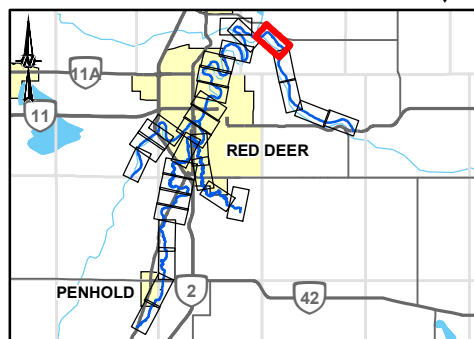
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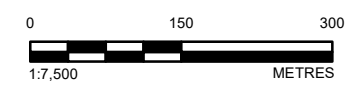
SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	10-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	10-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 647 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	FLOOD CONTROL STRUCTURE	
○	CULVERT	
—	BRIDGE	



SHEET 12 ↓



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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 14 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

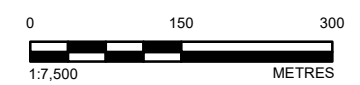
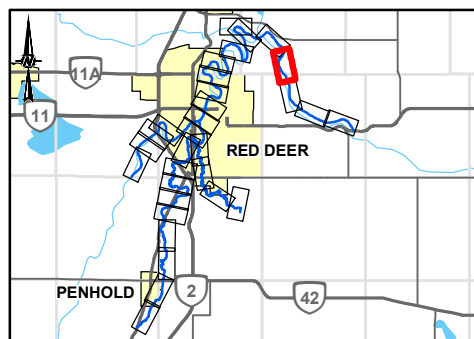
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	▬▬ BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		10-YEAR FLOOD INUNDATION EXTENT
		▬ 10-YEAR FLOOD EXTENT
		▬▬ 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 647 M ³ /S



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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 15 OF 31	

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

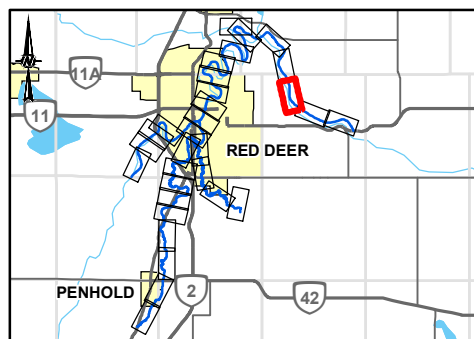
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	10-YEAR FLOOD INUNDATION EXTENT	
	■ 10-YEAR FLOOD EXTENT	
	■ 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 647 M ³ /S	



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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 16 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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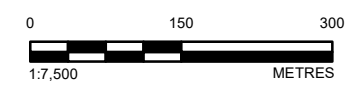
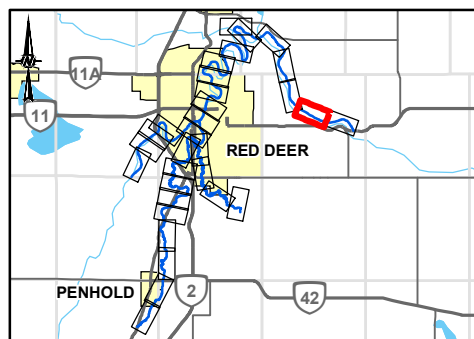
SHEET 16 ↑

↓ SHEET 18

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	10-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	□	CULVERT	10-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	— —	BRIDGE	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
▭	STUDY BOUNDARY			
➔	FLOW DIRECTION			
—	LOCAL ROAD			
—	PRIMARY HIGHWAY			
—	SECONDARY HIGHWAY			
+	RAILWAY			

DISCHARGE
RED DEER RIVER BELOW BLINDMAN RIVER = 647 M³/S



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	PREPARED	NB
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PROJECT RED DEER RIVER HAZARD STUDY	
TITLE 10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO. 1783039	CONTROL 4000
REV. 2	FIGURE SHEET 17 OF 31

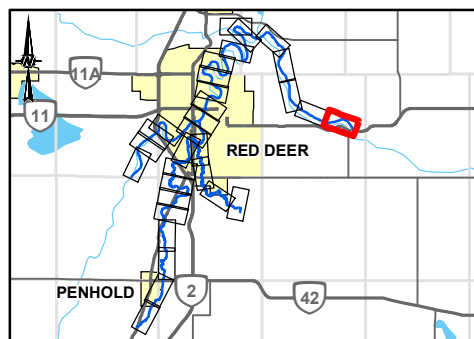
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SHEET 17 ↑



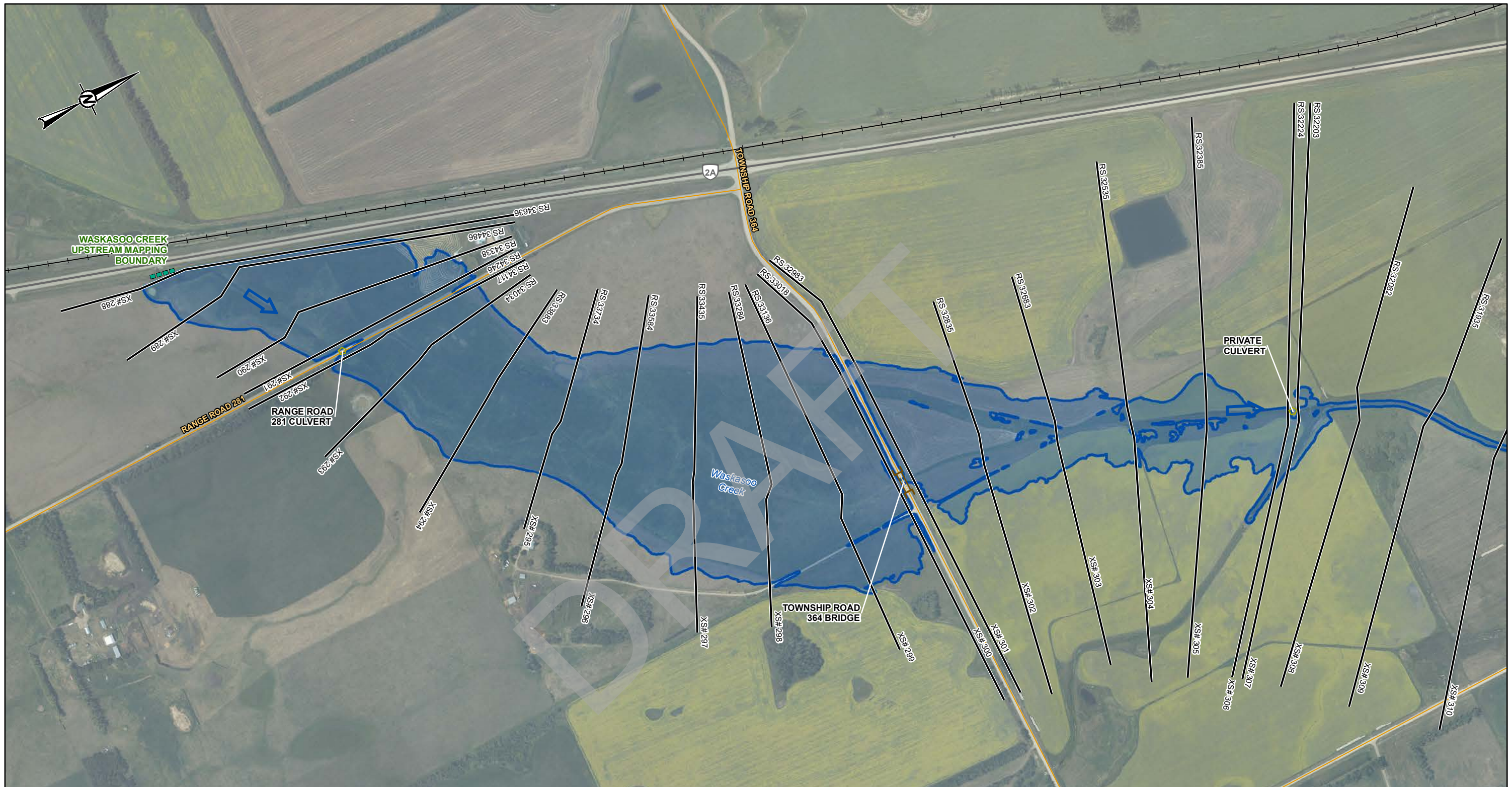
LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
—	STUDY BOUNDARY	— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		10-YEAR FLOOD INUNDATION EXTENT
		■ 10-YEAR FLOOD EXTENT
		■ 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 647 M ³ /S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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REVIEWED	GT	
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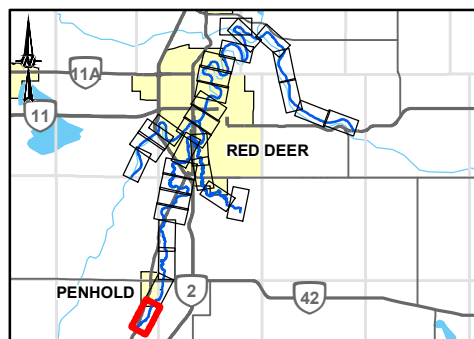
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



SHEET 20

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		10-YEAR FLOOD INUNDATION EXTENT
		■ 10-YEAR FLOOD EXTENT
		■ 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		WASKASOO CREEK ABOVE HIGHWAY 42 = 11.9 M ³ /S

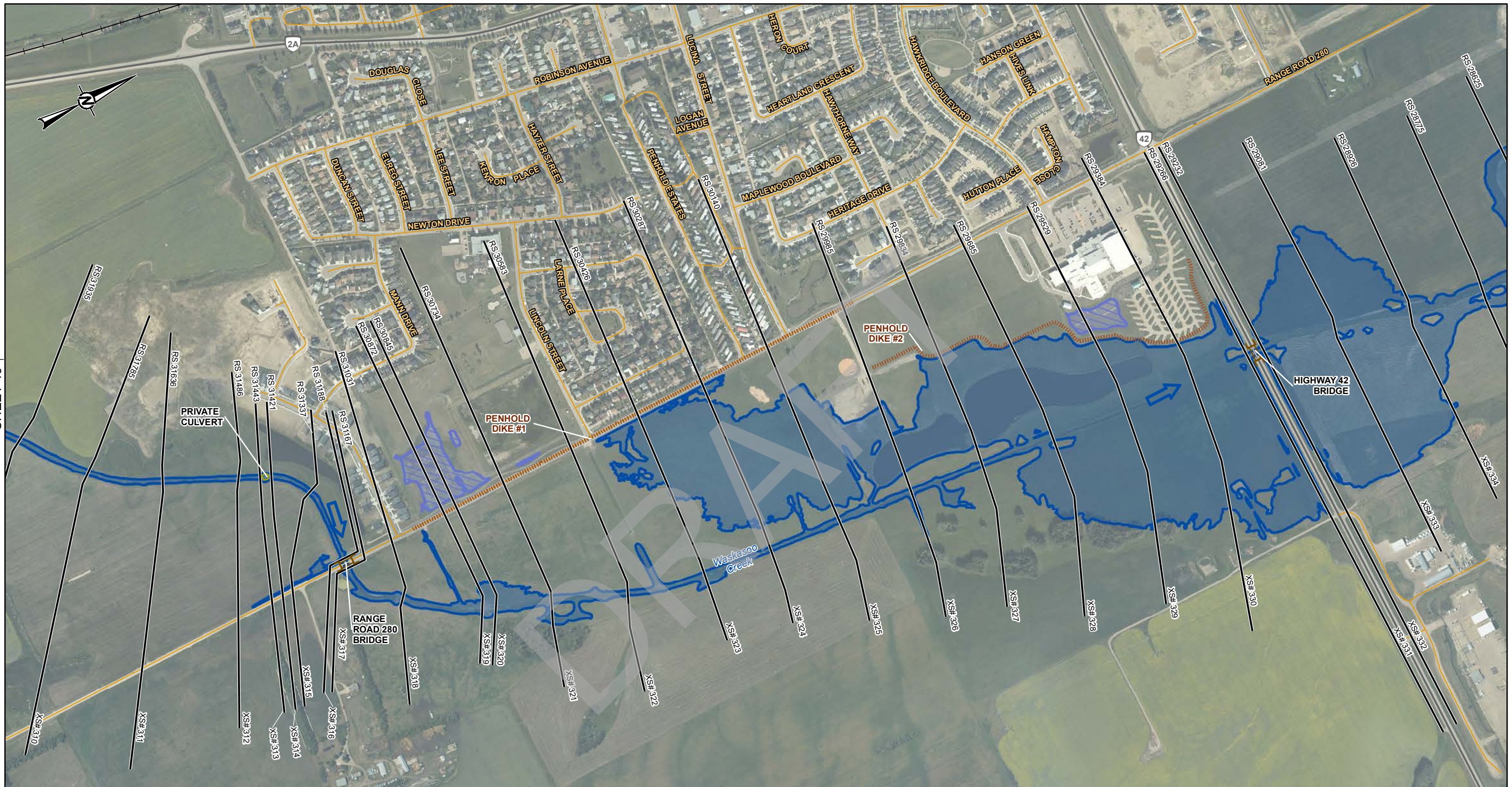


CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

REFERENCE(S)			
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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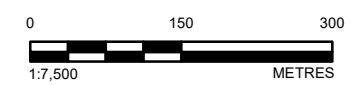
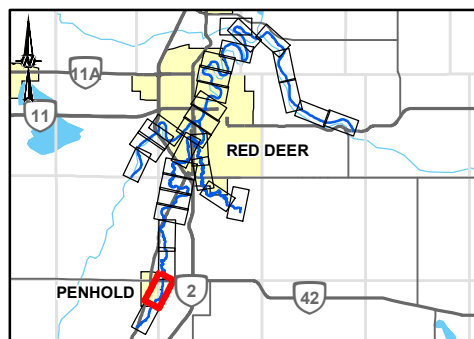
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SHEET 19 ↑

↓ SHEET 21

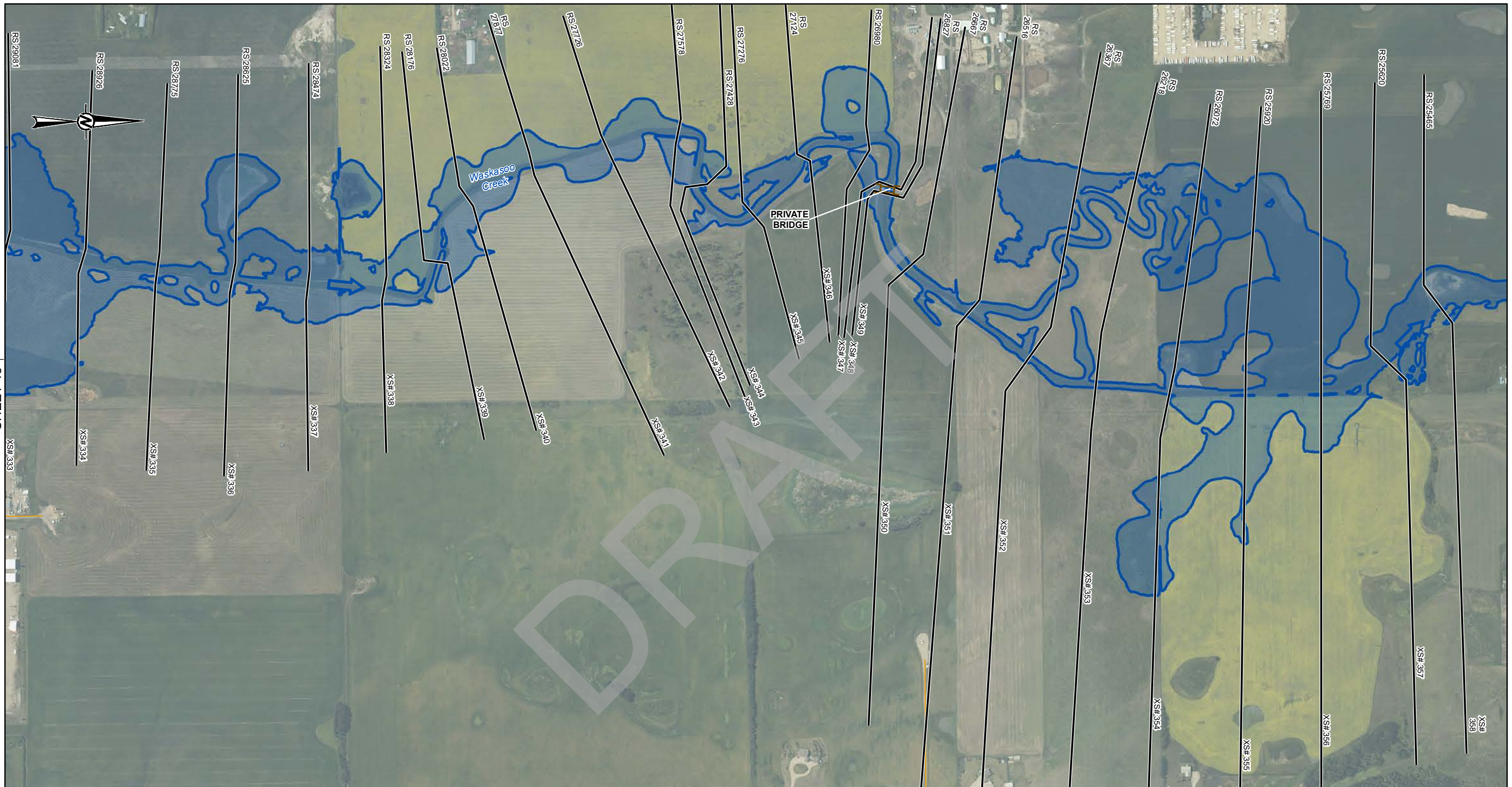
LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	CROSS SECTION NUMBER
	RIVER STATION (M)
	10-YEAR FLOOD EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
WASKASOO CREEK ABOVE HIGHWAY 42 = 11.9 M ³ /S	
WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M ³ /S	



CLIENT	ALBERTA ENVIRONMENT AND PARKS	ALBERTA Government
CONSULTANT	GOLDER	
DATE	2022-11-23	
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REVIEWED	GT	
APPROVED	WP	

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114			
PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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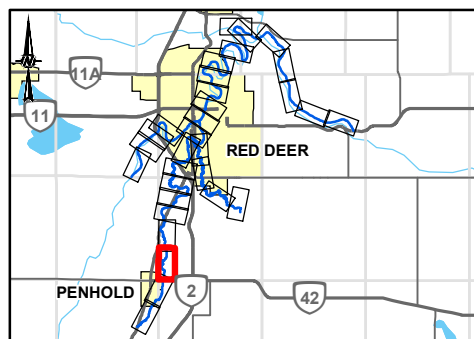


SHEET 18 ↑

↑ SHEET 22

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	10-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	10-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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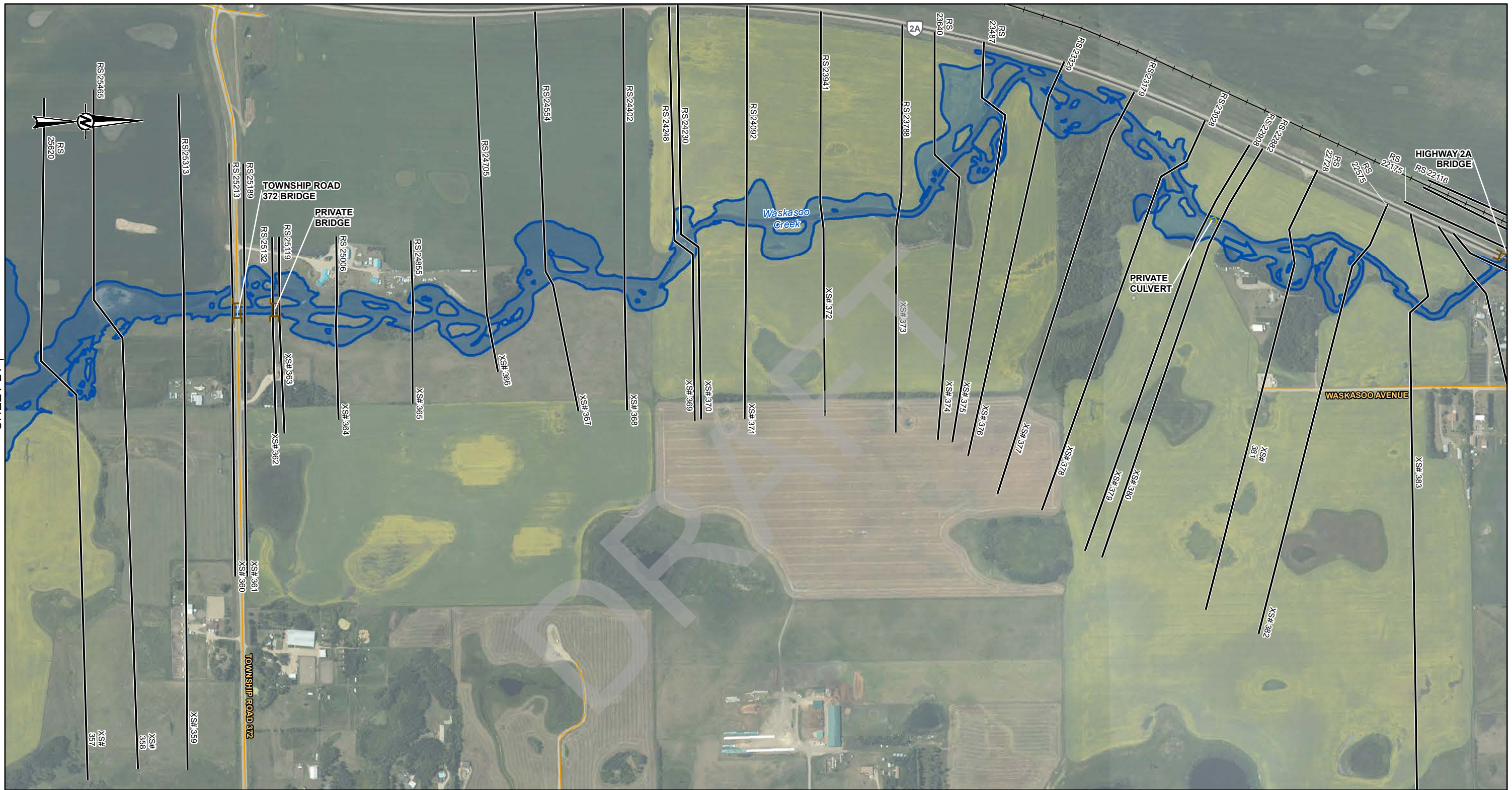
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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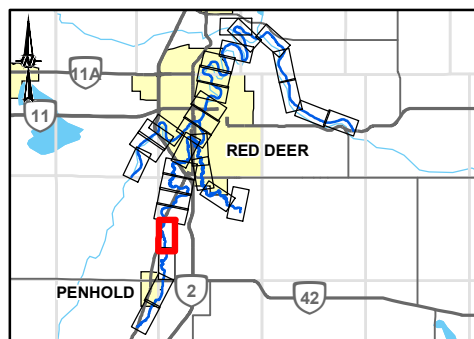
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	▬▬▬ BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬▬▬	10-YEAR FLOOD INUNDATION EXTENT	
▬▬▬	10-YEAR FLOOD EXTENT	
▬▬▬	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M ³ /S	



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CONSULTANT	GOLDER	
DATE	2022-11-23	
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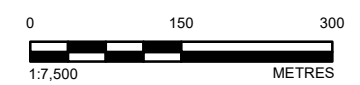
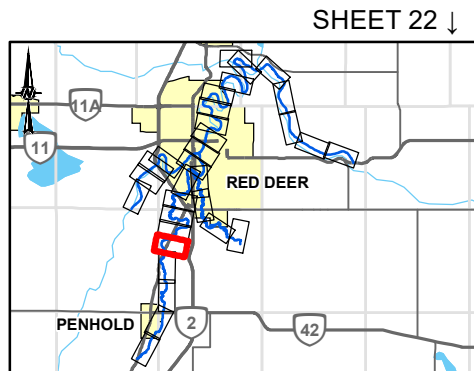
PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 22 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	HYDRAULIC STRUCTURES
	10-YEAR FLOOD EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M³/S



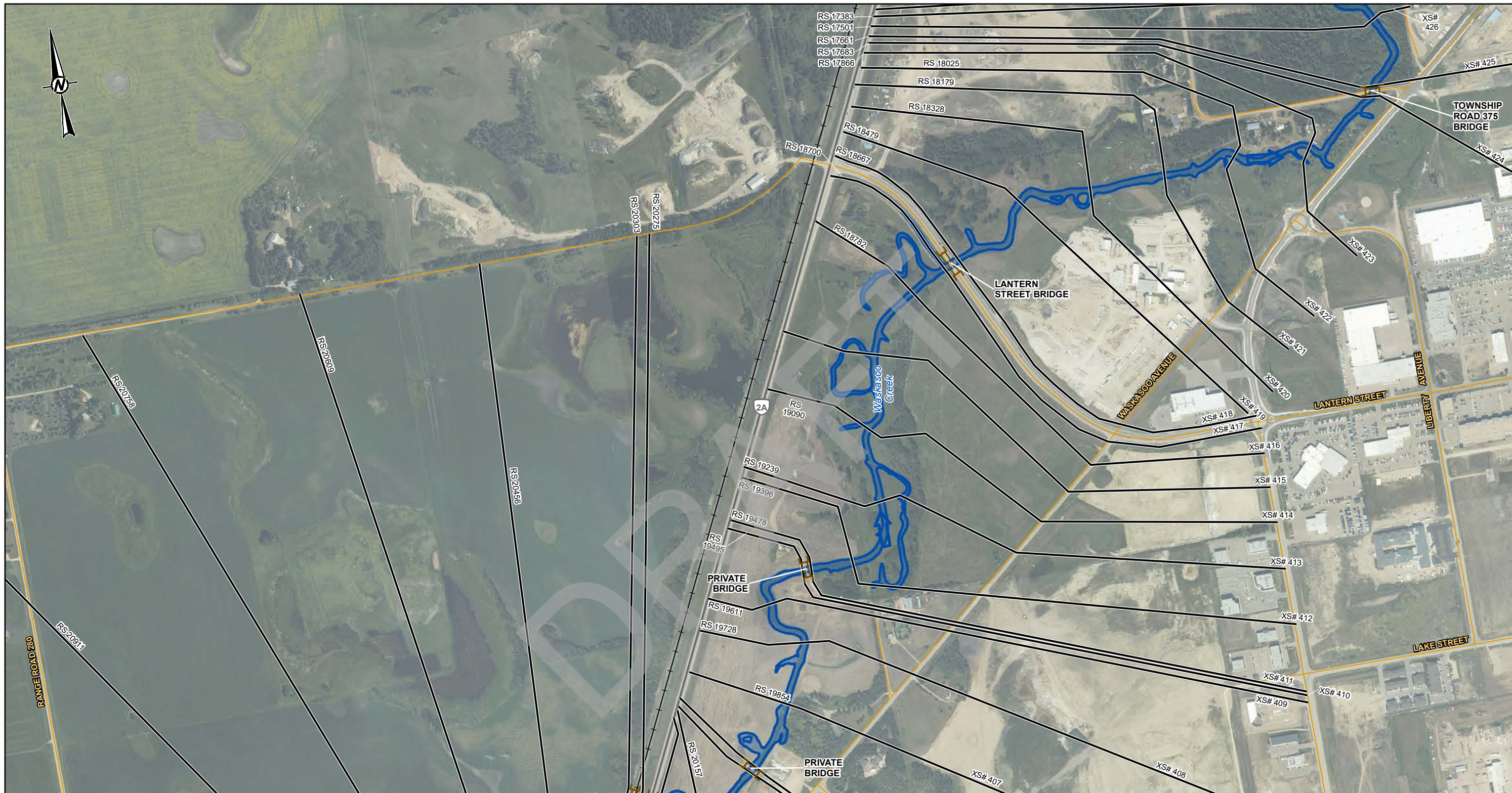
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 23 OF 31	

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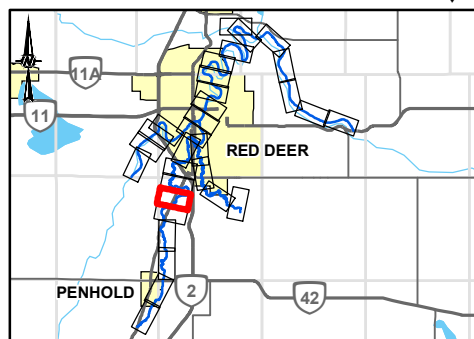
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		10-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		10-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31

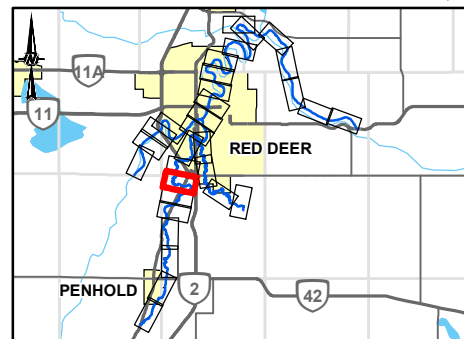
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	10-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	10-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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AND PARKS



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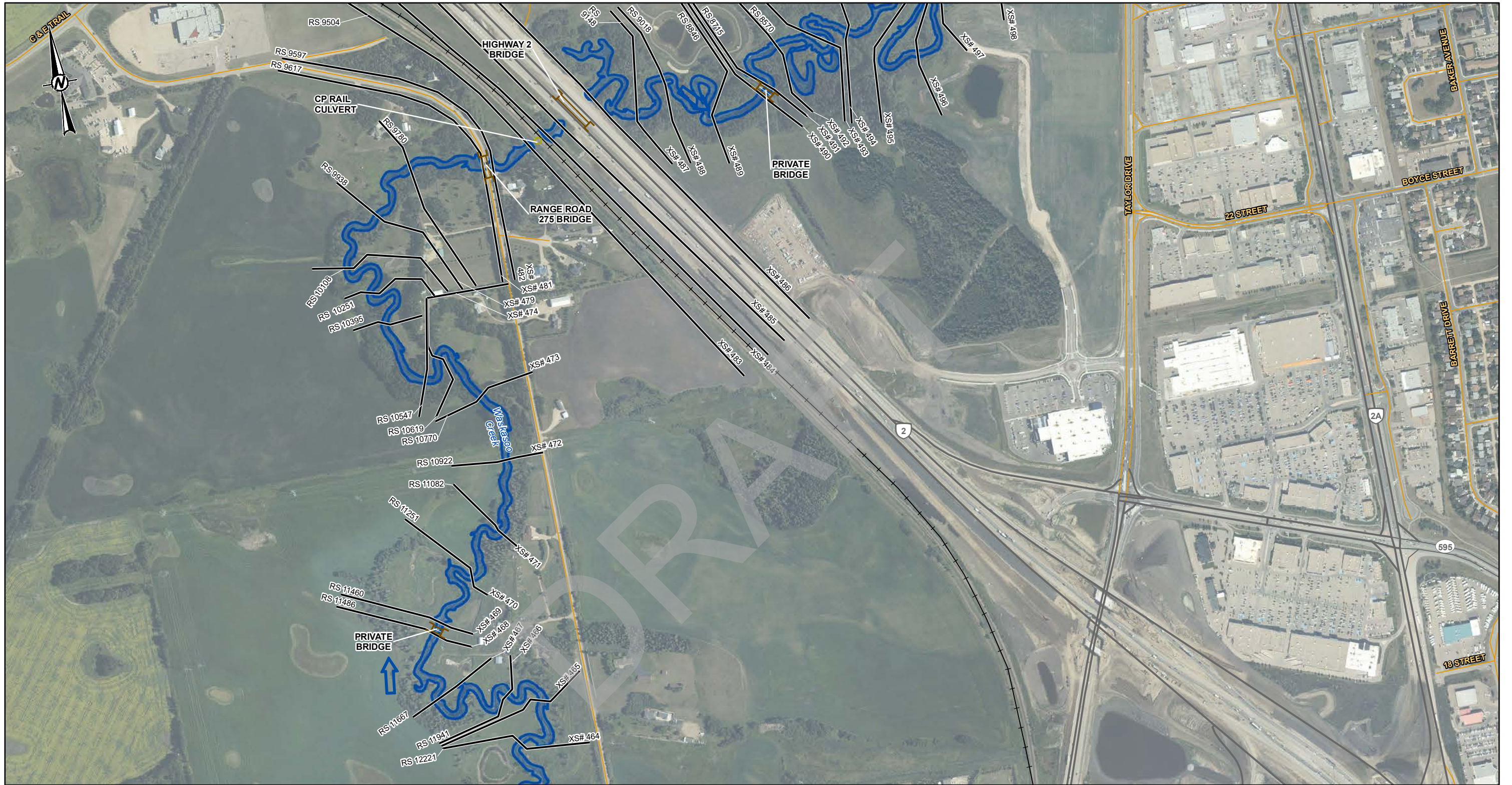
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**10-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

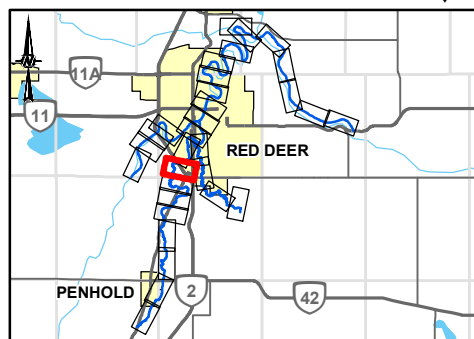
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		10-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		10-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M³/S



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

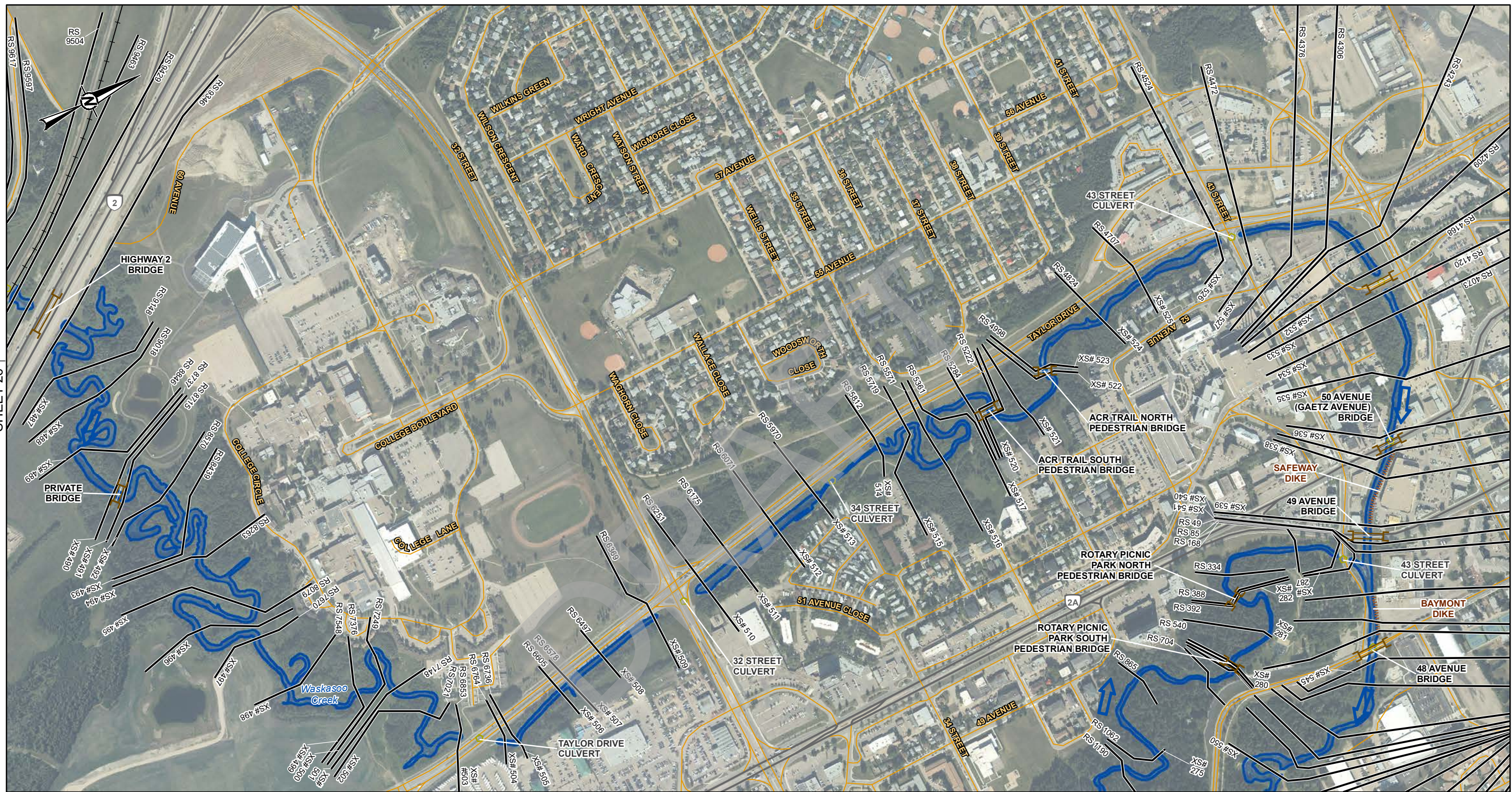
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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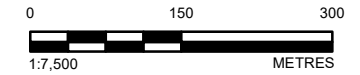
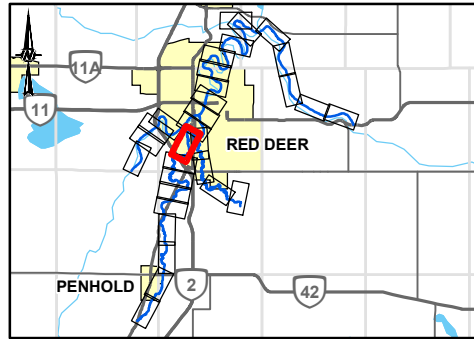
SHEET 26 ↑

↓ SHEET 5

SHEET 31 ↓

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	Xs#100 CROSS SECTION NUMBER
	RS 304 RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE

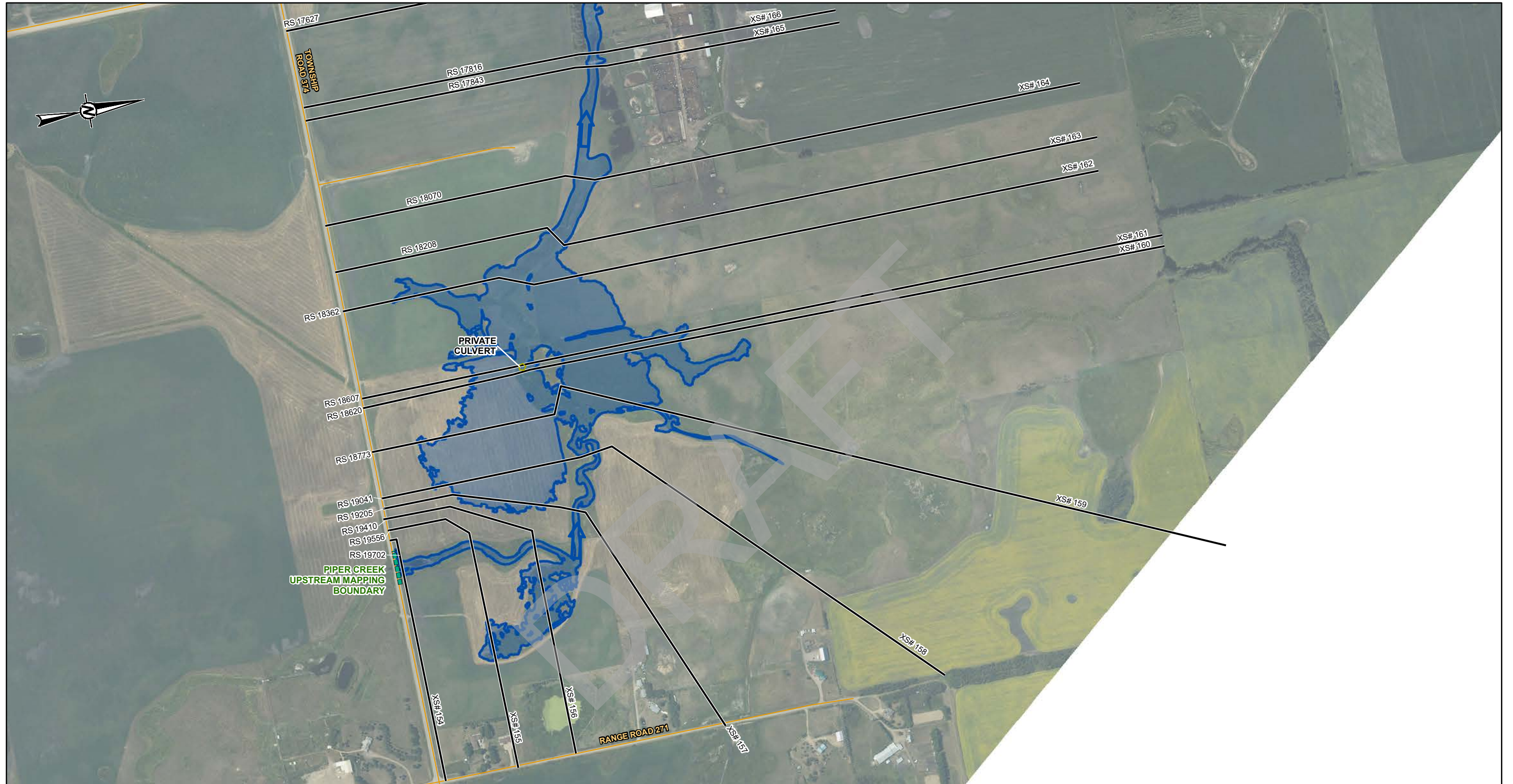
DISCHARGE
 WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 19.8 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 7.21 M³/S



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

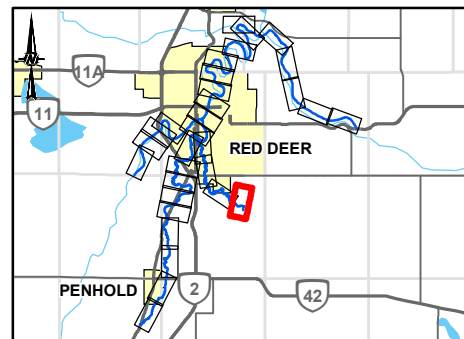
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 27 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	10-YEAR FLOOD INUNDATION EXTENT
	10-YEAR FLOOD EXTENT
	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE

DISCHARGE
PIPER CREEK ABOVE HIGHWAY 595 = 6.55 M³/S



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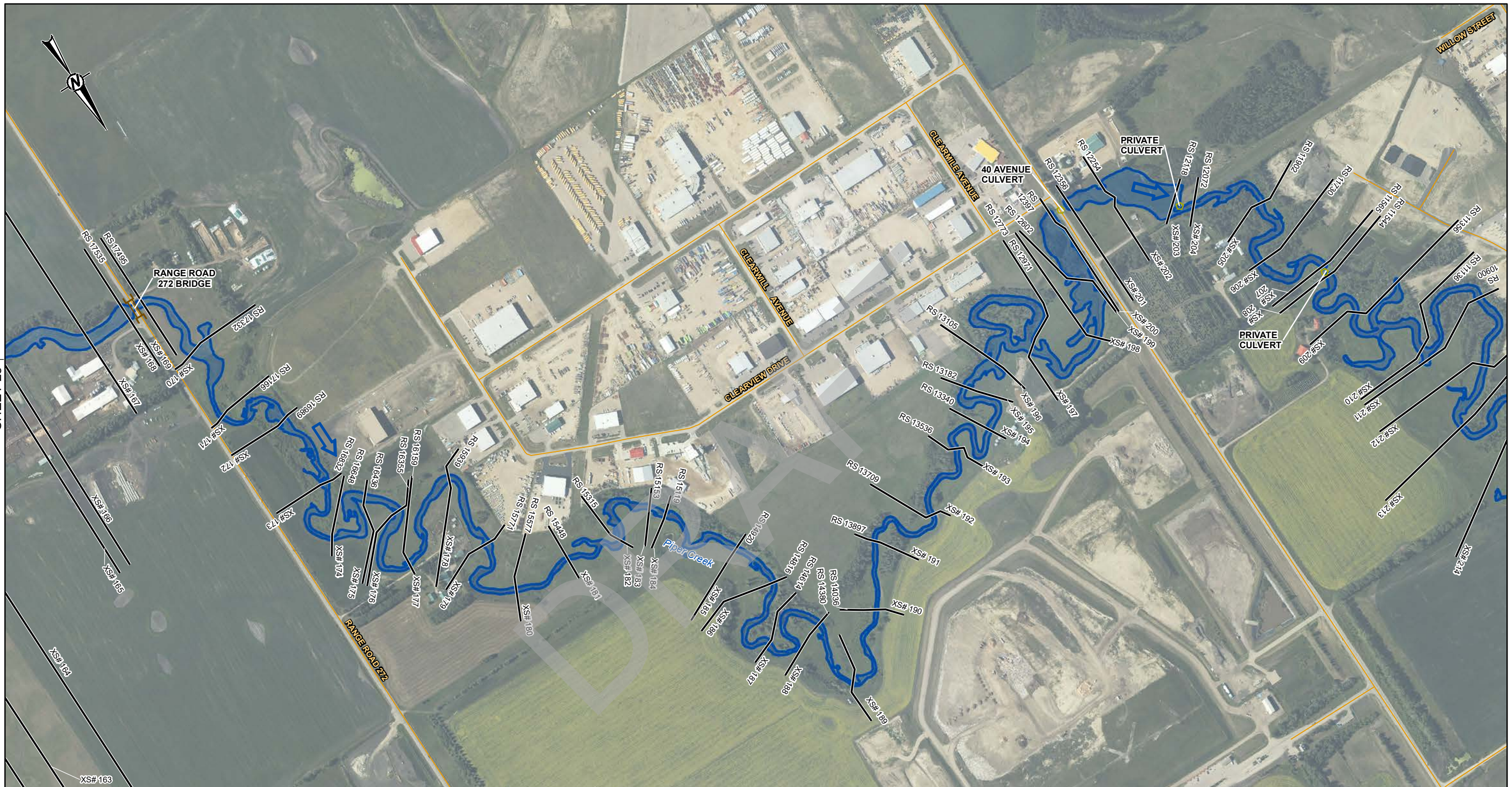
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REVIEWED	GT
APPROVED	WP

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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**10-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31



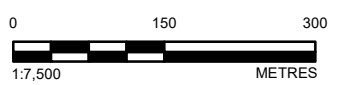
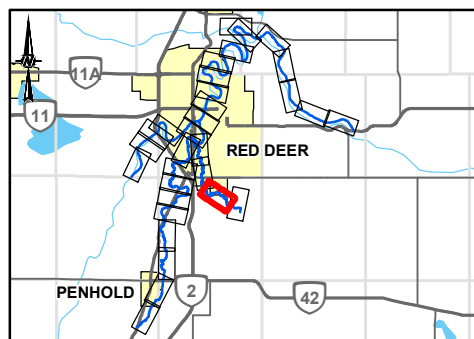
SHEET 28

SHEET 30

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LEGEND		
CROSS SECTION	FLOOD CONTROL STRUCTURE	10-YEAR FLOOD INUNDATION EXTENT
CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	10-YEAR FLOOD EXTENT
RIVER STATION (M)	CULVERT	10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 6.55 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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GOLDER

Alberta Government

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

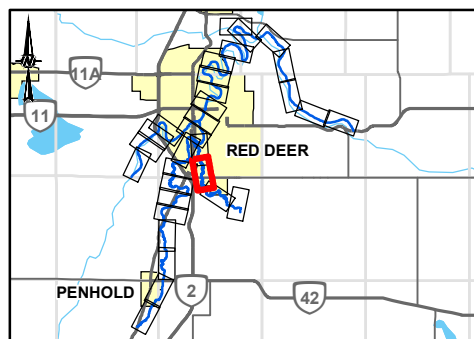
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31



SHEET 30

SHEET 31

LEGEND		10-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION		10-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER		10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)		
	STUDY BOUNDARY		
	FLOW DIRECTION		
	LOCAL ROAD		
	PRIMARY HIGHWAY		
	SECONDARY HIGHWAY		
	RAILWAY		
	FLOOD CONTROL STRUCTURE		
	CULVERT		
	BRIDGE		
	DISCHARGE		
	PIPER CREEK ABOVE HIGHWAY 595 = 6.55 M ³ /S		
	PIPER CREEK ABOVE WASKASOO CREEK = 7.21 M ³ /S		

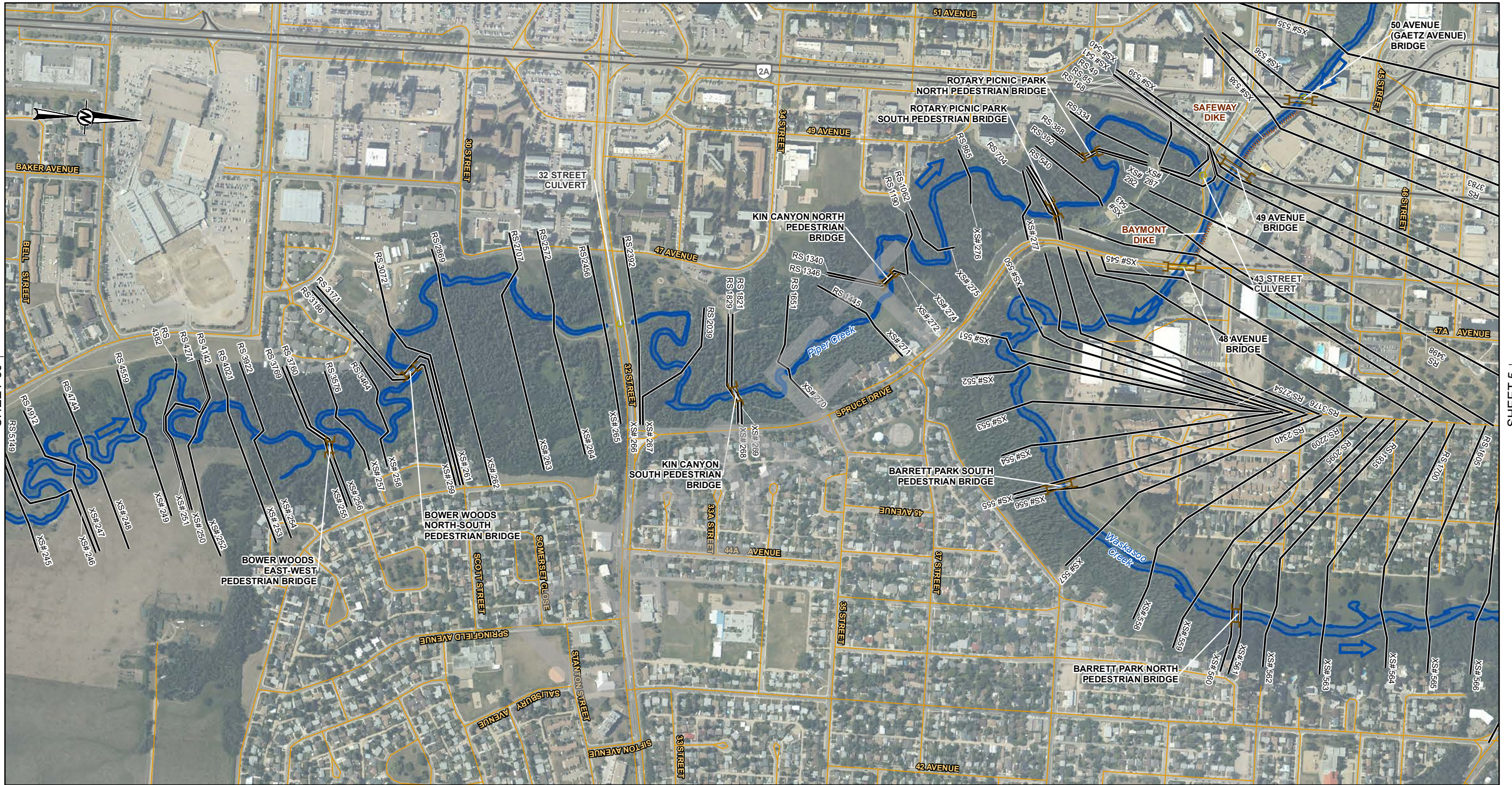


CLIENT	ALBERTA ENVIRONMENT AND PARKS	ALBERTA Government
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
10-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

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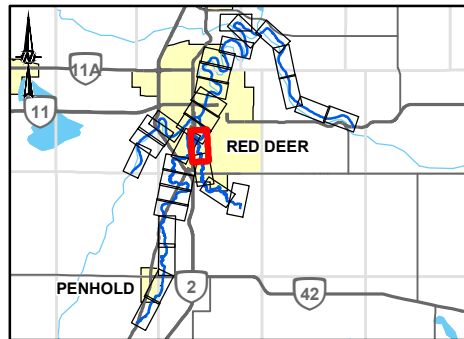
SHEET 30 ↑

↑ SHEET 5

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- ▬ STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- ⬮ HYDRAULIC STRUCTURES
- ⬮ CULVERT
- ⬮ BRIDGE
- 10-YEAR FLOOD INUNDATION EXTENT
- 10-YEAR FLOOD EXTENT
- 10-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 PIPER CREEK ABOVE WASKASOO CREEK = 7.21 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 13.7 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 19.8 M³/S



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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**10-YEAR FLOOD INUNDATION EXTENT
 REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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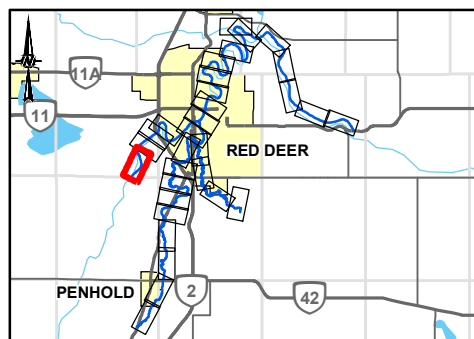
SHEETS 1-31

20-Year Flood Inundation Extent

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LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
—	STUDY BOUNDARY	—
➔	FLOW DIRECTION	—
—	LOCAL ROAD	—
—	PRIMARY HIGHWAY	—
—	SECONDARY HIGHWAY	—
+	RAILWAY	—
		20-YEAR FLOOD INUNDATION EXTENT
		■ 20-YEAR FLOOD EXTENT
		■ 20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER ABOVE WASKASOO CREEK = 720 M ³ /S



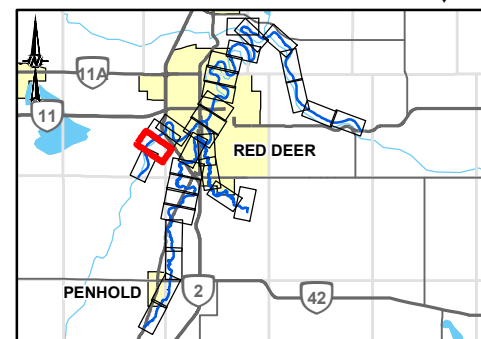
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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 1 OF 31	



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	20-YEAR FLOOD INUNDATION EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 720 M ³ /S
	CULVERT
	BRIDGE
	20-YEAR FLOOD EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)



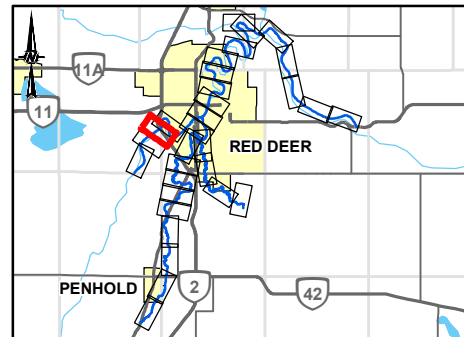
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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
—+—	RAILWAY	
		20-YEAR FLOOD INUNDATION EXTENT
		▬ 20-YEAR FLOOD EXTENT
		▬▬ 20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER ABOVE WASKASOO CREEK = 720 M ³ /S



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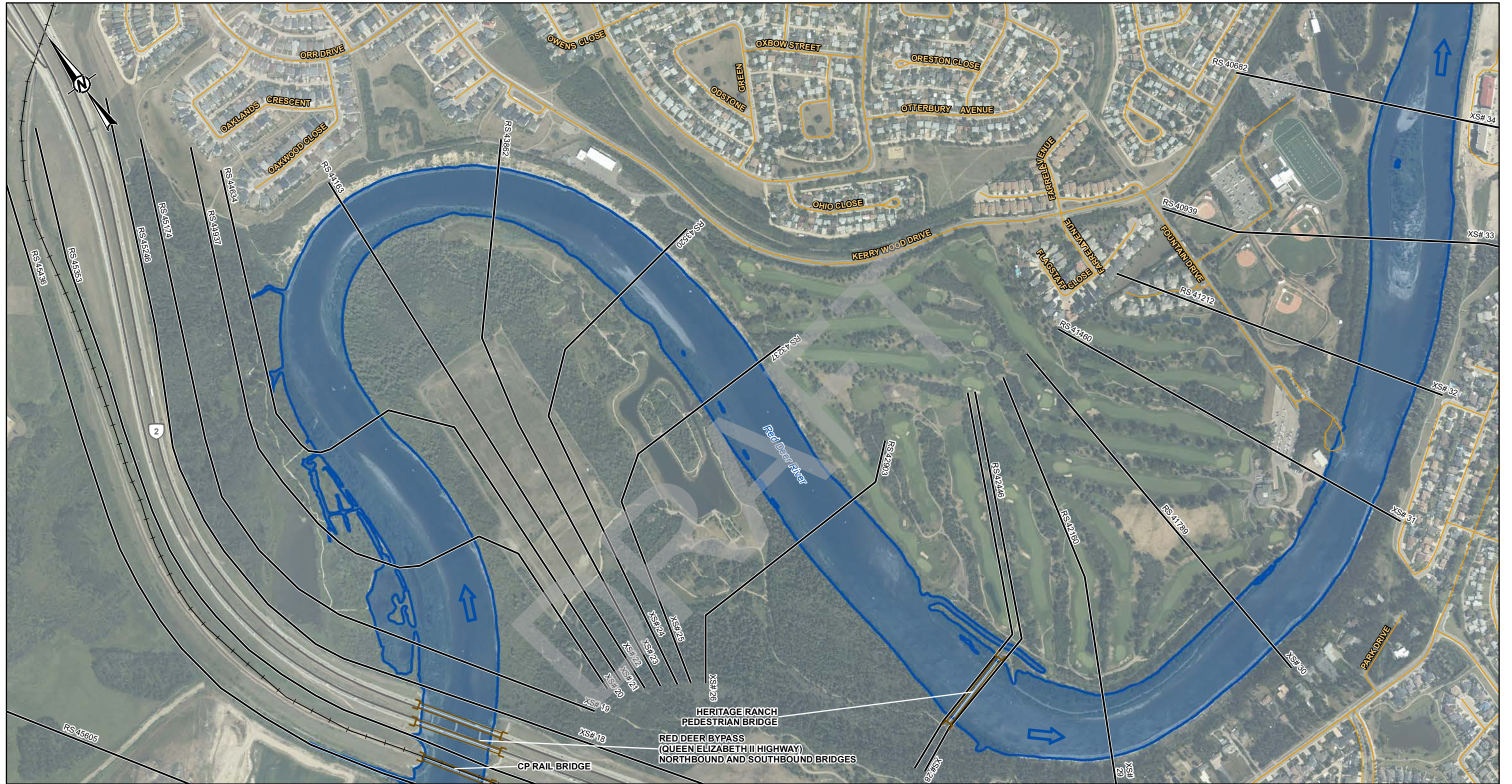
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**20-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

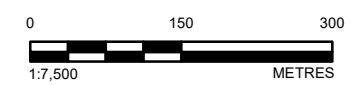
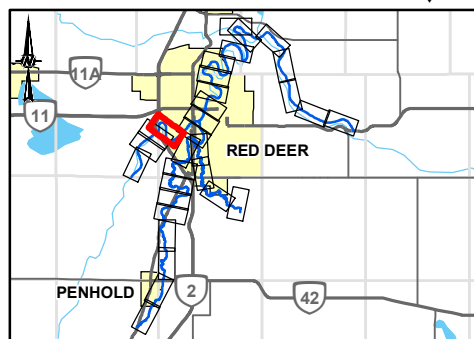
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31



LEGEND

—	CROSS SECTION	▬▬▬	FLOOD CONTROL STRUCTURE		20-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)		CULVERT		
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 720 M³/S



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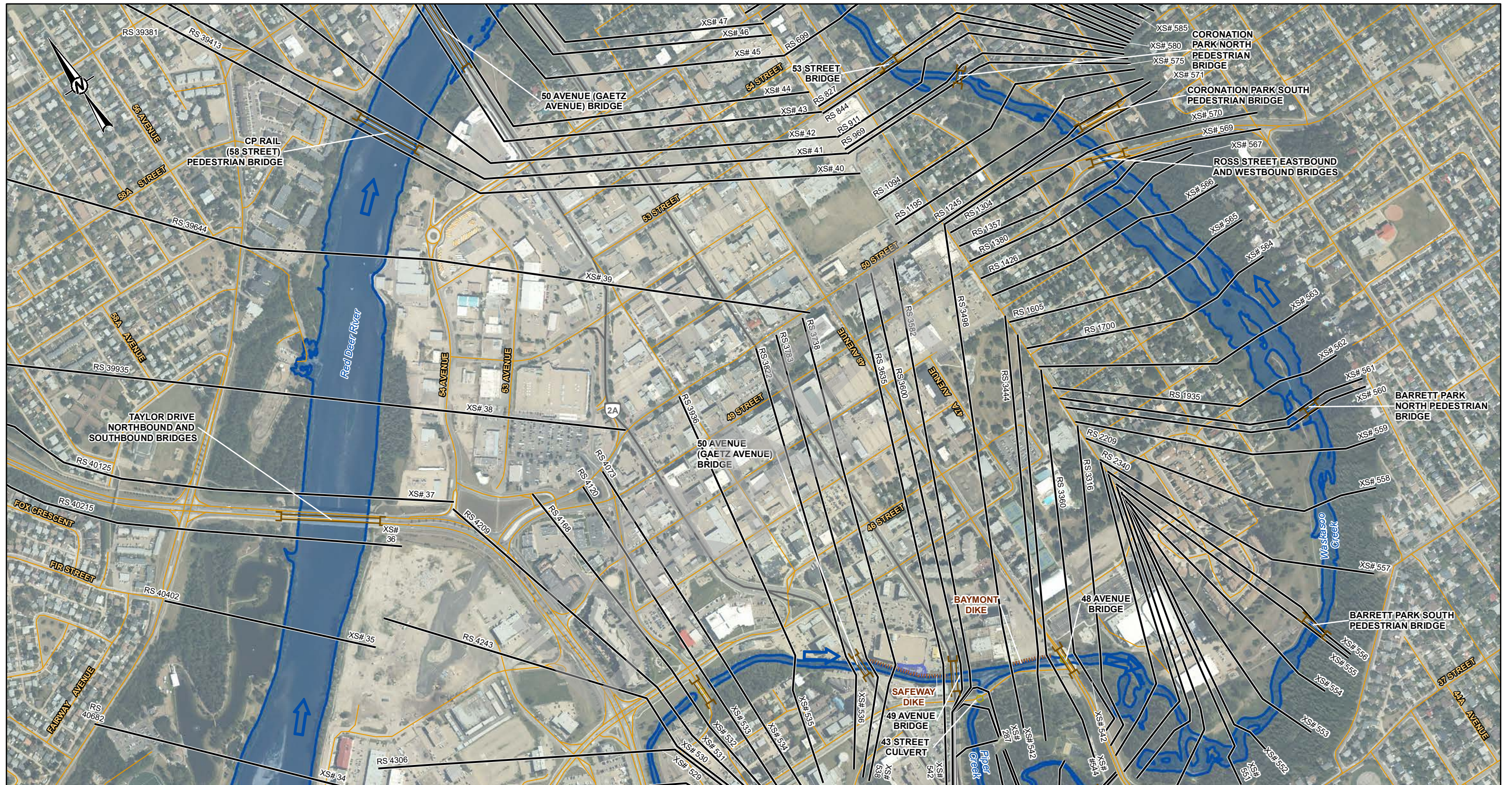
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31

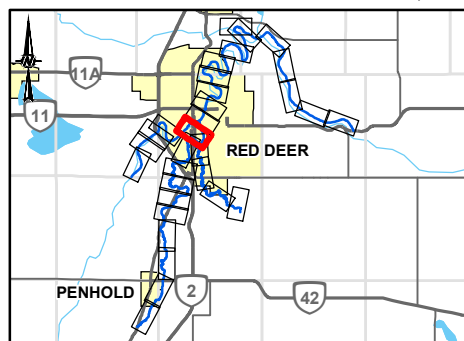
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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	20-YEAR FLOOD INUNDATION EXTENT
	20-YEAR FLOOD EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 720 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 28.3 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 10.3 M³/S



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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 5 OF 31	

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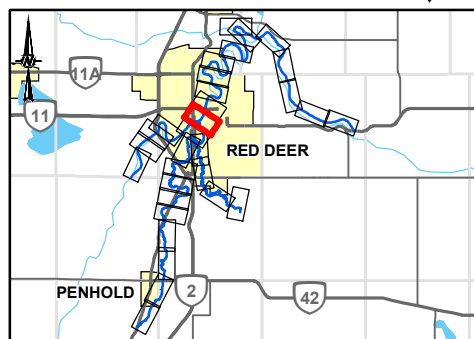
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LEGEND

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XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)				20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		CULVERT		
	FLOW DIRECTION		BRIDGE		
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 720 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 721 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 28.3 M³/S



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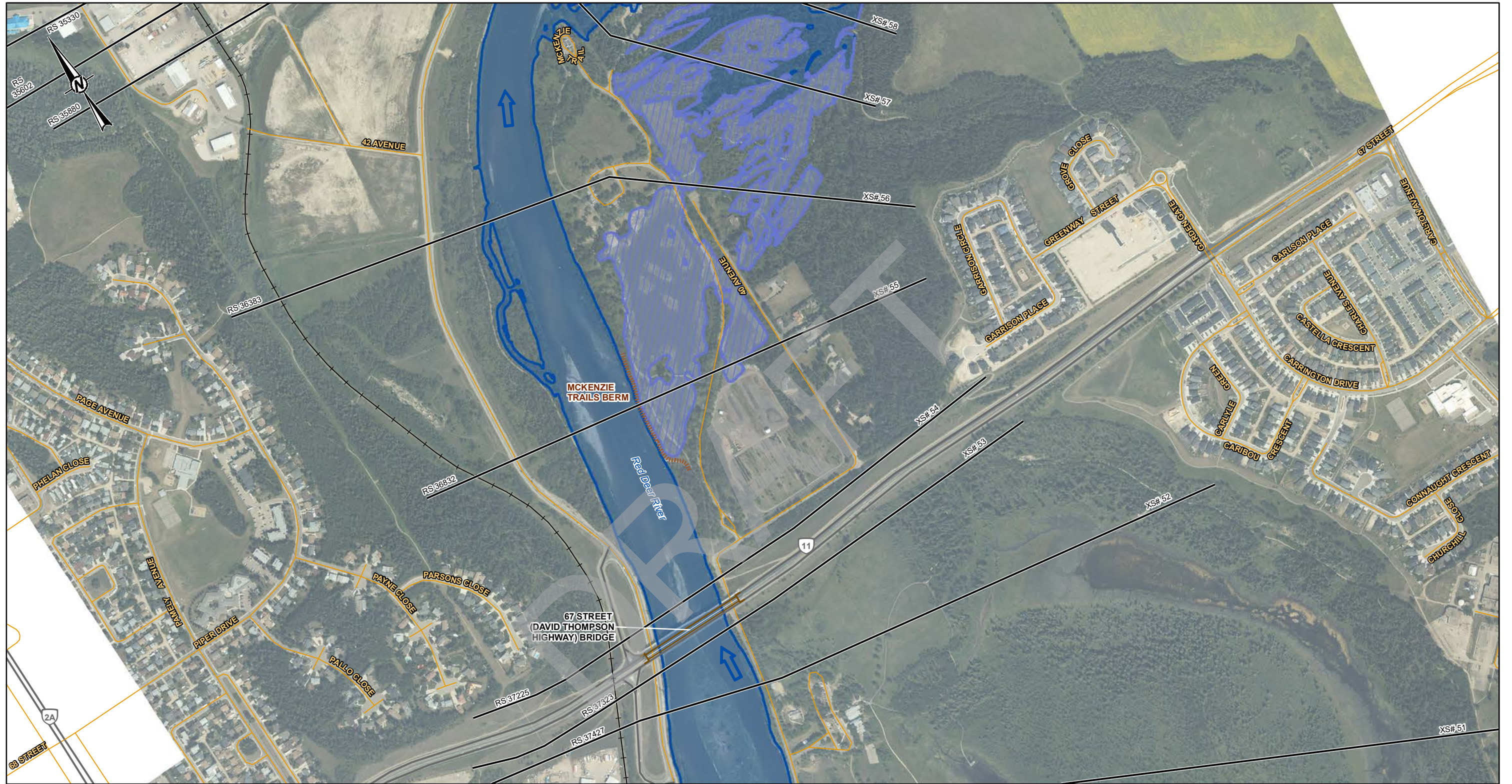
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

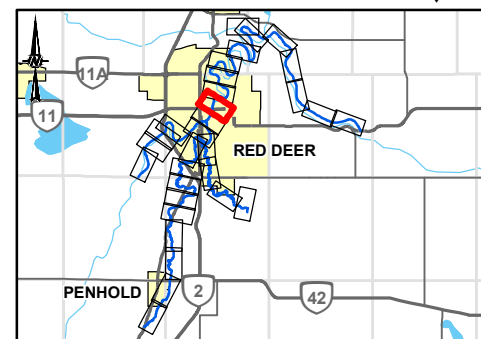
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		20-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)		CULVERT		
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 721 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

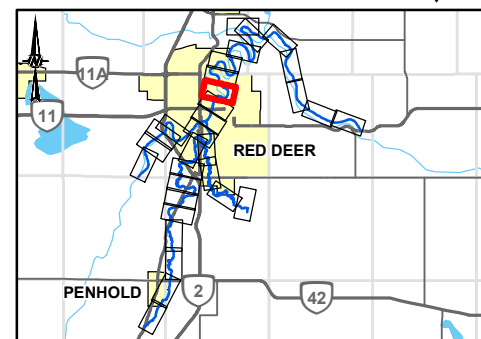
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	20-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	20-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW WASKASOO CREEK = 721 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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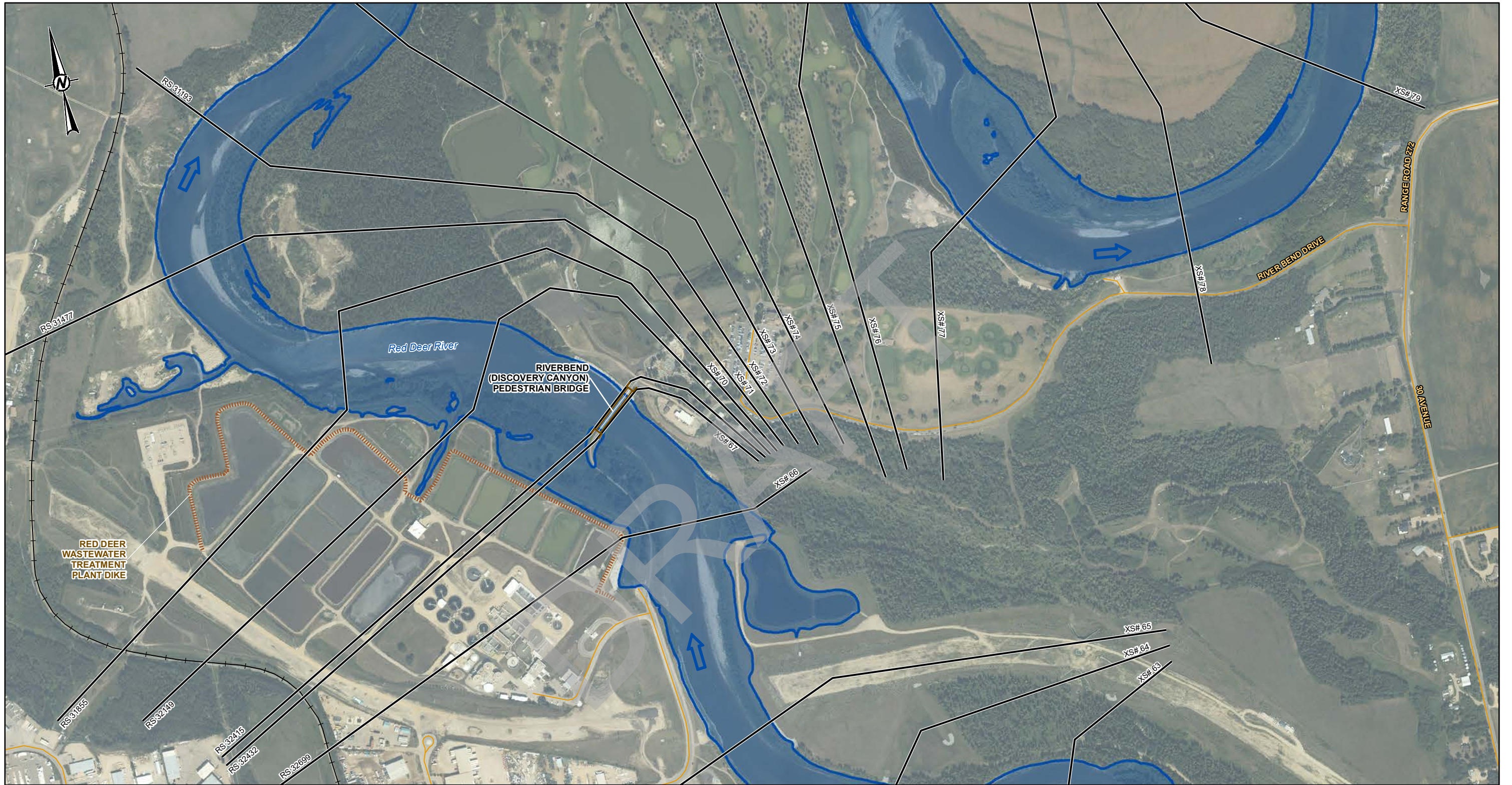
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31

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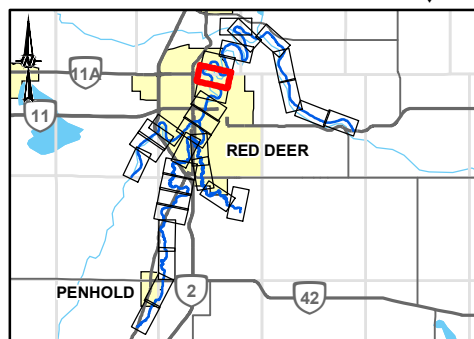
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LEGEND

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Xs#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 721 M³/S



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ALBERTA Government

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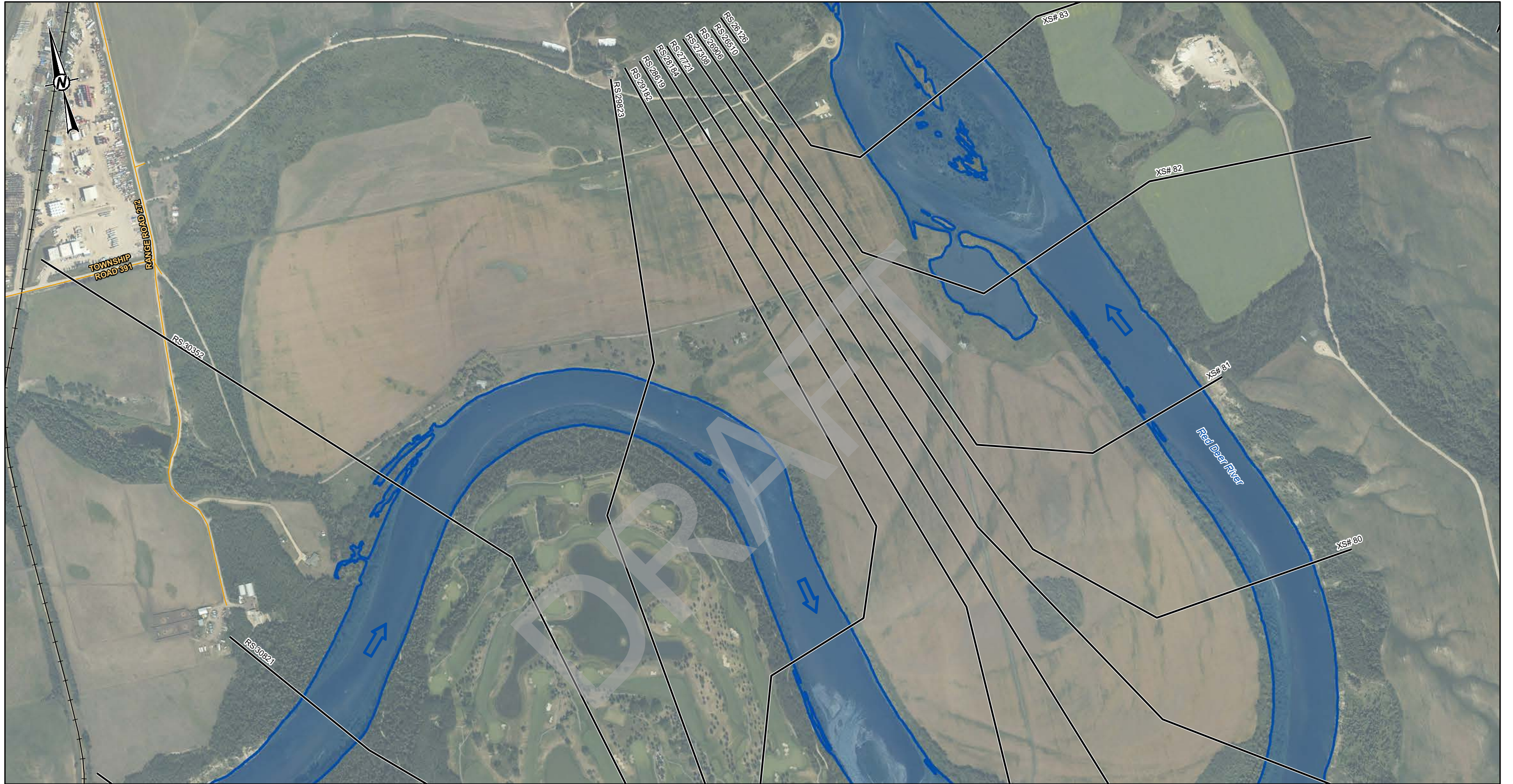
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PROJECT
RED DEER RIVER HAZARD STUDY

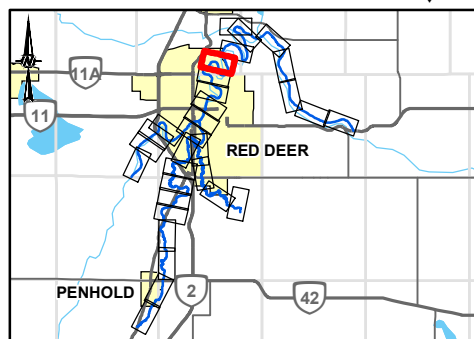
TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31

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LEGEND	
—	CROSS SECTION
XXXX	FLOOD CONTROL STRUCTURE
RS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
▬▬▬	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
▬▬▬	HYDRAULIC STRUCTURES
○	CULVERT
▬▬▬	BRIDGE
▬▬▬	20-YEAR FLOOD INUNDATION EXTENT
▬▬▬	20-YEAR FLOOD EXTENT
▬▬▬	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 721 M ³ /S	

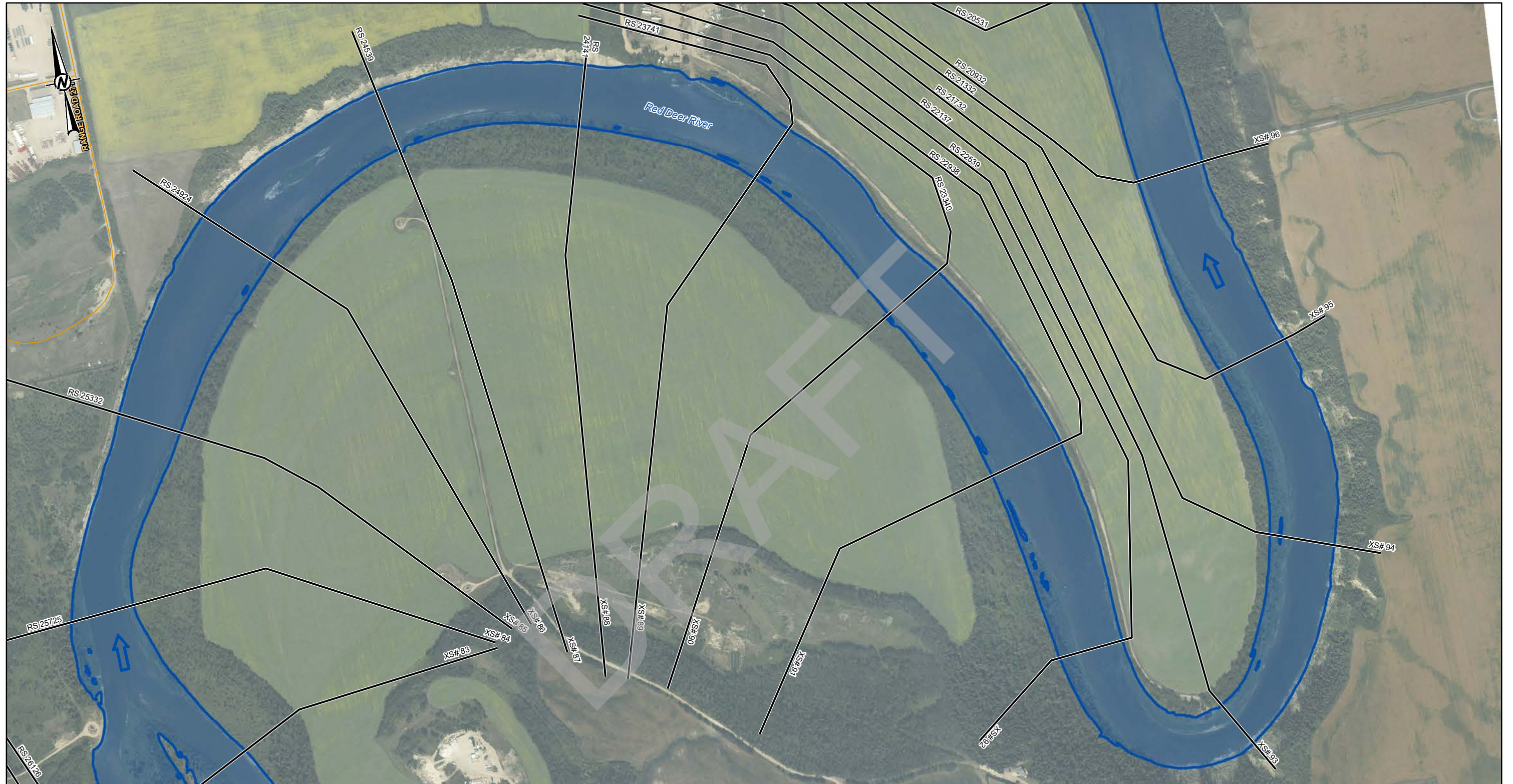


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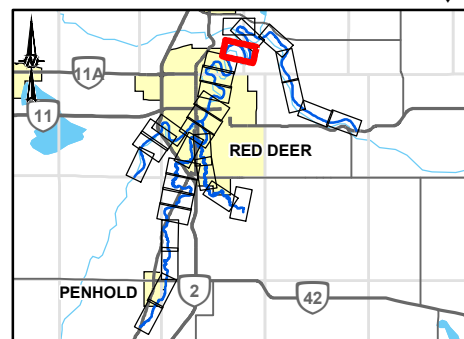
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PROJECT		
RED DEER RIVER HAZARD STUDY		
TITLE		
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE		SHEET 10 OF 31

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25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	20-YEAR FLOOD INUNDATION EXTENT
■	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 721 M ³ /S	



CLIENT
ALBERTA ENVIRONMENT
AND PARKS



CONSULTANT



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PREPARED	NB
REVIEWED	GT
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REFERENCE(S)
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**20-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

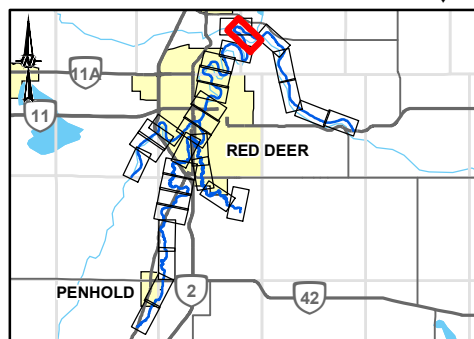
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SHEET 13 ↑

↓ SHEET 14

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	20-YEAR FLOOD INUNDATION EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	BRIDGE
	CULVERT
	DISCHARGE
	DISCHARGE



↓ SHEET 11



CLIENT	ALBERTA ENVIRONMENT AND PARKS
CONSULTANT	GOLDER
DATE	2022-11-23
DESIGNED	PT
PREPARED	NB
REVIEWED	GT
APPROVED	WP

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 12 OF 31

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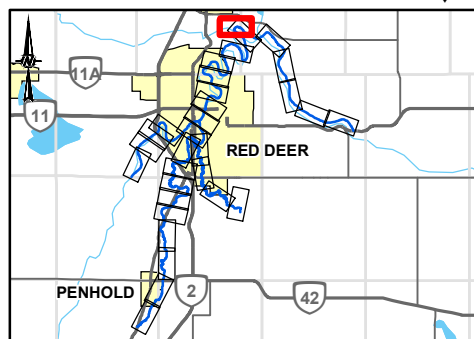
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SHEET 14 ↓

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		20-YEAR FLOOD INUNDATION EXTENT
		■ 20-YEAR FLOOD EXTENT
		▨ 20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW WASKASOO CREEK = 721 M ³ /S
		RED DEER RIVER BELOW BLINDMAN RIVER = 782 M ³ /S

SHEET 12 ↓



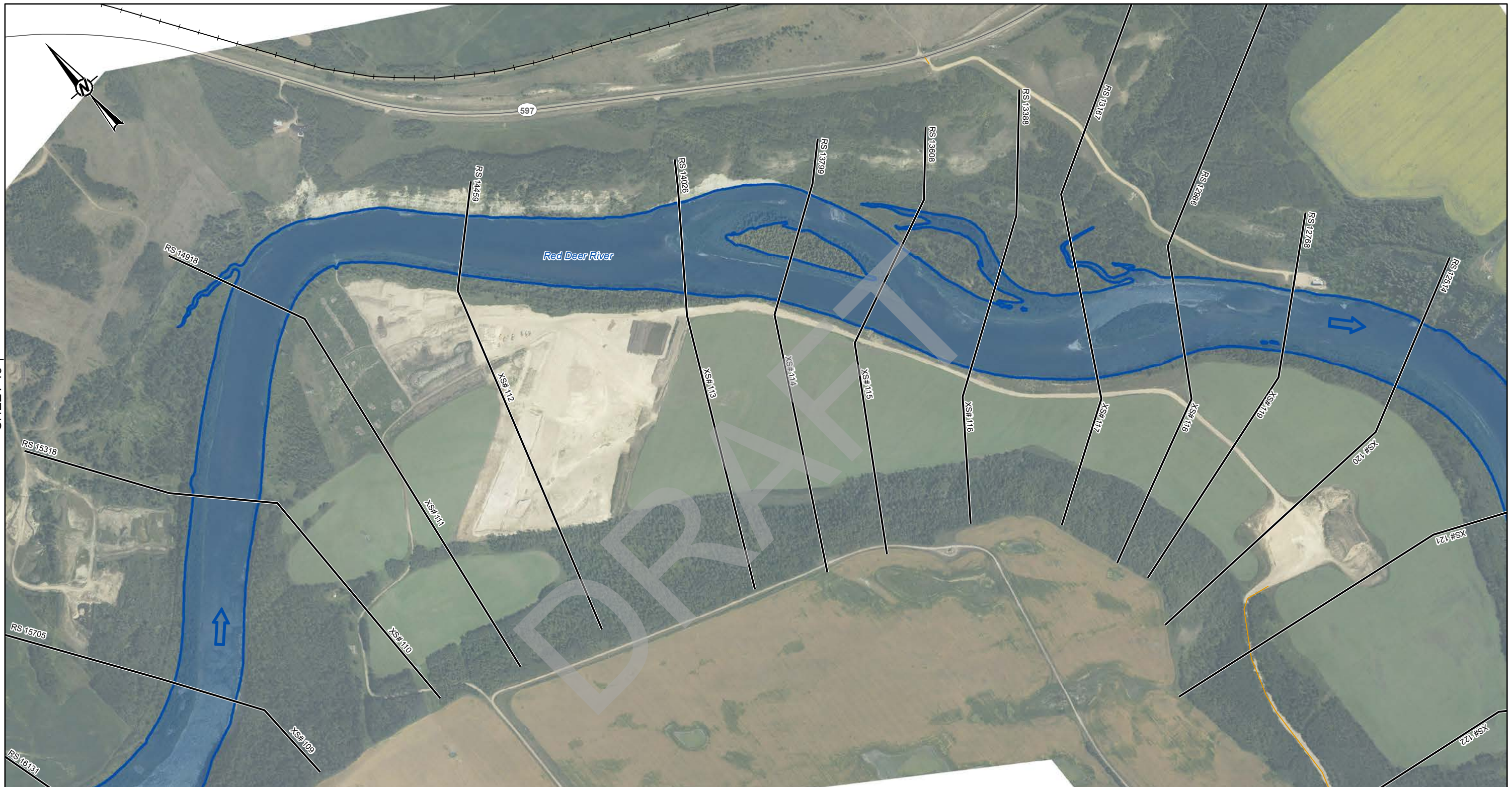
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CONSULTANT	GOLDER	
DESIGNED	YYYY-MM-DD	2022-11-23
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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 13 OF 31	

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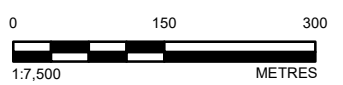
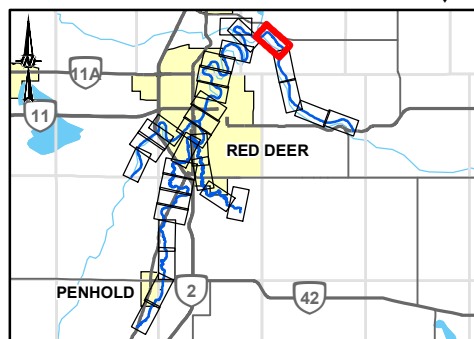


SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	20-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 782 M ³ /S	

SHEET 12 ↓



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 14 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

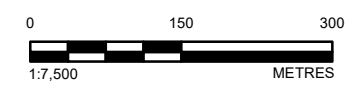
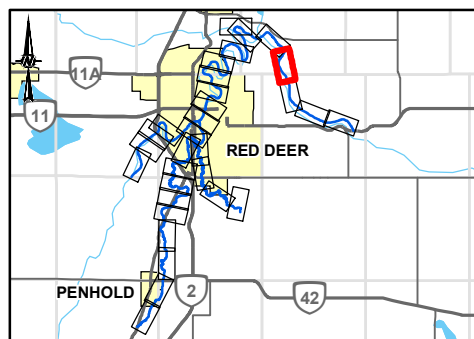
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LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		20-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT
	RIVER STATION (M)		CULVERT		20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW BLINDMAN RIVER = 782 M³/S



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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
 20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

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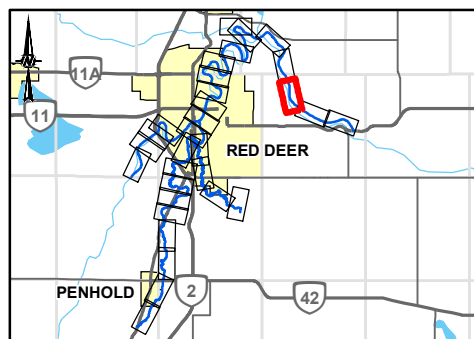
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 SHEET 15 ↑



↓ SHEET 17

LEGEND	
	CROSS SECTION
	20-YEAR FLOOD INUNDATION EXTENT
	20-YEAR FLOOD EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)

DISCHARGE
 RED DEER RIVER BELOW BLINDMAN RIVER = 782 M³/S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DATE	2022-11-23	
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APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 16 OF 31

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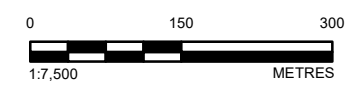
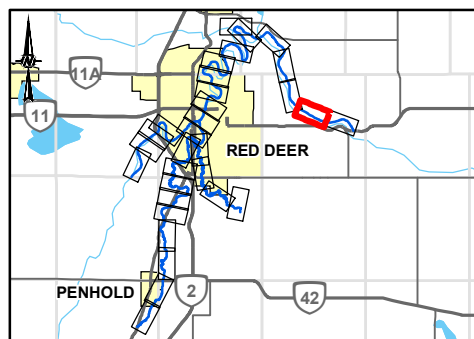
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬▬▬	20-YEAR FLOOD INUNDATION EXTENT	
▬▬▬	20-YEAR FLOOD EXTENT	
▬▬▬	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 782 M ³ /S	



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AND PARKS



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**20-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

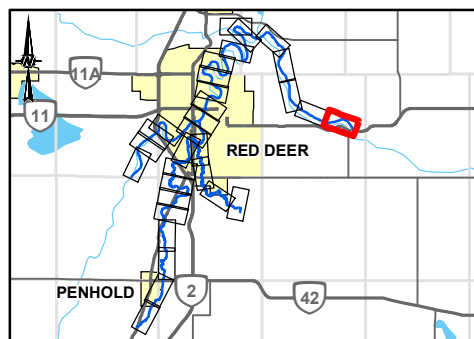
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SHEET 17 ↑



LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		20-YEAR FLOOD INUNDATION EXTENT
		▬ 20-YEAR FLOOD EXTENT
		▬ 20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 782 M ³ /S



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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

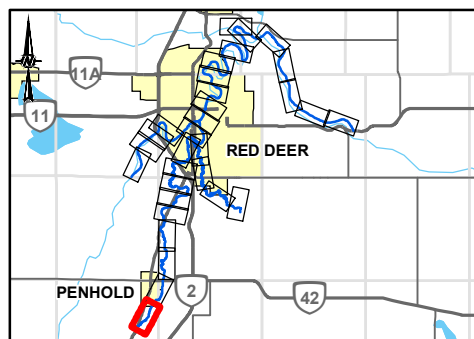
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SHEET 20

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LEGEND		
CROSS SECTION	FLOOD CONTROL STRUCTURE	20-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	20-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 17 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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SHEET 19 ↑

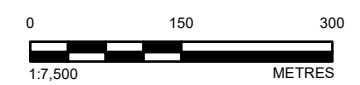
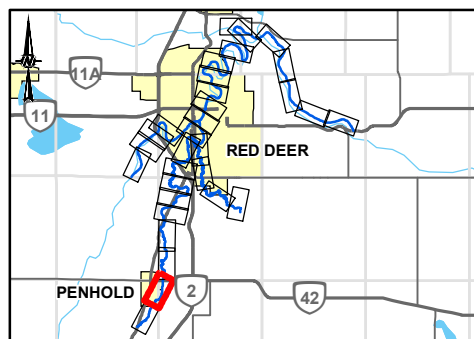
↓ SHEET 21

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LEGEND		
— CROSS SECTION	▬ FLOOD CONTROL STRUCTURE	20-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	■ 20-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	○ CULVERT	▨ 20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
▬ STUDY BOUNDARY	▬ BRIDGE	
➔ FLOW DIRECTION		
— LOCAL ROAD		
— PRIMARY HIGHWAY		
— SECONDARY HIGHWAY		
— RAILWAY		

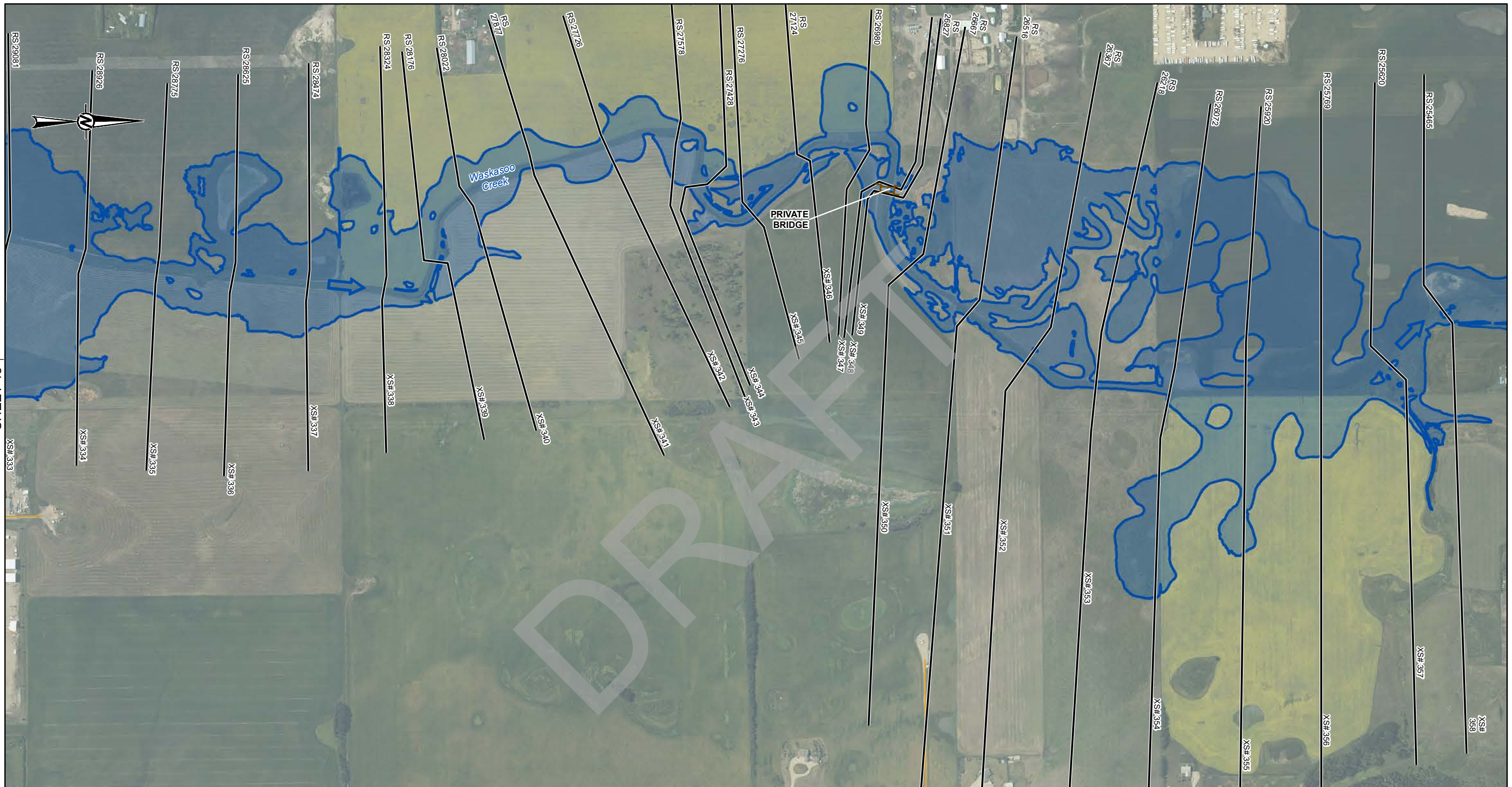
DISCHARGE
 WASKASOO CREEK ABOVE HIGHWAY 42 = 17 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M³/S



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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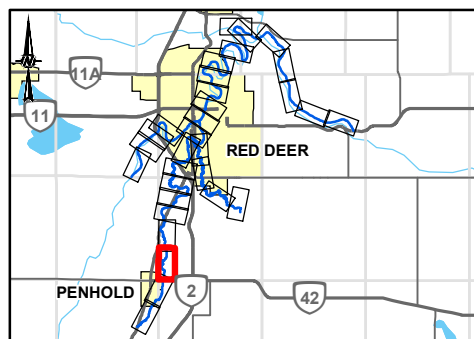
SHEET 18 ↑

↑ SHEET 22

LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		20-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M³/S



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ALBERTA ENVIRONMENT AND PARKS

CONSULTANT
GOLDER

Alberta Government

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PREPARED	NB
REVIEWED	GT
APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

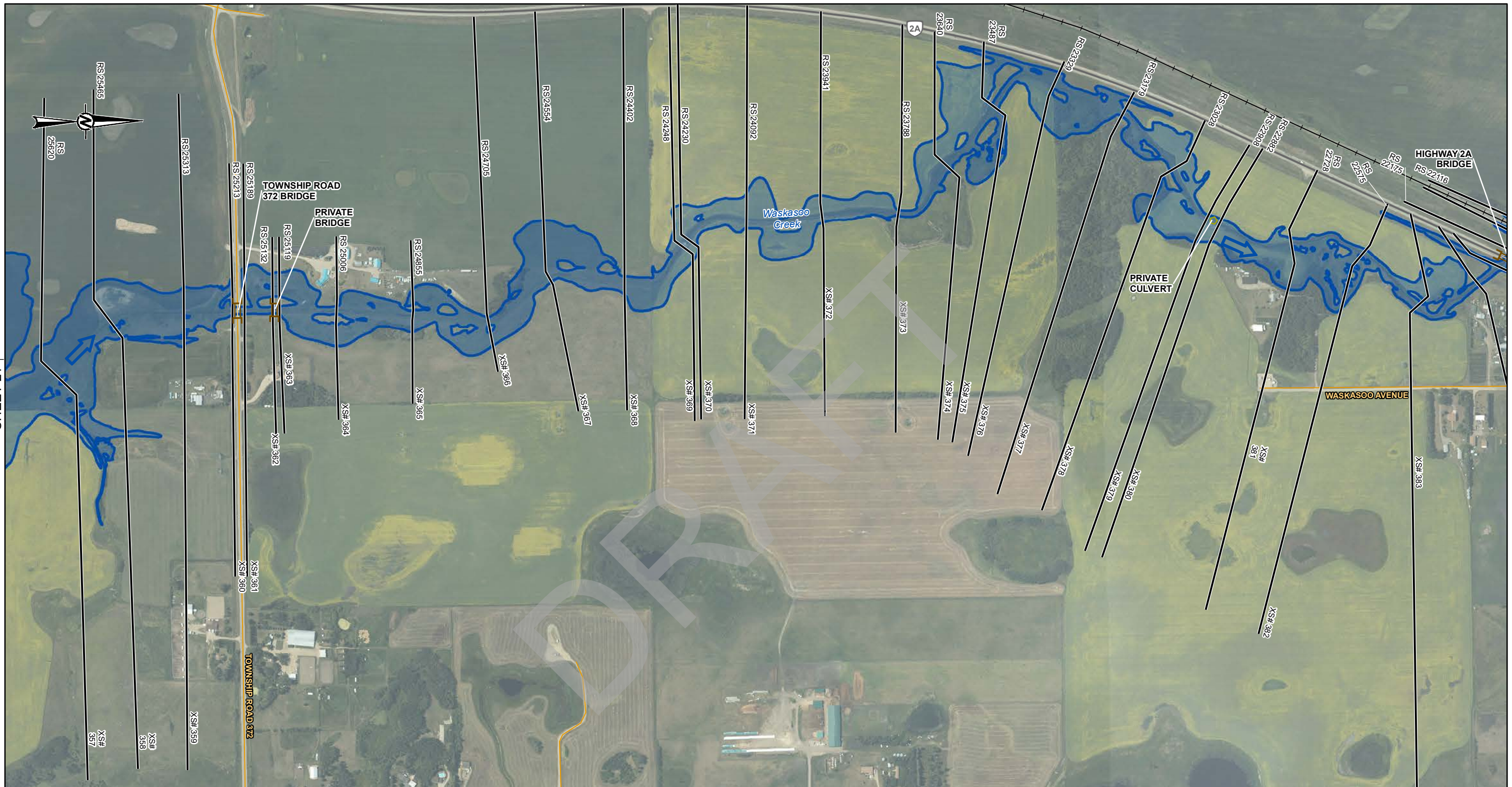
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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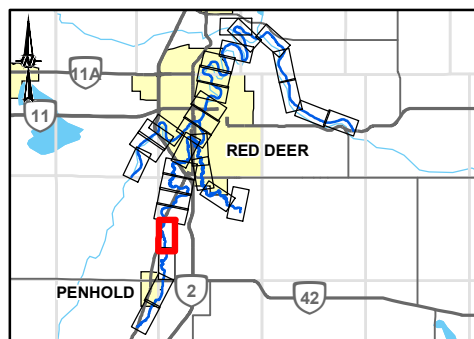
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	20-YEAR FLOOD INUNDATION EXTENT	
	■ 20-YEAR FLOOD EXTENT	
	■ 20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M ³ /S	



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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

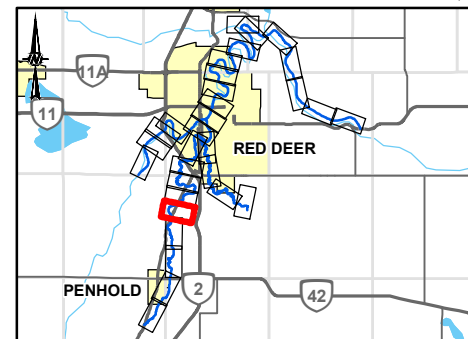
REFERENCE(S)
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 22 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	20-YEAR FLOOD INUNDATION EXTENT
	20-YEAR FLOOD EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M ³ /S	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**20-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

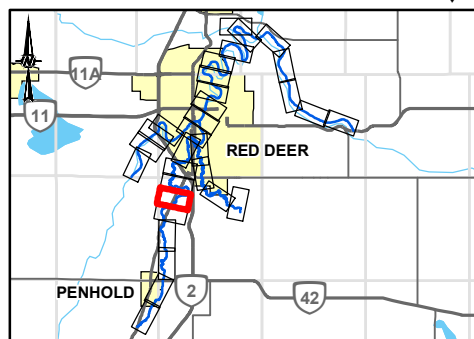
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		20-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M³/S



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31

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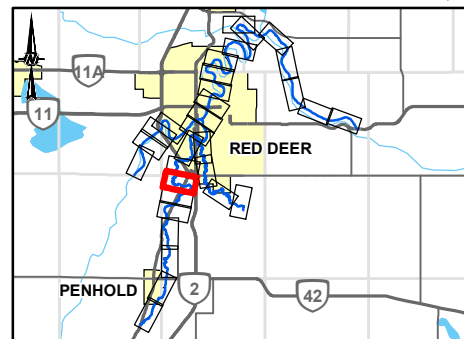
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		20-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		20-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M³/S



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ALBERTA ENVIRONMENT
AND PARKS



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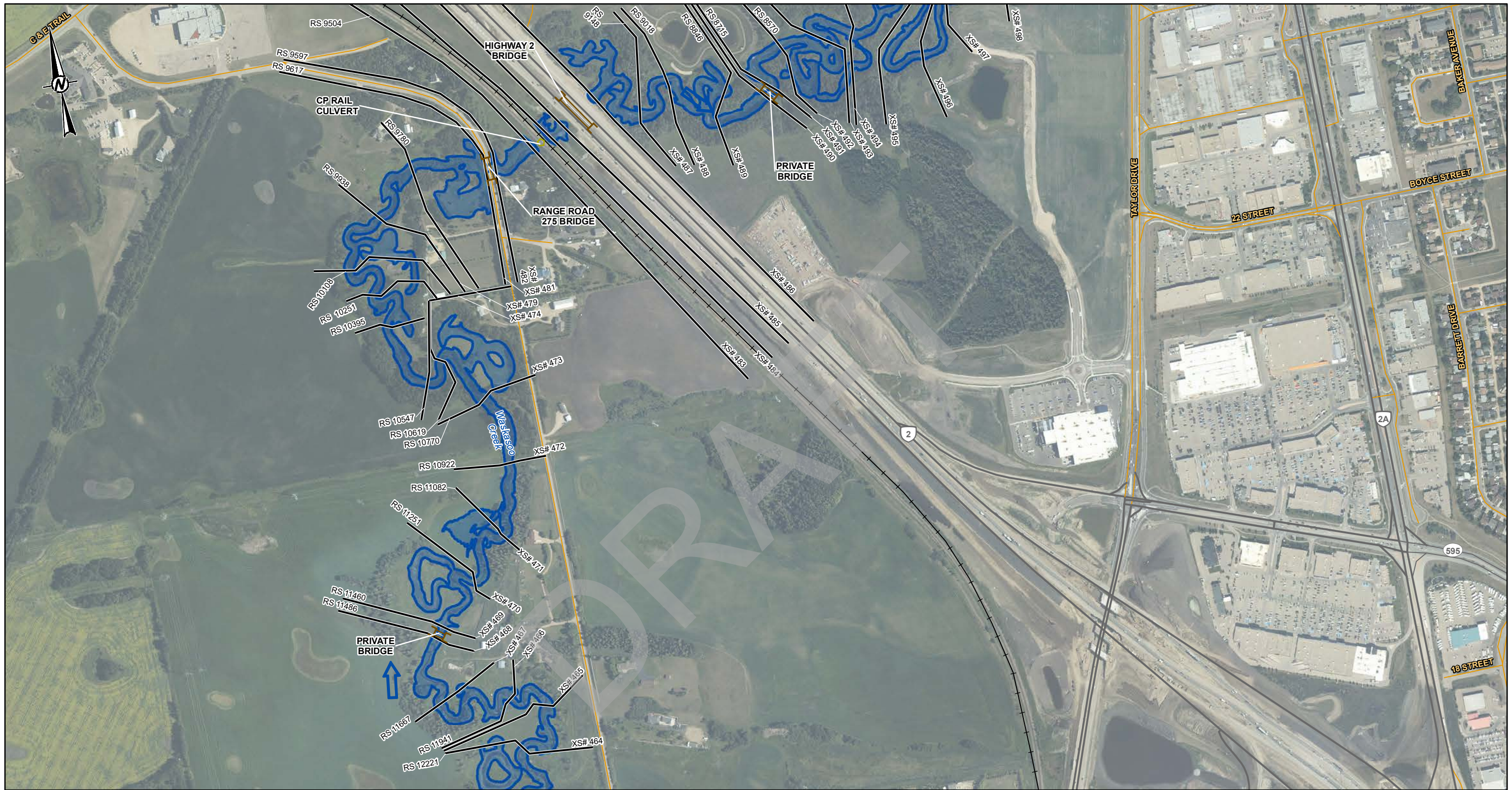
YYYY-MM-DD	2022-11-23
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PREPARED	NB
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

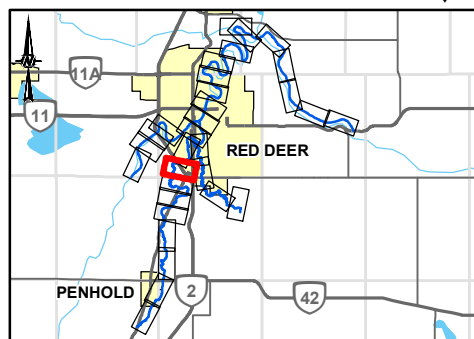
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**20-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31



LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	20-YEAR FLOOD INUNDATION EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M ³ /S	



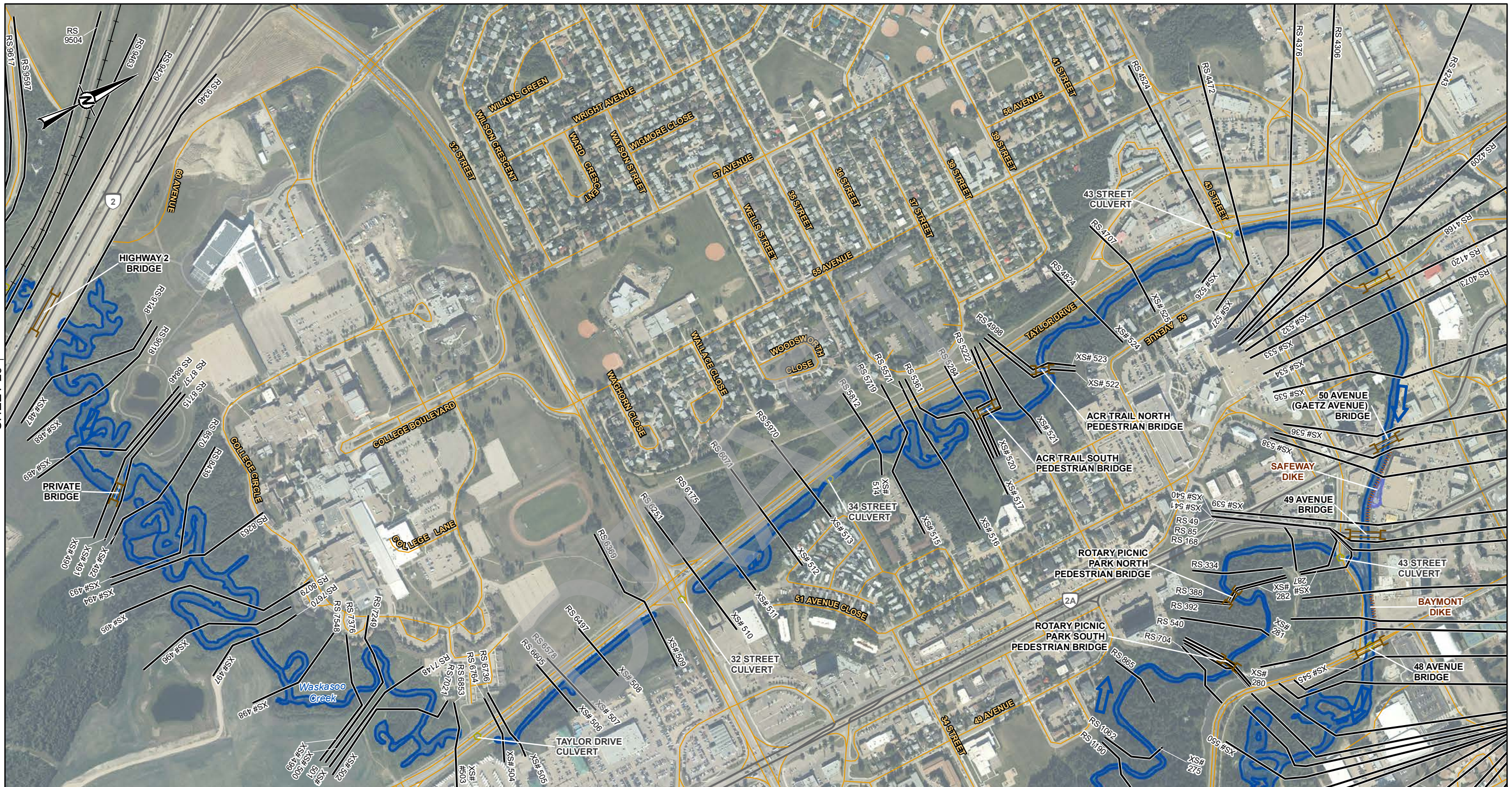
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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PROJECT RED DEER RIVER HAZARD STUDY			
TITLE 20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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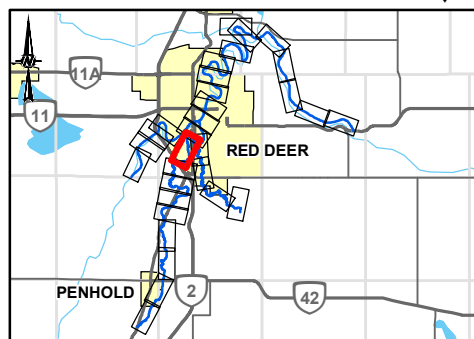


SHEET 26 ↑

↓ SHEET 5

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	20-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	HYDRAULIC STRUCTURES
	CULVERT
	BRIDGE
	20-YEAR FLOOD EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 28.3 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 10.3 M³/S



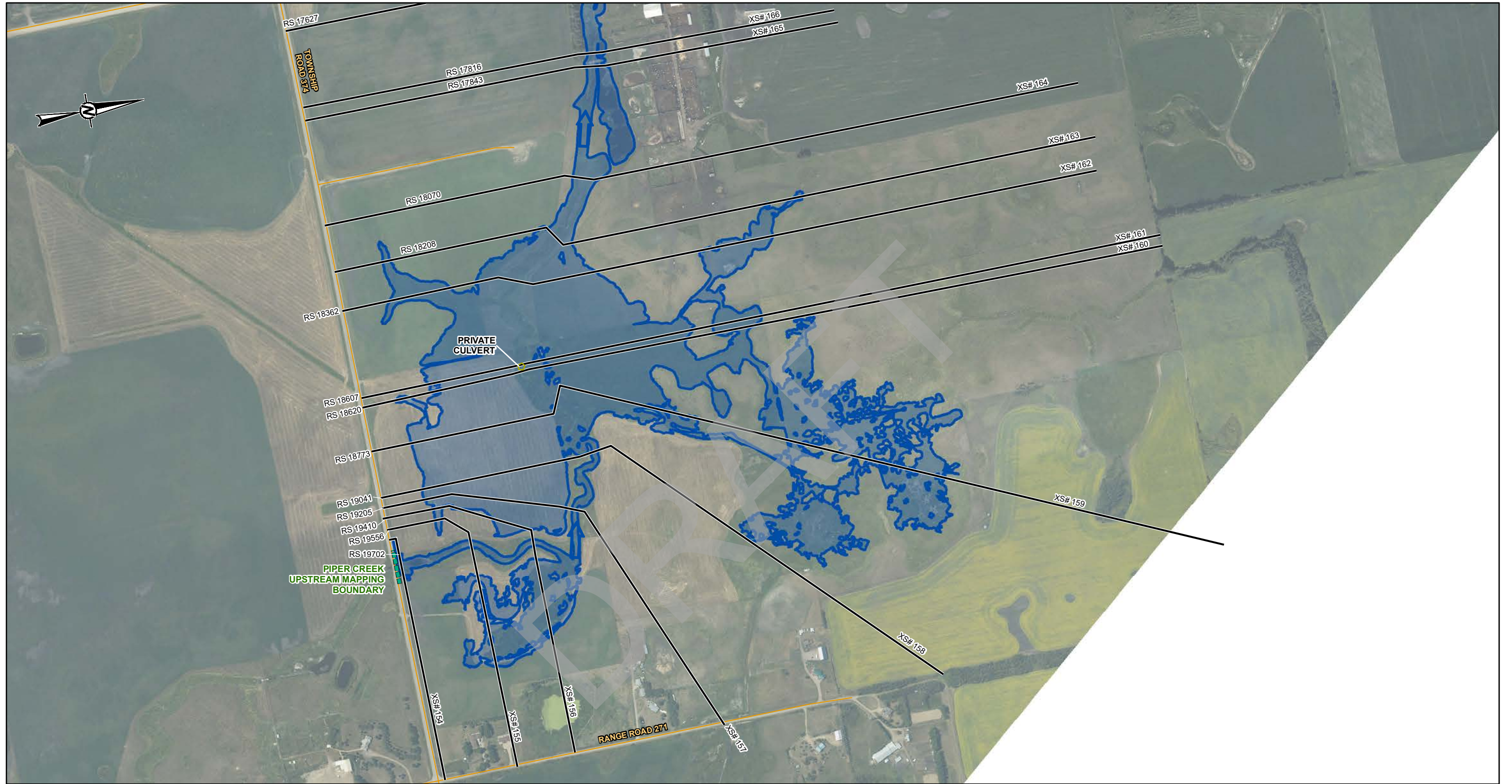
SHEET 31 ↓



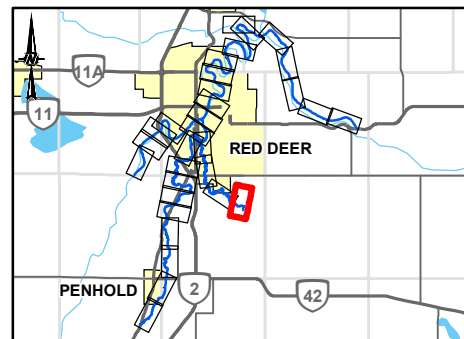
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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 27 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	20-YEAR FLOOD INUNDATION EXTENT
	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
PIPER CREEK ABOVE HIGHWAY 595 = 9.39 M ³ /S	



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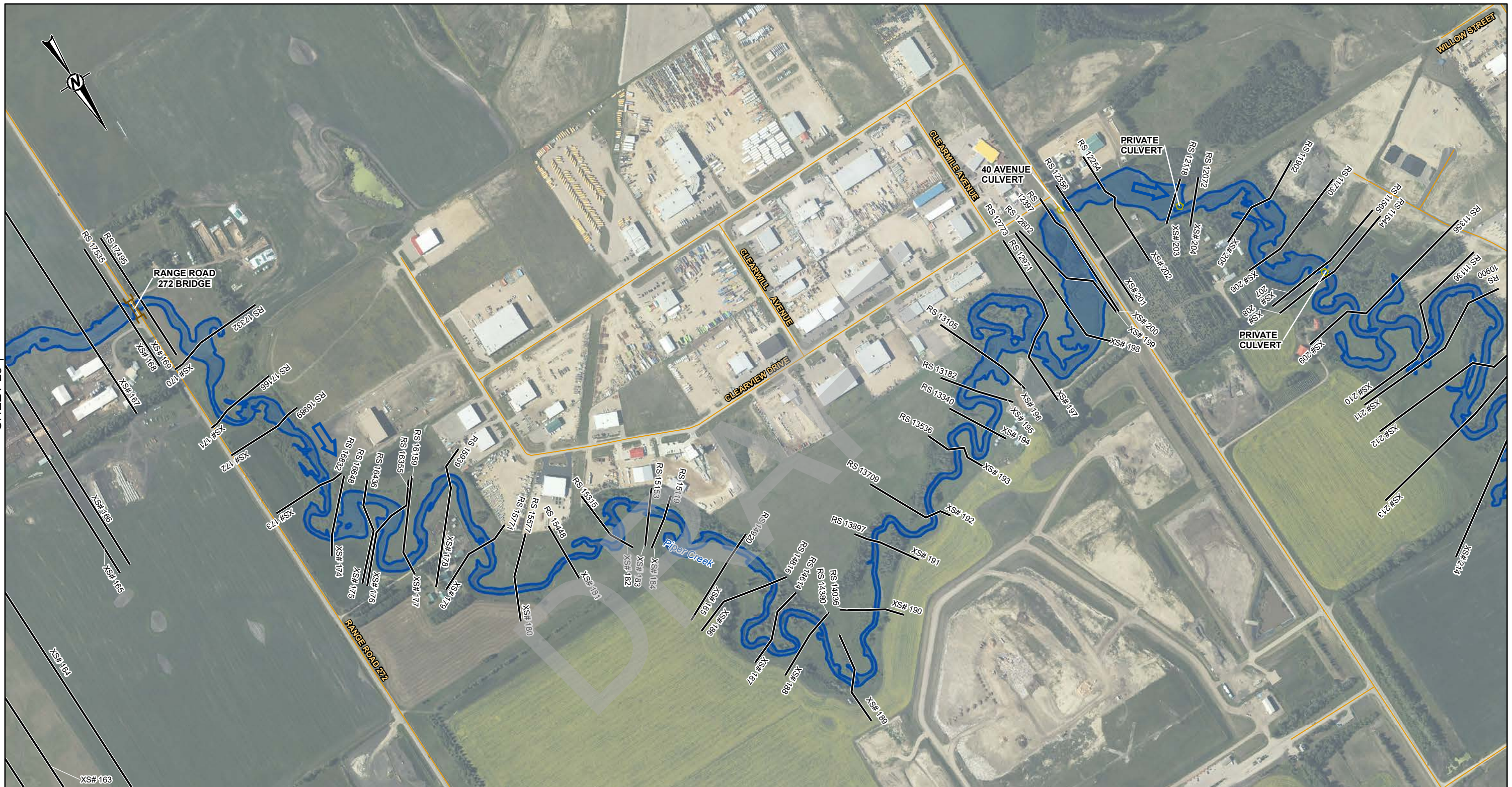
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**20-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

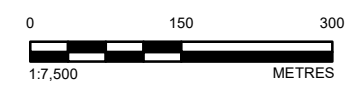
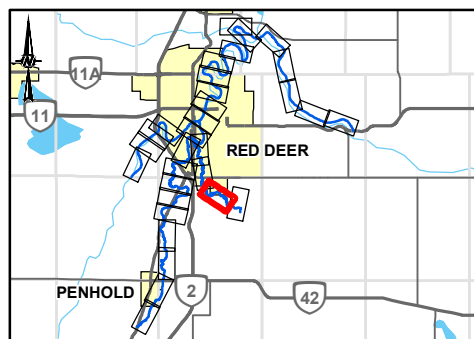
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	20-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	20-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 9.39 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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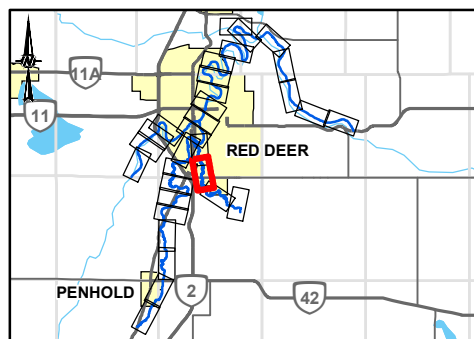
SHEET 62

SHEET 31

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	20-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	20-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
 PIPER CREEK ABOVE HIGHWAY 595 = 9.39 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 10.3 M³/S



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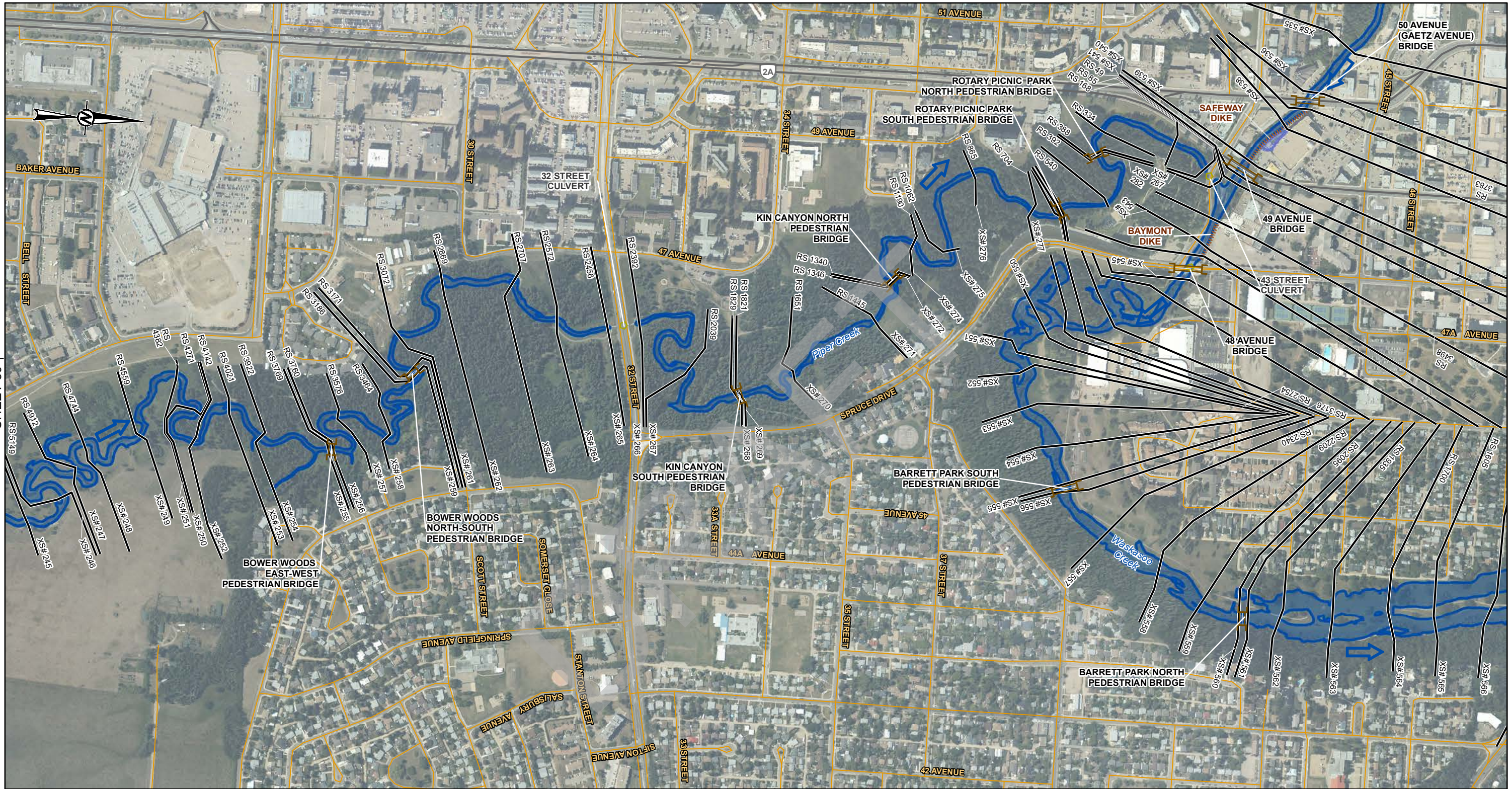
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



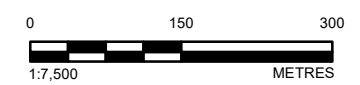
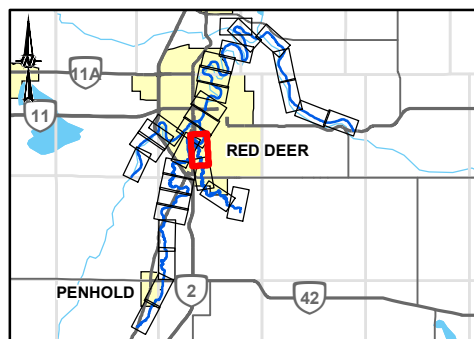
↑ SHEET 30

↑ SHEET 5

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- BRIDGE
- 20-YEAR FLOOD INUNDATION EXTENT
- 20-YEAR FLOOD EXTENT
- 20-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 PIPER CREEK ABOVE WASKASOO CREEK = 10.3 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 19.6 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 28.3 M³/S



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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	20-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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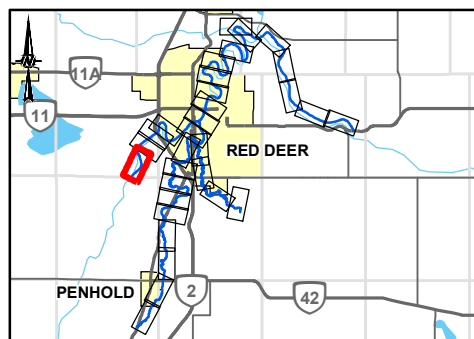
SHEETS 1-31

35-Year Flood Inundation Extent

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LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
—	STUDY BOUNDARY	—
→	FLOW DIRECTION	—
—	LOCAL ROAD	—
—	PRIMARY HIGHWAY	—
—	SECONDARY HIGHWAY	—
+	RAILWAY	—
■	35-YEAR FLOOD INUNDATION EXTENT	
■	35-YEAR FLOOD EXTENT	
■	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER ABOVE WASKASOO CREEK = 1200 M ³ /S	



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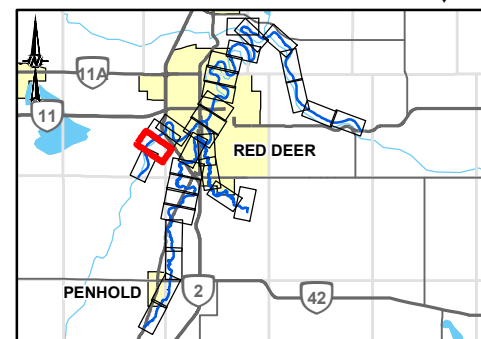
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31

SHEET 2 ↓

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 1200 M ³ /S
	STUDY BOUNDARY
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	HYDRAULIC STRUCTURES
	CULVERT
	BRIDGE



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
APPROVED	WP	

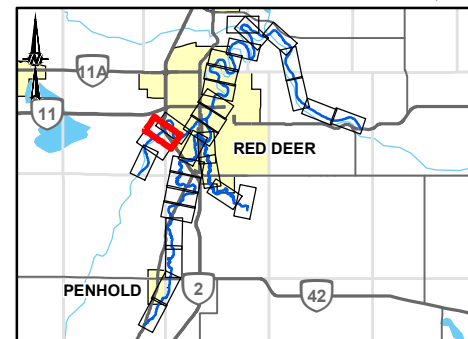
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER ABOVE WASKASOO CREEK = 1200 M ³ /S	



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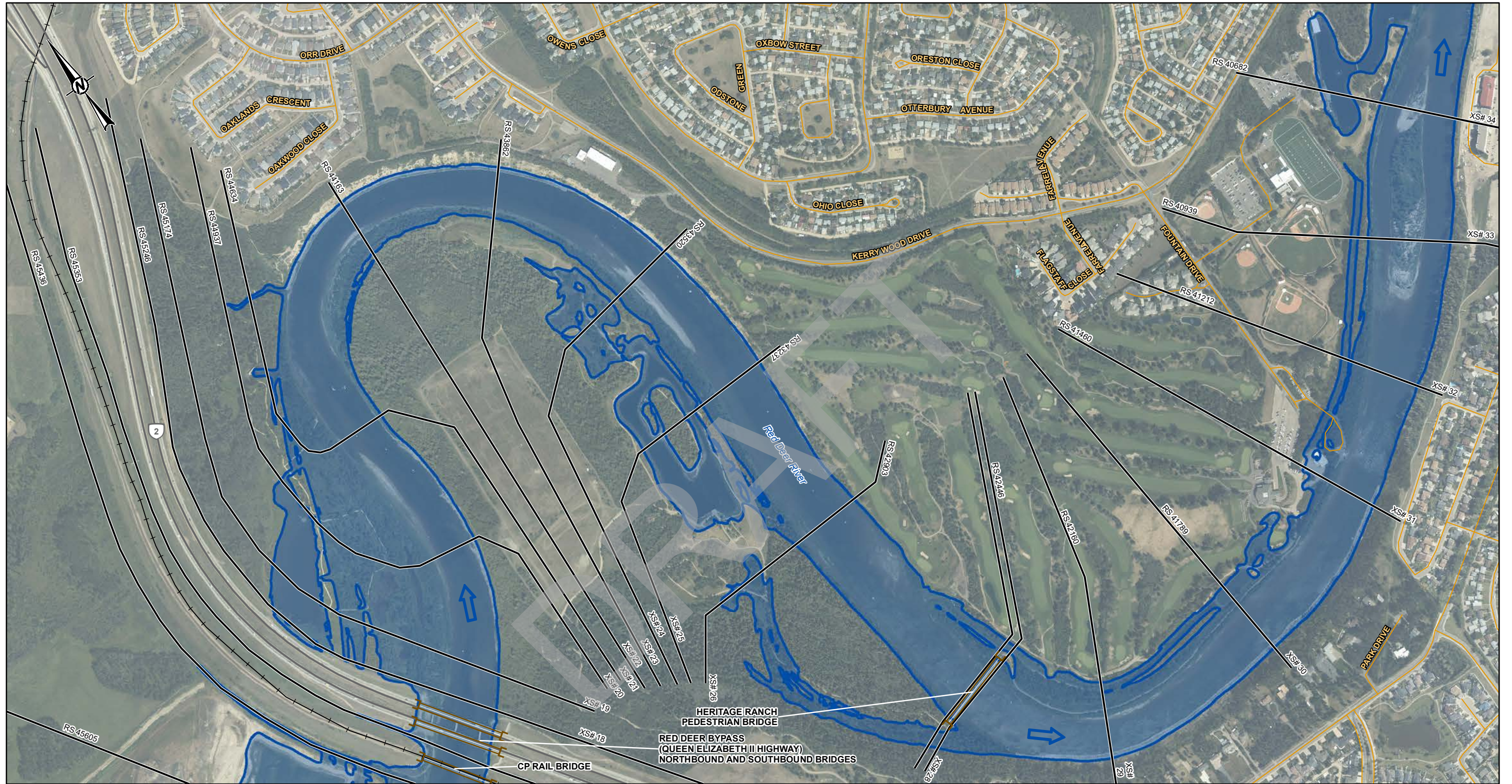
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REVIEWED	GT
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PROJECT
RED DEER RIVER HAZARD STUDY

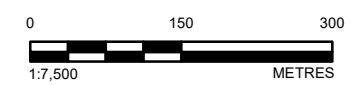
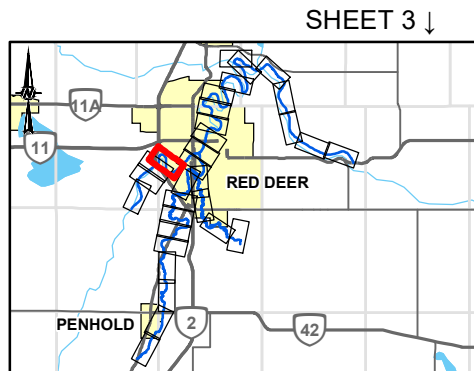
TITLE
**35-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31



LEGEND	
	CROSS SECTION
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 1200 M³/S

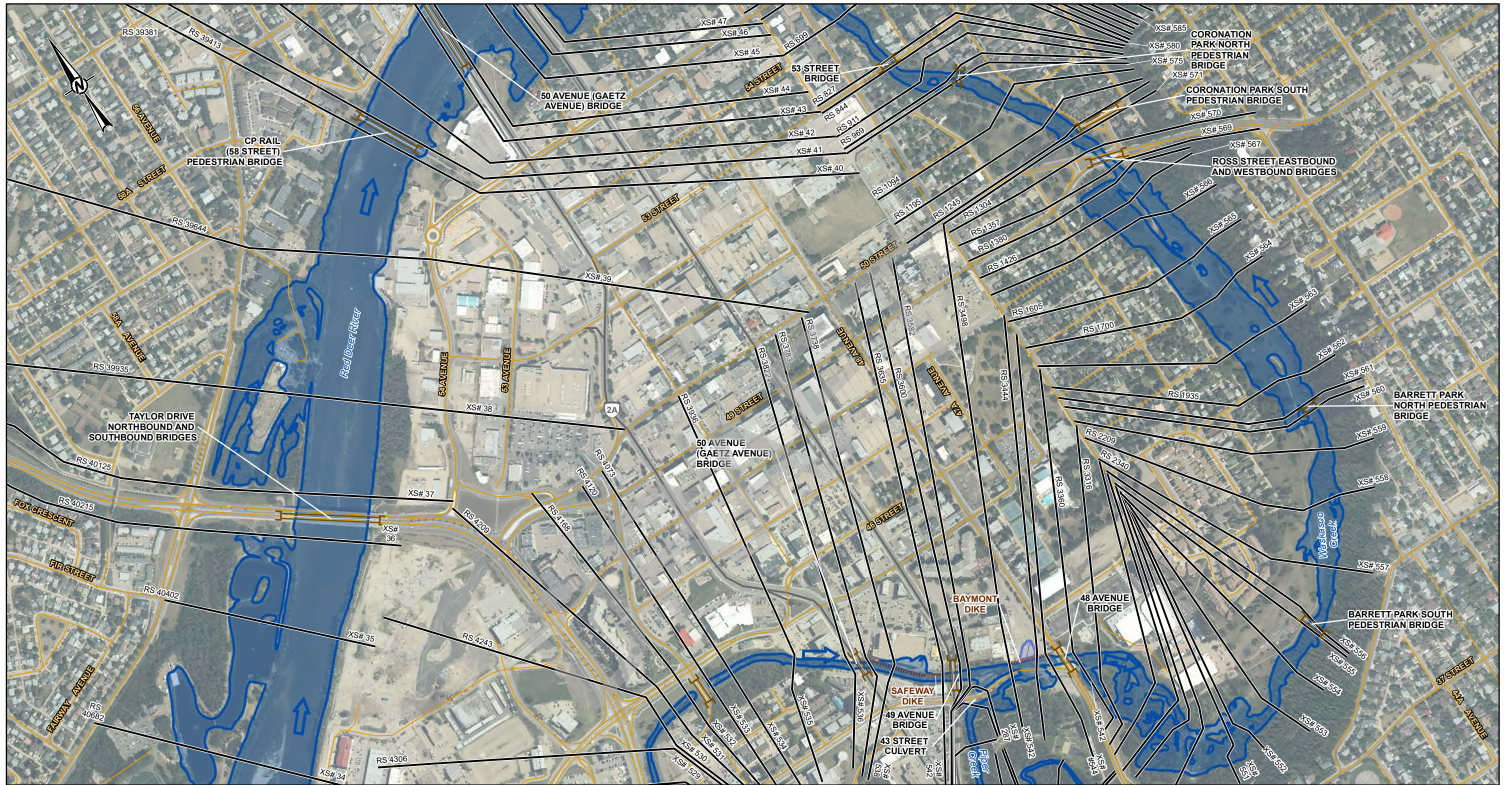


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CONSULTANT	GOLDER	
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REVIEWED	NB	
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	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31

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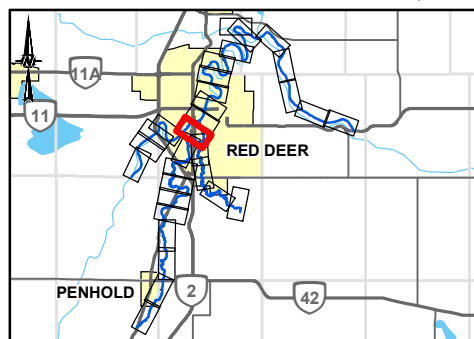


LEGEND

- CROSS SECTION
- CROSS SECTION NUMBER
- RIVER STATION (M)
- STUDY BOUNDARY
- FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- FLOOD CONTROL STRUCTURE
- HYDRAULIC STRUCTURES
- CULVERT
- BRIDGE
- 35-YEAR FLOOD INUNDATION EXTENT
- 35-YEAR FLOOD EXTENT
- 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE

RED DEER RIVER ABOVE WASKASOO CREEK = 1200 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 36.3 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 13.2 M³/S



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ALBERTA Government

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APPROVED	WP

DATE: 2022-11-23

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

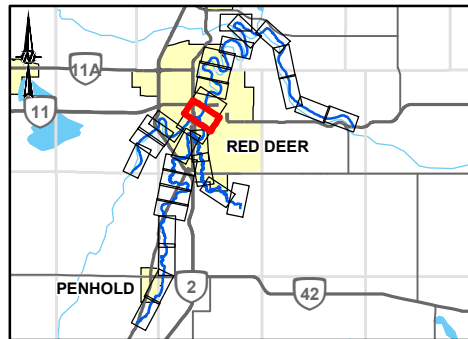
TITLE
 35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	35-YEAR FLOOD INUNDATION EXTENT
	FLOW DIRECTION
	STUDY BOUNDARY
	BRIDGE
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CULVERT
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	HYDRAULIC STRUCTURES
	35-YEAR FLOOD EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 1200 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 1230 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 36.3 M³/S



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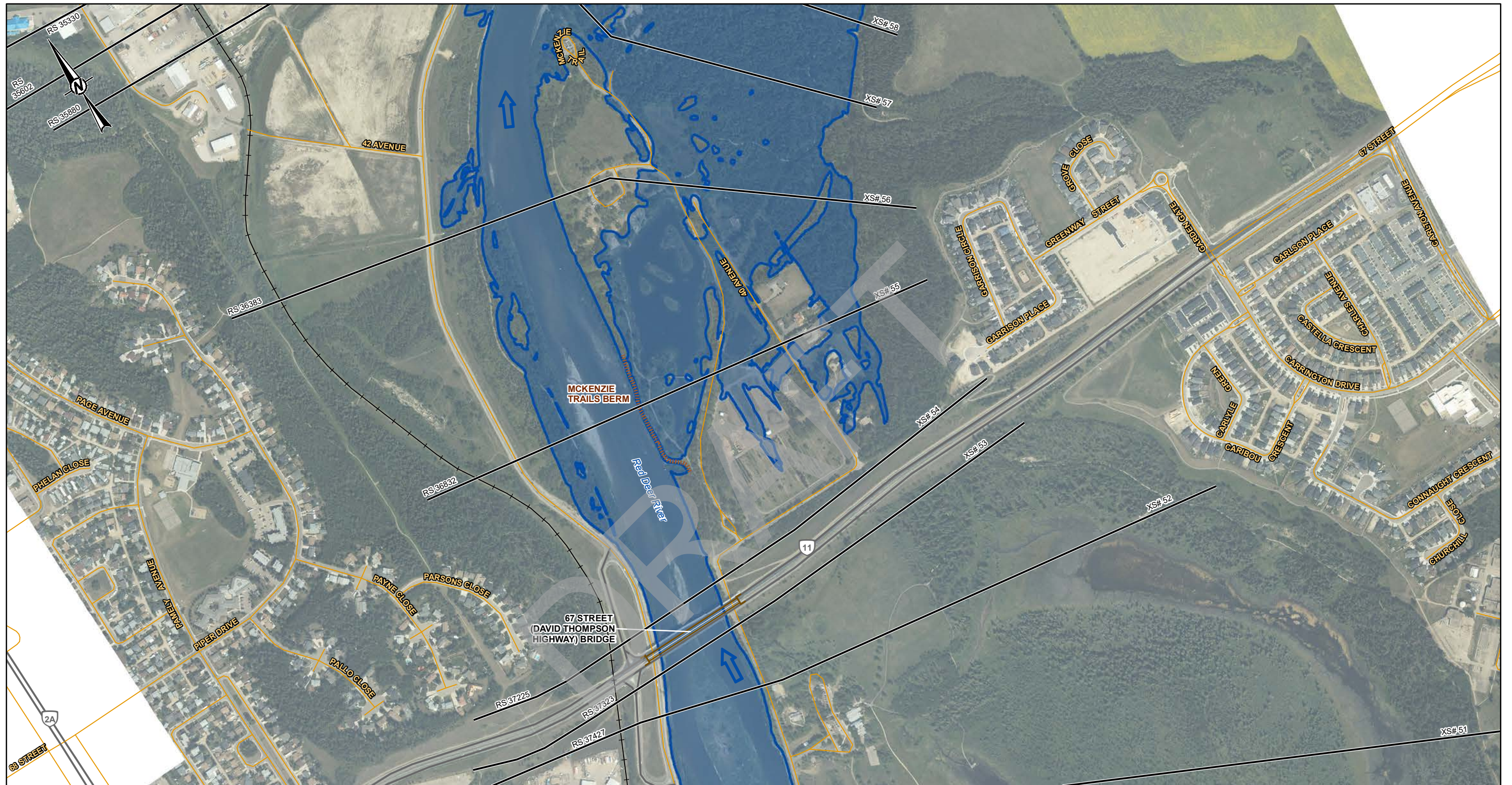
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DESIGNED	PT
PREPARED	NB
REVIEWED	GT
APPROVED	WP

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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**35-YEAR FLOOD INUNDATION EXTENT
 REGULATED FLOWS**

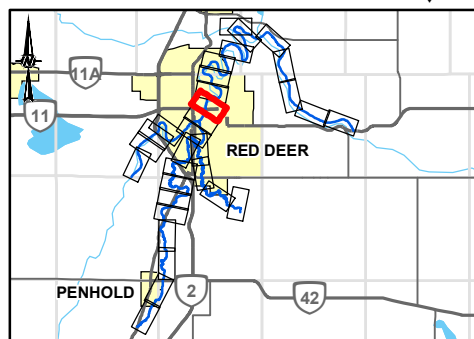
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	 	35-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	—	HYDRAULIC STRUCTURES	 	35-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	○	CULVERT	 	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	—	BRIDGE		
→	FLOW DIRECTION				
—	LOCAL ROAD				
—	PRIMARY HIGHWAY				
—	SECONDARY HIGHWAY				
+	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1230 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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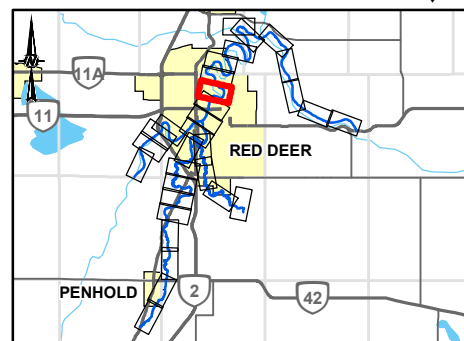
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		35-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		35-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1230 M³/S



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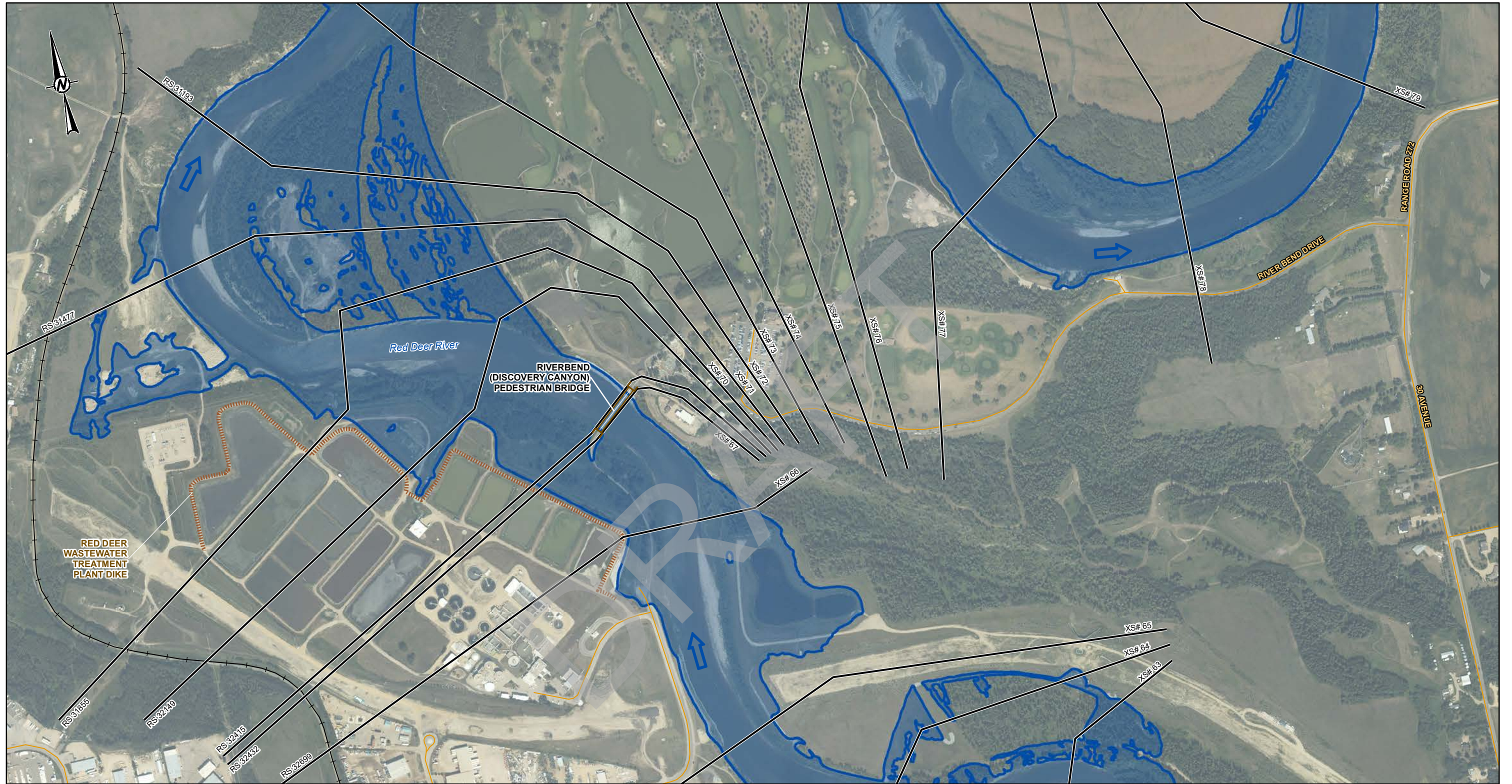
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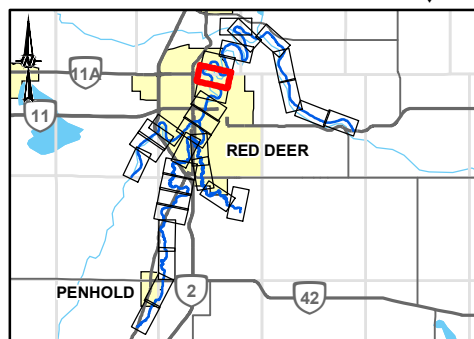
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**35-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31



LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	35-YEAR FLOOD INUNDATION EXTENT
■	35-YEAR FLOOD EXTENT
■	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 1230 M ³ /S	

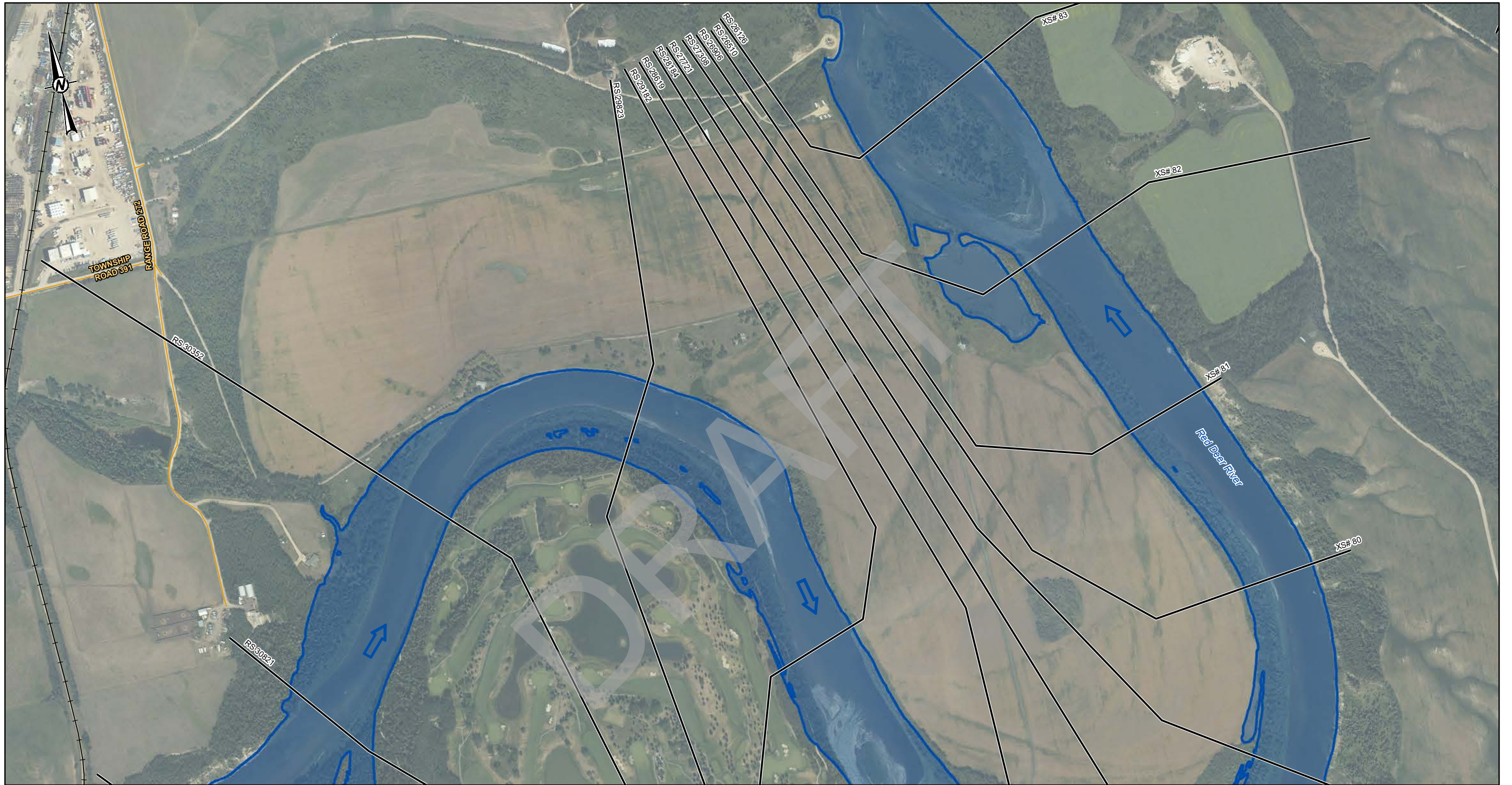


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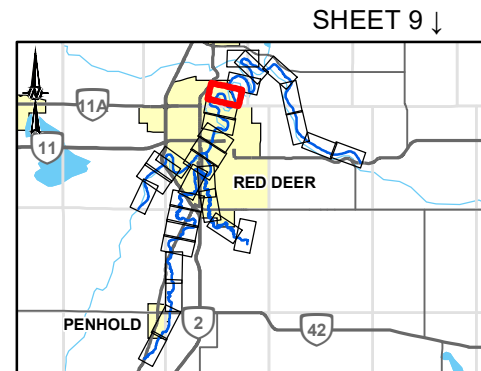
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31

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LEGEND	
	CROSS SECTION
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	RAILWAY
	LOCAL ROAD
	SECONDARY HIGHWAY
	PRIMARY HIGHWAY
	STUDY BOUNDARY
	FLOW DIRECTION
	RIVER STATION (M)
	CROSS SECTION NUMBER
DISCHARGE RED DEER RIVER BELOW WASKASOO CREEK = 1230 M ³ /S	

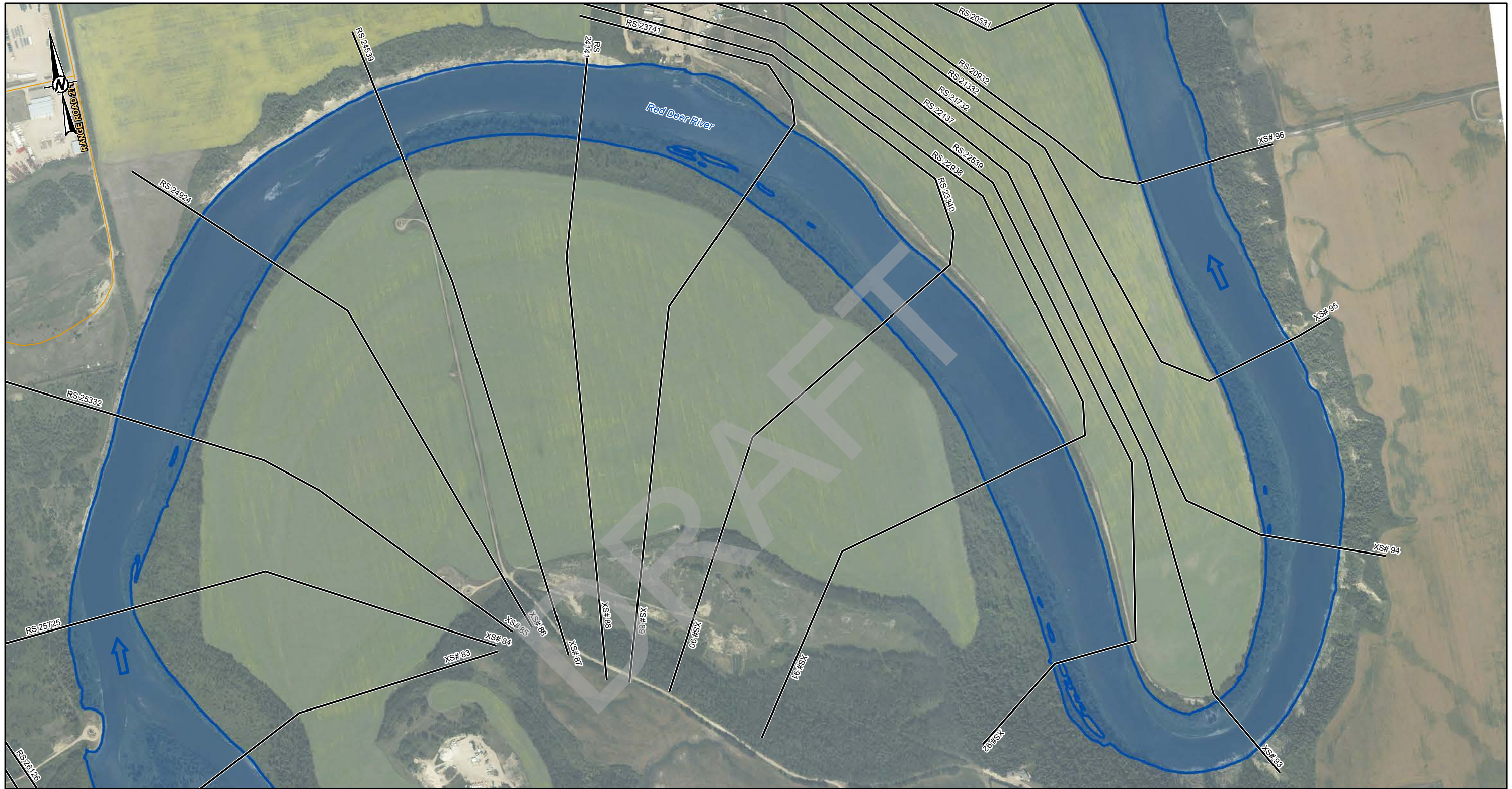


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CONSULTANT	GOLDER	
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PREPARED	NB	
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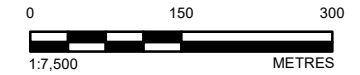
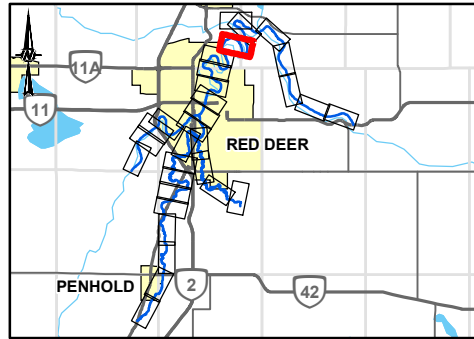
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PROJECT		
RED DEER RIVER HAZARD STUDY		
TITLE		
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE		SHEET 10 OF 31

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LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
▬▬▬	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
▬▬▬	FLOOD CONTROL STRUCTURE
⬡	CULVERT
⌄	BRIDGE
▬	35-YEAR FLOOD INUNDATION EXTENT
▬	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 1230 M ³ /S	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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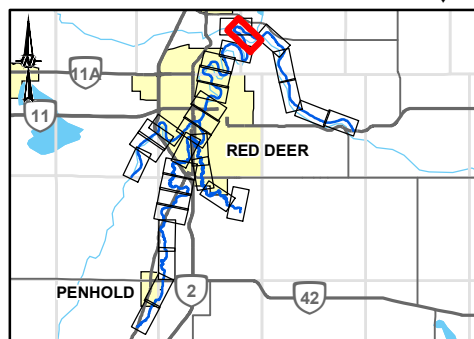
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SHEET 13 ↑

SHEET 14 ↓

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		35-YEAR FLOOD INUNDATION EXTENT
		■ 35-YEAR FLOOD EXTENT
		■ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW WASKASOO CREEK = 1230 M ³ /S
		RED DEER RIVER BELOW BLINDMAN RIVER = 1490 M ³ /S



SHEET 11 ↓



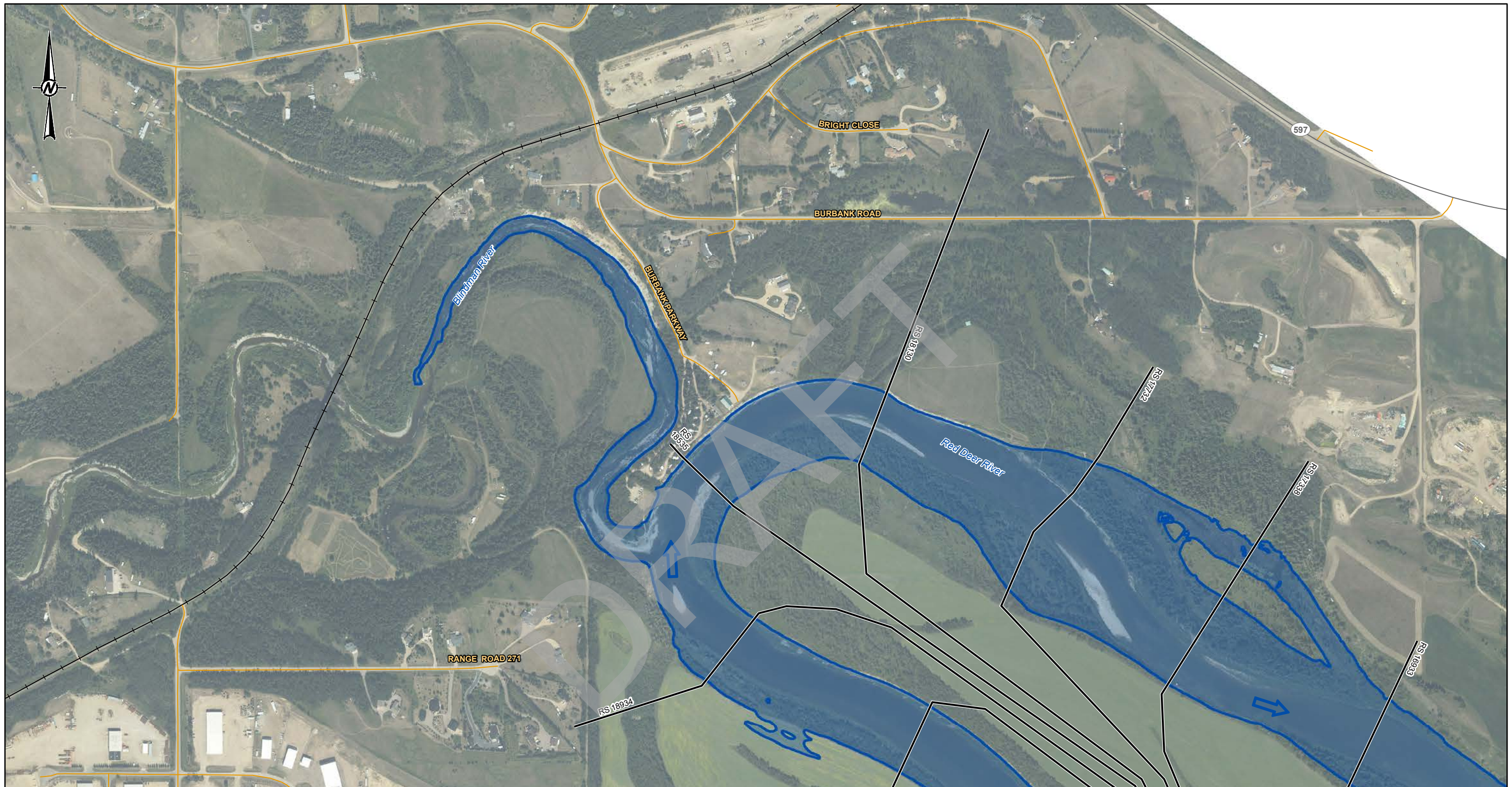
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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
APPROVED	WP	

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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 12 OF 31

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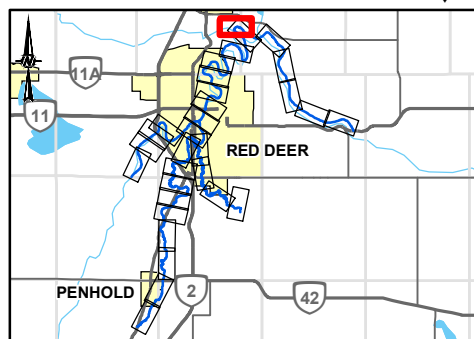
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SHEET 14 ↓

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
—+—	RAILWAY	
		35-YEAR FLOOD INUNDATION EXTENT
		■ 35-YEAR FLOOD EXTENT
		▨ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW WASKASOO CREEK = 1230 M ³ /S
		RED DEER RIVER BELOW BLINDMAN RIVER = 1490 M ³ /S

SHEET 12 ↓



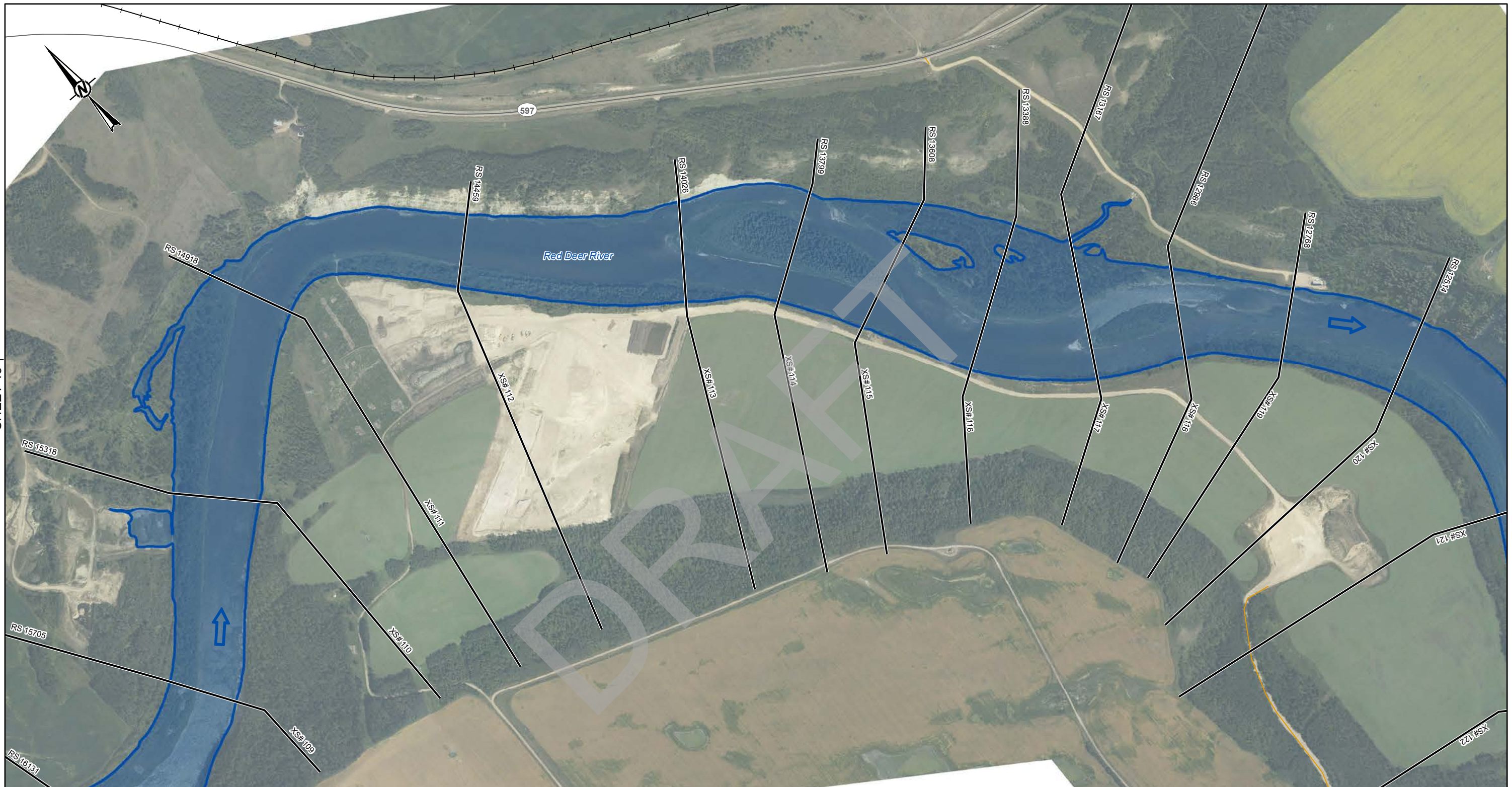
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CONSULTANT	GOLDER	
DESIGNED	YYYY-MM-DD	2022-11-23
PREPARED	PT	
REVIEWED	NB	
APPROVED	GT	
	WP	

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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 13 OF 31	

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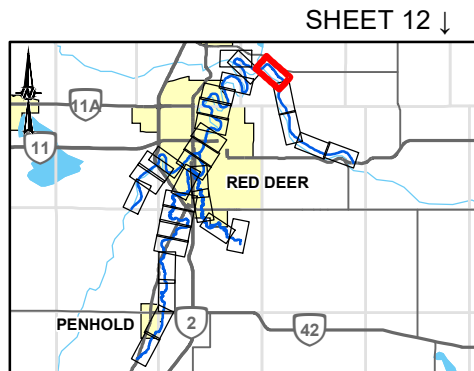
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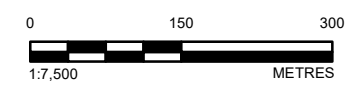
SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	▬▬▬ FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	HYDRAULIC STRUCTURES
▬▬▬	STUDY BOUNDARY	◻ CULVERT
➡	FLOW DIRECTION	▬ BRIDGE
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		35-YEAR FLOOD INUNDATION EXTENT
		▬ 35-YEAR FLOOD EXTENT
		▬ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 1490 M ³ /S



SHEET 12 ↓



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 14 OF 31

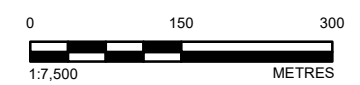
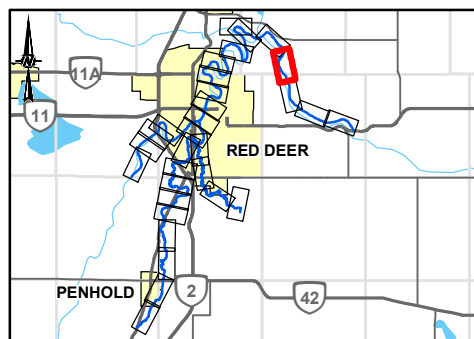
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		35-YEAR FLOOD INUNDATION EXTENT
		▬ 35-YEAR FLOOD EXTENT
		▬▬ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 1490 M ³ /S



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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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PREPARED	NB	
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REFERENCE(S)			
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

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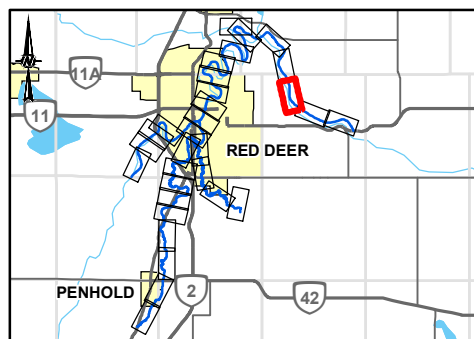
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	HYDRAULIC STRUCTURES
—	STUDY BOUNDARY	○ CULVERT
→	FLOW DIRECTION	— — BRIDGE
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		35-YEAR FLOOD INUNDATION EXTENT
		■ 35-YEAR FLOOD EXTENT
		■ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 1490 M ³ /S



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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 16 OF 31

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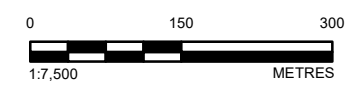
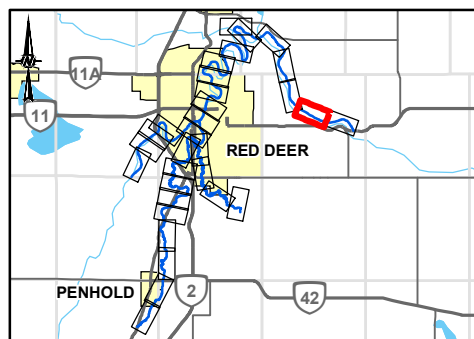
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	35-YEAR FLOOD INUNDATION EXTENT	
	▬ 35-YEAR FLOOD EXTENT	
	▬▬▬ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 1490 M ³ /S	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**35-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

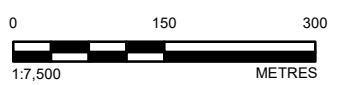
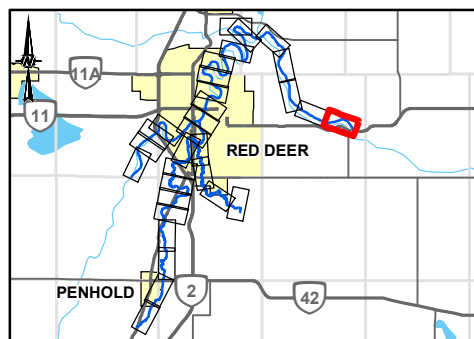
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SHEET 17 ↑



LEGEND	
	CROSS SECTION
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CROSS SECTION NUMBER
	RIVER STATION (M)
	DISCHARGE

RED DEER RIVER BELOW BLINDMAN RIVER = 1490 M³/S



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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 18 OF 31

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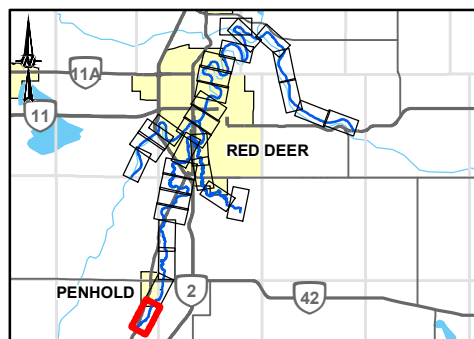


SHEET 20

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	35-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	35-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
WASKASOO CREEK ABOVE HIGHWAY 42 = 21.7 M³/S



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GOLDER

ALBERTA Government

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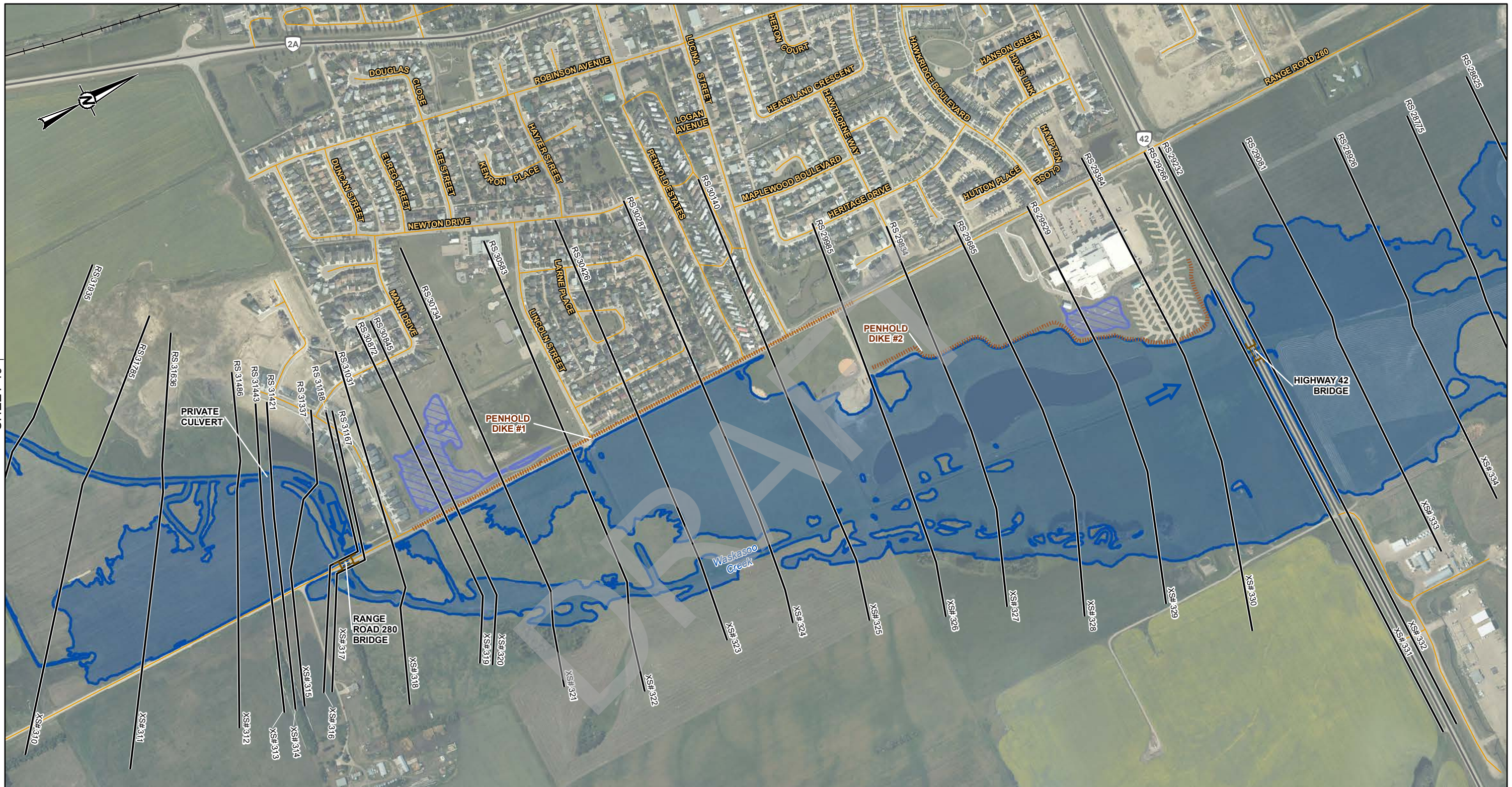
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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SHEET 19 ↑

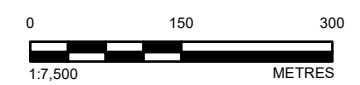
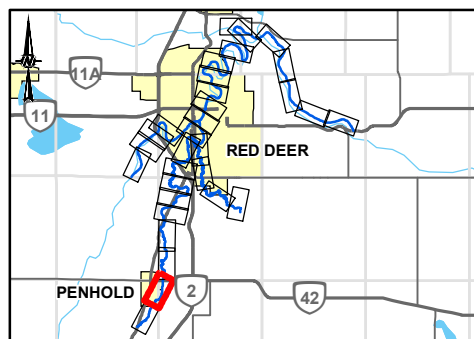
↓ SHEET 21

THE CLIENT GOVERNMENT OF ALBERTA 1425276_Rev2_DrainsMapping/Products/Hydrology/04_Open Water Flood Inundation Map Production/Rev3_1783039_2025/Inundation_Rev2.mxd PRINTED ON: 2025-01-06 AT: 2:30:43 PM

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LEGEND		
— CROSS SECTION	▬ FLOOD CONTROL STRUCTURE	35-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	■ 35-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	○ CULVERT	▨ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
▬ STUDY BOUNDARY	▬ BRIDGE	
➔ FLOW DIRECTION		
— LOCAL ROAD		
— PRIMARY HIGHWAY		
— SECONDARY HIGHWAY		
— RAILWAY		

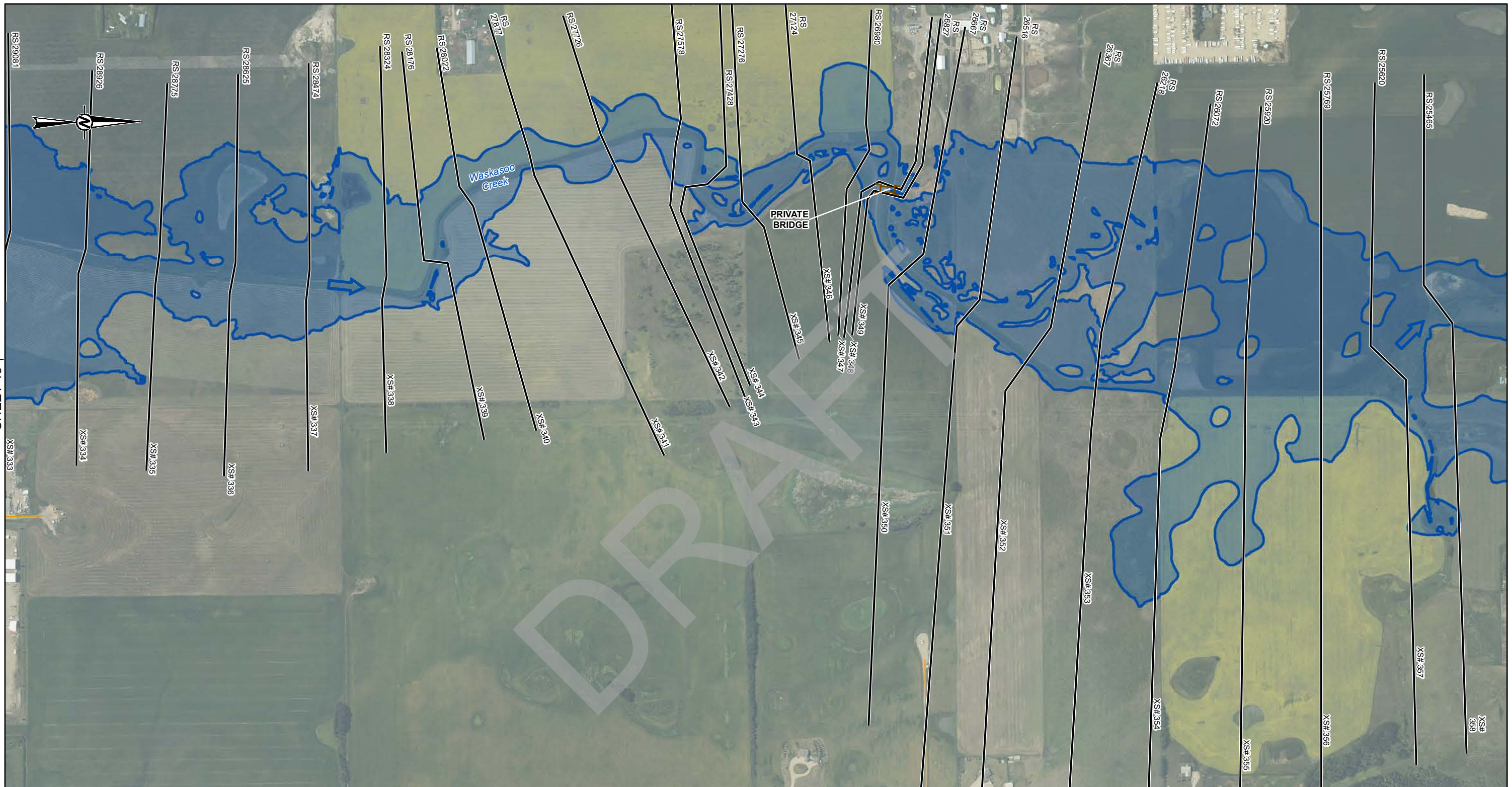
DISCHARGE
 WASKASOO CREEK ABOVE HIGHWAY 42 = 21.7 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M³/S



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

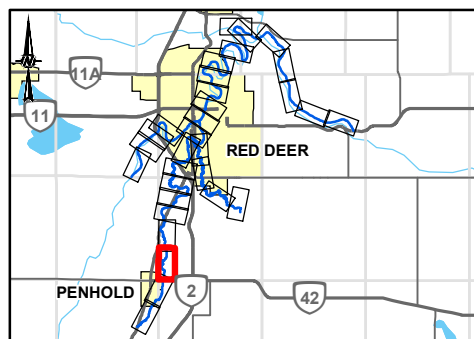
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SHEET 18 ↑

↑ SHEET 22

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
—	STUDY BOUNDARY	— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	35-YEAR FLOOD INUNDATION EXTENT	
	■ 35-YEAR FLOOD EXTENT	
	■ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M ³ /S	

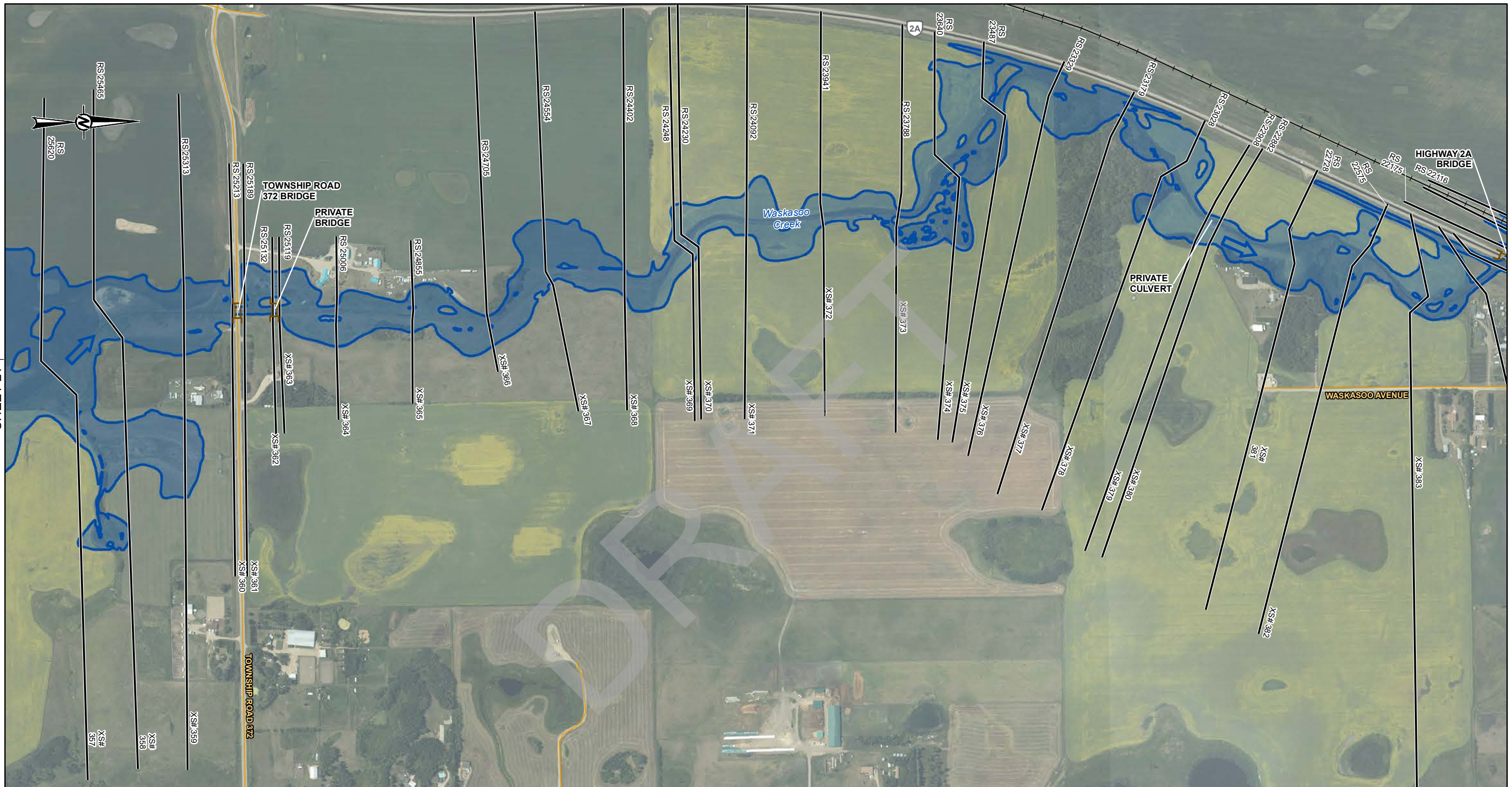


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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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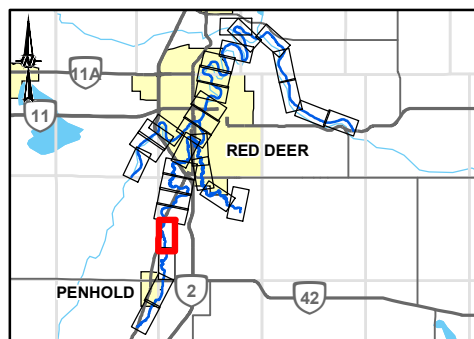
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	35-YEAR FLOOD INUNDATION EXTENT	
	◻ 35-YEAR FLOOD EXTENT	
	◻ 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M ³ /S	



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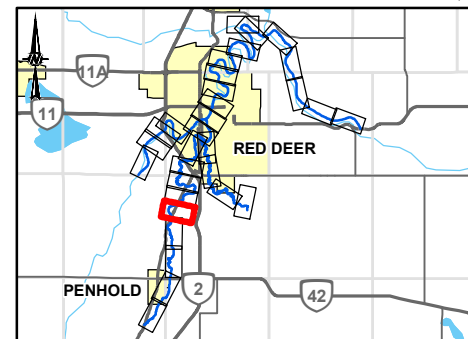
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 22 OF 31

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LEGEND		35-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	35-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

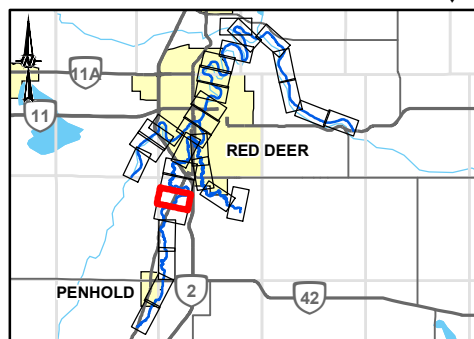
TITLE
**35-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	RIVER STATION (M)
	DISCHARGE
	CULVERT
	BRIDGE

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M³/S



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 24 OF 31	

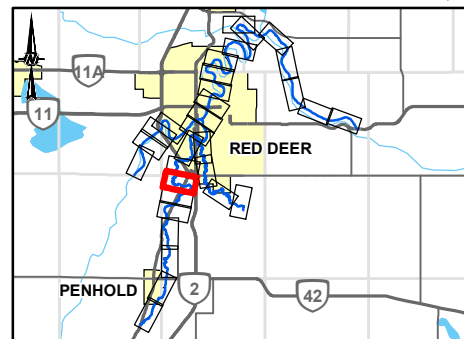
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	35-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	35-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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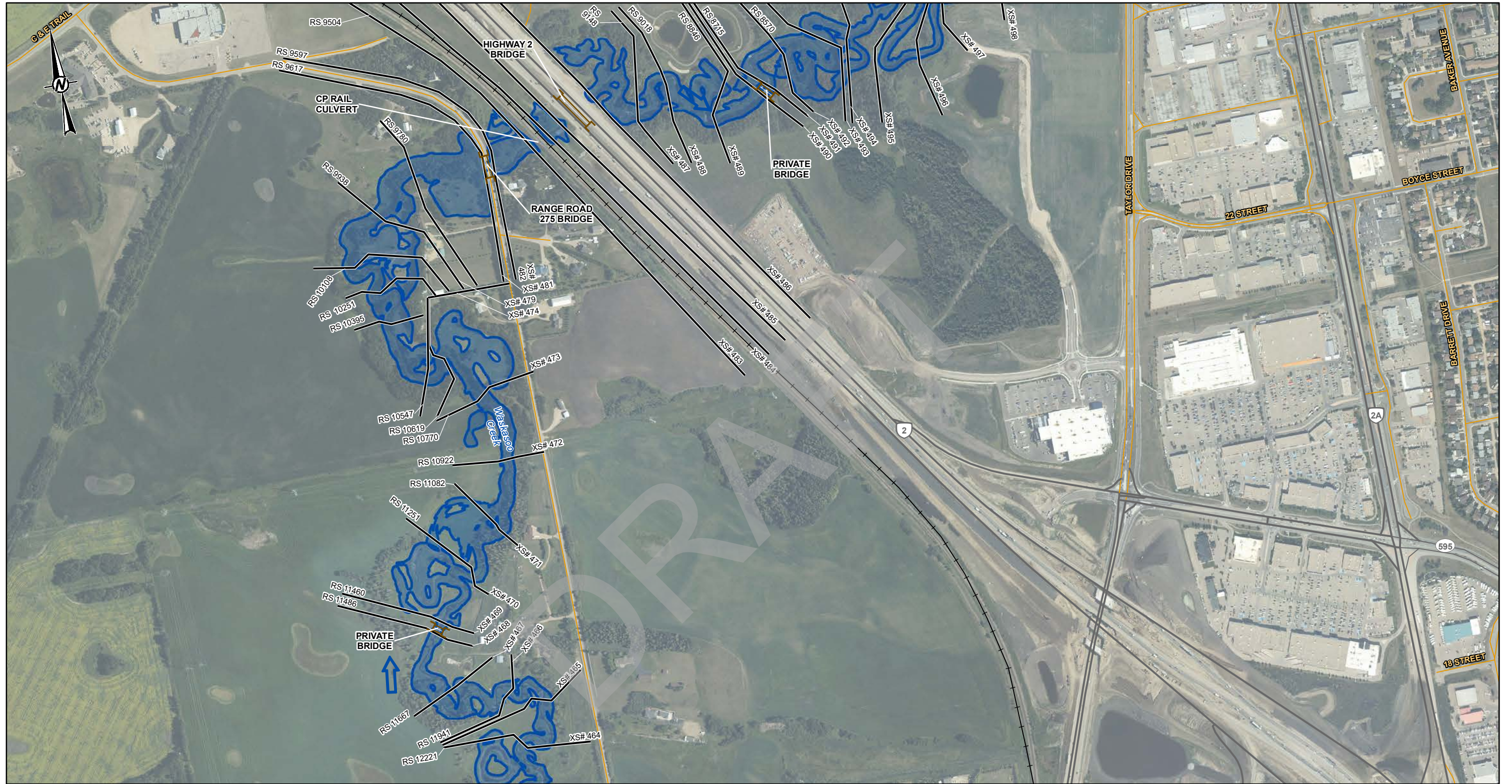
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

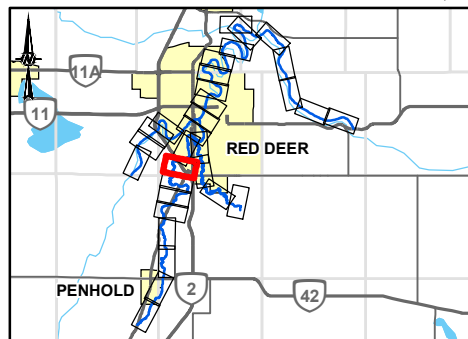
TITLE
**35-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M³/S



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ALBERTA ENVIRONMENT
AND PARKS



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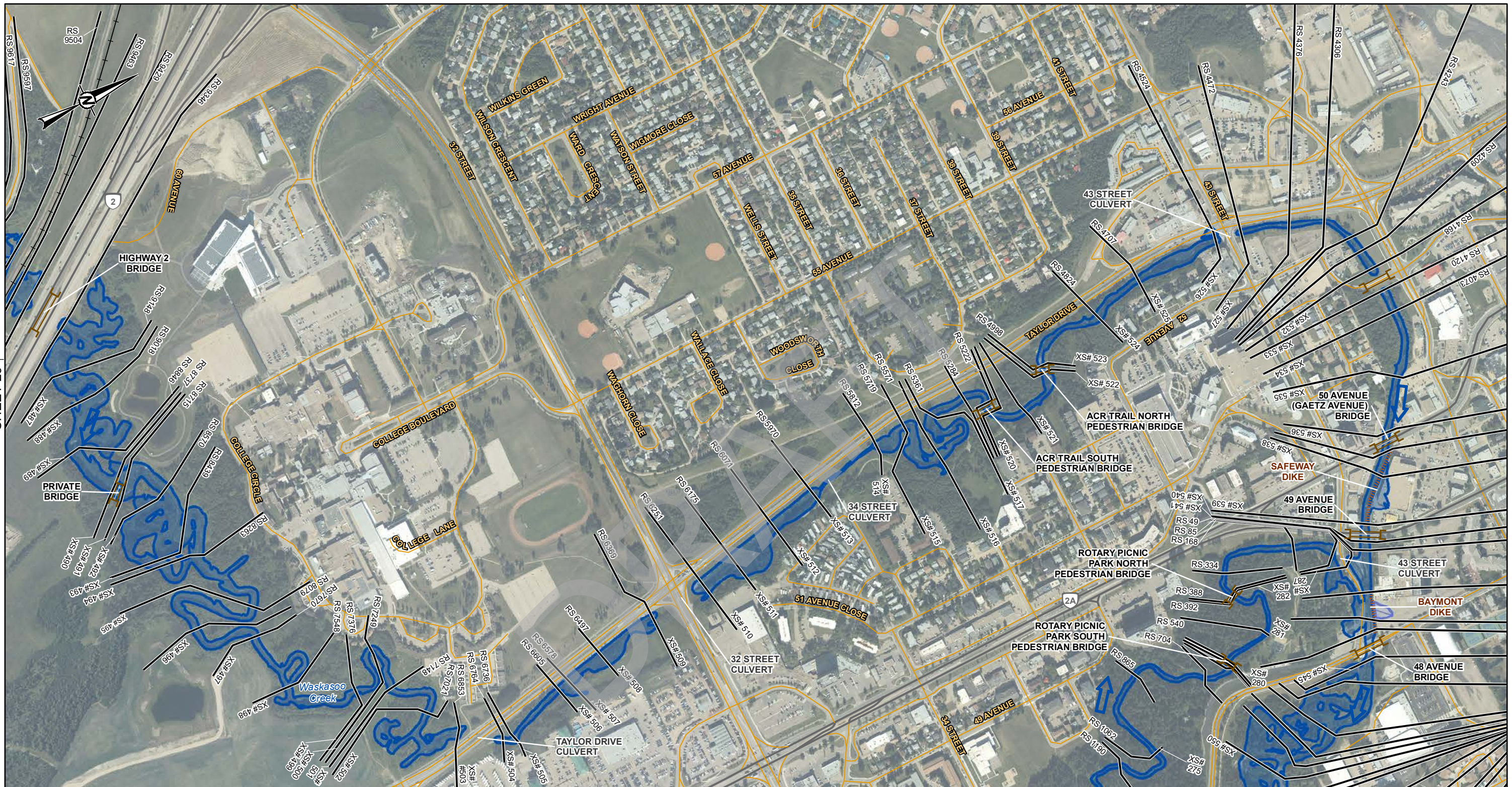
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**35-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

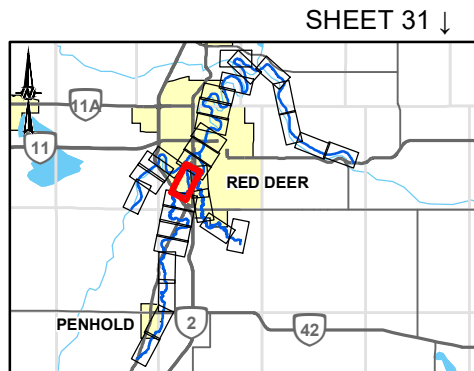
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SHEET 26 ↑

↓ SHEET 5

- LEGEND**
- CROSS SECTION
 - FLOOD CONTROL STRUCTURE
 - 35-YEAR FLOOD INUNDATION EXTENT
 - 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
 - CROSS SECTION NUMBER
 - HYDRAULIC STRUCTURES
 - 35-YEAR FLOOD EXTENT
 - RIVER STATION (M)
 - STUDY BOUNDARY
 - CULVERT
 - 35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
 - FLOW DIRECTION
 - BRIDGE
 - LOCAL ROAD
 - PRIMARY HIGHWAY
 - SECONDARY HIGHWAY
 - RAILWAY
- DISCHARGE**
WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M³/S
WASKASOO CREEK BELOW PIPER CREEK = 36.3 M³/S
PIPER CREEK ABOVE WASKASOO CREEK = 13.2 M³/S



SHEET 31 ↓

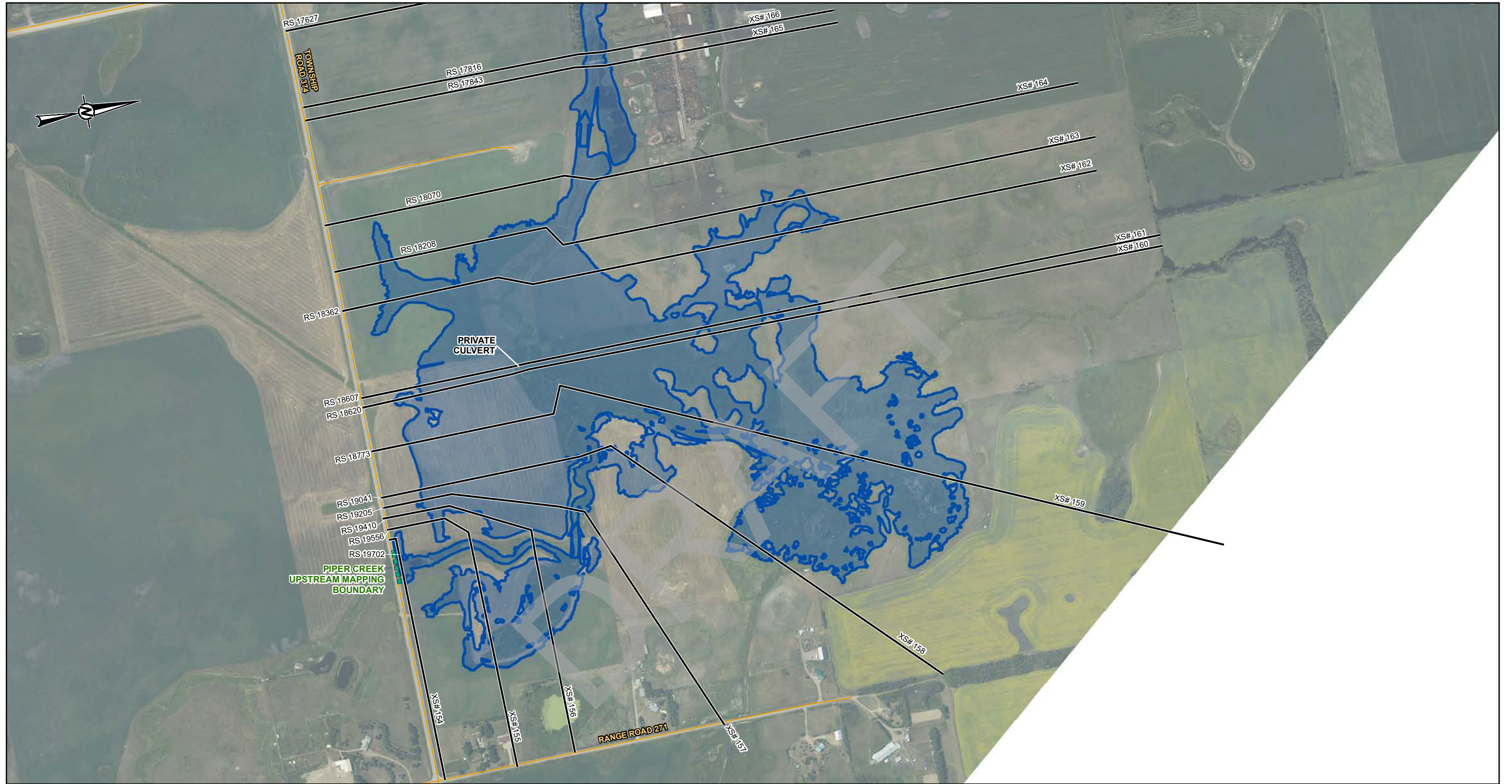


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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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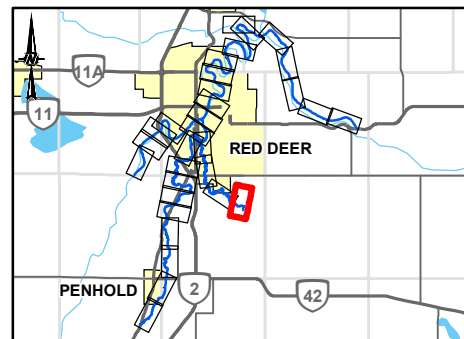
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	35-YEAR FLOOD INUNDATION EXTENT
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE PIPER CREEK ABOVE HIGHWAY 595 = 12 M ³ /S	



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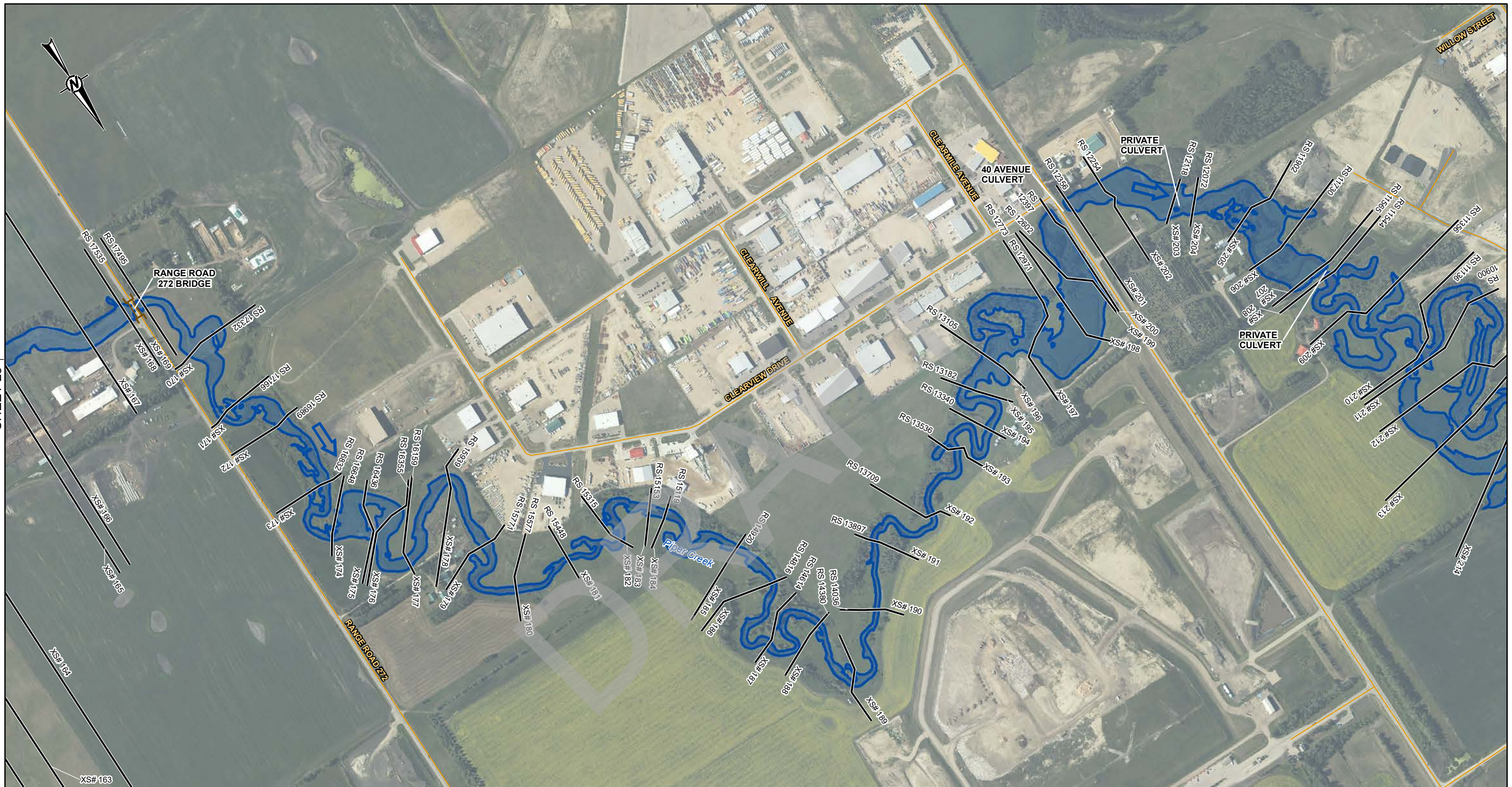
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**35-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

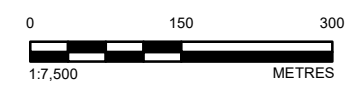
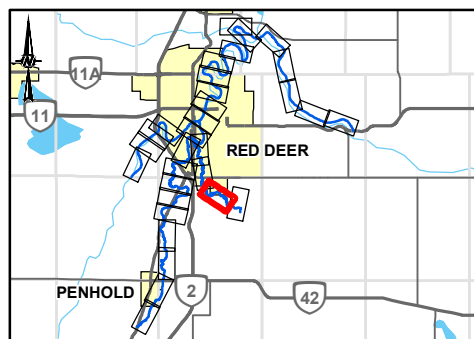
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	35-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	35-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 12 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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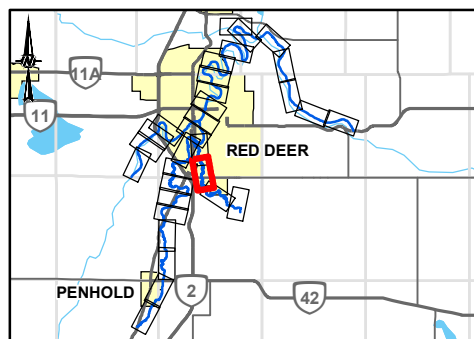
SHEET 62

SHEET 31

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	35-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	35-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
 PIPER CREEK ABOVE HIGHWAY 595 = 12 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 13.2 M³/S



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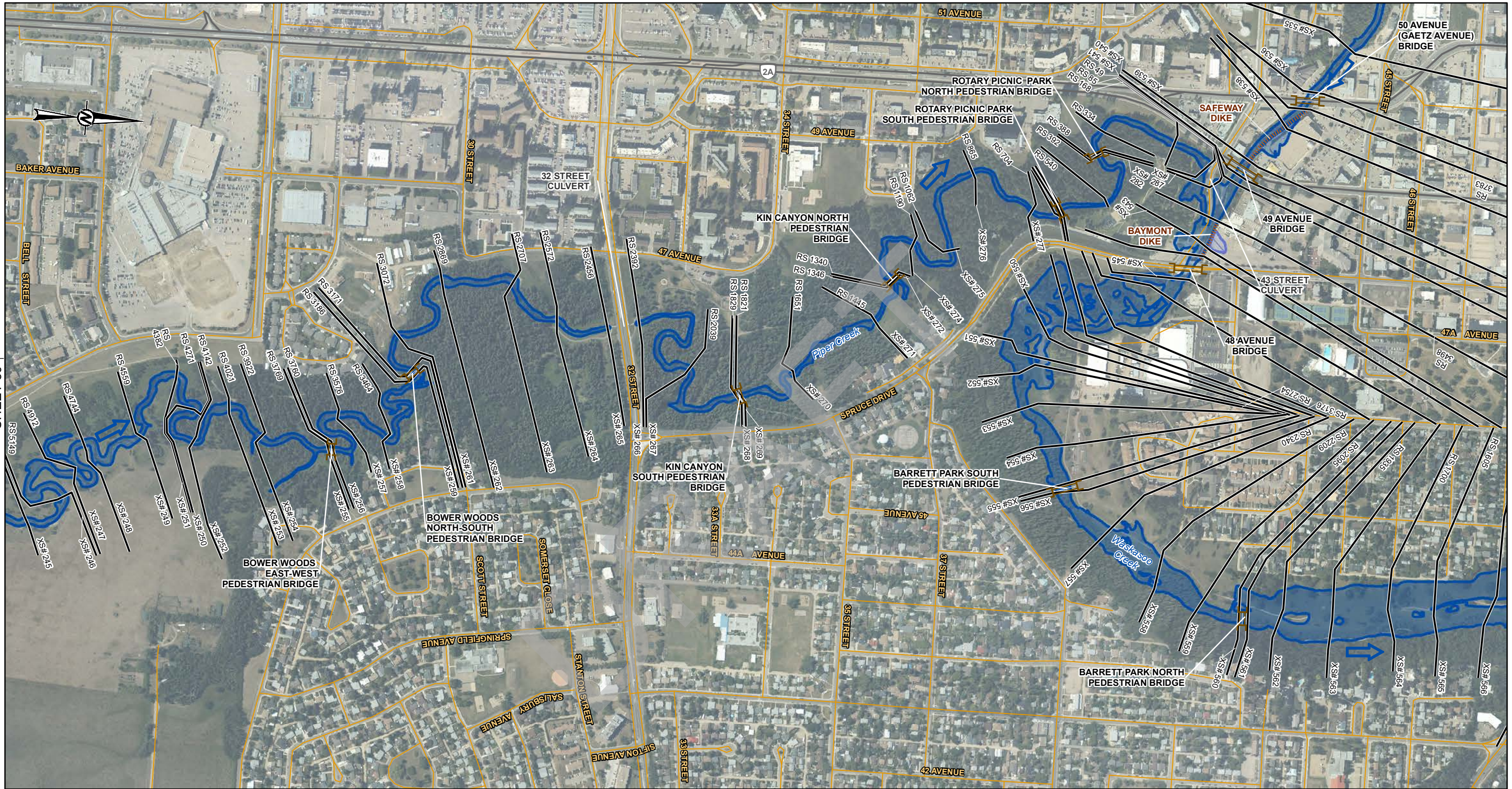
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

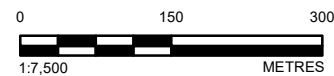
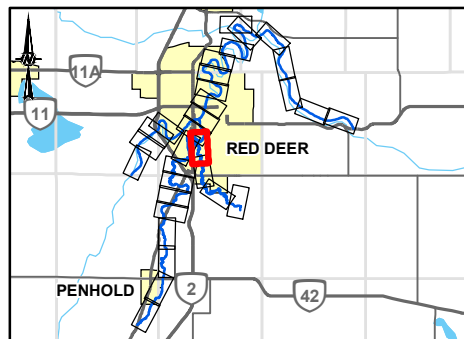
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↑ SHEET 30

↑ SHEET 5

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	35-YEAR FLOOD INUNDATION EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	DISCHARGE
	PIPER CREEK ABOVE WASKASOO CREEK = 13.2 M ³ /S
	WASKASOO CREEK ABOVE PIPER CREEK = 25.1 M ³ /S
	WASKASOO CREEK BELOW PIPER CREEK = 36.3 M ³ /S
	CULVERT
	BRIDGE
	35-YEAR FLOOD EXTENT
	35-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	XS#100 CROSS SECTION NUMBER
	RS 304 RIVER STATION (M)



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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	35-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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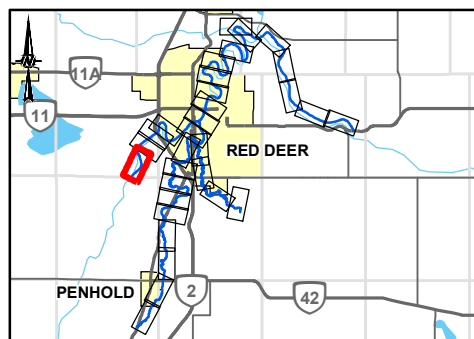
SHEETS 1-31

50-Year Flood Inundation Extent

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LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	RED DEER RIVER ABOVE WASKASOO CREEK = 1390 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	



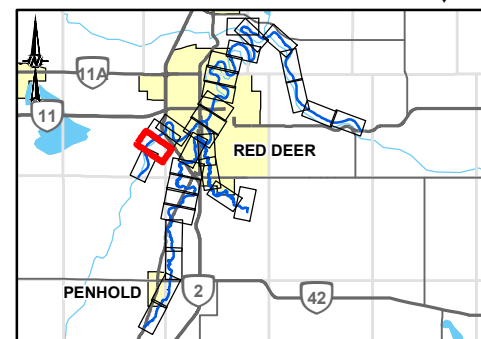
CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 1 OF 31



LEGEND		
—	CROSS SECTION	50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER ABOVE WASKASOO CREEK = 1390 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	FLOOD CONTROL STRUCTURE	
○	CULVERT	
—	BRIDGE	



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CONSULTANT	GOLDER	
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REVIEWED	GT	
APPROVED	WP	

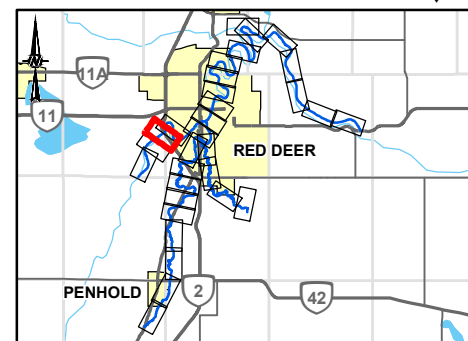
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND		
—	CROSS SECTION	50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER ABOVE WASKASOO CREEK = 1390 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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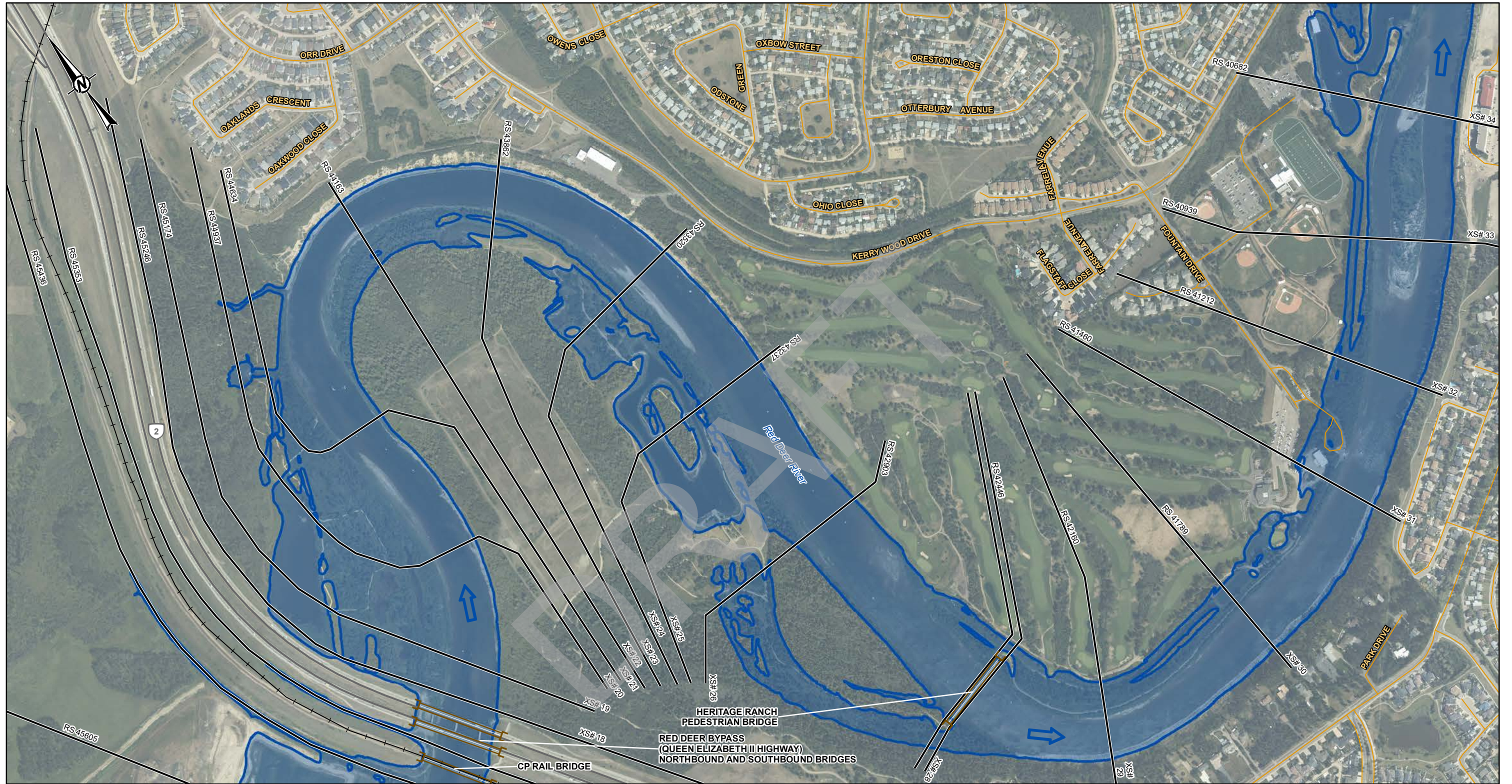
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PROJECT
RED DEER RIVER HAZARD STUDY

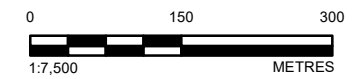
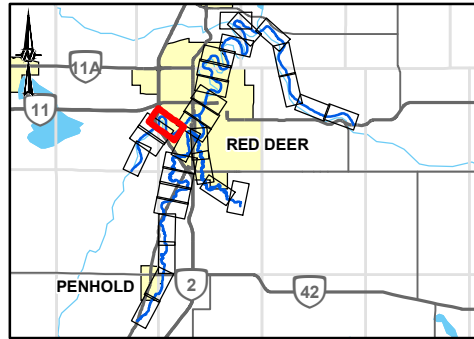
TITLE
**50-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31



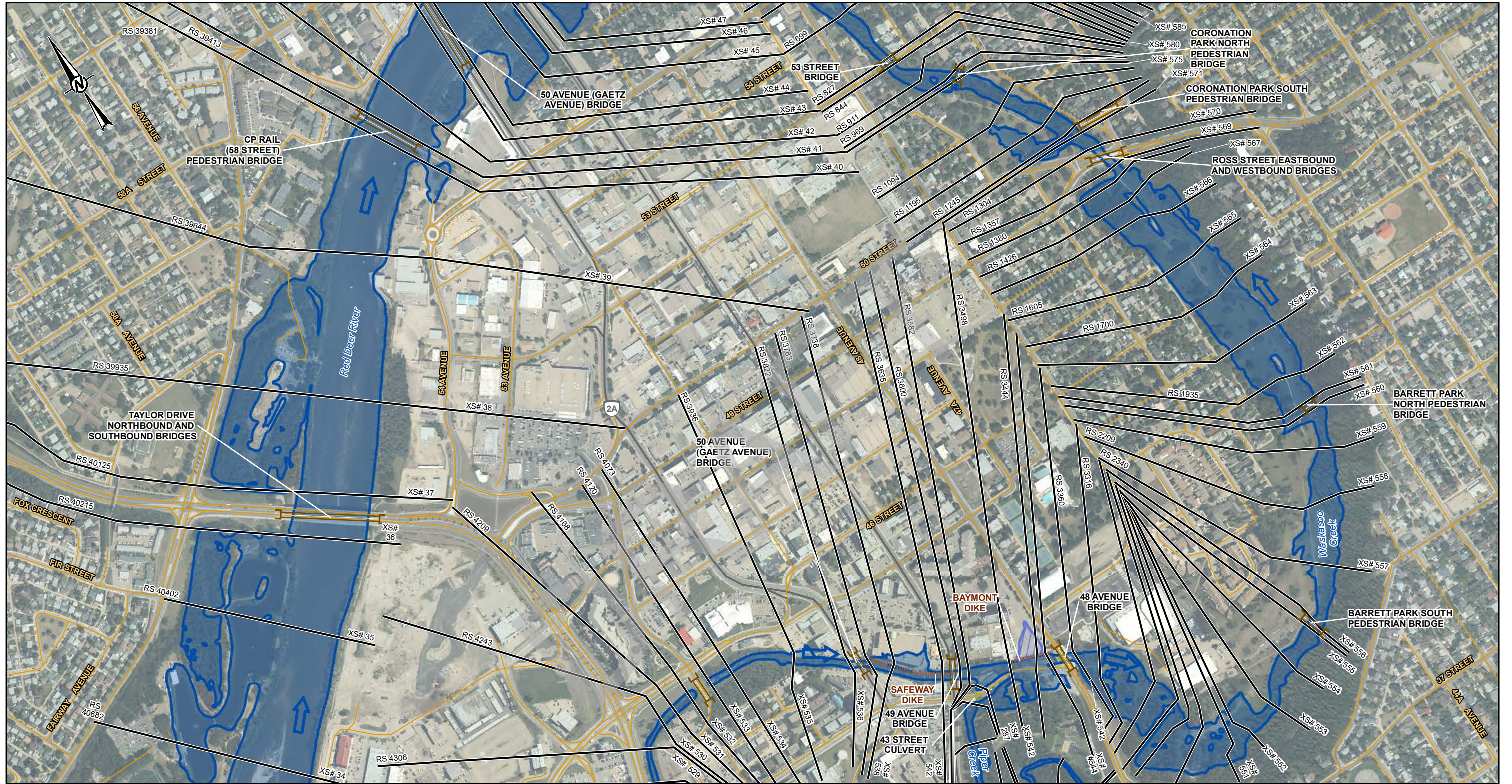
LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- ▬ STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- ◻ HYDRAULIC STRUCTURES
- ◻ CULVERT
- ▬ BRIDGE
- ▬ 50-YEAR FLOOD INUNDATION EXTENT
- ▬ 50-YEAR FLOOD EXTENT
- ▬ 50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 1390 M³/S



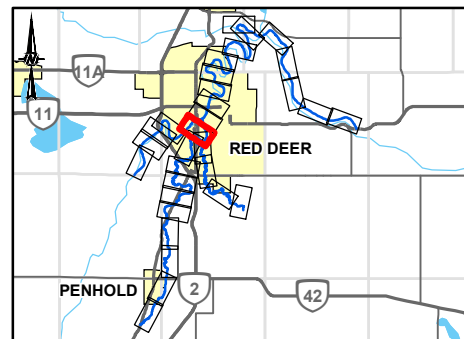
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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	50-YEAR FLOOD INUNDATION EXTENT
	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	HYDRAULIC STRUCTURES
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 1390 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 41.8 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 15.2 M³/S



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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**50-YEAR FLOOD INUNDATION EXTENT
 REGULATED FLOWS**

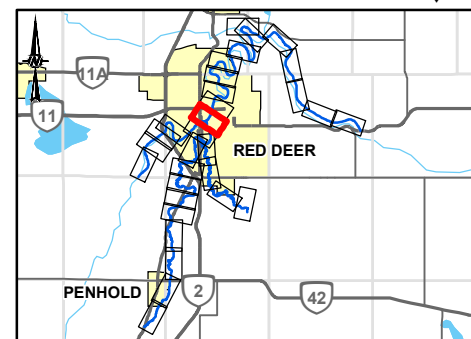
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 1390 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 1430 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 41.8 M³/S



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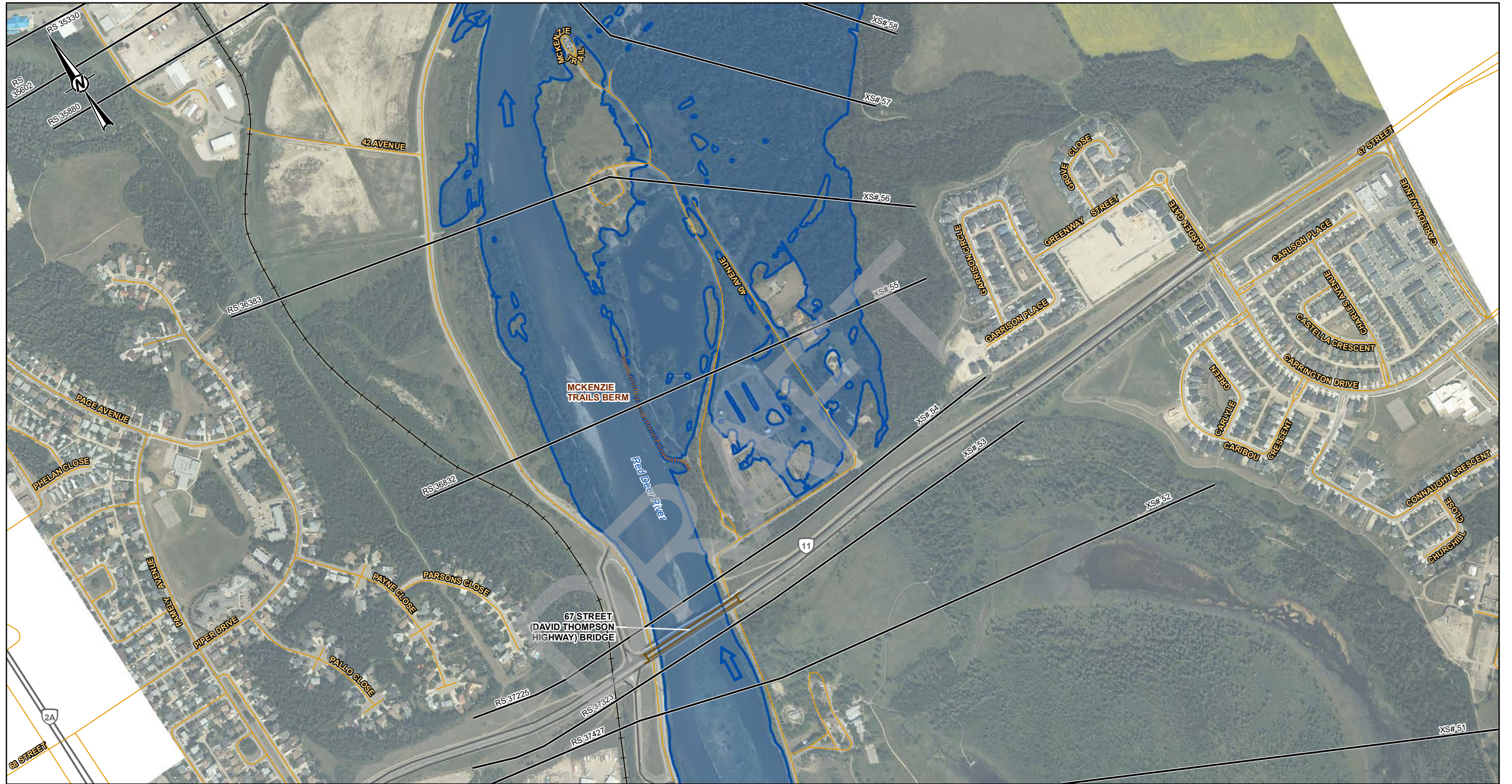
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31

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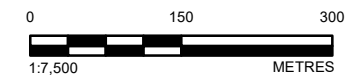
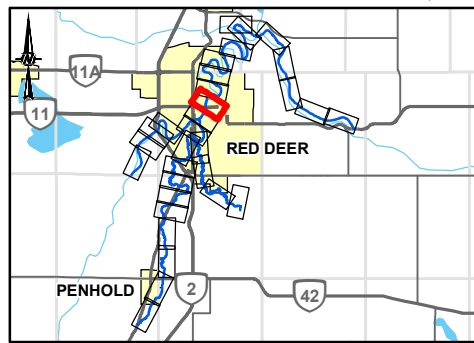
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1430 M³/S



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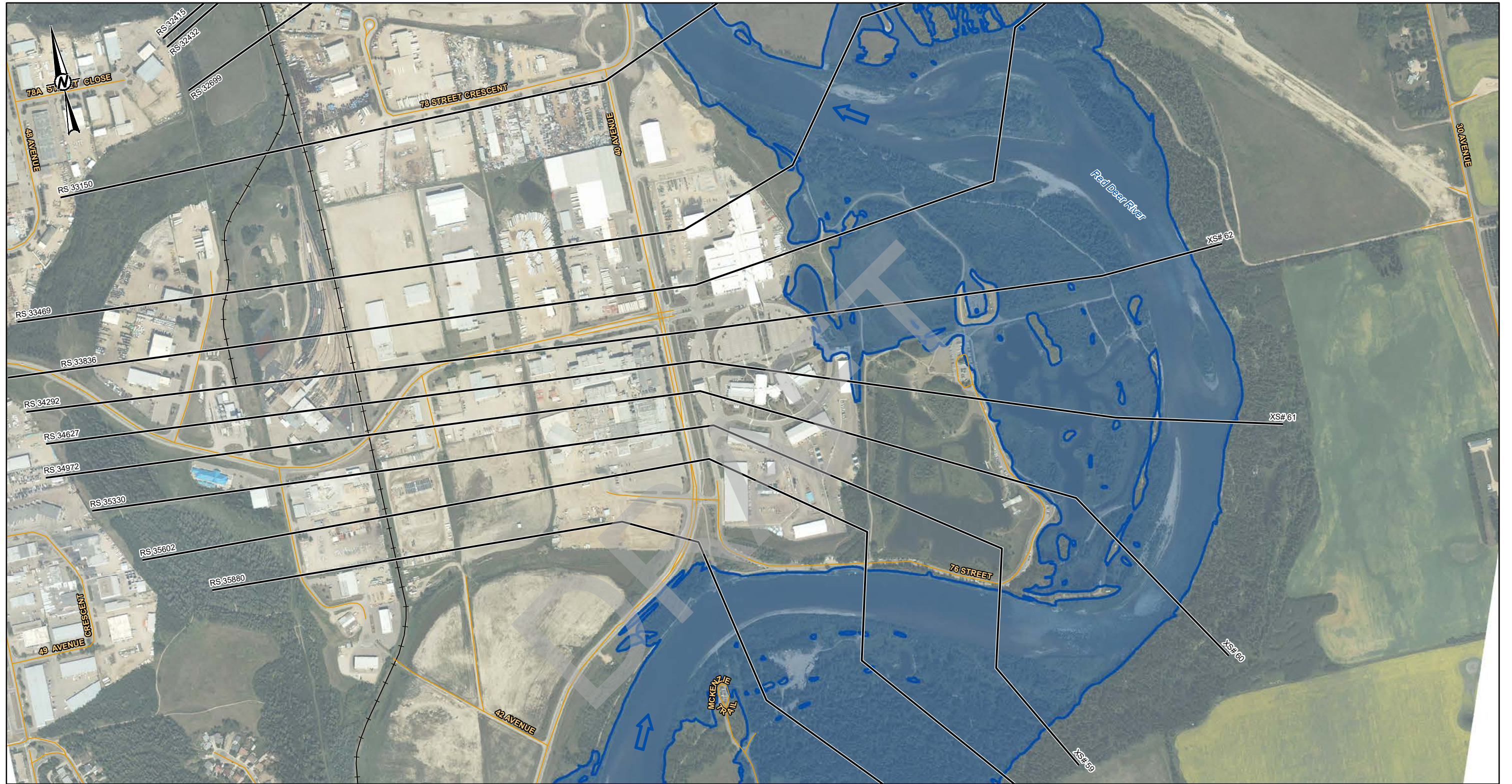
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

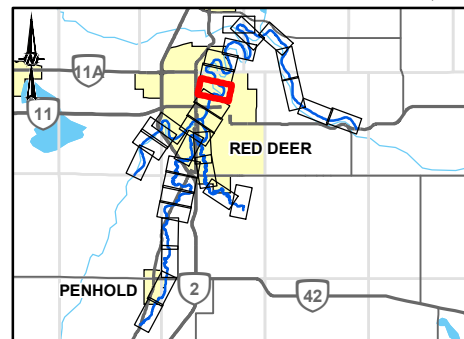
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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LEGEND		50-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	50-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER BELOW WASKASOO CREEK = 1430 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
HYDRAULIC STRUCTURES		
	CULVERT	
	BRIDGE	



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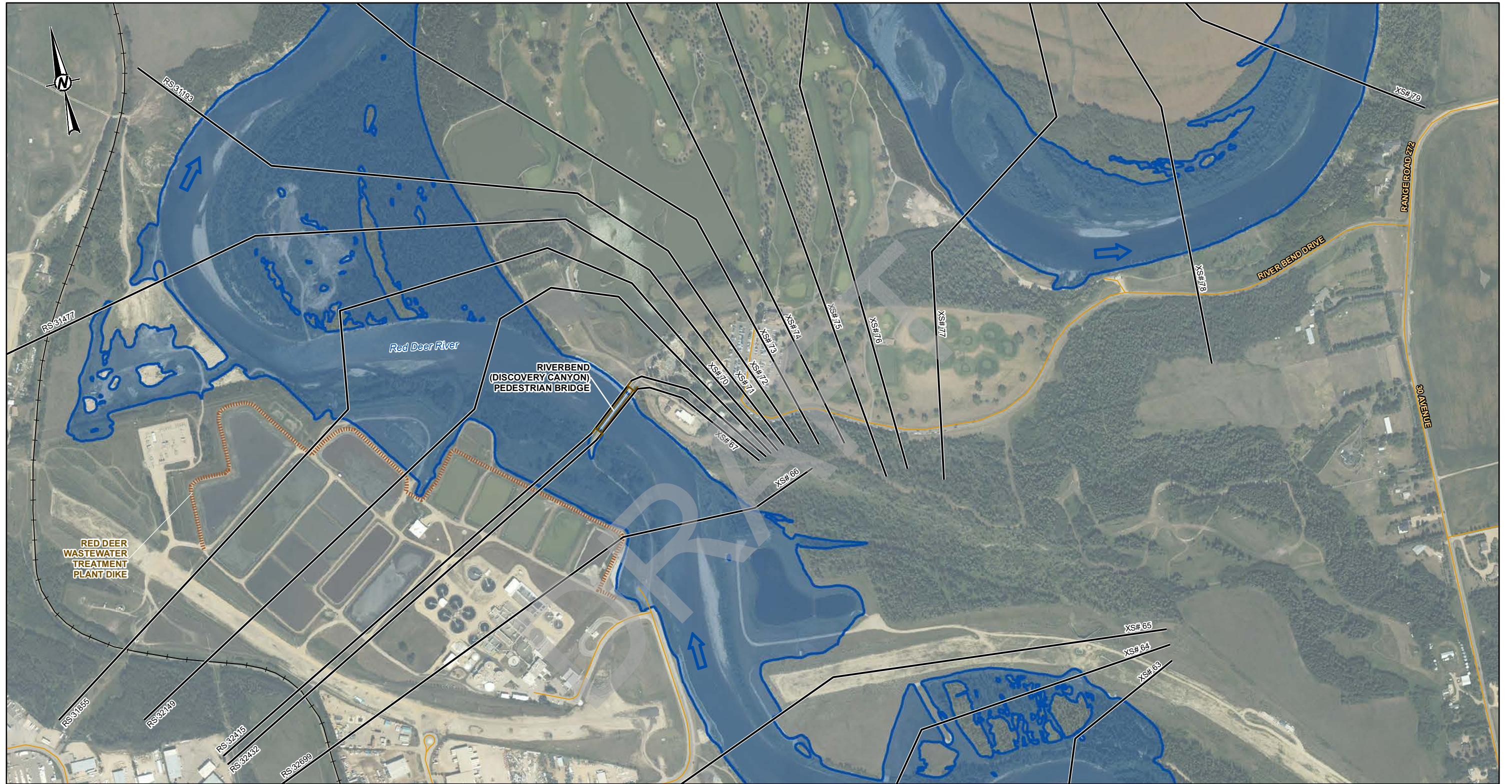
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DESIGNED	PT
PREPARED	NB
REVIEWED	GT
APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

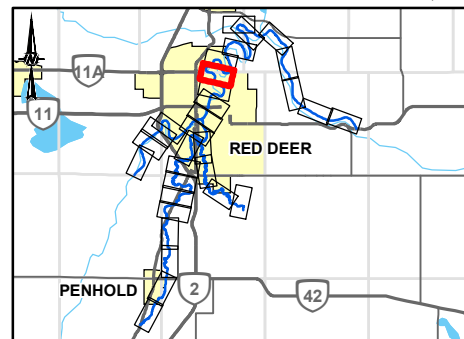
TITLE
**50-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	50-YEAR FLOOD INUNDATION EXTENT
	50-YEAR FLOOD EXTENT
	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	RED DEER WASTEWATER TREATMENT PLANT DIKE
	CROSS SECTION NUMBER
	RIVER STATION (M)

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1430 M³/S



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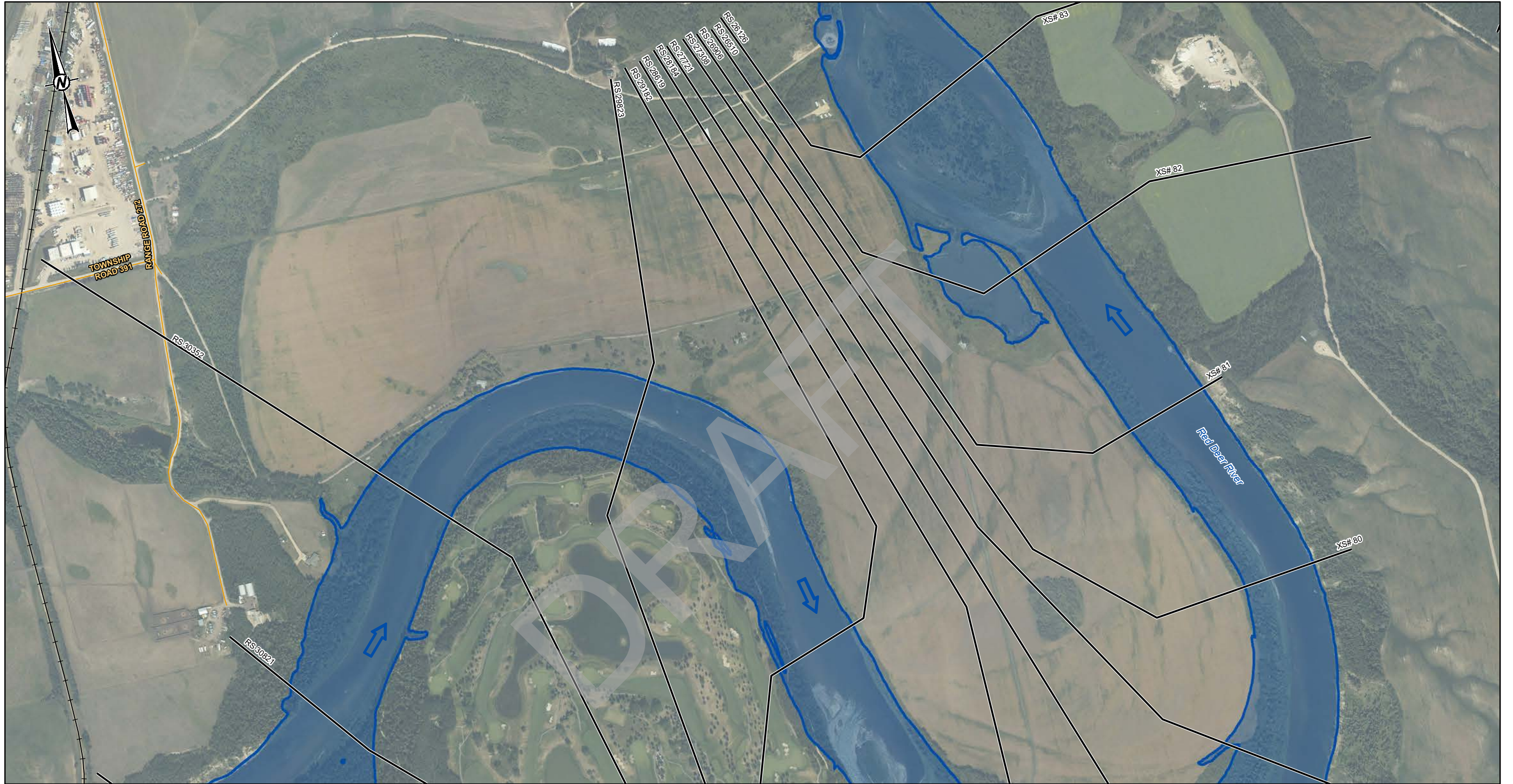
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APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

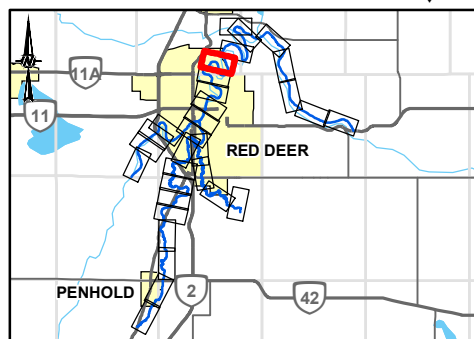
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**50-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31



LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	50-YEAR FLOOD INUNDATION EXTENT	
	50-YEAR FLOOD EXTENT	
	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW WASKASOO CREEK = 1430 M ³ /S	

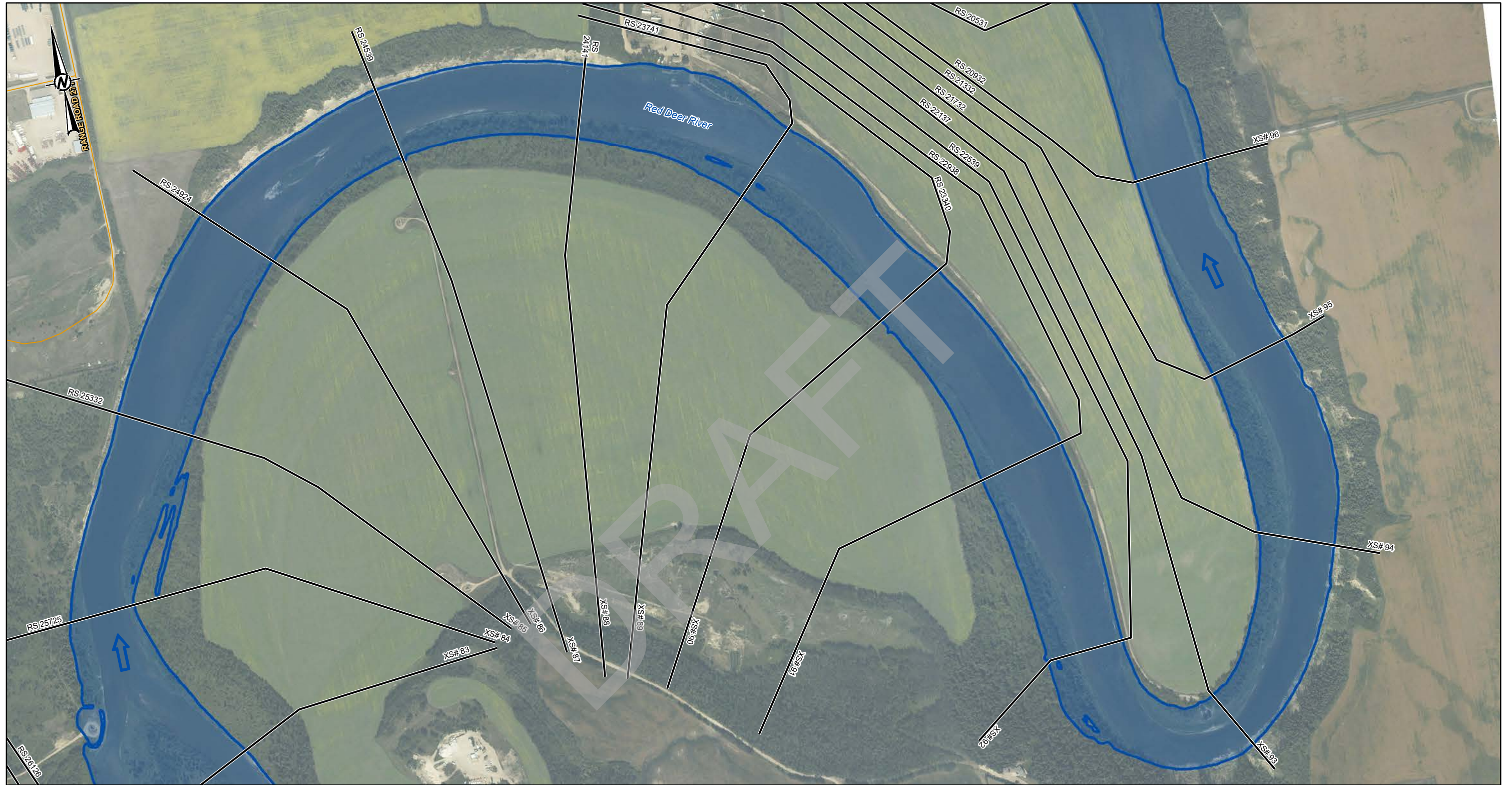


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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

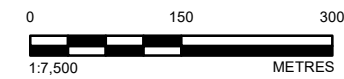
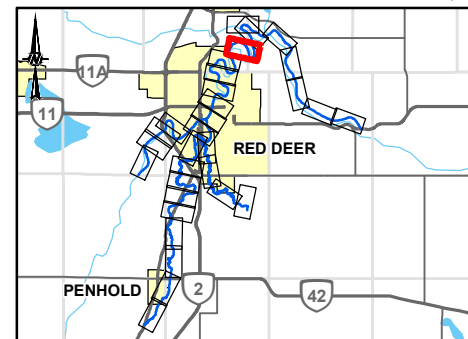
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

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LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
⬡	CULVERT
—	BRIDGE
■	50-YEAR FLOOD INUNDATION EXTENT
■	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 1430 M ³ /S	



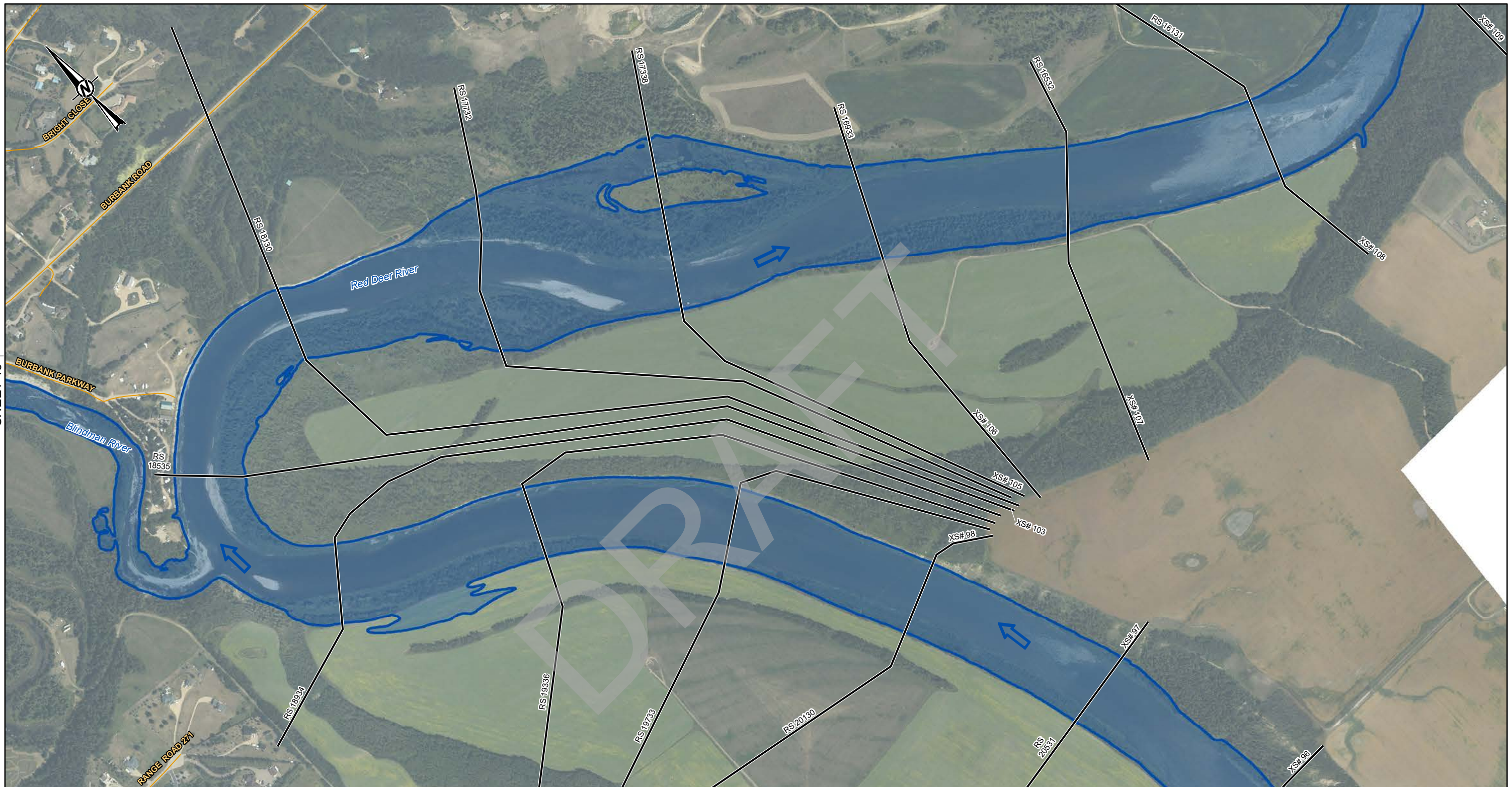
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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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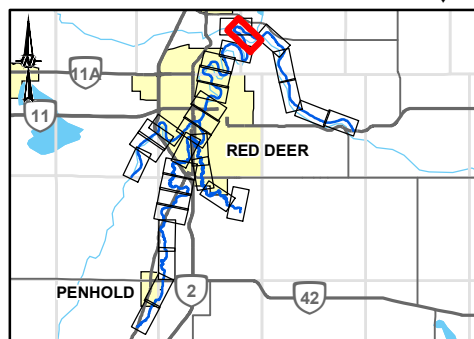
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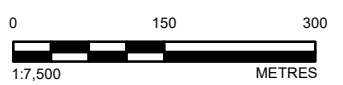
SHEET 13 ↑

SHEET 14 ↓

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	50-YEAR FLOOD INUNDATION EXTENT
—	LOCAL ROAD	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
DISCHARGE		
RED DEER RIVER BELOW WASKASOO CREEK = 1430 M ³ /S		
RED DEER RIVER BELOW BLINDMAN RIVER = 1720 M ³ /S		



SHEET 11 ↓



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT		RED DEER RIVER HAZARD STUDY	
TITLE		50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 12 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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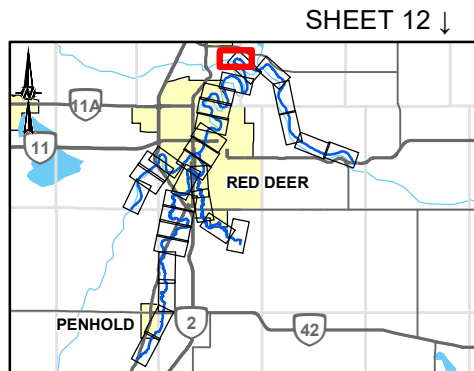


SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 1430 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 1720 M³/S



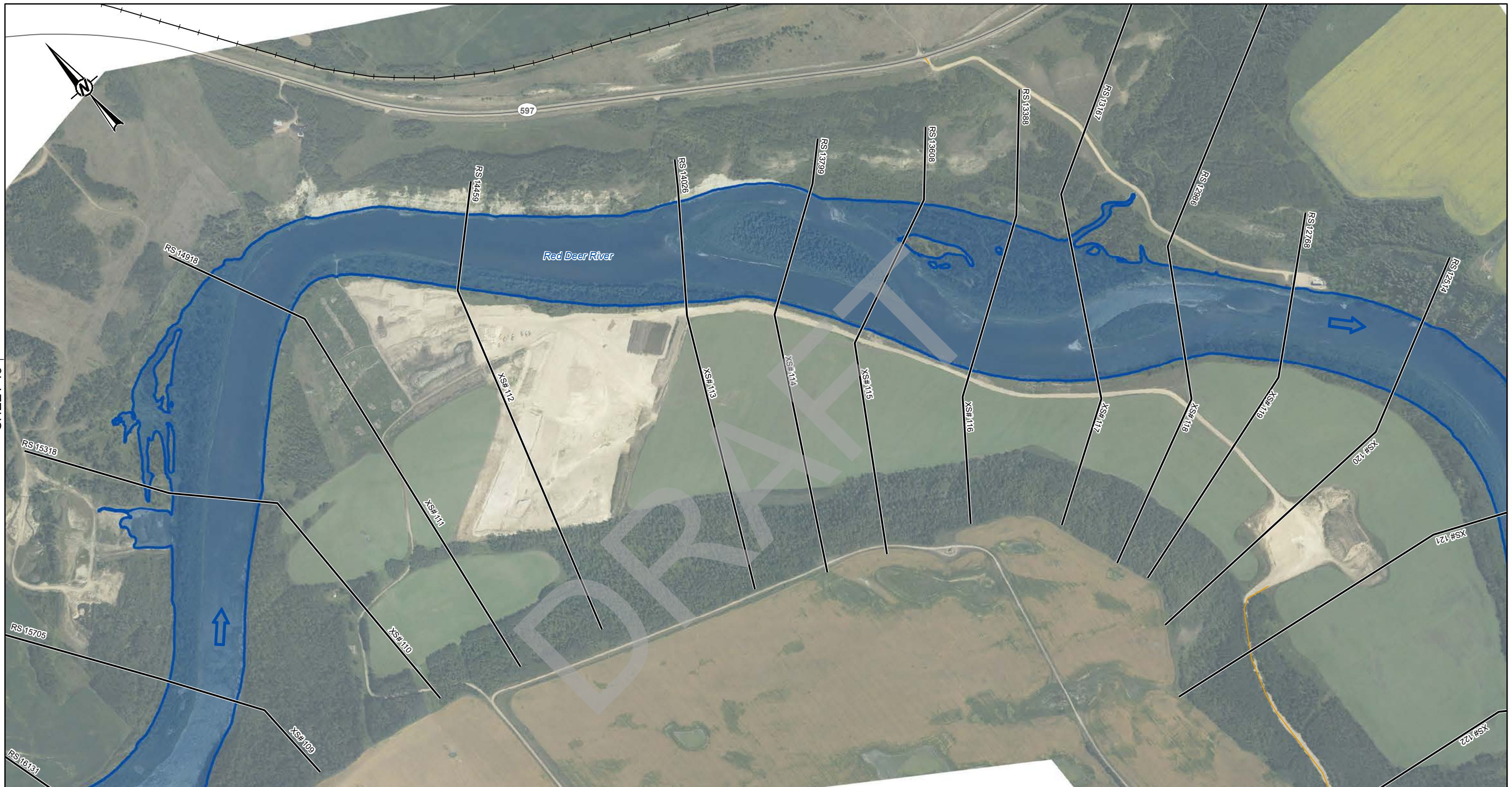
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CONSULTANT			
DESIGNED	YYYY-MM-DD	2022-11-23	PT
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 13 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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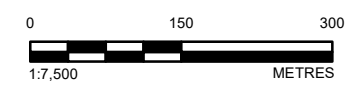
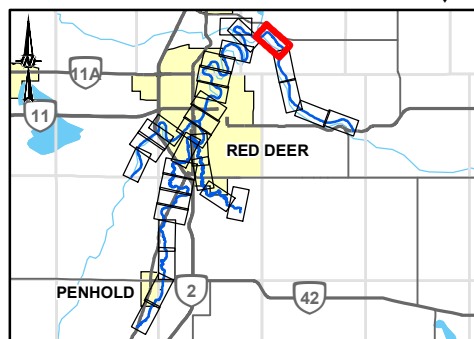


SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	FLOOD CONTROL STRUCTURE
	STUDY BOUNDARY	CULVERT
	FLOW DIRECTION	BRIDGE
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 1720 M ³ /S

SHEET 12 ↓



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 14 OF 31	

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A4 (210x297mm)

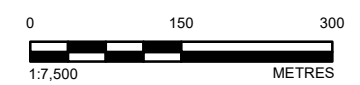
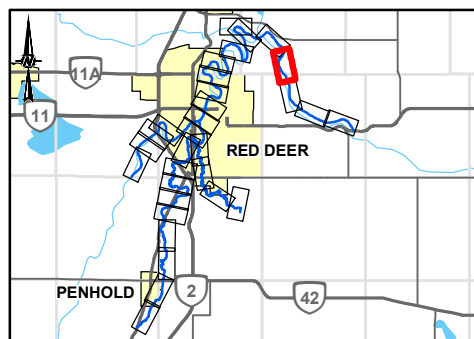
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	RED DEER RIVER BELOW BLINDMAN RIVER = 1720 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

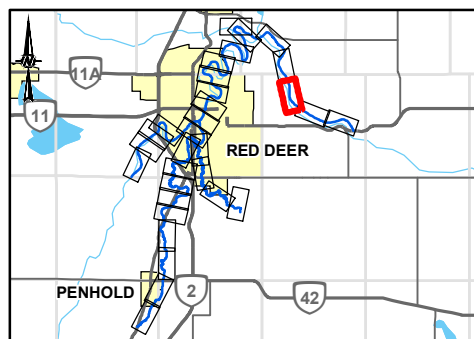
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	
XXXX	FLOOD CONTROL STRUCTURE	50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	HYDRAULIC STRUCTURES	
FLOW DIRECTION	CULVERT	DISCHARGE
LOCAL ROAD	BRIDGE	RED DEER RIVER BELOW BLINDMAN RIVER = 1720 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 16 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

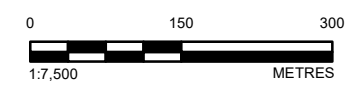
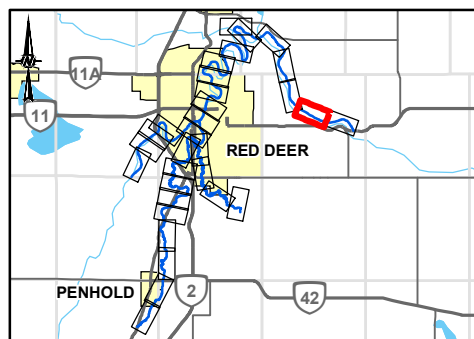
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬▬▬	50-YEAR FLOOD INUNDATION EXTENT	
▬▬▬	50-YEAR FLOOD EXTENT	
▬▬▬	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 1720 M ³ /S	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**50-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

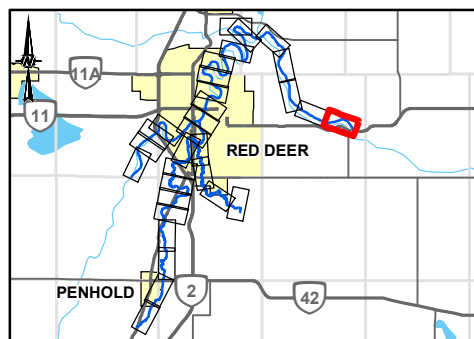
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SHEET 17 ↑



LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
—	STUDY BOUNDARY	— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	50-YEAR FLOOD INUNDATION EXTENT	
	50-YEAR FLOOD EXTENT	
	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 1720 M ³ /S	



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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
DESIGNED	PT	
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REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

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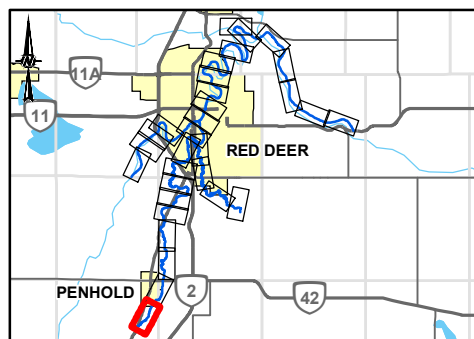
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SHEET 20

LEGEND		
—	CROSS SECTION	50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
○	CULVERT	
—	BRIDGE	

DISCHARGE
WASKASOO CREEK ABOVE HIGHWAY 42 = 25 M³/S



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 19 OF 31



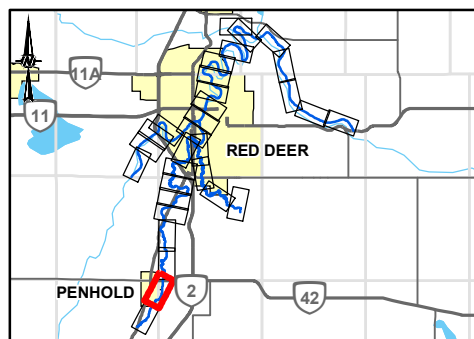
SHEET 19 ↑

↓ SHEET 21

THE CLIENT GOVERNMENT OF ALBERTA 1425276_Rev2_DrainsMappingProductsHydrology04_Open Water Flood Inundation Map Production (Rev3) 1783039_2020-01-09 AT 2:37:15 PM
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LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	 50-YEAR FLOOD INUNDATION EXTENT
RS 304	RIVER STATION (M)	 50-YEAR FLOOD EXTENT
 	STUDY BOUNDARY	 50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
→	FLOW DIRECTION	 HYDRAULIC STRUCTURES
—	LOCAL ROAD	 CULVERT
—	PRIMARY HIGHWAY	 BRIDGE
—	SECONDARY HIGHWAY	
+	RAILWAY	

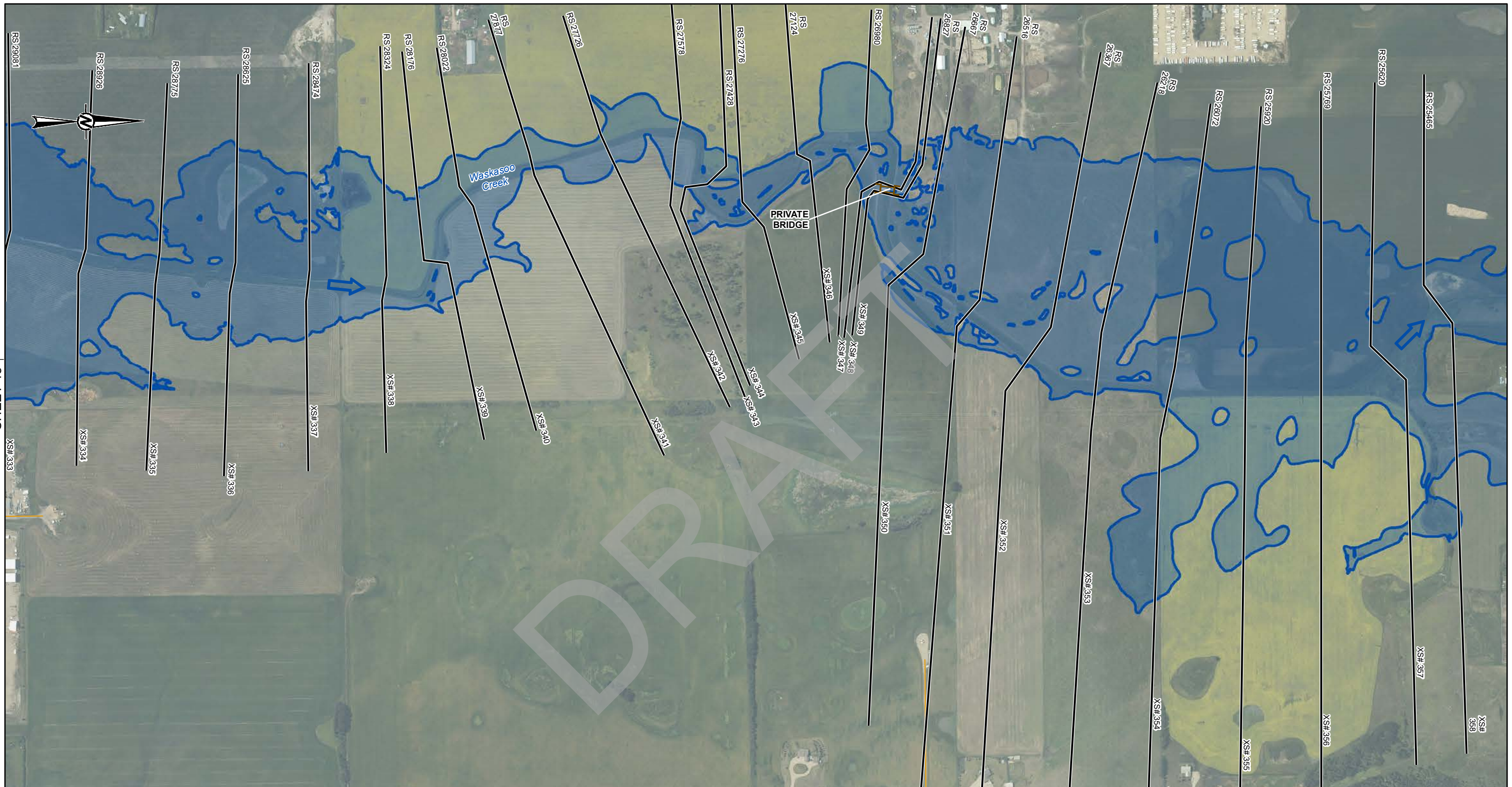
DISCHARGE
 WASKASOO CREEK ABOVE HIGHWAY 42 = 25 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M³/S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

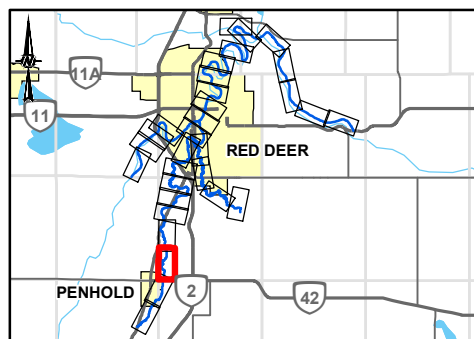
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↑ SHEET 18

↑ SHEET 22

LEGEND		
—	CROSS SECTION	50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	

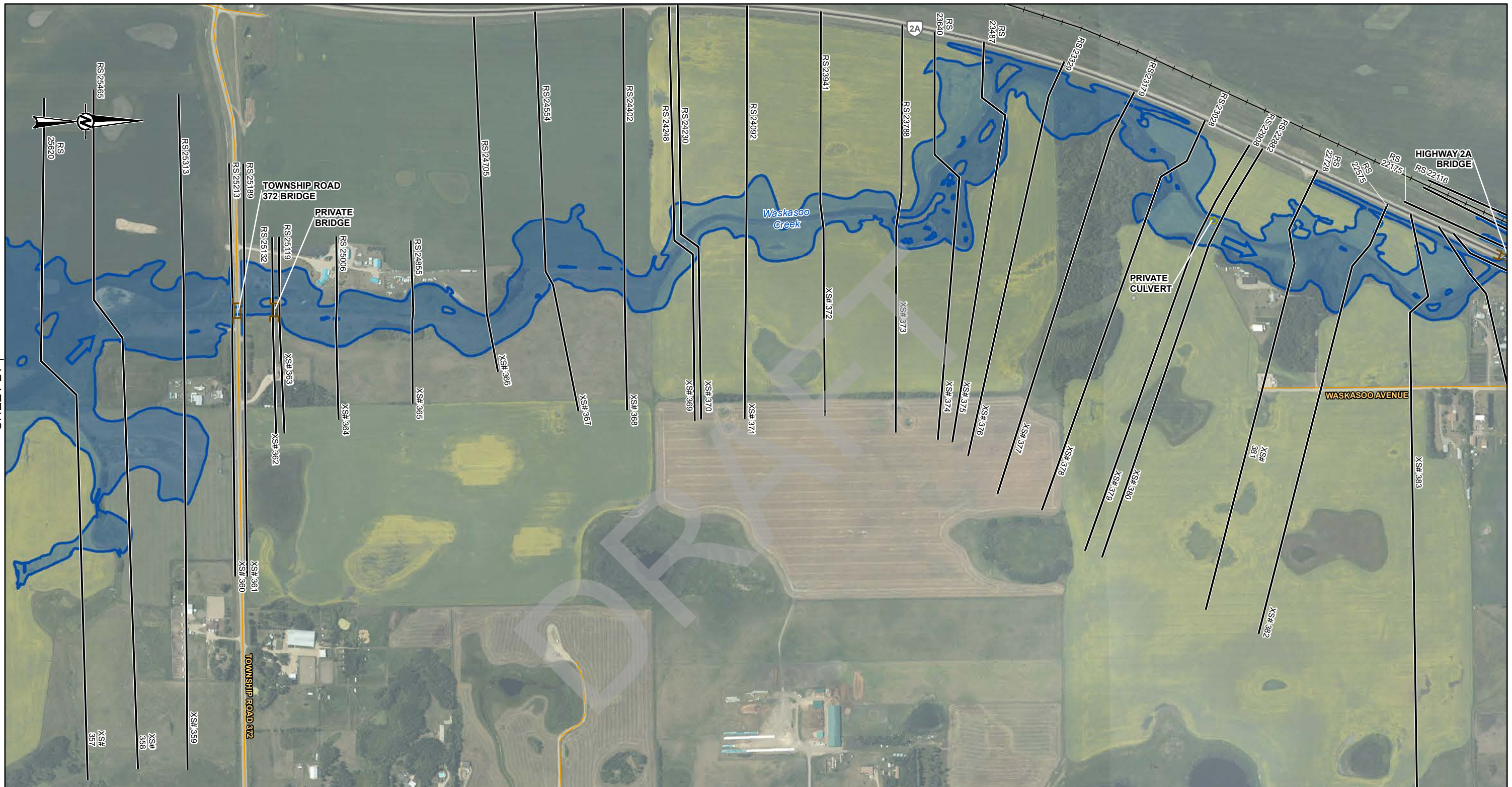


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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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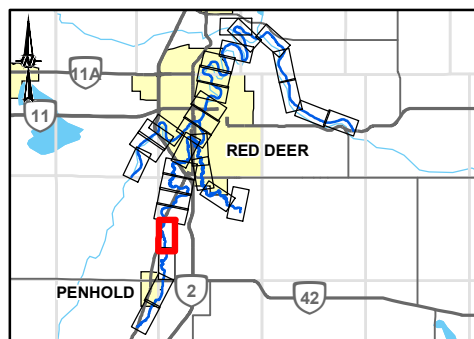
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
▬▬▬	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬▬▬	FLOOD CONTROL STRUCTURE	
◻	CULVERT	
▬▬▬	BRIDGE	



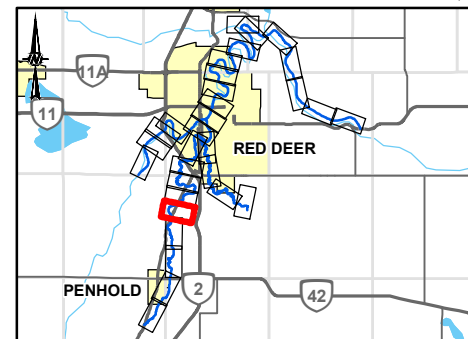
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CONSULTANT	GOLDER	
DATE	2022-11-23	
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PREPARED	NB	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND		50-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	50-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**50-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

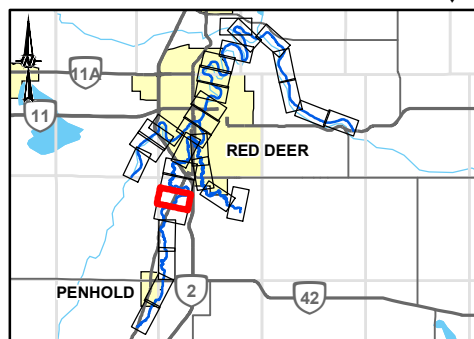
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		50-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		50-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M³/S



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

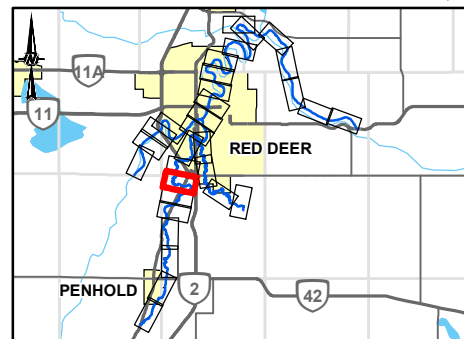
PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 24 OF 31

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LEGEND		50-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	50-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	FLOOD CONTROL STRUCTURE
■	STUDY BOUNDARY	○	CULVERT
→	FLOW DIRECTION	—	BRIDGE
—	LOCAL ROAD		
—	PRIMARY HIGHWAY		
—	SECONDARY HIGHWAY		
+	RAILWAY		
		DISCHARGE	
		WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M ³ /S	



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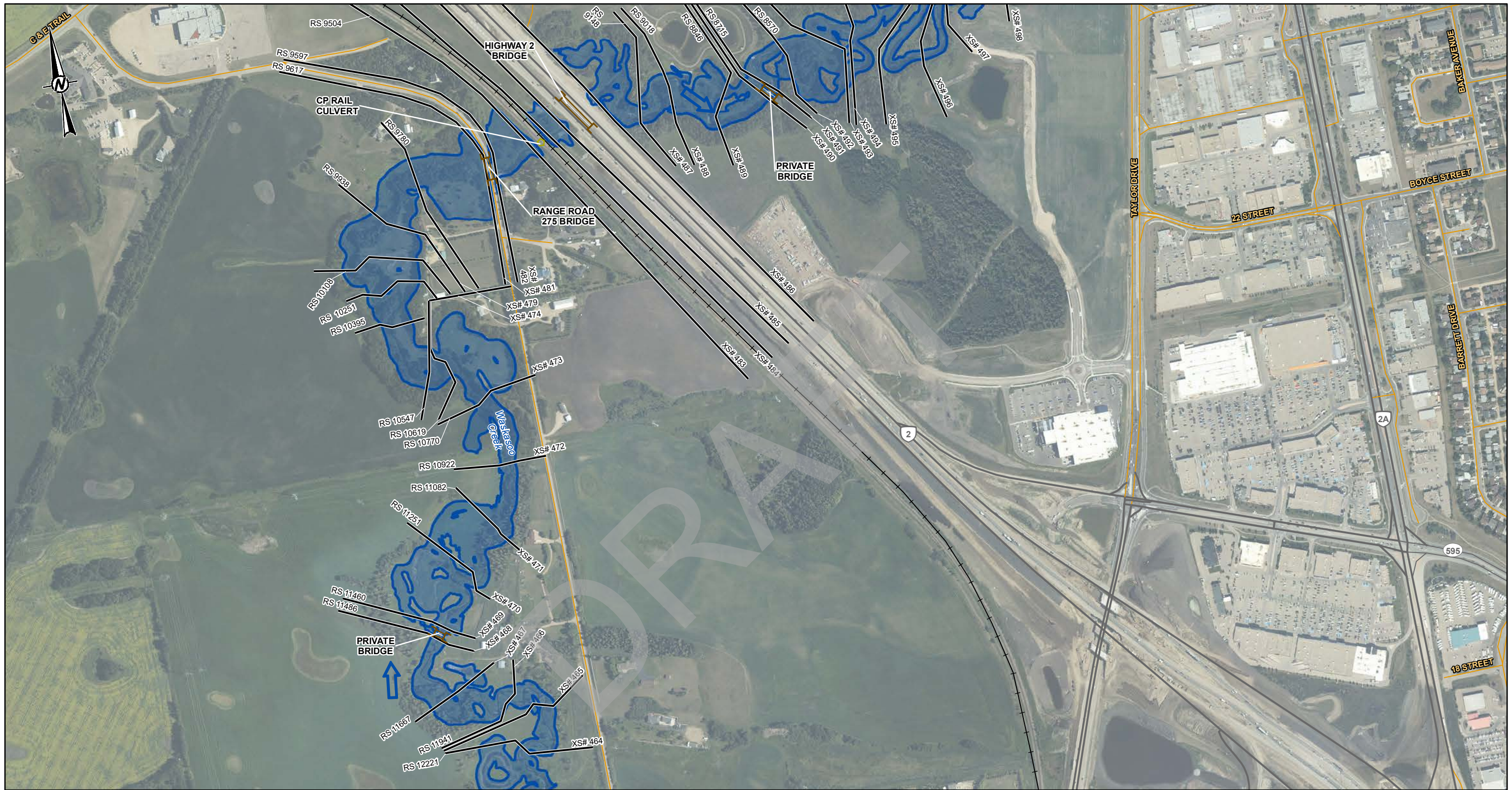
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**50-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

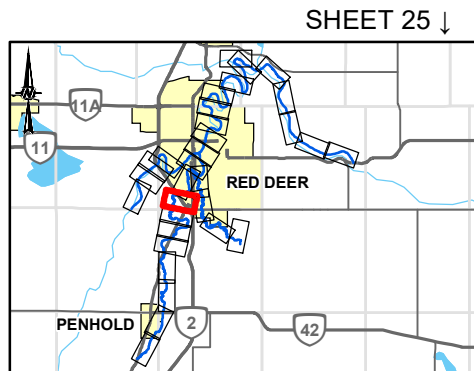
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31

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LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	50-YEAR FLOOD INUNDATION EXTENT
	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M ³ /S	

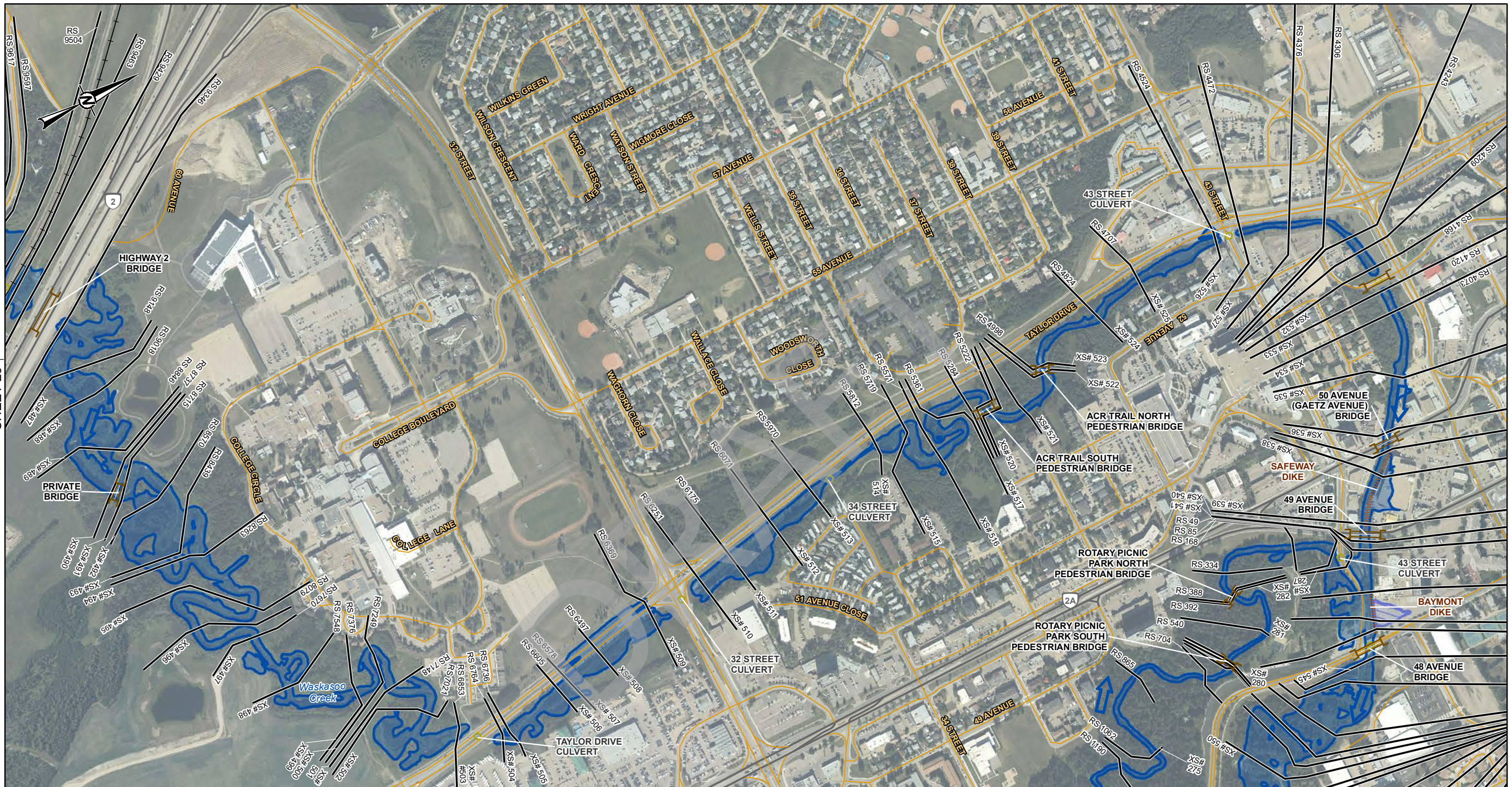


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PROJECT RED DEER RIVER HAZARD STUDY			
TITLE 50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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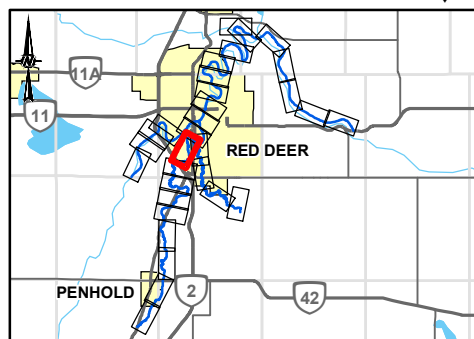
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SHEET 26 ↑

↓ SHEET 5

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	50-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	HYDRAULIC STRUCTURES
	CULVERT
	BRIDGE
	50-YEAR FLOOD EXTENT
	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M ³ /S	
WASKASOO CREEK BELOW PIPER CREEK = 41.8 M ³ /S	
PIPER CREEK ABOVE WASKASOO CREEK = 15.2 M ³ /S	

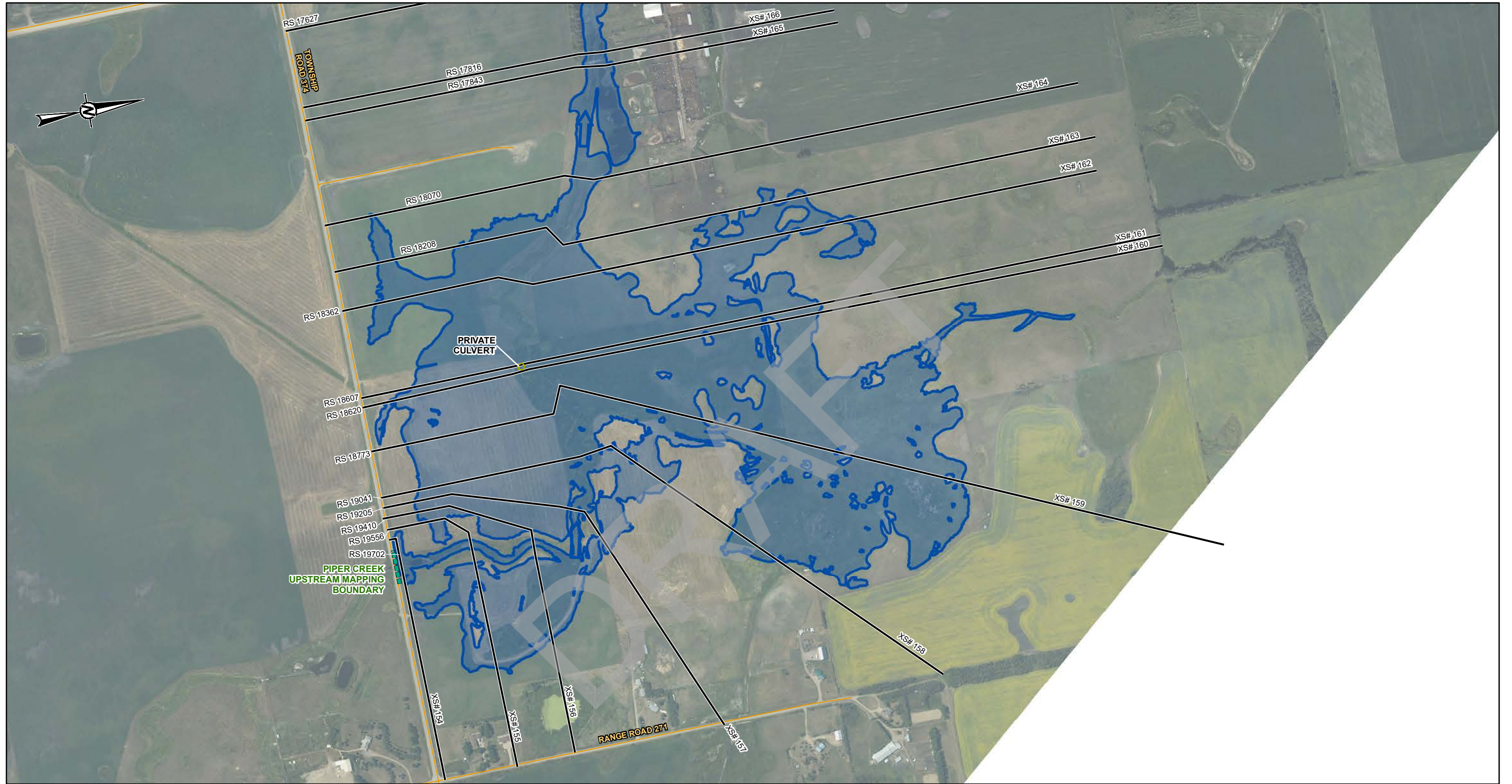


SHEET 31 ↓

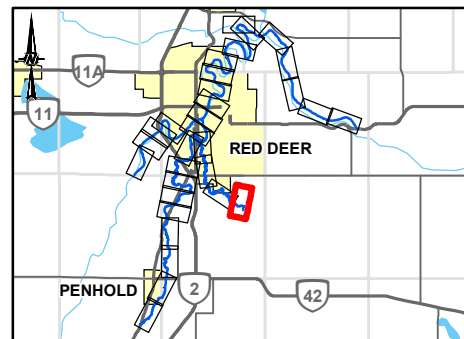


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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	50-YEAR FLOOD INUNDATION EXTENT
	50-YEAR FLOOD EXTENT
	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	PIPER CREEK UPSTREAM MAPPING BOUNDARY
	CULVERT
	BRIDGE
	DISCHARGE
	PIPER CREEK ABOVE HIGHWAY 595 = 13.8 M ³ /S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**50-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

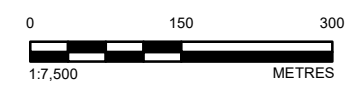
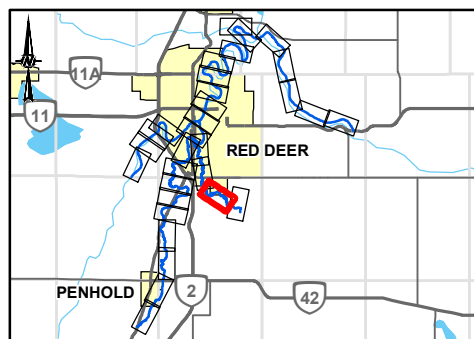
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	50-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	50-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 13.8 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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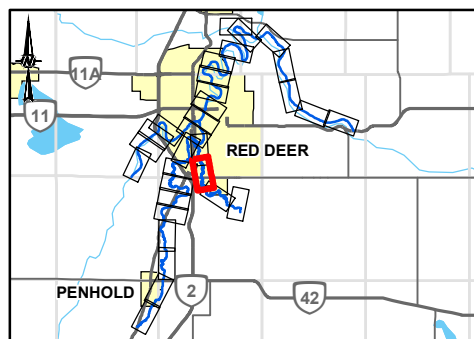
SHEET 31

SHEET 30

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	50-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	50-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
 PIPER CREEK ABOVE HIGHWAY 595 = 13.8 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 15.2 M³/S



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GOLDER

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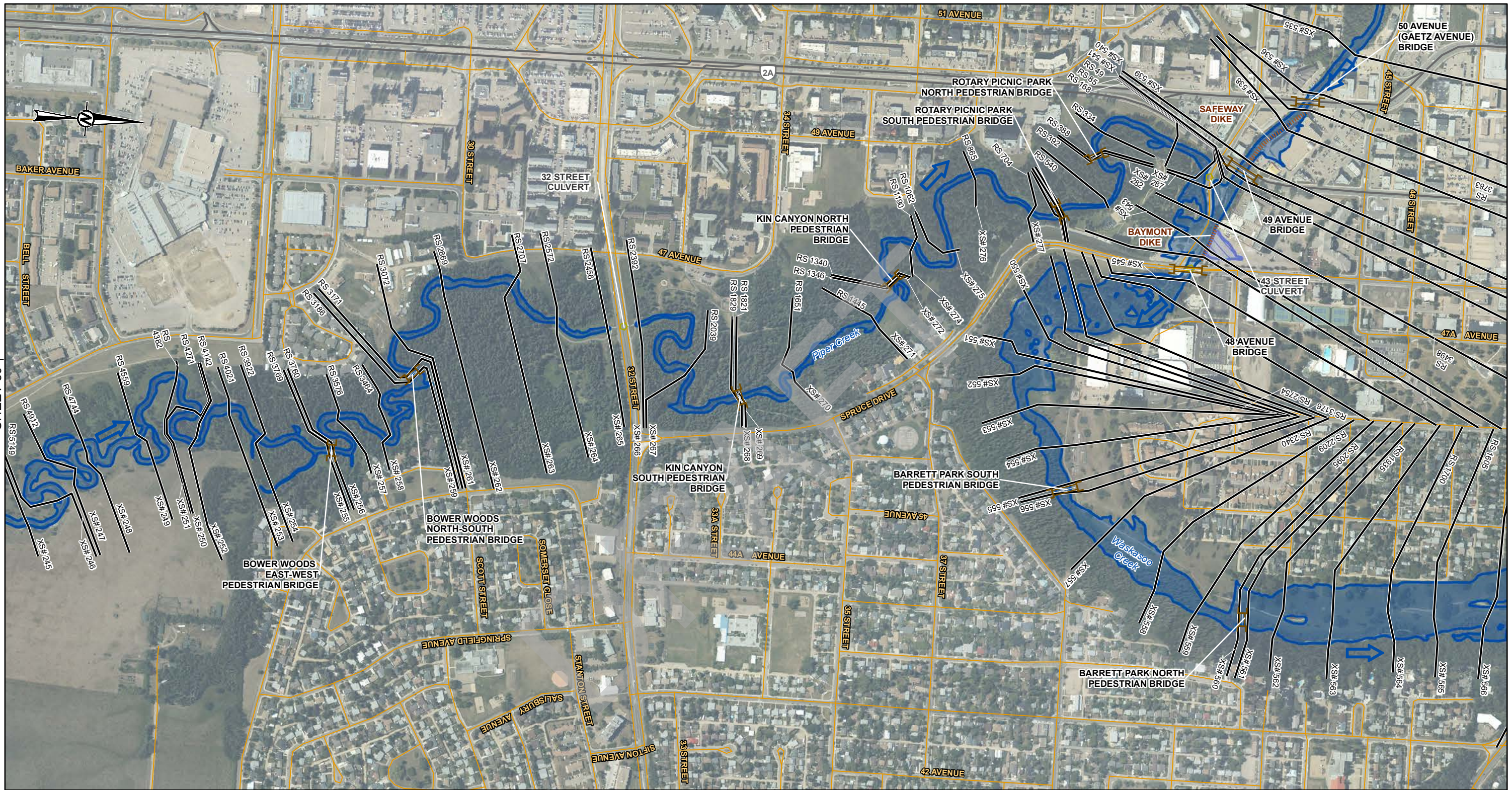
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

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↑ SHEET 30

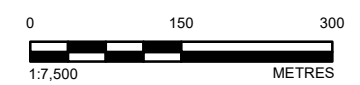
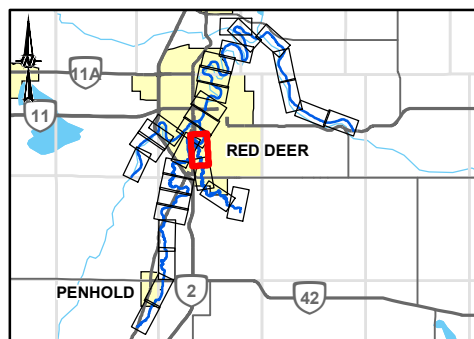
↑ SHEET 5

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- BRIDGE
- 50-YEAR FLOOD INUNDATION EXTENT
- 50-YEAR FLOOD EXTENT
- 50-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE

PIPER CREEK ABOVE WASKASOO CREEK = 15.2 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 28.9 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 41.8 M³/S



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CONSULTANT
GOLDER

Alberta Government

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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
50-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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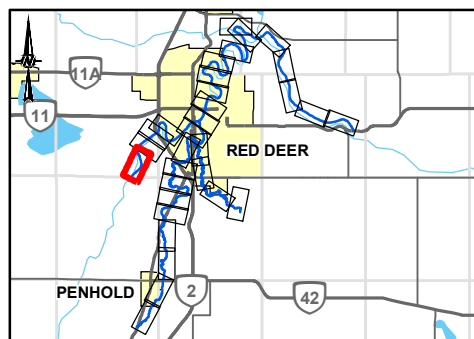
SHEETS 1-31

75-Year Flood Inundation Extent

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LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
—	STUDY BOUNDARY	— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	75-YEAR FLOOD INUNDATION EXTENT	
	75-YEAR FLOOD EXTENT	
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER ABOVE WASKASOO CREEK = 1630 M ³ /S	



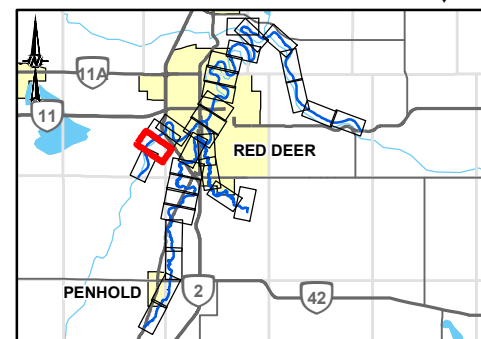
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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 1 OF 31	



LEGEND		
—	CROSS SECTION	75-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER ABOVE WASKASOO CREEK = 1630 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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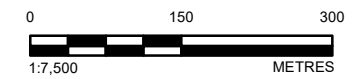
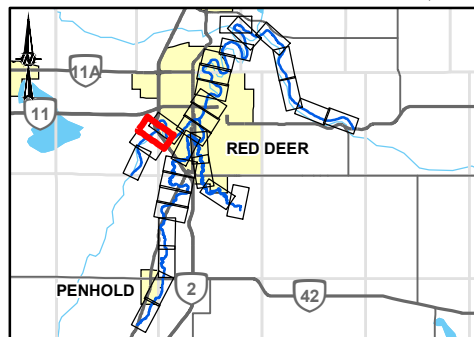
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 1630 M ³ /S	

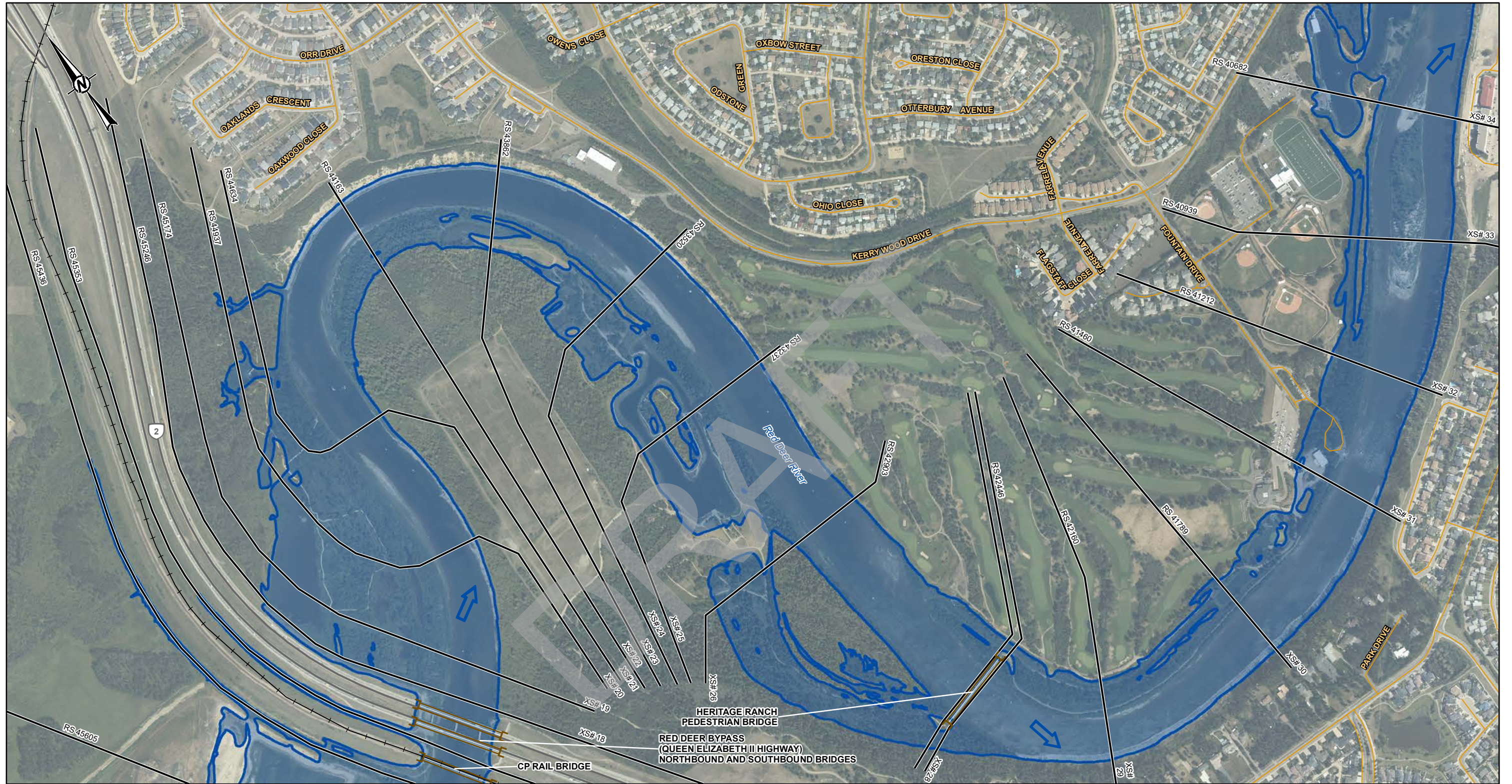


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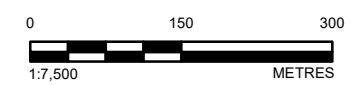
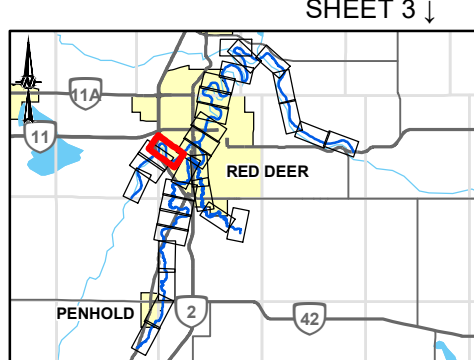
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31

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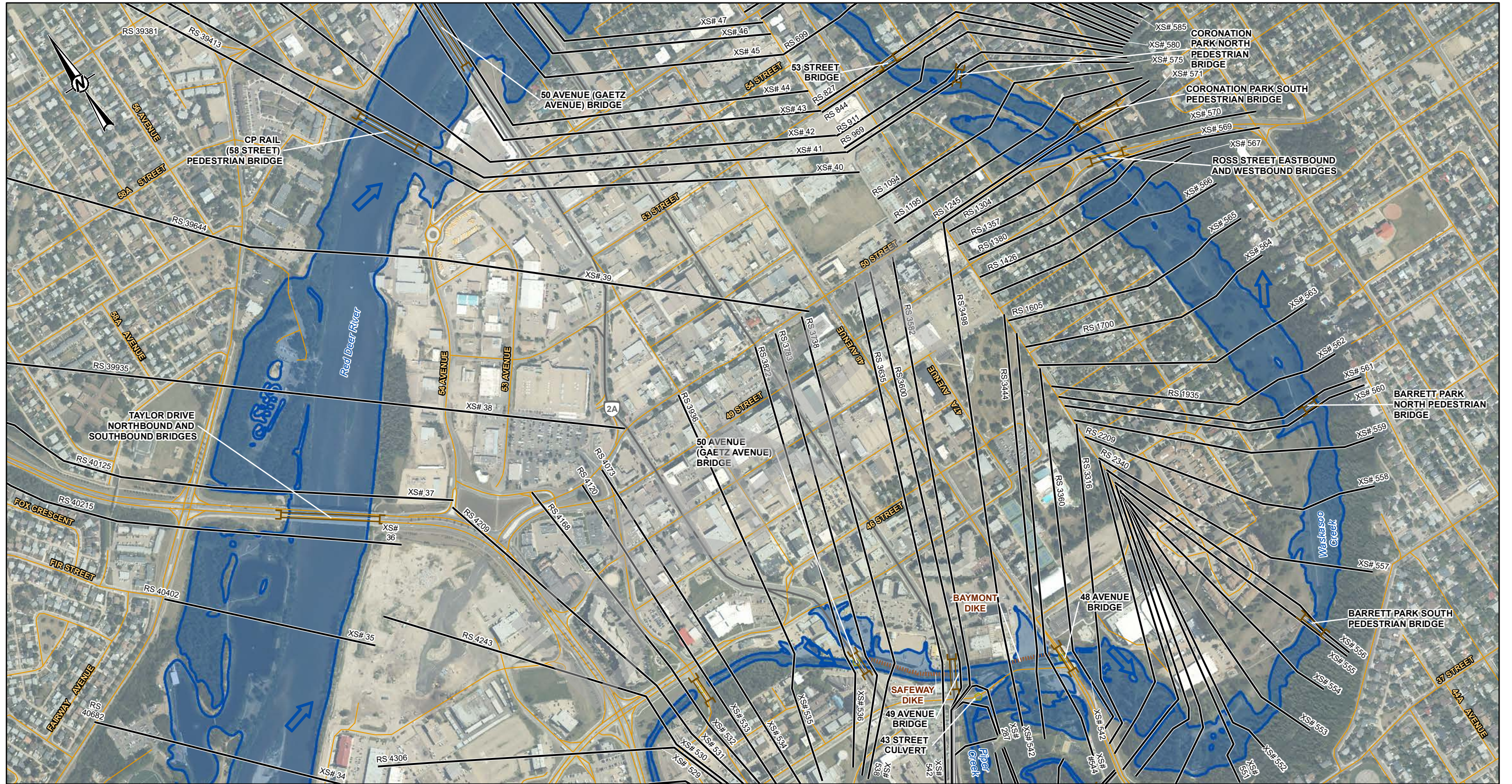


LEGEND	
	CROSS SECTION
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOOD CONTROL STRUCTURE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 1630 M ³ /S	

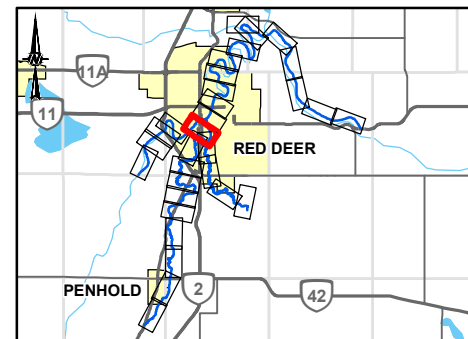


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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31



LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	75-YEAR FLOOD INUNDATION EXTENT
RS 304	RIVER STATION (M)	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	HYDRAULIC STRUCTURES	
FLOW DIRECTION	CULVERT	
LOCAL ROAD	BRIDGE	
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		
	DISCHARGE	
	RED DEER RIVER ABOVE WASKASOO CREEK = 1630 M ³ /S	
	WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M ³ /S	
	WASKASOO CREEK BELOW PIPER CREEK = 48.7 M ³ /S	
	PIPER CREEK ABOVE WASKASOO CREEK = 17.5 M ³ /S	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**75-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	RAILWAY
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	CULVERT
	BRIDGE
	HYDRAULIC STRUCTURES
	DISCHARGE

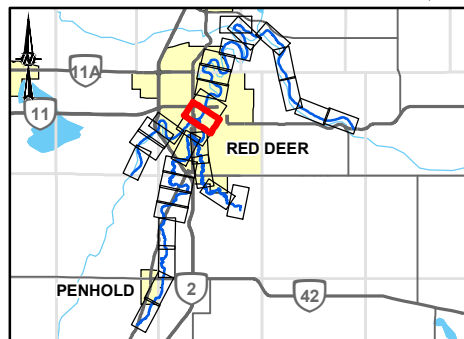
75-YEAR FLOOD INUNDATION EXTENT

75-YEAR FLOOD EXTENT

75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE

RED DEER RIVER ABOVE WASKASOO CREEK = 1630 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 1680 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 48.7 M³/S



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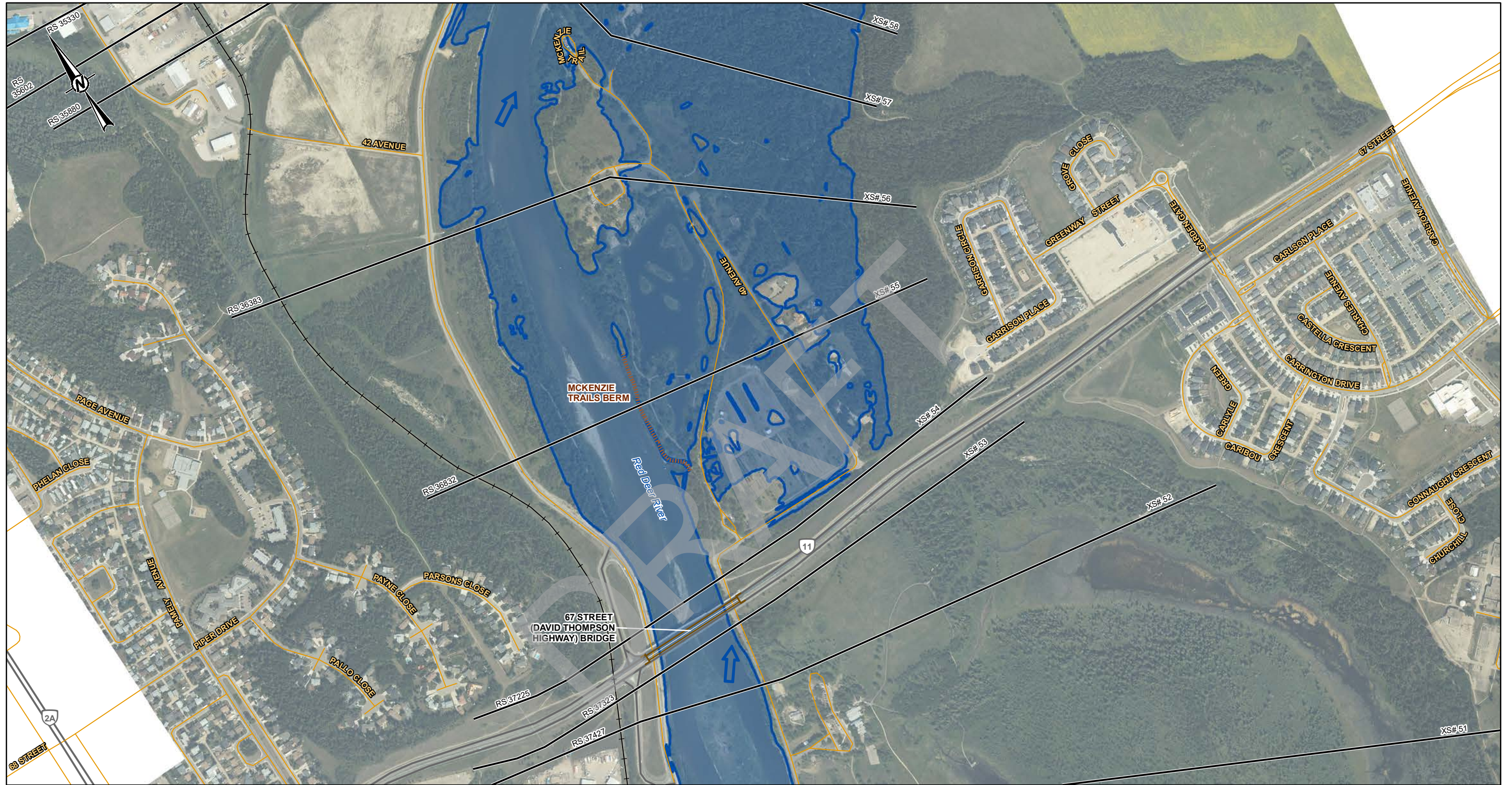
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31

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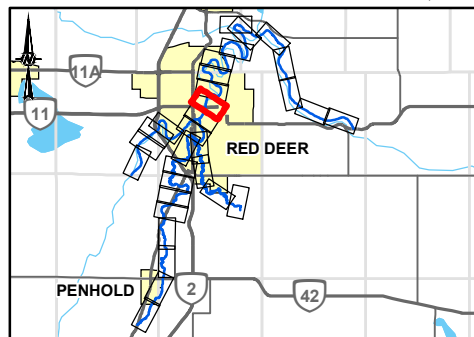
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	75	75-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	—	HYDRAULIC STRUCTURES	75	75-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	⬇	○	⬇	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	—	—	—	
➔	FLOW DIRECTION	—	—	—	
—	LOCAL ROAD	—	—	—	
—	PRIMARY HIGHWAY	—	—	—	
—	SECONDARY HIGHWAY	—	—	—	
—	RAILWAY	—	—	—	

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1680 M³/S



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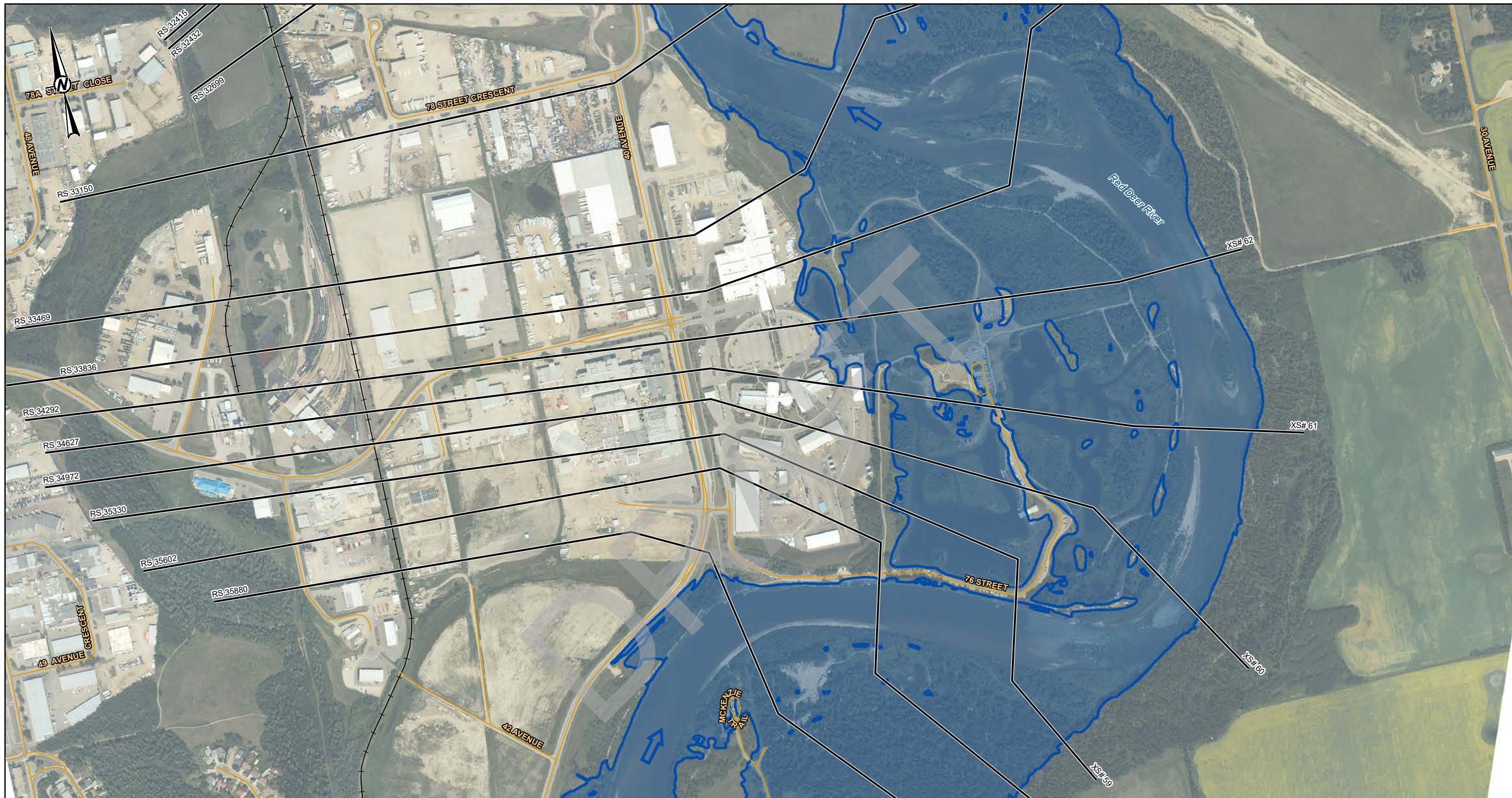
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

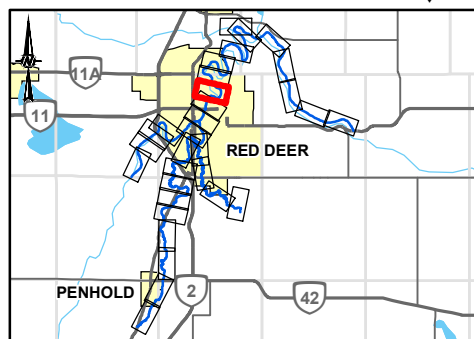
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LEGEND

— CROSS SECTION	FLOOD CONTROL STRUCTURE	75-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	■ 75-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	○ CULVERT	■ 75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
■ STUDY BOUNDARY	— BRIDGE	
➔ FLOW DIRECTION		DISCHARGE
— LOCAL ROAD		RED DEER RIVER BELOW WASKASOO CREEK = 1680 M ³ /S
— PRIMARY HIGHWAY		
— SECONDARY HIGHWAY		
+ RAILWAY		



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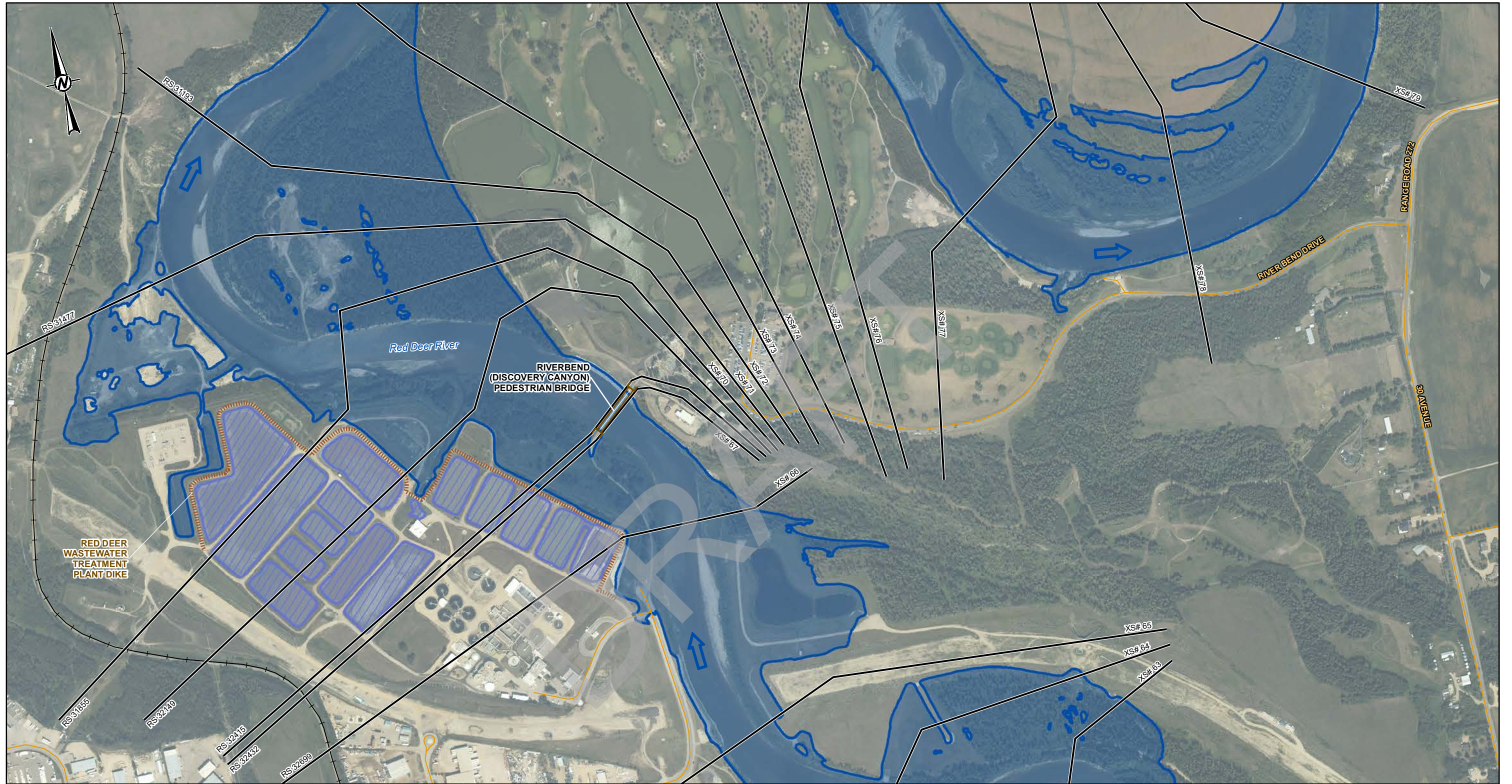
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PROJECT
RED DEER RIVER HAZARD STUDY

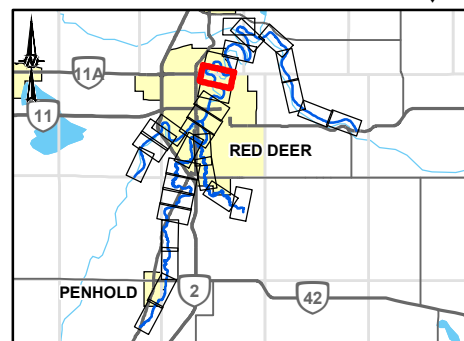
TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	CULVERT
	BRIDGE
	75-YEAR FLOOD EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1680 M ³ /S	



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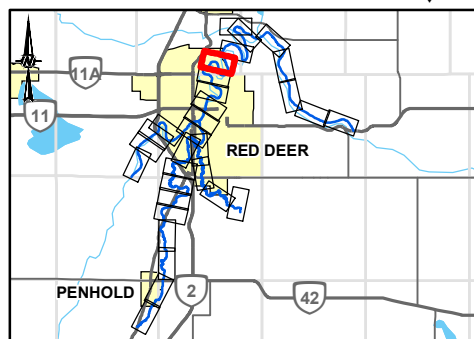
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**75-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	CULVERT
	BRIDGE
	DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1680 M ³ /S	

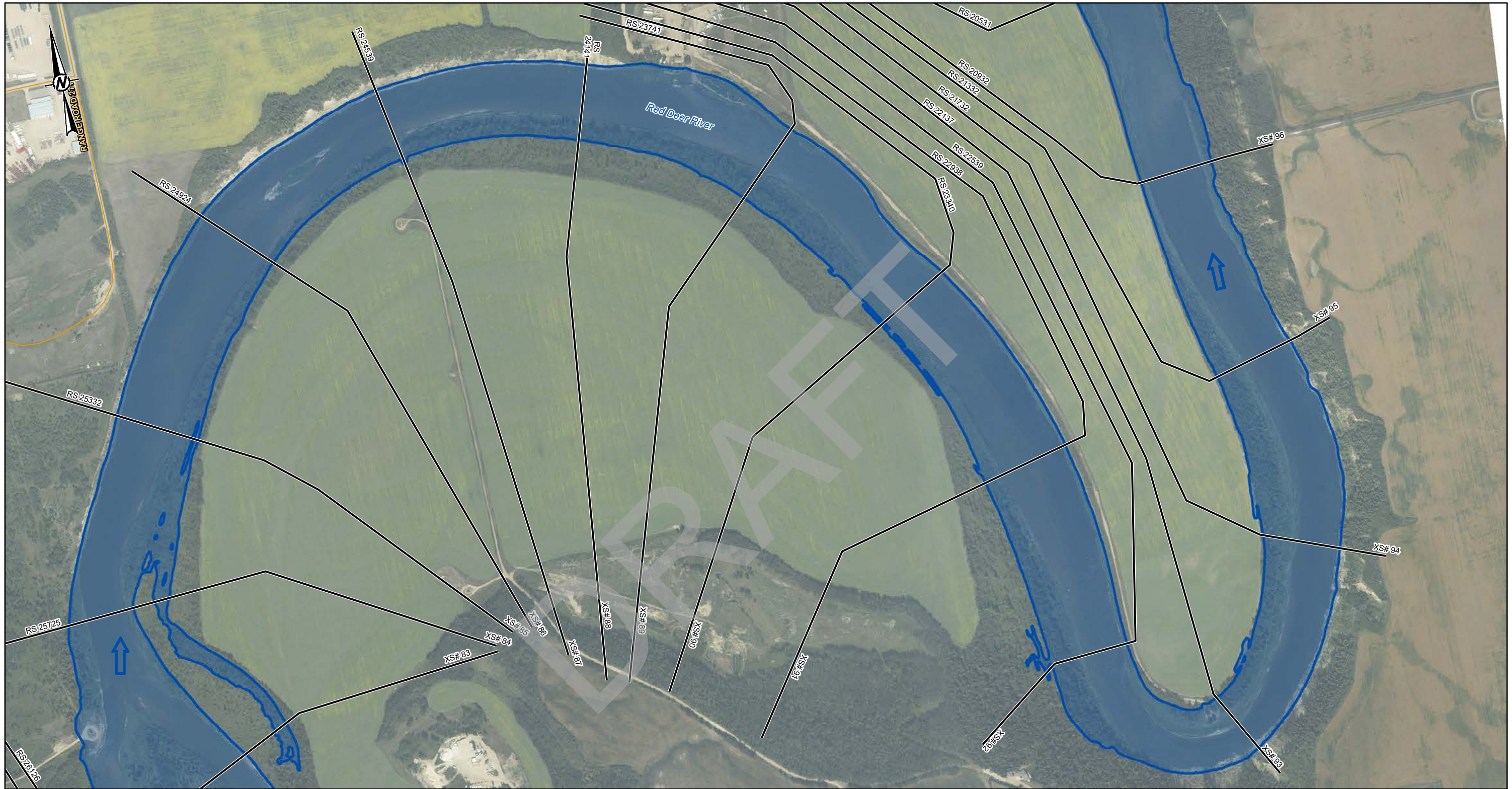


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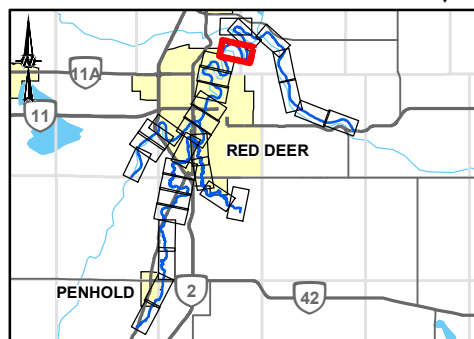
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

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LEGEND	
	CROSS SECTION
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1680 M ³ /S	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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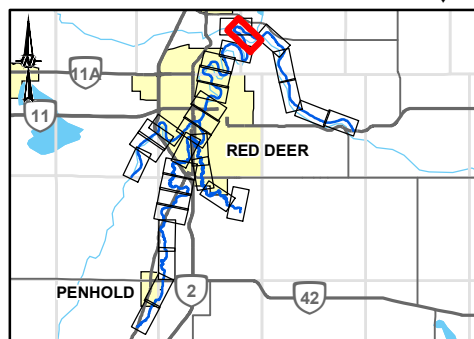
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SHEET 13 ↑

↓ SHEET 14

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
■	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	75-YEAR FLOOD INUNDATION EXTENT	
	■ 75-YEAR FLOOD EXTENT	
	■ 75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW WASKASOO CREEK = 1680 M ³ /S	
	RED DEER RIVER BELOW BLINDMAN RIVER = 1980 M ³ /S	



↓ SHEET 11



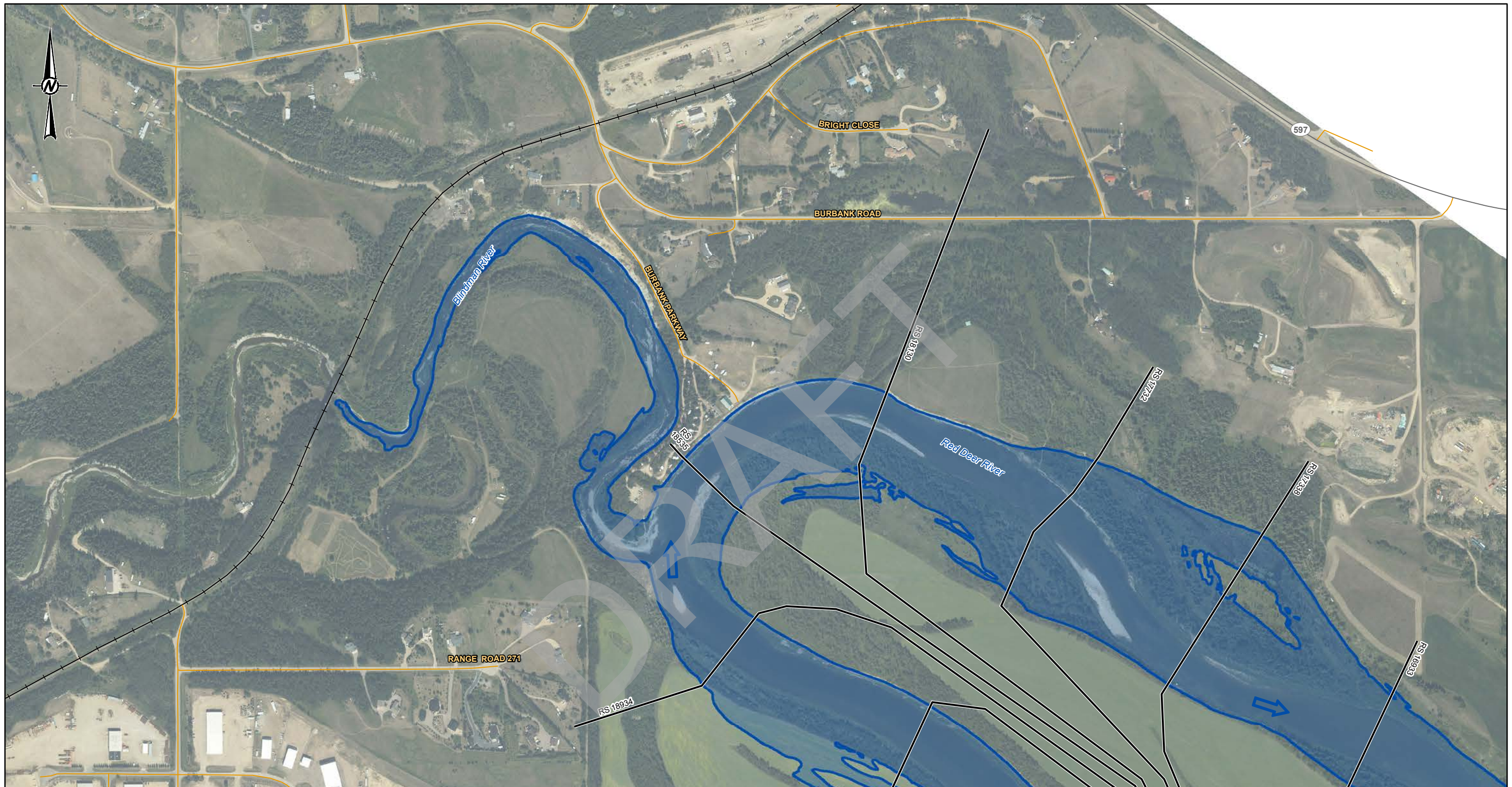
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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 12 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS I

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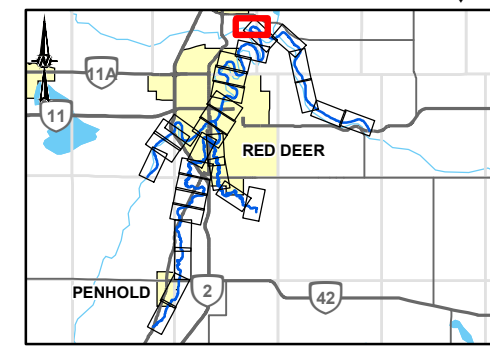
SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		75-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		75-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 1680 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 1980 M³/S

SHEET 12 ↓



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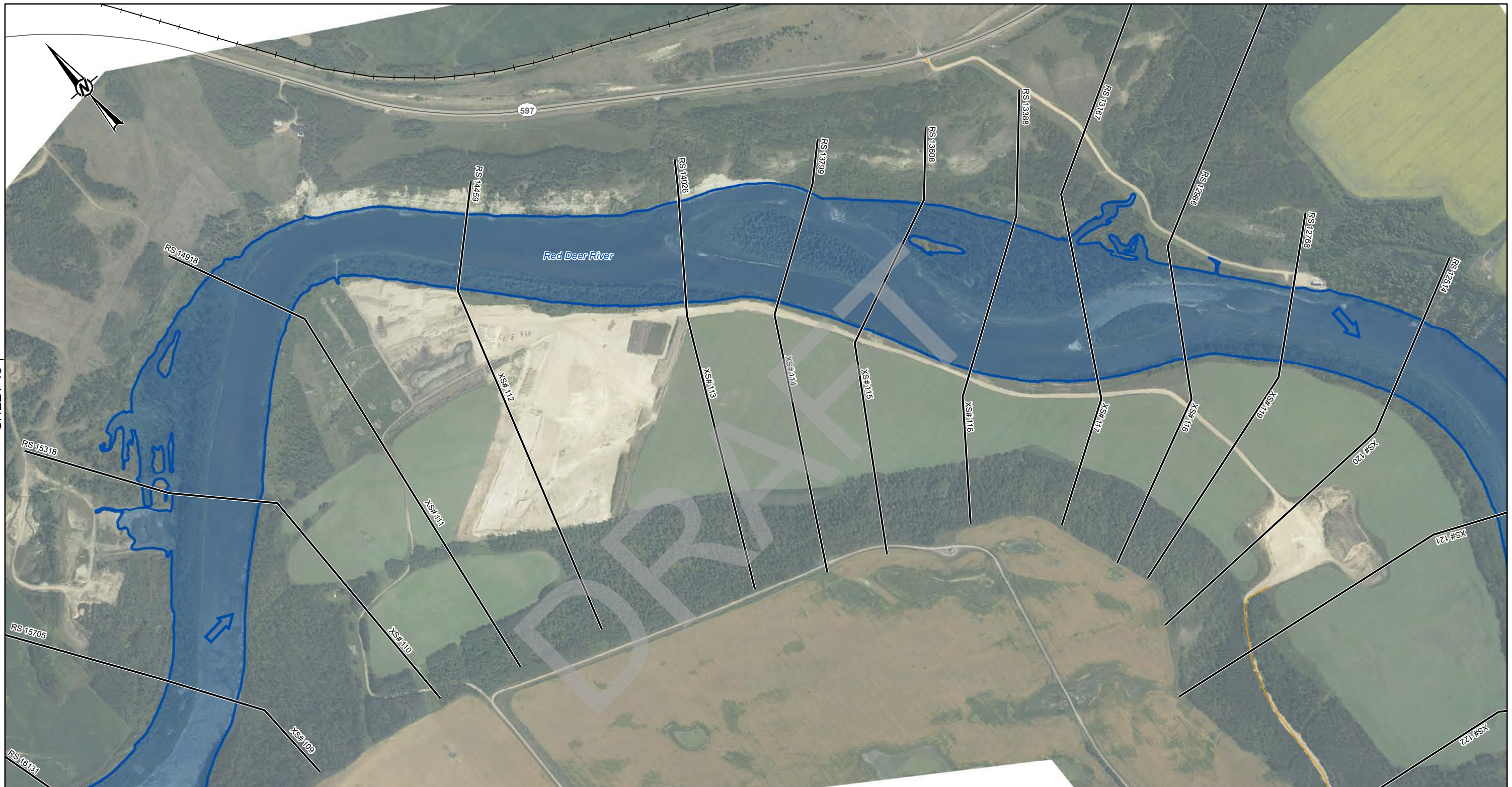
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DESIGNED	PT
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT RED DEER RIVER HAZARD STUDY	
TITLE 75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO. 1783039	CONTROL 4000
REV. 2	FIGURE SHEET 13 OF 31

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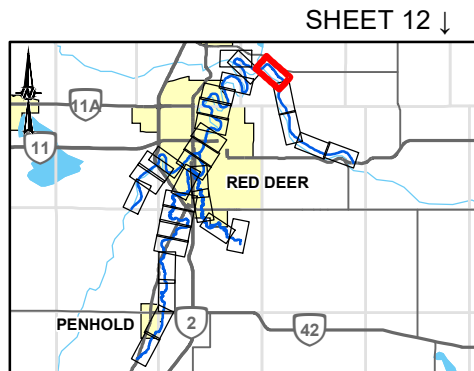
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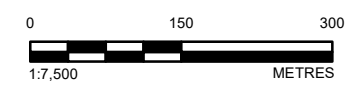
SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	HYDRAULIC STRUCTURES
—	STUDY BOUNDARY	◻ CULVERT
➔	FLOW DIRECTION	— BRIDGE
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		75-YEAR FLOOD INUNDATION EXTENT
		◻ 75-YEAR FLOOD EXTENT
		◻ 75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 1980 M ³ /S



SHEET 12 ↓



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 14 OF 31

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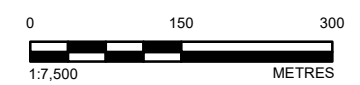
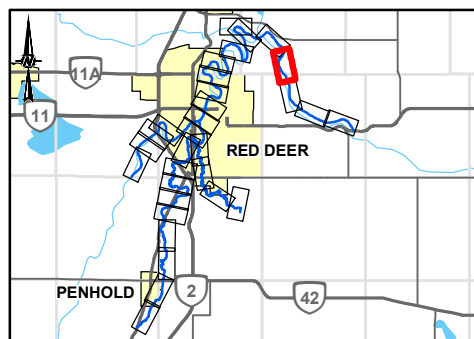
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	75-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	75-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 1980 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

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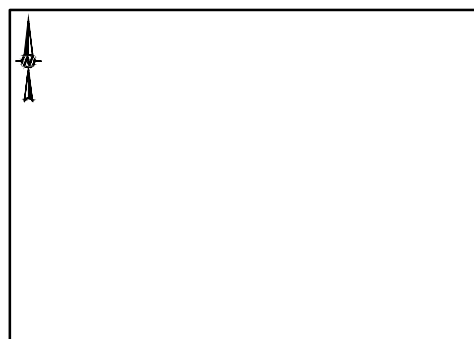


SHEET 15 ↑

↓ SHEET 17

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	75-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	75-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW BLINDMAN RIVER = 1980 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 16 OF 31

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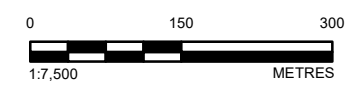
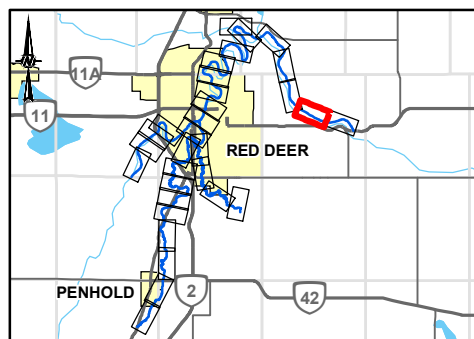
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬	75-YEAR FLOOD INUNDATION EXTENT	
▬	75-YEAR FLOOD EXTENT	
▬	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 1980 M ³ /S	



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**75-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

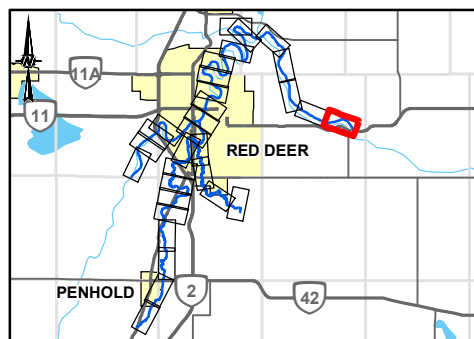
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SHEET 17 ↑



LEGEND	
	CROSS SECTION
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	DISCHARGE RED DEER RIVER BELOW BLINDMAN RIVER = 1980 M ³ /S



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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

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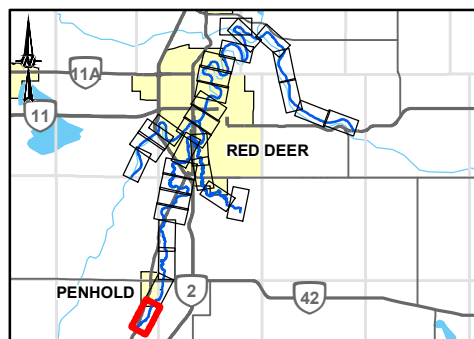
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SHEET 20

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	75-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	75-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 29 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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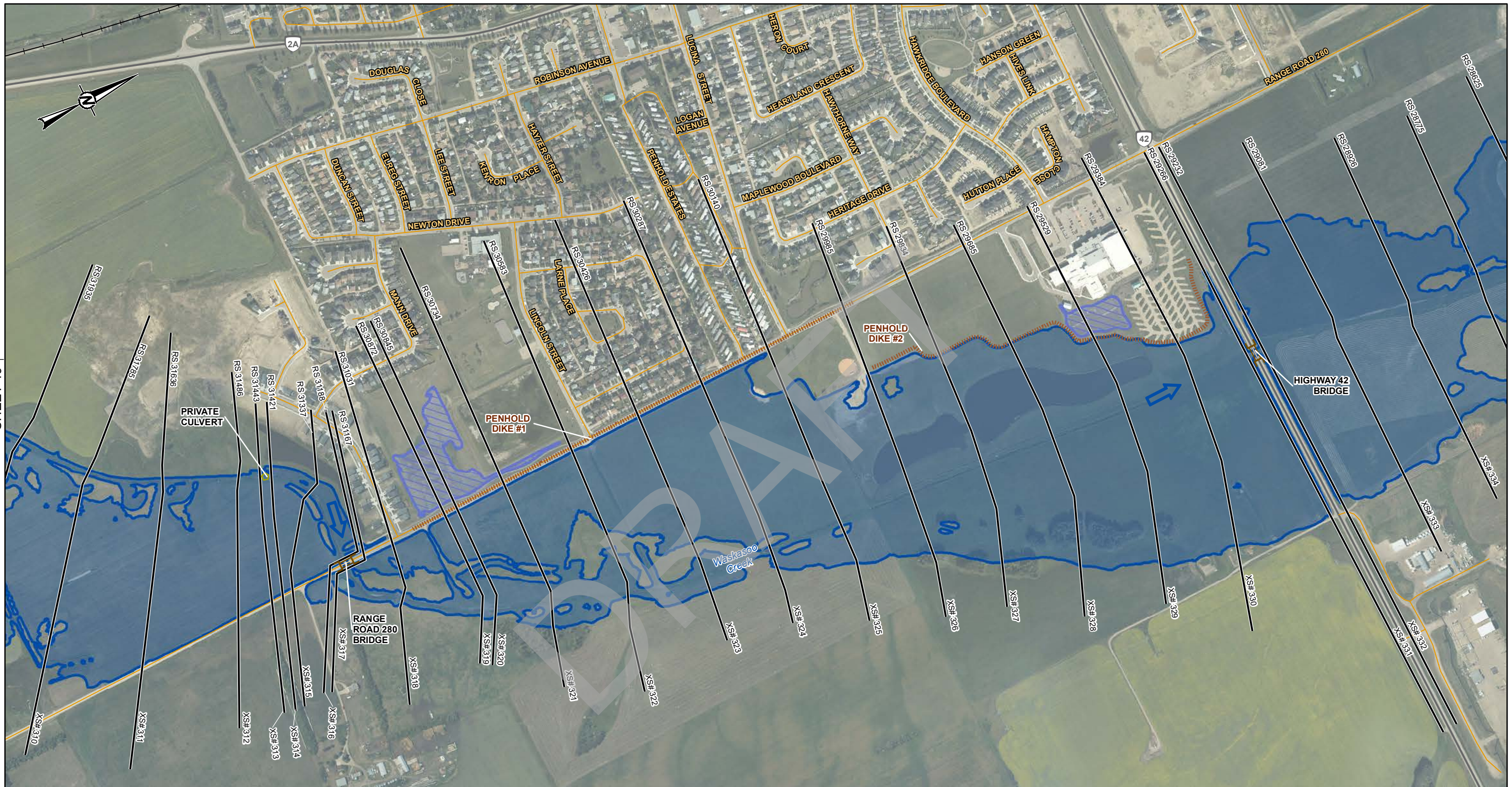
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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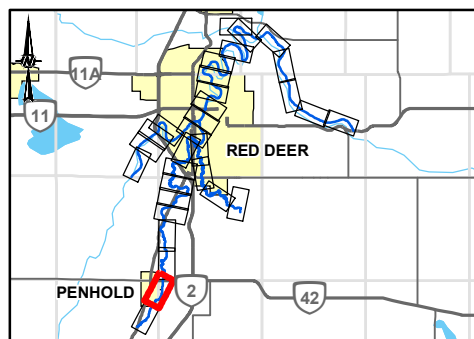
SHEET 19 ↑

↓ SHEET 21

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LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	 75-YEAR FLOOD EXTENT
	STUDY BOUNDARY	 75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
➔	FLOW DIRECTION	 DISCHARGE
	LOCAL ROAD	WASKASOO CREEK ABOVE HIGHWAY 42 = 29 M ³ /S
	PRIMARY HIGHWAY	WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M ³ /S
	SECONDARY HIGHWAY	
	RAILWAY	
 	CULVERT	
 	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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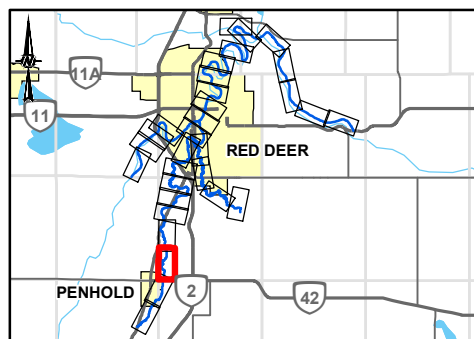


↑ SHEET 18

↑ SHEET 22

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	75-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	75-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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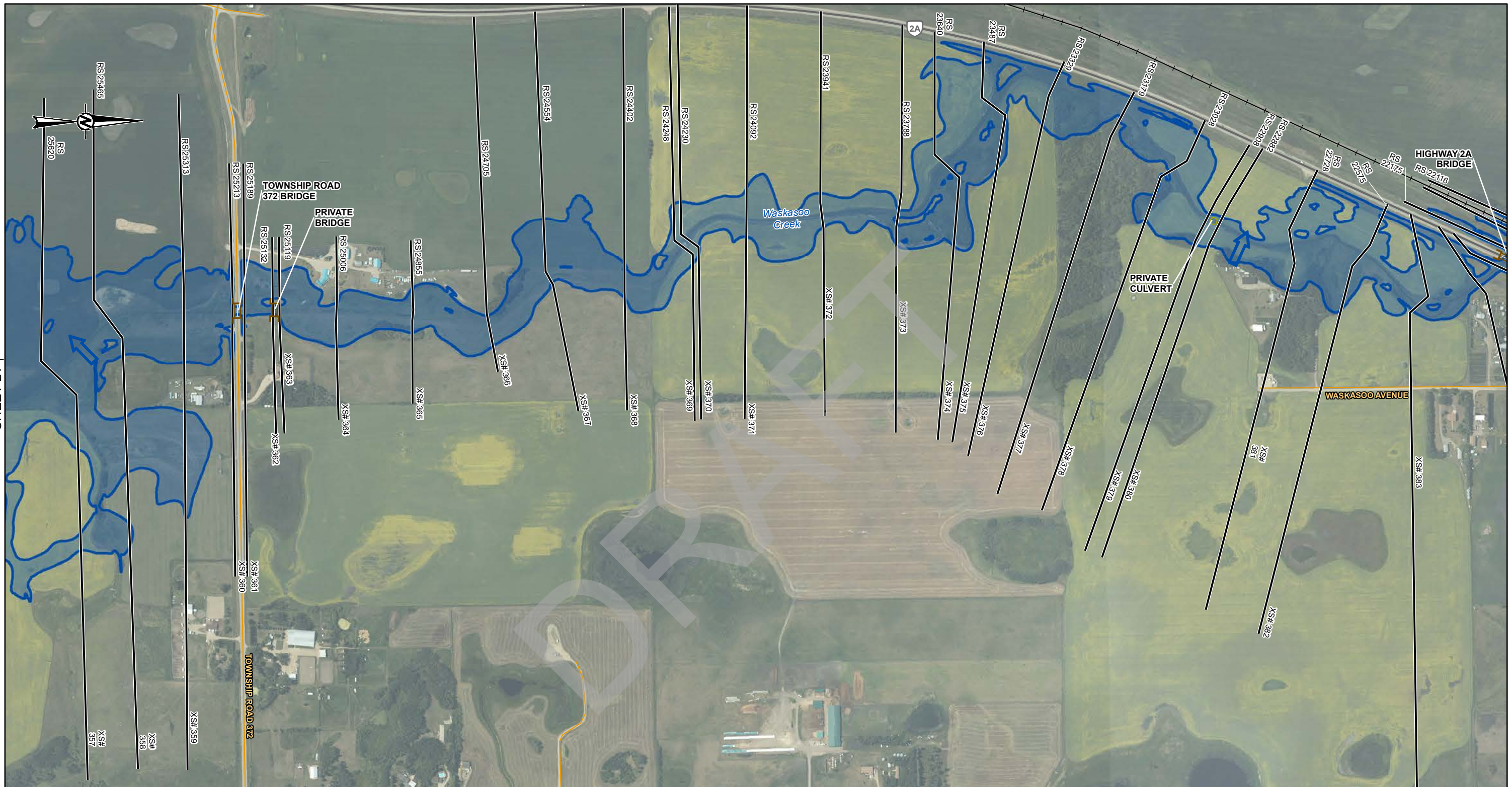
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

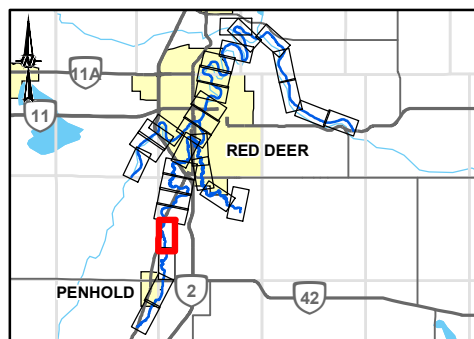
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SHEET 21 ↑

↑ SHEET 23

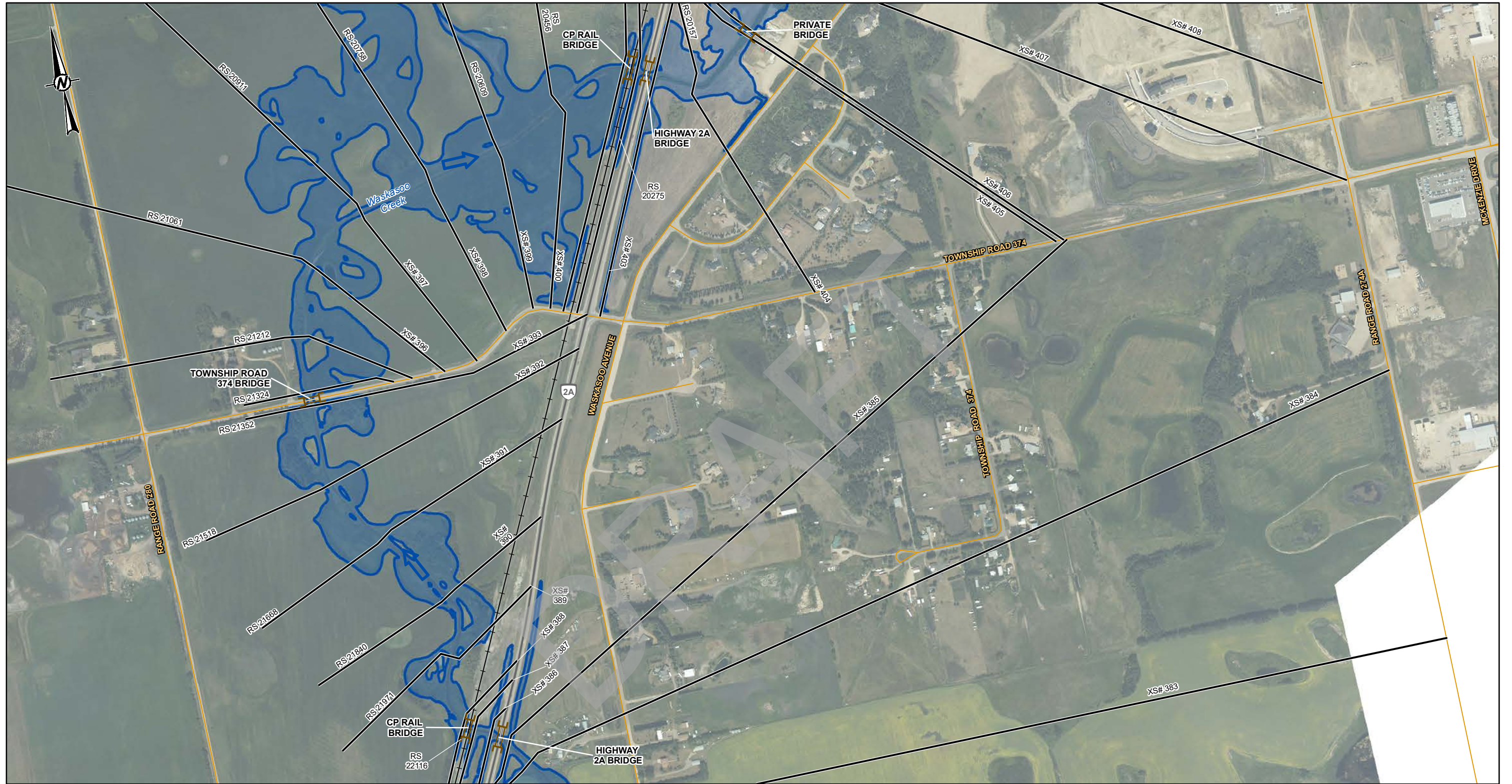
LEGEND		
—	CROSS SECTION	75-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



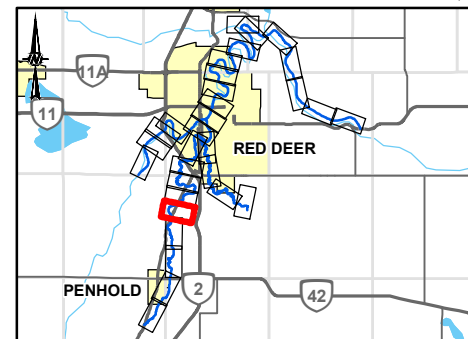
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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND		75-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	75-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	DISCHARGE
■	STUDY BOUNDARY	—	WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M ³ /S
→	FLOW DIRECTION	—	
—	LOCAL ROAD	—	
—	PRIMARY HIGHWAY	—	
—	SECONDARY HIGHWAY	—	
+	RAILWAY	—	
—	FLOOD CONTROL STRUCTURE		
—	HYDRAULIC STRUCTURES		
—	CULVERT		
—	BRIDGE		



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

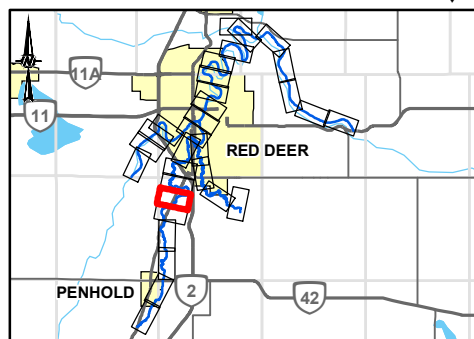
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**75-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	RIVER STATION (M)
	HYDRAULIC STRUCTURES
	CULVERT
	BRIDGE
	DISCHARGE
	WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M ³ /S



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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31

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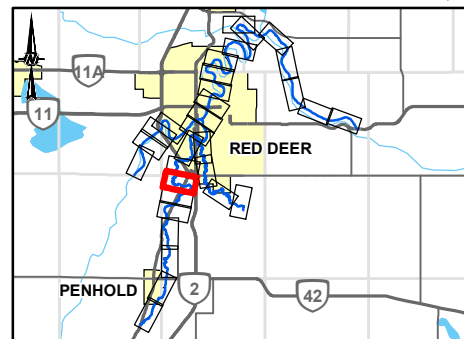
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B 29mm



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		75-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		75-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M³/S



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**75-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

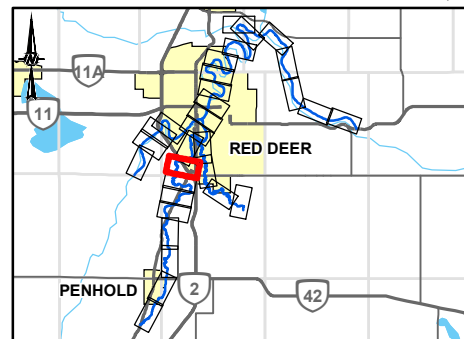
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31

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LEGEND		75-YEAR FLOOD INUNDATION EXTENT	
	CROSS SECTION		75-YEAR FLOOD EXTENT
	FLOOD CONTROL STRUCTURE		75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	
RS 304	RIVER STATION (M)		CULVERT
	STUDY BOUNDARY		BRIDGE
	FLOW DIRECTION	DISCHARGE	
	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M ³ /S	
	PRIMARY HIGHWAY		
	SECONDARY HIGHWAY		
	RAILWAY		



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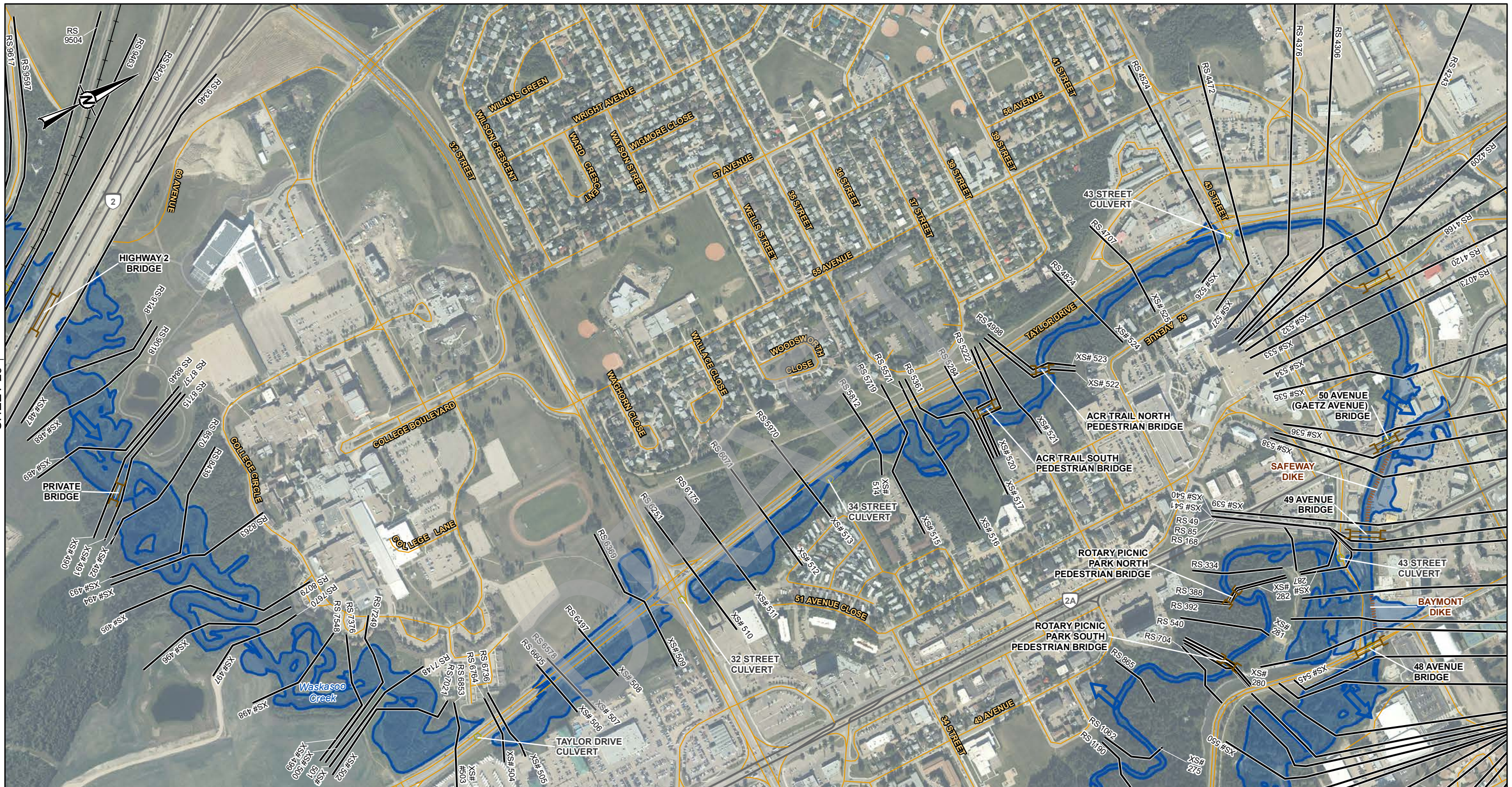
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**75-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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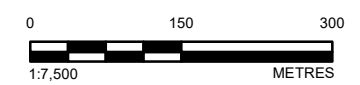
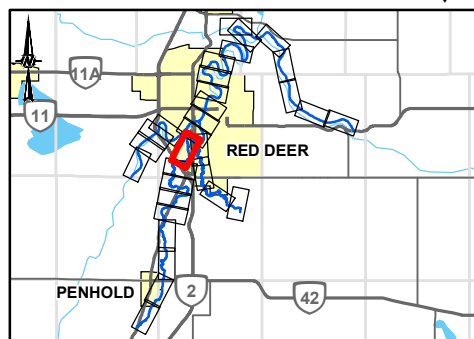


LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	75-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	75-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE

WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 48.7 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 17.5 M³/S



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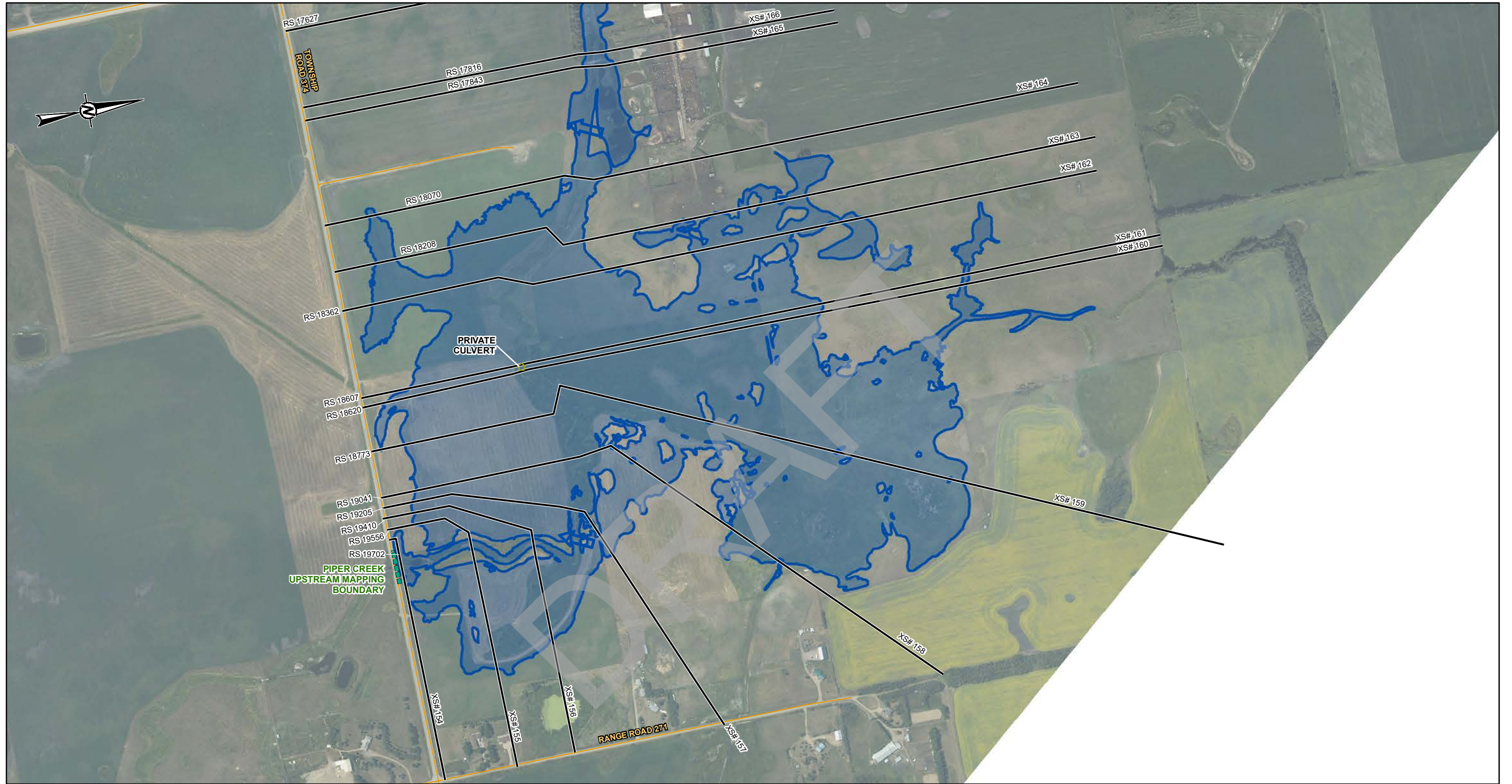
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PROJECT
RED DEER RIVER HAZARD STUDY

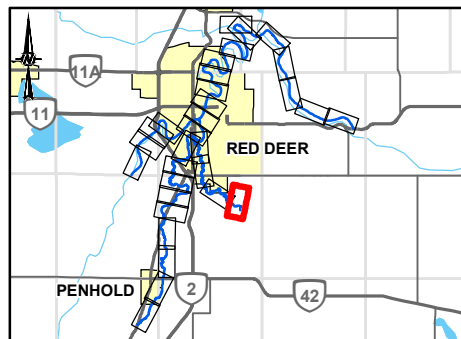
TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	75-YEAR FLOOD INUNDATION EXTENT
	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	CULVERT
	BRIDGE
	DISCHARGE
	PIPER CREEK ABOVE HIGHWAY 595 = 15.9 M ³ /S



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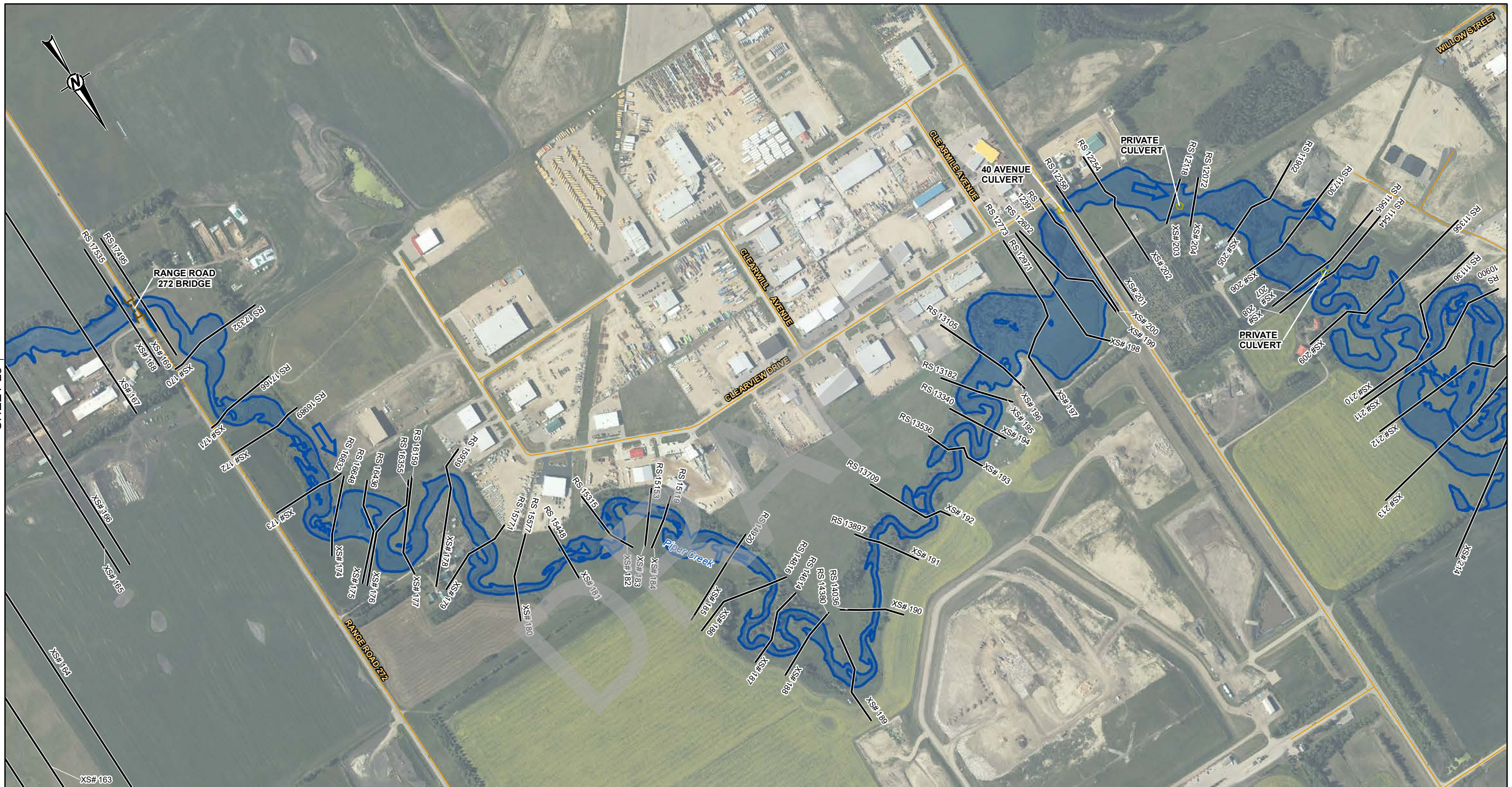
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**75-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

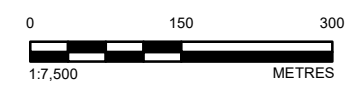
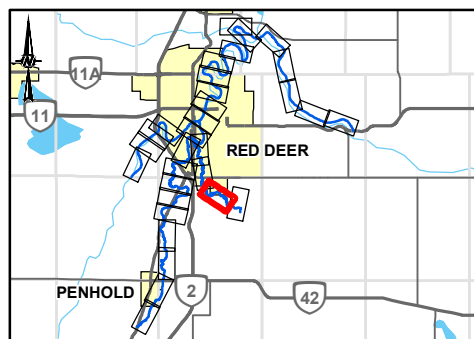
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	75-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	75-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 15.9 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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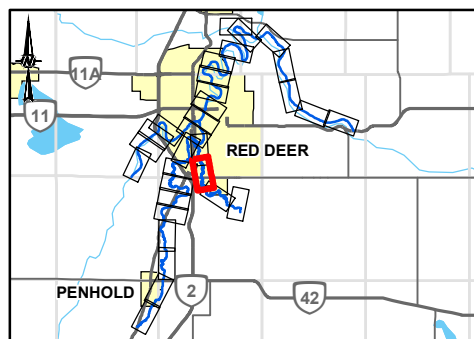


SHEET 31

SHEET 30

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	75-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	75-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 15.9 M ³ /S
PRIMARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 17.5 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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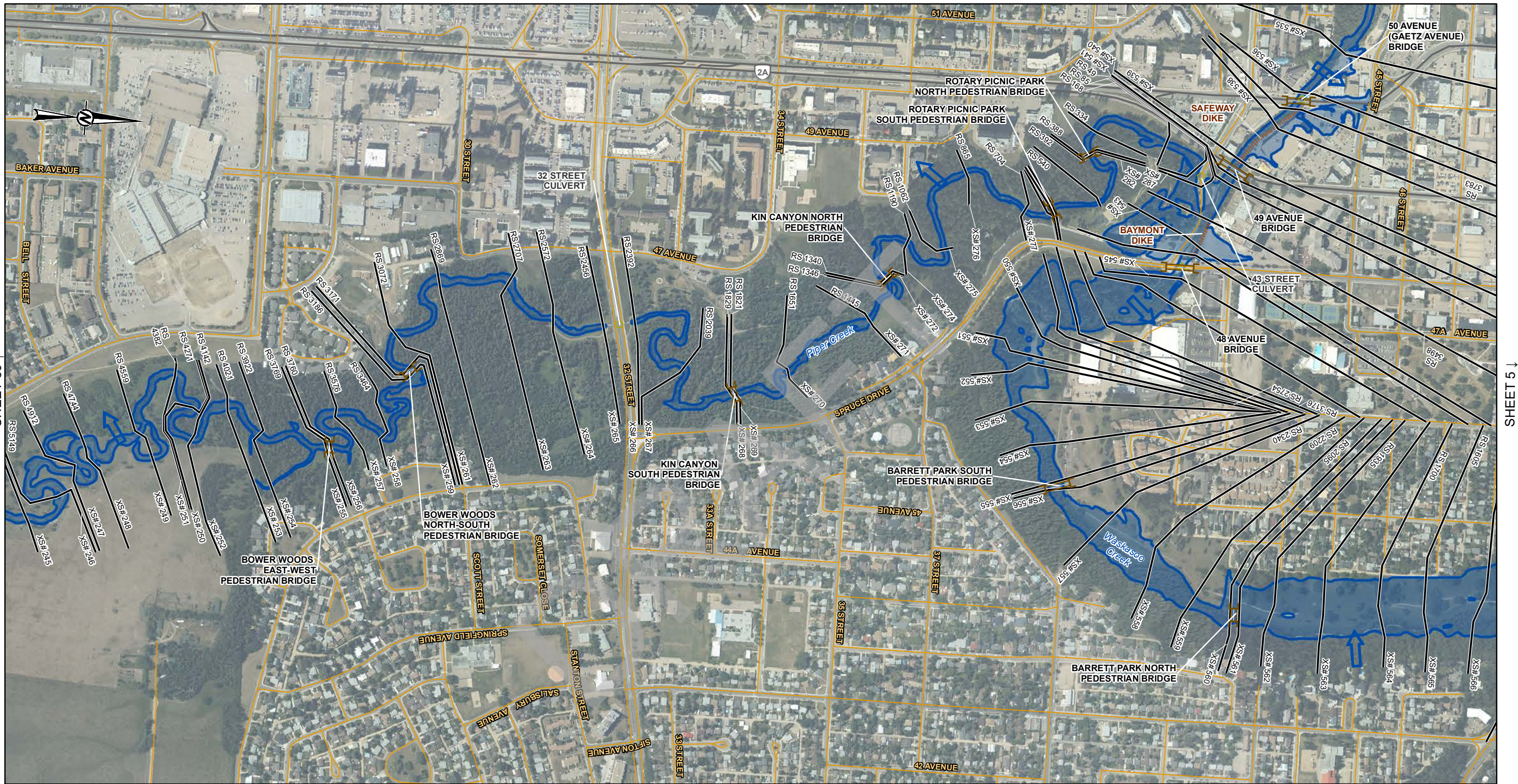
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



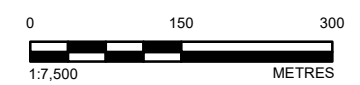
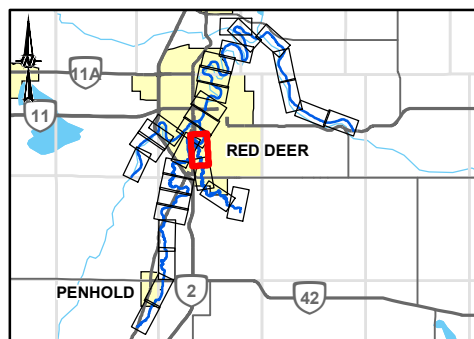
SHEET 30 ↑

SHEET 5 ↓

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- ▬ BRIDGE
- 75-YEAR FLOOD INUNDATION EXTENT
- 75-YEAR FLOOD EXTENT
- 75-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 PIPER CREEK ABOVE WASKASOO CREEK = 17.5 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 33.5 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 48.7 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
75-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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SHEETS 1-31

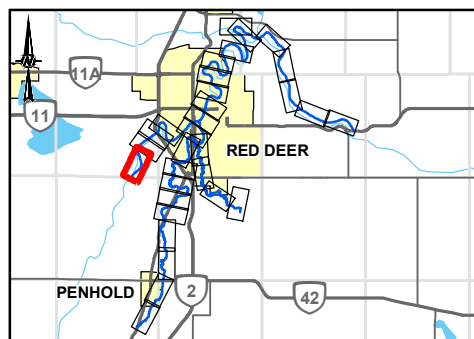
100-Year Flood Inundation Extent

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SHEET 2 ↓

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
—	STUDY BOUNDARY	— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		100-YEAR FLOOD INUNDATION EXTENT
		■ 100-YEAR FLOOD EXTENT
		■ 100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER ABOVE WASKASOO CREEK = 1820 M ³ /S



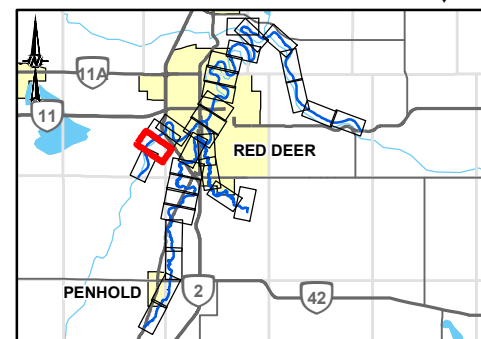
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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	100-YEAR FLOOD INUNDATION EXTENT
	100-YEAR FLOOD EXTENT
	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	HYDRAULIC STRUCTURES
	CULVERT
	BRIDGE
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 1820 M ³ /S



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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 2 OF 31

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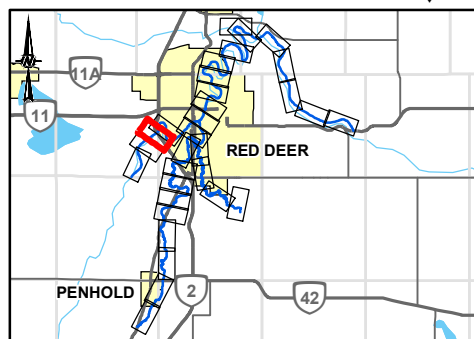
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 1820 M³/S



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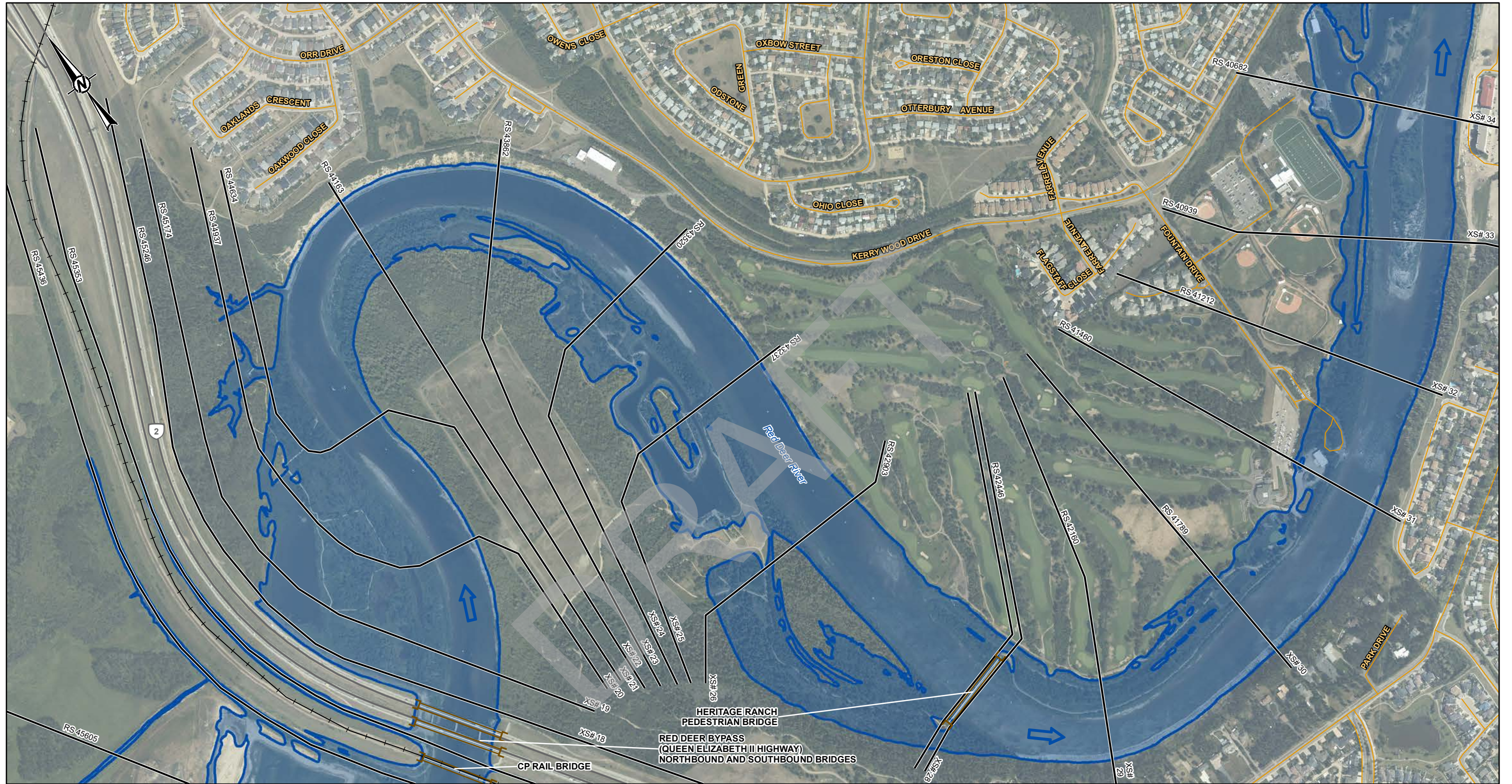
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

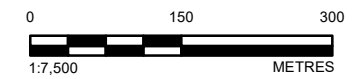
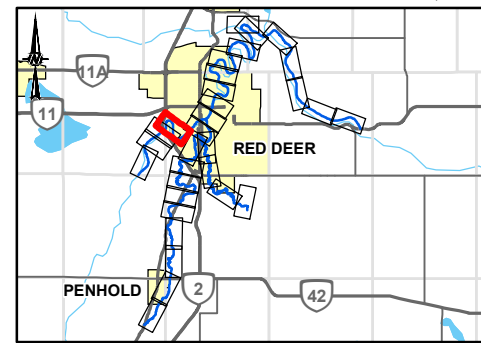
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31

I:\CLIENT\GOVERNMENT_OF_ALBERTA\1425276_Red_Deer\Map\Map\Production\Map\Production\Rev3\1783039_0100\Inundation_Rev2.mxd PRINTED ON: 2023-11-29 AT: 10:46:17 AM

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	100-YEAR FLOOD INUNDATION EXTENT
	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 1820 M ³ /S	
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

REFERENCE(S)			
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31

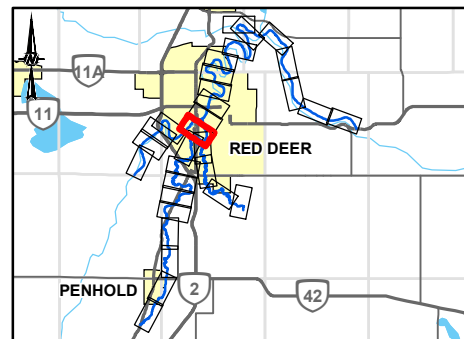
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	100-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	100-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER ABOVE WASKASOO CREEK = 1820 M ³ /S
PRIMARY HIGHWAY		WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S
SECONDARY HIGHWAY		WASKASOO CREEK BELOW PIPER CREEK = 53.9 M ³ /S
RAILWAY		PIPER CREEK ABOVE WASKASOO CREEK = 19.3 M ³ /S



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**100-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

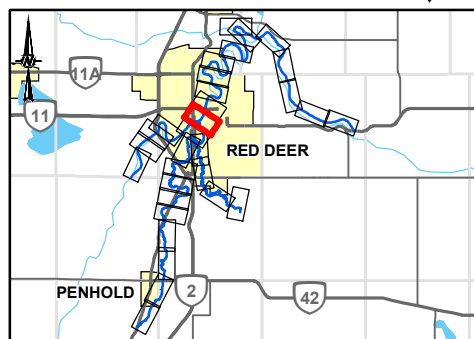
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)				100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY				
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 1820 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 1870 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 53.9 M³/S



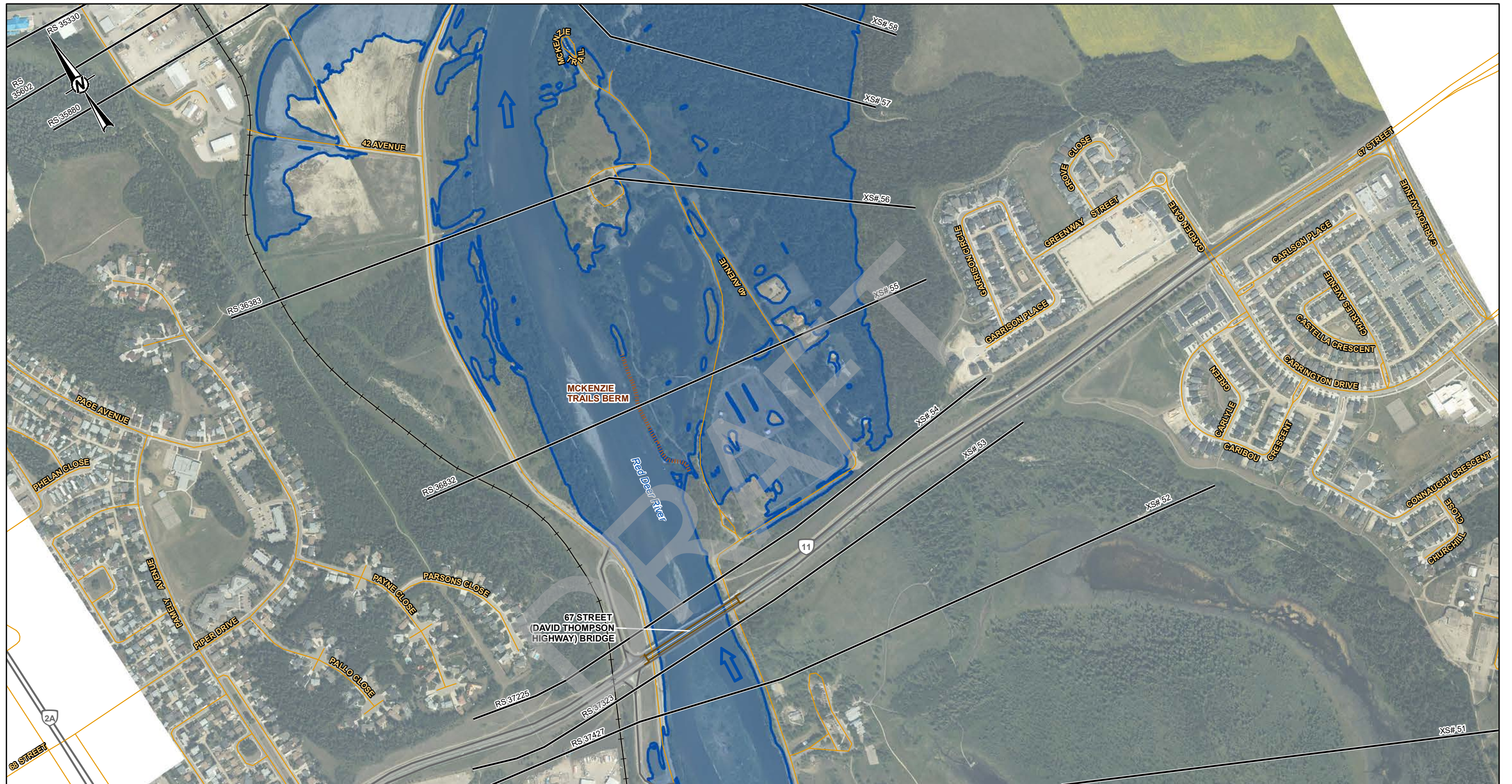
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	YYYY-MM-DD	2022-11-23
PREPARED	PT	
REVIEWED	NB	
APPROVED	GT	
	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
 100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

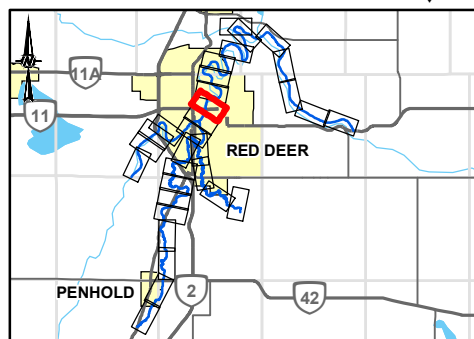
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31



LEGEND

—	CROSS SECTION	▨▨▨▨	FLOOD CONTROL STRUCTURE	100-YEAR FLOOD INUNDATION EXTENT	100-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	◻	HYDRAULIC STRUCTURES	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	◻	◻	CULVERT	
▭▭▭▭	STUDY BOUNDARY	—	—	BRIDGE	
➔	FLOW DIRECTION				
—	LOCAL ROAD				
—	PRIMARY HIGHWAY				
—	SECONDARY HIGHWAY				
+	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1870 M³/S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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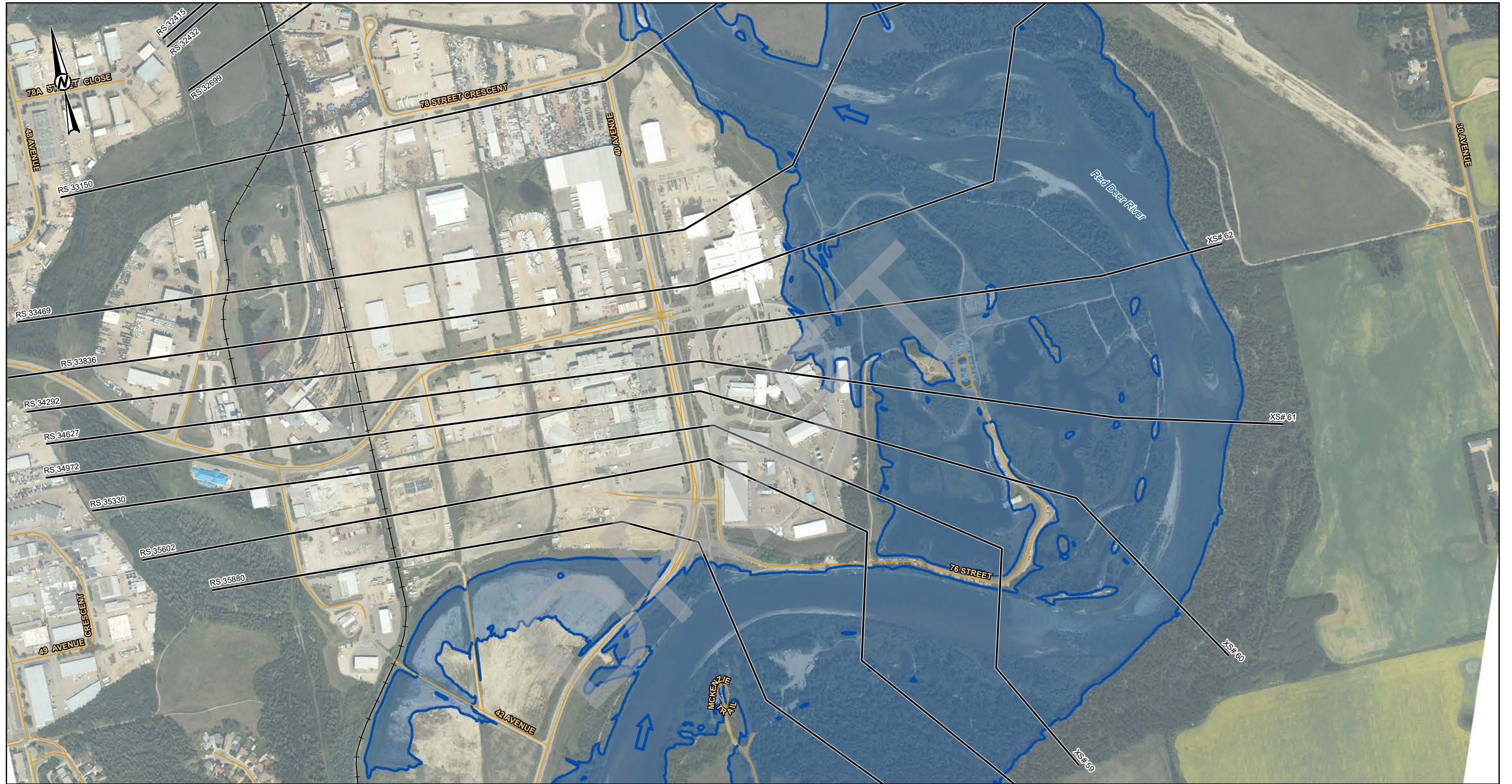
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

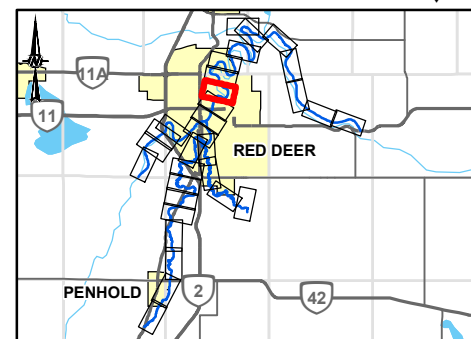
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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LEGEND		
— CROSS SECTION	FLOOD CONTROL STRUCTURE	100-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	100-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW WASKASOO CREEK = 1870 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



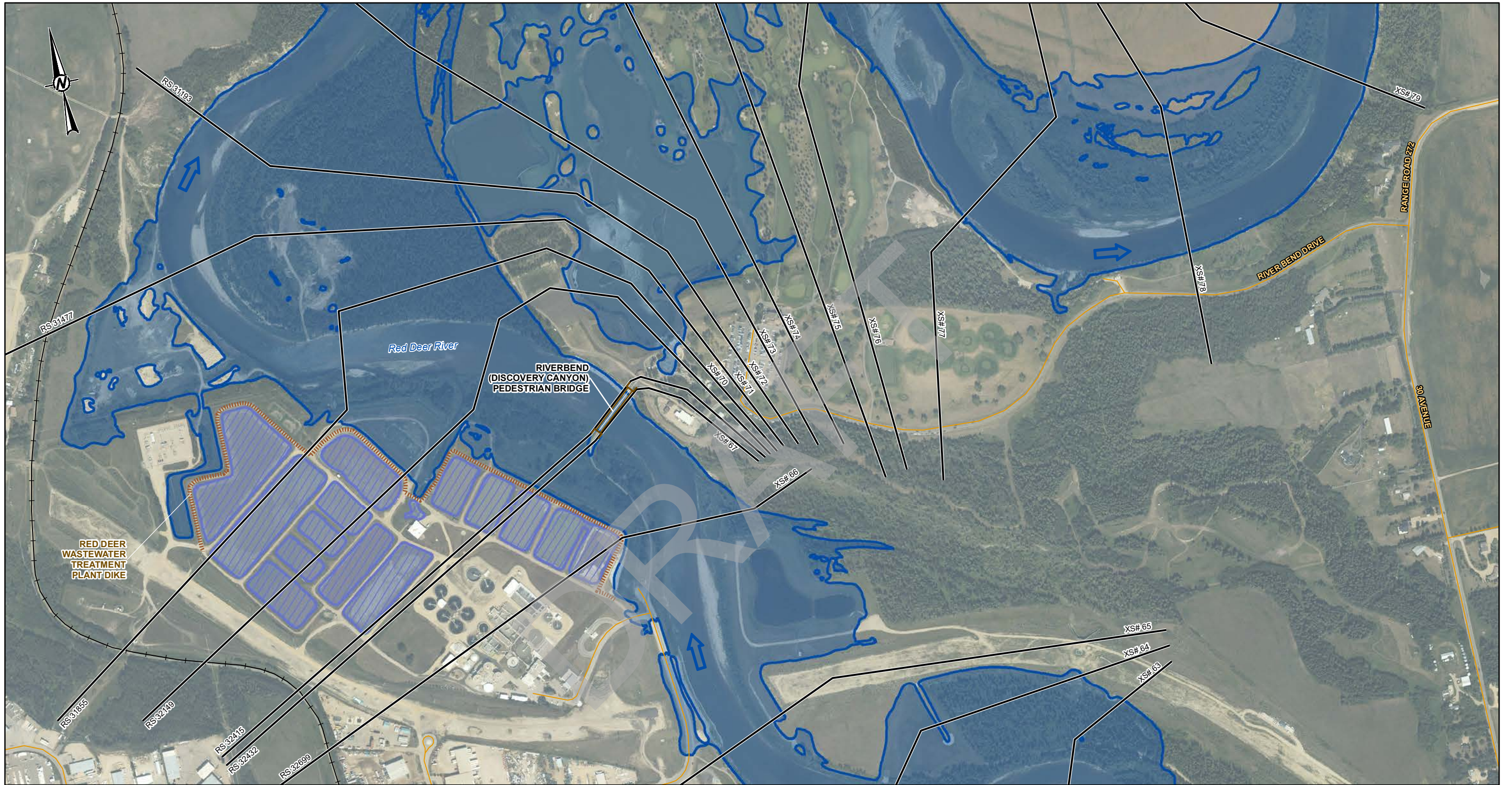
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

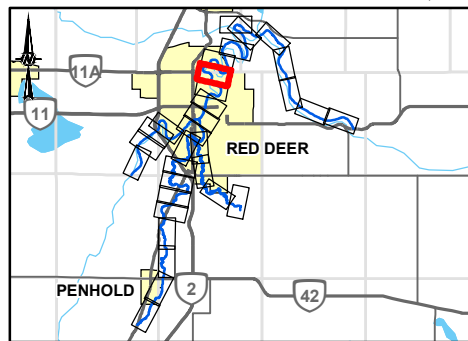
PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31

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LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
▬▬▬▬	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	100-YEAR FLOOD INUNDATION EXTENT
■	100-YEAR FLOOD EXTENT
■	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 1870 M ³ /S	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

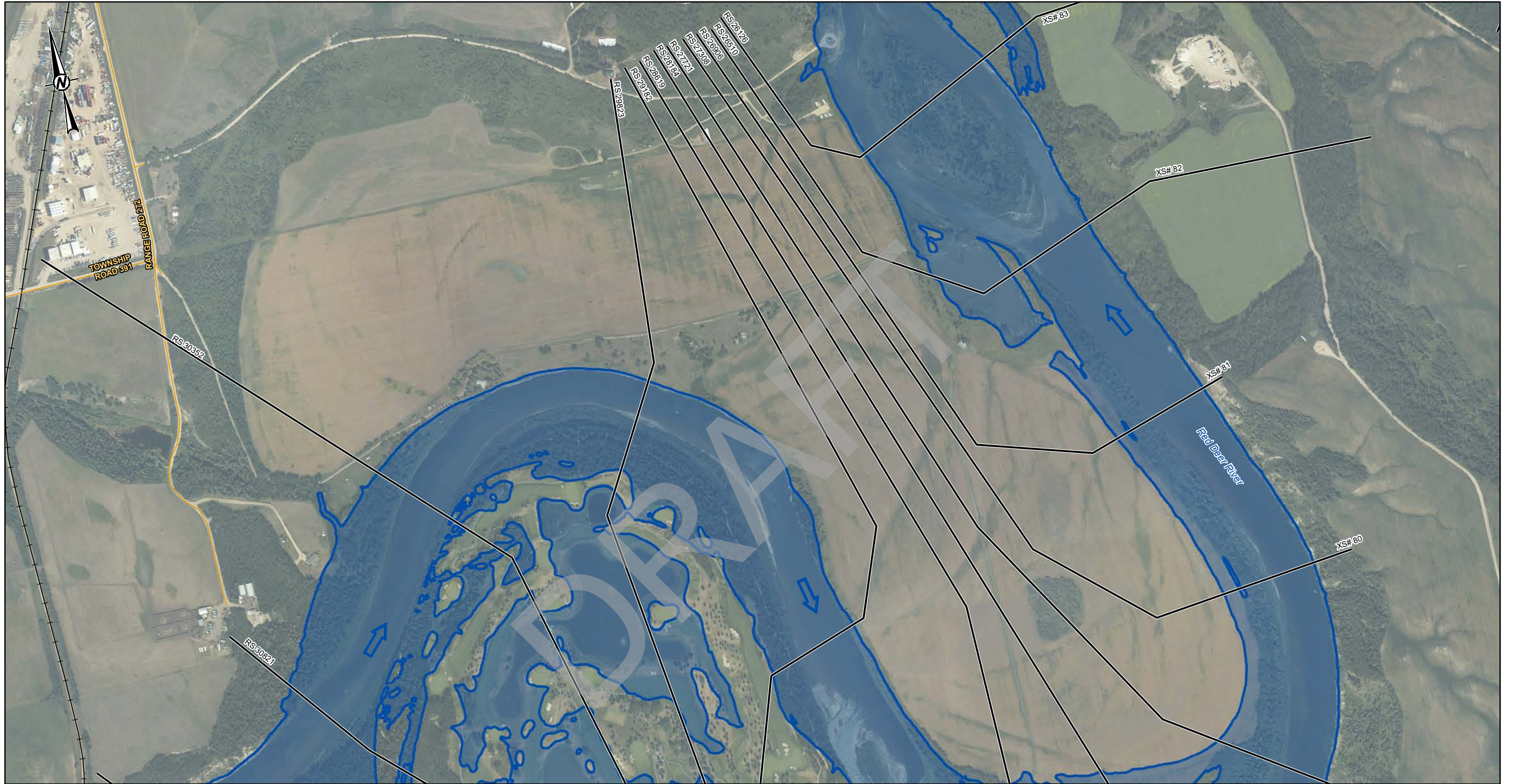
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**100-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31

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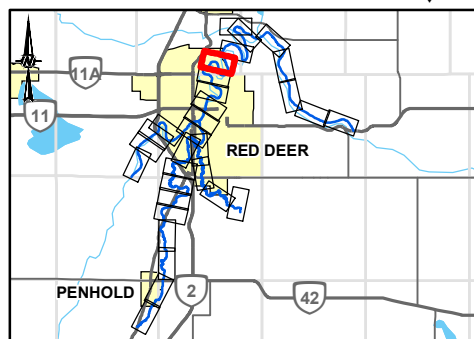
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 1870 M³/S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

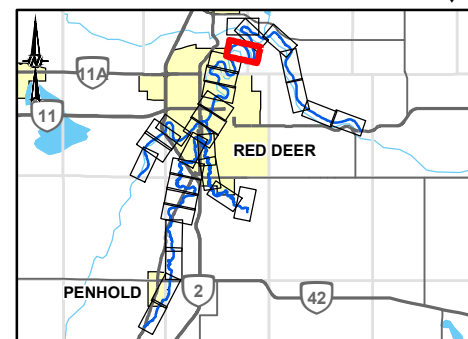
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

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LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	100-YEAR FLOOD INUNDATION EXTENT
■	100-YEAR FLOOD EXTENT
■	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 1870 M ³ /S	



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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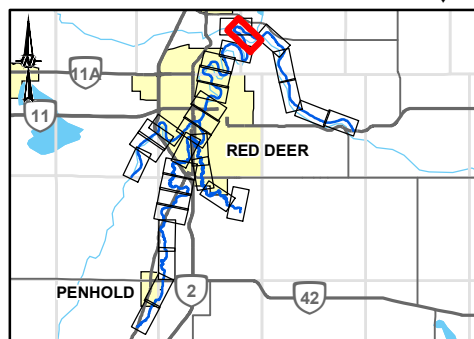
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SHEET 13 ↑

↓ SHEET 14

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		100-YEAR FLOOD INUNDATION EXTENT
		■ 100-YEAR FLOOD EXTENT
		■ 100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW WASKASOO CREEK = 1870 M ³ /S
		RED DEER RIVER BELOW BLINDMAN RIVER = 2180 M ³ /S



↓ SHEET 11



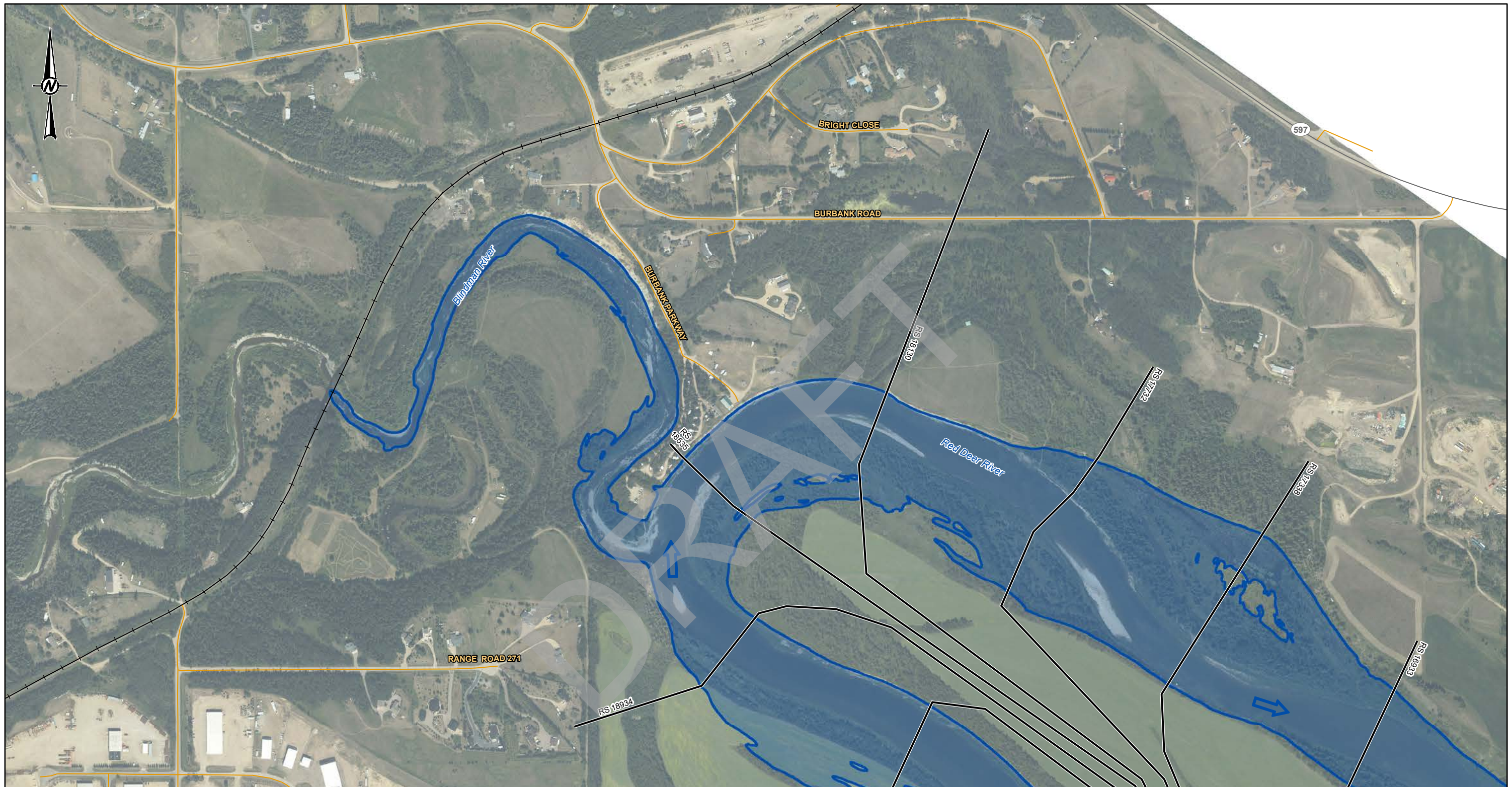
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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 12 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

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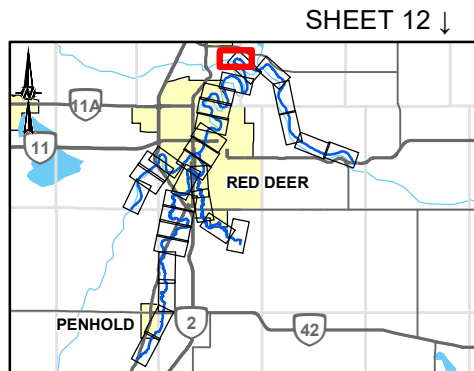


SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 1870 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 2180 M³/S



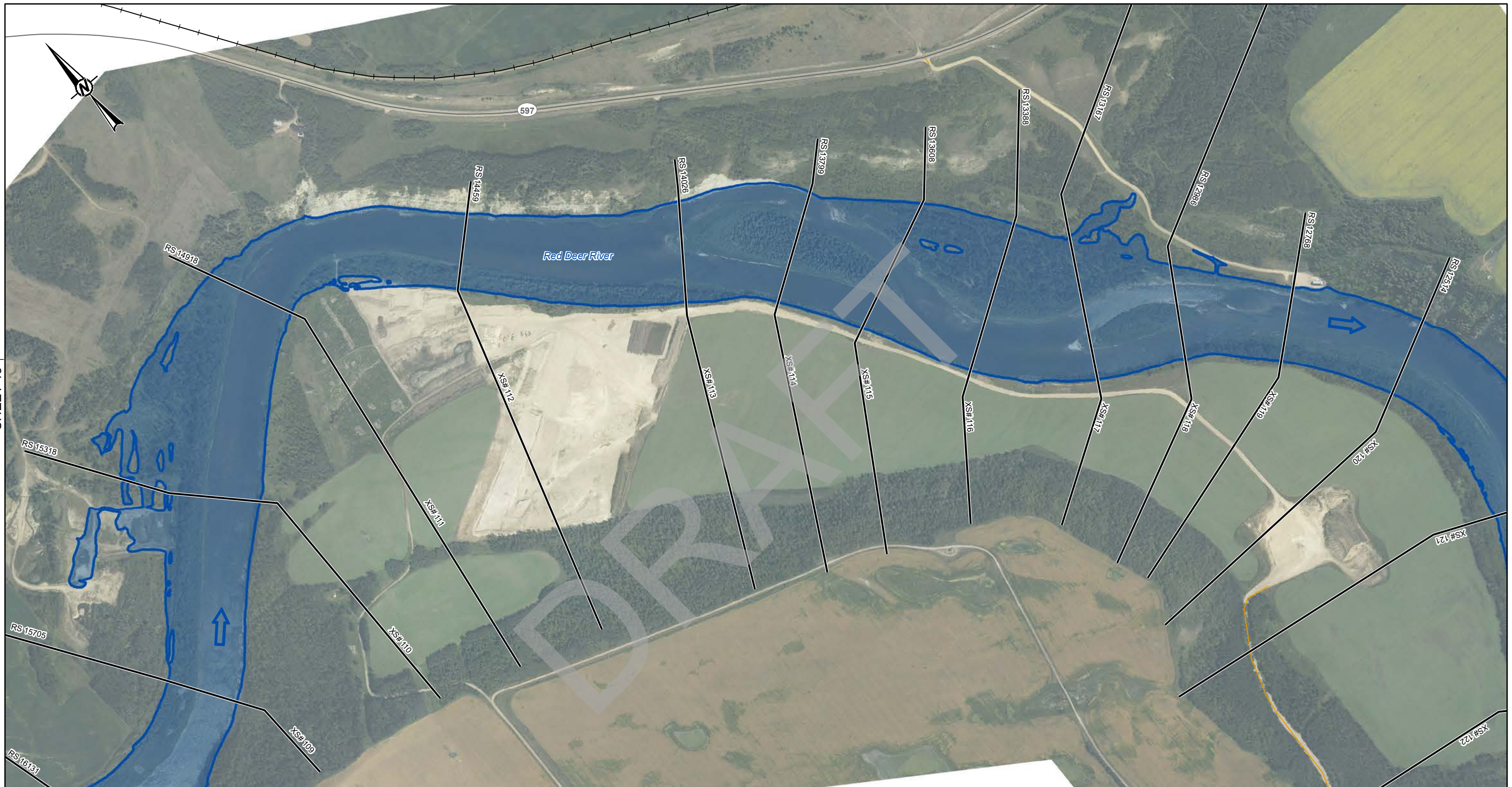
CLIENT	ALBERTA ENVIRONMENT AND PARKS		
CONSULTANT			
DESIGNED	YYYY-MM-DD	2022-11-23	PT
PREPARED			NB
REVIEWED			GT
APPROVED			WP

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 13 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

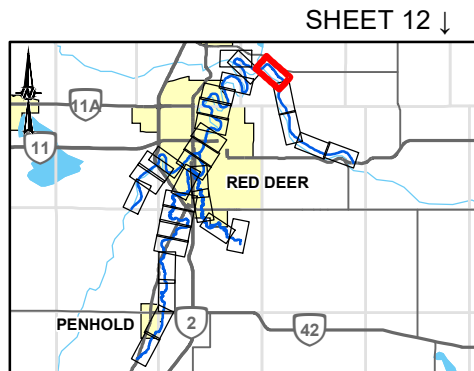
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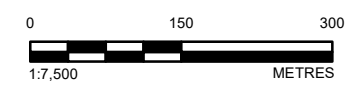
SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	HYDRAULIC STRUCTURES
—	STUDY BOUNDARY	◻ CULVERT
→	FLOW DIRECTION	— — BRIDGE
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		100-YEAR FLOOD INUNDATION EXTENT
		◻ 100-YEAR FLOOD EXTENT
		◻ 100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 2180 M ³ /S



SHEET 12 ↓



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 14 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

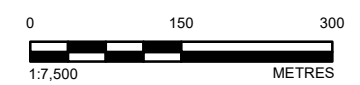
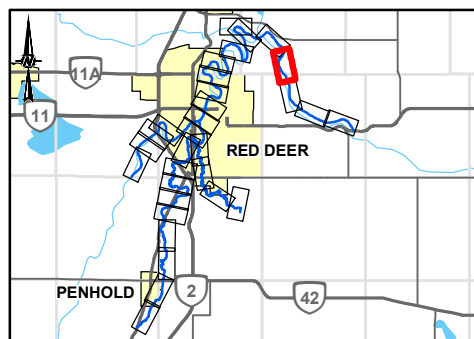
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 2180 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	CULVERT	
—	BRIDGE	



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CONSULTANT	GOLDER	
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REVIEWED	GT	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

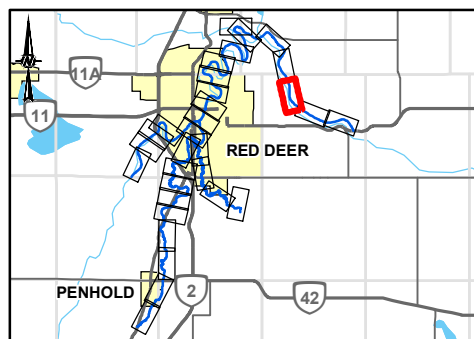
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
▬▬▬	STUDY BOUNDARY	
➡	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 2180 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬▬▬	FLOOD CONTROL STRUCTURE	
⬢	CULVERT	
⌒	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 16 OF 31

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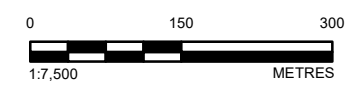
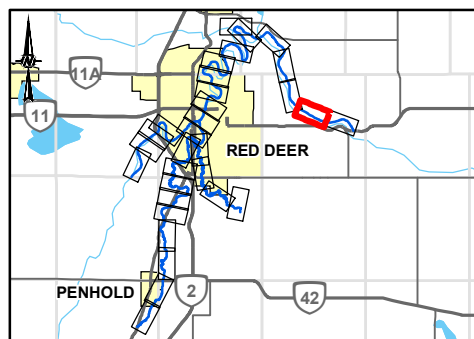
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	RED DEER RIVER BELOW BLINDMAN RIVER = 2180 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	



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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

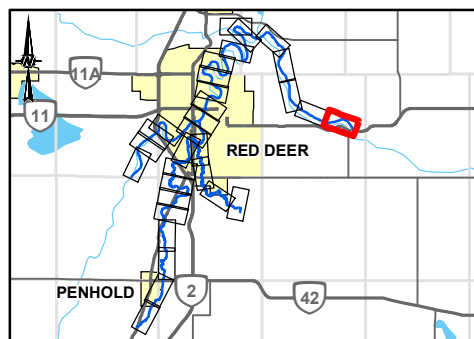
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SHEET 17 ↑



LEGEND		
—	CROSS SECTION	100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 2180 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

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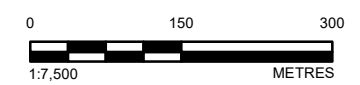
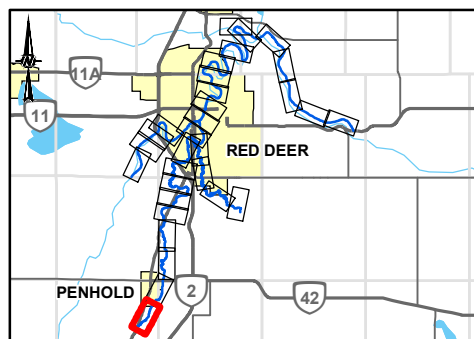
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	100-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	100-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
WASKASOO CREEK ABOVE HIGHWAY 42 = 32.1 M³/S



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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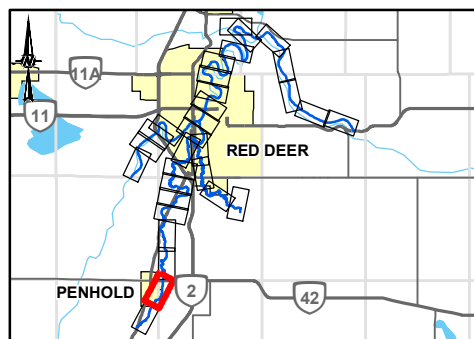


SHEET 19 ↑

↓ SHEET 21

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	100-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	100-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 32.1 M ³ /S
PRIMARY HIGHWAY		WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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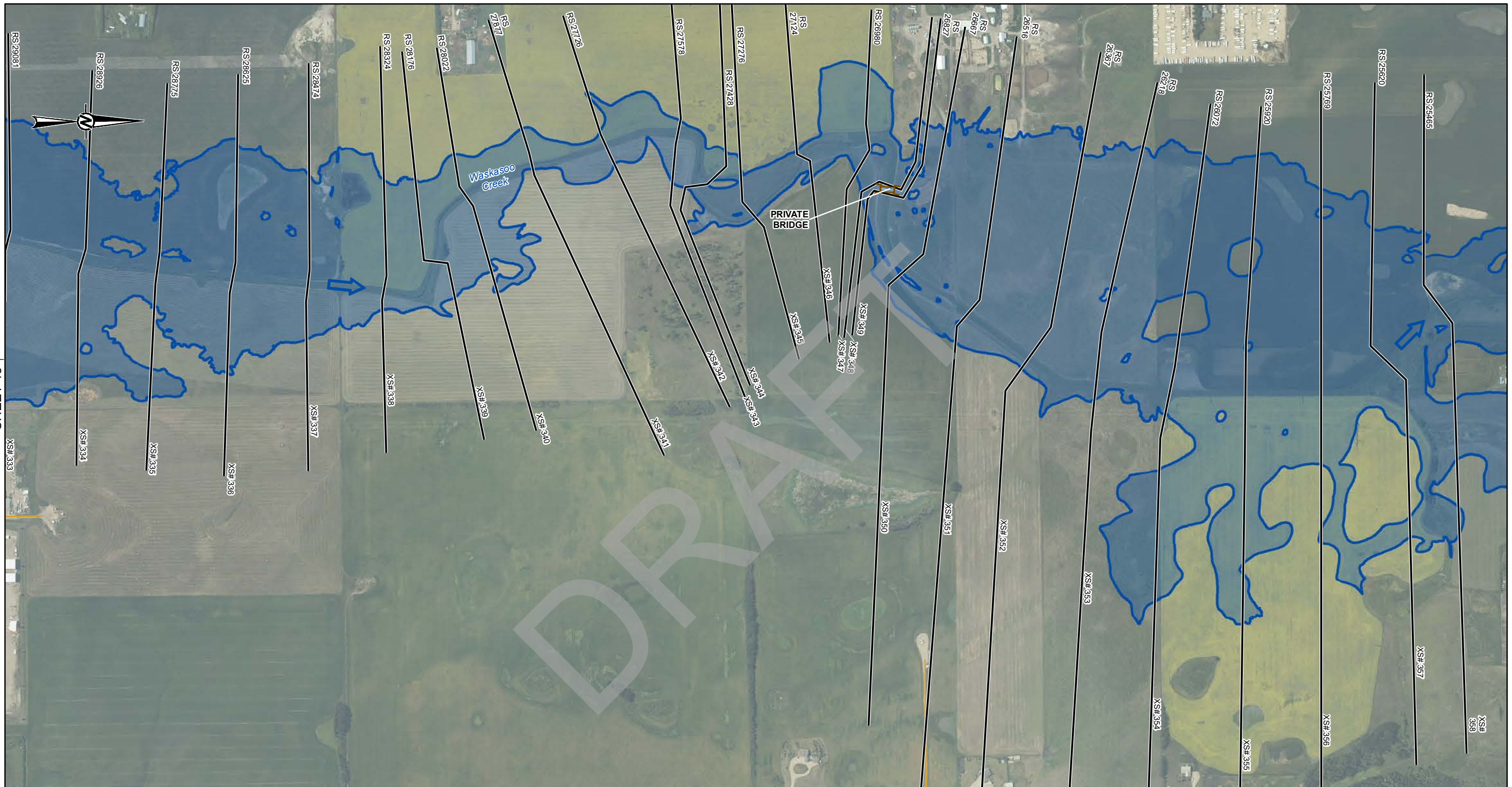
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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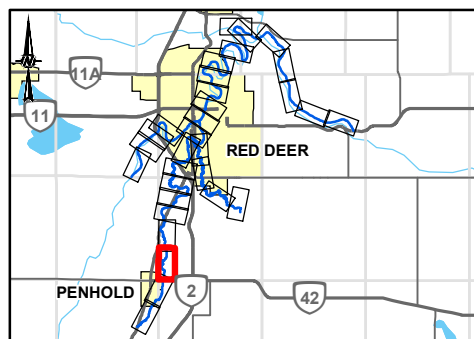
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↑ SHEET 18

↑ SHEET 22

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		100-YEAR FLOOD INUNDATION EXTENT
		■ 100-YEAR FLOOD EXTENT
		■ 100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S

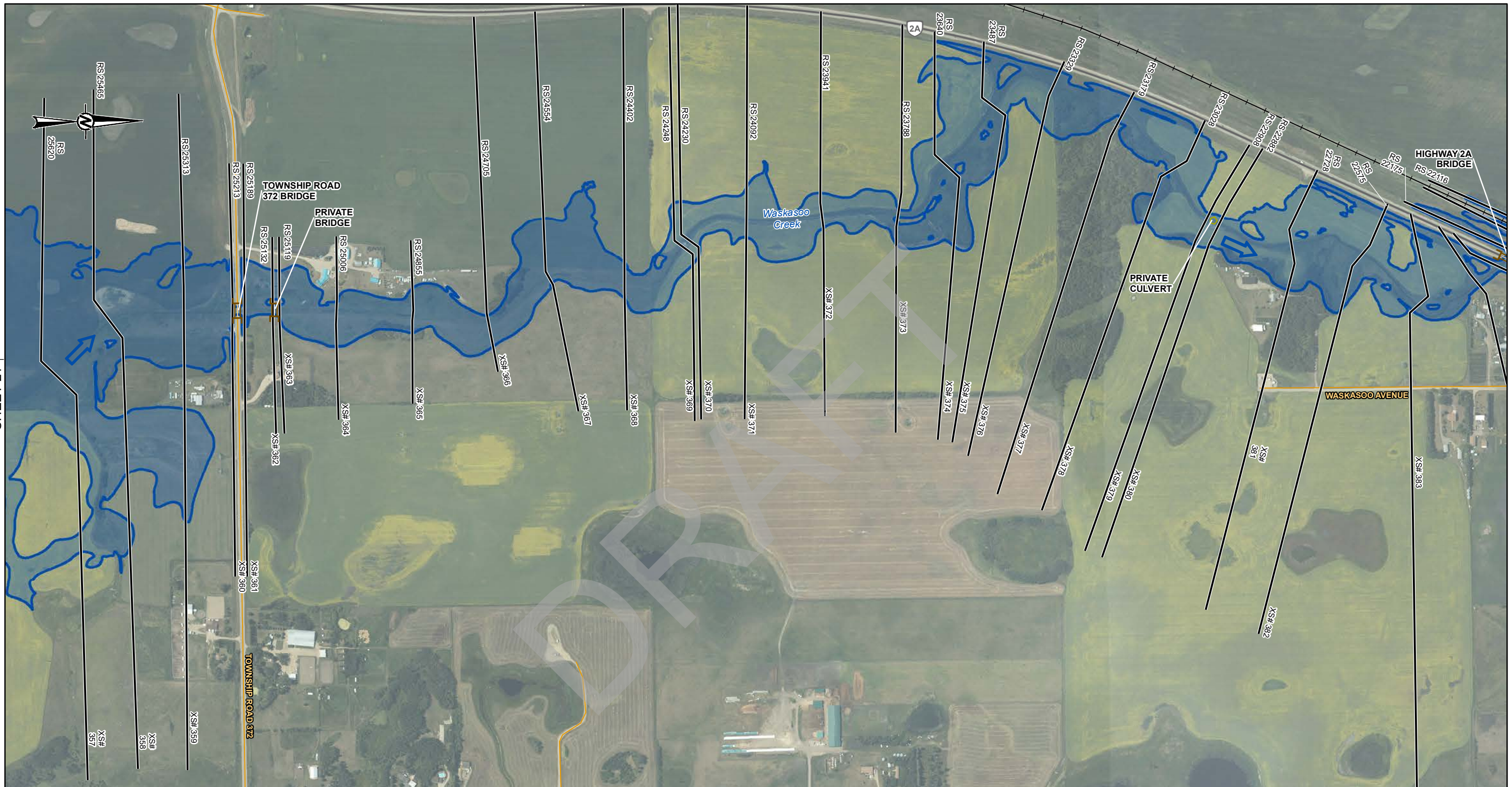


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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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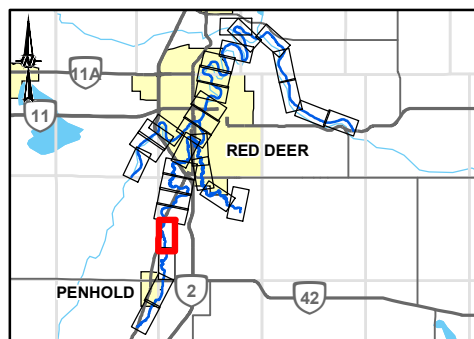
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SHEET 21 ↑

↑ SHEET 23

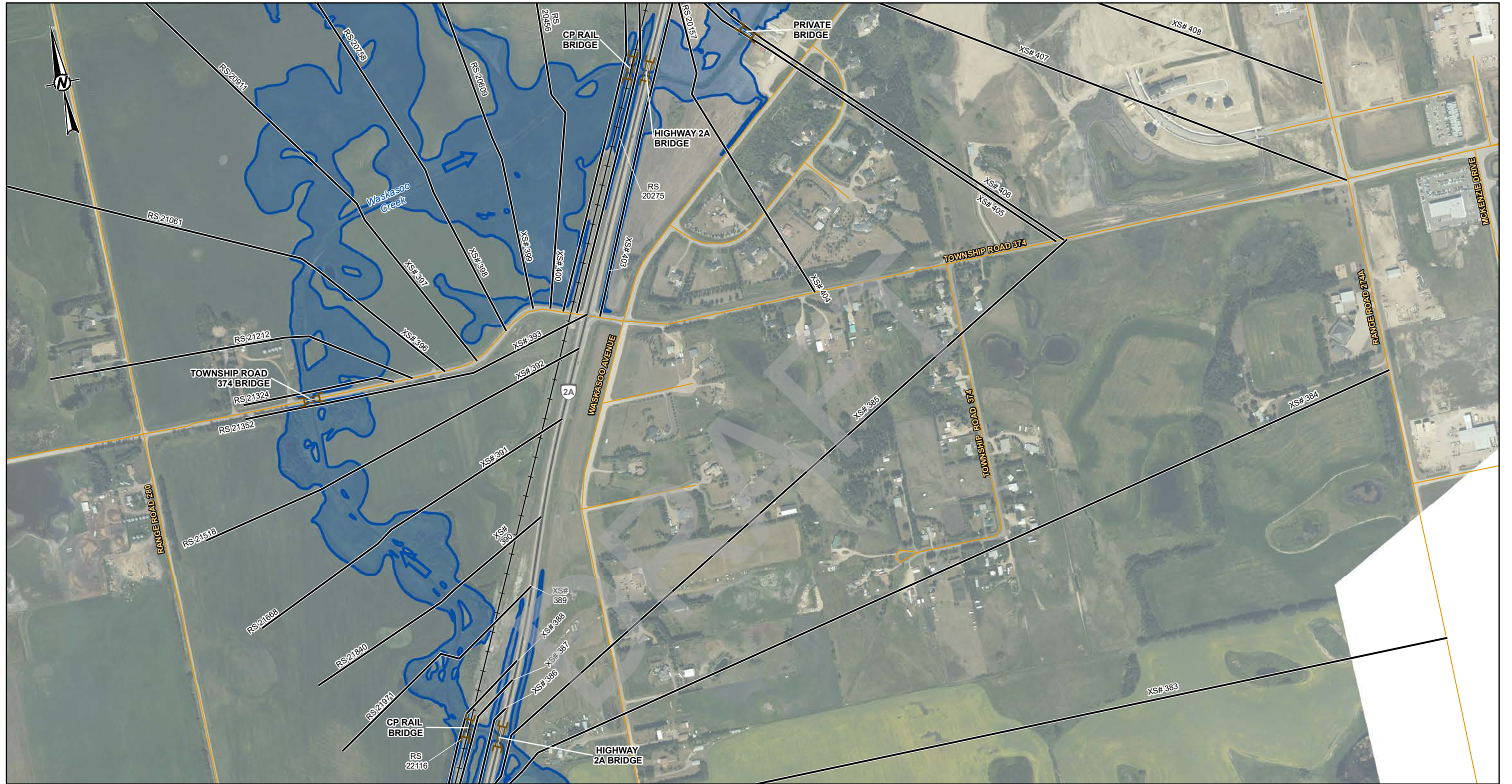
LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	 100-YEAR FLOOD INUNDATION EXTENT
RS 304	RIVER STATION (M)	 100-YEAR FLOOD EXTENT
	STUDY BOUNDARY	 100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
➔	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	BRIDGE	
	CULVERT	



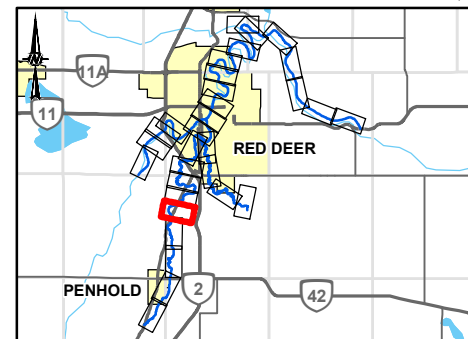
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CONSULTANT	GOLDER	
DATE	2022-11-23	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND		100-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	100-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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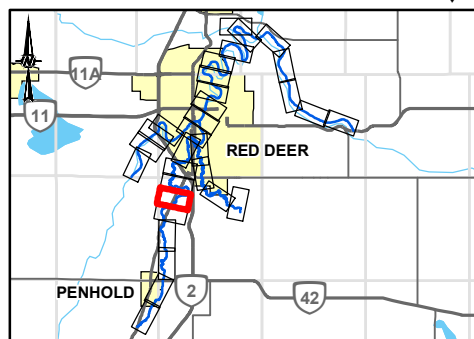
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M³/S



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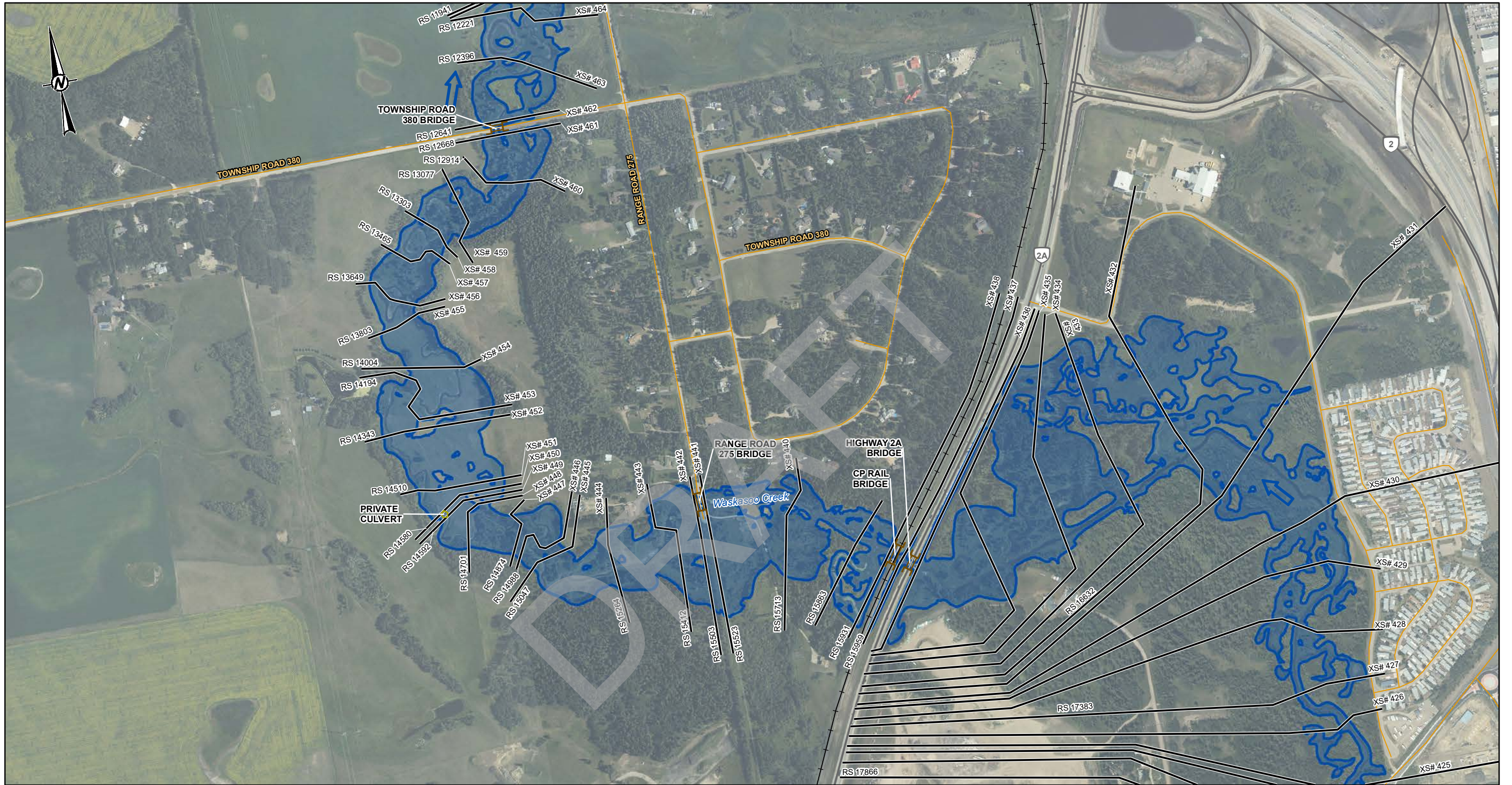
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

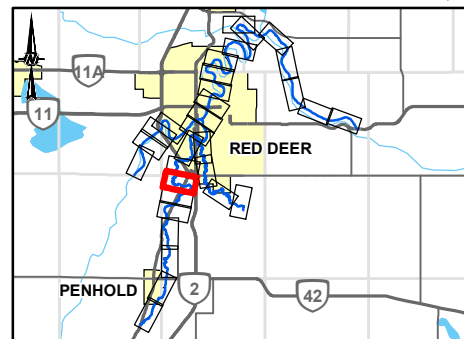
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31

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LEGEND		
—	CROSS SECTION	100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	
DISCHARGE		
WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S		



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**100-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

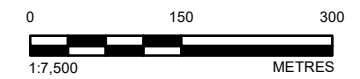
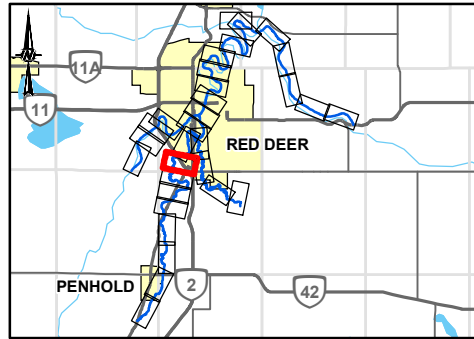
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	100-YEAR FLOOD INUNDATION EXTENT
	100-YEAR FLOOD EXTENT
	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
DISCHARGE	WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S



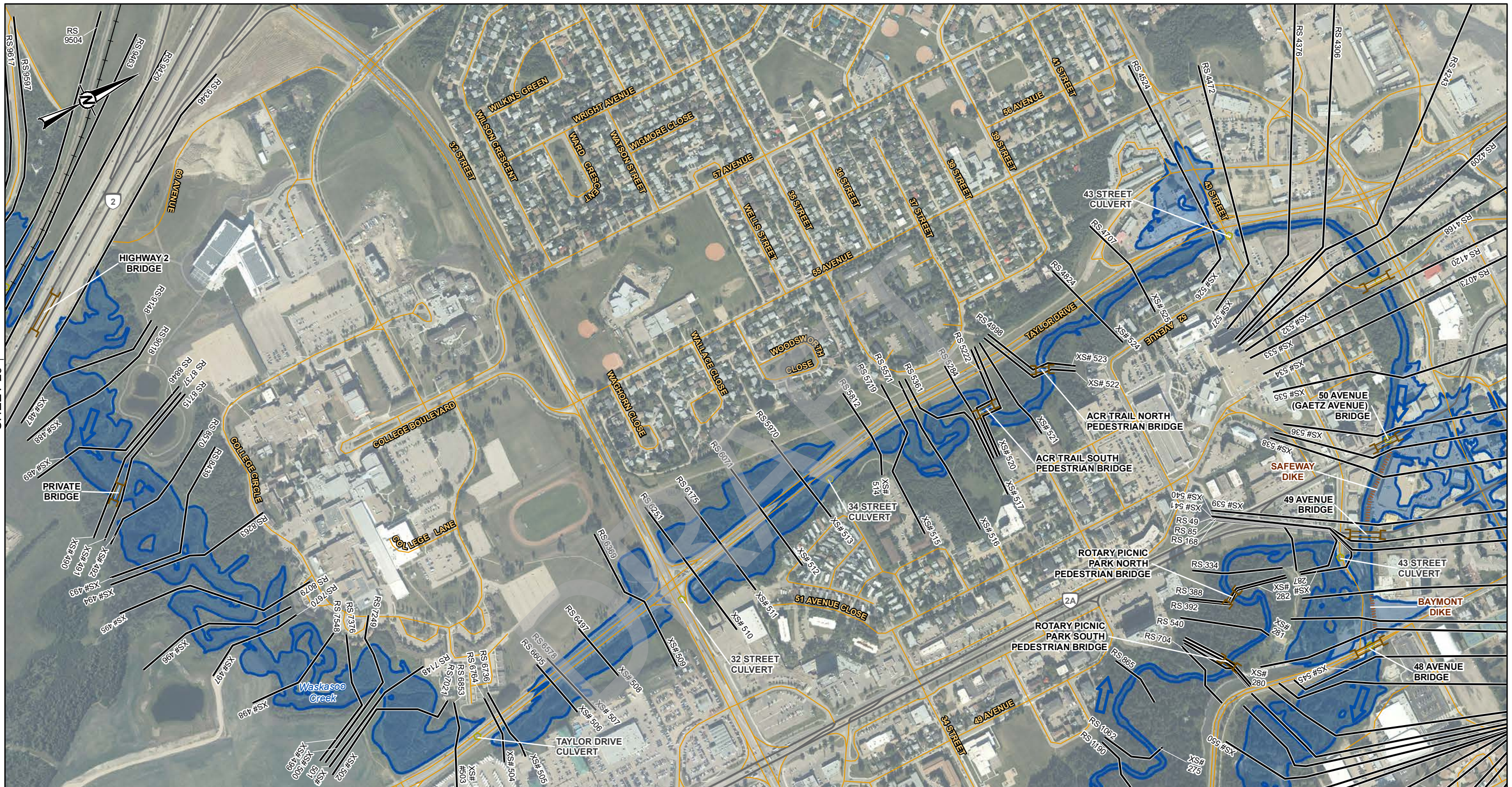
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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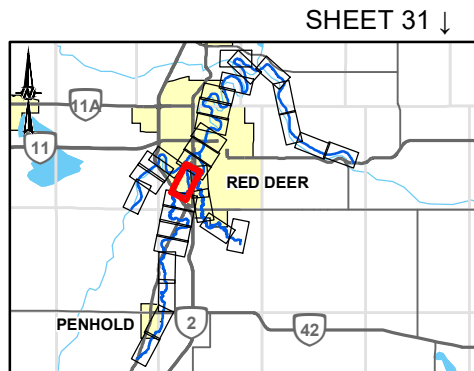
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SHEET 26 ↑

SHEET 5 ↓

LEGEND		
—	CROSS SECTION	100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	FLOOD CONTROL STRUCTURE
	STUDY BOUNDARY	CULVERT
	FLOW DIRECTION	BRIDGE
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
DISCHARGE		
WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S		
WASKASOO CREEK BELOW PIPER CREEK = 53.9 M ³ /S		
PIPER CREEK ABOVE WASKASOO CREEK = 19.3 M ³ /S		



SHEET 31 ↓

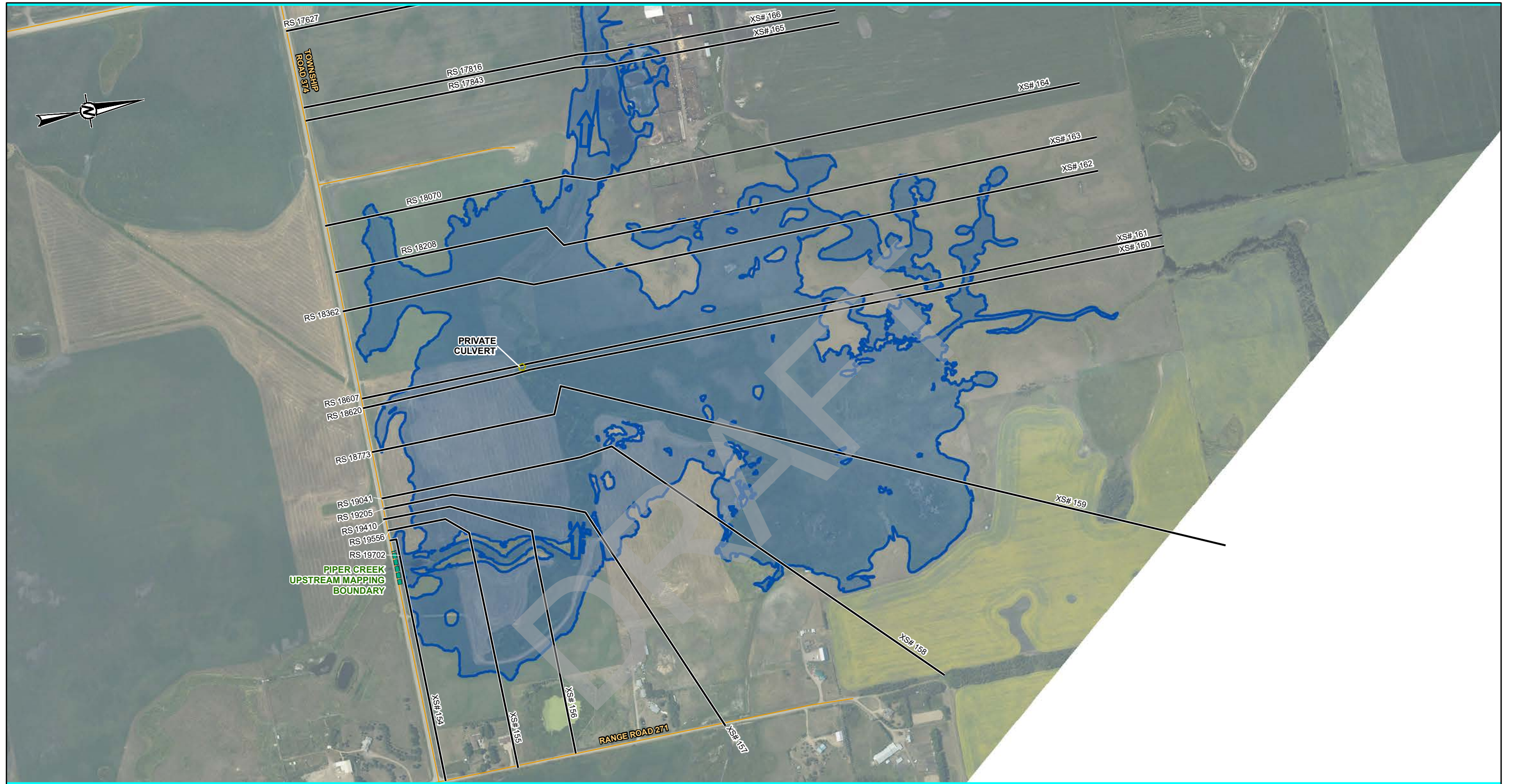


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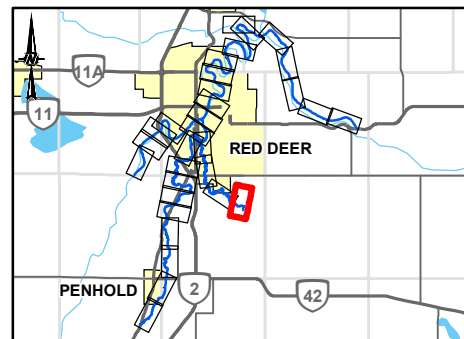
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	100-YEAR FLOOD INUNDATION EXTENT
	100-YEAR FLOOD EXTENT
	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
DISCHARGE	PIPER CREEK ABOVE HIGHWAY 595 = 17.5 M ³ /S



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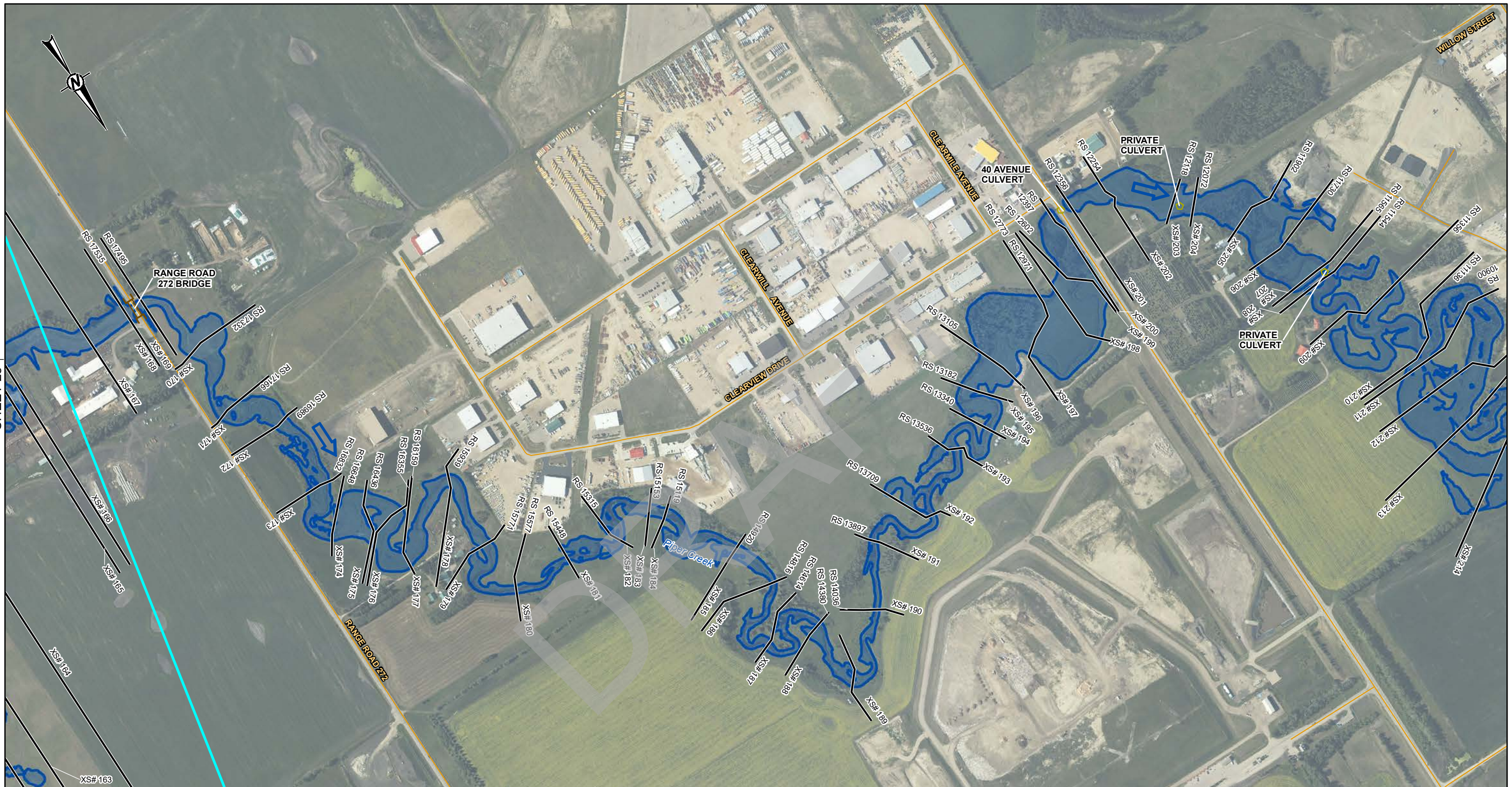
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**100-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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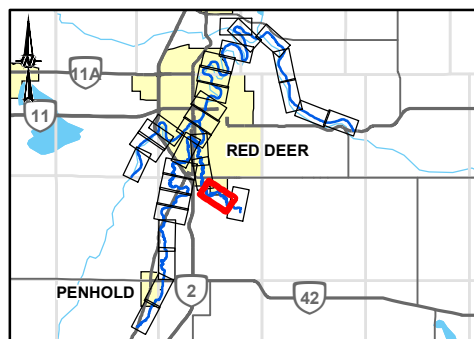
SHEET 28 ↑

↑ SHEET 30

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		100-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		100-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 PIPER CREEK ABOVE HIGHWAY 595 = 17.5 M³/S



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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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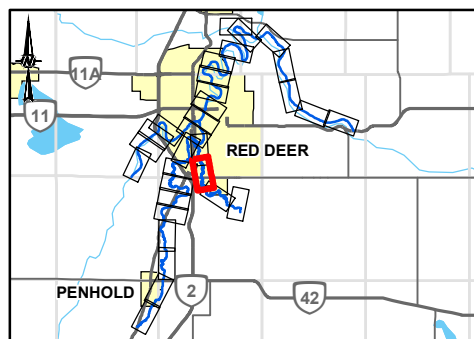
SHEET 31

SHEET 30

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	100-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	100-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
 PIPER CREEK ABOVE HIGHWAY 595 = 17.5 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 19.3 M³/S



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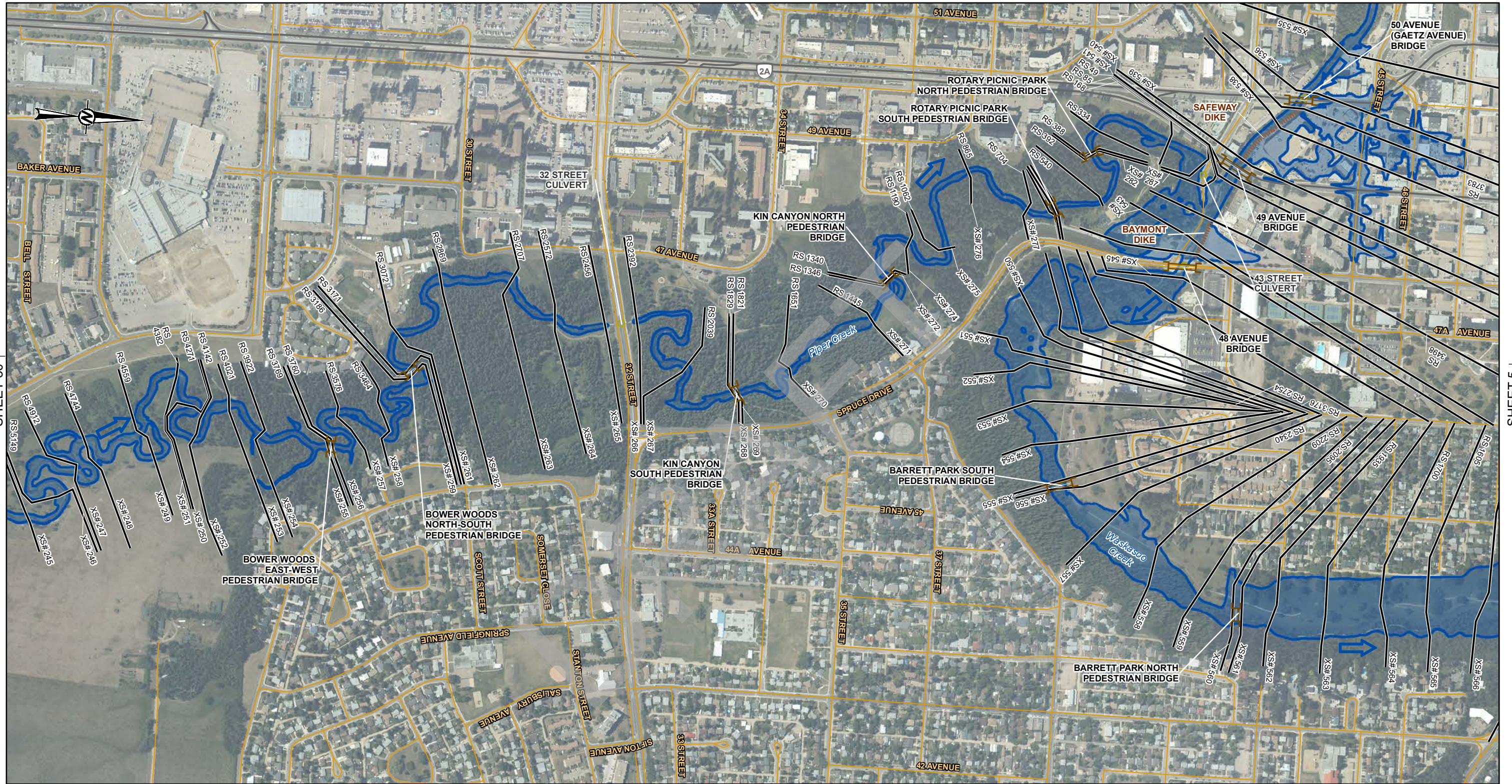
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
100-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

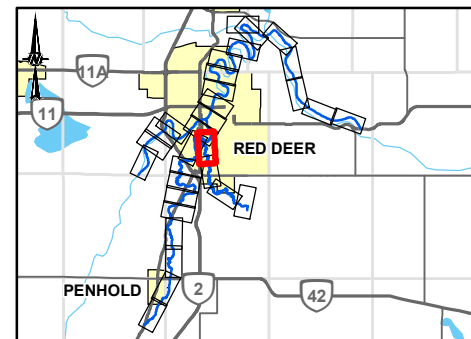
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↑ SHEET 30

↑ SHEET 5

LEGEND			
— CROSS SECTION	FLOOD CONTROL STRUCTURE	100-YEAR FLOOD INUNDATION EXTENT	
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	100-YEAR FLOOD EXTENT	
RS 304 RIVER STATION (M)	CULVERT	100-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
STUDY BOUNDARY	BRIDGE		
FLOW DIRECTION		DISCHARGE	
LOCAL ROAD		PIPER CREEK ABOVE WASKASOO CREEK = 19.3 M ³ /S	
PRIMARY HIGHWAY		WASKASOO CREEK ABOVE PIPER CREEK = 37.1 M ³ /S	
SECONDARY HIGHWAY		WASKASOO CREEK BELOW PIPER CREEK = 53.9 M ³ /S	
RAILWAY			



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**100-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

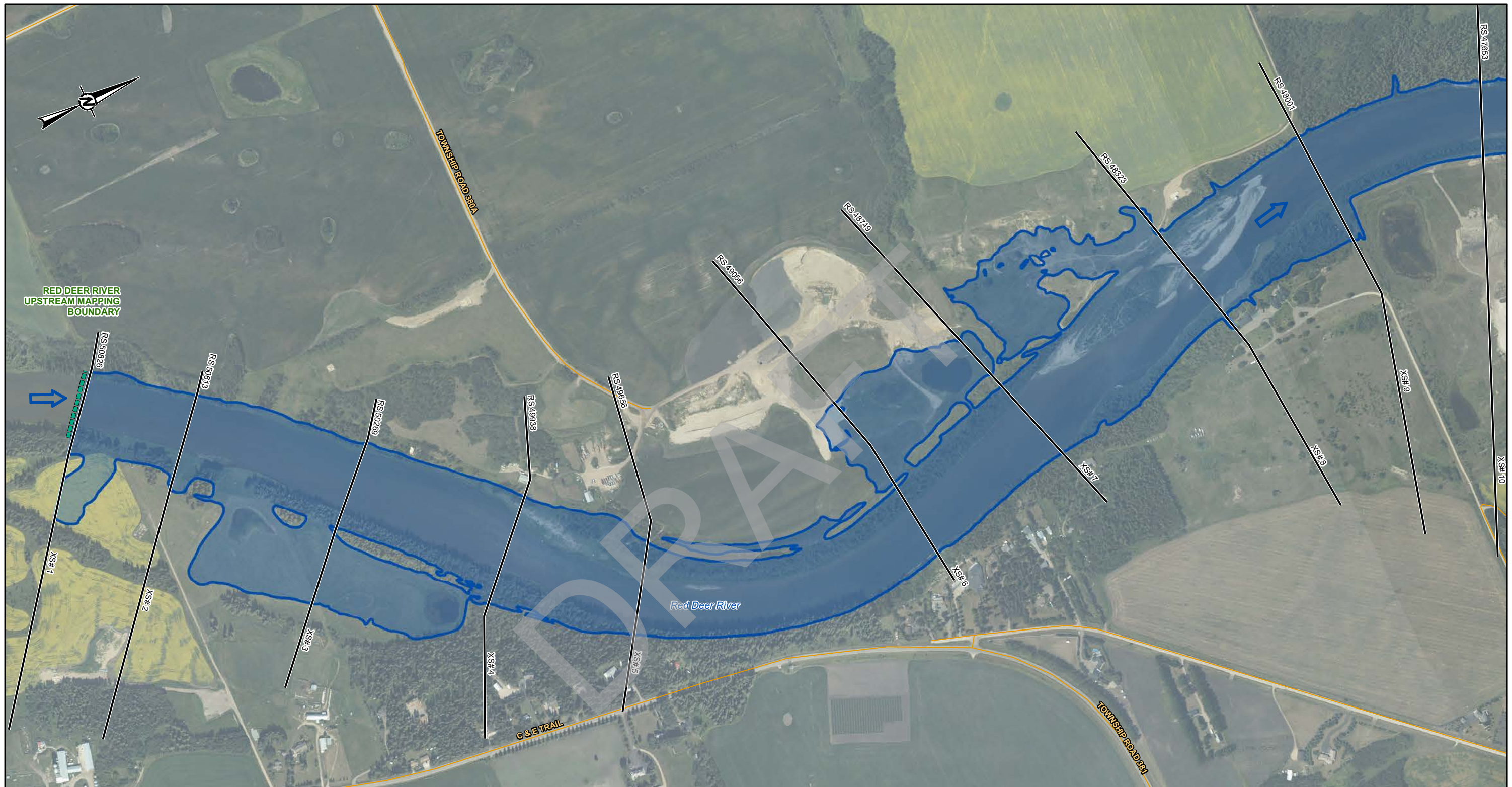
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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SHEETS 1-31

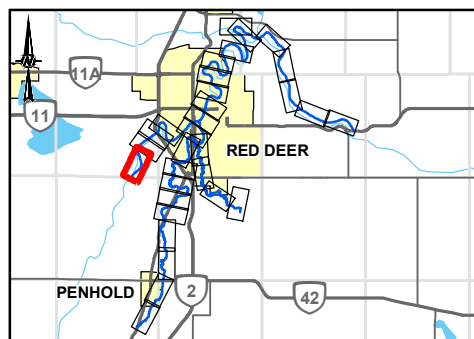
200-Year Flood Inundation Extent

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SHEET 2 ↓

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	200-YEAR FLOOD INUNDATION EXTENT
RS 304	RIVER STATION (M)	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER ABOVE WASKASOO CREEK = 2390 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	



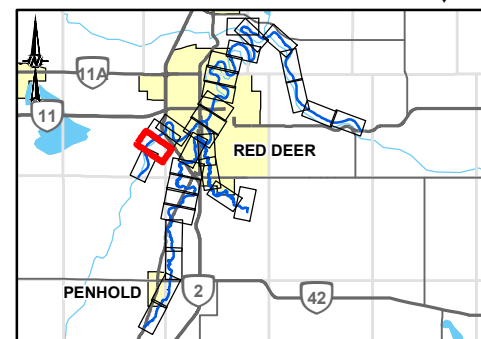
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	HYDRAULIC STRUCTURES
	CULVERT
	BRIDGE
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 2390 M ³ /S

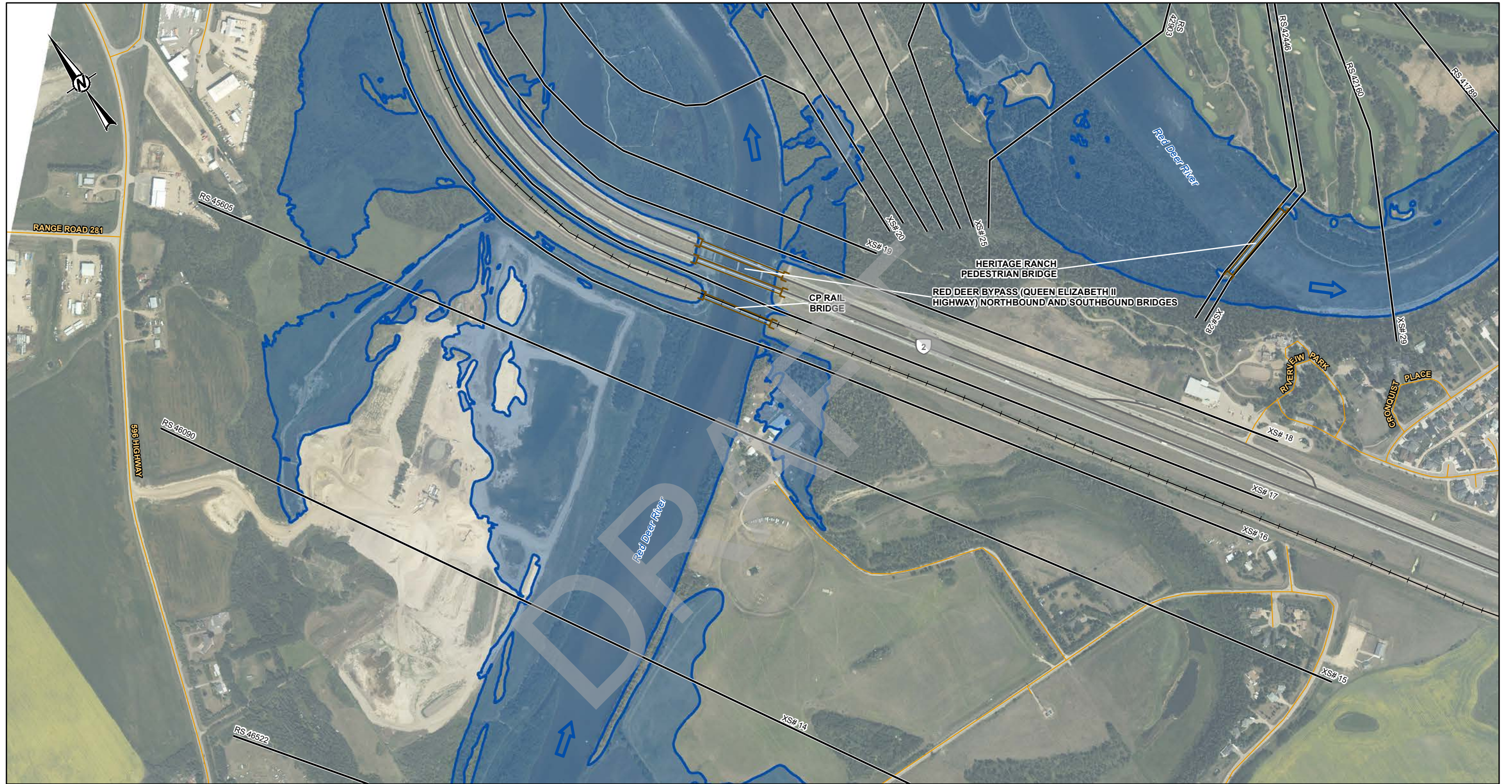


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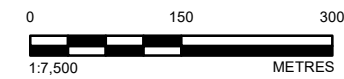
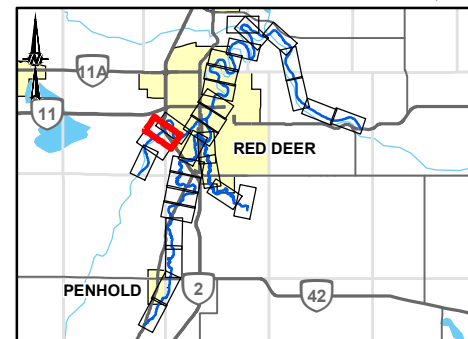
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 2390 M ³ /S	

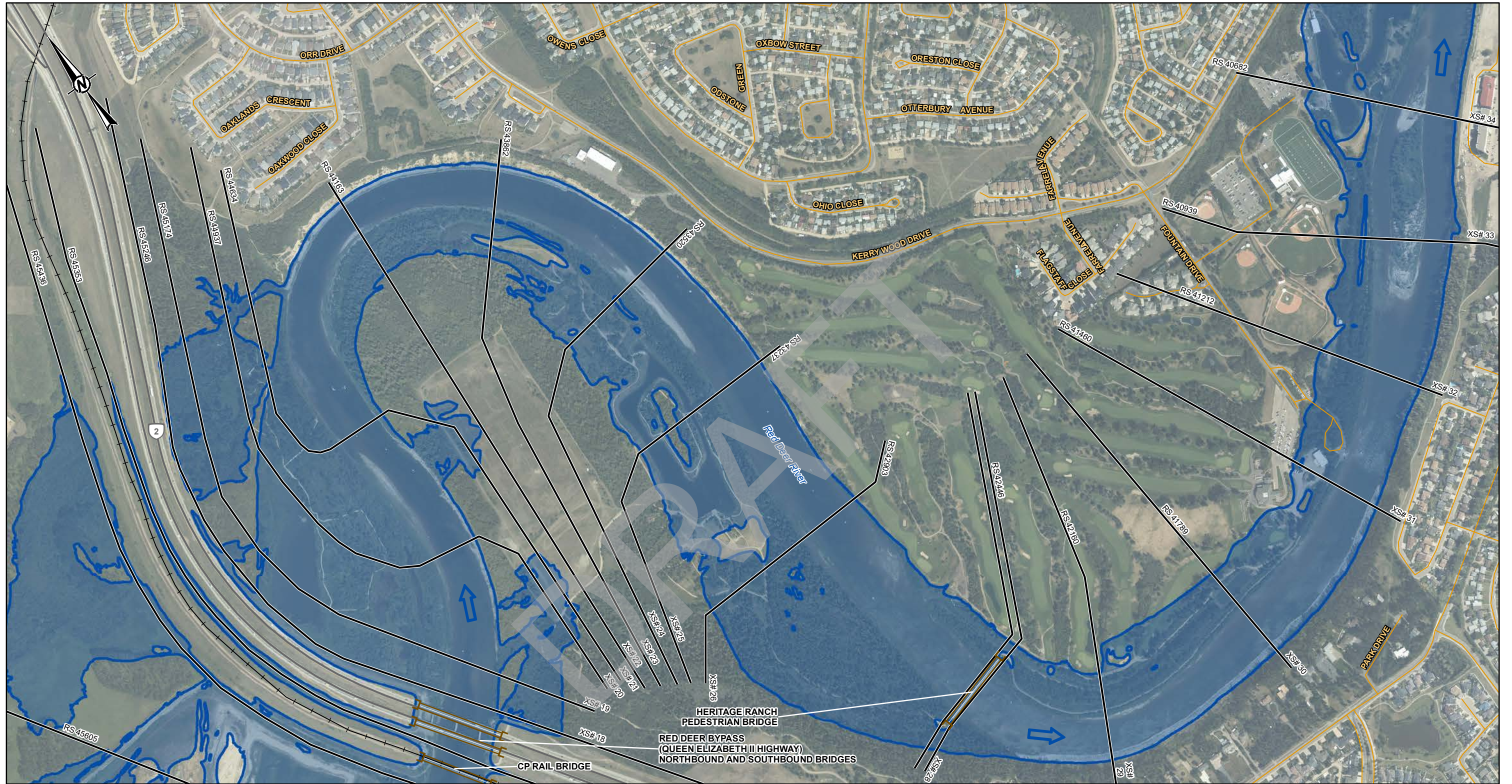


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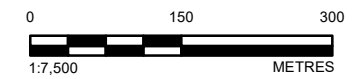
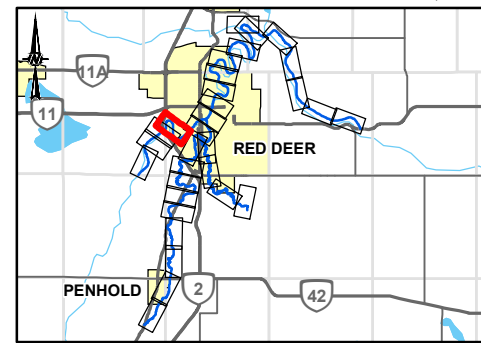
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31

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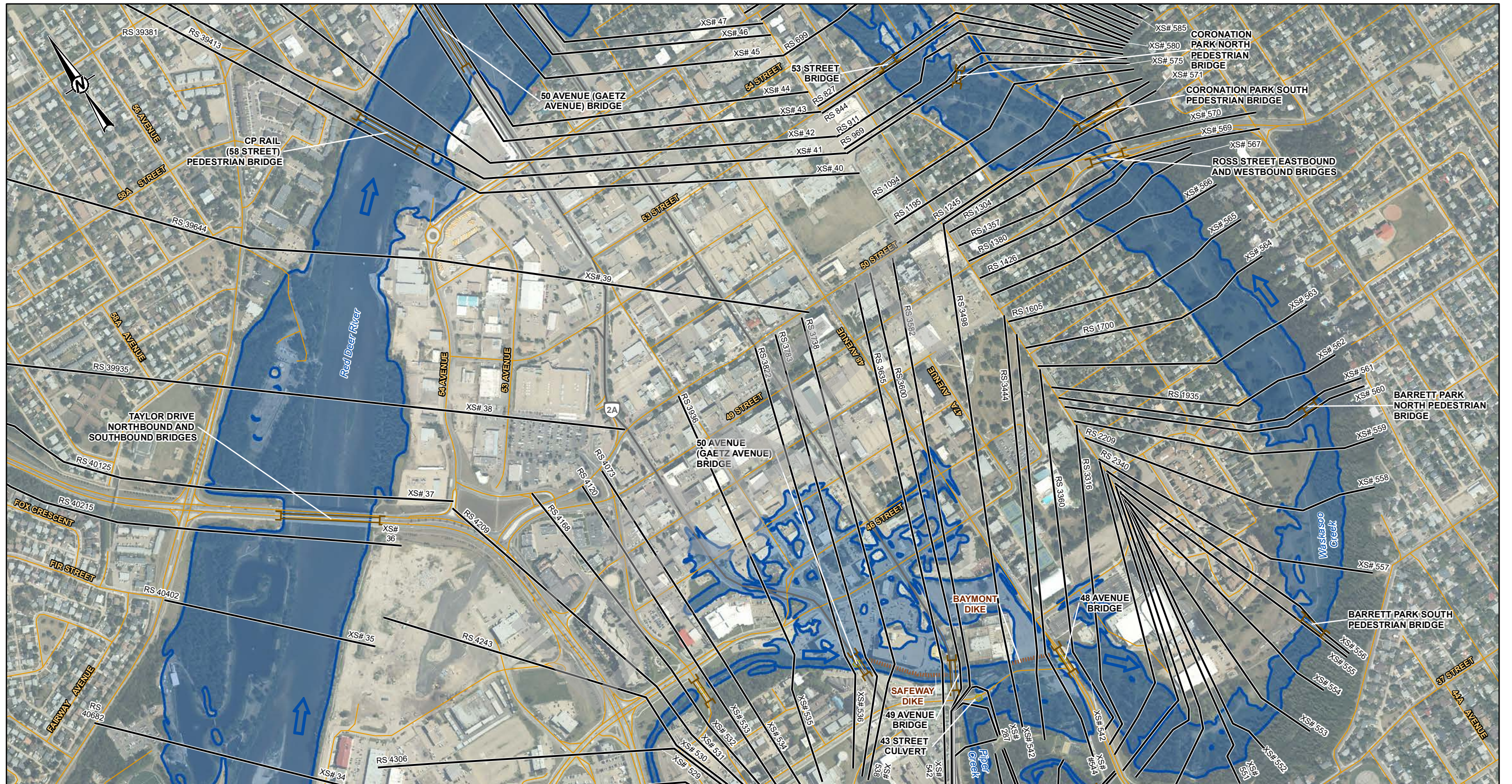


LEGEND		200-YEAR FLOOD INUNDATION EXTENT	
	CROSS SECTION		200-YEAR FLOOD EXTENT
	FLOOD CONTROL STRUCTURE		200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER		CULVERT
	RIVER STATION (M)		BRIDGE
	STUDY BOUNDARY		
	FLOW DIRECTION		
	LOCAL ROAD		
	PRIMARY HIGHWAY		
	SECONDARY HIGHWAY		
	RAILWAY		
		DISCHARGE RED DEER RIVER ABOVE WASKASOO CREEK = 2390 M ³ /S	



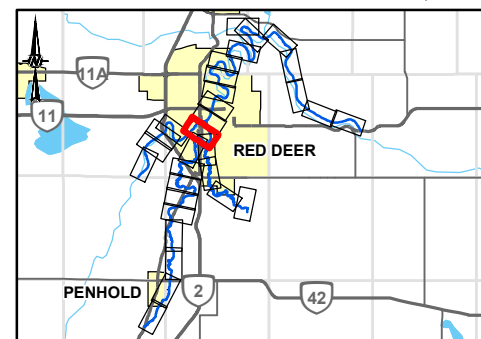
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PROJECT RED DEER RIVER HAZARD STUDY		
TITLE 200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.
1783039	4000	2
		FIGURE
		SHEET 4 OF 31



LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ||||| FLOOD CONTROL STRUCTURE
- HYDRAULIC STRUCTURES**
- CULVERT
- BRIDGE
- 200-YEAR FLOOD INUNDATION EXTENT**
- 200-YEAR FLOOD EXTENT
- 200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE**
- RED DEER RIVER ABOVE WASKASOO CREEK = 2390 M³/S
- WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M³/S
- WASKASOO CREEK BELOW PIPER CREEK = 67.7 M³/S
- PIPER CREEK ABOVE WASKASOO CREEK = 23.9 M³/S



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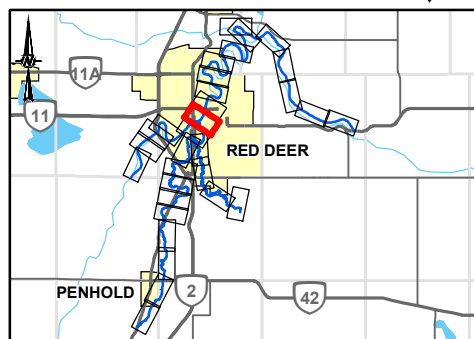
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND		200-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	200-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER ABOVE WASKASOO CREEK = 2390 M ³ /S
	FLOW DIRECTION	RED DEER RIVER BELOW WASKASOO CREEK = 2460 M ³ /S
	LOCAL ROAD	WASKASOO CREEK BELOW PIPER CREEK = 67.7 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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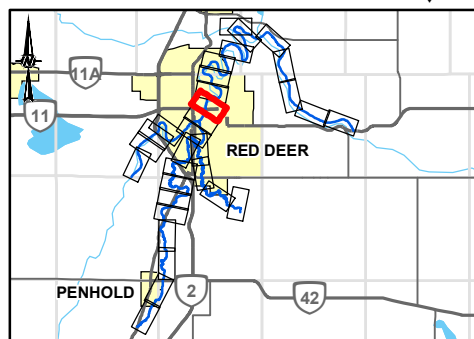
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT		RED DEER RIVER HAZARD STUDY
TITLE		200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE		SHEET 6 OF 31



LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	200-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	200-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	DISCHARGE
FLOW DIRECTION		RED DEER RIVER BELOW WASKASOO CREEK = 2460 M ³ /S
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

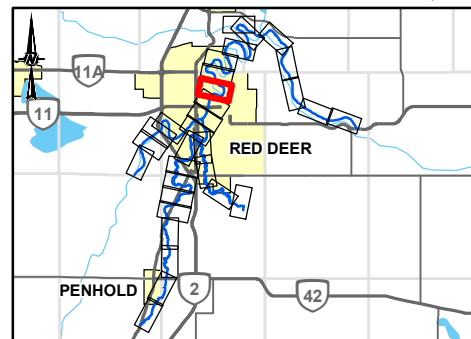
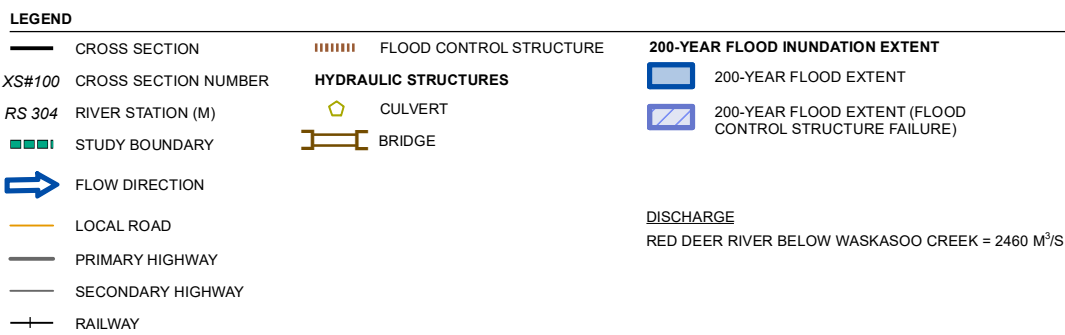
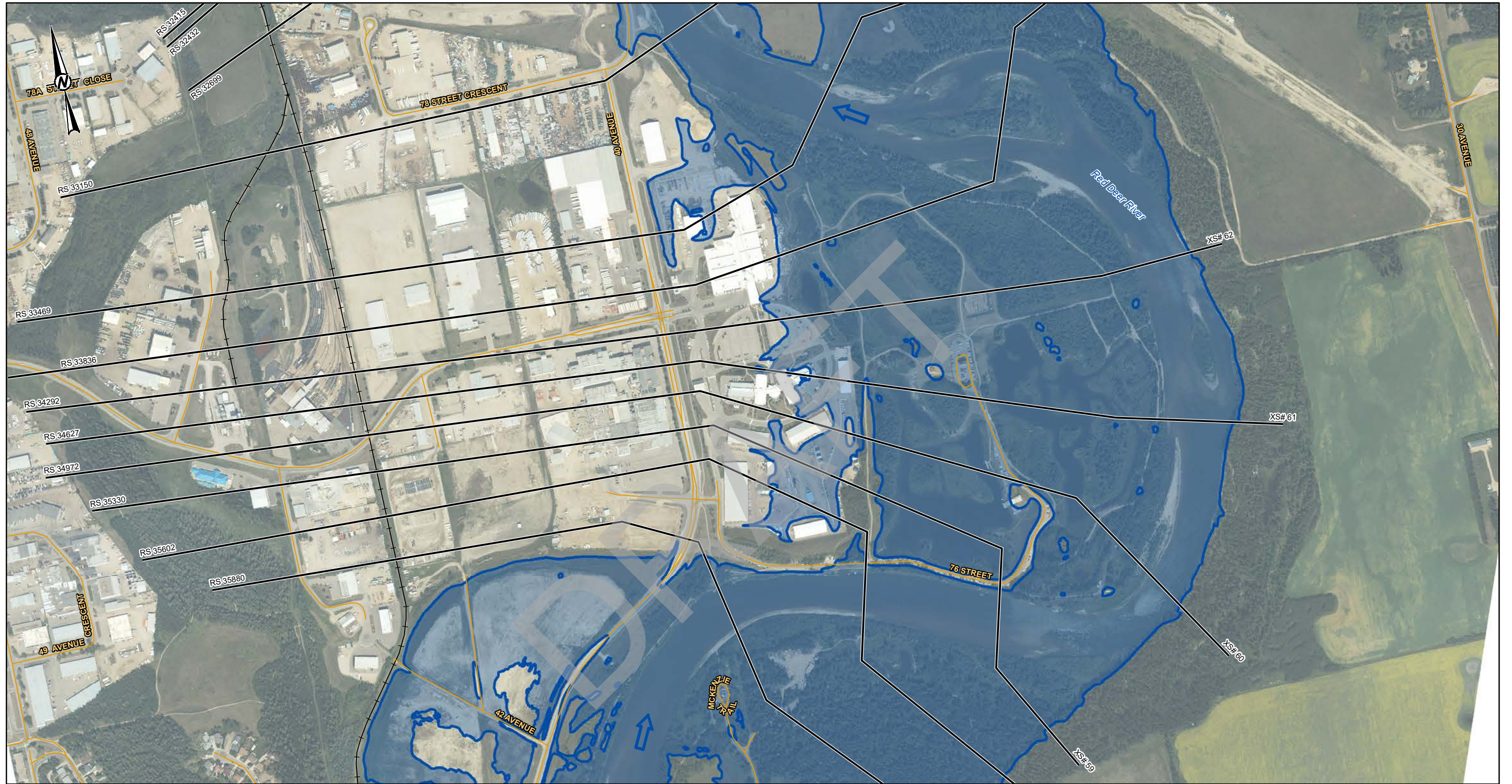
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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AND PARKS



CONSULTANT



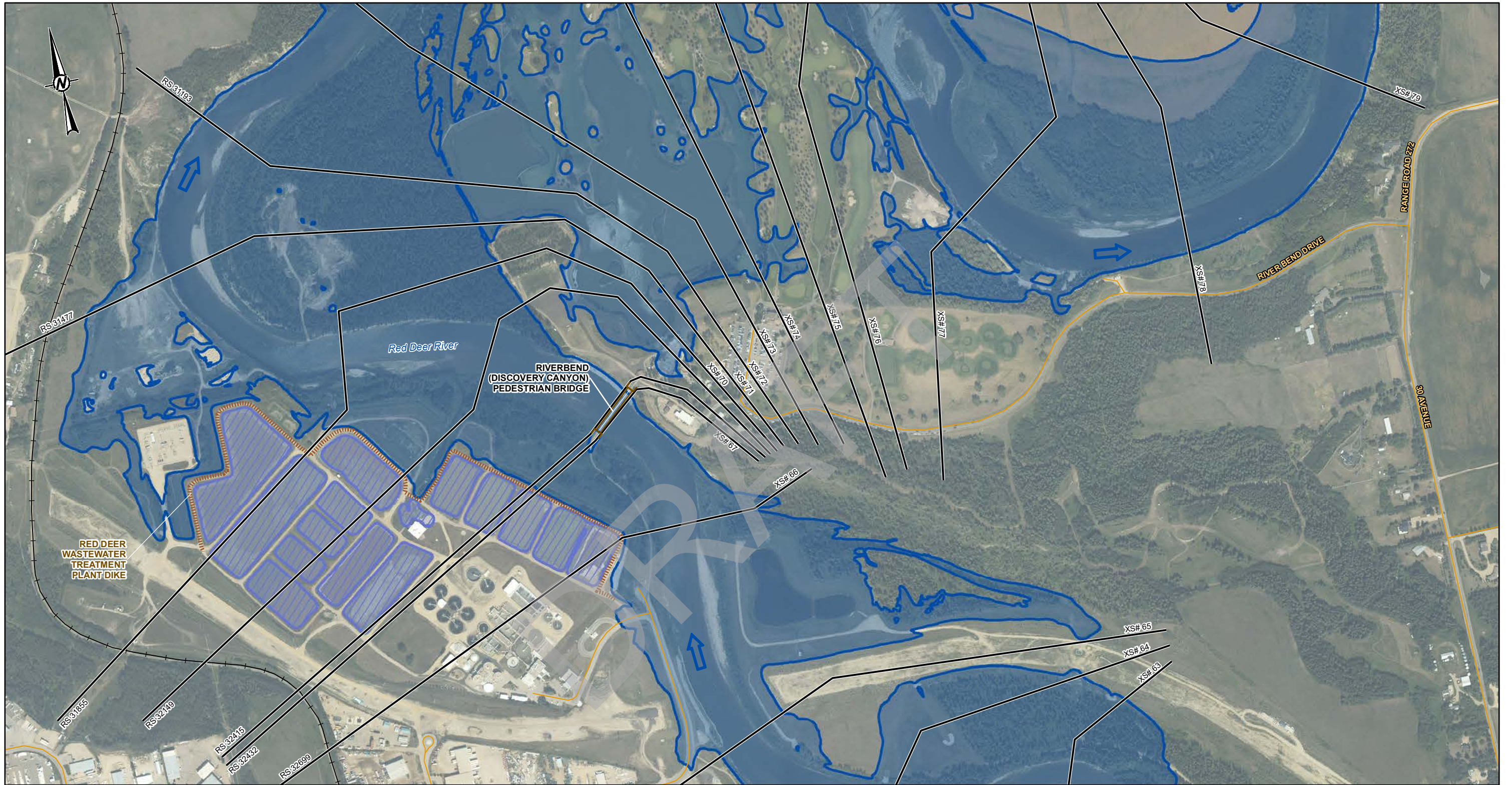
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DESIGNED	PT
PREPARED	NB
REVIEWED	GT
APPROVED	WP

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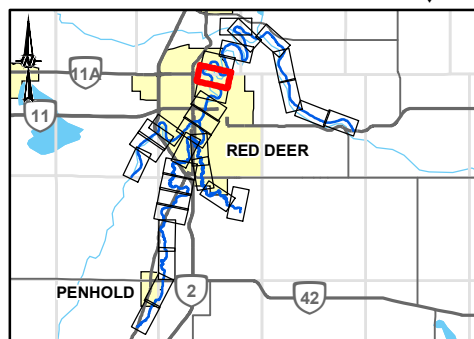
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**200-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31



LEGEND		200-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	▭	200-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	▭	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	▭	DISCHARGE
▭	STUDY BOUNDARY	▭	RED DEER RIVER BELOW WASKASOO CREEK = 2460 M ³ /S
➔	FLOW DIRECTION	▭	
—	LOCAL ROAD	▭	
—	PRIMARY HIGHWAY	▭	
—	SECONDARY HIGHWAY	▭	
+	RAILWAY	▭	
▭	FLOOD CONTROL STRUCTURE		
▭	HYDRAULIC STRUCTURES		
▭	CULVERT		
▭	BRIDGE		



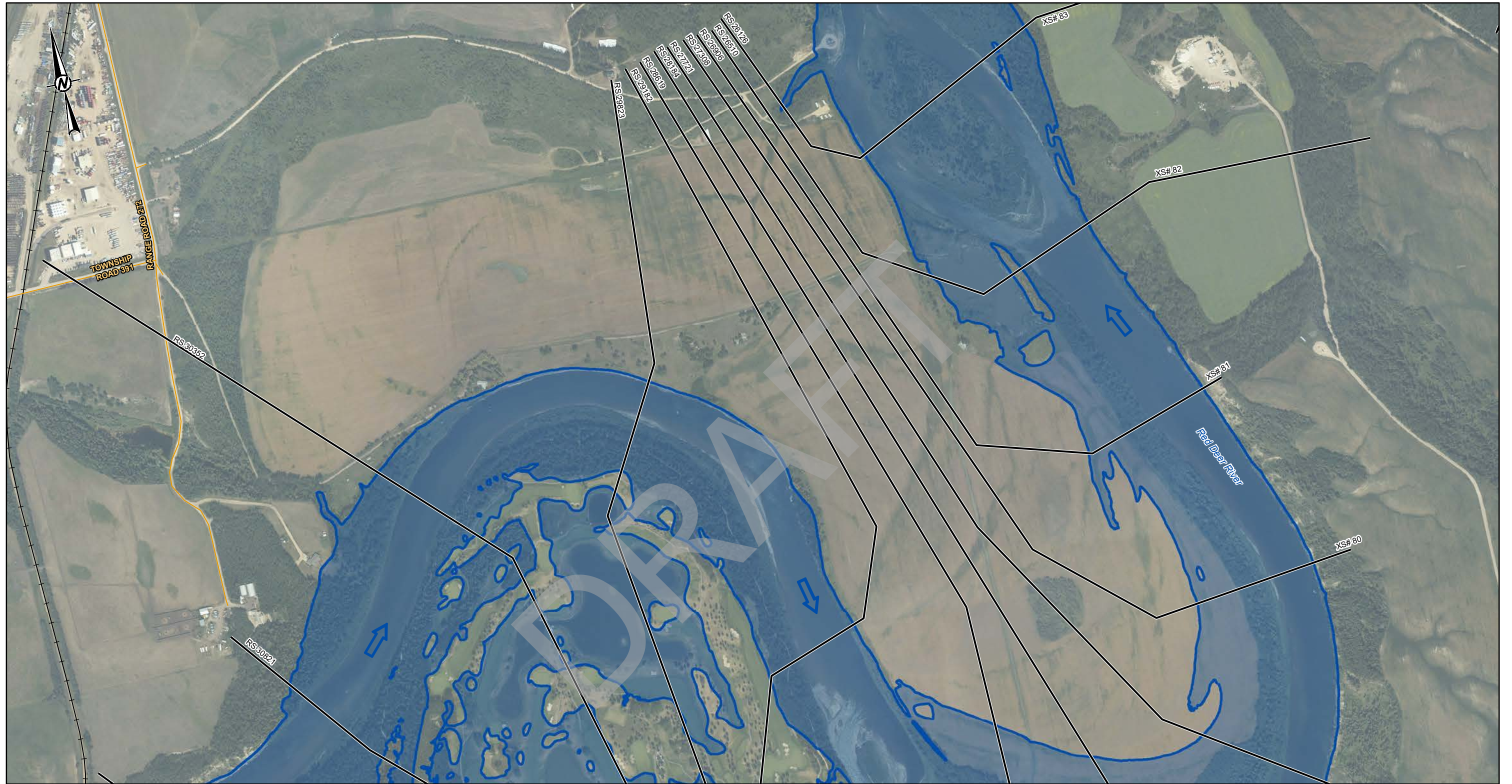
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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

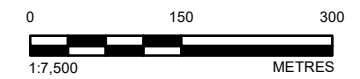
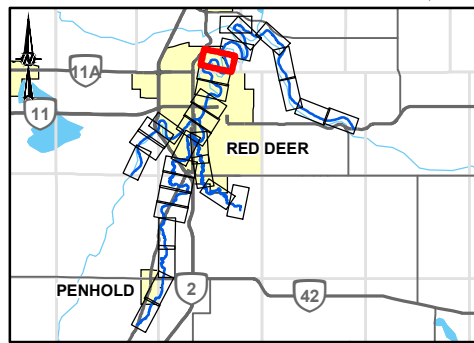
PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 9 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 2460 M ³ /S

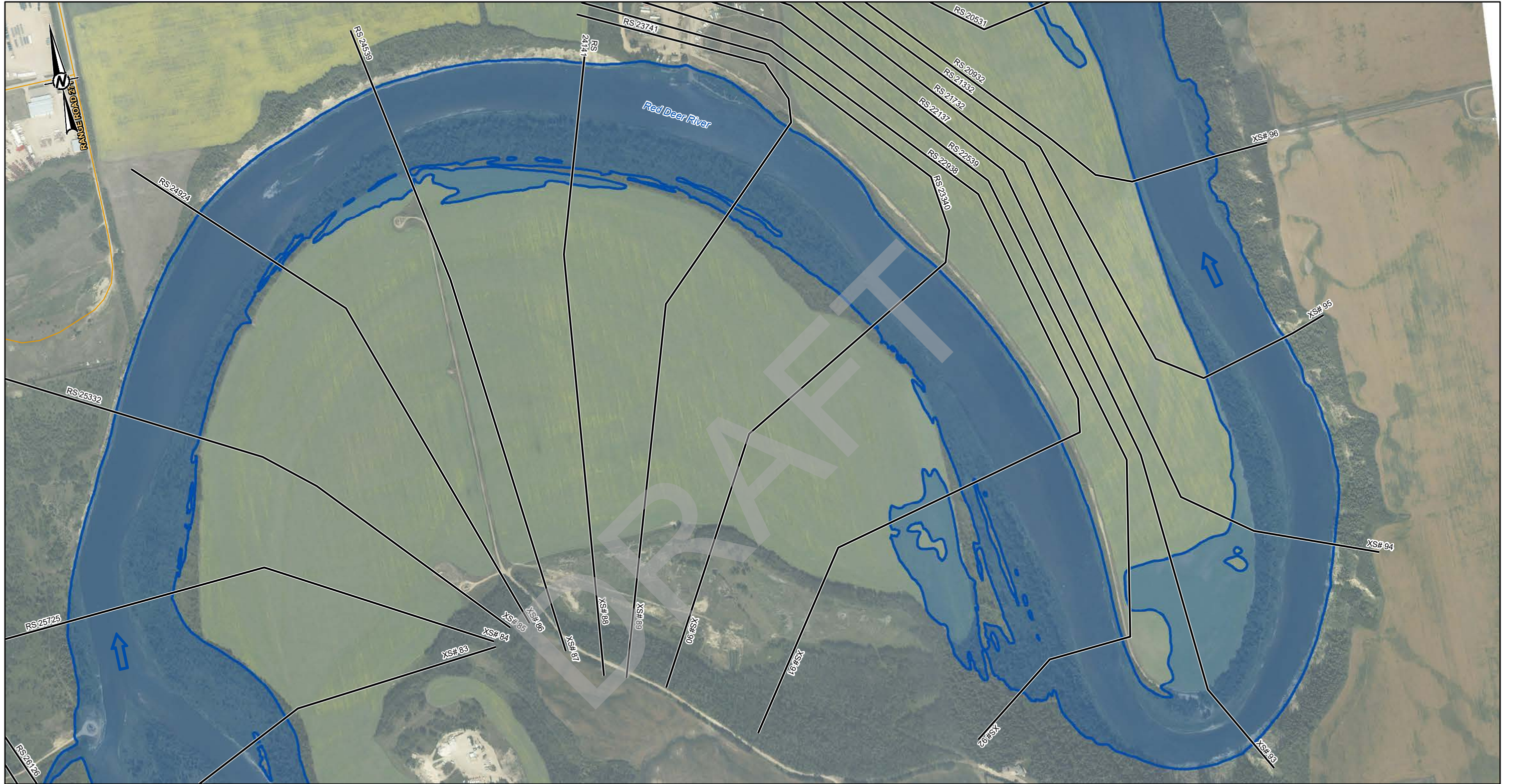


CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

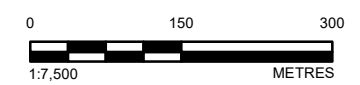
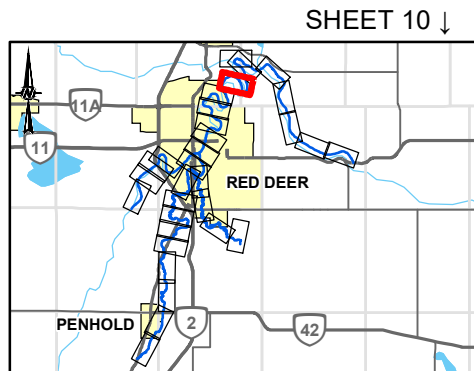
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	200-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	200-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW WASKASOO CREEK = 2460 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



CLIENT ALBERTA ENVIRONMENT AND PARKS	Alberta Government										
CONSULTANT GOLDER	<table border="0"> <tr> <td>YYYY-MM-DD</td> <td>2022-11-23</td> </tr> <tr> <td>DESIGNED</td> <td>PT</td> </tr> <tr> <td>PREPARED</td> <td>NB</td> </tr> <tr> <td>REVIEWED</td> <td>GT</td> </tr> <tr> <td>APPROVED</td> <td>WP</td> </tr> </table>	YYYY-MM-DD	2022-11-23	DESIGNED	PT	PREPARED	NB	REVIEWED	GT	APPROVED	WP
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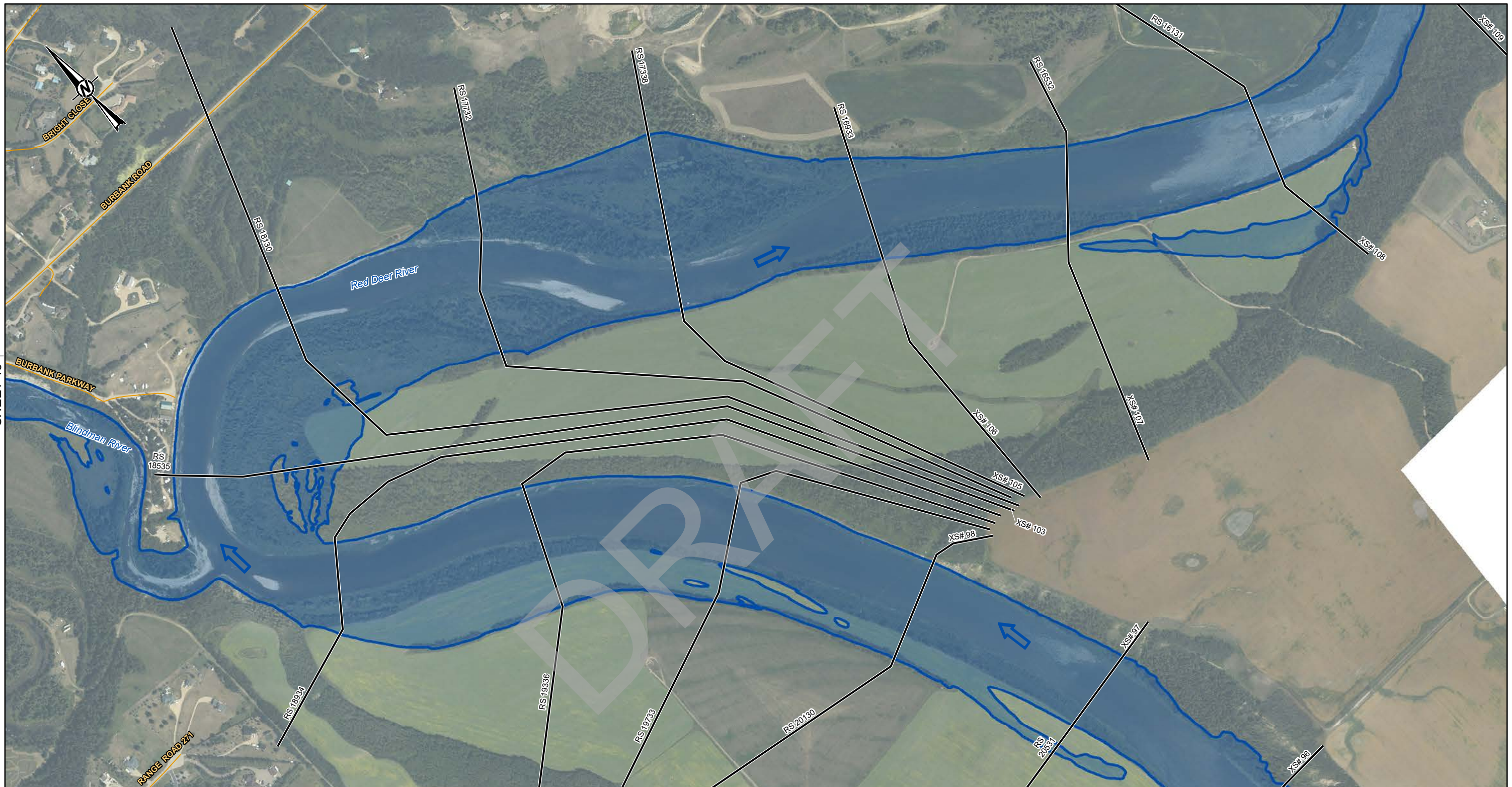
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT RED DEER RIVER HAZARD STUDY	TITLE 200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO. 1783039	CONTROL 4000
REV. 2	FIGURE SHEET 11 OF 31

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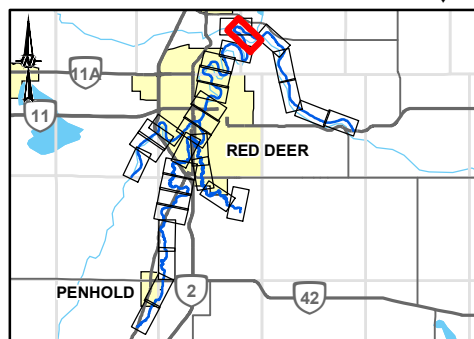
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SHEET 13 ↑

SHEET 14 ↓

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	200-YEAR FLOOD INUNDATION EXTENT
RS 304	RIVER STATION (M)	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	
DISCHARGE		
RED DEER RIVER BELOW WASKASOO CREEK = 2460 M ³ /S		
RED DEER RIVER BELOW BLINDMAN RIVER = 2810 M ³ /S		



SHEET 11 ↓



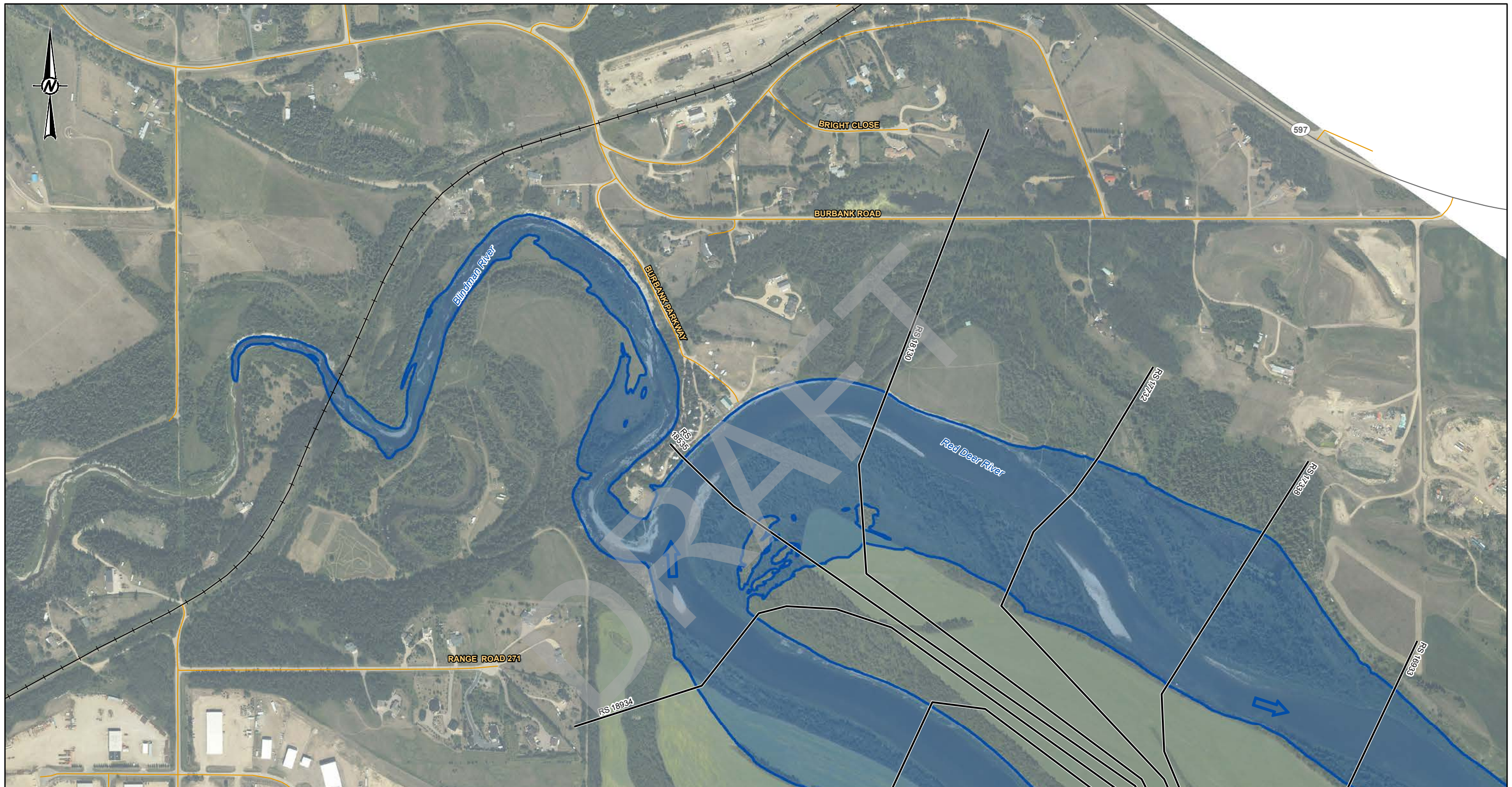
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CONSULTANT	GOLDER	
YYYY-MM-DD	2022-11-23	
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PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT		RED DEER RIVER HAZARD STUDY	
TITLE		200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 12 OF 31

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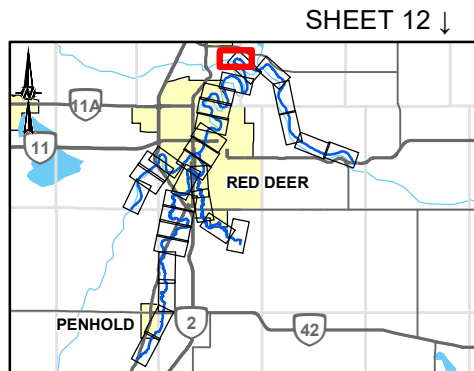


SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		200-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		200-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 2460 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 2810 M³/S



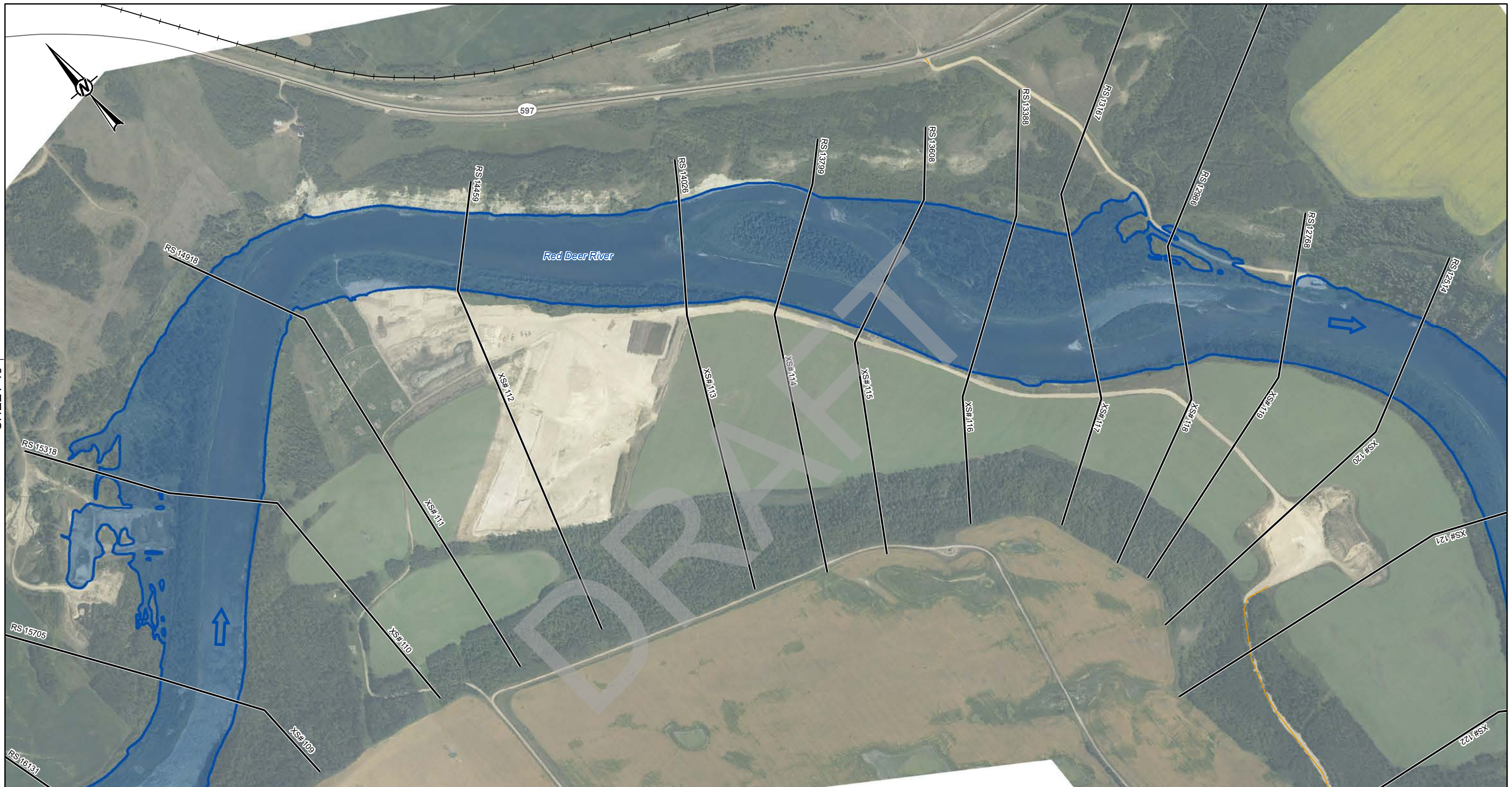
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CONSULTANT	GOLDER		
DESIGNED	YYYY-MM-DD	2022-11-23	PT
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 13 OF 31

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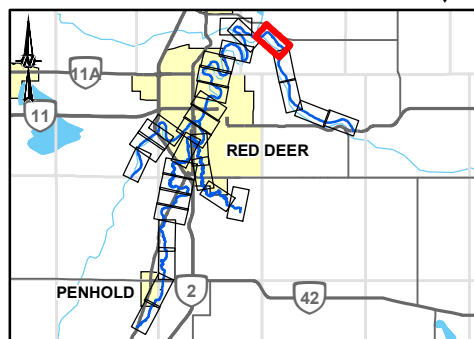
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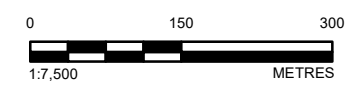
SHEET 13 ↑

↓ SHEET 15

LEGEND		
—	CROSS SECTION	200-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER BELOW BLINDMAN RIVER = 2810 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



SHEET 12 ↓



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 14 OF 31	

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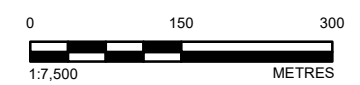
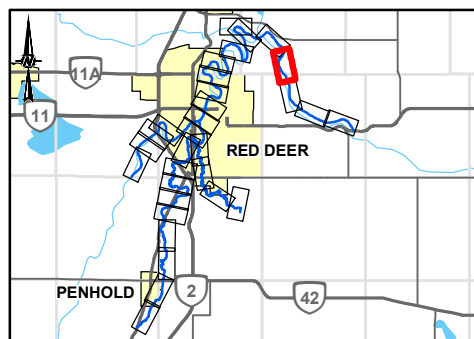
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	200-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	200-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 2810 M ³ /S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

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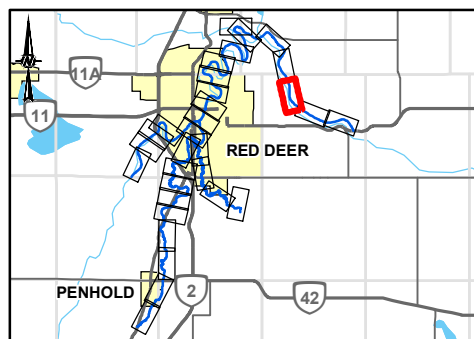
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
■	STUDY BOUNDARY	—+— BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	200-YEAR FLOOD INUNDATION EXTENT	
	■ 200-YEAR FLOOD EXTENT	
	■ 200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 2810 M ³ /S	



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 16 OF 31

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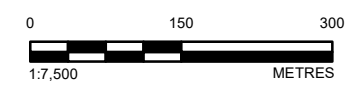
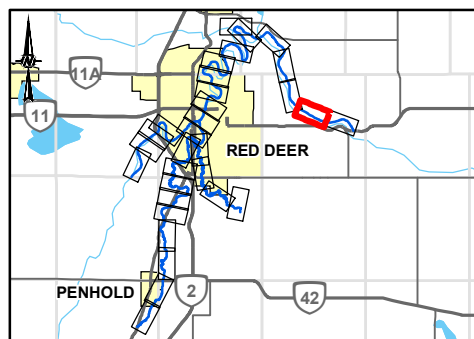
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	200-YEAR FLOOD INUNDATION EXTENT	
	▬ 200-YEAR FLOOD EXTENT	
	▬ 200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW BLINDMAN RIVER = 2810 M ³ /S	



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

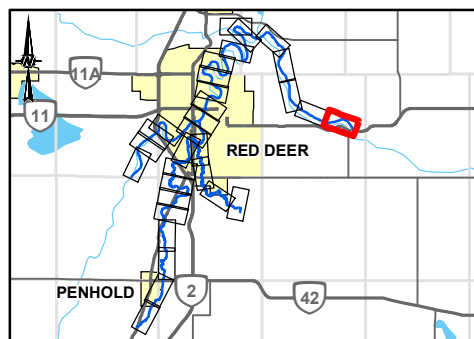
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SHEET 17 ↑



LEGEND		
—	CROSS SECTION	200-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	200-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	DISCHARGE
	PRIMARY HIGHWAY	RED DEER RIVER BELOW BLINDMAN RIVER = 2810 M ³ /S
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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CONSULTANT		
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APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

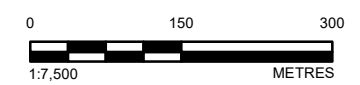
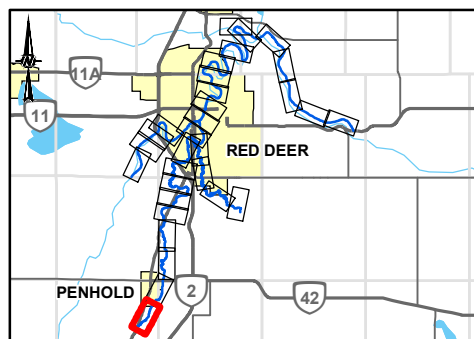


SHEET 20

LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		200-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		200-YEAR FLOOD EXTENT
	RIVER STATION (M)		CULVERT		200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE HIGHWAY 42 = 40 M³/S



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

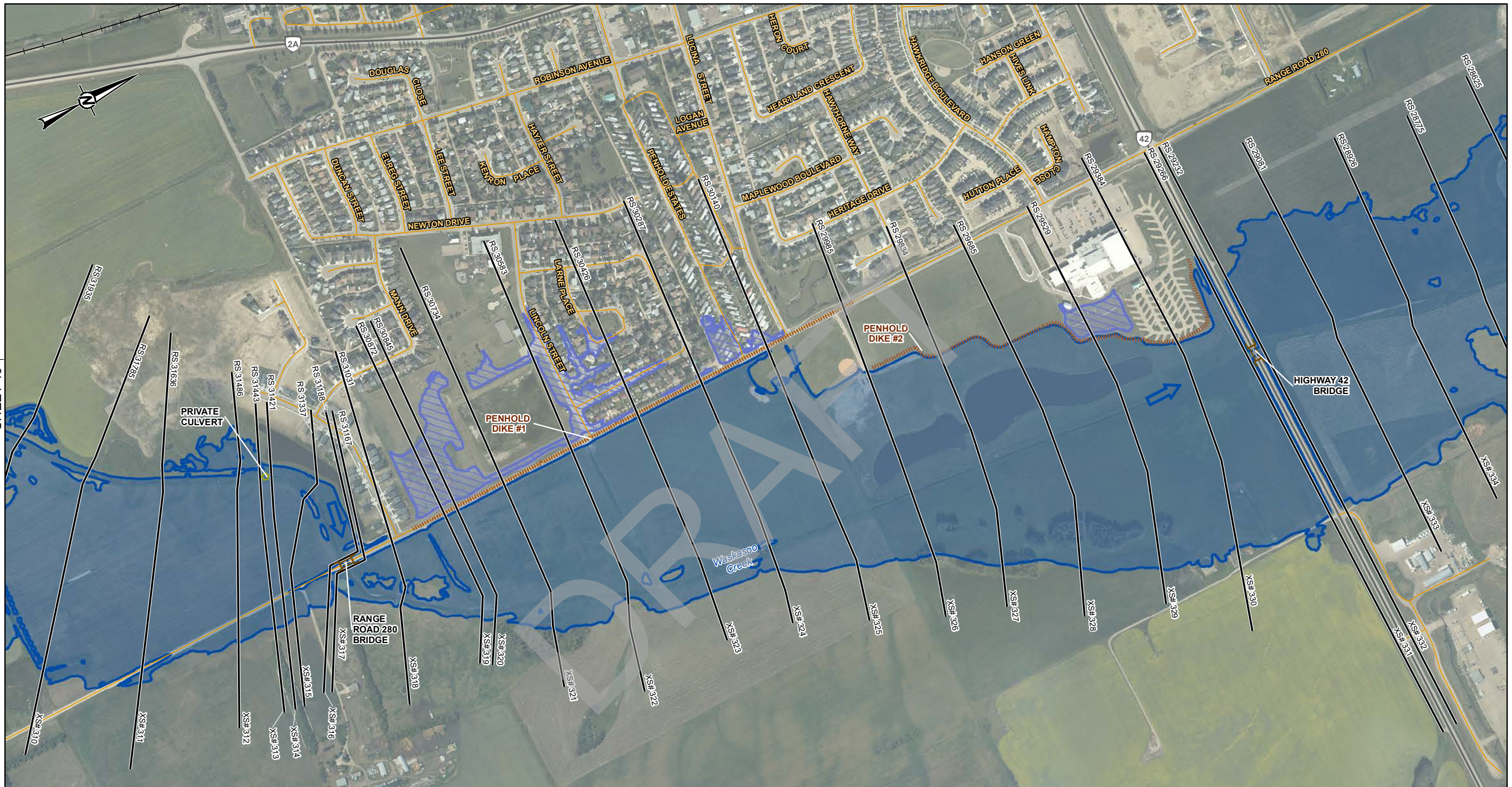
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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SHEET 19 ↑

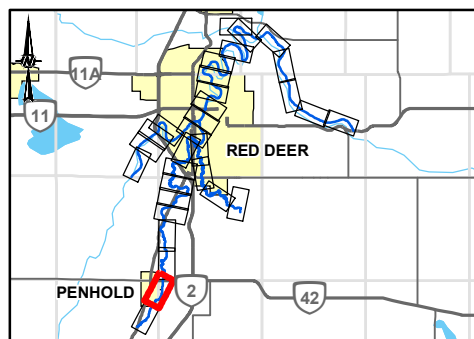
↓ SHEET 21

THE CLIENT/GOVERNMENT OF ALBERTA/ALBERTA/1425276_Rev2_Drains/Mapping/Products/Hydrology/04_Open_Water/Flood/Burialtion/Map/Production/Rev3/1783039_2020/Inundation_Rev2.mxd PRINTED ON: 2023-01-06 AT: 2:45:02 PM

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LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		200-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		200-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				DISCHARGE
	LOCAL ROAD				WASKASOO CREEK ABOVE HIGHWAY 42 = 40 M ³ /S
	PRIMARY HIGHWAY				WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M ³ /S
	SECONDARY HIGHWAY				
	RAILWAY				



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PROJECT
RED DEER RIVER HAZARD STUDY

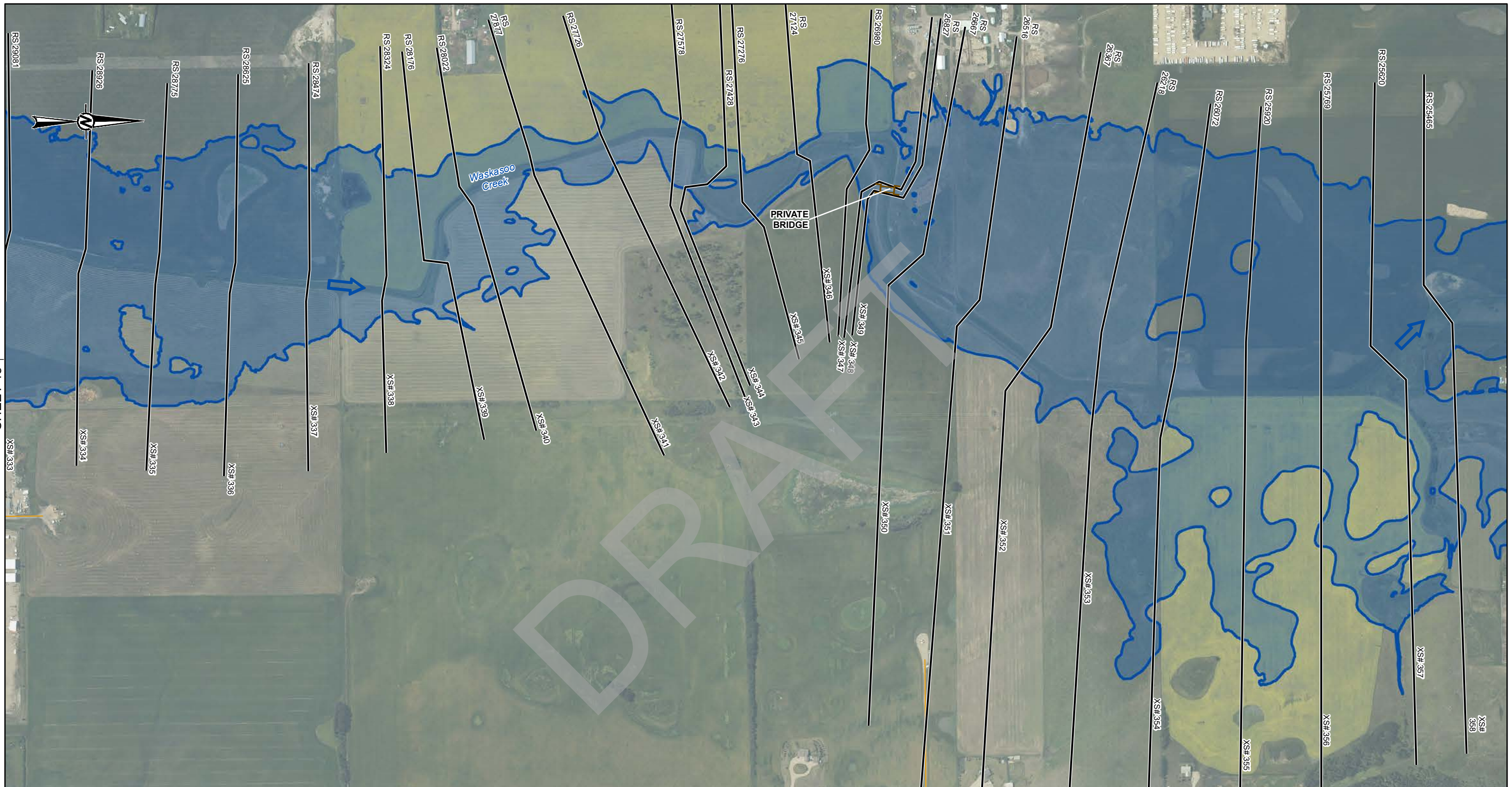
TITLE
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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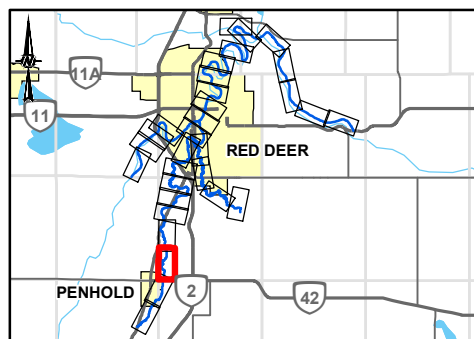
SHEET 18 ↑

↑ SHEET 22



LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	200-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	200-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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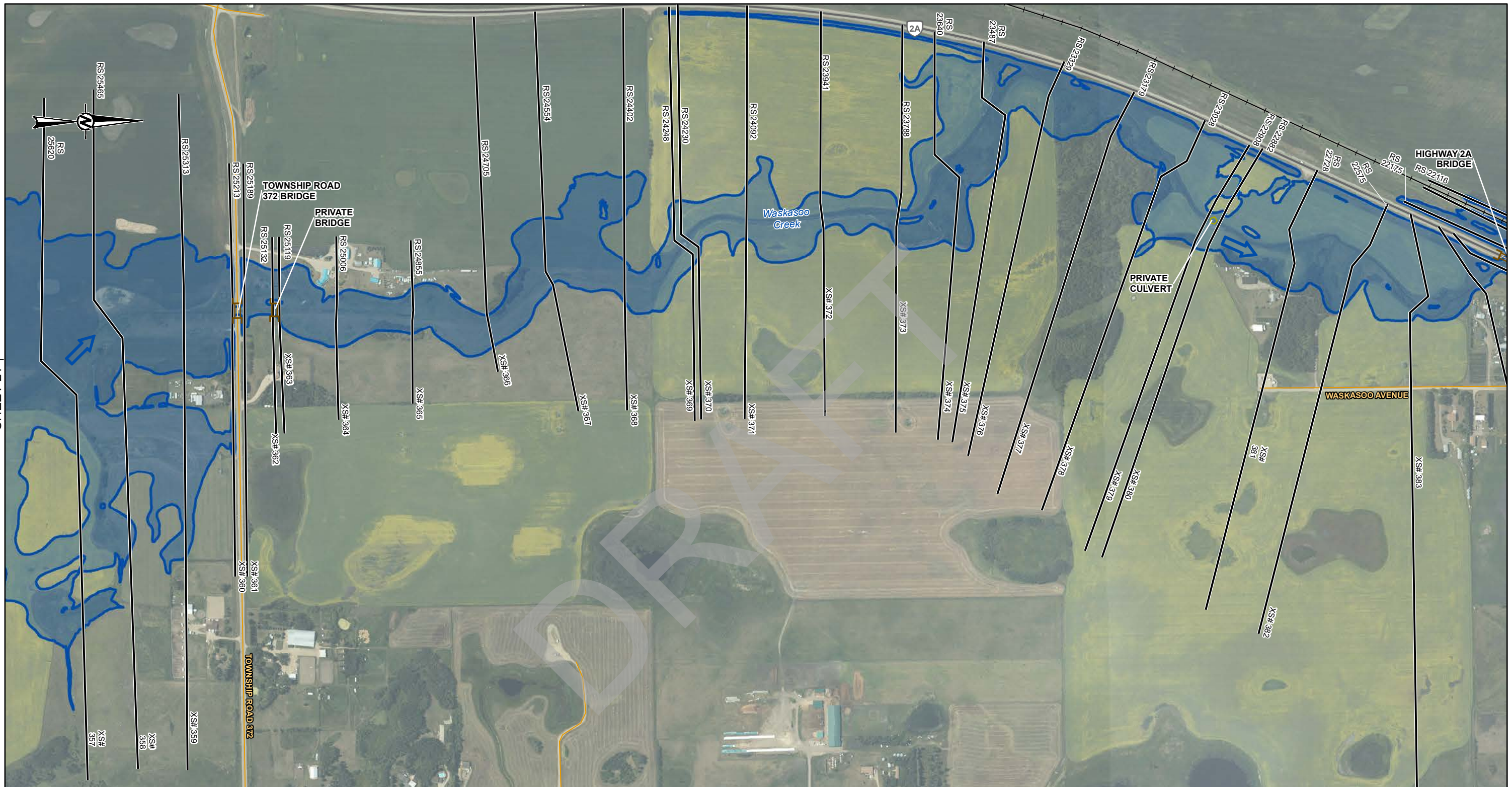
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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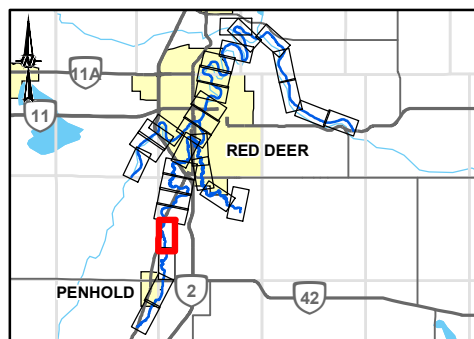
SHEET 21 ↑

↑ SHEET 23

LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		200-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	RIVER STATION (M)		CULVERT		
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M³/S



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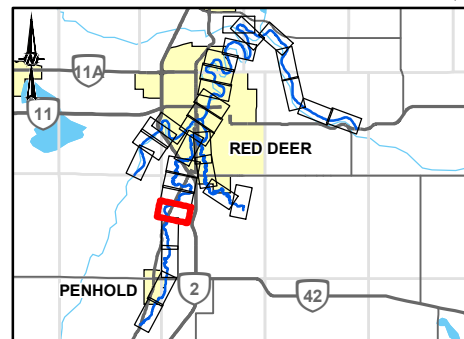
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PROJECT RED DEER RIVER HAZARD STUDY	
TITLE 200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO. 1783039	CONTROL 4000
REV. 2	FIGURE SHEET 22 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M ³ /S	



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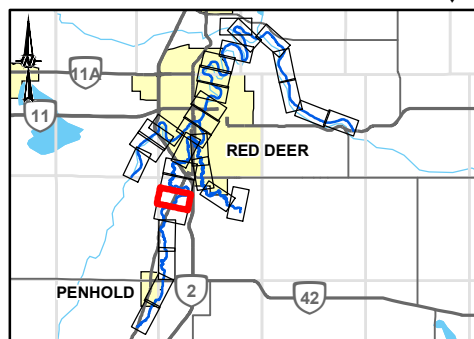
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**200-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M ³ /S	

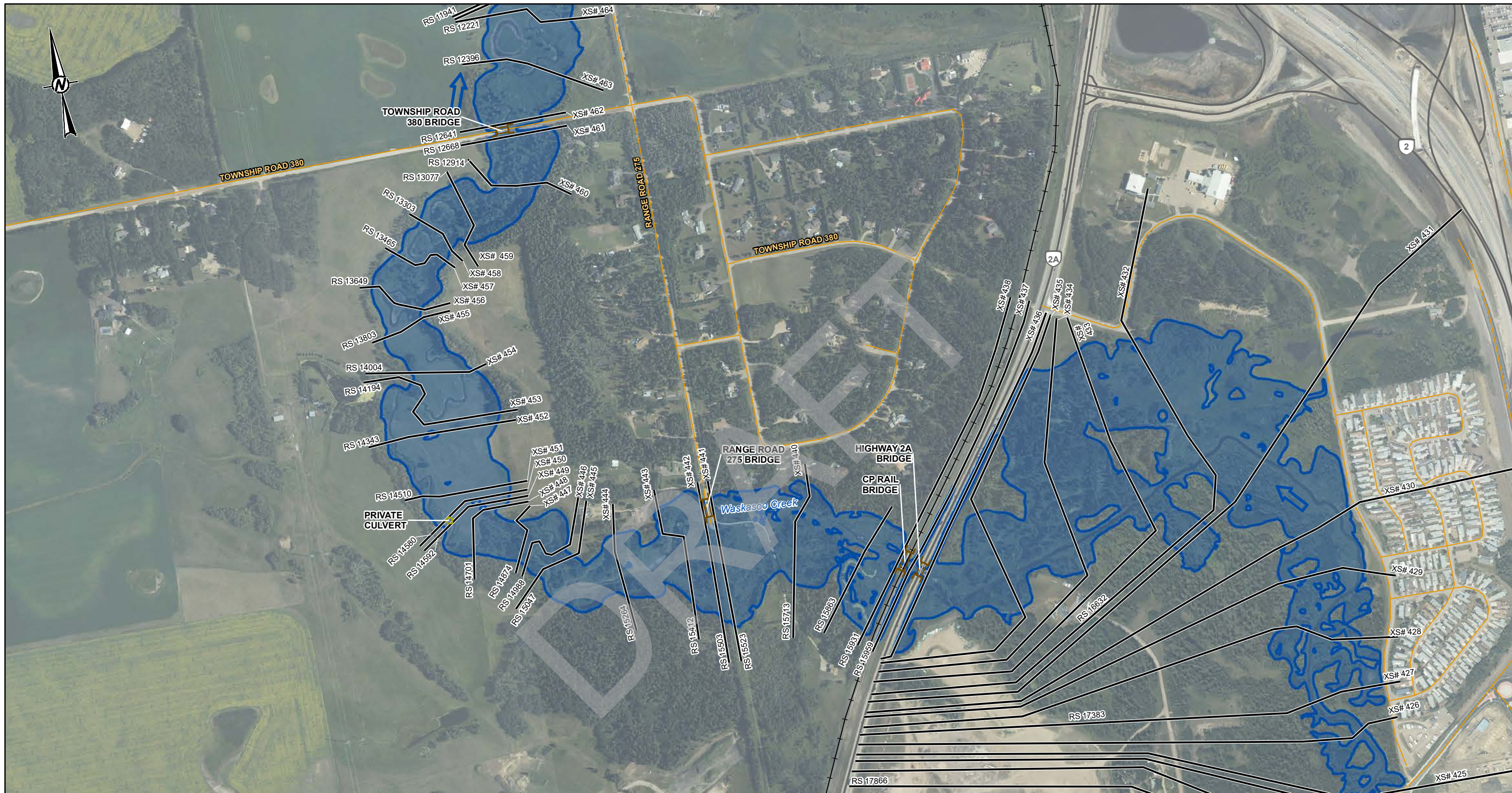


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CONSULTANT	GOLDER	
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APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31

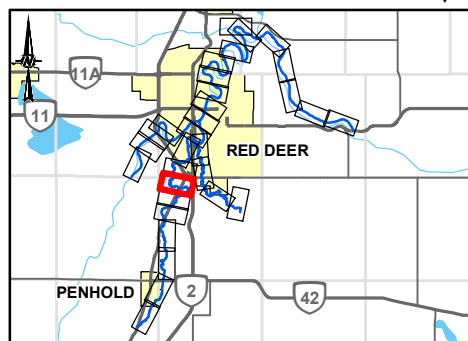
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	200-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	200-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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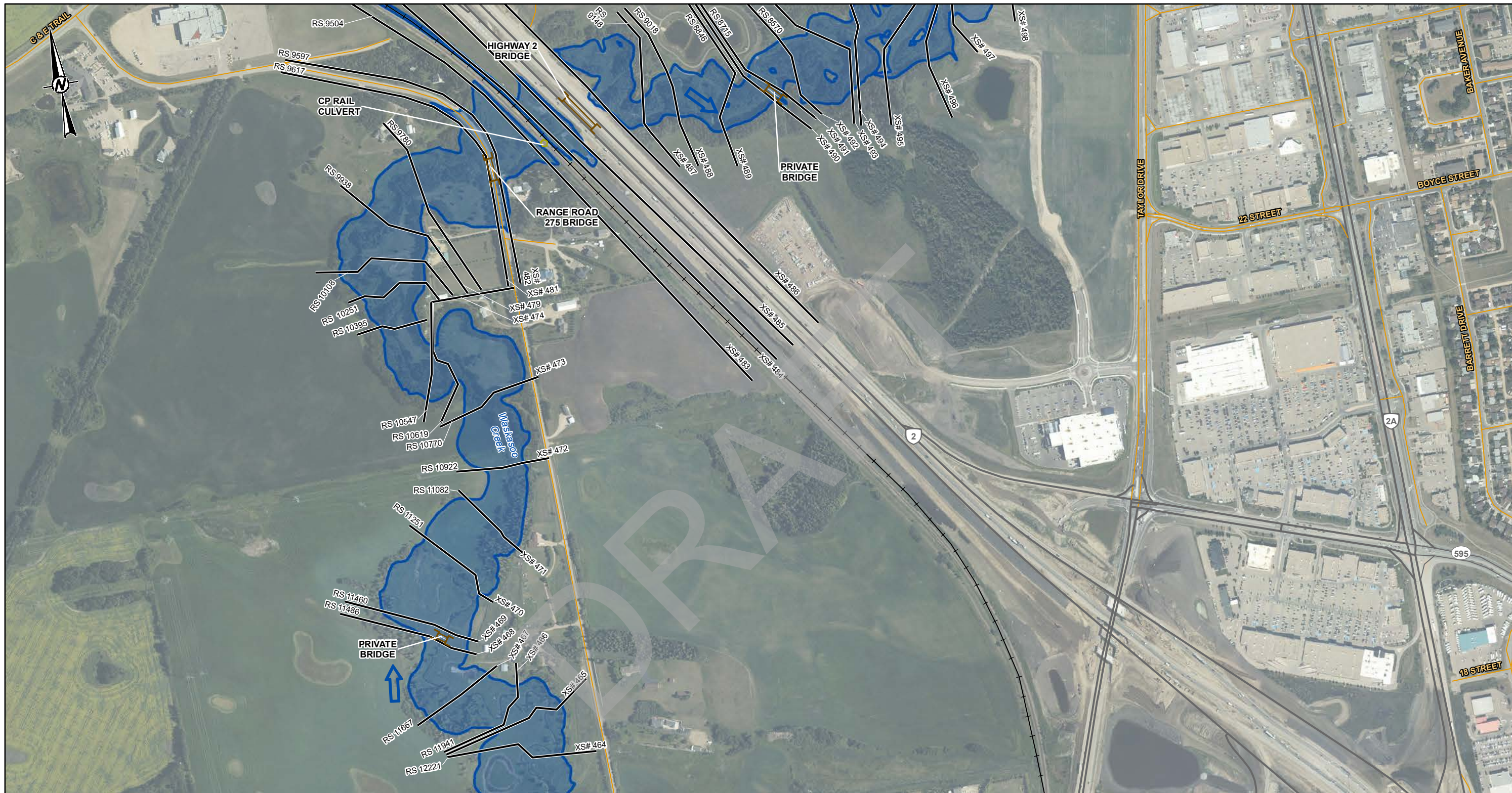
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**200-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

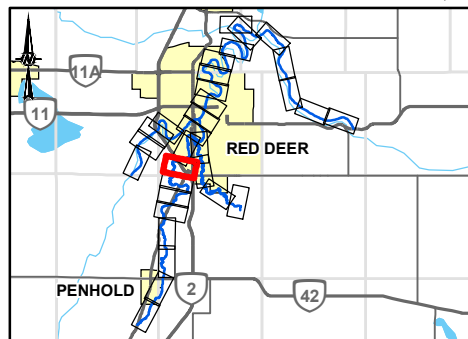
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	STUDY BOUNDARY
	DISCHARGE
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE



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REVIEWED	GT
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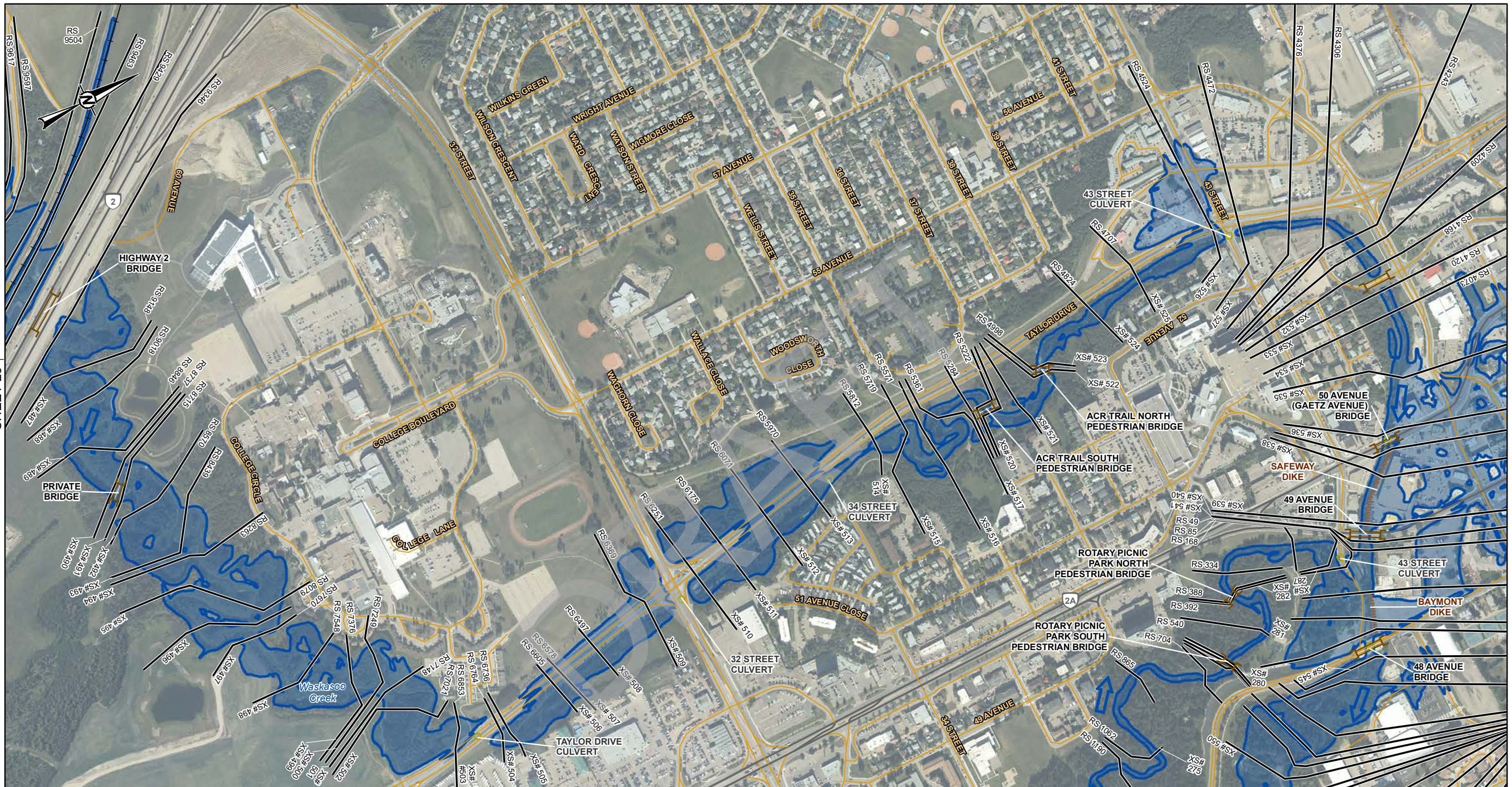
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**200-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

THE CLIENT GOVERNMENT OF ALBERTA 142576_Rev2_DraftMappingProductHydrology04_Open Water Flood Inundation Map Production (Rev 3) 1783039_20200104.mxd PRINTED ON: 2023-11-29 AT: 10:41:57 AM

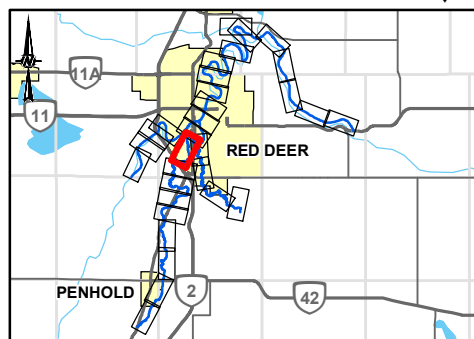


SHEET 26 ↑

↓ SHEET 5

SHEET 31 ↓

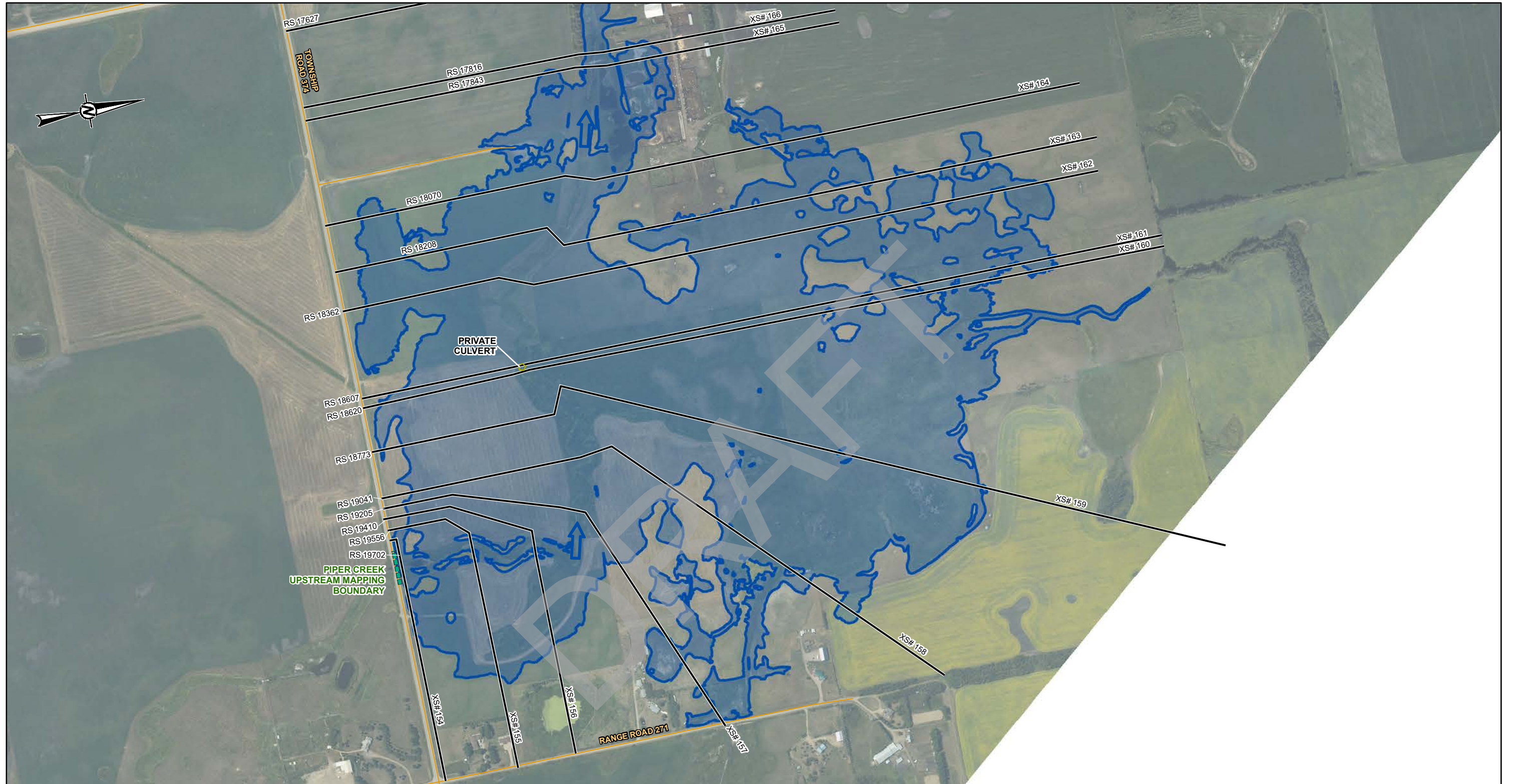
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	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
DISCHARGE	
WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M ³ /S	
WASKASOO CREEK BELOW PIPER CREEK = 67.7 M ³ /S	
PIPER CREEK ABOVE WASKASOO CREEK = 23.9 M ³ /S	



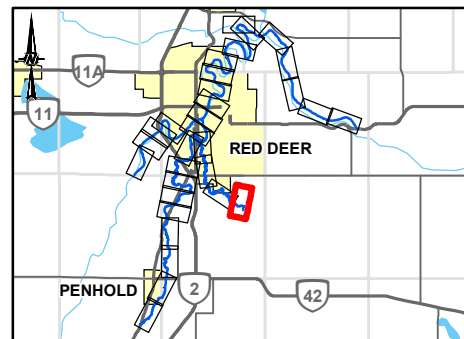
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	200-YEAR FLOOD INUNDATION EXTENT
	200-YEAR FLOOD EXTENT
	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
PIPER CREEK ABOVE HIGHWAY 595 = 21.7 M ³ /S	



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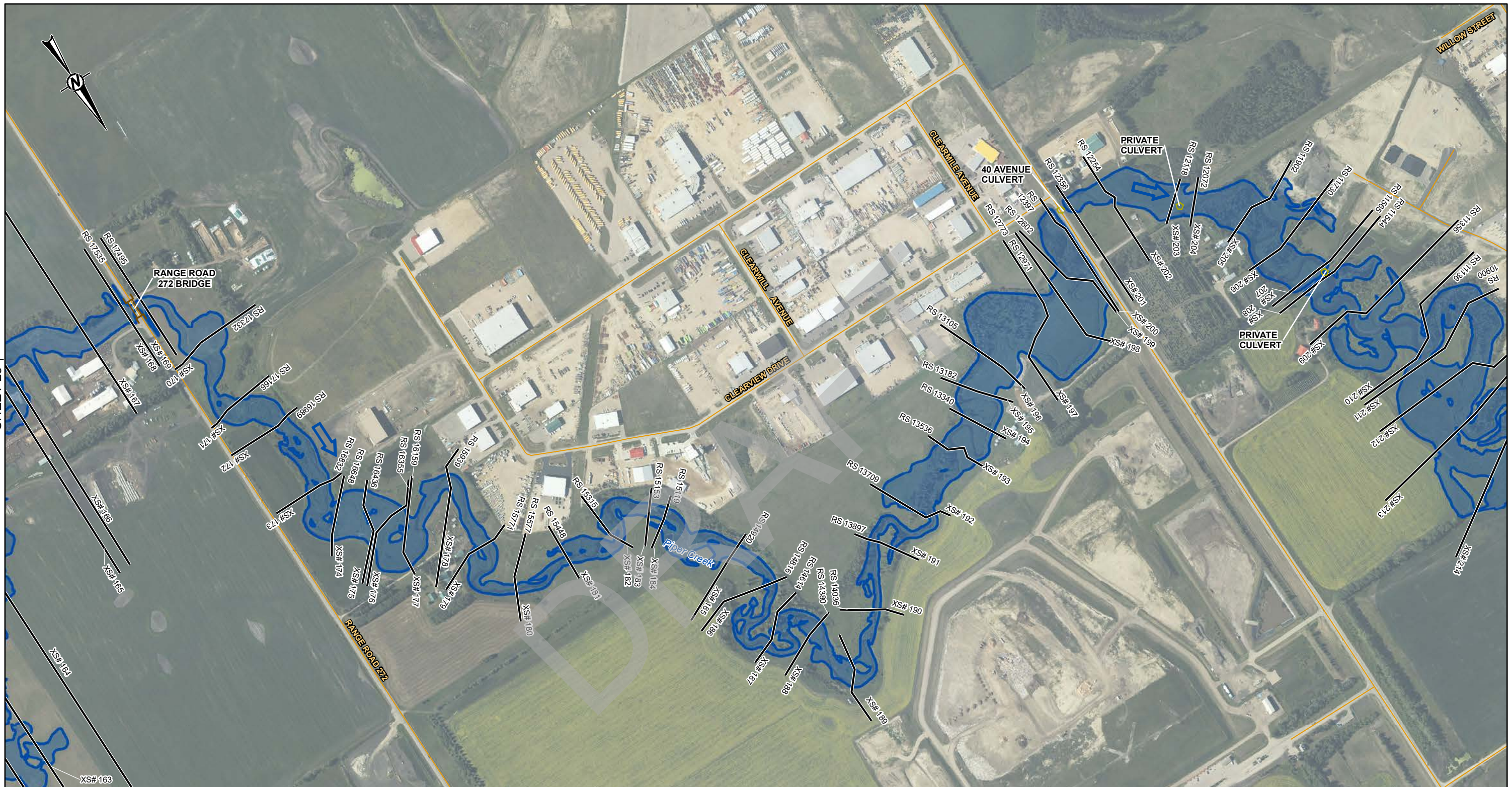
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**200-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

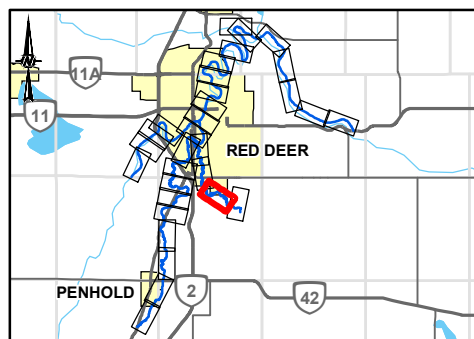
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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 SHEET 28 ↑



SHEET 30 ↑
 25mm
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LEGEND		200-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	200-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	
	DISCHARGE	
	PIPER CREEK ABOVE HIGHWAY 595 = 21.7 M ³ /S	



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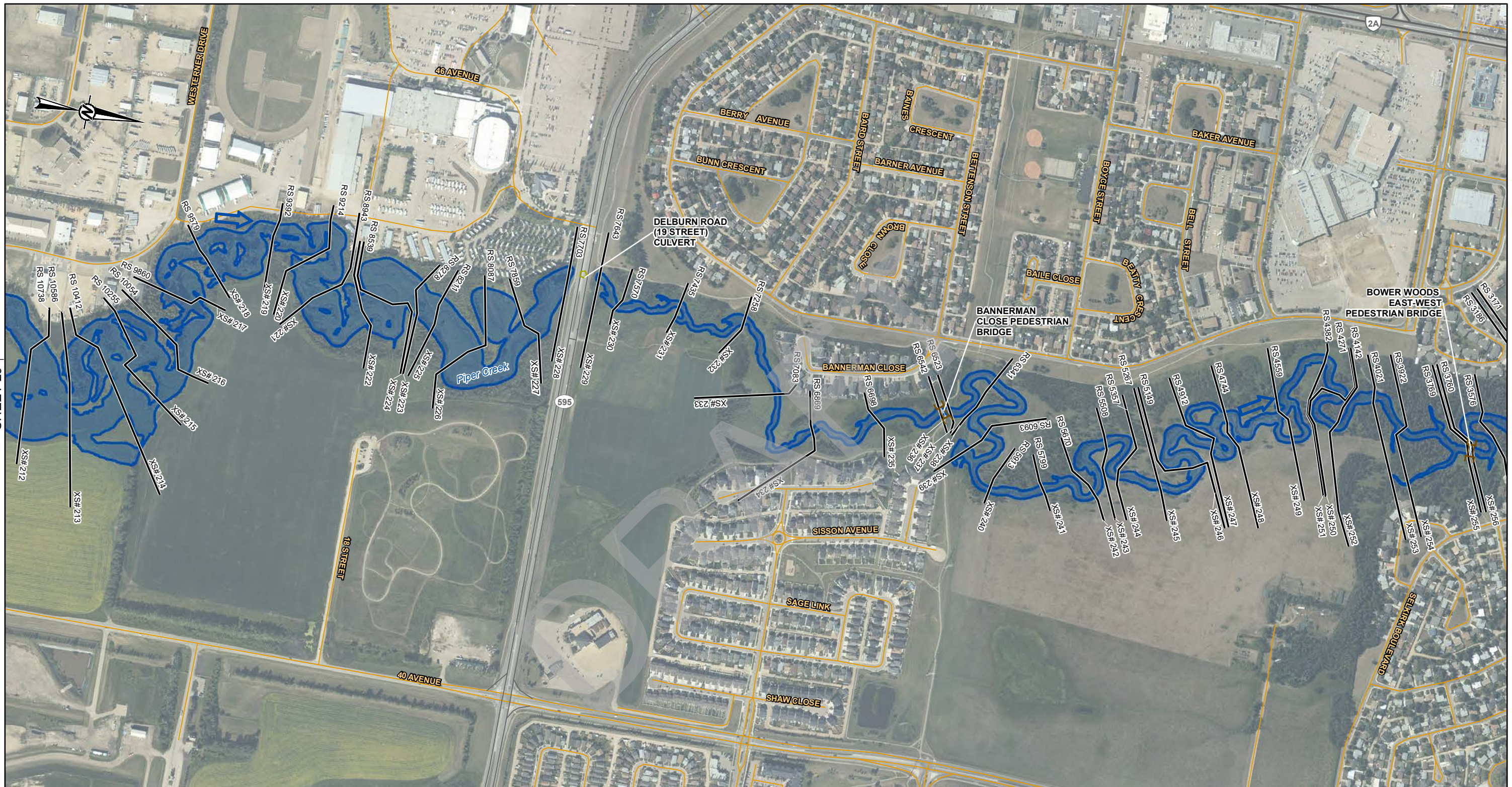
CONSULTANT
GOLDER

YYY-MM-DD 2022-11-23
 DESIGNED PT
 PREPARED NB
 REVIEWED GT
 APPROVED WP

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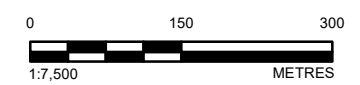
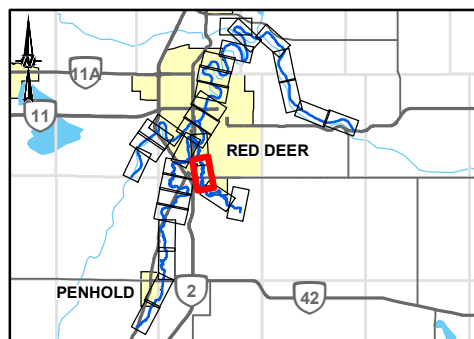
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114	
PROJECT	
RED DEER RIVER HAZARD STUDY	
TITLE	
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL
1783039	4000
REV.	FIGURE
2	SHEET 29 OF 31

THE CLIENT GOVERNMENT OF ALBERTA 1425276_Rev2_DWG/Mapping/Products/Hydrology/04_Open Water Flood Inundation Map Production/Rev3_1783039_2020/Inundation_Rev2.mxd PRINTED ON: 2023-11-29 AT: 10:42:56 AM



LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	200-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	200-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 21.7 M ³ /S
PRIMARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 23.9 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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APPROVED	WP

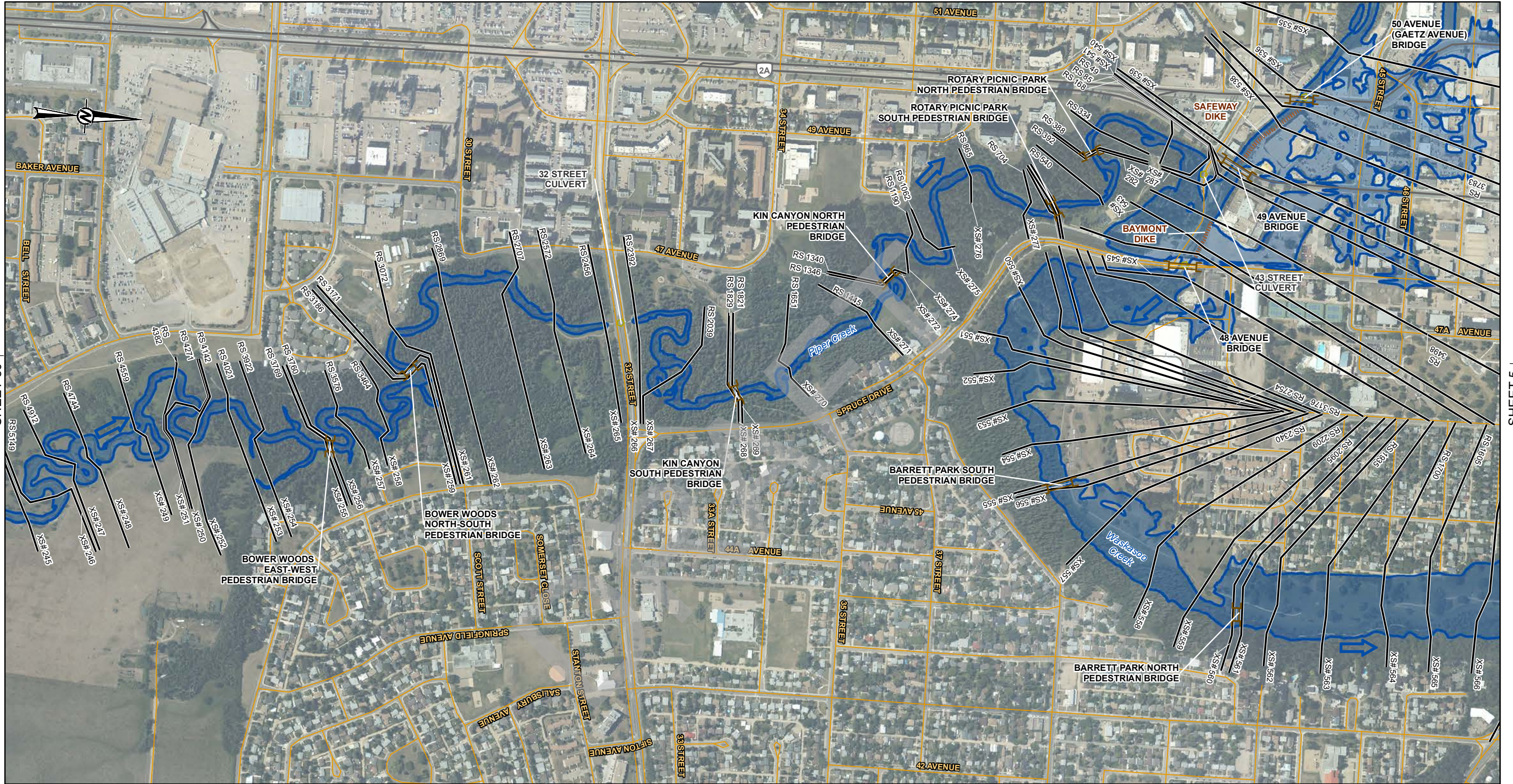
ALBERTA Government

REFERENCE(S)
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
200-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31



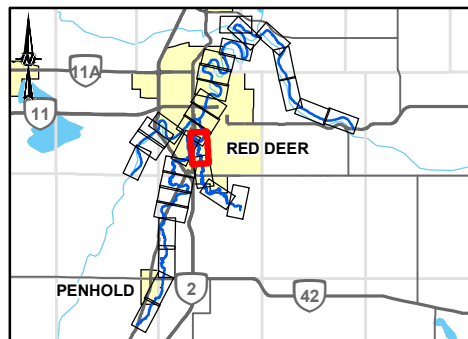
↑ SHEET 30

↑ SHEET 5

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- ▬ BRIDGE
- 200-YEAR FLOOD INUNDATION EXTENT
- 200-YEAR FLOOD EXTENT
- ▨ 200-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 PIPER CREEK ABOVE WASKASOO CREEK = 23.9 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 46.3 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 67.7 M³/S



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**200-YEAR FLOOD INUNDATION EXTENT
 REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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SHEETS 1-31

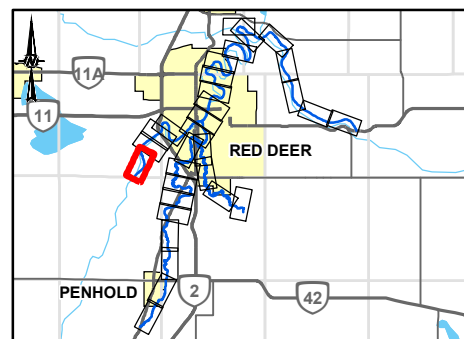
350-Year Flood Inundation Extent



RED DEER RIVER
UPSTREAM MAPPING
BOUNDARY

SHEET 2 ↓

LEGEND	
	CROSS SECTION
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	350-YEAR FLOOD INUNDATION EXTENT
	350-YEAR FLOOD EXTENT
	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER ABOVE WASKASOO CREEK = 2830 M ³ /S	



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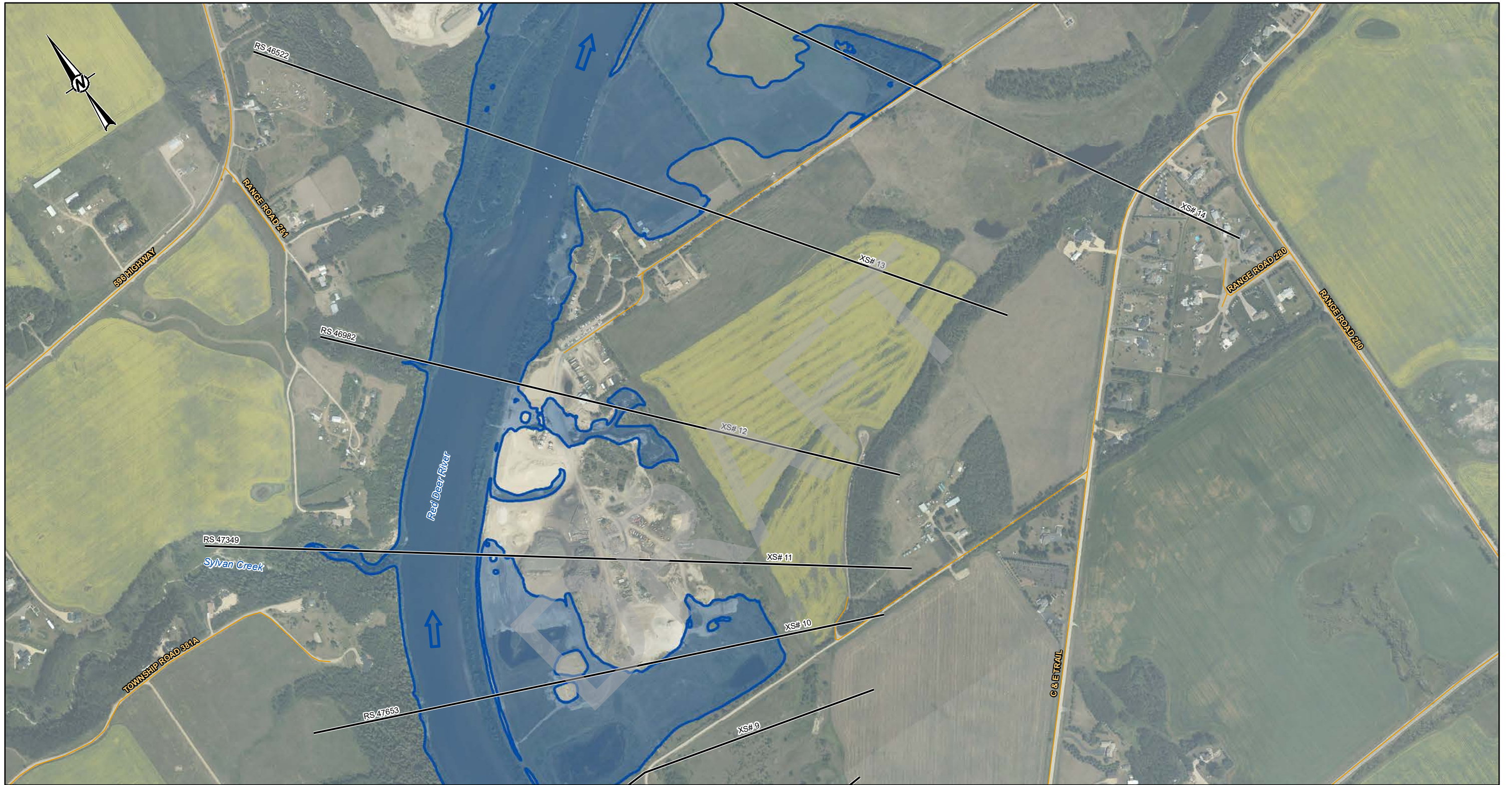
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

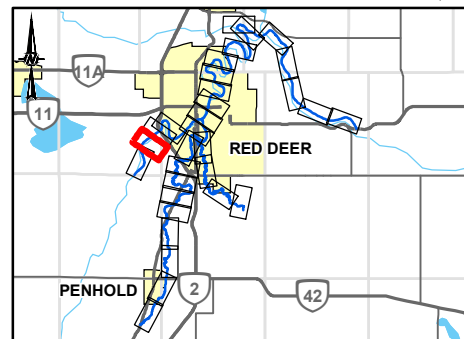
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31



LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	350-YEAR FLOOD INUNDATION EXTENT
	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER ABOVE WASKASOO CREEK = 2830 M ³ /S	



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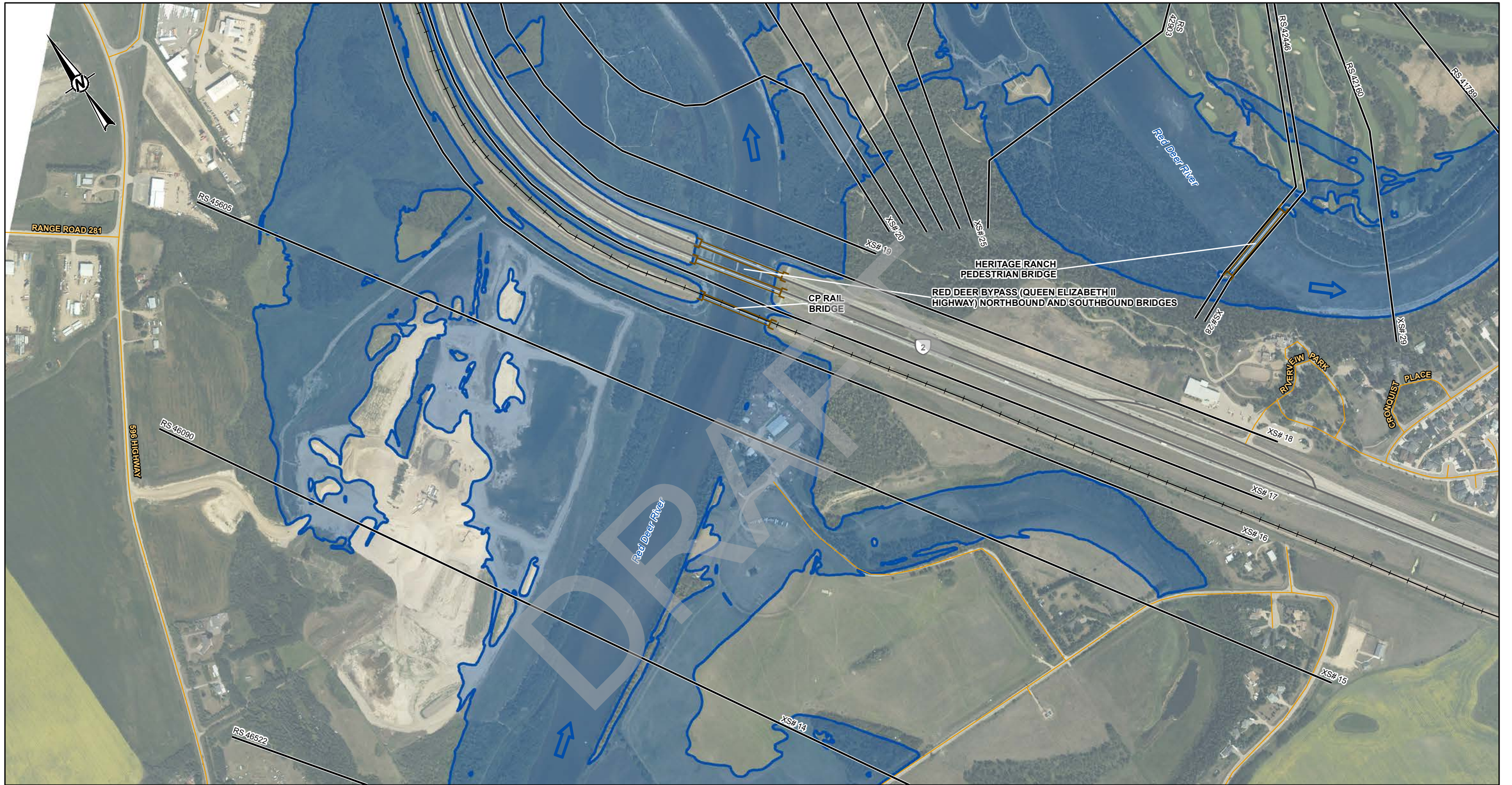
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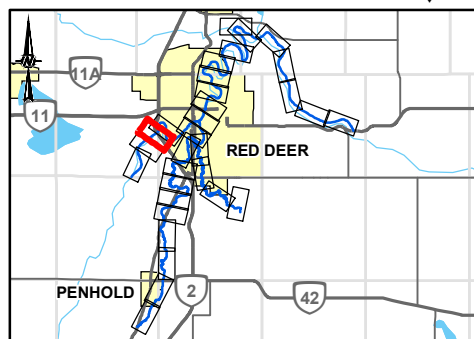
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	350-YEAR FLOOD INUNDATION EXTENT
	350-YEAR FLOOD EXTENT
	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 2830 M ³ /S
	CULVERT
	BRIDGE
	HYDRAULIC STRUCTURES
	RS#100 CROSS SECTION NUMBER
	RS 304 RIVER STATION (M)



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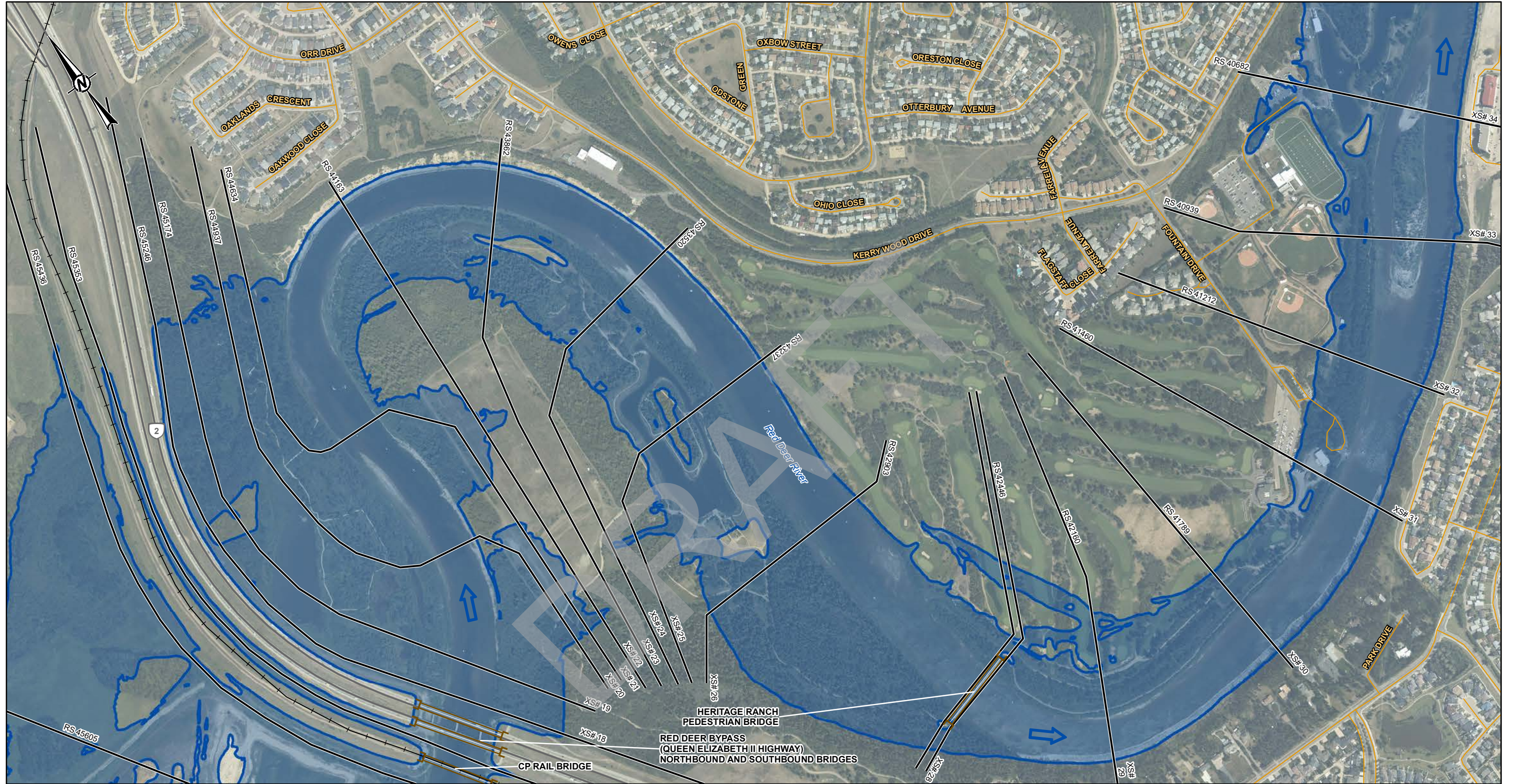
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT RED DEER RIVER HAZARD STUDY			
TITLE 350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO. 1783039	CONTROL 4000	REV. 2	FIGURE SHEET 3 OF 31

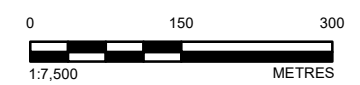
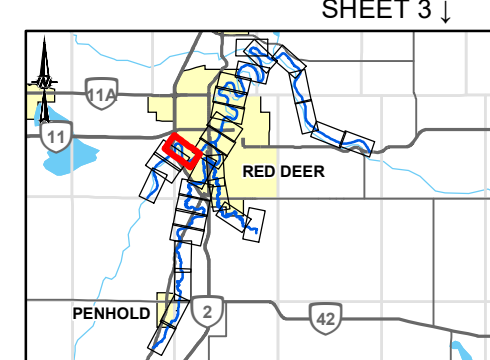
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	350-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	350-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	DISCHARGE
FLOW DIRECTION		RED DEER RIVER ABOVE WASKASOO CREEK = 2830 M ³ /S
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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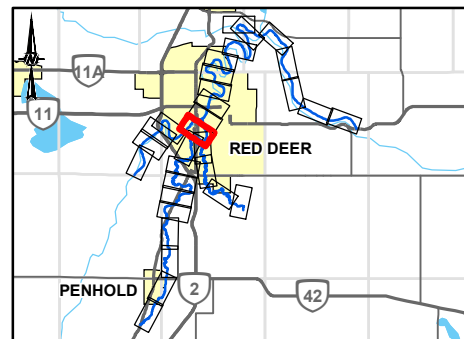
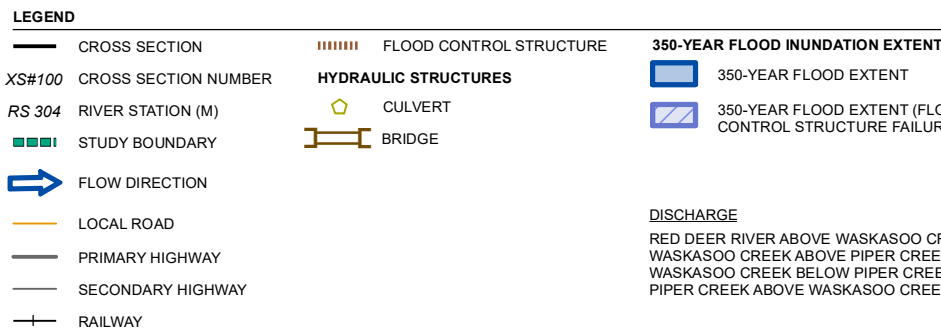
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31

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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
 REGULATED FLOWS**

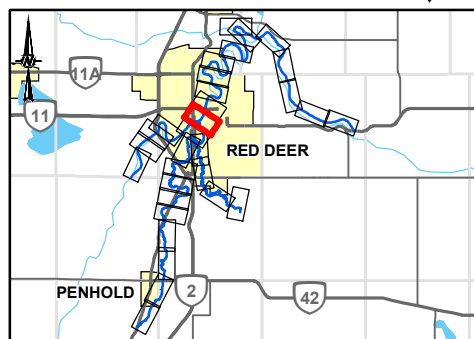
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		350-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		350-YEAR FLOOD EXTENT
	RIVER STATION (M)				350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		CULVERT		
	FLOW DIRECTION		BRIDGE		
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 2830 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 2910 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 80.2 M³/S



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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
 350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

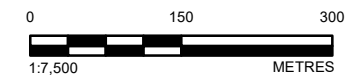
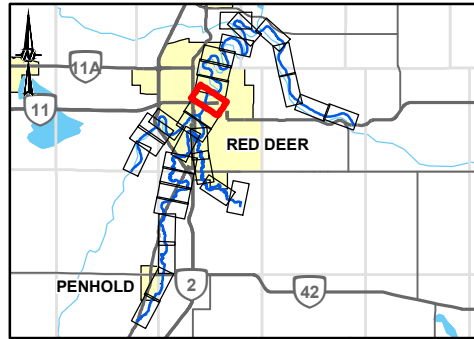
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31



LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		350-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		350-YEAR FLOOD EXTENT
	RIVER STATION (M)		CULVERT		350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 2910 M³/S



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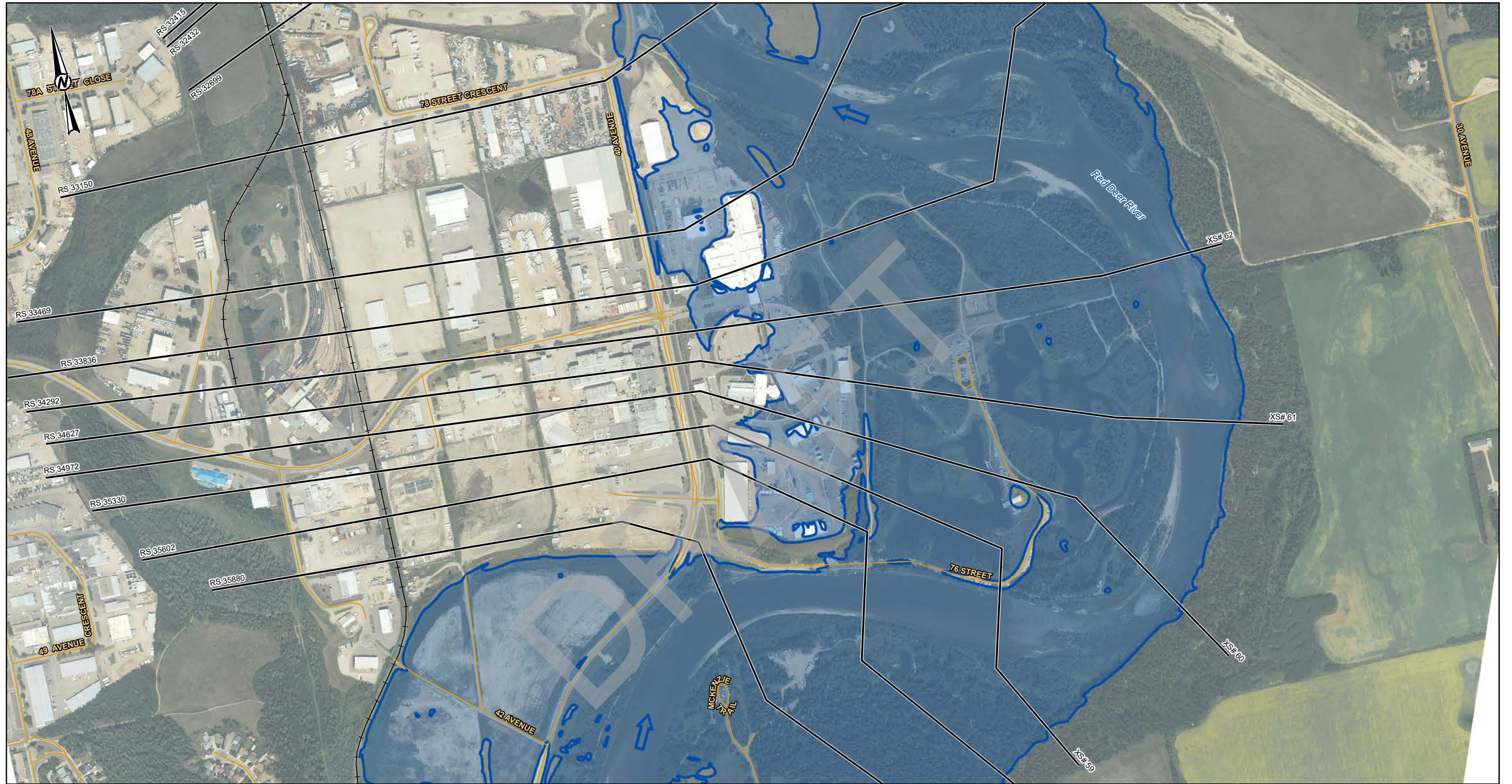
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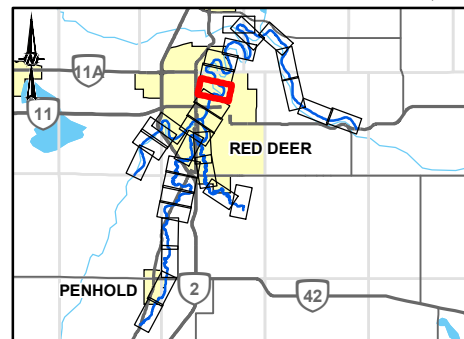
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31



LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	350-YEAR FLOOD INUNDATION EXTENT
■	350-YEAR FLOOD EXTENT
■	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 2910 M ³ /S	



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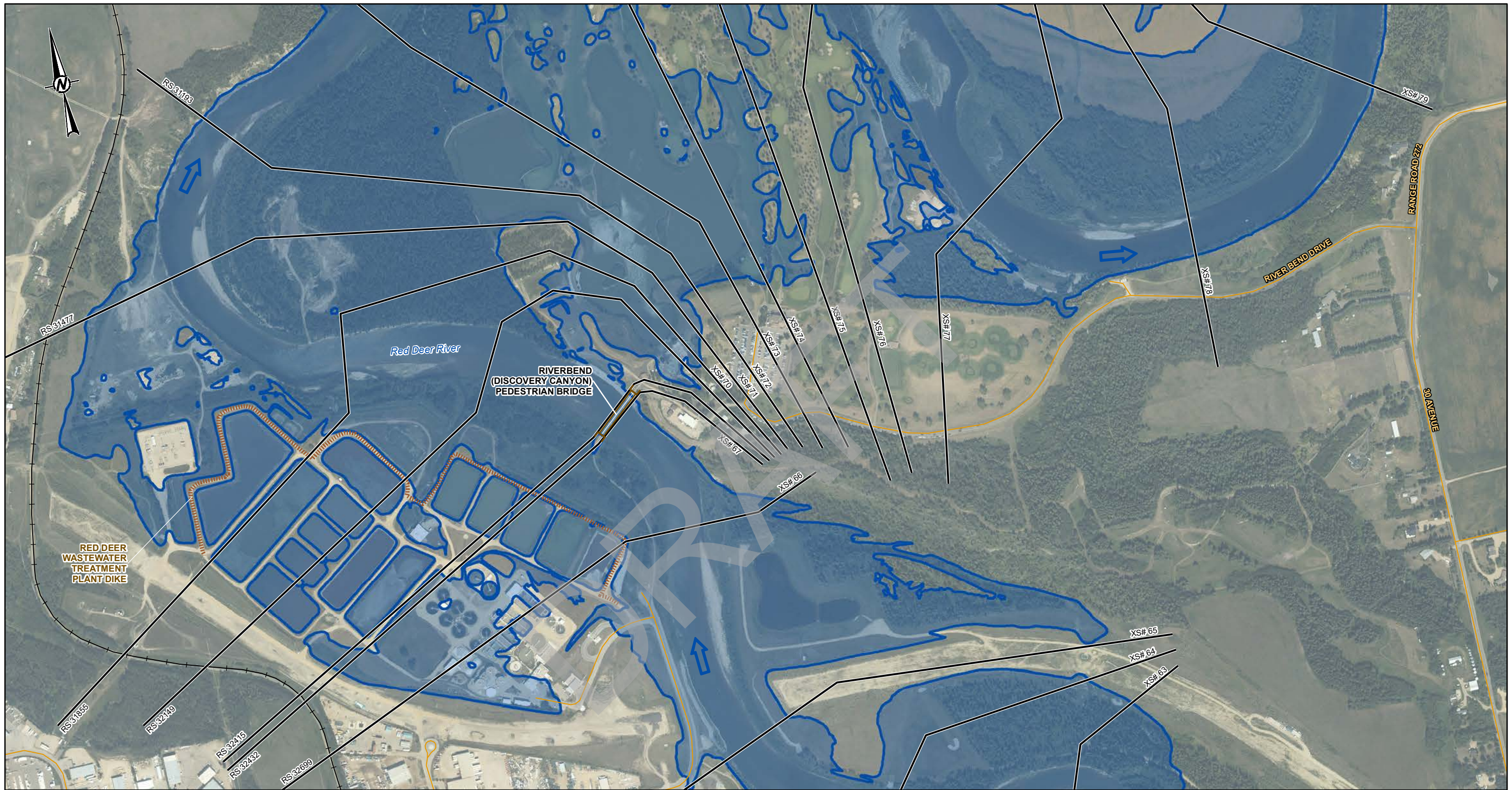
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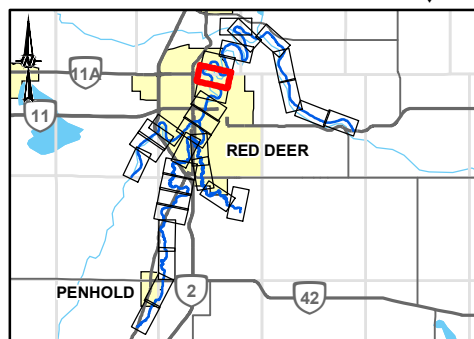
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31



LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
▬▬▬	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
▬▬▬	FLOOD CONTROL STRUCTURE
⬡	CULVERT
▬▬▬	BRIDGE
▬▬▬	350-YEAR FLOOD INUNDATION EXTENT
▬▬▬	350-YEAR FLOOD EXTENT
▬▬▬	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER BELOW WASKASOO CREEK = 2910 M ³ /S	

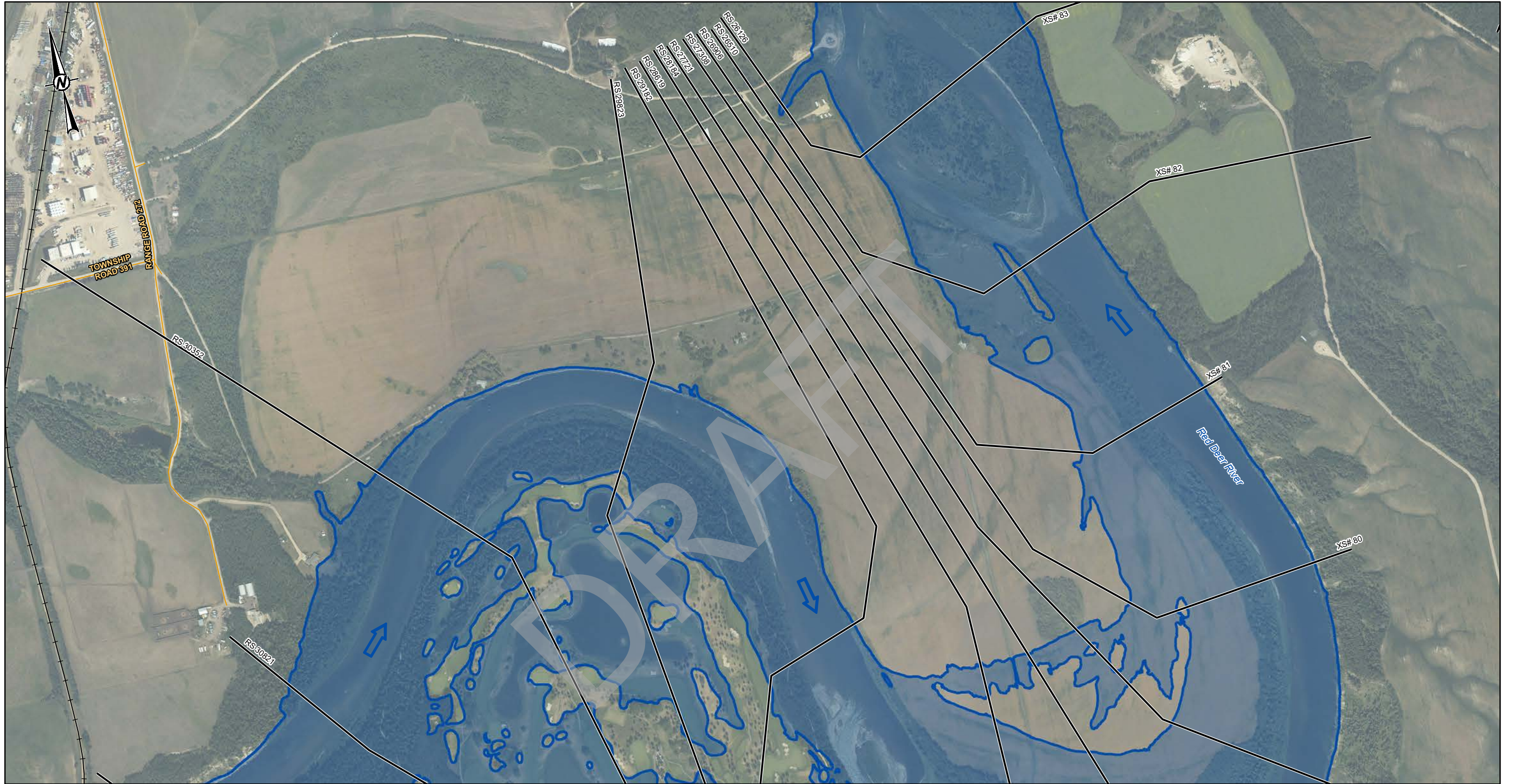


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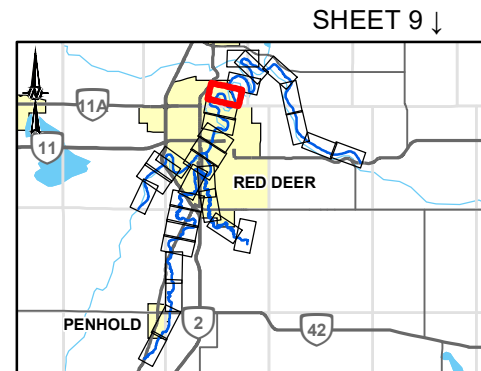
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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	350-YEAR FLOOD INUNDATION EXTENT
	350-YEAR FLOOD EXTENT
	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 2910 M ³ /S

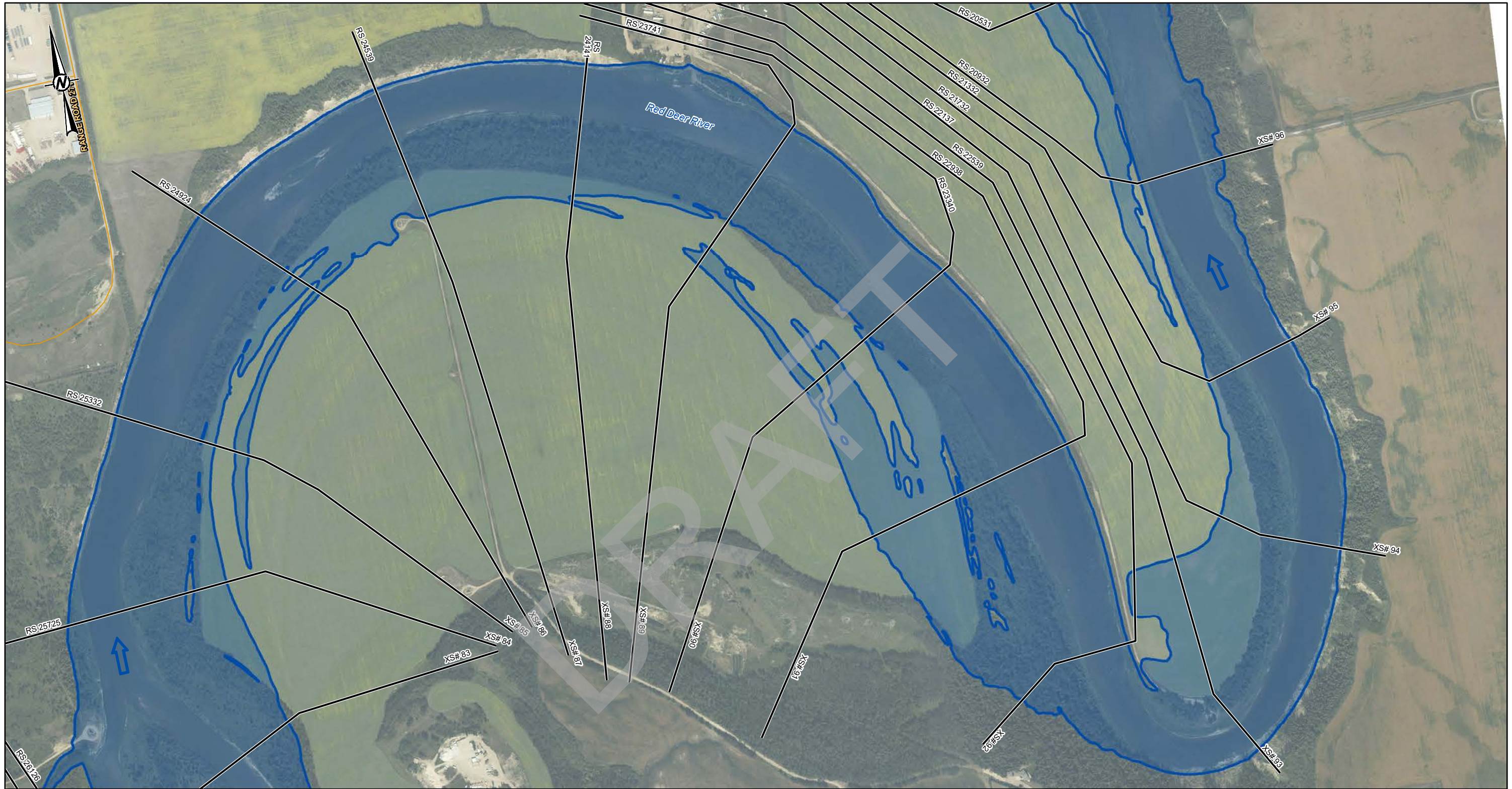


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DESIGNED	PT	2022-11-23
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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

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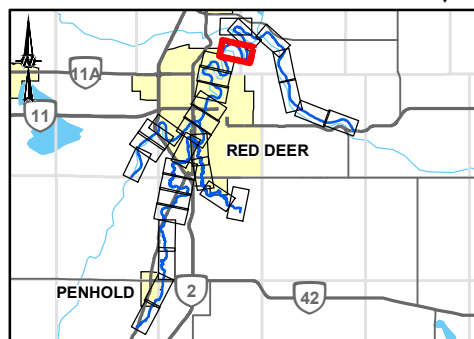
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		350-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		350-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 2910 M³/S



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REVIEWED	GT		
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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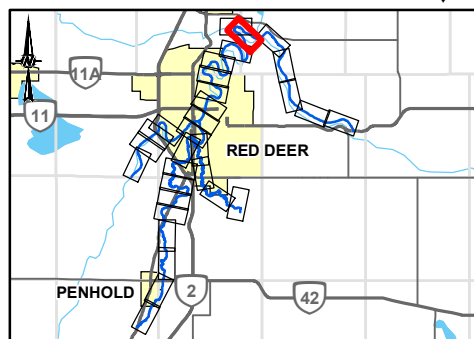
SHEET 13 ↑

↓ SHEET 14

↓ SHEET 11

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	350-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	350-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW WASKASOO CREEK = 2910 M ³ /S
PRIMARY HIGHWAY		RED DEER RIVER BELOW BLINDMAN RIVER = 3310 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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APPROVED	WP

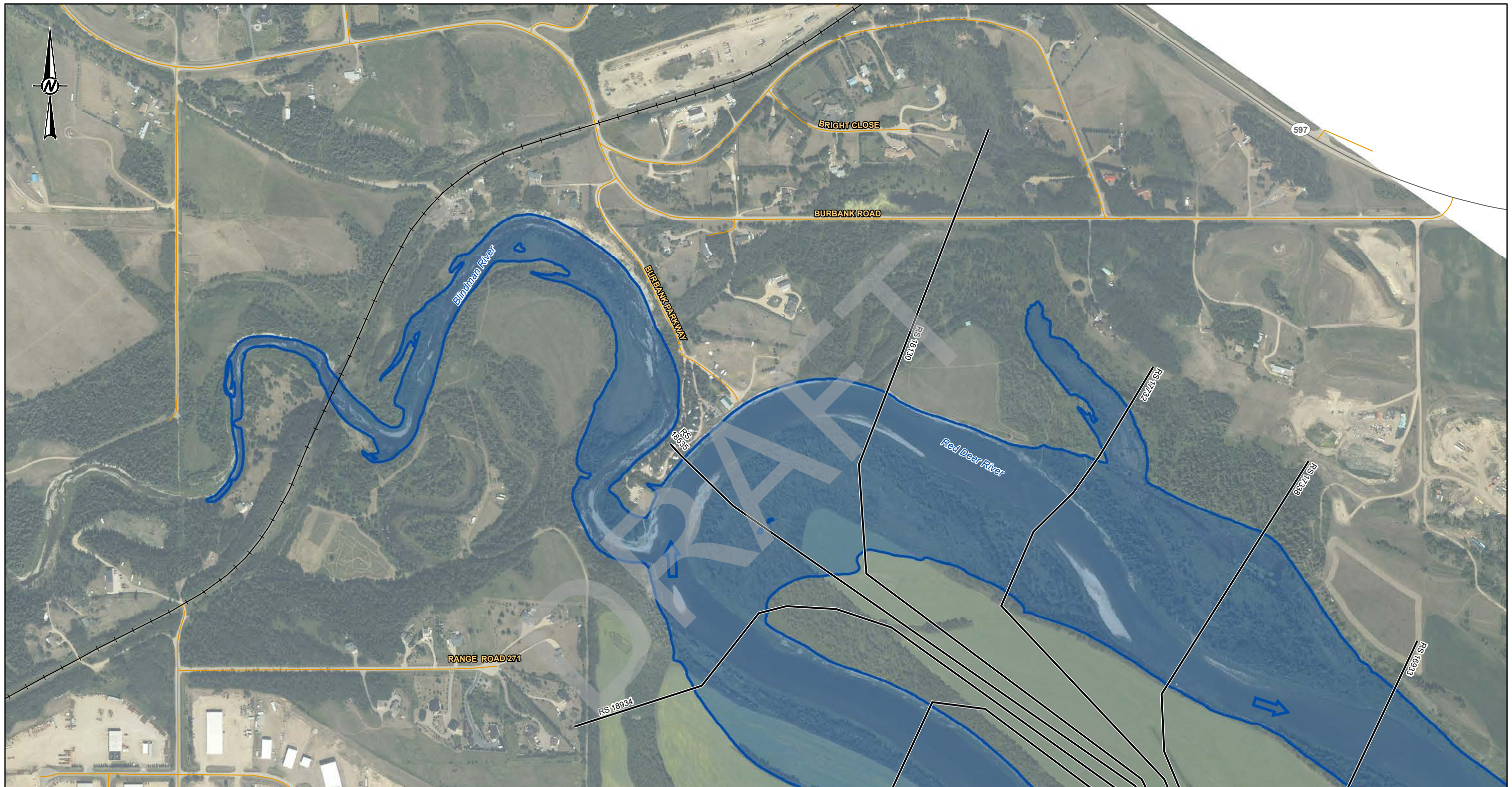
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PROJECT RED DEER RIVER HAZARD STUDY	
TITLE 350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO. 1783039	CONTROL 4000
REV. 2	FIGURE SHEET 12 OF 31

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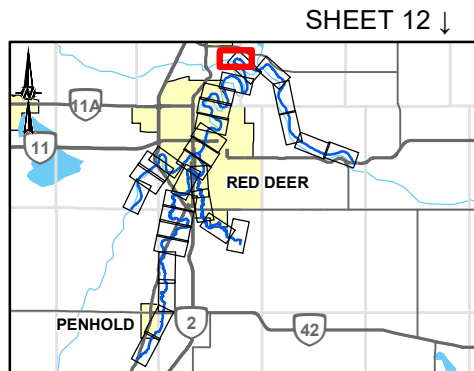


SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	 	350-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	○	HYDRAULIC STRUCTURES	 	350-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	◻	CULVERT	 	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
 	STUDY BOUNDARY	—	BRIDGE		
➔	FLOW DIRECTION				
—	LOCAL ROAD				
—	PRIMARY HIGHWAY				
—	SECONDARY HIGHWAY				
+	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 2910 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 3310 M³/S



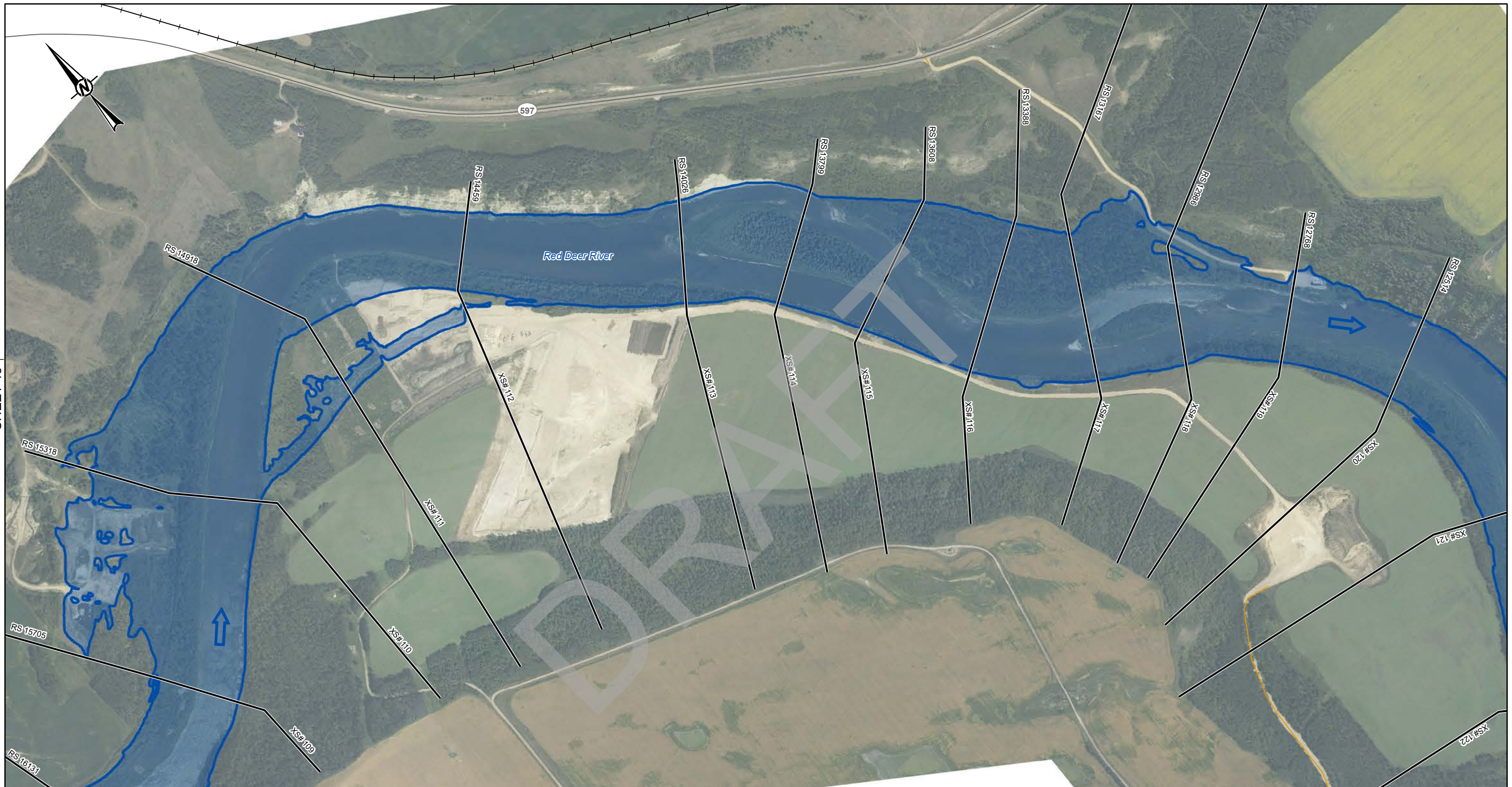
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PROJECT RED DEER RIVER HAZARD STUDY	TITLE 350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO. 1783039	CONTROL 4000
REV. 2	FIGURE SHEET 13 OF 31

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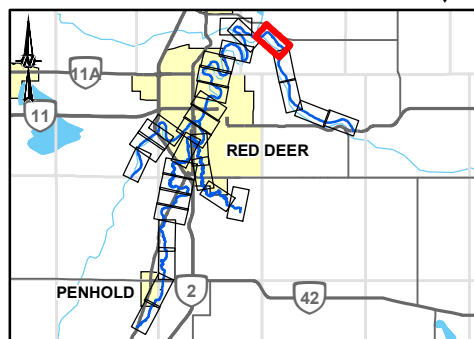
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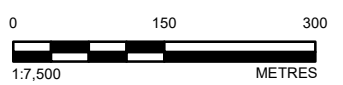
SHEET 13 ↑

↓ SHEET 15

LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
▬▬▬	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
▬▬▬	FLOOD CONTROL STRUCTURE
⬠	CULVERT
⌈	BRIDGE
▬▬▬	350-YEAR FLOOD INUNDATION EXTENT
▬▬▬	350-YEAR FLOOD EXTENT
▬▬▬	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER BELOW BLINDMAN RIVER = 3310 M ³ /S	



SHEET 12 ↓



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 14 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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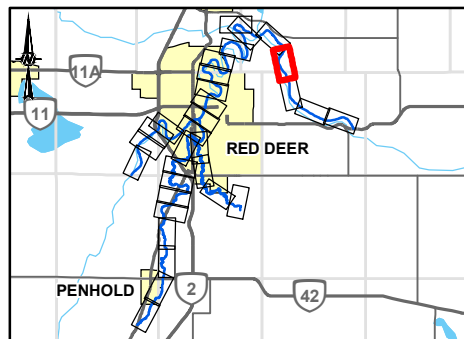


SHEET 14 ↑

↓ SHEET 16

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- ▬ STUDY BOUNDARY
- ➡ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬▬▬ FLOOD CONTROL STRUCTURE
- ⬢ HYDRAULIC STRUCTURES
- ◻ CULVERT
- ▬ BRIDGE
- 350-YEAR FLOOD INUNDATION EXTENT
- 350-YEAR FLOOD EXTENT
- 350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE
RED DEER RIVER BELOW BLINDMAN RIVER = 3310 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

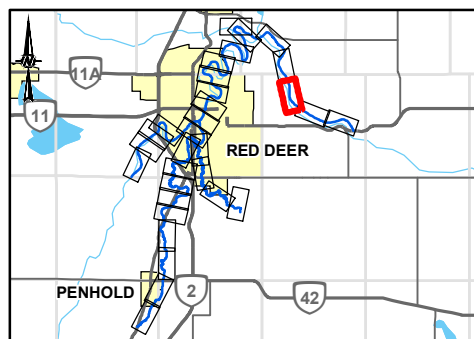
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
CROSS SECTION	FLOOD CONTROL STRUCTURE	350-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	350-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW BLINDMAN RIVER = 3310 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 16 OF 31

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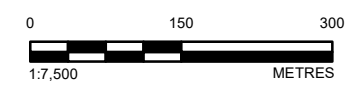
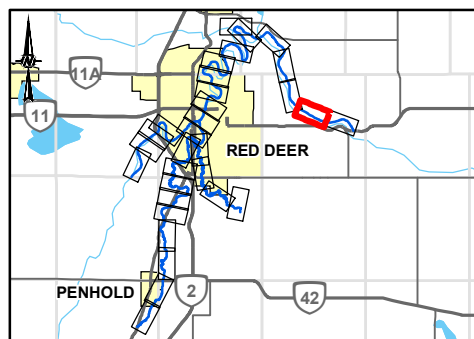
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	350-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	350-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 3310 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

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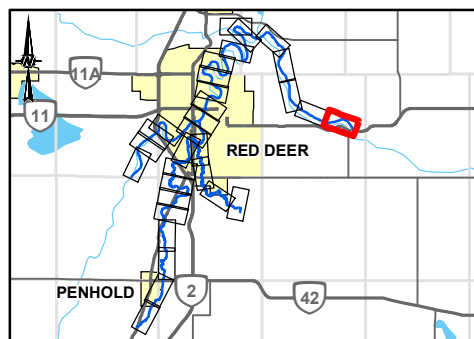
SHEET 17 ↑



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		350-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		350-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW BLINDMAN RIVER = 3310 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

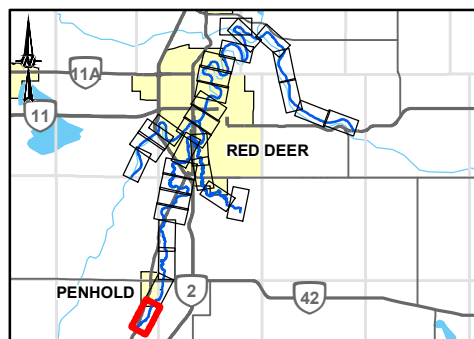
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SHEET 20

LEGEND		
—	CROSS SECTION	350-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	WASKASOO CREEK ABOVE HIGHWAY 42 = 47 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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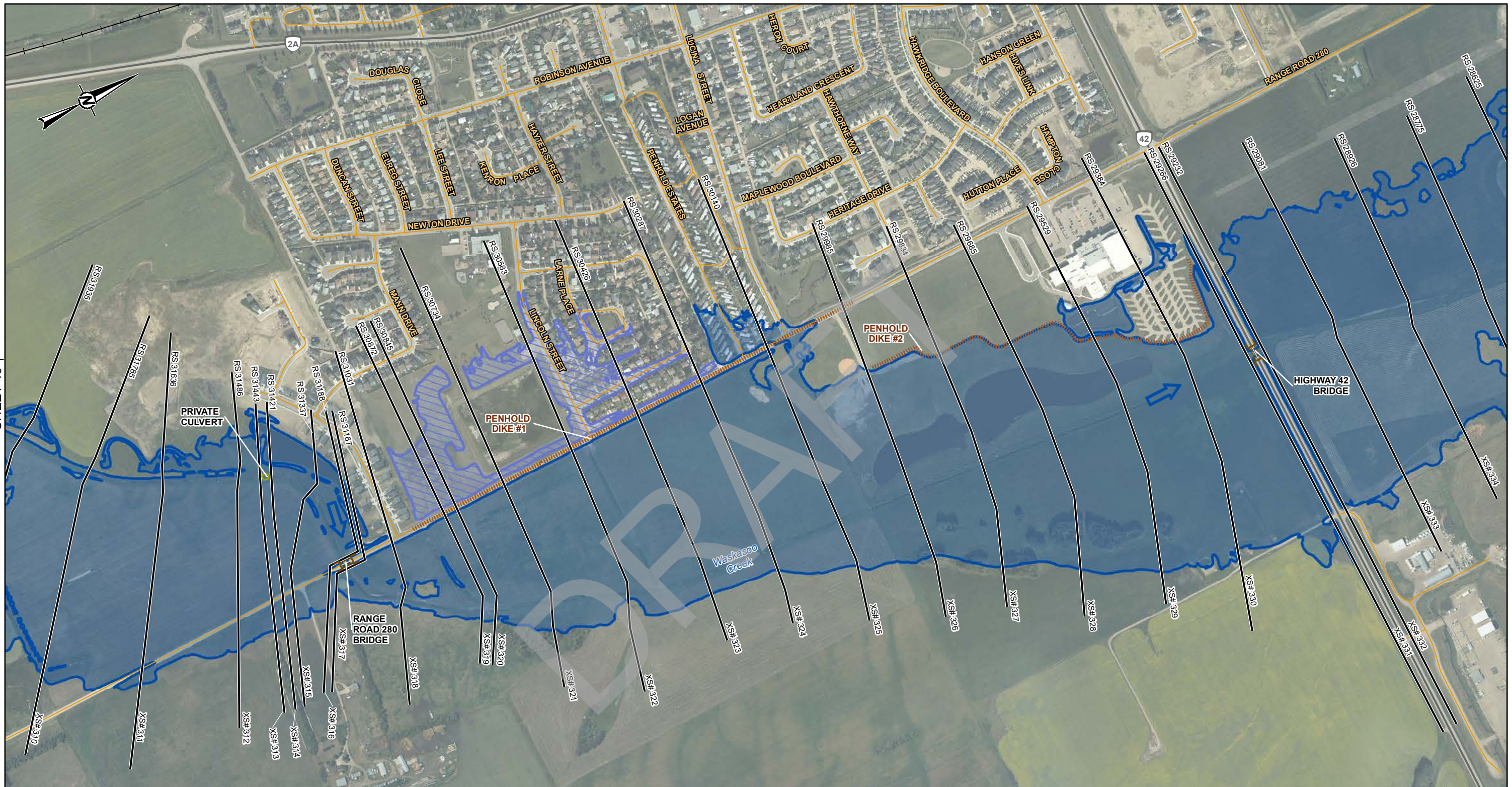
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PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
 350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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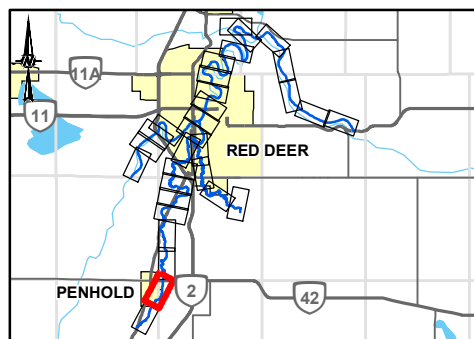


SHEET 19 ↑

SHEET 21 ↓

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	350-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	350-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 47 M ³ /S
PRIMARY HIGHWAY		WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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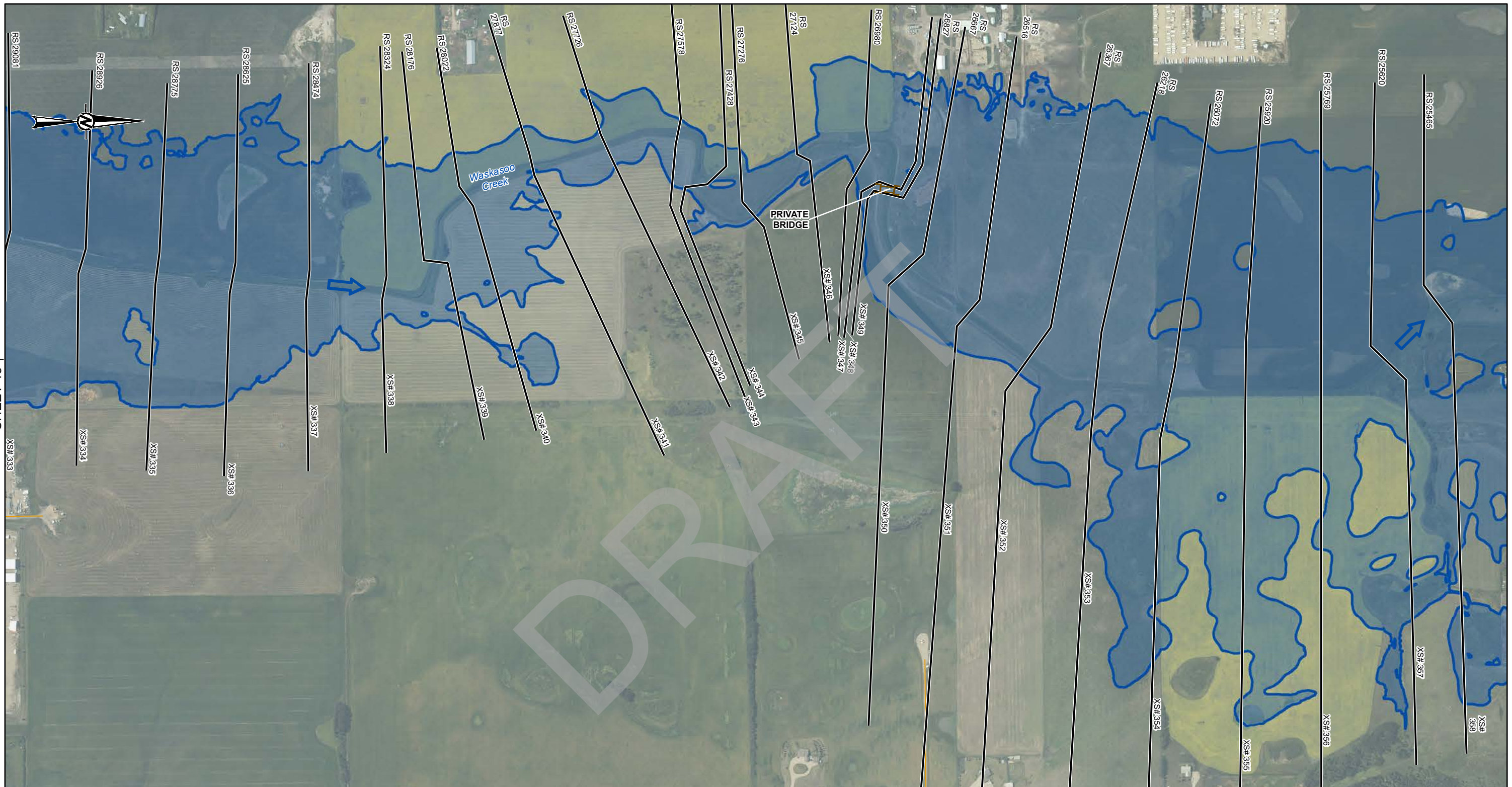
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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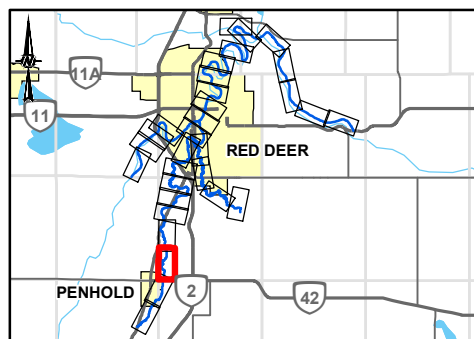
SHEET 18 ↑

↑ SHEET 22

LEGEND

	CROSS SECTION		FLOOD CONTROL STRUCTURE		350-YEAR FLOOD INUNDATION EXTENT
	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	RIVER STATION (M)		CULVERT		
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M³/S



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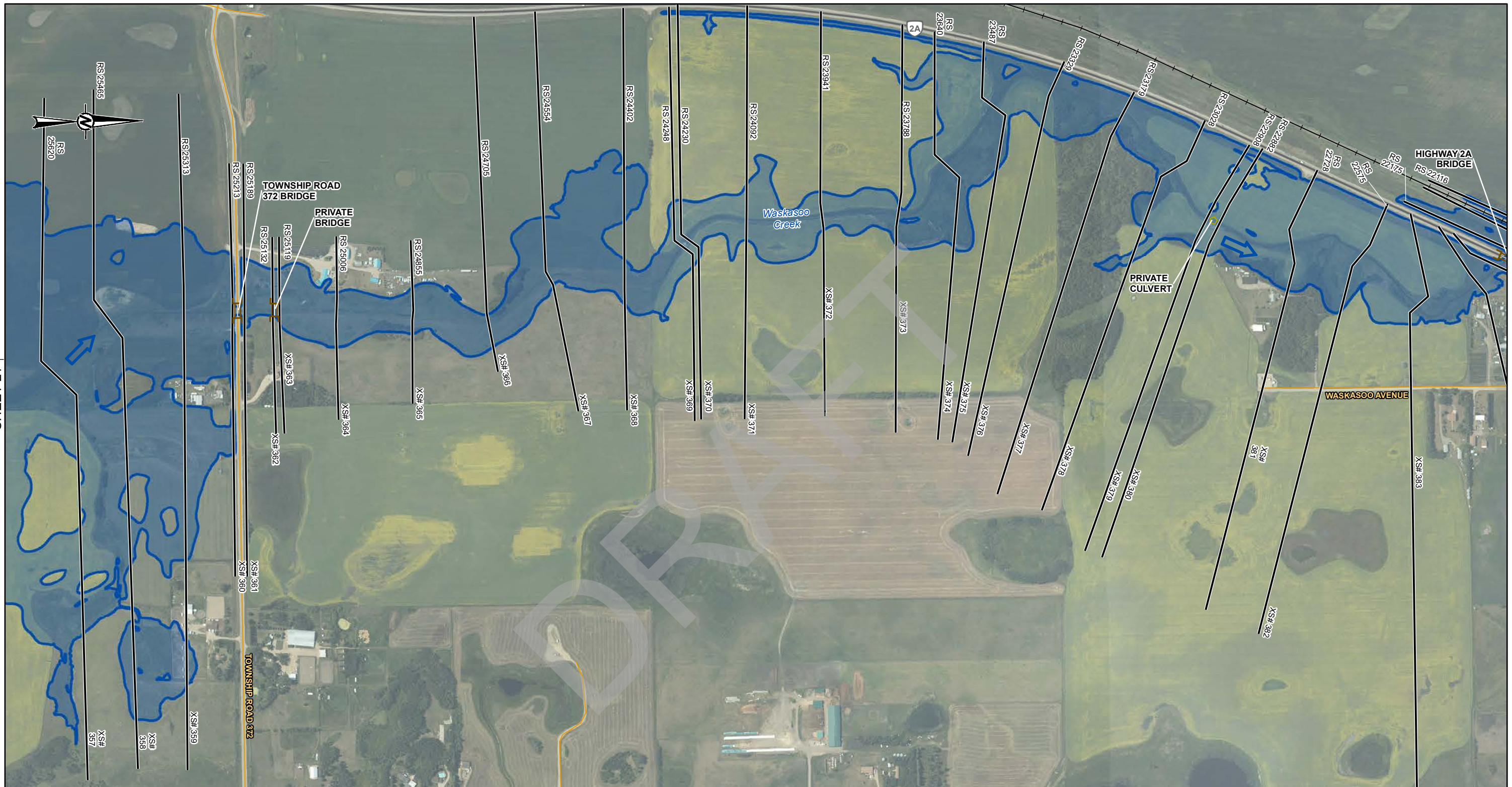
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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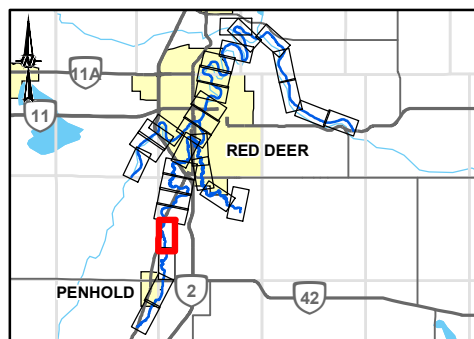
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	350-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



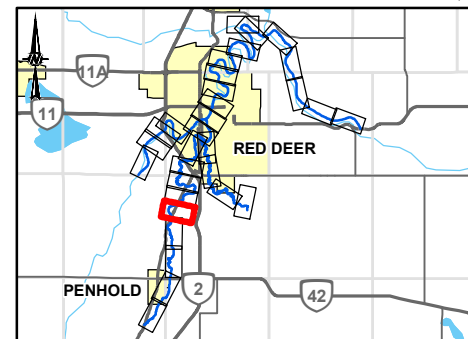
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	350-YEAR FLOOD INUNDATION EXTENT
	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	CROSS SECTION NUMBER
	RIVER STATION (M)
	DISCHARGE
	WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M ³ /S



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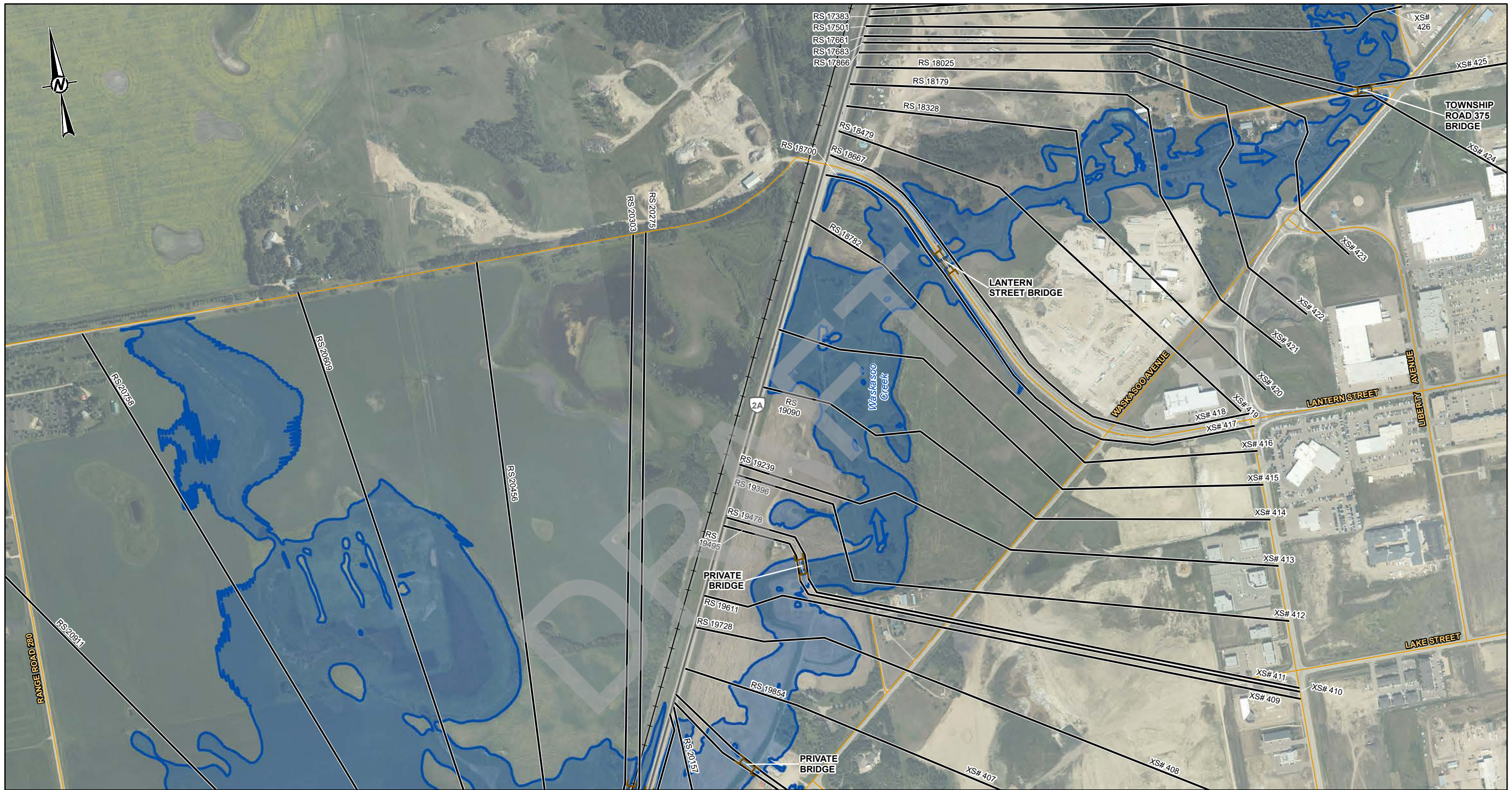
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DESIGNED	PT
PREPARED	NB
REVIEWED	GT
APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

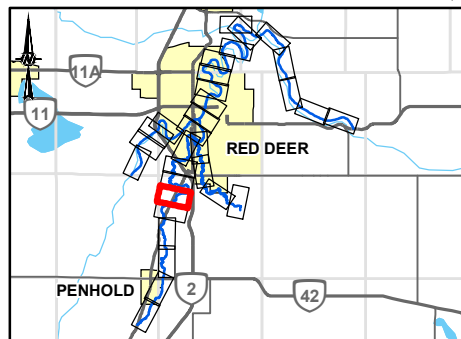
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND	
	CROSS SECTION
	350-YEAR FLOOD INUNDATION EXTENT
	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOOD CONTROL STRUCTURE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M ³ /S	



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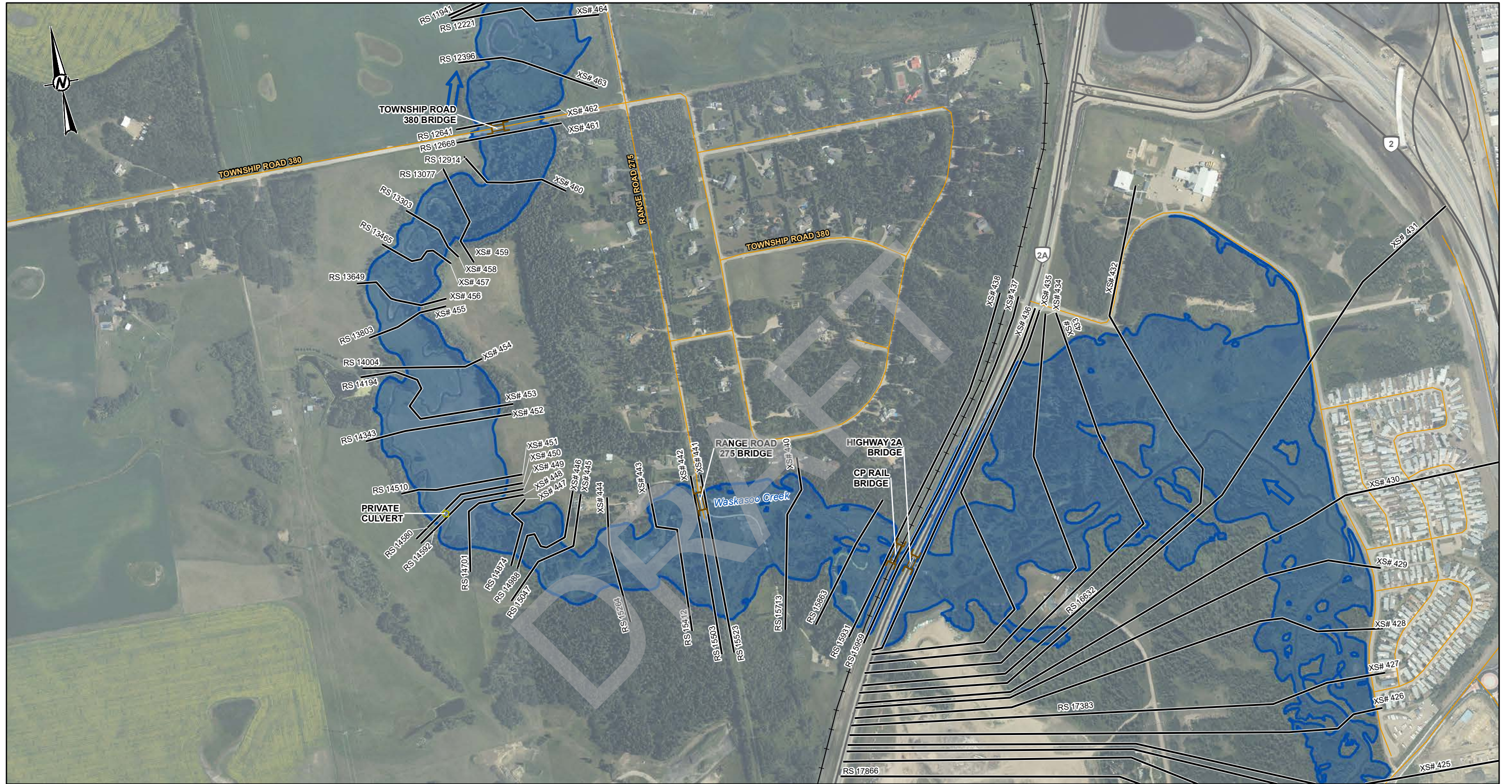
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PREPARED	NB
REVIEWED	GT
APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

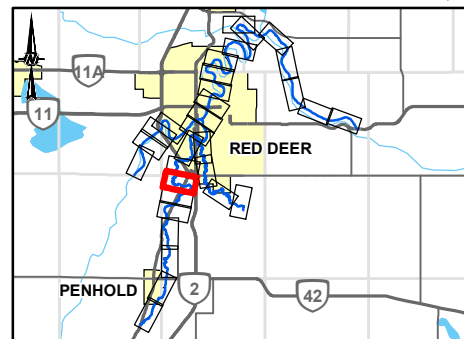
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31



LEGEND		350-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	350-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	DISCHARGE
■	STUDY BOUNDARY	WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M ³ /S	
→	FLOW DIRECTION		
—	LOCAL ROAD		
—	PRIMARY HIGHWAY		
—	SECONDARY HIGHWAY		
+	RAILWAY		
—	FLOOD CONTROL STRUCTURE		
○	CULVERT		
—	BRIDGE		



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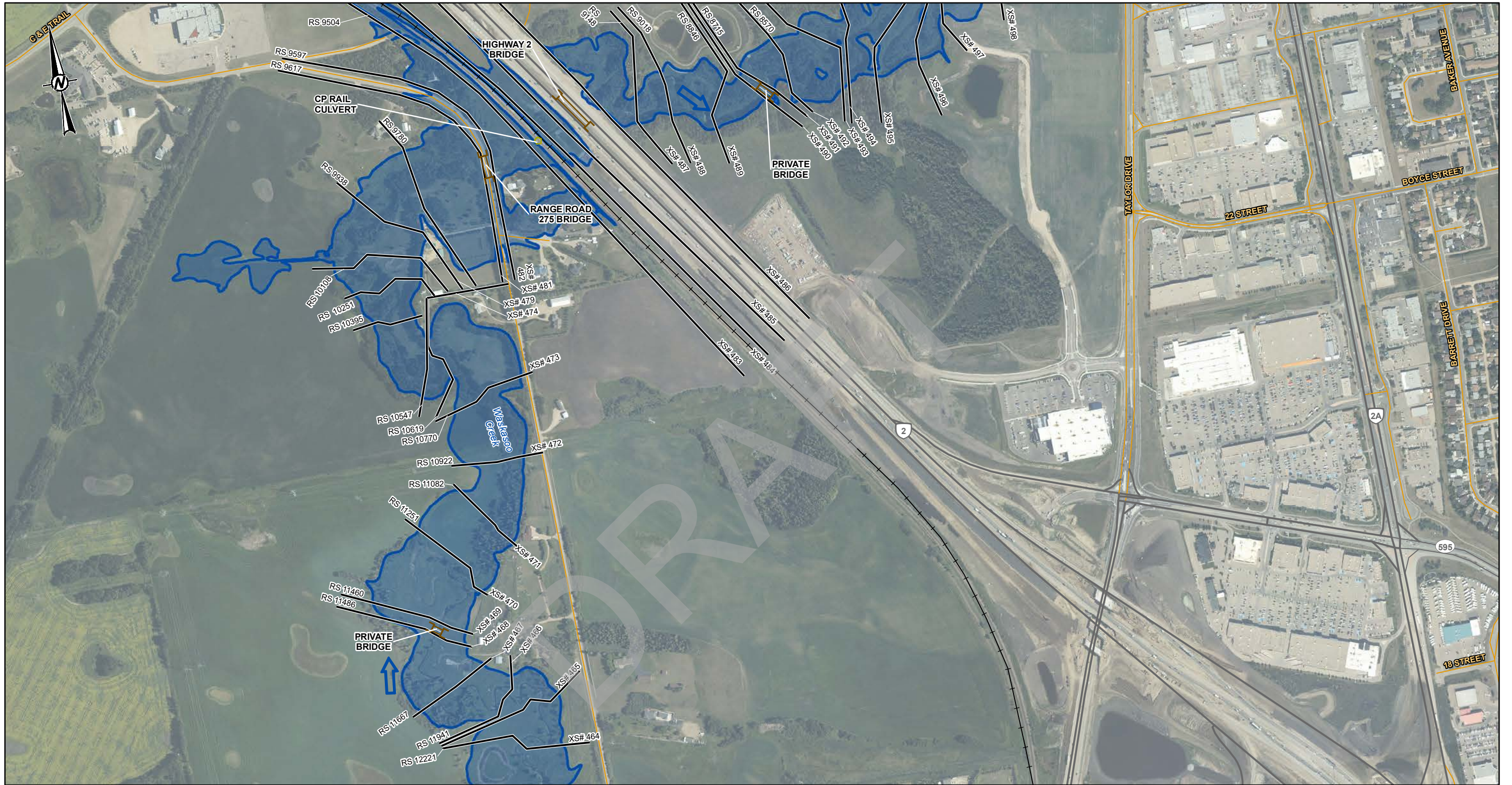
YYYY-MM-DD	2022-11-23
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PREPARED	NB
REVIEWED	GT
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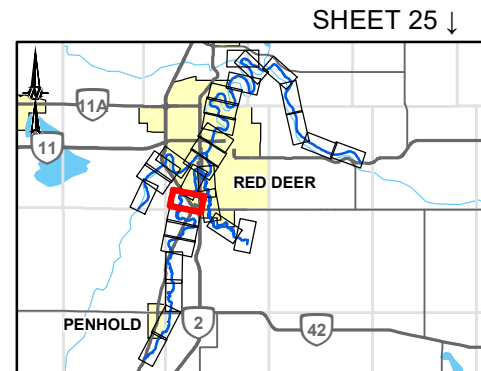
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**350-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	350-YEAR FLOOD INUNDATION EXTENT
	HYDRAULIC STRUCTURES
	CULVERT
	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	BRIDGE
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	DISCHARGE
	WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M ³ /S



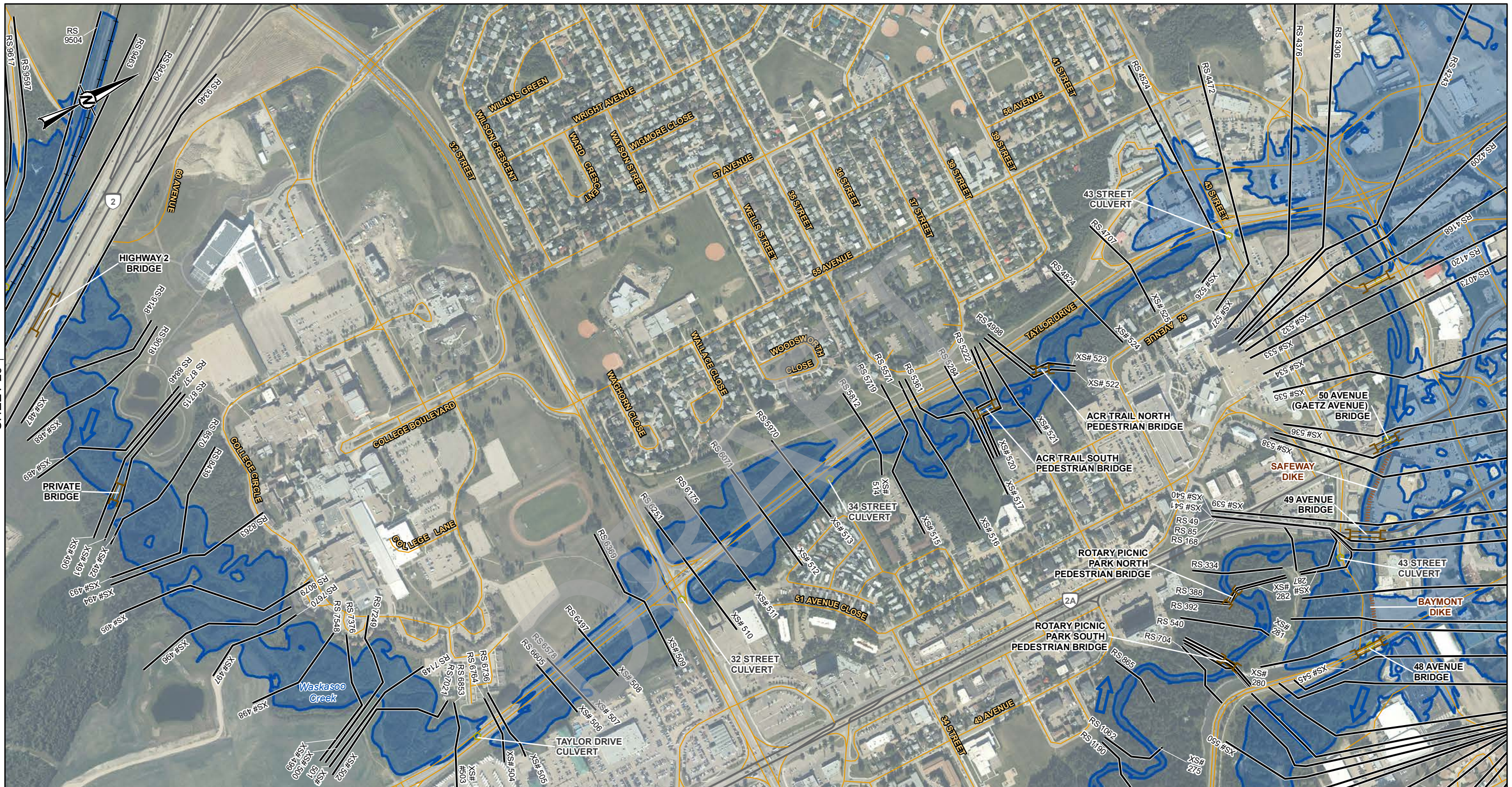
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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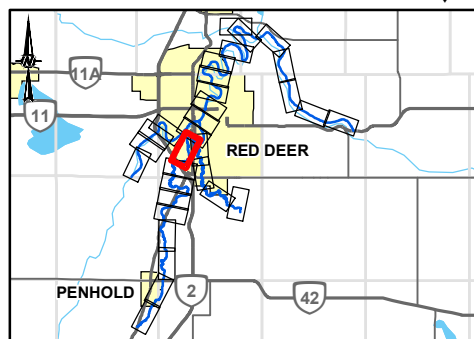
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SHEET 26 ↑

SHEET 5 ↓

LEGEND		
—	CROSS SECTION	■ ■ ■ ■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	■ 350-YEAR FLOOD INUNDATION EXTENT
RS 304	RIVER STATION (M)	■ 350-YEAR FLOOD EXTENT
■ ■ ■ ■	STUDY BOUNDARY	■ 350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
→	FLOW DIRECTION	■ DISCHARGE
—	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M ³ /S
—	PRIMARY HIGHWAY	WASKASOO CREEK BELOW PIPER CREEK = 80.2 M ³ /S
—	SECONDARY HIGHWAY	PIPER CREEK ABOVE WASKASOO CREEK = 28 M ³ /S
+	RAILWAY	
○	CULVERT	
—	BRIDGE	



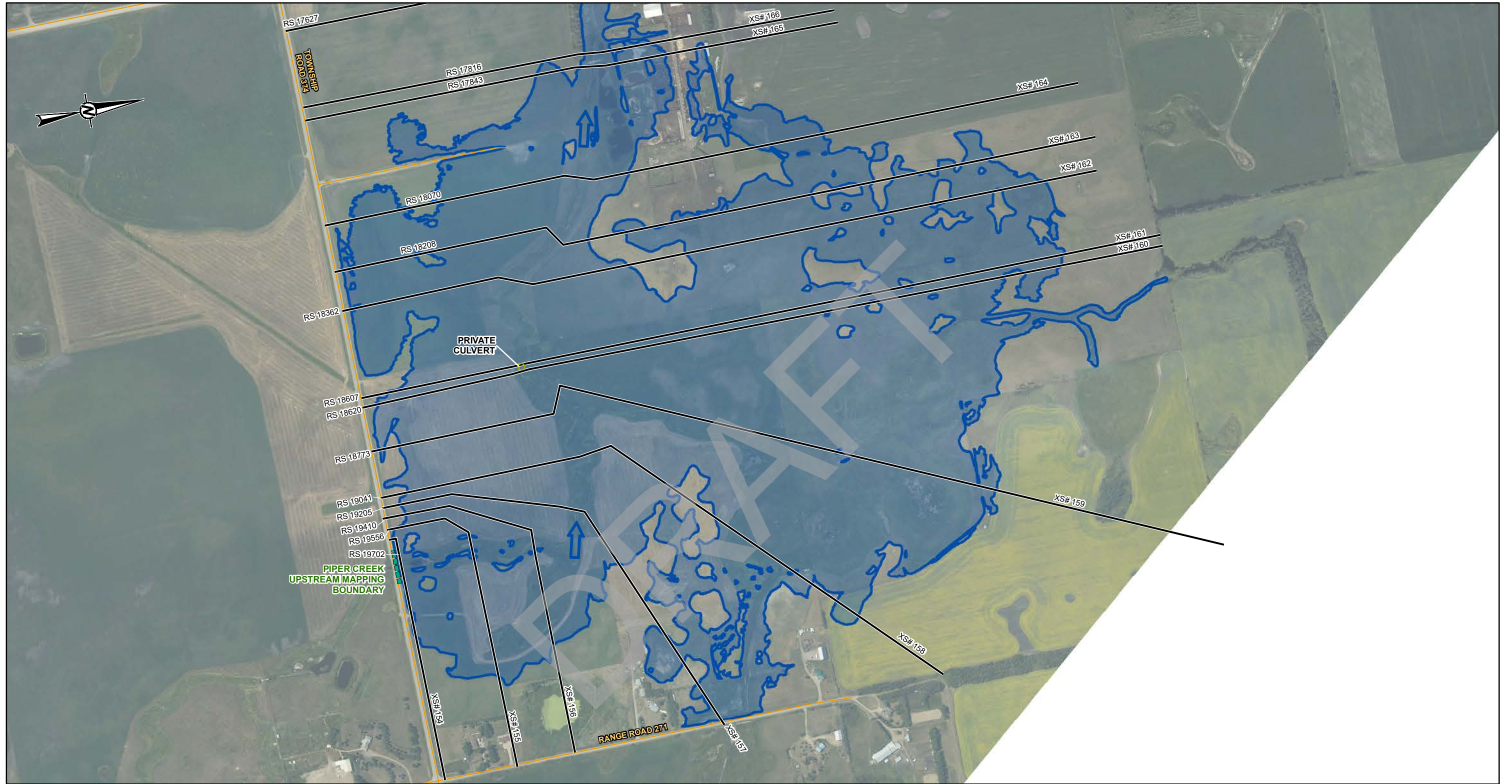
SHEET 31 ↓



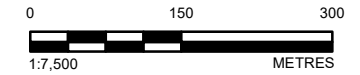
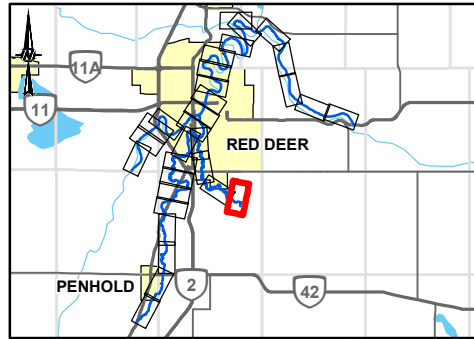
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

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LEGEND		
	CROSS SECTION	350-YEAR FLOOD INUNDATION EXTENT
	FLOOD CONTROL STRUCTURE	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER	DISCHARGE
	RIVER STATION (M)	PIPER CREEK ABOVE HIGHWAY 595 = 25.3 M ³ /S
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	HYDRAULIC STRUCTURES	
	CULVERT	
	BRIDGE	



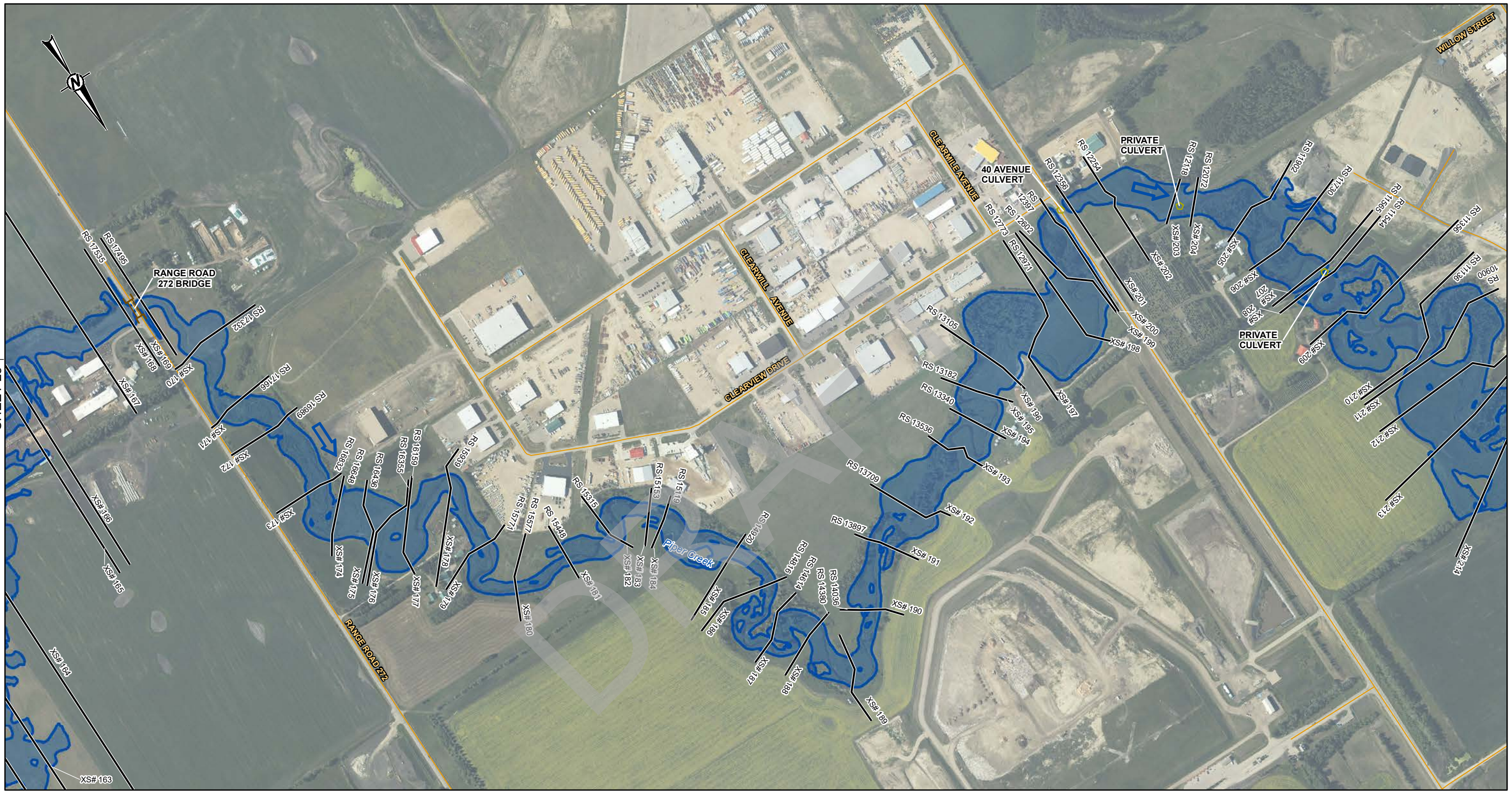
CLIENT	ALBERTA ENVIRONMENT AND PARKS	ALBERTA Government
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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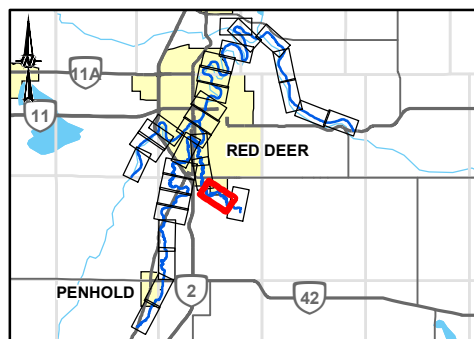


SHEET 28 ↑

↑ SHEET 30

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	350-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	350-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	DISCHARGE
FLOW DIRECTION		PIPER CREEK ABOVE HIGHWAY 595 = 25.3 M ³ /S
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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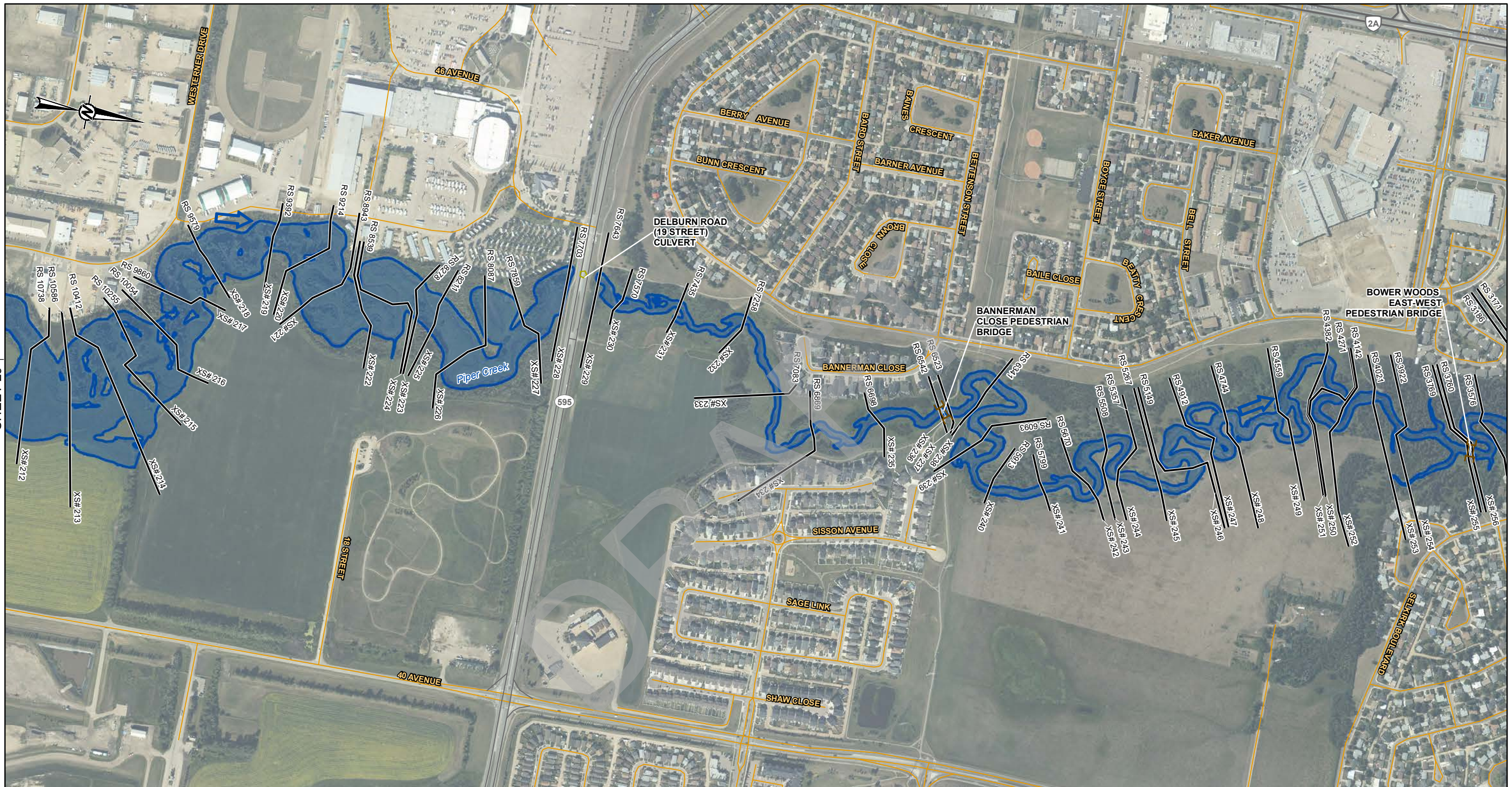
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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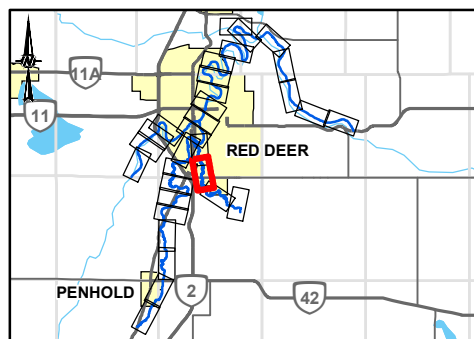


SHEET 31

SHEET 30

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	350-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	350-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		DISCHARGE
PRIMARY HIGHWAY		PIPER CREEK ABOVE HIGHWAY 595 = 25.3 M ³ /S
SECONDARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 28 M ³ /S
RAILWAY		



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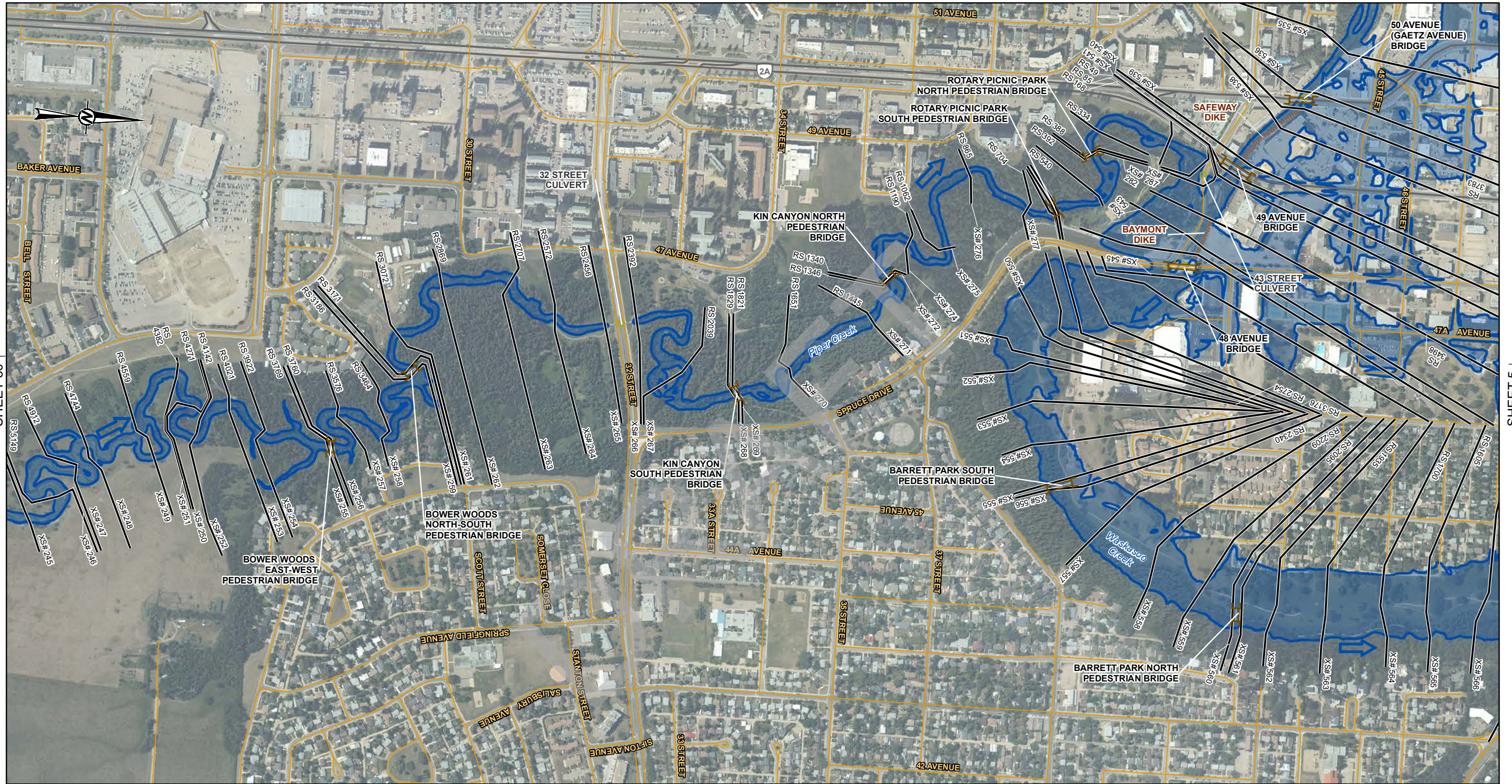
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

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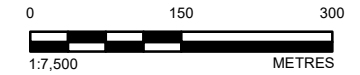
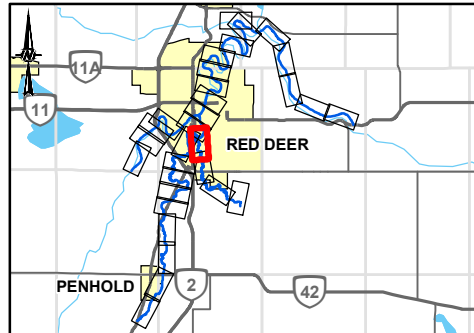
↑ SHEET 30

↑ SHEET 5

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- FLOOD CONTROL STRUCTURE
- HYDRAULIC STRUCTURES
- CULVERT
- BRIDGE
- 350-YEAR FLOOD INUNDATION EXTENT
- 350-YEAR FLOOD EXTENT
- 350-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 PIPER CREEK ABOVE WASKASOO CREEK = 28 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 54.6 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 80.2 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
350-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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SHEETS 1-31

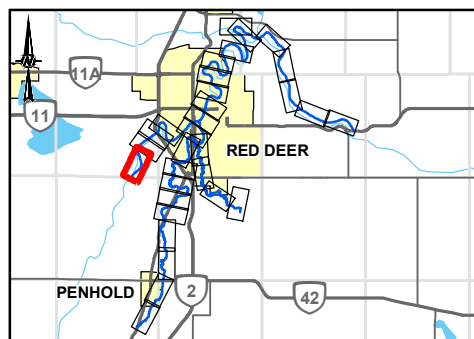
500-Year Flood Inundation Extent

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SHEET 2 ↓

LEGEND		
—	CROSS SECTION	500-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER ABOVE WASKASOO CREEK = 3100 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



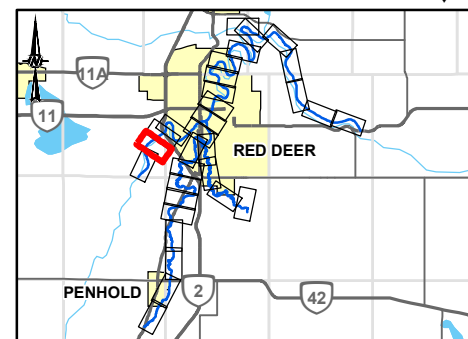
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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 1 OF 31



LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	500-YEAR FLOOD INUNDATION EXTENT
■	500-YEAR FLOOD EXTENT
■	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	RED DEER RIVER ABOVE WASKASOO CREEK = 3100 M ³ /S



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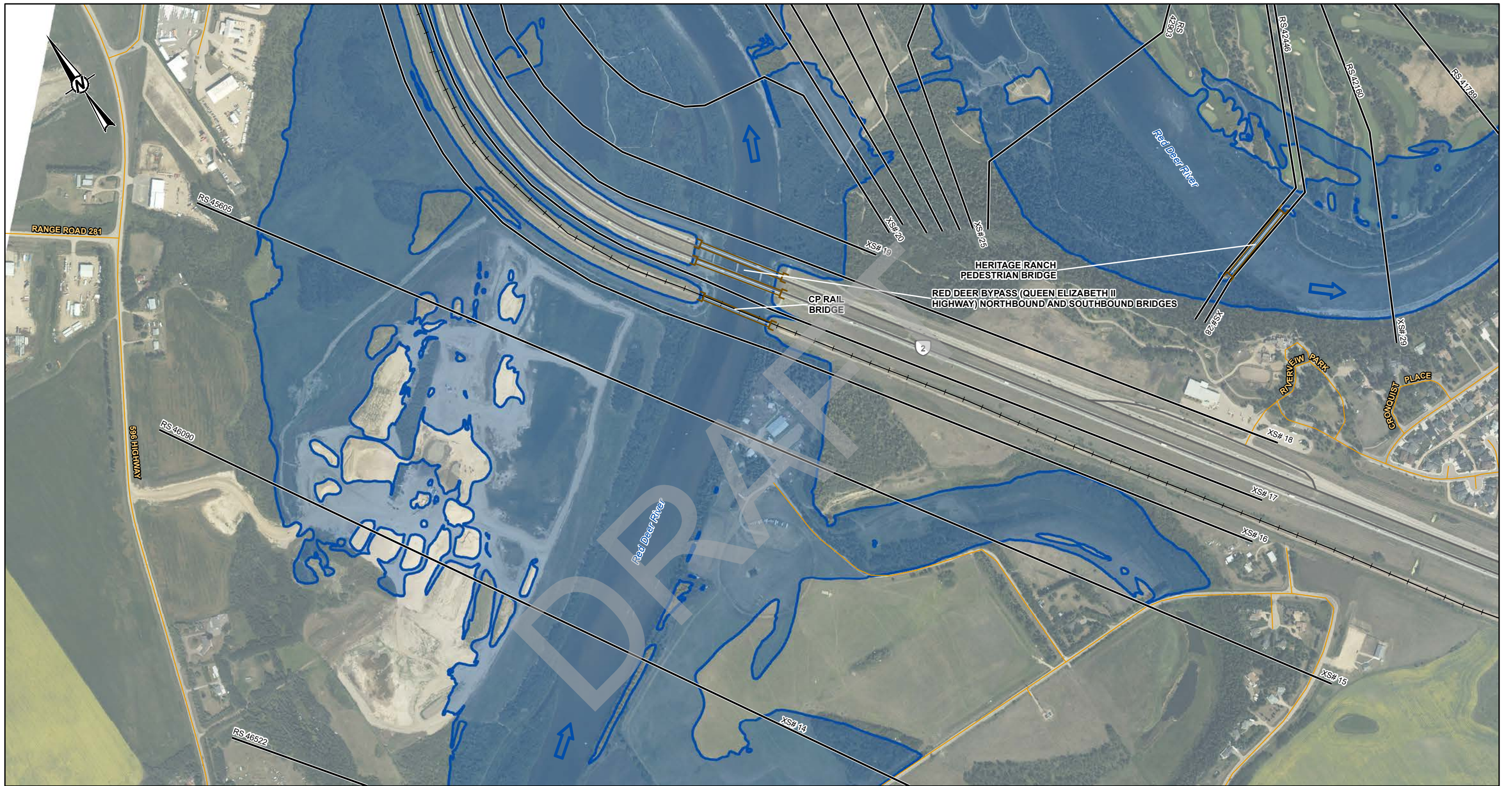
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**500-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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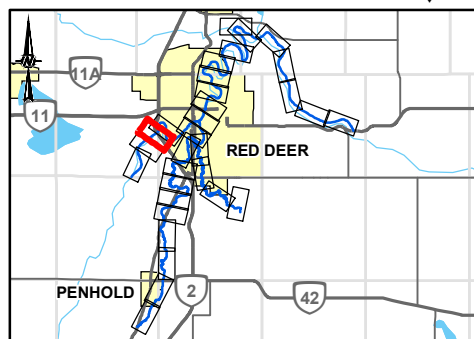
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		500-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		500-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 3100 M³/S



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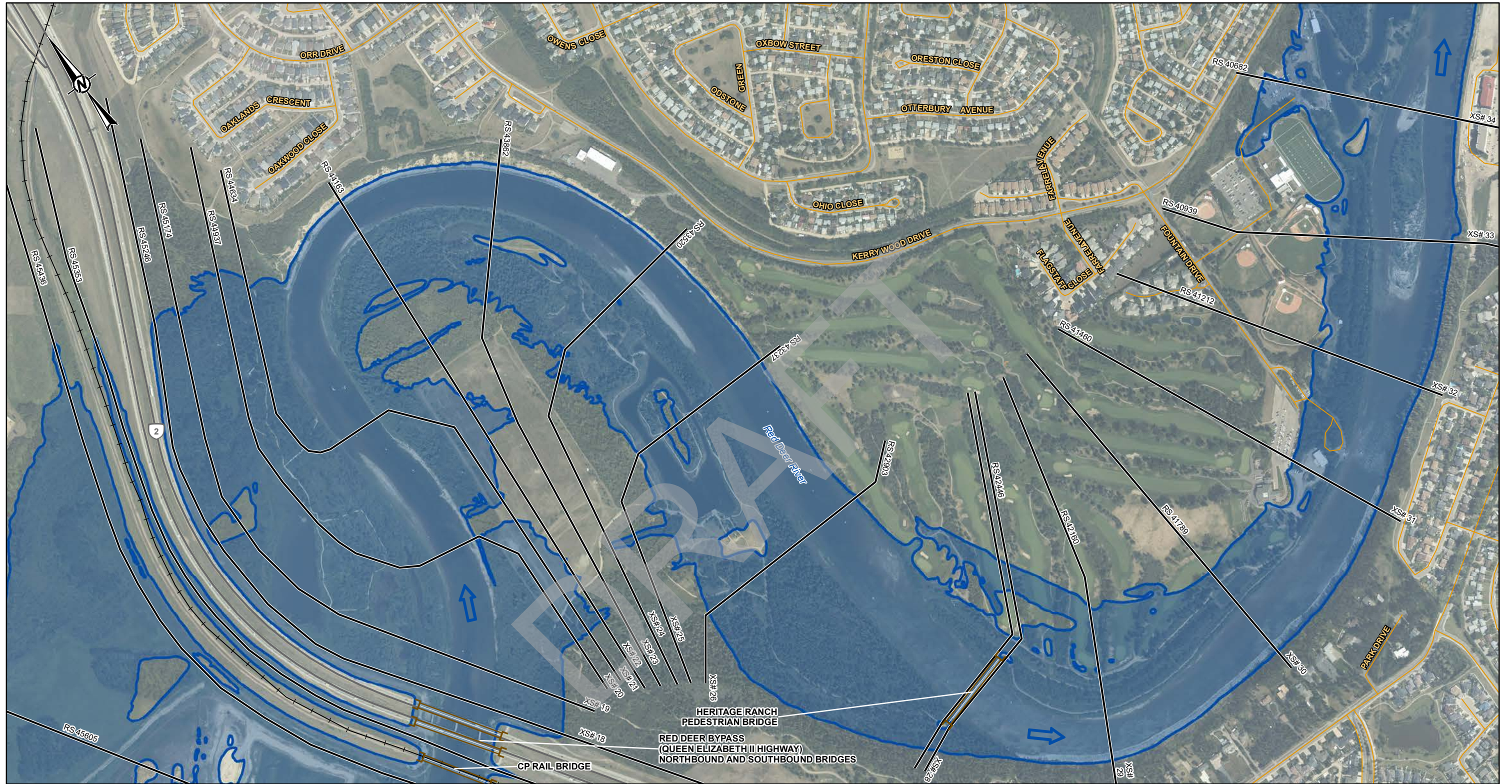
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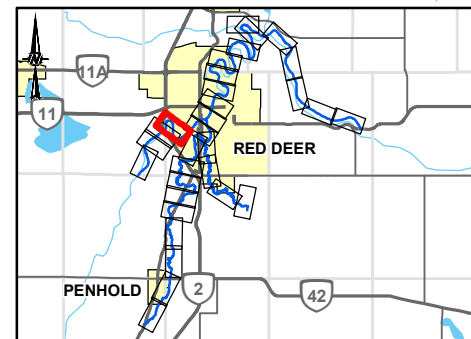
PROJECT RED DEER RIVER HAZARD STUDY	
TITLE 500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO. 1783039	CONTROL 4000
REV. 2	FIGURE SHEET 3 OF 31

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LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	500-YEAR FLOOD INUNDATION EXTENT
	500-YEAR FLOOD EXTENT
	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 3100 M³/S

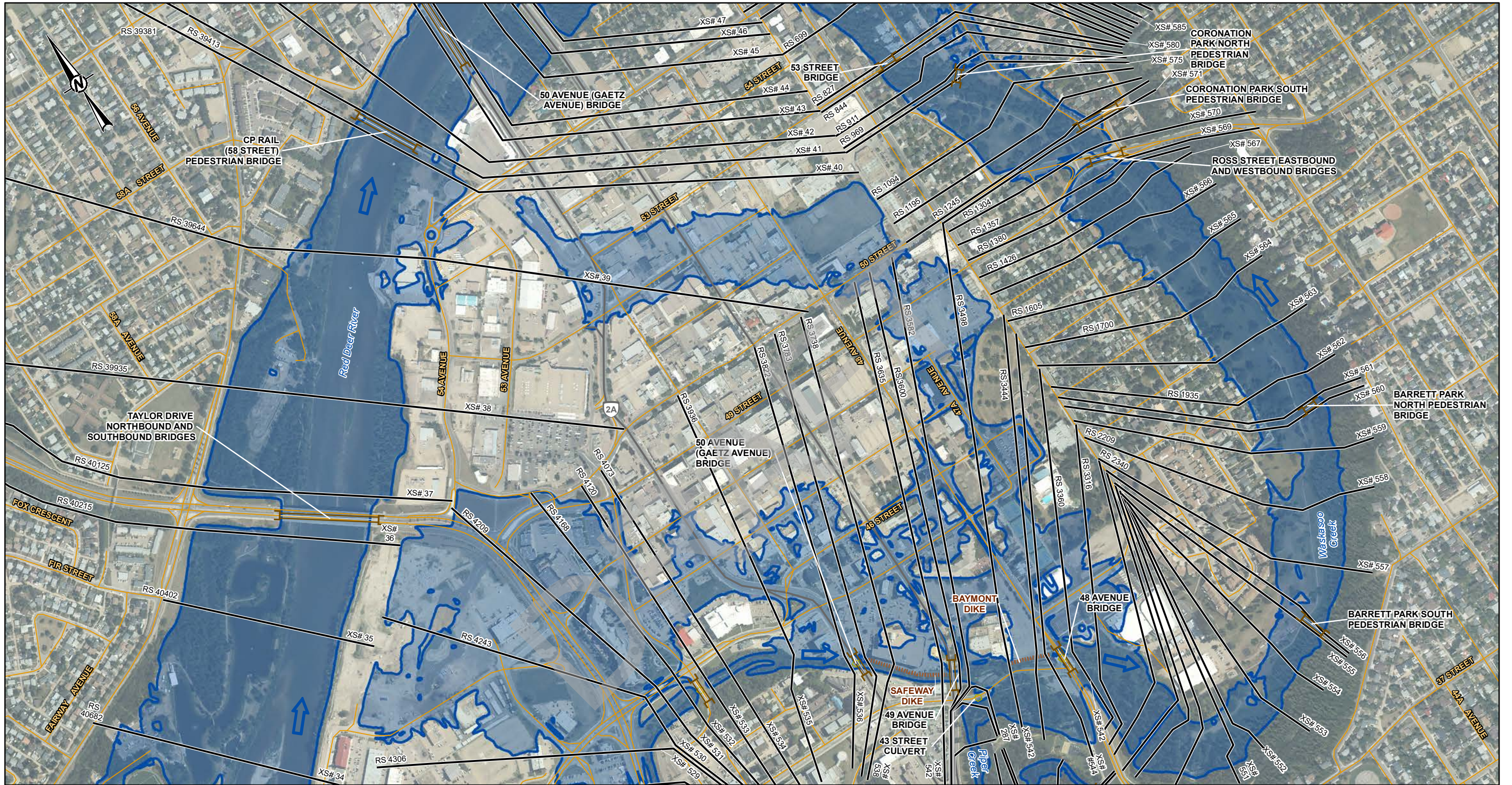


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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

REFERENCE(S)	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 4 OF 31

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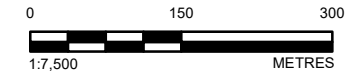
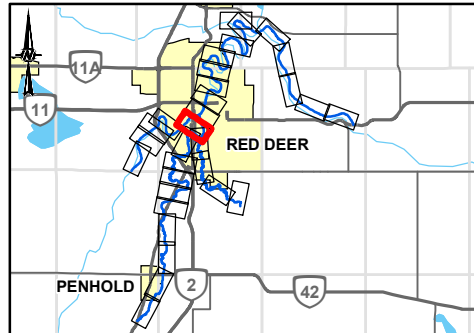


LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- BRIDGE
- 500-YEAR FLOOD INUNDATION EXTENT
- 500-YEAR FLOOD EXTENT
- 500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE

RED DEER RIVER ABOVE WASKASOO CREEK = 3100 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 88.7 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 30.7 M³/S



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ALBERTA ENVIRONMENT AND PARKS

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Alberta Government

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
 500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31

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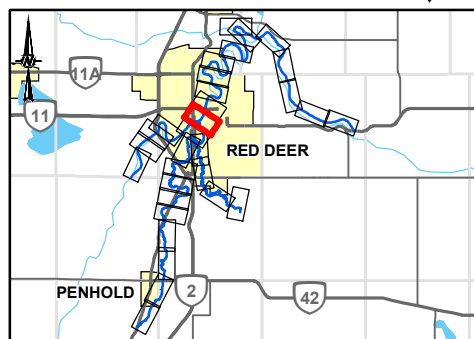
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		500-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		500-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 3100 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 3190 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 88.7 M³/S



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

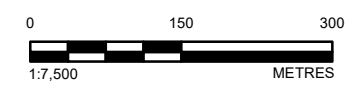
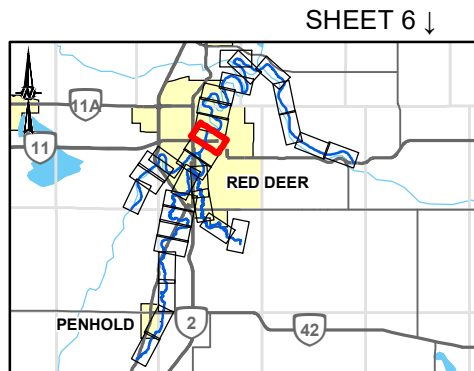
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		500-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		500-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 3190 M³/S



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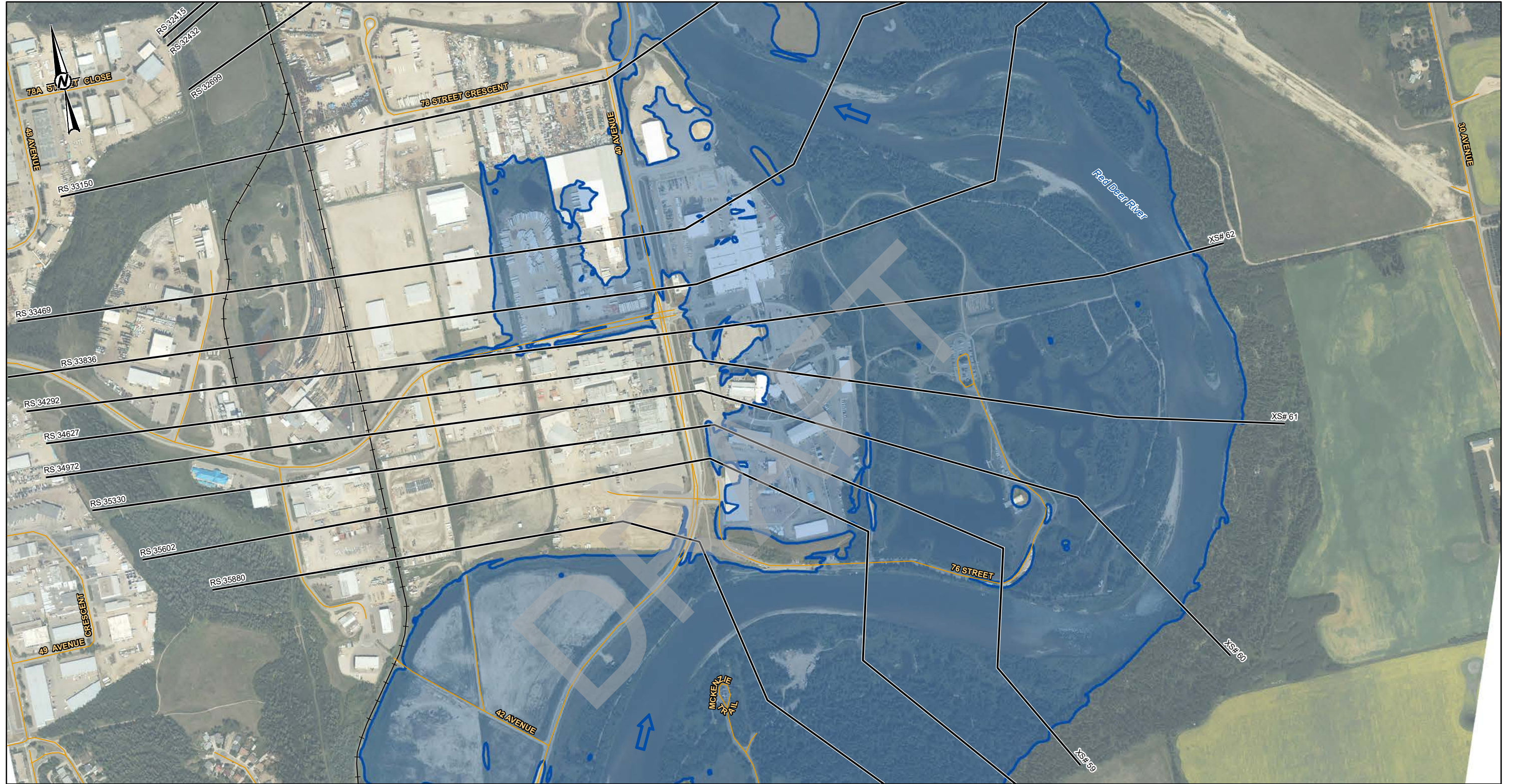
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

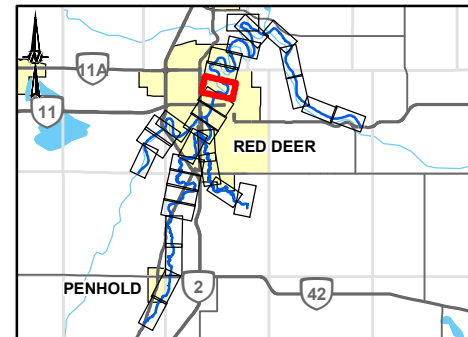
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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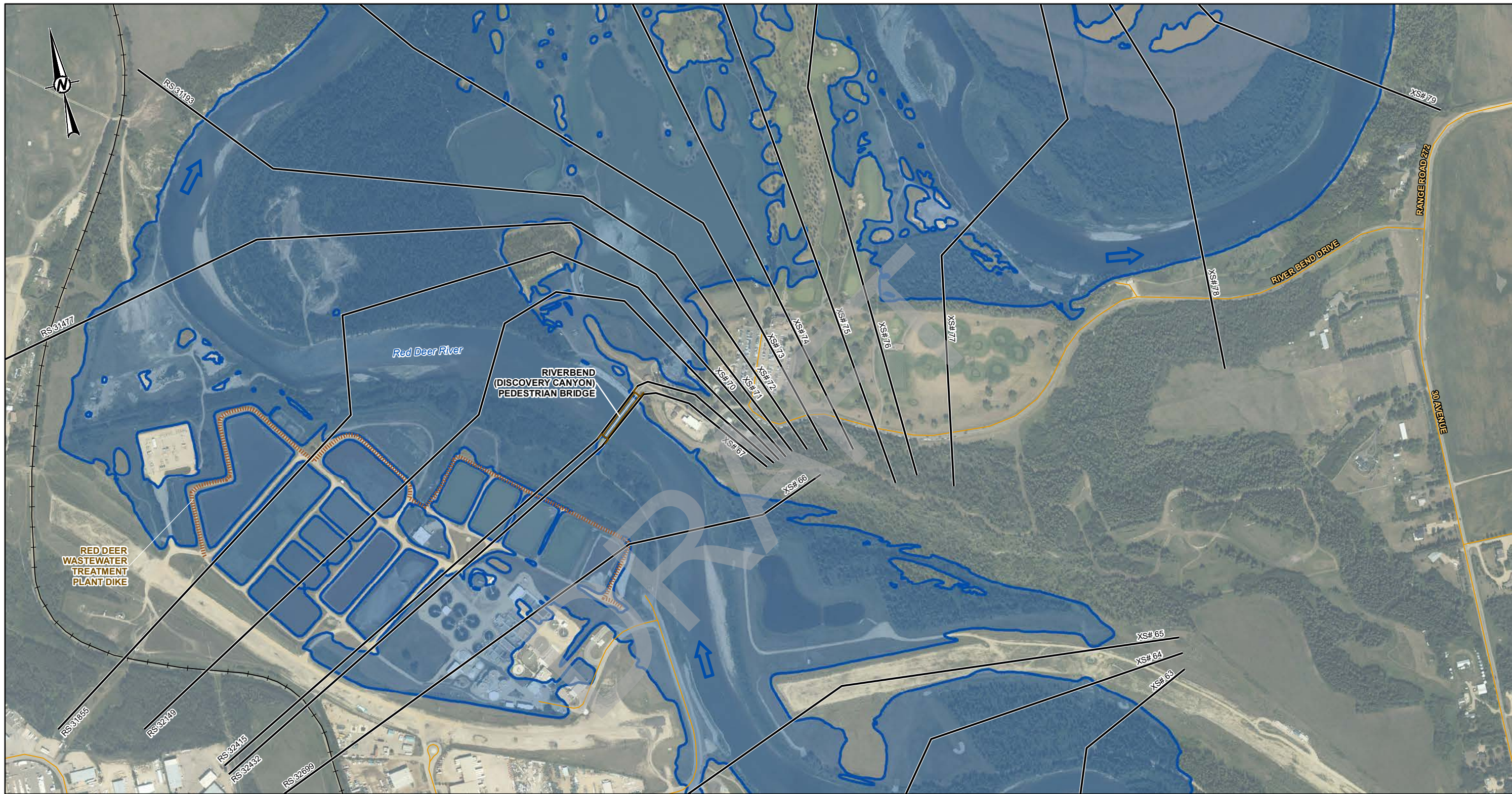


LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	500-YEAR FLOOD INUNDATION EXTENT
	500-YEAR FLOOD EXTENT
	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	CROSS SECTION NUMBER
	STUDY BOUNDARY
	RAILWAY
	RS 304 RIVER STATION (M)
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 3190 M ³ /S	

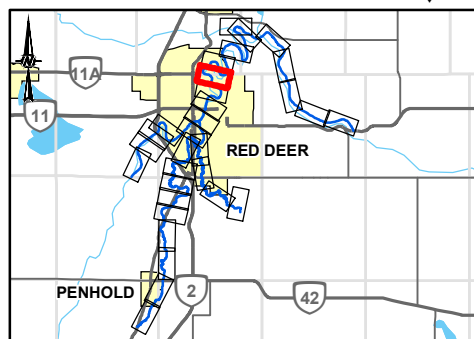


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DESIGNED	YYYY-MM-DD	2022-11-23
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114			
PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	500-YEAR FLOOD INUNDATION EXTENT
	500-YEAR FLOOD EXTENT
	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	RAILWAY
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	LOCAL ROAD
	FLOW DIRECTION
	STUDY BOUNDARY
	RS 304 RIVER STATION (M)
	CROSS SECTION NUMBER
	RS 3100 CROSS SECTION NUMBER
	CULVERT
	BRIDGE
	HYDRAULIC STRUCTURES
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 3190 M ³ /S



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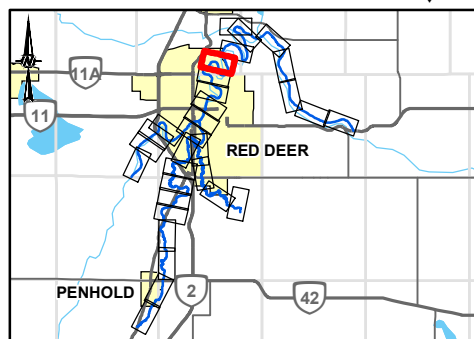
PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		500-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		500-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 3190 M³/S



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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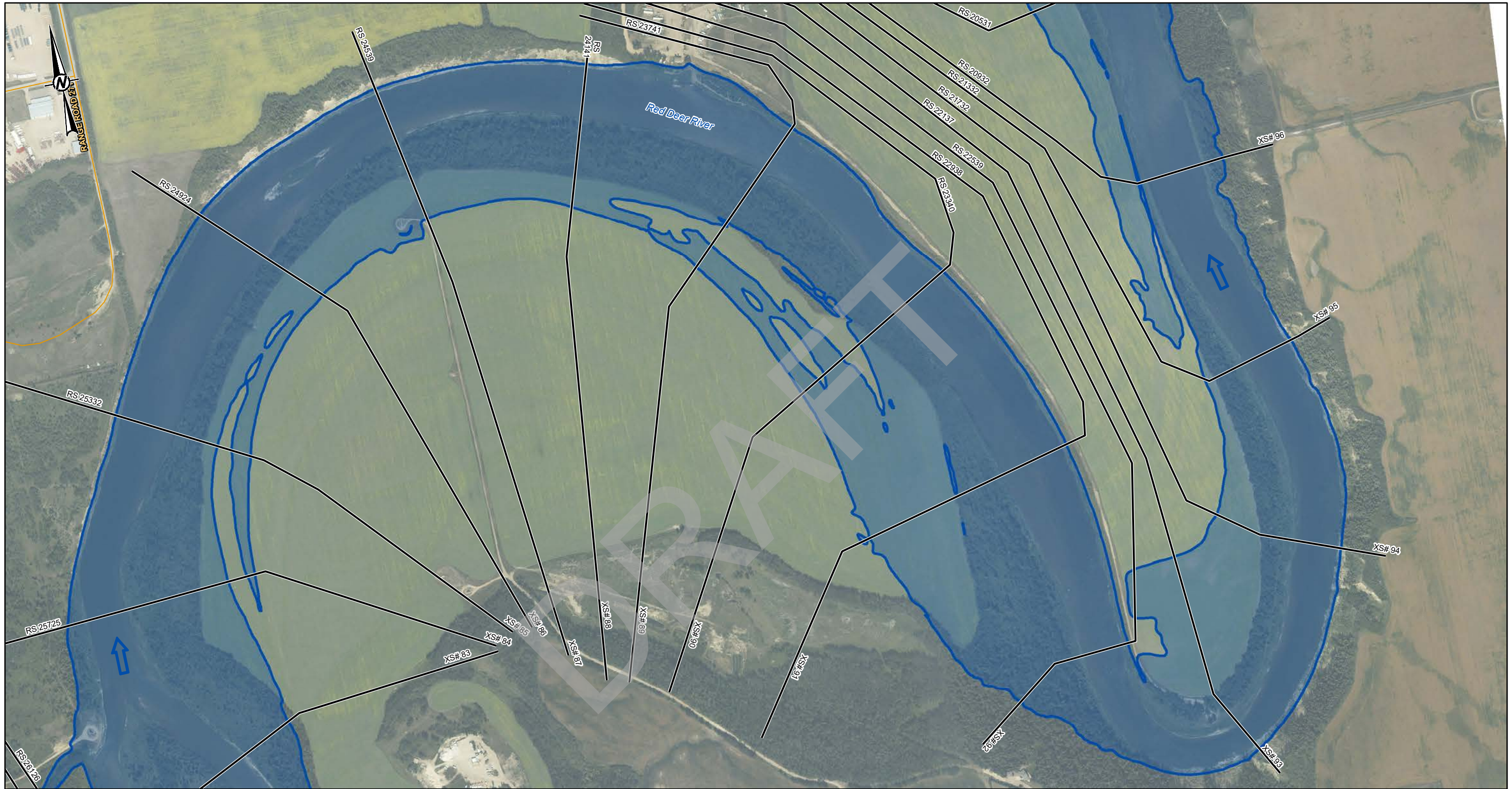
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

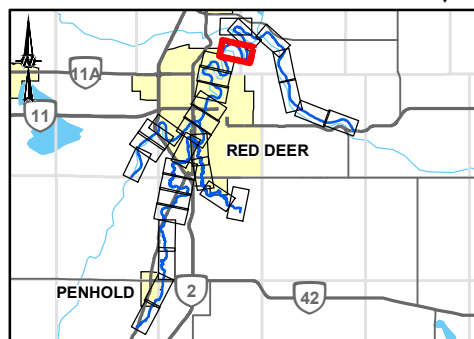
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	500-YEAR FLOOD INUNDATION EXTENT
	500-YEAR FLOOD EXTENT
	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 3190 M ³ /S
	CROSS SECTION NUMBER
	RIVER STATION (M)



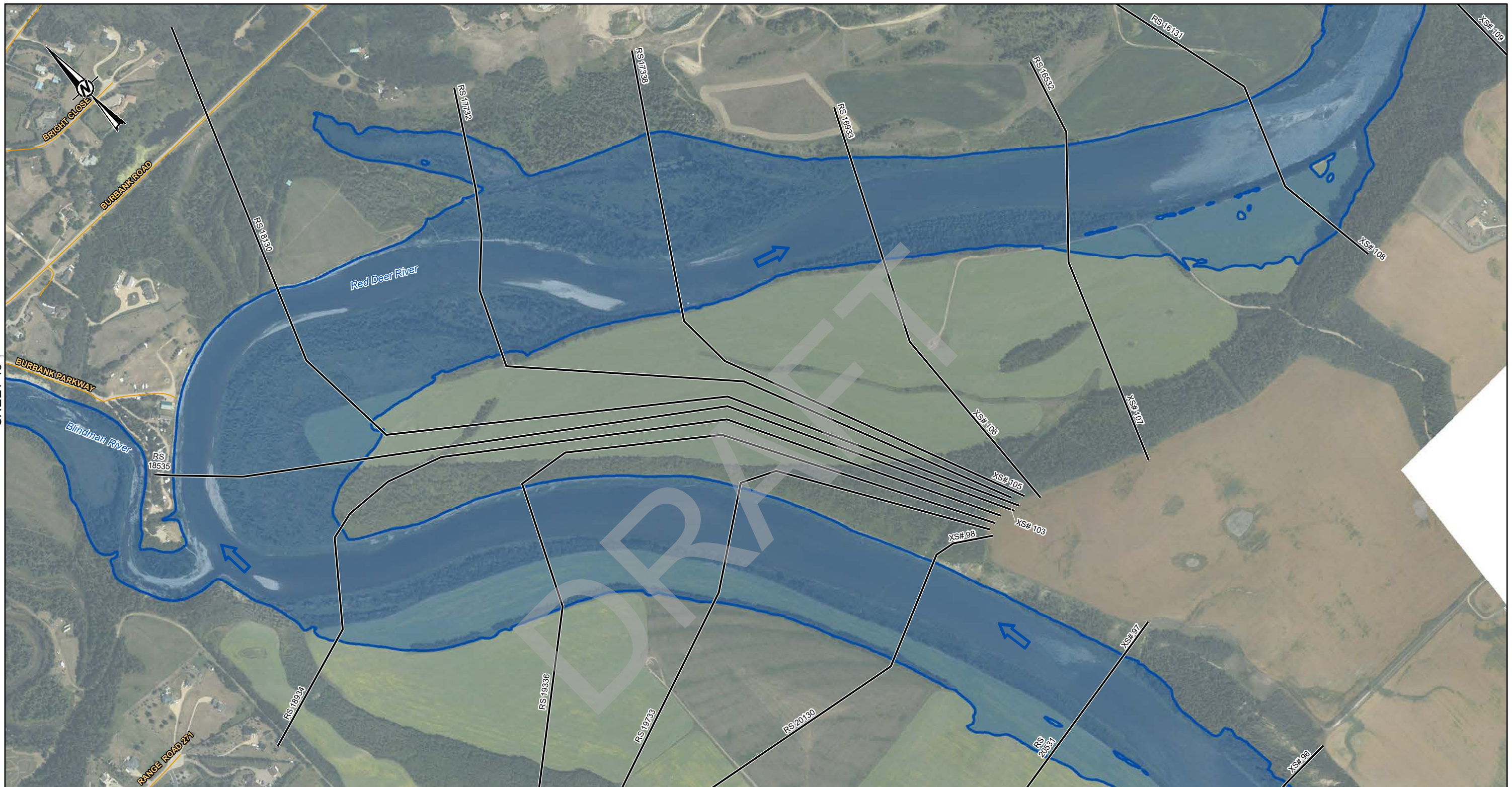
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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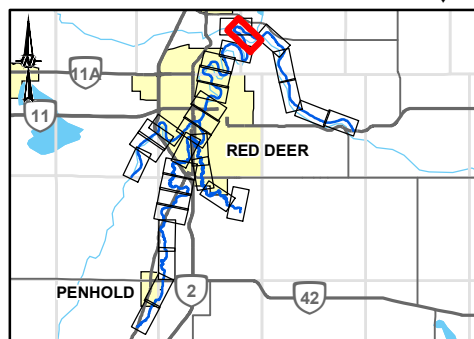
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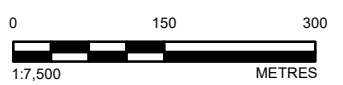
SHEET 13 ↑

↓ SHEET 14

LEGEND		500-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	500-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	RED DEER RIVER BELOW WASKASOO CREEK = 3190 M ³ /S
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 3630 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



↓ SHEET 11



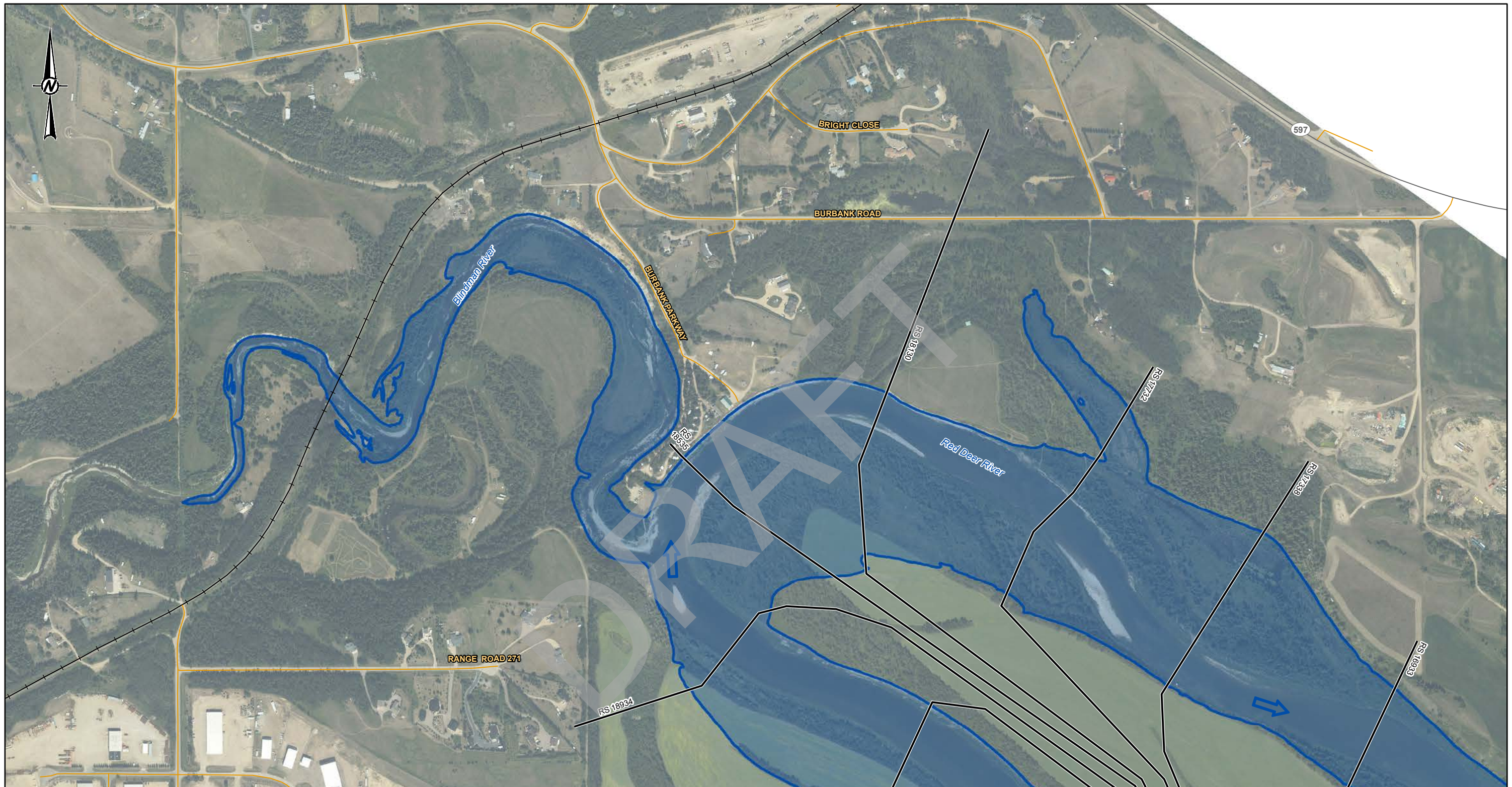
CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 12 OF 31

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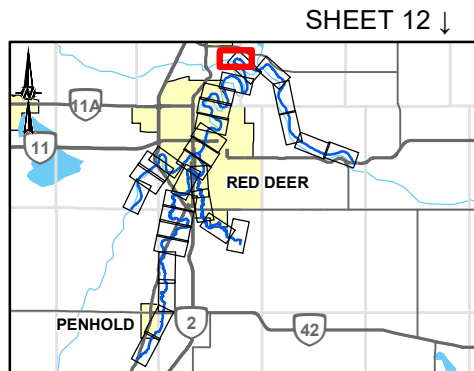


SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	500-YEAR FLOOD INUNDATION EXTENT	500-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	○	CULVERT	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	BRIDGE		
—	STUDY BOUNDARY				
→	FLOW DIRECTION				
—	LOCAL ROAD				
—	PRIMARY HIGHWAY				
—	SECONDARY HIGHWAY				
+	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 3190 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 3630 M³/S



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 ALBERTA ENVIRONMENT AND PARKS

CONSULTANT
GOLDER

Alberta Government

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PREPARED	NB
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

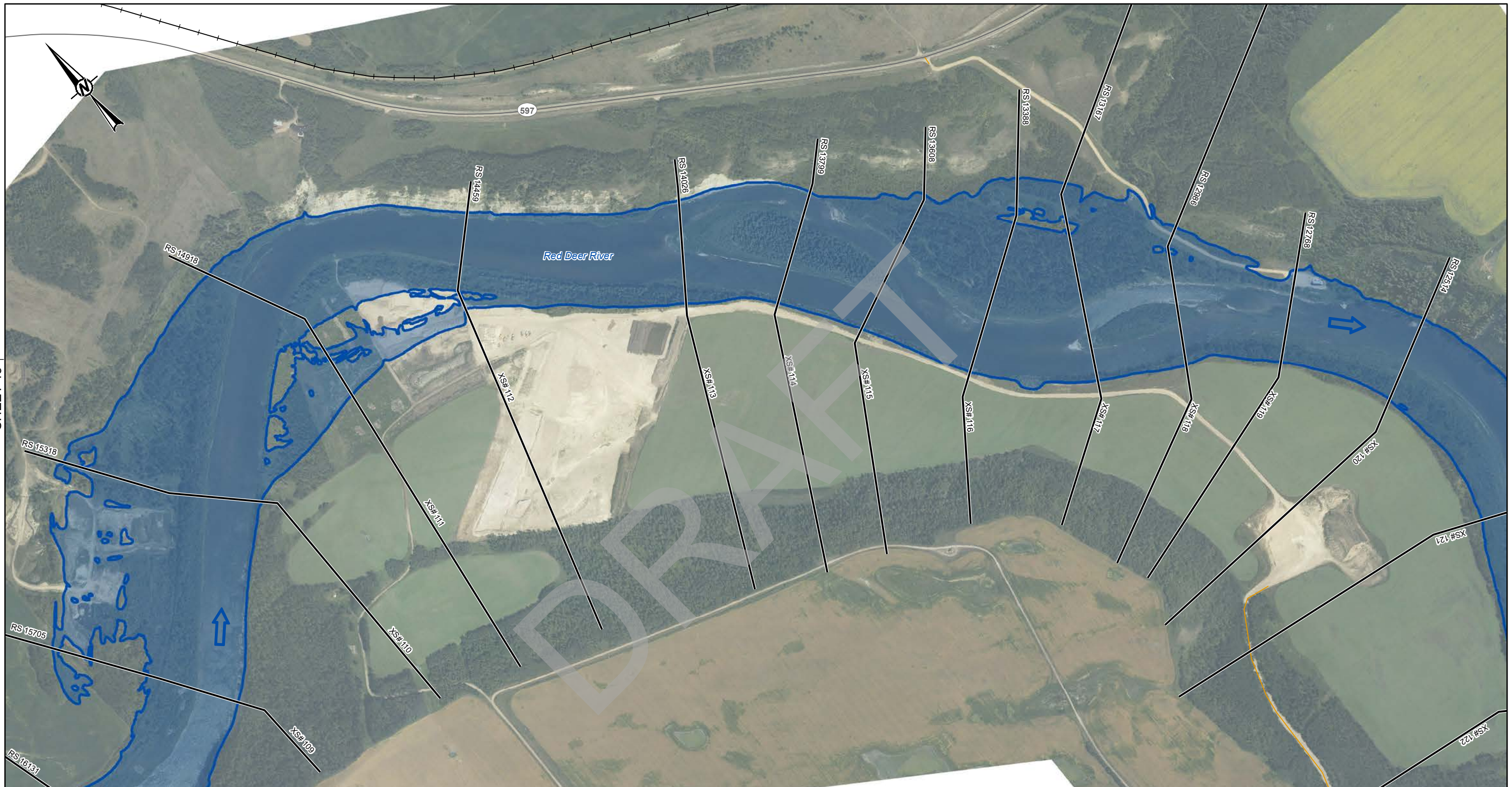
PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 13 OF 31

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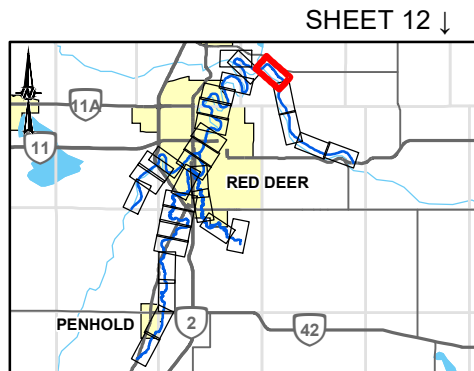
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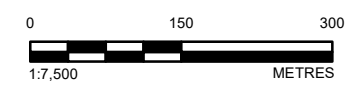
SHEET 13 ↑

↓ SHEET 15

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	500-YEAR FLOOD INUNDATION EXTENT
	500-YEAR FLOOD EXTENT
	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
DISCHARGE	RED DEER RIVER BELOW BLINDMAN RIVER = 3630 M ³ /S



SHEET 12 ↓



CLIENT	ALBERTA ENVIRONMENT AND PARKS	ALBERTA Government
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 14 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

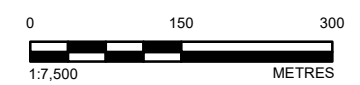
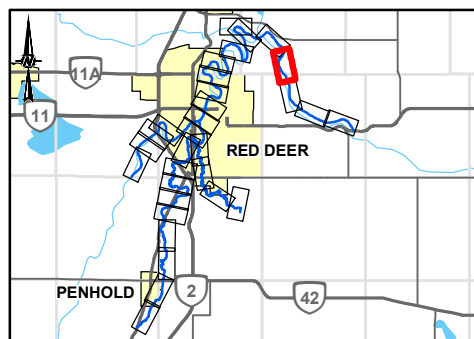
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	500-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 3630 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	HYDRAULIC STRUCTURES	
—	CULVERT	
—	BRIDGE	



CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
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PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

REFERENCE(S)			
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

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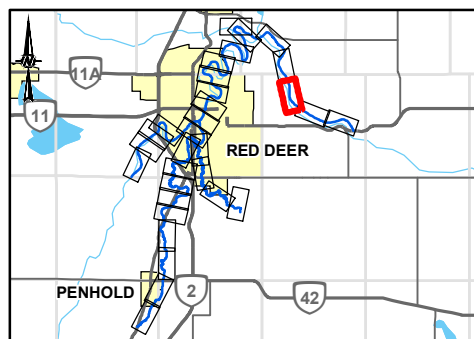
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	500-YEAR FLOOD INUNDATION EXTENT
XXXX	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 3630 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 16 OF 31

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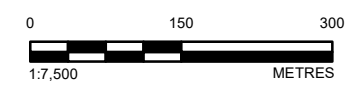
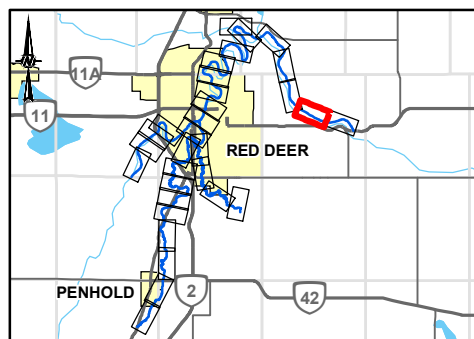
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	500-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 3630 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 17 OF 31

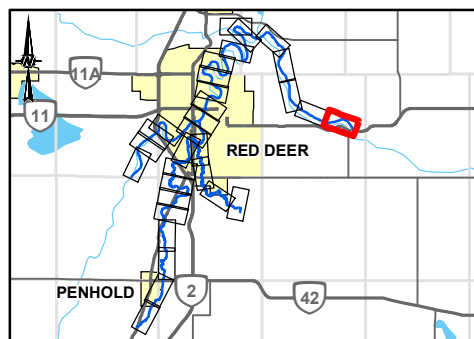
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SHEET 17 ↑



LEGEND		
— CROSS SECTION	FLOOD CONTROL STRUCTURE	500-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	500-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW BLINDMAN RIVER = 3630 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

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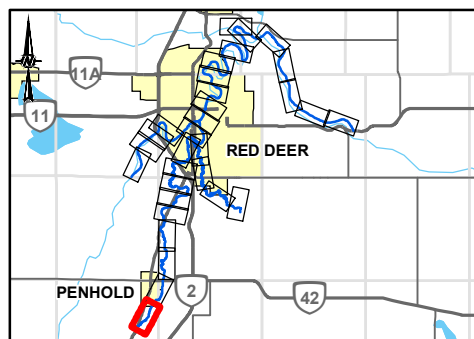


SHEET 20

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	500-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	500-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 51.8 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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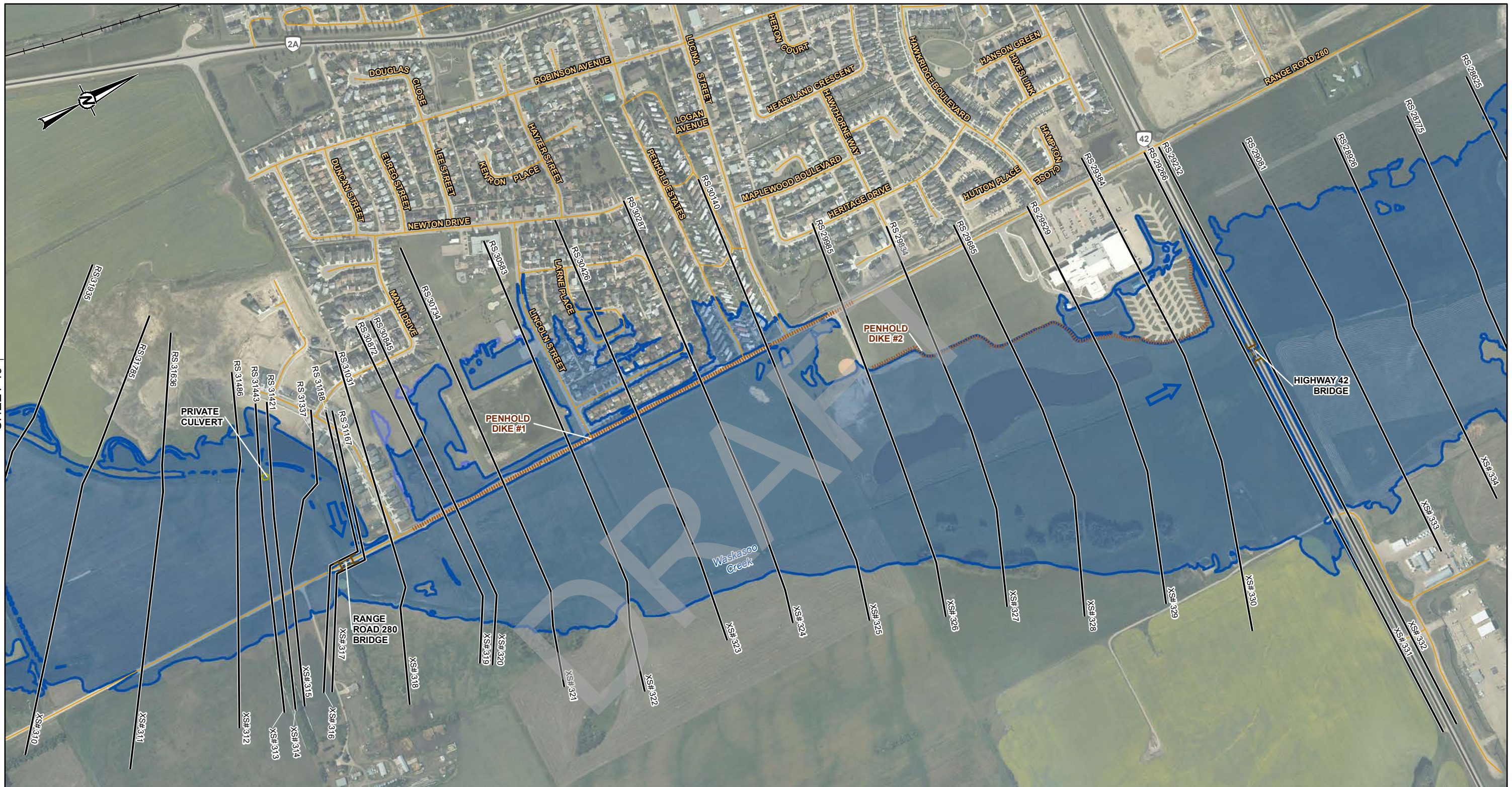
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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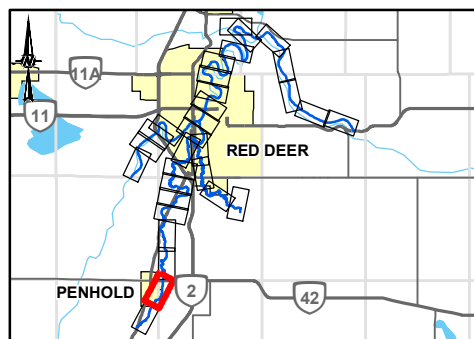
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SHEET 19 ↑

↓ SHEET 21

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	500-YEAR FLOOD EXTENT
	STUDY BOUNDARY	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	WASKASOO CREEK ABOVE HIGHWAY 42 = 51.8 M ³ /S
	PRIMARY HIGHWAY	WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M ³ /S
	SECONDARY HIGHWAY	
	RAILWAY	
	CULVERT	
	BRIDGE	

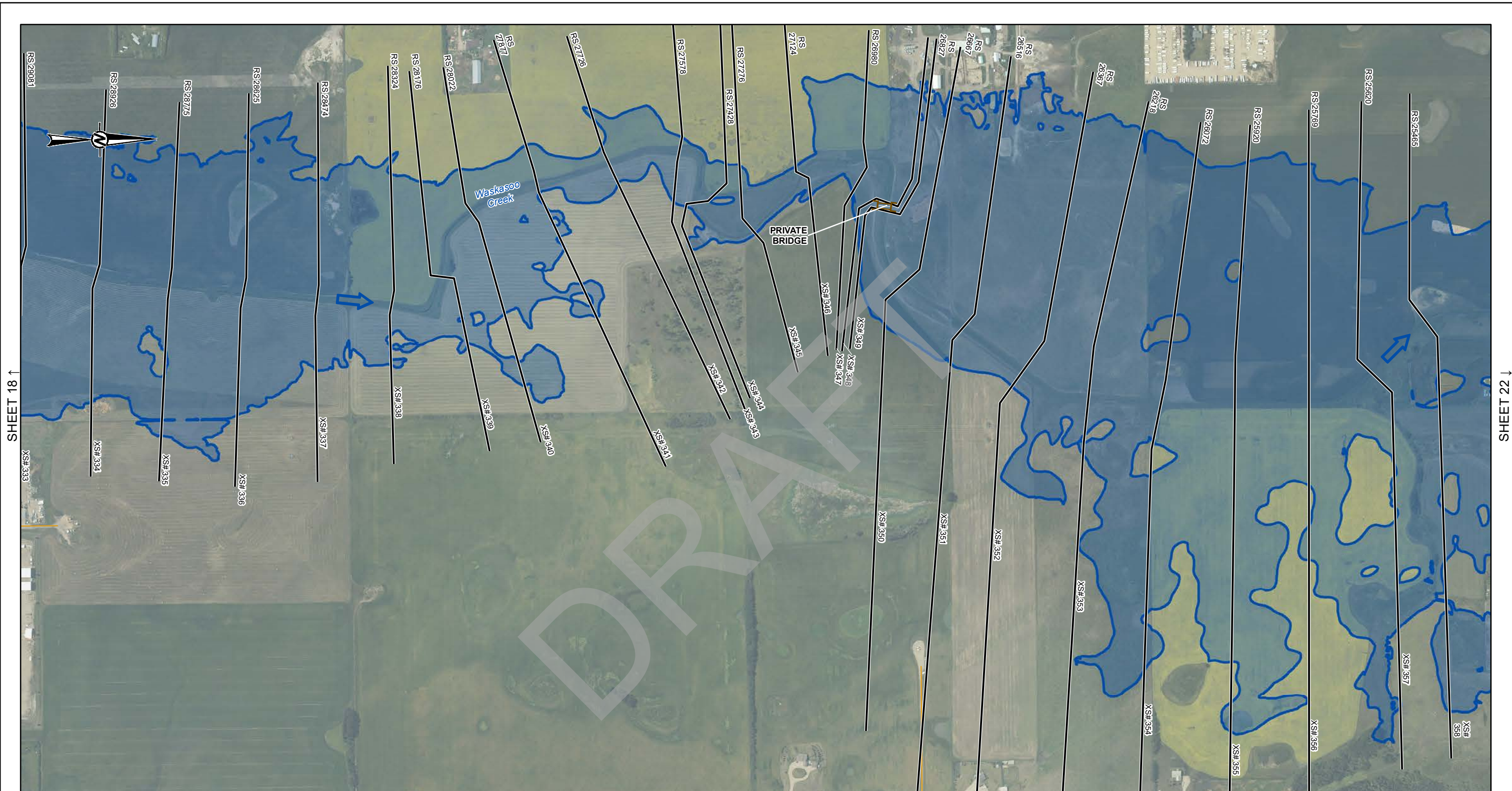


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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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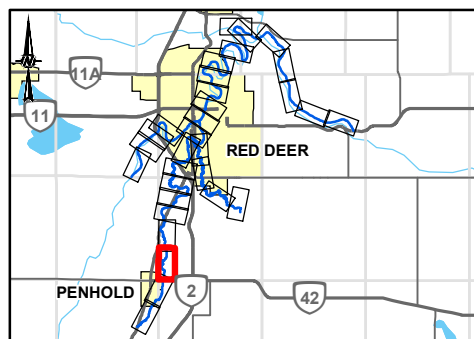
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SHEET 18 ↑

↑ SHEET 22

LEGEND		
—	CROSS SECTION	FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
▭	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	500-YEAR FLOOD INUNDATION EXTENT	
	◻ 500-YEAR FLOOD EXTENT	
	◻ 500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M ³ /S	



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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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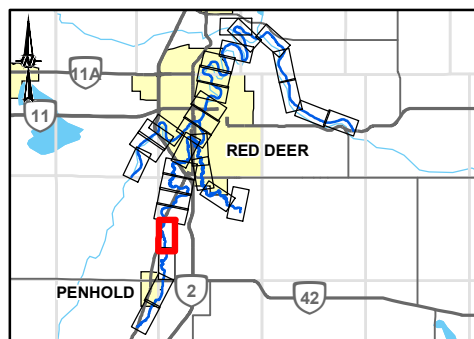
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
—	CROSS SECTION	
XS#100	CROSS SECTION NUMBER	FLOOD CONTROL STRUCTURE
RS 304	RIVER STATION (M)	HYDRAULIC STRUCTURES
■	STUDY BOUNDARY	○ CULVERT
➔	FLOW DIRECTION	▬ BRIDGE
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	500-YEAR FLOOD INUNDATION EXTENT
—	SECONDARY HIGHWAY	■ 500-YEAR FLOOD EXTENT
+	RAILWAY	▨ 500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M ³ /S



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CONSULTANT	GOLDER	
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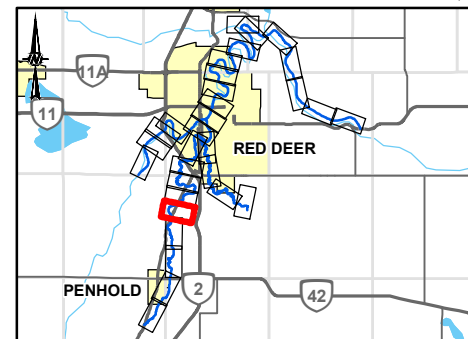
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	500-YEAR FLOOD INUNDATION EXTENT
	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	CROSS SECTION NUMBER
	RIVER STATION (M)

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M³/S



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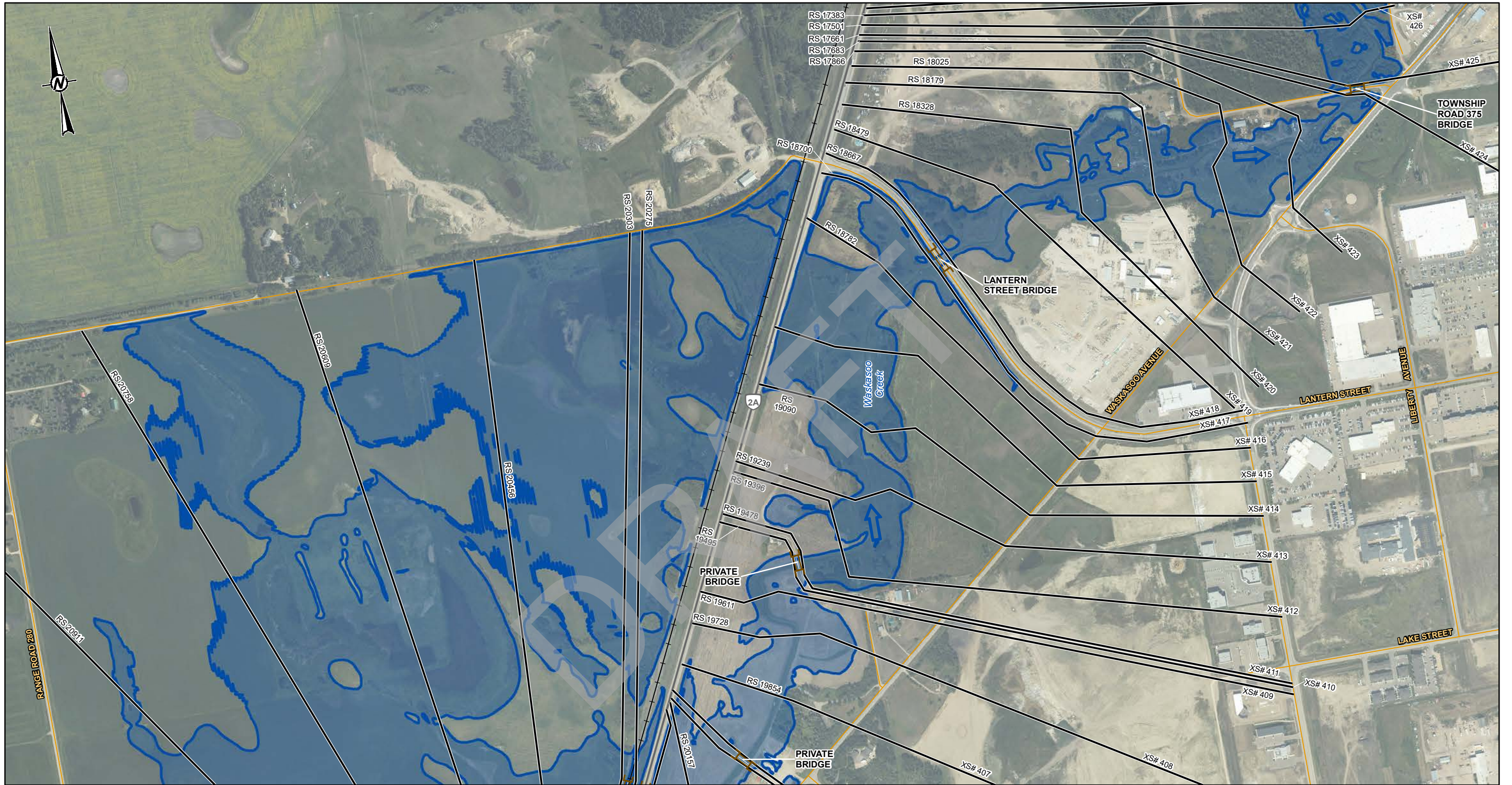
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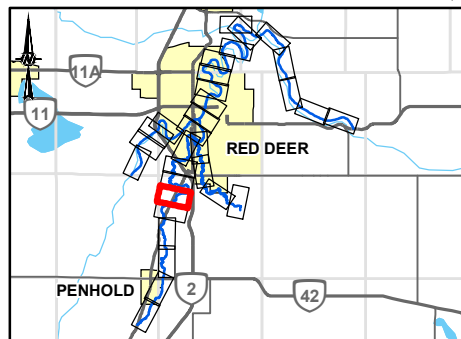
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**500-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND		500-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	500-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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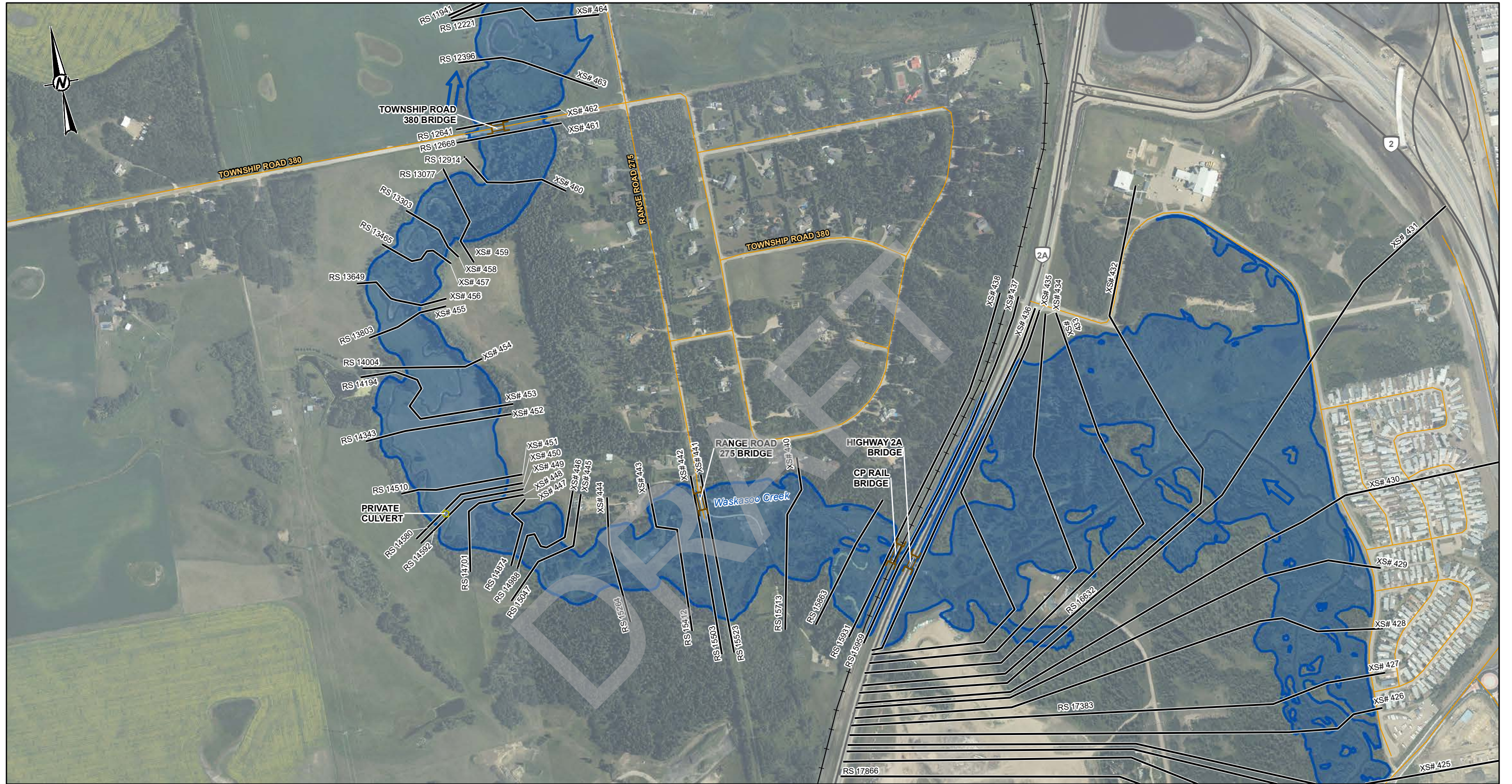
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**500-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31

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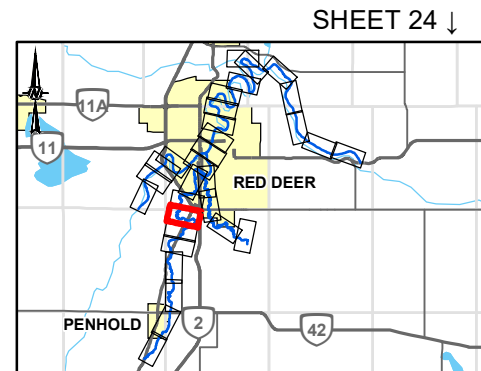
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	500-YEAR FLOOD INUNDATION EXTENT	500-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)		
RS 304	RIVER STATION (M)	 	CULVERT		
	STUDY BOUNDARY		BRIDGE		
➔	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M³/S



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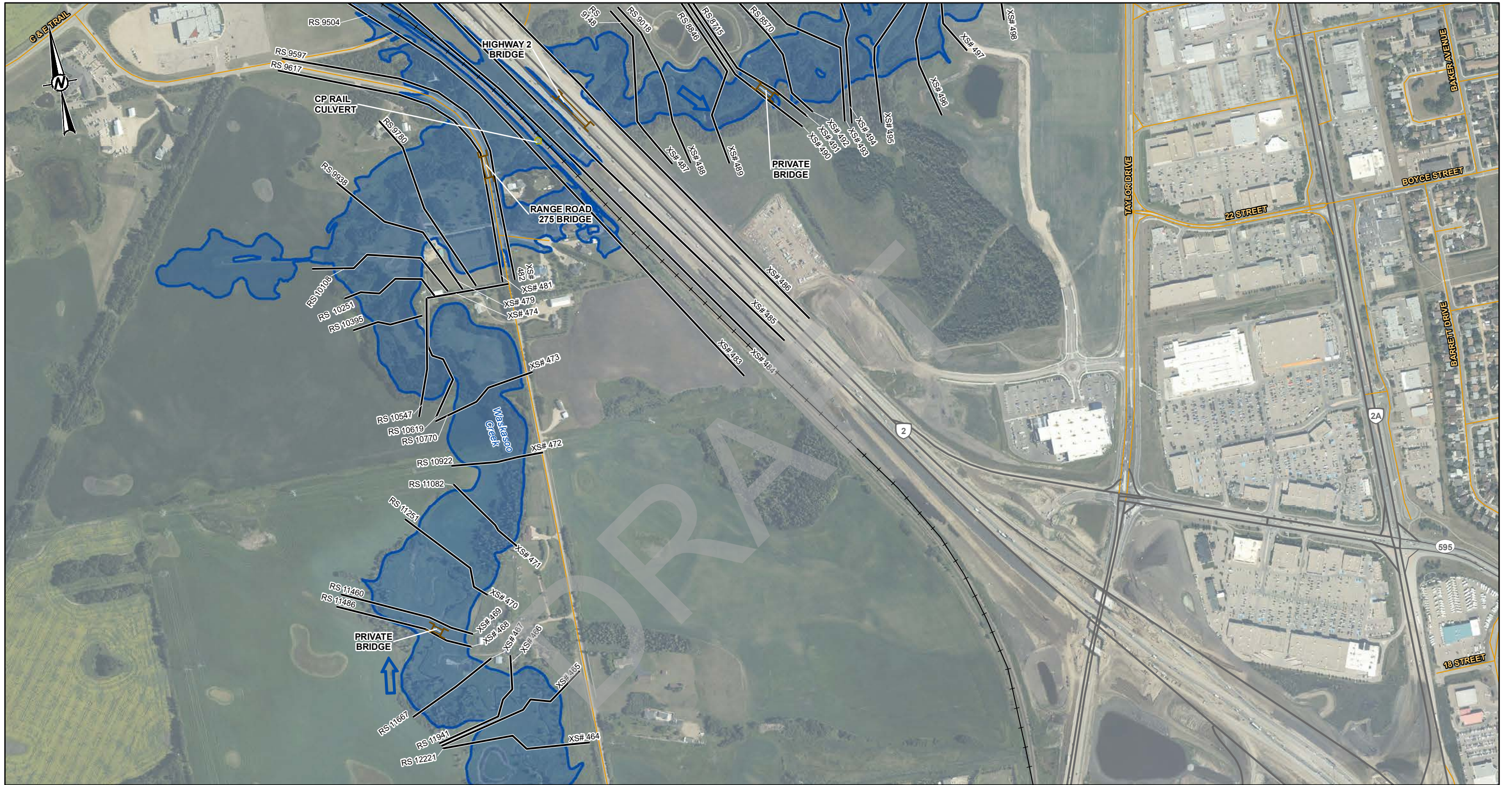
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31

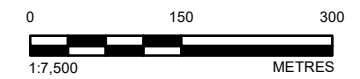
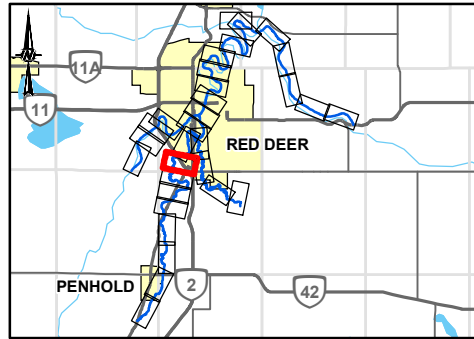
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	500-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	500-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
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PROJECT
RED DEER RIVER HAZARD STUDY

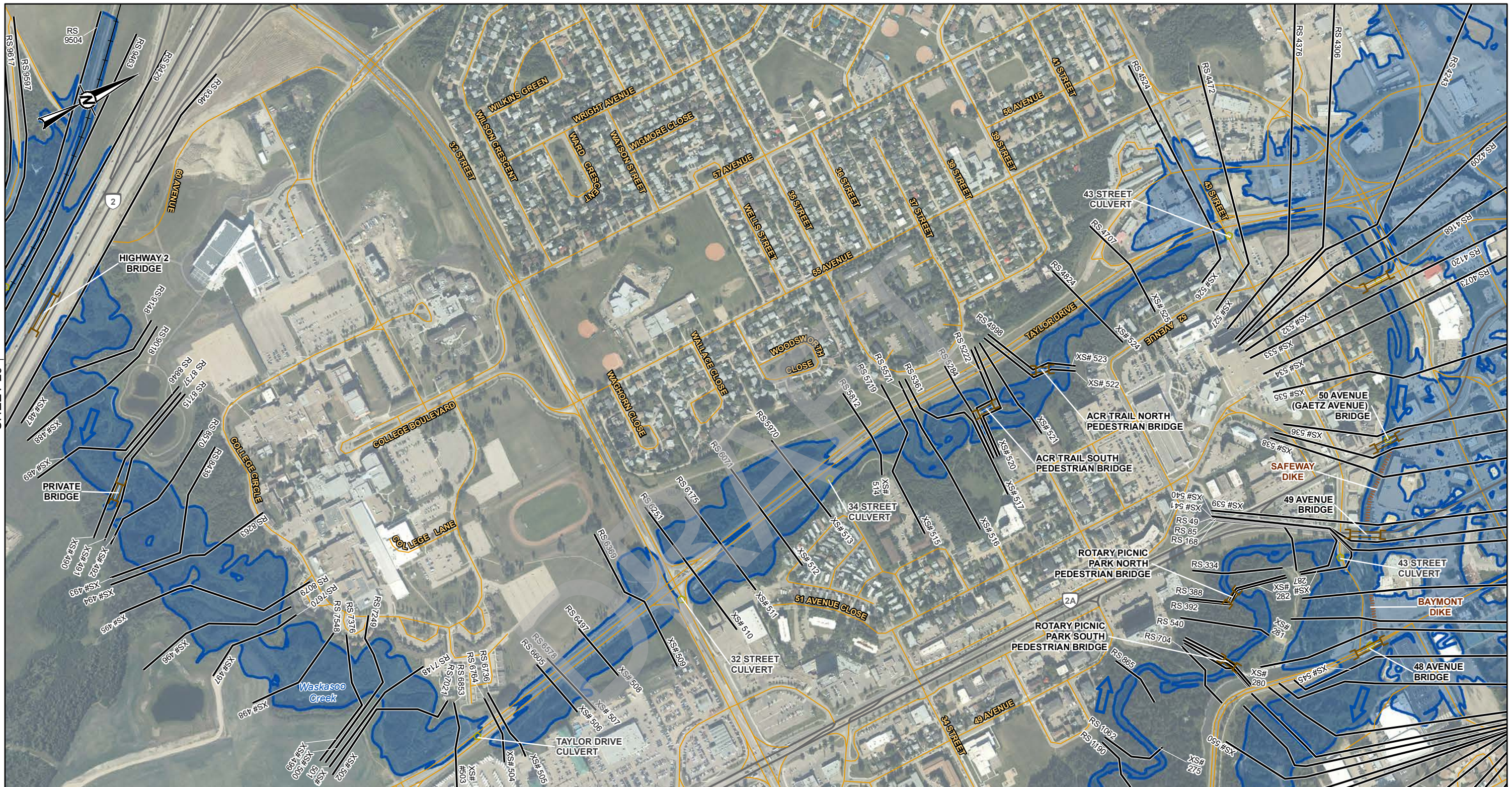
TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

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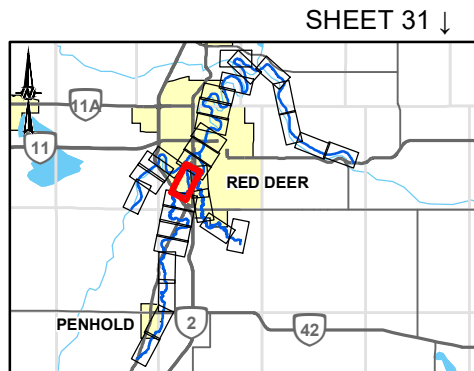


SHEET 26 ↑

SHEET 5 ↓

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	500-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	500-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M ³ /S
PRIMARY HIGHWAY		WASKASOO CREEK BELOW PIPER CREEK = 88.7 M ³ /S
SECONDARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 30.7 M ³ /S
RAILWAY		



SHEET 31 ↓



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GOLDER

ALBERTA Government

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PREPARED	NB
REVIEWED	GT
APPROVED	WP

DATE: 2022-11-23

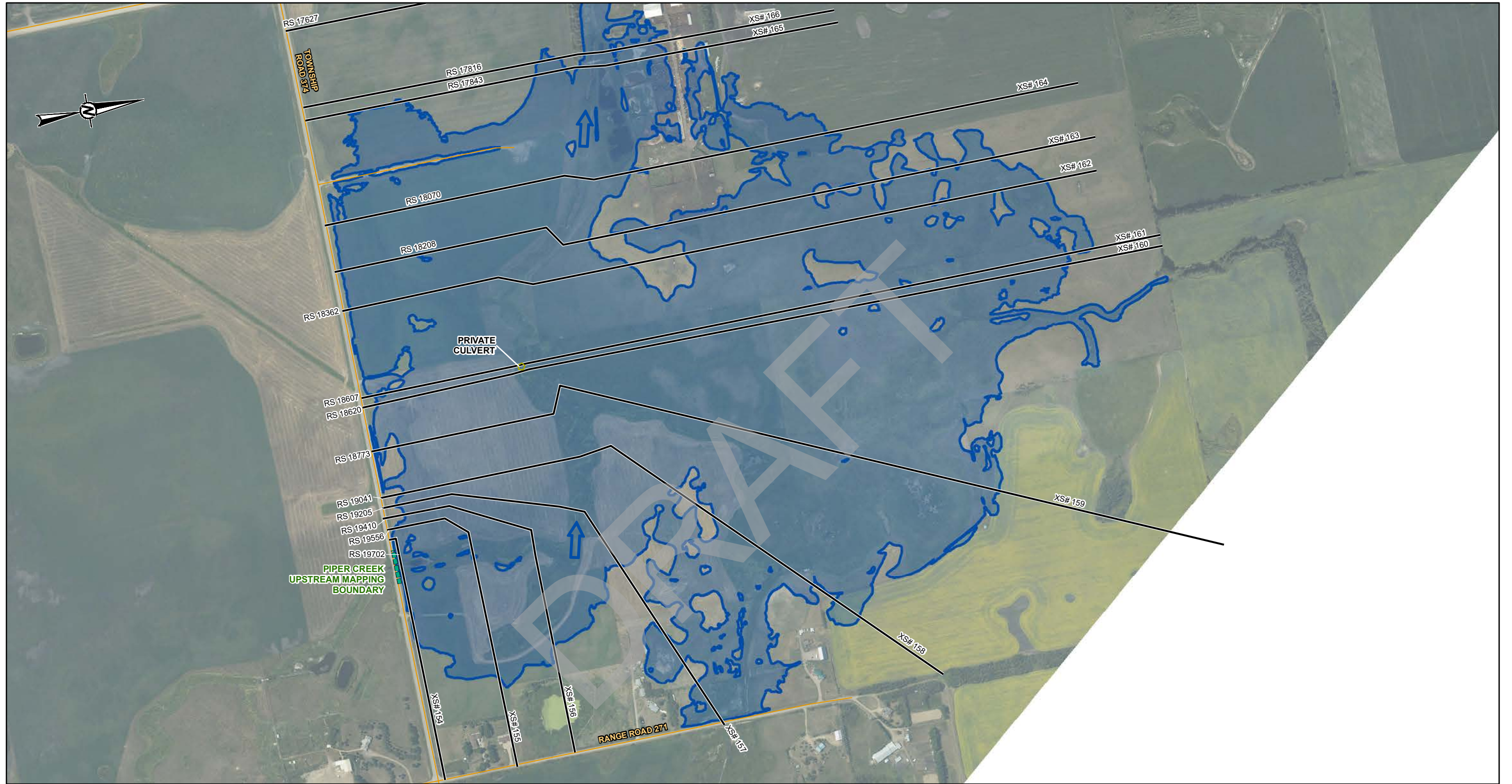
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PROJECT
RED DEER RIVER HAZARD STUDY

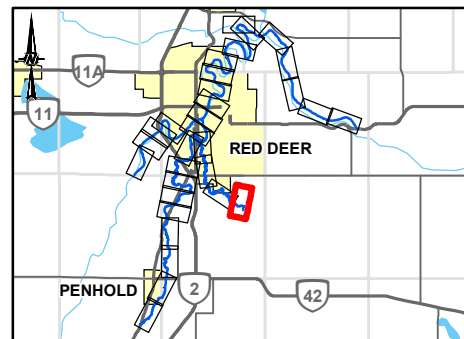
TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	500-YEAR FLOOD INUNDATION EXTENT
	500-YEAR FLOOD EXTENT
	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE PIPER CREEK ABOVE HIGHWAY 595 = 27.7 M ³ /S	



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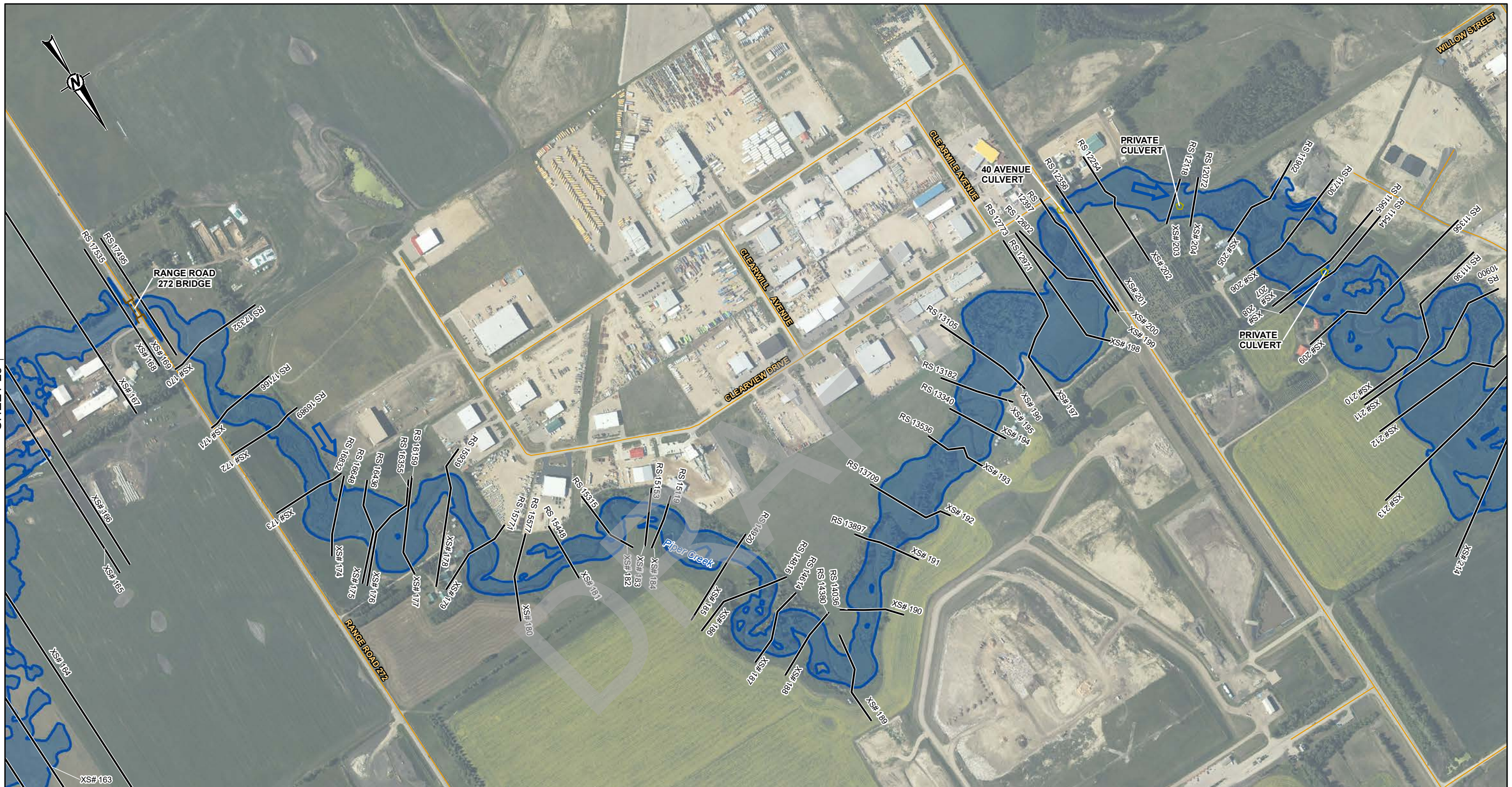
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**500-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

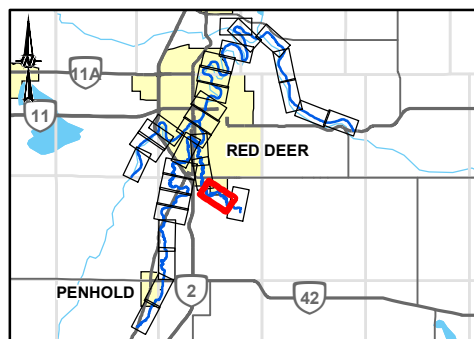
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SHEET 28 ↑

↑ SHEET 30

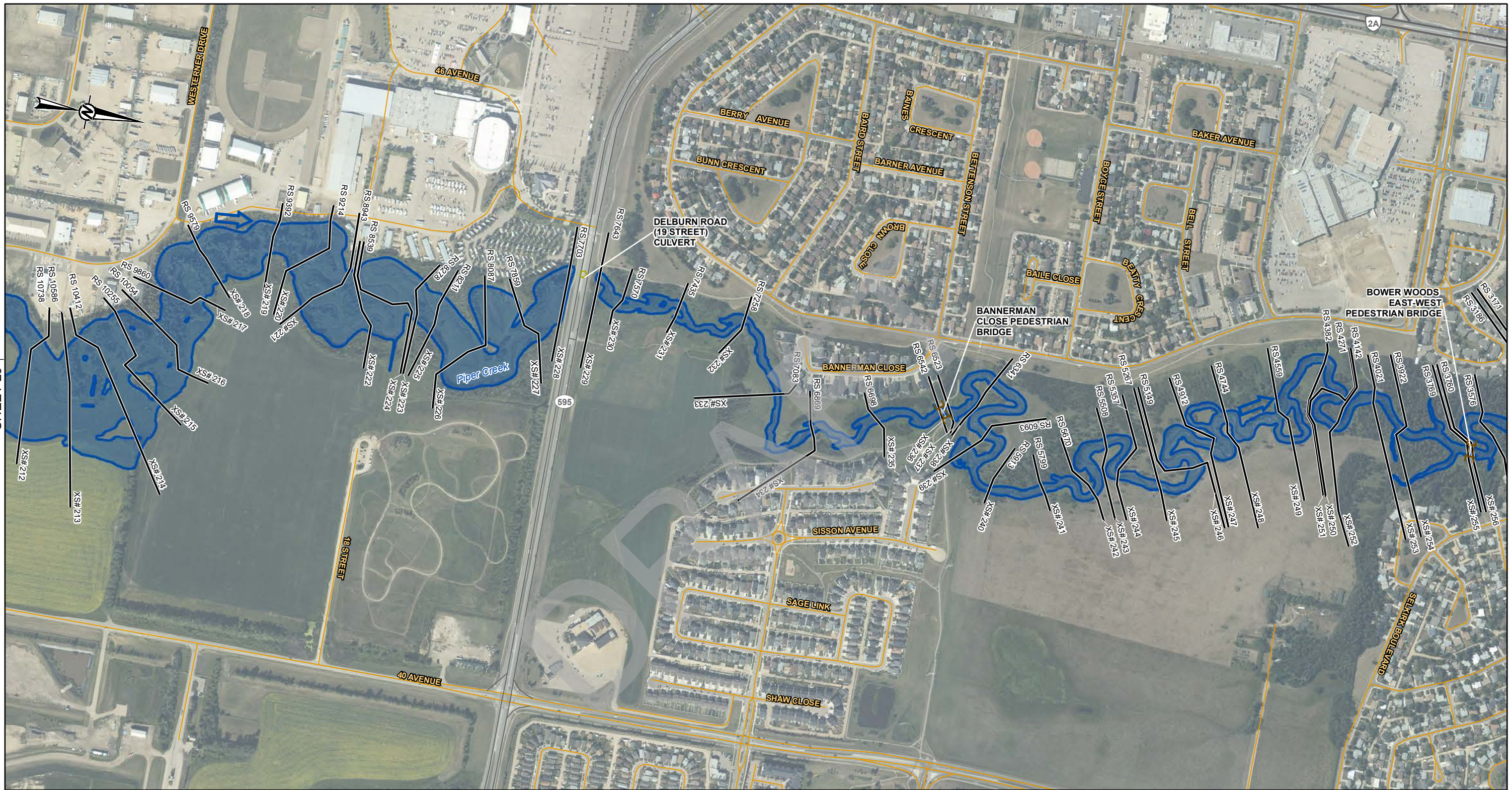
LEGEND		500-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	500-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
STUDY BOUNDARY		DISCHARGE
FLOW DIRECTION		PIPER CREEK ABOVE HIGHWAY 595 = 27.7 M ³ /S
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		
FLOOD CONTROL STRUCTURE		
CULVERT		
BRIDGE		



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CONSULTANT	GOLDER	
DATE	2022-11-23	
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APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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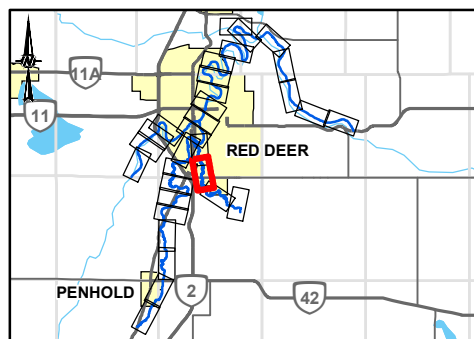


SHEET 62

SHEET 31

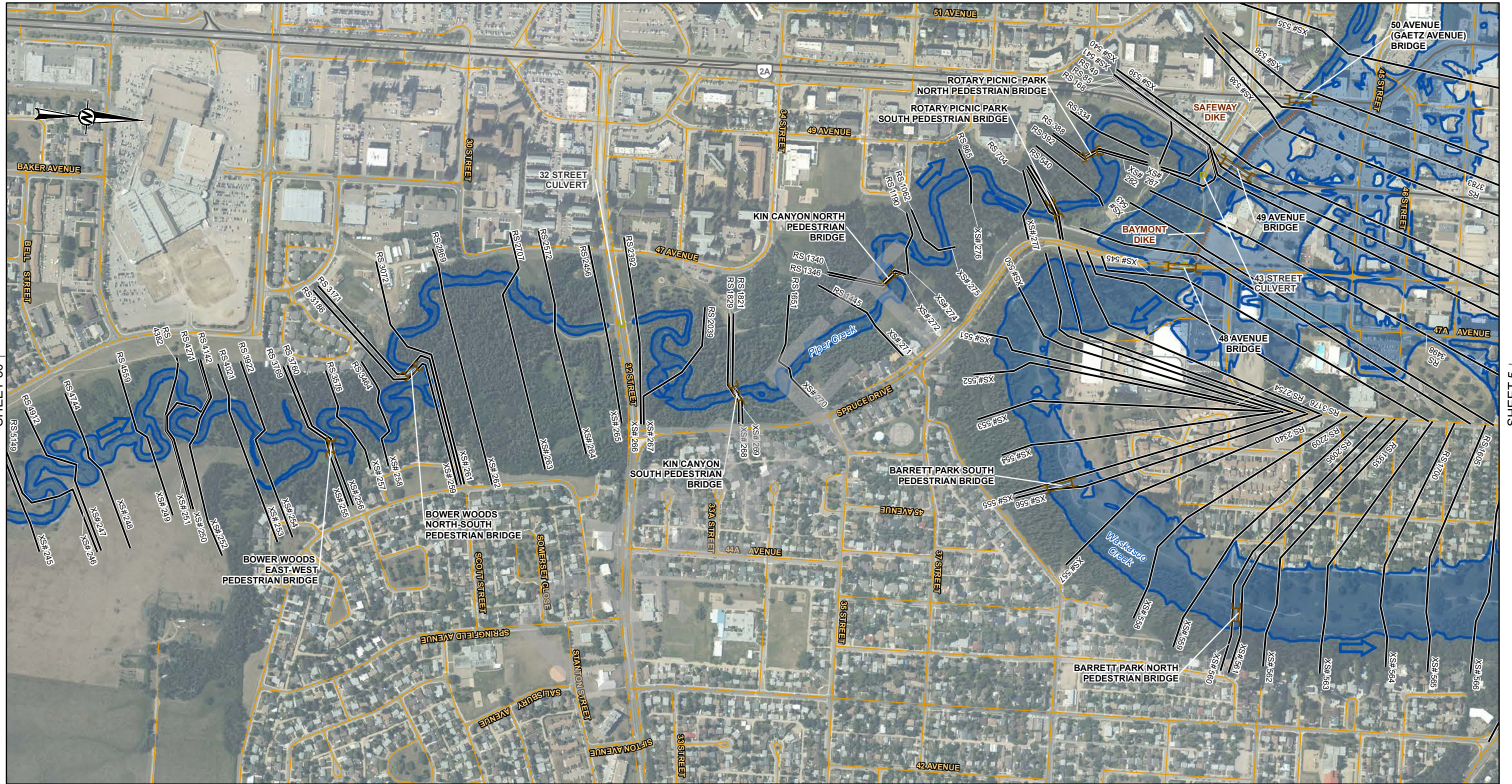
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CROSS SECTION	FLOOD CONTROL STRUCTURE	500-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	500-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 27.7 M ³ /S
PRIMARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 30.7 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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CONSULTANT	GOLDER	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31



SHEET 30 ↑

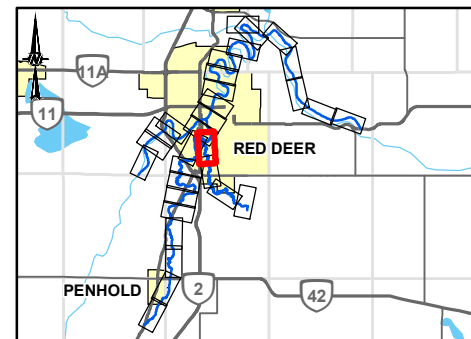
SHEET 5 ↓

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- BRIDGE
- 500-YEAR FLOOD INUNDATION EXTENT
- 500-YEAR FLOOD EXTENT
- 500-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE

PIPER CREEK ABOVE WASKASOO CREEK = 30.7 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 60.2 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 88.7 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
500-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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SHEETS 1-31

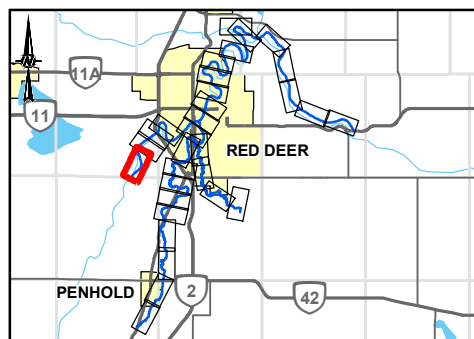
750-Year Flood Inundation Extent

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SHEET 2 ↓

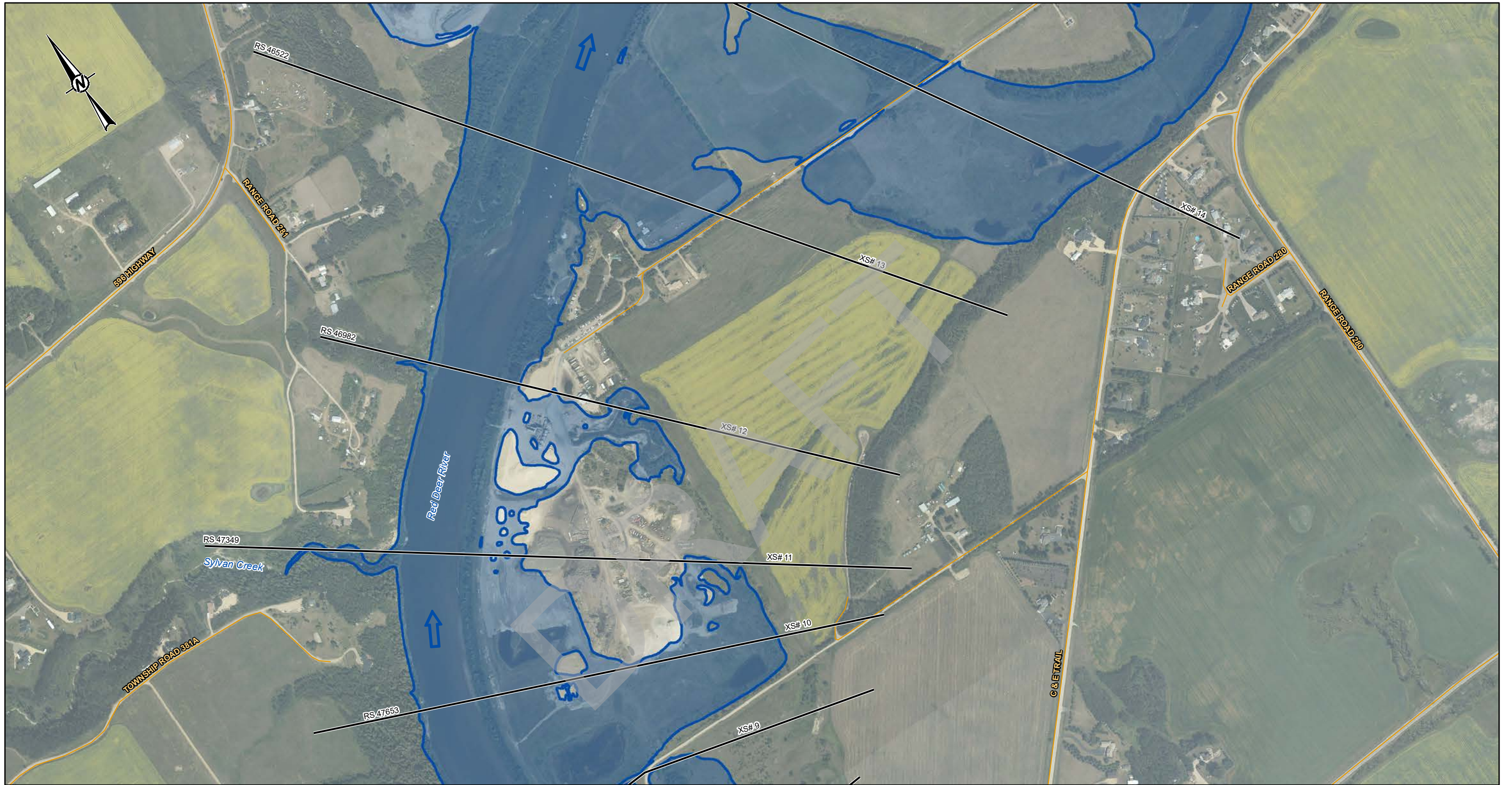
LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	RED DEER RIVER ABOVE WASKASOO CREEK = 3500 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 1 OF 31

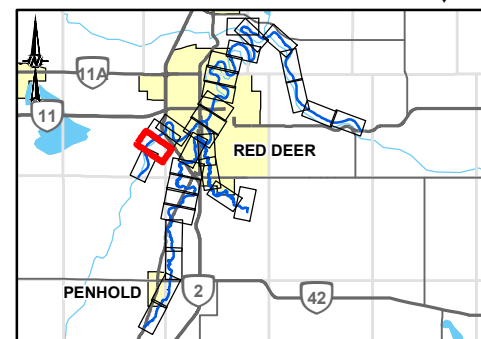
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER ABOVE WASKASOO CREEK = 3500 M³/S



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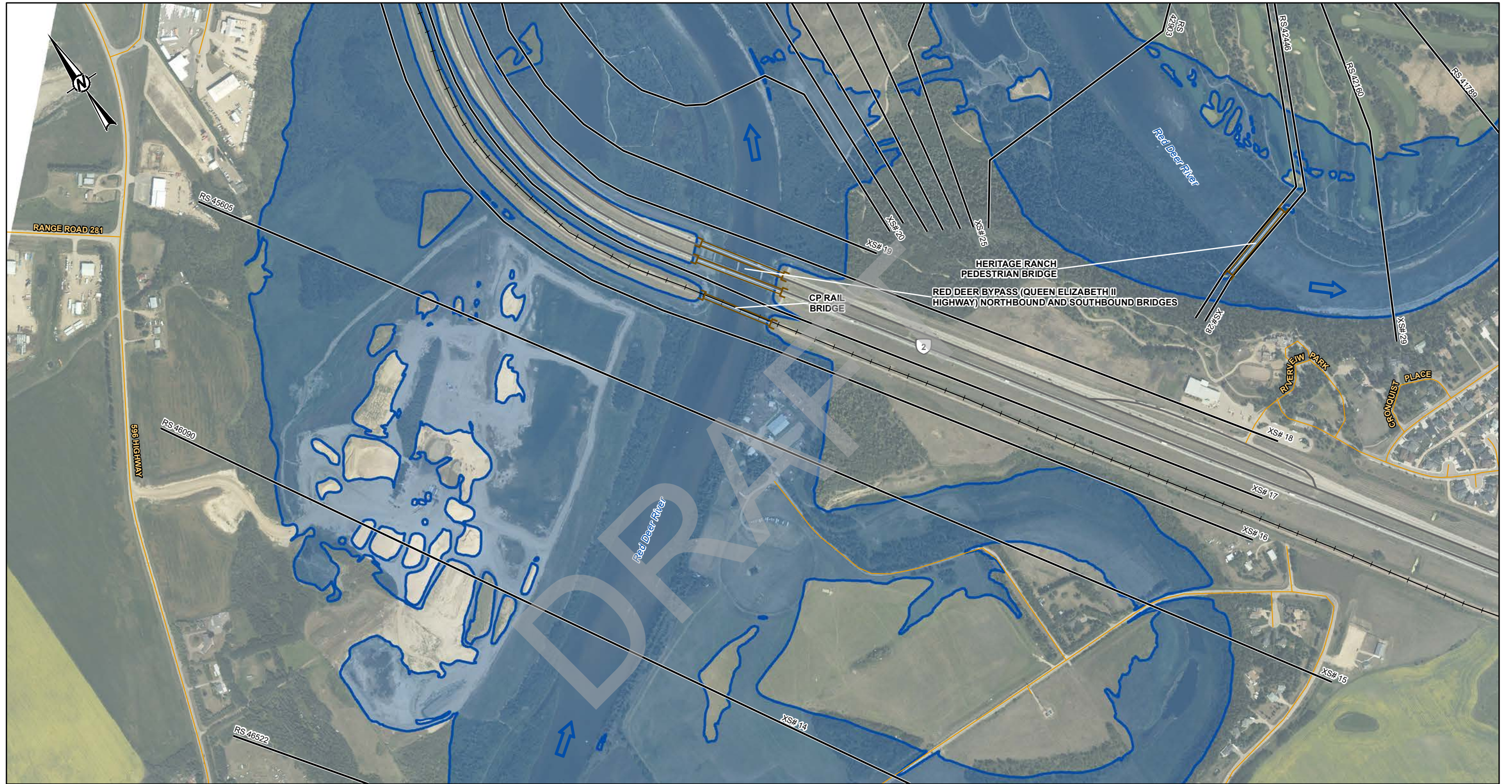
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

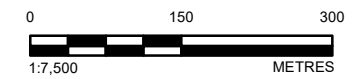
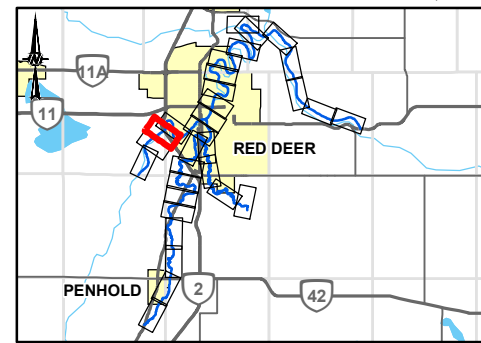
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	750-YEAR FLOOD INUNDATION EXTENT
■	750-YEAR FLOOD EXTENT
■	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER ABOVE WASKASOO CREEK = 3500 M ³ /S	

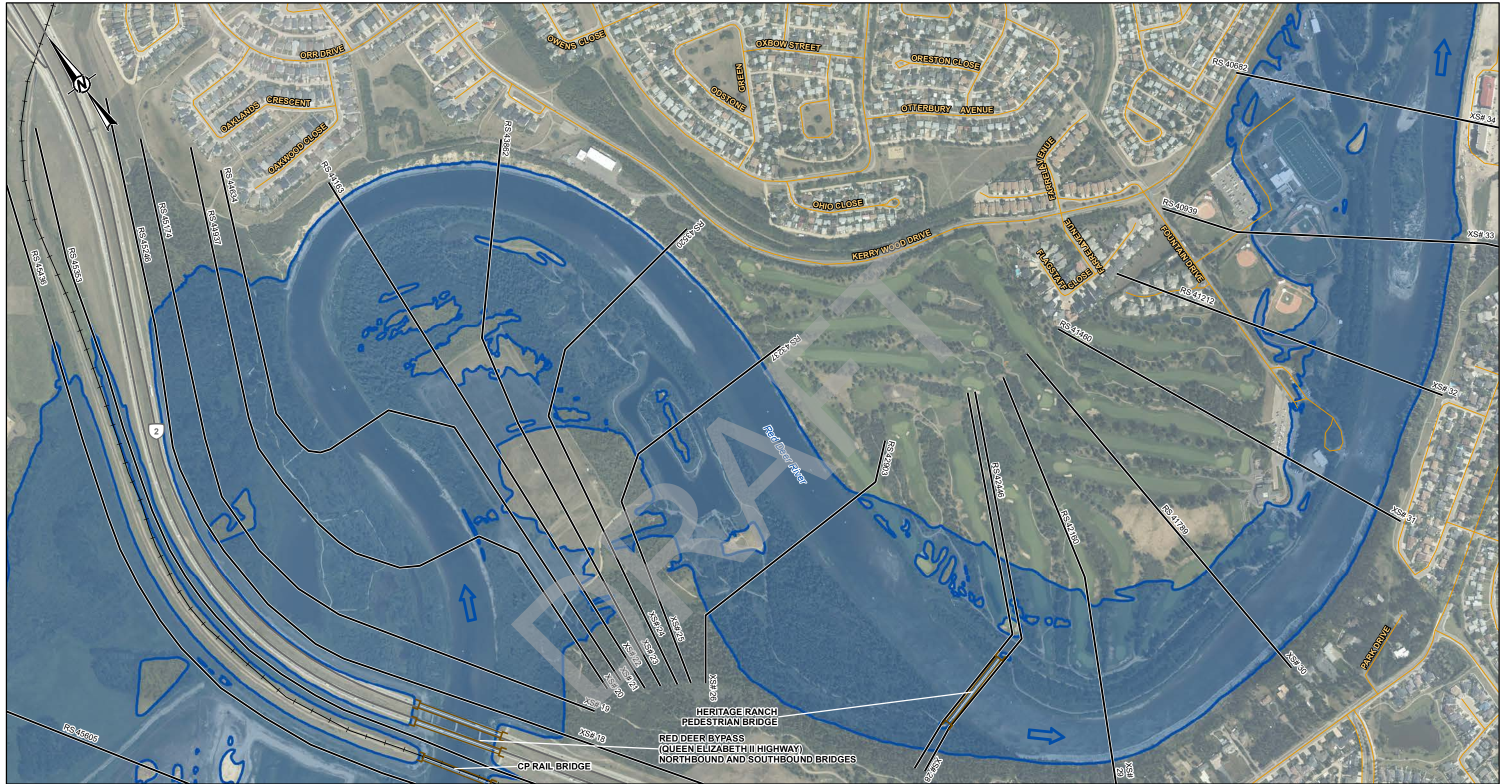


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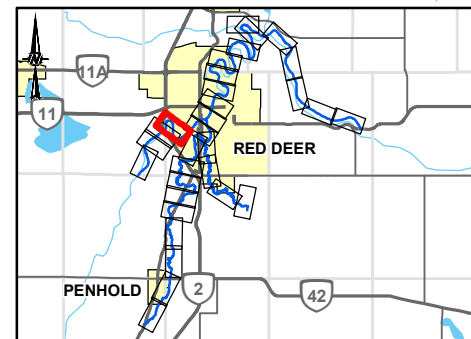
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 3 OF 31

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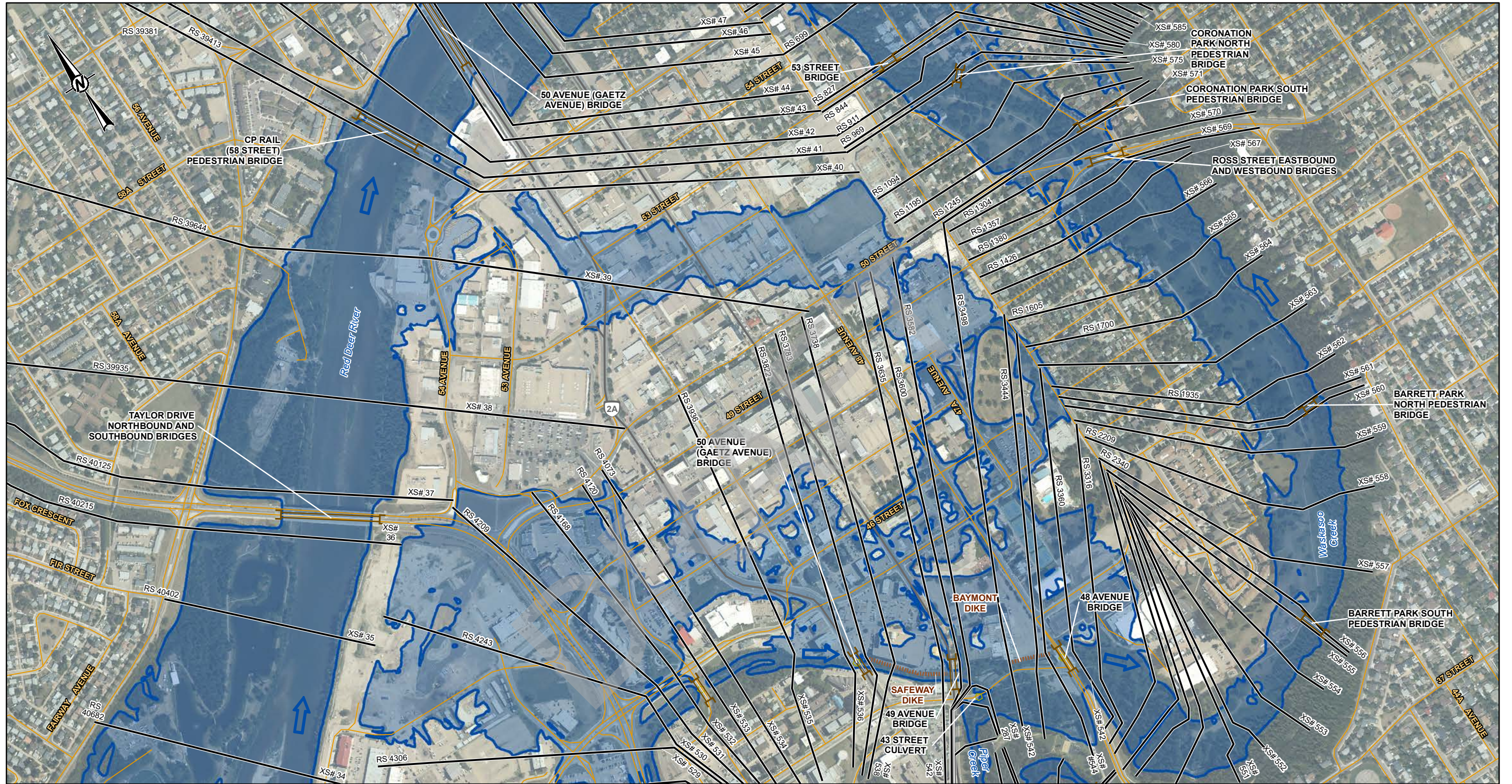
LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	750-YEAR FLOOD INUNDATION EXTENT
	750-YEAR FLOOD EXTENT
	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	STUDY BOUNDARY
	RAILWAY
	CULVERT
	BRIDGE
	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	750-YEAR FLOOD EXTENT
	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE RED DEER RIVER ABOVE WASKASOO CREEK = 3500 M ³ /S	



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APPROVED	WP	

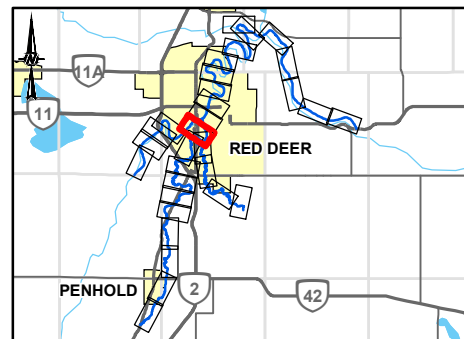
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PROJECT RED DEER RIVER HAZARD STUDY			
TITLE 750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31

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LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- BRIDGE
- 750-YEAR FLOOD INUNDATION EXTENT**
- 750-YEAR FLOOD EXTENT
- 750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE**
- RED DEER RIVER ABOVE WASKASOO CREEK = 3500 M³/S
- WASKASOO CREEK ABOVE PIPER CREEK = 67 M³/S
- WASKASOO CREEK BELOW PIPER CREEK = 99 M³/S
- PIPER CREEK ABOVE WASKASOO CREEK = 33.9 M³/S



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AND PARKS



CONSULTANT



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PREPARED	NB
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**750-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

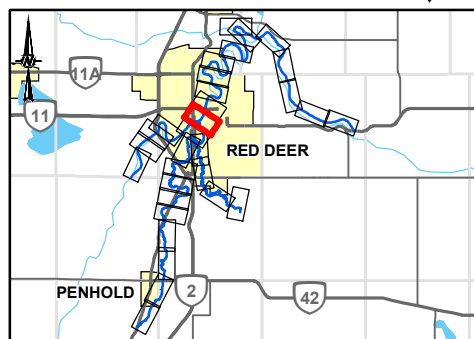
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 3500 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 3590 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 99 M³/S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

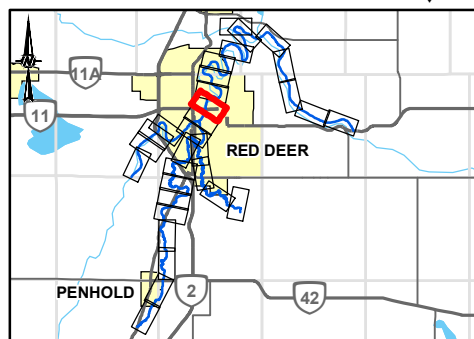
TITLE
 750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31



LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- ◻ HYDRAULIC STRUCTURES
- ◻ CULVERT
- ▬ BRIDGE
- 750-YEAR FLOOD INUNDATION EXTENT
- 750-YEAR FLOOD EXTENT
- 750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE
- RED DEER RIVER BELOW WASKASOO CREEK = 3590 M³/S



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CONSULTANT
GOLDER

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PREPARED	NB
REVIEWED	GT
APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

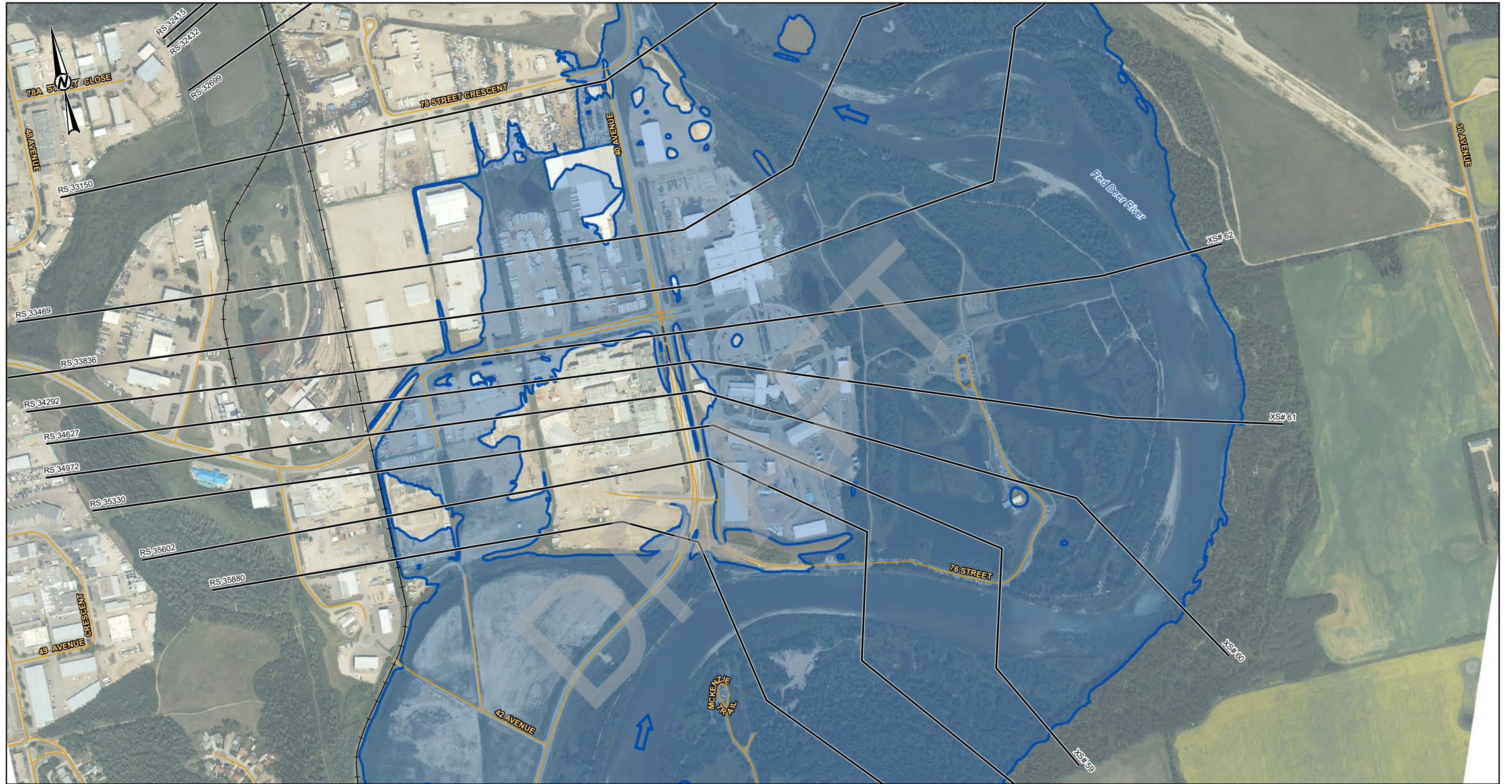
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

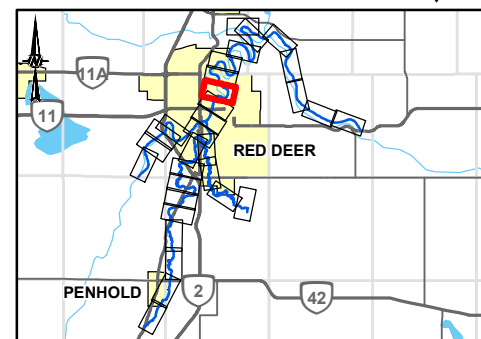
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	FLOOD CONTROL STRUCTURE
	STUDY BOUNDARY	CULVERT
	FLOW DIRECTION	BRIDGE
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
		DISCHARGE
		RED DEER RIVER BELOW WASKASOO CREEK = 3590 M ³ /S



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GOLDER

Alberta Government

YYYY-MM-DD	2022-11-23
DESIGNED	PT
PREPARED	NB
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APPROVED	WP

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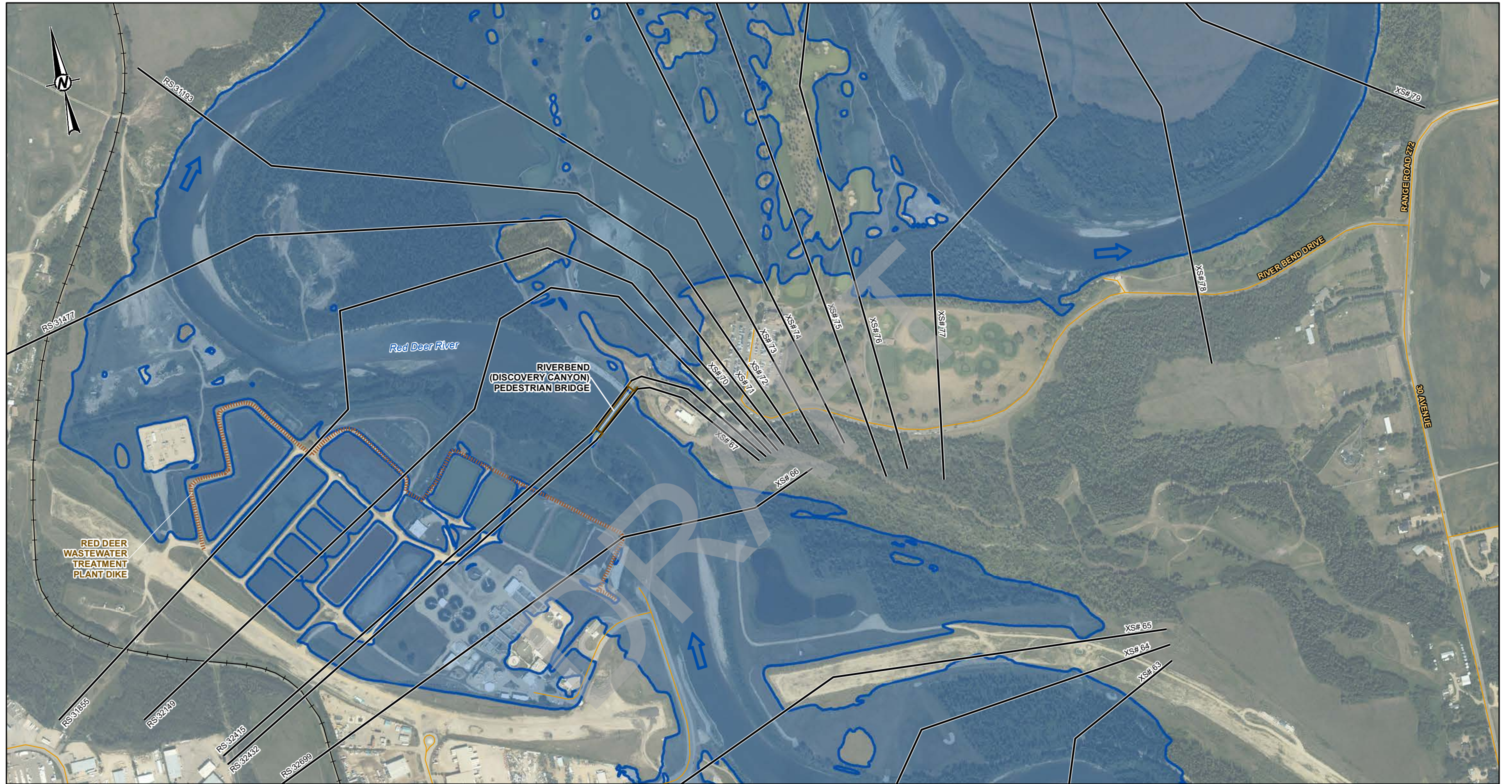
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31

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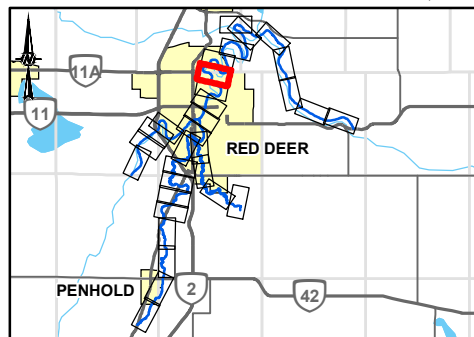
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LEGEND

—	CROSS SECTION	▬▬▬	FLOOD CONTROL STRUCTURE		750-YEAR FLOOD INUNDATION EXTENT	
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES			750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)					750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY					
	FLOW DIRECTION					
	LOCAL ROAD					
	PRIMARY HIGHWAY					
	SECONDARY HIGHWAY					
	RAILWAY					

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 3590 M³/S



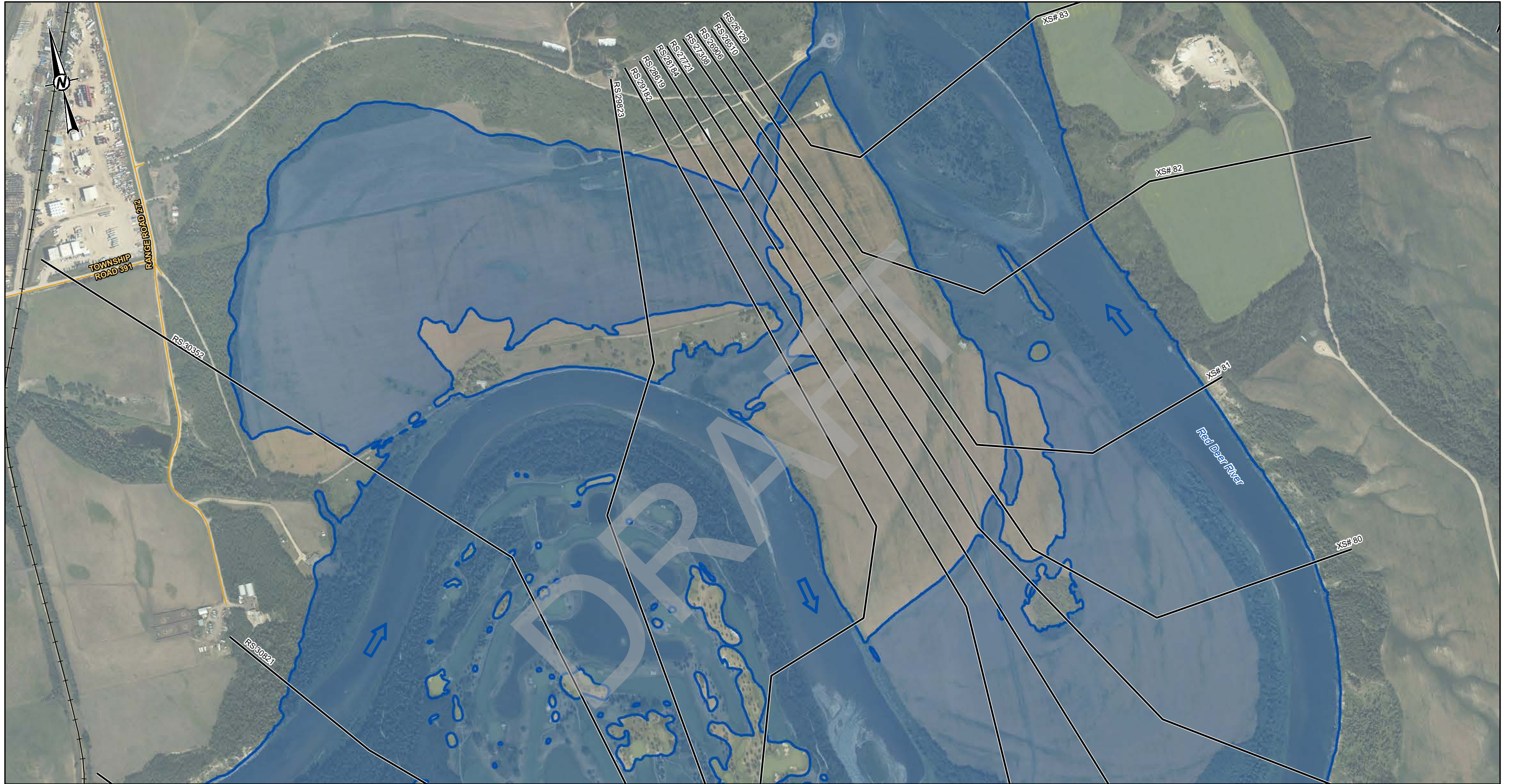
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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
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PREPARED	NB	
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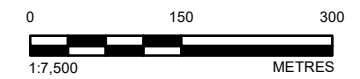
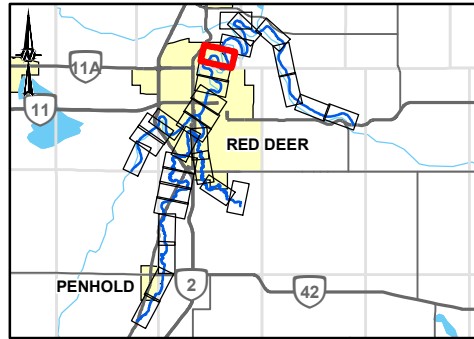
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31



LEGEND		750-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	750-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	DISCHARGE
■	STUDY BOUNDARY	—	RED DEER RIVER BELOW WASKASOO CREEK = 3590 M ³ /S
➔	FLOW DIRECTION	—	
—	LOCAL ROAD	—	
—	PRIMARY HIGHWAY	—	
—	SECONDARY HIGHWAY	—	
+	RAILWAY	—	
—	FLOOD CONTROL STRUCTURE	—	
—	HYDRAULIC STRUCTURES	—	
—	CULVERT	—	
—	BRIDGE	—	



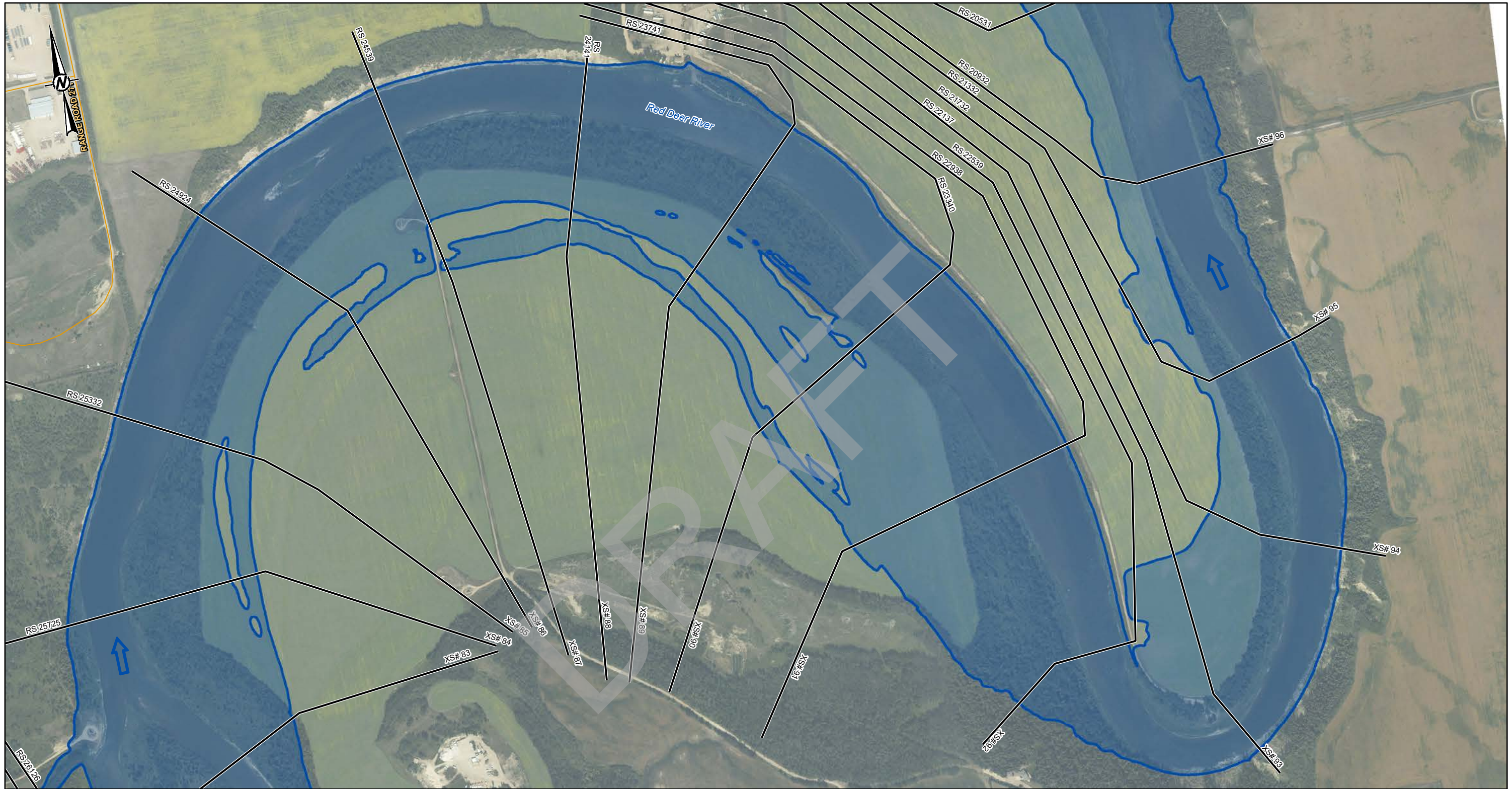
CLIENT	ALBERTA ENVIRONMENT AND PARKS	ALBERTA Government
CONSULTANT	GOLDER	
DATE	2022-11-23	
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 10 OF 31

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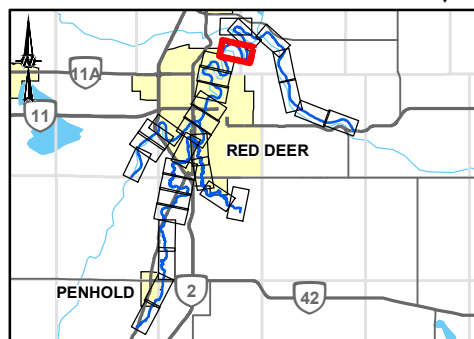
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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 3590 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

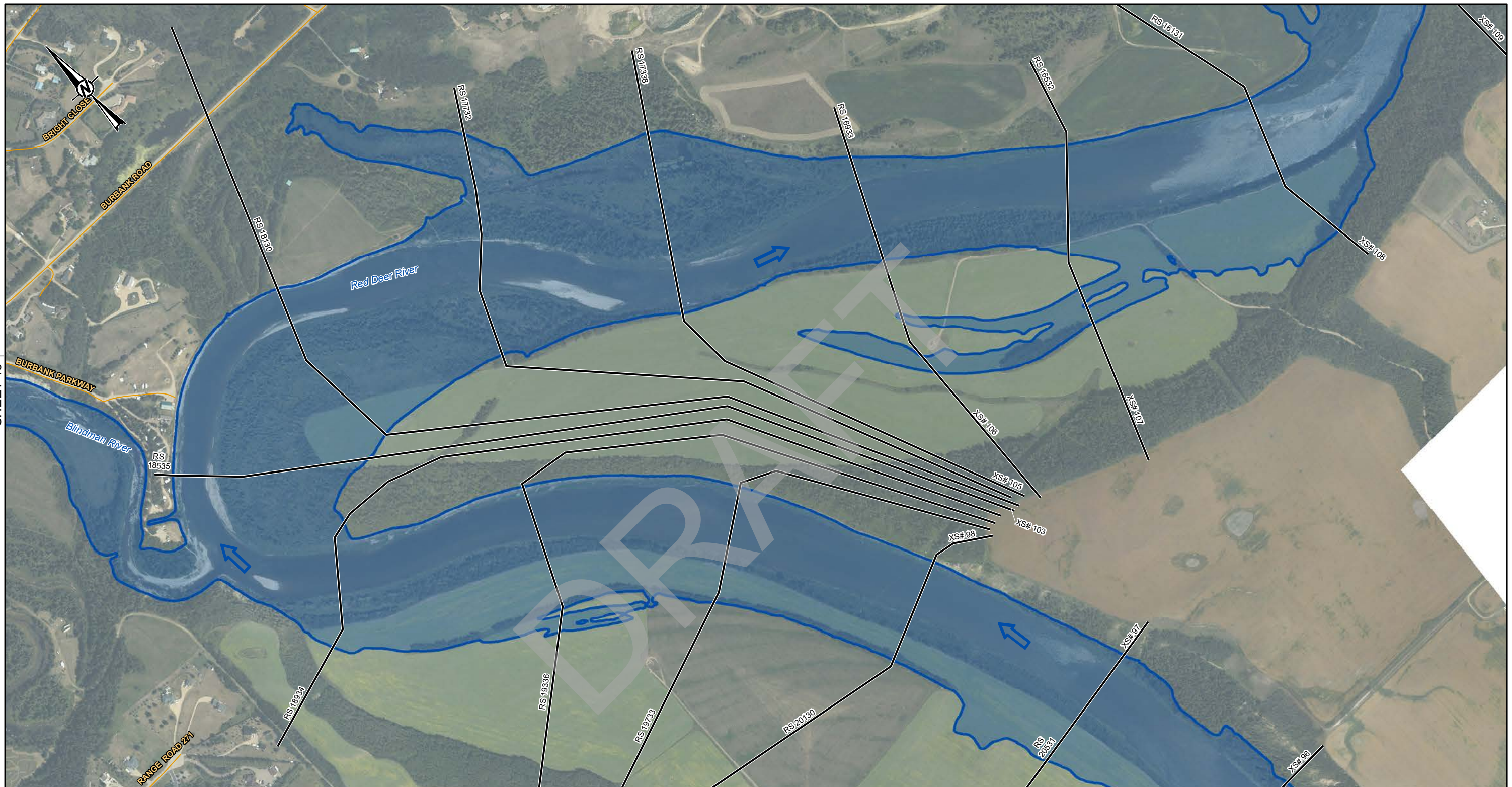
TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 11 OF 31

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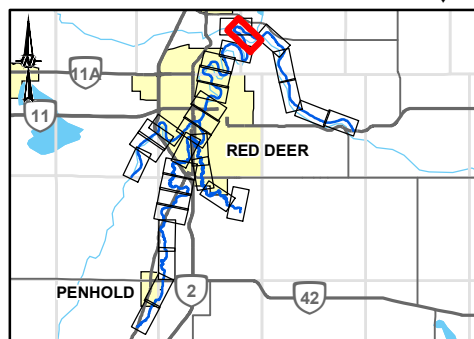
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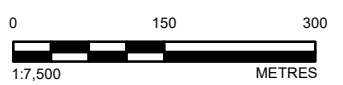
SHEET 13 ↑

↓ SHEET 14

LEGEND		
— CROSS SECTION	FLOOD CONTROL STRUCTURE	750-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	750-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER BELOW WASKASOO CREEK = 3590 M ³ /S
PRIMARY HIGHWAY		RED DEER RIVER BELOW BLINDMAN RIVER = 4130 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



↓ SHEET 11



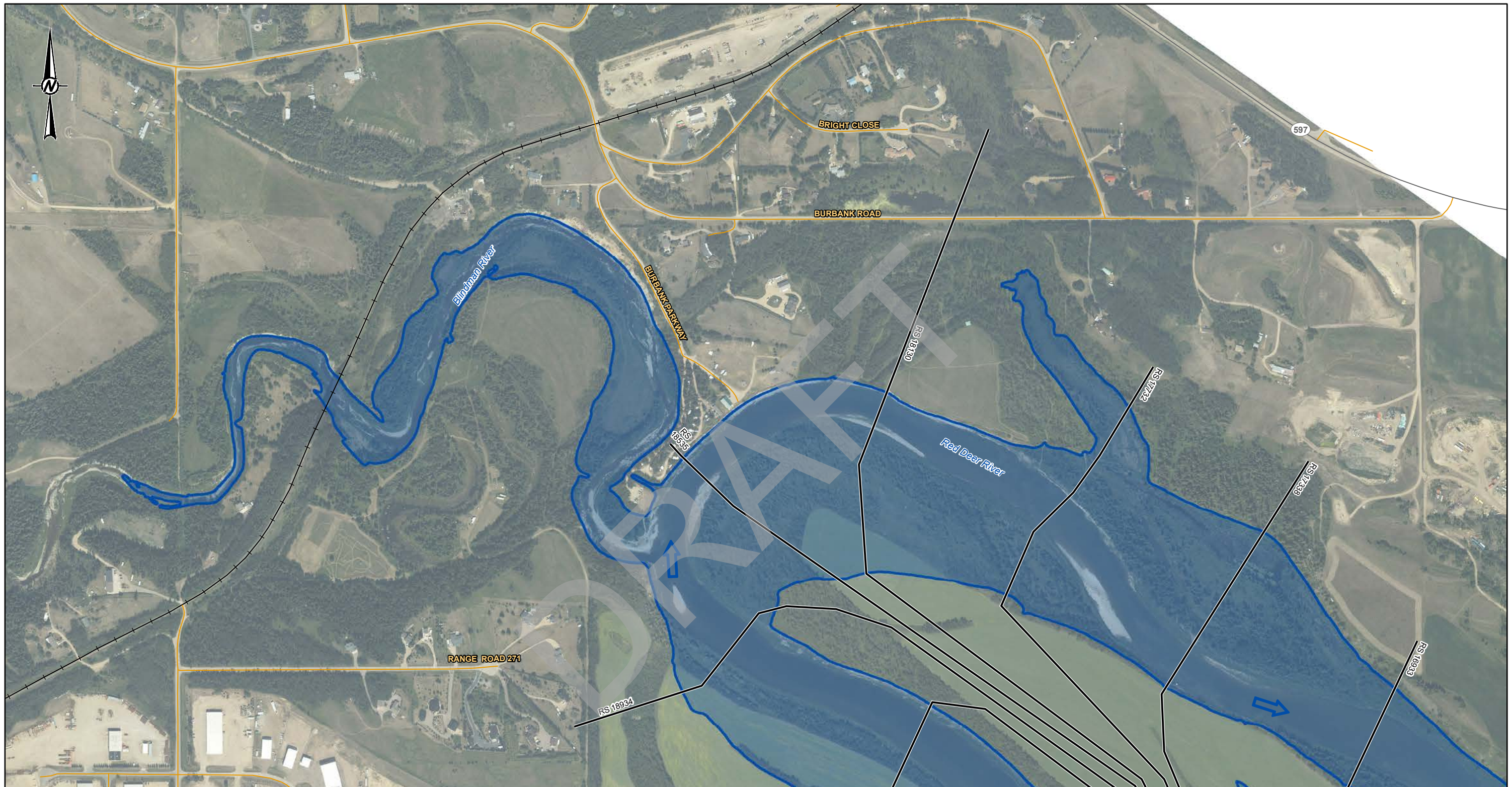
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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 12 OF 31

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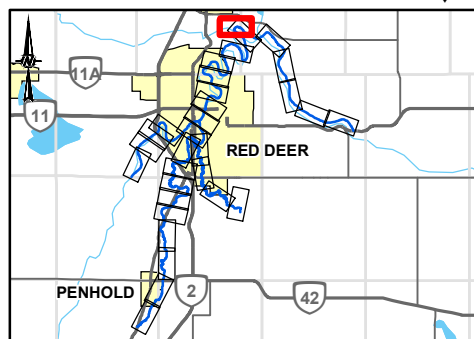
SHEET 14 ↓

LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE	750-YEAR FLOOD INUNDATION EXTENT	750-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	—	HYDRAULIC STRUCTURES	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	○	CULVERT		
—	STUDY BOUNDARY	—	BRIDGE		
➔	FLOW DIRECTION				
—	LOCAL ROAD				
—	PRIMARY HIGHWAY				
—	SECONDARY HIGHWAY				
+	RAILWAY				

DISCHARGE
 RED DEER RIVER BELOW WASKASOO CREEK = 3590 M³/S
 RED DEER RIVER BELOW BLINDMAN RIVER = 4130 M³/S

SHEET 12 ↓



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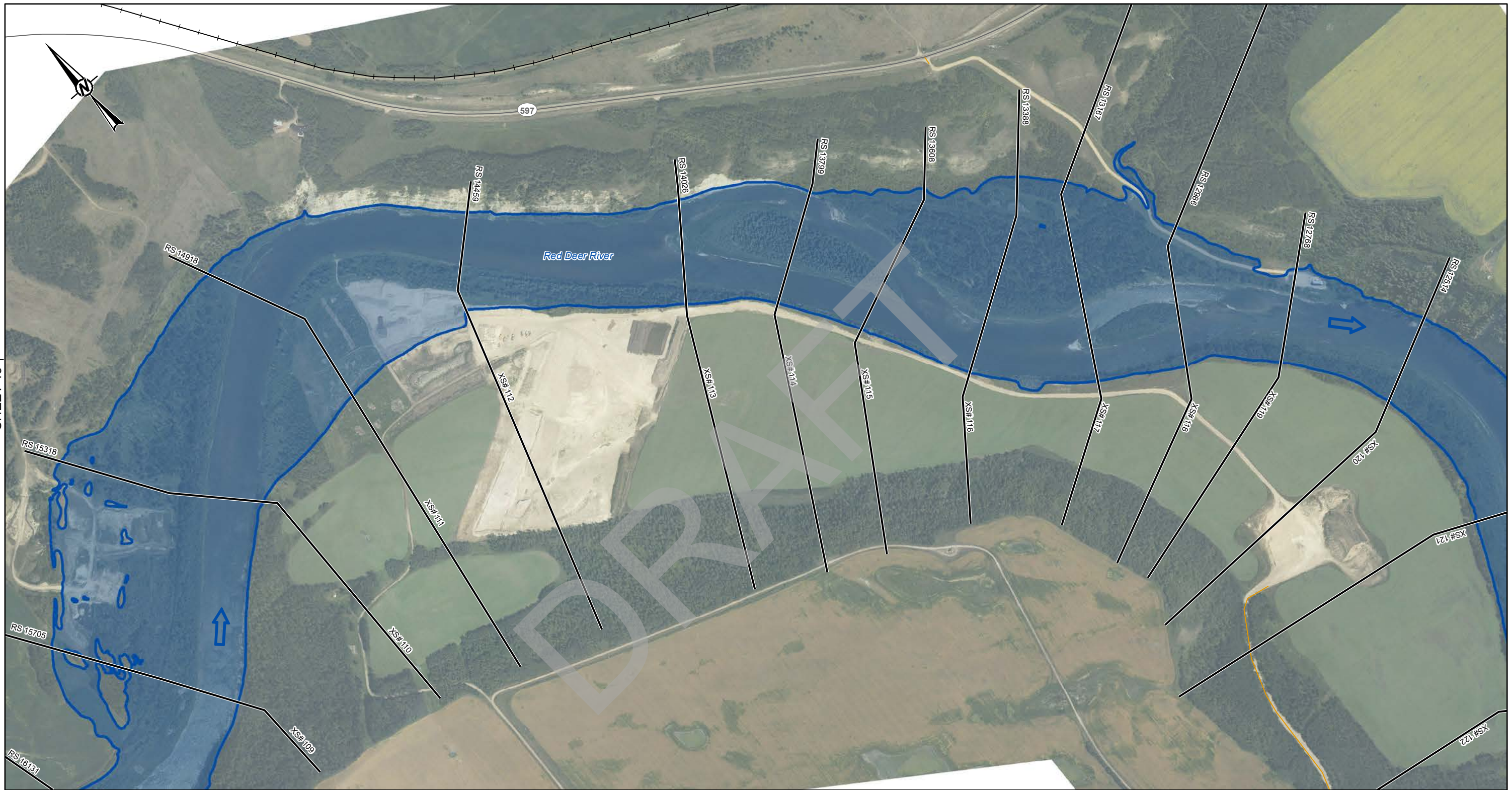
PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 13 OF 31

25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

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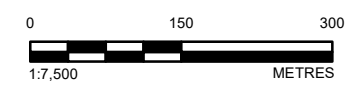
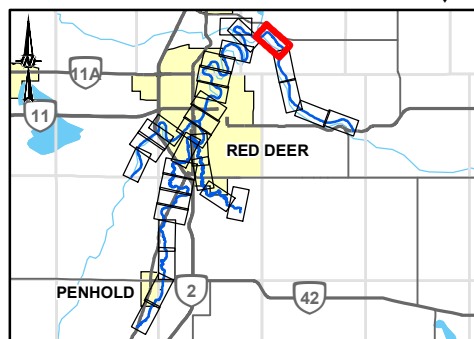


SHEET 13 ↑

↓ SHEET 15

↓ SHEET 12

LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE RED DEER RIVER BELOW BLINDMAN RIVER = 4130 M ³ /S
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
HYDRAULIC STRUCTURES		
	CULVERT	
	BRIDGE	



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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 14 OF 31

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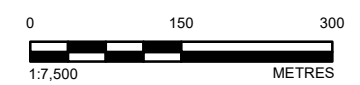
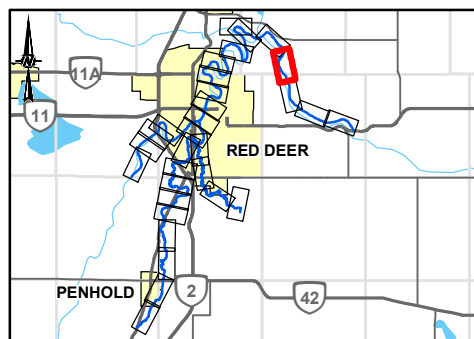
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 4130 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	HYDRAULIC STRUCTURES	
—	CULVERT	
—	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 15 OF 31

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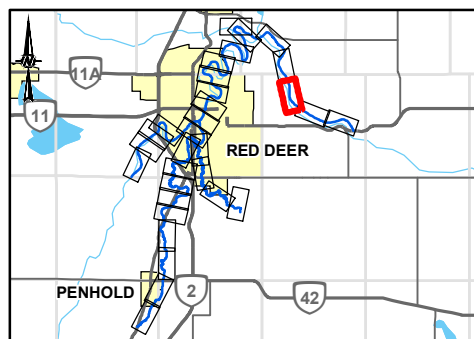
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	HYDRAULIC STRUCTURES	
—	CULVERT	
—	BRIDGE	
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 4130 M ³ /S



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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
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APPROVED	WP	

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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 16 OF 31

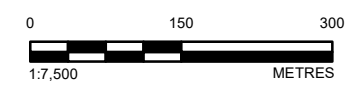
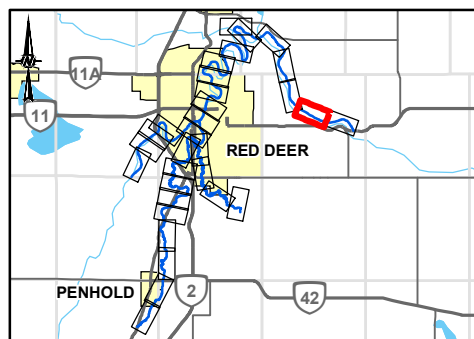
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	DISCHARGE
	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 4130 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

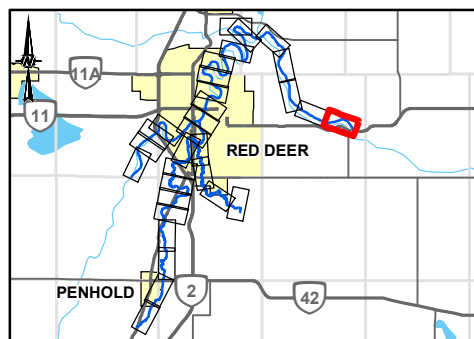
PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 17 OF 31	

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SHEET 17 ↑



LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 4130 M ³ /S



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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

REFERENCE(S)			
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

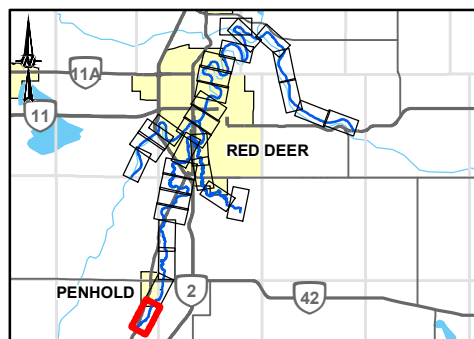


SHEET 20

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	750-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	750-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE HIGHWAY 42 = 57.5 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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ALBERTA ENVIRONMENT AND PARKS

CONSULTANT
GOLDER

Alberta Government

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PREPARED	NB
REVIEWED	GT
APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

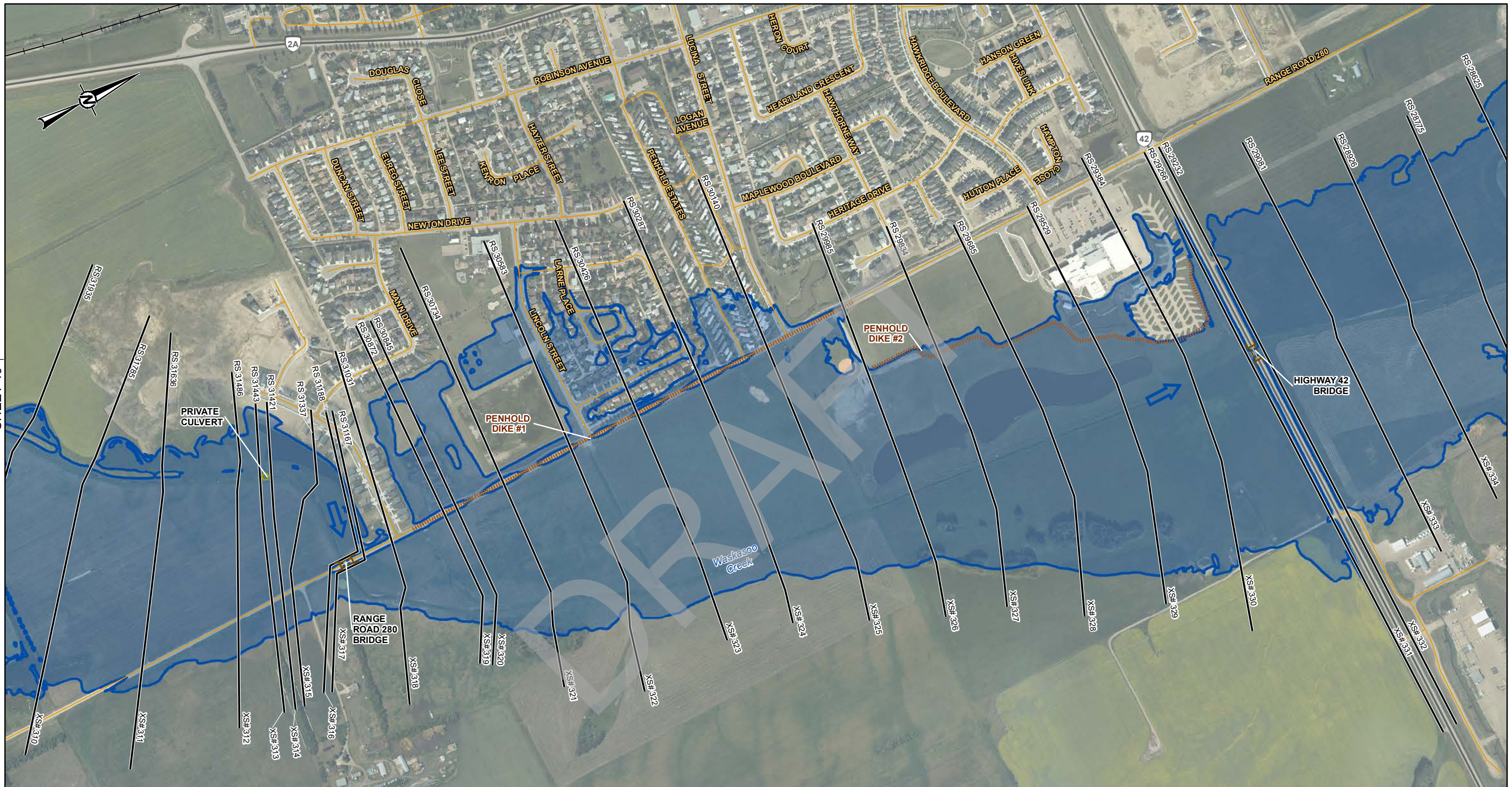
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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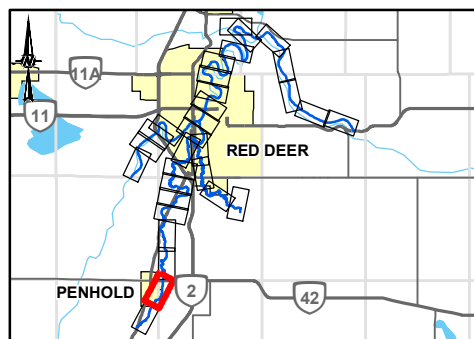
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SHEET 19 ↑

↓ SHEET 21

LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	WASKASOO CREEK ABOVE HIGHWAY 42 = 57.5 M ³ /S
—	PRIMARY HIGHWAY	WASKASOO CREEK ABOVE PIPER CREEK = 67 M ³ /S
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	HYDRAULIC STRUCTURES	
—	CULVERT	
—	BRIDGE	



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CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

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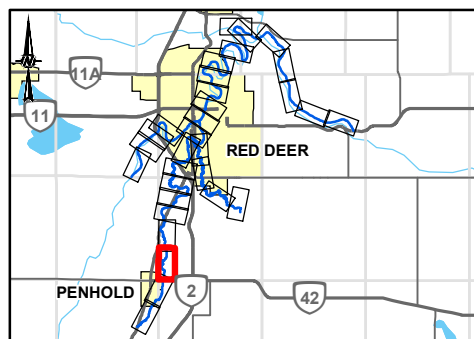
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↑ 18 SHEETS

↑ 22 SHEETS

LEGEND		
—	CROSS SECTION	■ 750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	■ 750-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	■ 750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
➔	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 67 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬▬▬▬	FLOOD CONTROL STRUCTURE	
◻	CULVERT	
▬▬▬▬	BRIDGE	

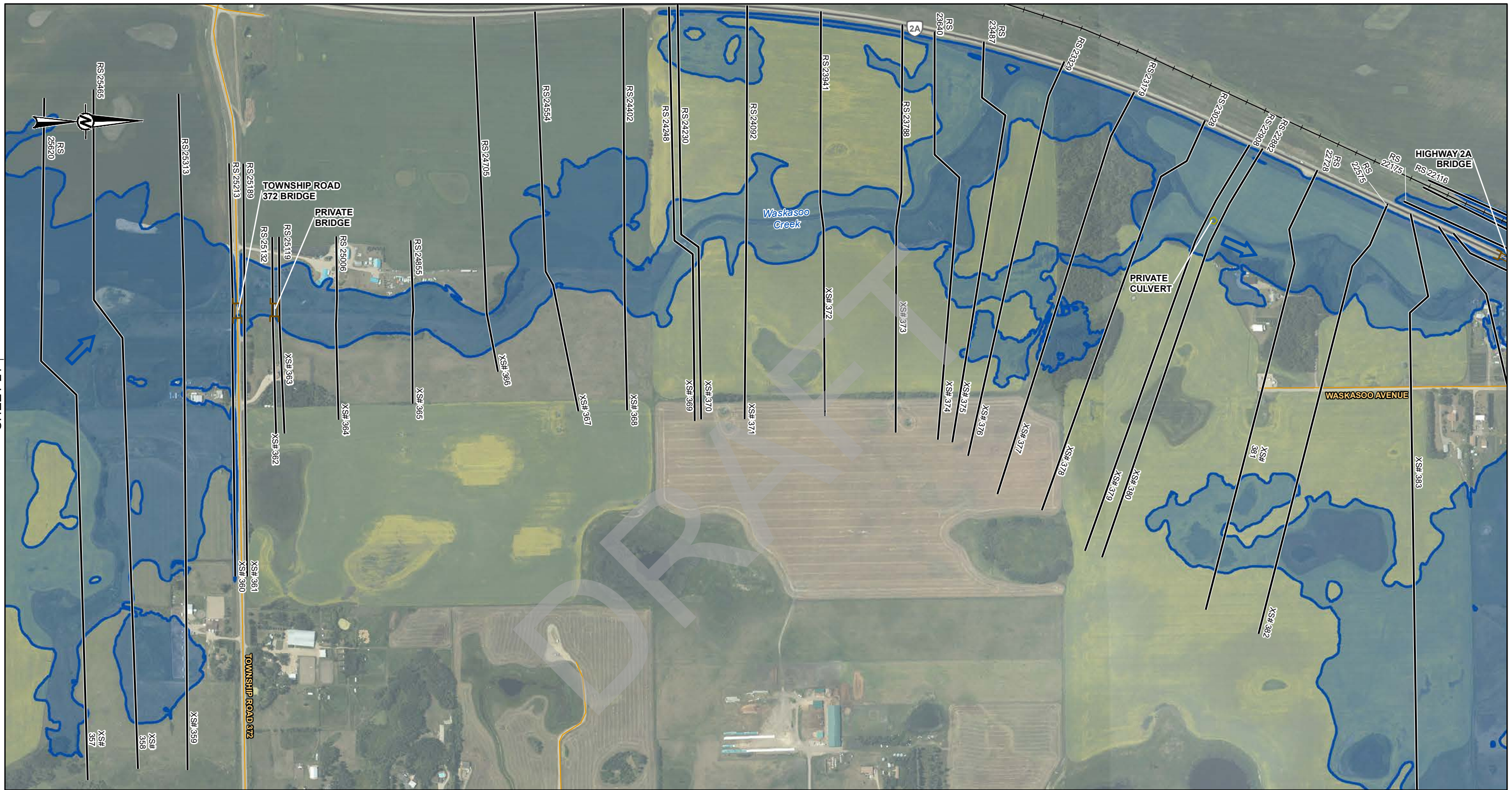


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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

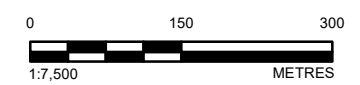
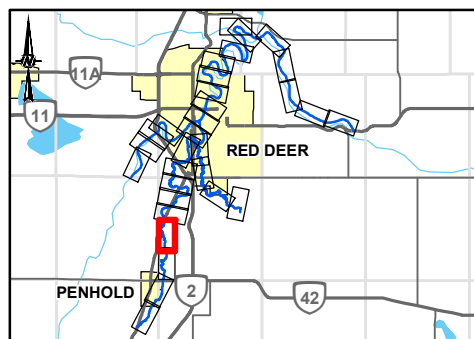
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

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LEGEND		750-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	750-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	WASKASOO CREEK ABOVE PIPER CREEK = 67 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	

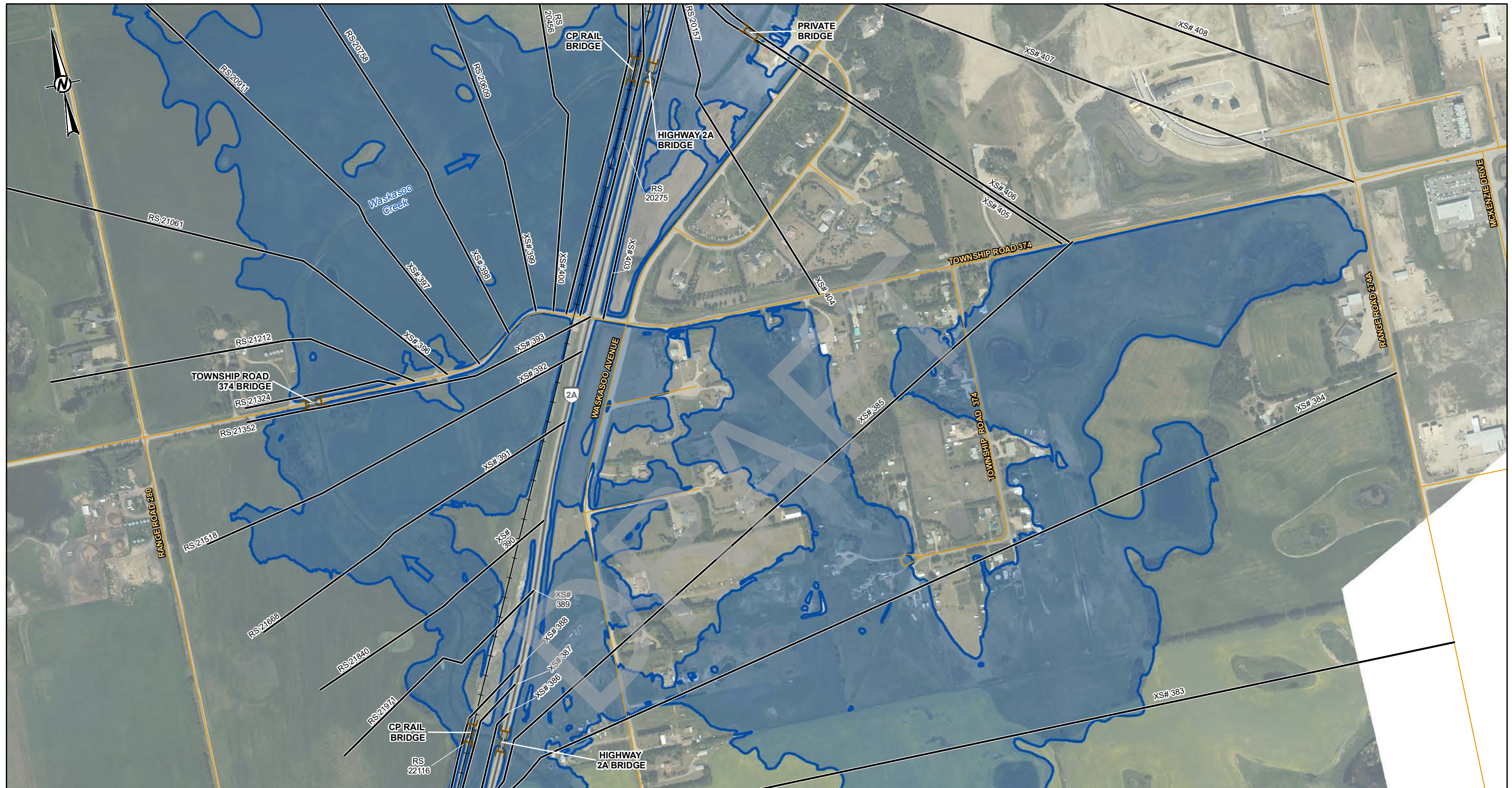


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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

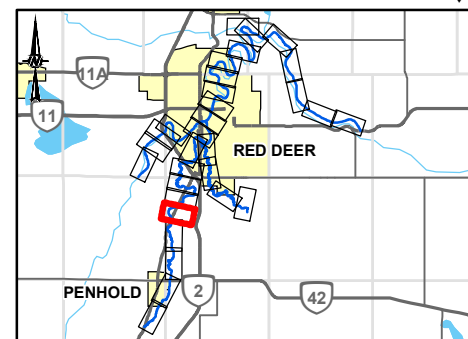
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 22 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND		
— CROSS SECTION	FLOOD CONTROL STRUCTURE	750-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	750-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		WASKASOO CREEK ABOVE PIPER CREEK = 67 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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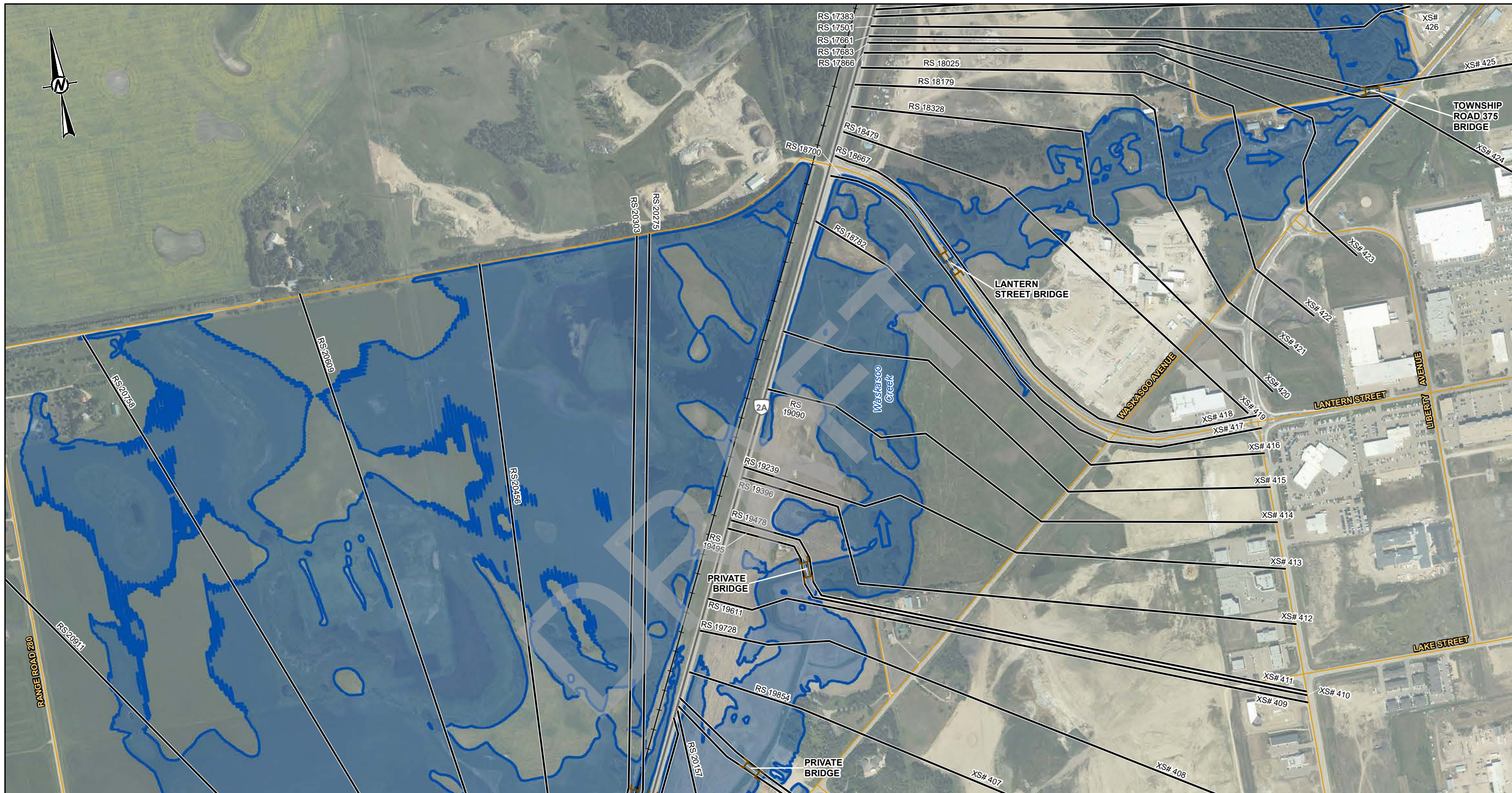
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PROJECT
RED DEER RIVER HAZARD STUDY

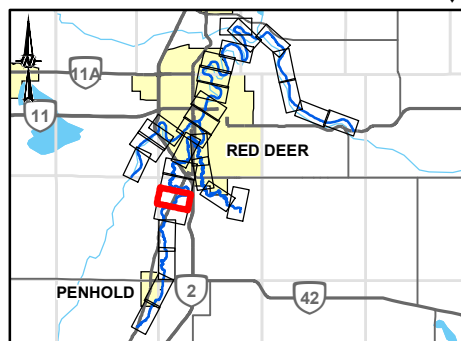
TITLE
**750-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND		
—	CROSS SECTION	750-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	DISCHARGE
	STUDY BOUNDARY	WASKASOO CREEK ABOVE PIPER CREEK = 67 M ³ /S
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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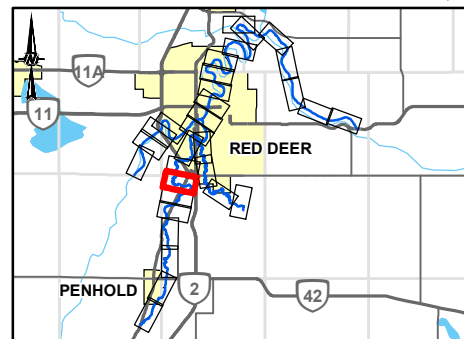
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**750-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 24 OF 31



LEGEND		750-YEAR FLOOD INUNDATION EXTENT	
—	CROSS SECTION	■	750-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	■	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	—	FLOOD CONTROL STRUCTURE
■	STUDY BOUNDARY	○	CULVERT
➔	FLOW DIRECTION	—	BRIDGE
—	LOCAL ROAD		
—	PRIMARY HIGHWAY		
—	SECONDARY HIGHWAY		
+	RAILWAY		
		DISCHARGE	
		WASKASOO CREEK ABOVE PIPER CREEK = 67 M ³ /S	



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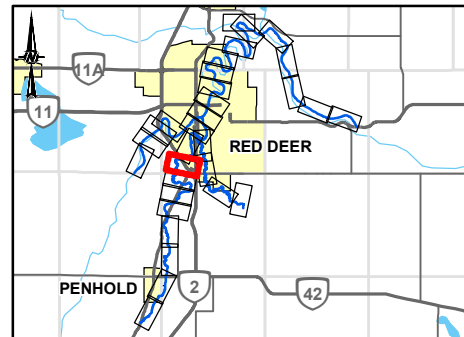
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**750-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31



LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	750-YEAR FLOOD INUNDATION EXTENT
	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE WASKASOO CREEK ABOVE PIPER CREEK = 67 M ³ /S	



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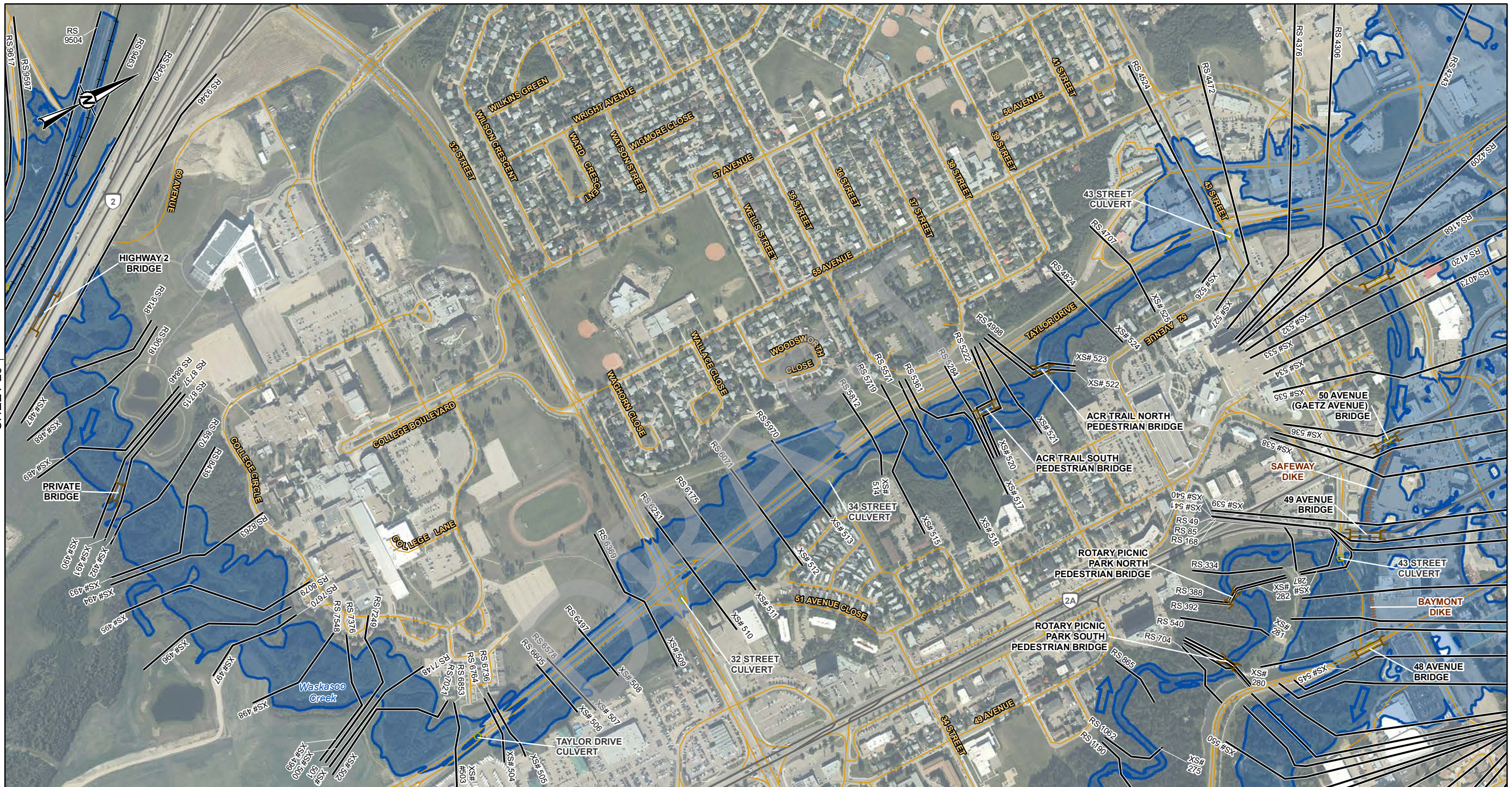
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**750-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 26 OF 31

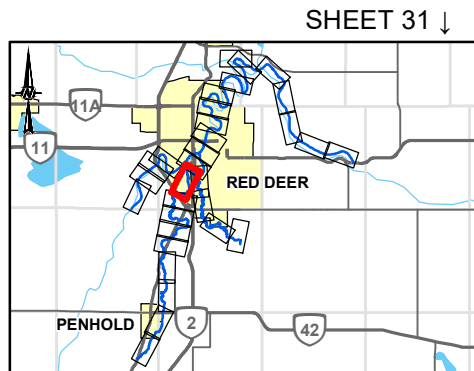


SHEET 26 ↑

↓ SHEET 5

LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- ▬ STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- ▬ BRIDGE
- 750-YEAR FLOOD INUNDATION EXTENT**
- 750-YEAR FLOOD EXTENT
- 750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE**
- WASKASOO CREEK ABOVE PIPER CREEK = 67 M³/S
- WASKASOO CREEK BELOW PIPER CREEK = 99 M³/S
- PIPER CREEK ABOVE WASKASOO CREEK = 33.9 M³/S



SHEET 31 ↓



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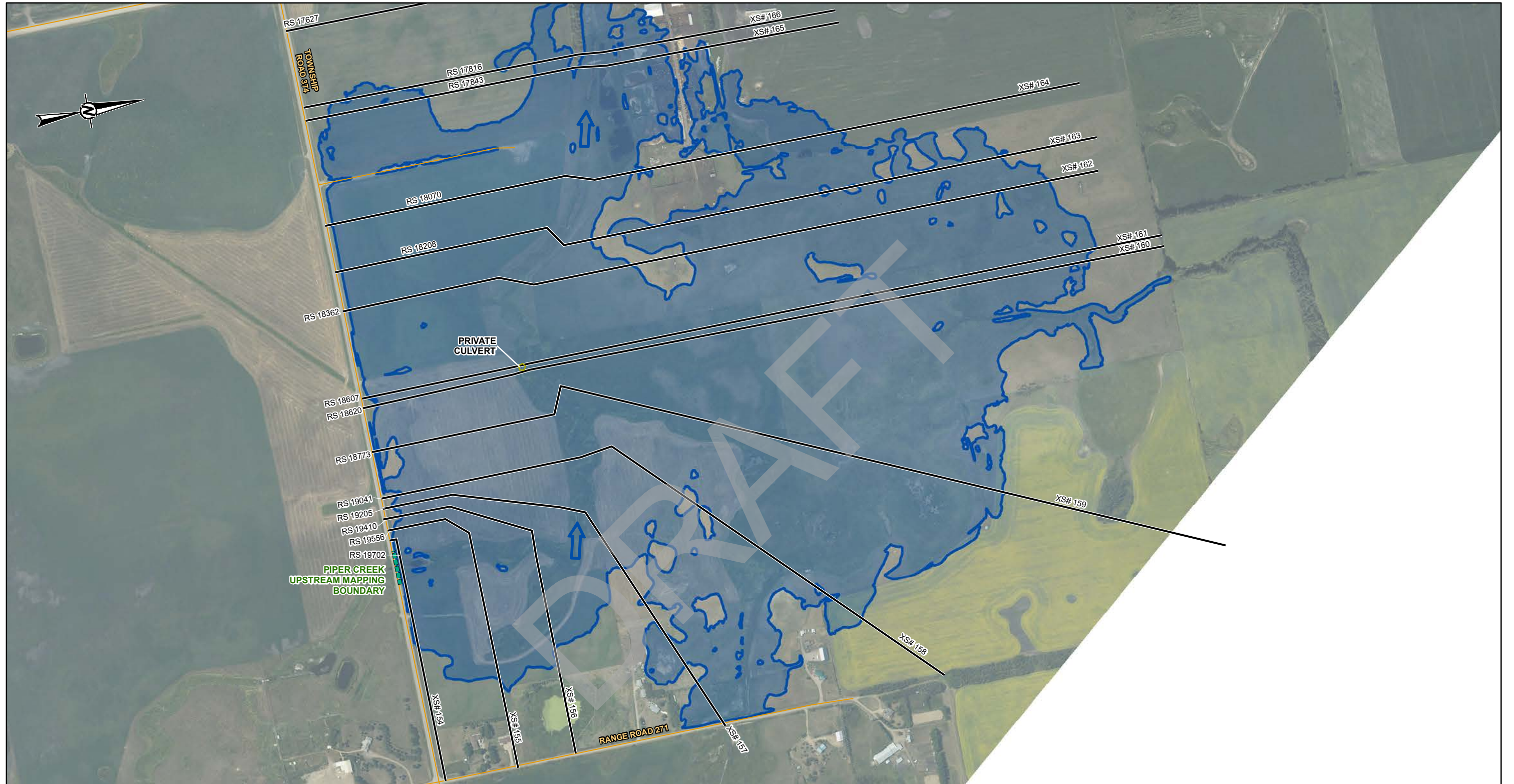
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

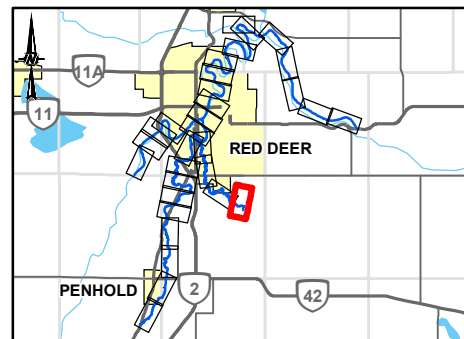
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LEGEND	
	CROSS SECTION
	750-YEAR FLOOD INUNDATION EXTENT
	750-YEAR FLOOD EXTENT
	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	STUDY BOUNDARY
	PIPER CREEK UPSTREAM MAPPING BOUNDARY
	CROSS SECTION NUMBER
	RIVER STATION (M)

DISCHARGE
PIPER CREEK ABOVE HIGHWAY 595 = 30.6 M³/S



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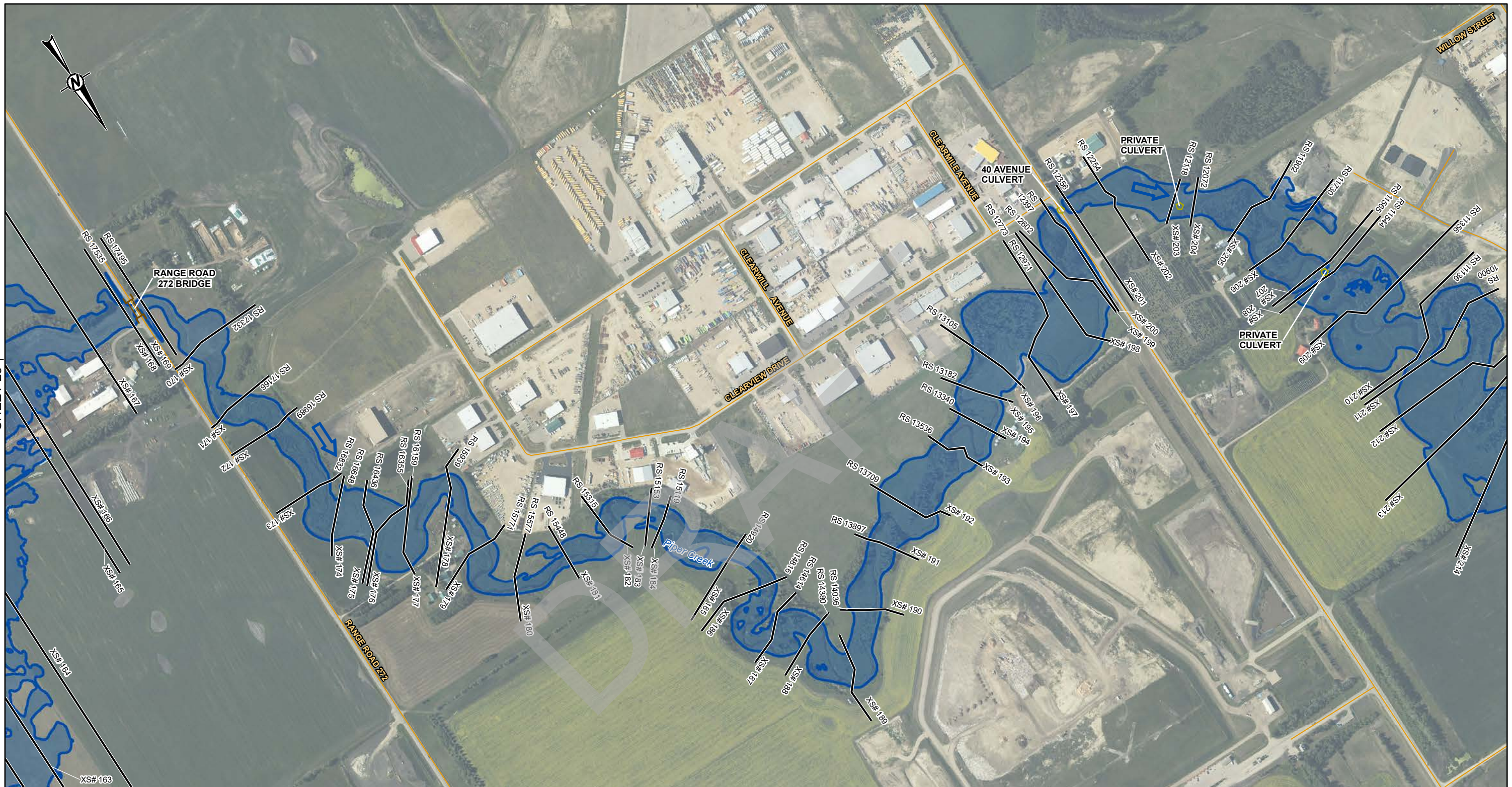
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**750-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31



SHEET 28 ↑

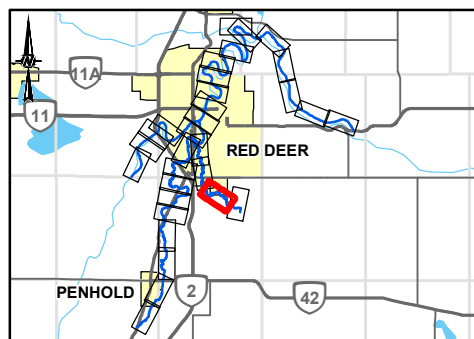
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	750-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	750-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 30.6 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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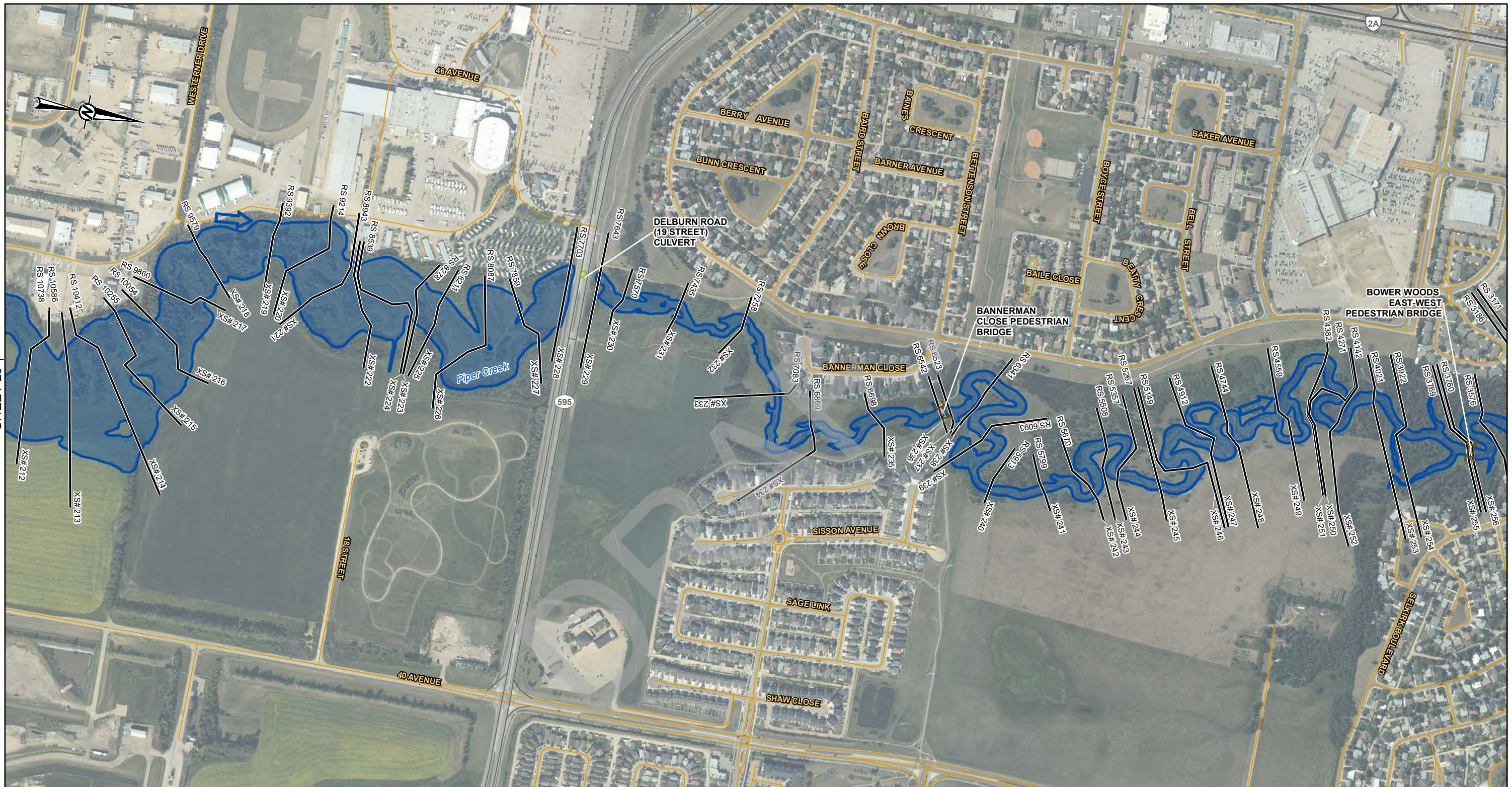
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DESIGNED	PT
PREPARED	NB
REVIEWED	GT
APPROVED	WP

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

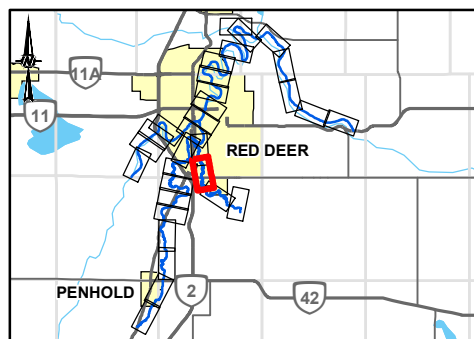


SHEET 30

SHEET 31

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	750-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	750-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 30.6 M ³ /S
PRIMARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 33.9 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

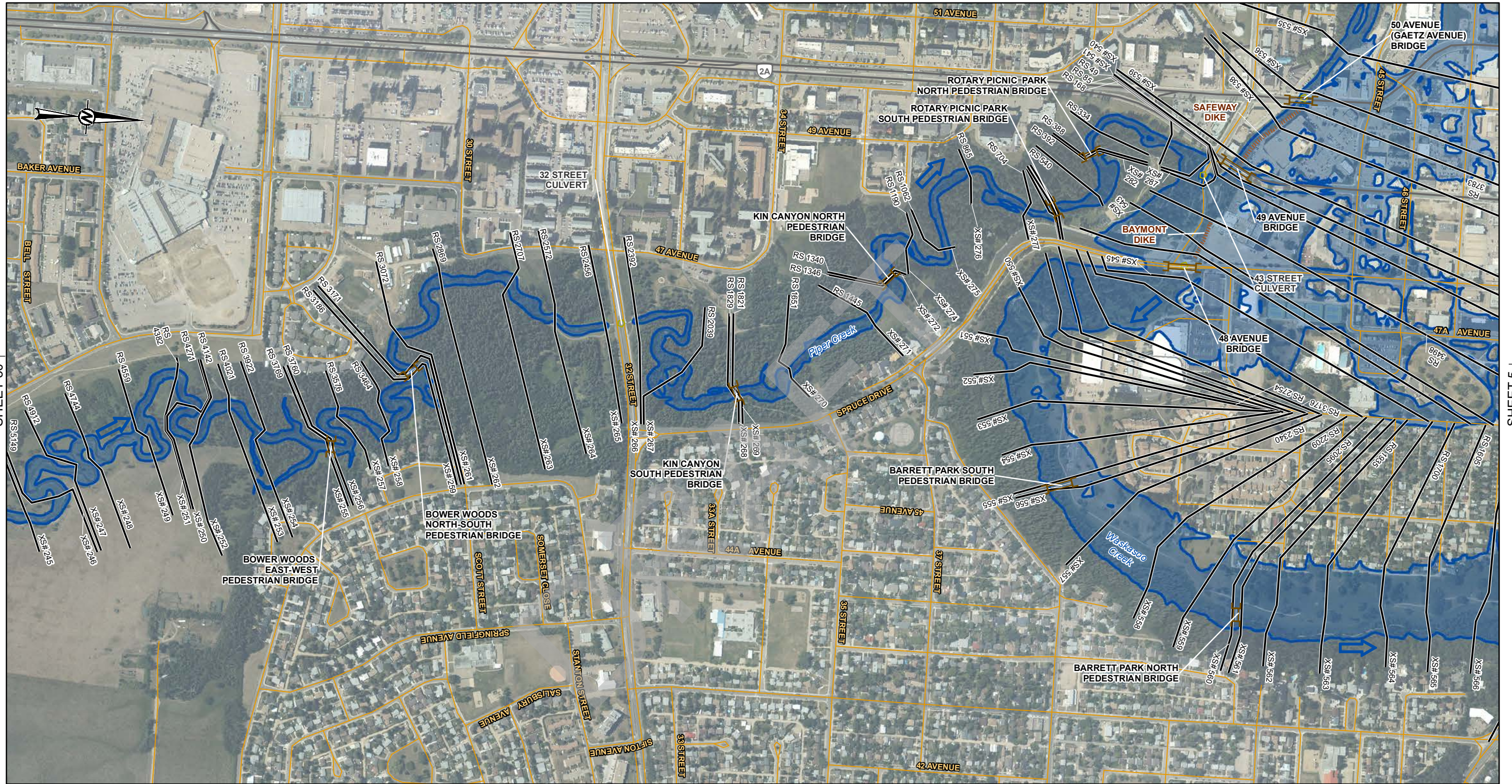
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
750-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31

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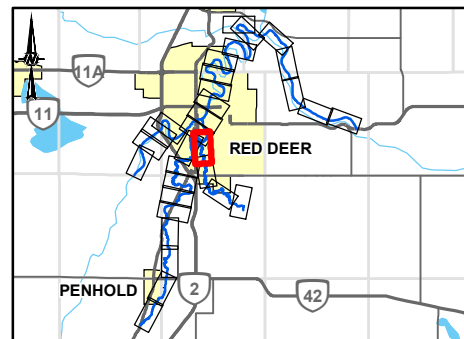


↑ SHEET 30

↓ SHEET 5

- LEGEND**
- CROSS SECTION
 - XS#100 CROSS SECTION NUMBER
 - RS 304 RIVER STATION (M)
 - ▬ STUDY BOUNDARY
 - ➔ FLOW DIRECTION
 - LOCAL ROAD
 - PRIMARY HIGHWAY
 - SECONDARY HIGHWAY
 - RAILWAY
 - ▬ FLOOD CONTROL STRUCTURE
 - CULVERT
 - BRIDGE
 - 750-YEAR FLOOD INUNDATION EXTENT
 - 750-YEAR FLOOD EXTENT
 - 750-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)

DISCHARGE
 PIPER CREEK ABOVE WASKASOO CREEK = 33.9 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 67 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 99 M³/S



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
 RED DEER RIVER HAZARD STUDY

TITLE
**750-YEAR FLOOD INUNDATION EXTENT
 REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

DRAFT

SHEETS 1-31

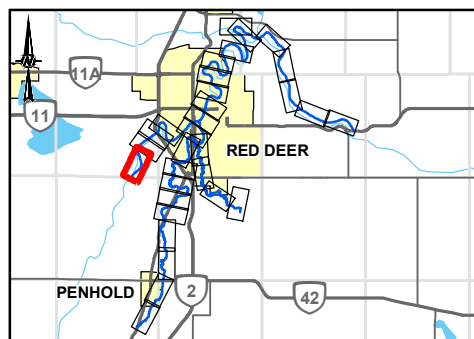
1000-Year Flood Inundation Extent

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SHEET 2 ↓

LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	○ CULVERT
—	STUDY BOUNDARY	— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	1000-YEAR FLOOD INUNDATION EXTENT	
	■ 1000-YEAR FLOOD EXTENT	
	■ 1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER ABOVE WASKASOO CREEK = 3810 M ³ /S	



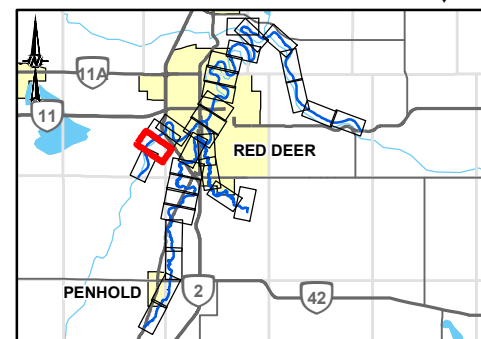
CLIENT	ALBERTA ENVIRONMENT AND PARKS	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 1 OF 31

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LEGEND		
—	CROSS SECTION	1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER ABOVE WASKASOO CREEK = 3810 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	FLOOD CONTROL STRUCTURE	
○	CULVERT	
—	BRIDGE	

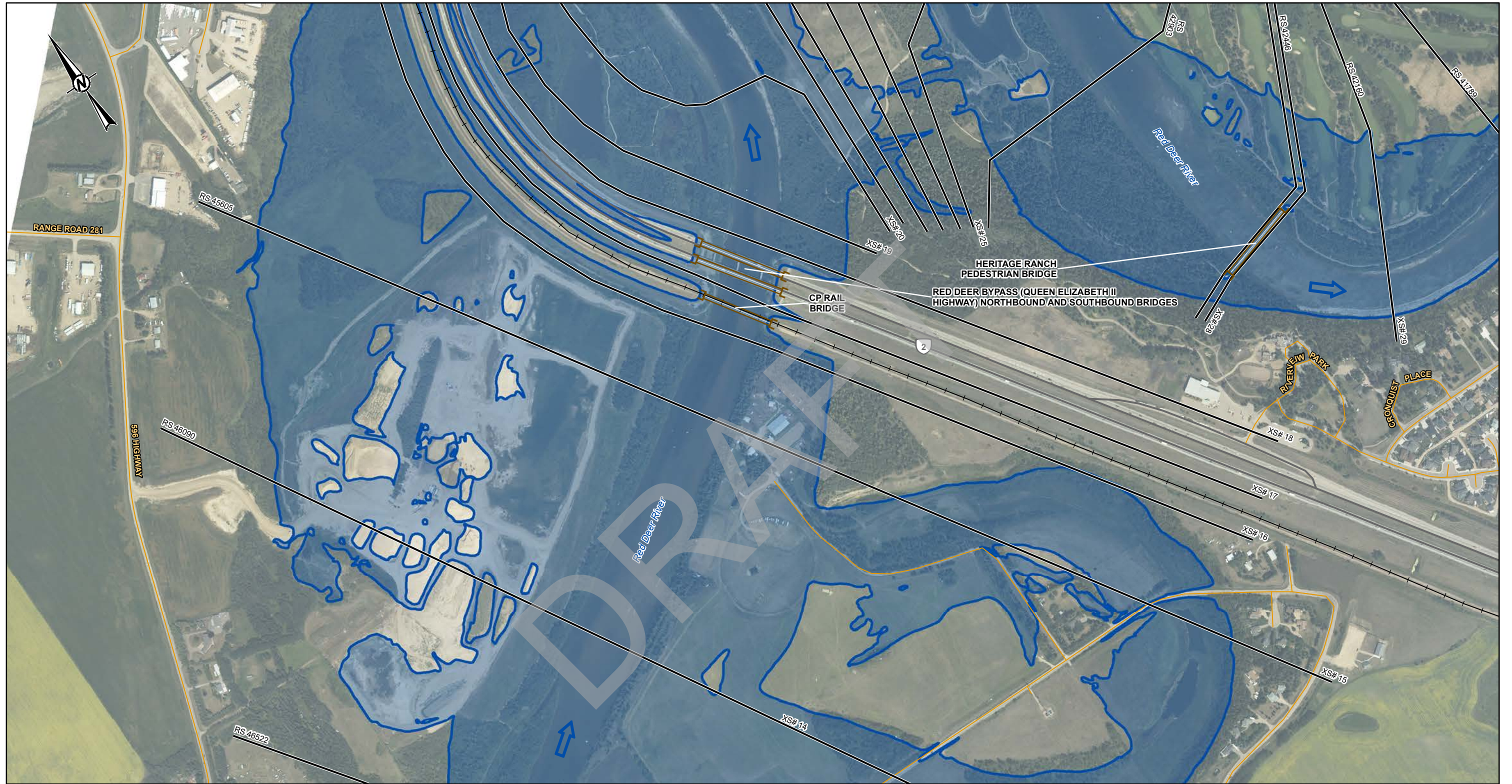


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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
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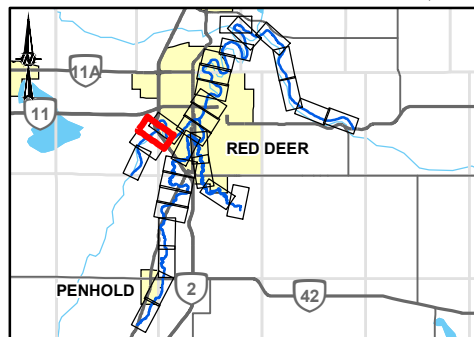
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 2 OF 31

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LEGEND		
— CROSS SECTION	FLOOD CONTROL STRUCTURE	1000-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	1000-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		RED DEER RIVER ABOVE WASKASOO CREEK = 3810 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

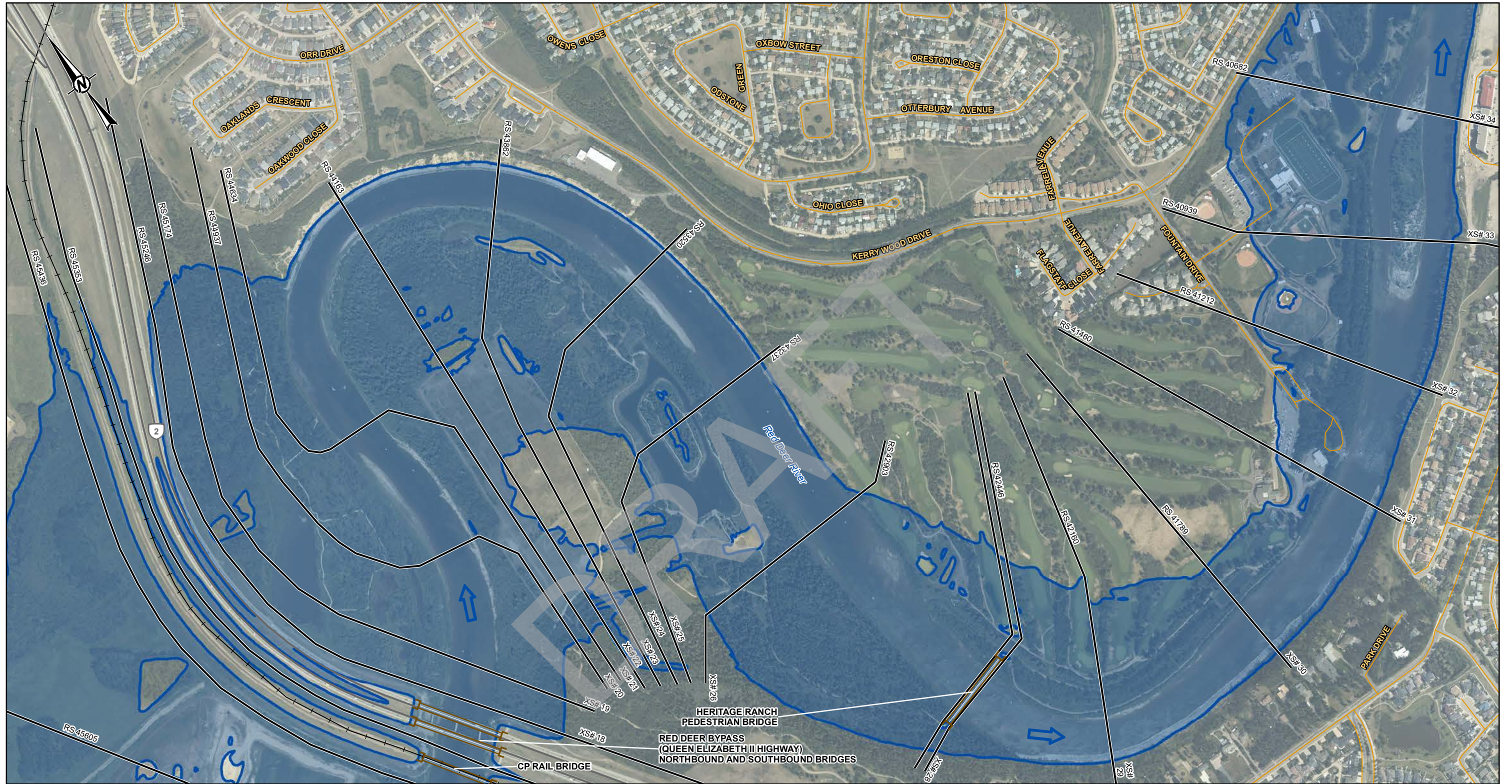


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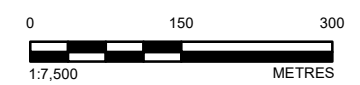
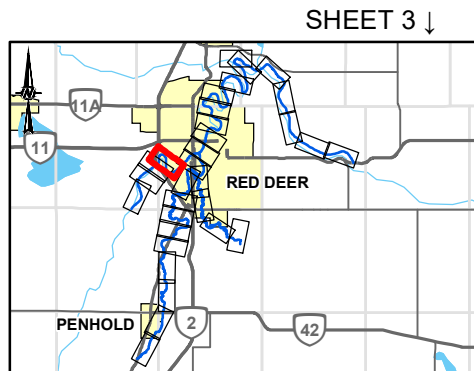
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 3 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	1000-YEAR FLOOD INUNDATION EXTENT
	1000-YEAR FLOOD EXTENT
	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CULVERT
	BRIDGE
	FLOW DIRECTION
	STUDY BOUNDARY
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	DISCHARGE
	RED DEER RIVER ABOVE WASKASOO CREEK = 3810 M ³ /S

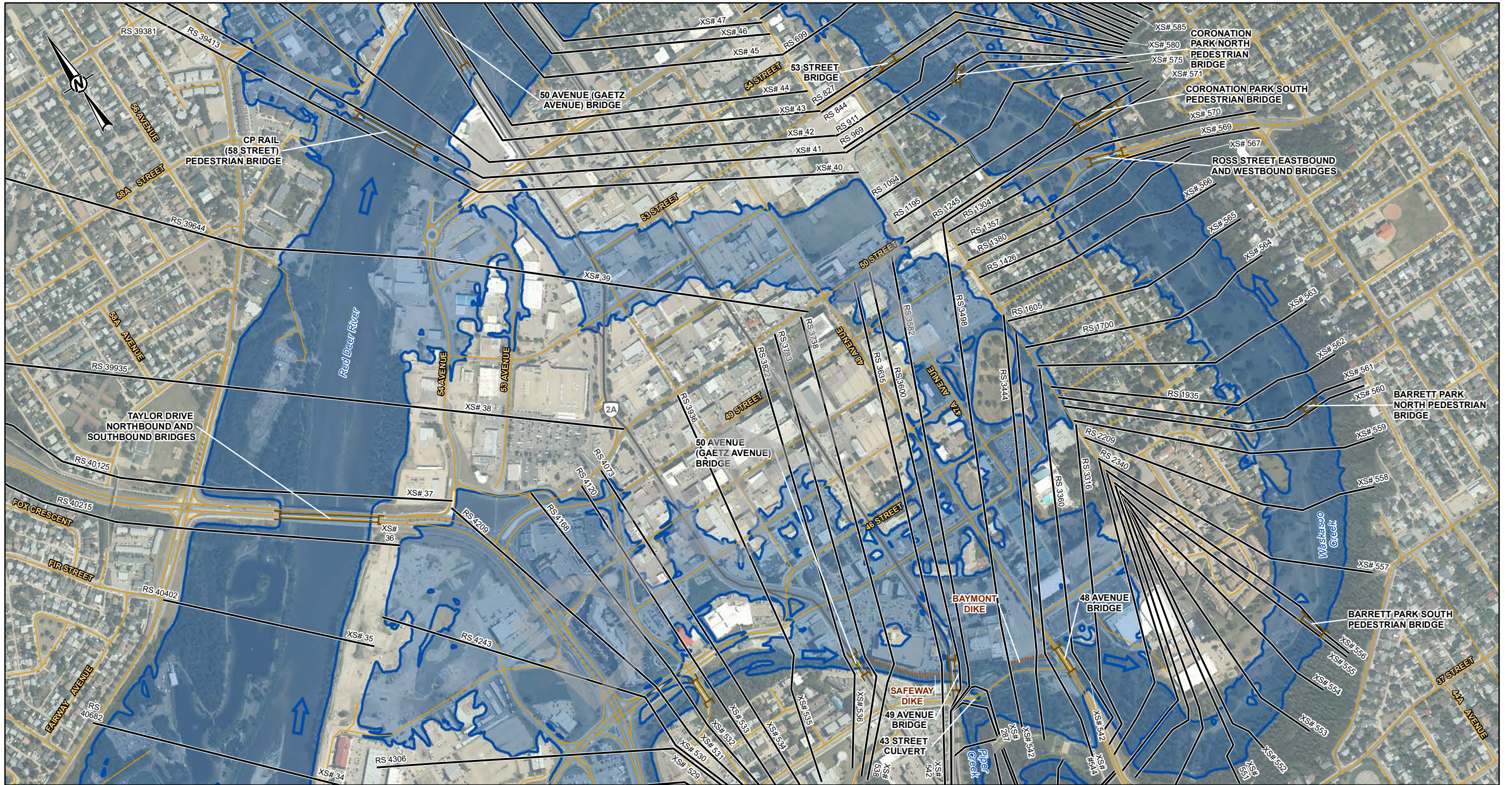


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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 4 OF 31

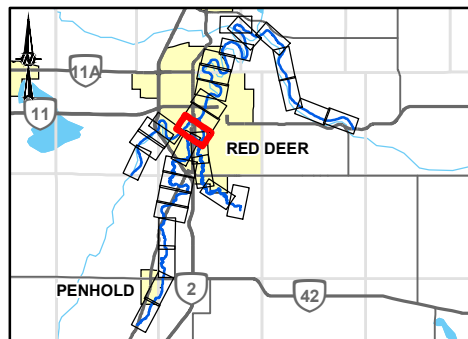
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LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- CULVERT
- BRIDGE
- 1000-YEAR FLOOD INUNDATION EXTENT**
- ▭ 1000-YEAR FLOOD EXTENT
- ▭ 1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE**
- RED DEER RIVER ABOVE WASKASOO CREEK = 3810 M³/S
- WASKASOO CREEK ABOVE PIPER CREEK = 72 M³/S
- WASKASOO CREEK BELOW PIPER CREEK = 107 M³/S
- PIPER CREEK ABOVE WASKASOO CREEK = 36.3 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**1000-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

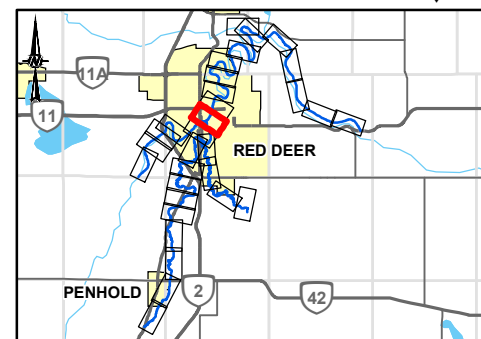
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 5 OF 31



LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
 RED DEER RIVER ABOVE WASKASOO CREEK = 3810 M³/S
 RED DEER RIVER BELOW WASKASOO CREEK = 3910 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 107 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 6 OF 31

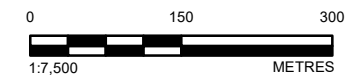
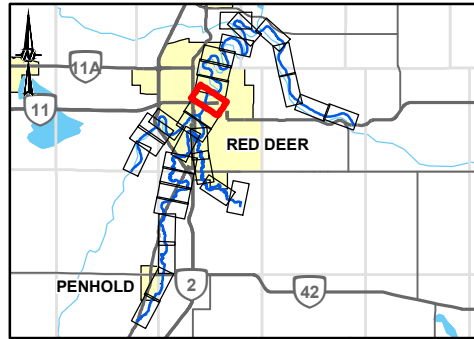
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LEGEND

- CROSS SECTION
- XS#100 CROSS SECTION NUMBER
- RS 304 RIVER STATION (M)
- STUDY BOUNDARY
- ➔ FLOW DIRECTION
- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILWAY
- ▬ FLOOD CONTROL STRUCTURE
- ◻ HYDRAULIC STRUCTURES
- ◻ CULVERT
- ▬ BRIDGE
- 1000-YEAR FLOOD INUNDATION EXTENT
- 1000-YEAR FLOOD EXTENT
- 1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
- DISCHARGE
RED DEER RIVER BELOW WASKASOO CREEK = 3910 M³/S



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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

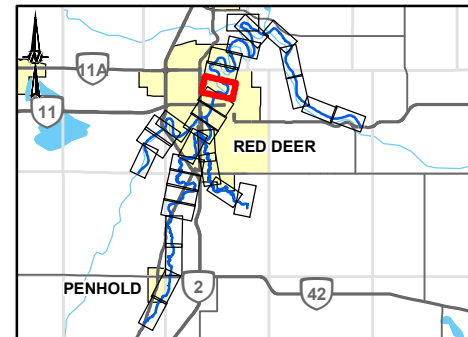
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 7 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	1000-YEAR FLOOD INUNDATION EXTENT
	1000-YEAR FLOOD EXTENT
	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
DISCHARGE RED DEER RIVER BELOW WASKASOO CREEK = 3910 M ³ /S	



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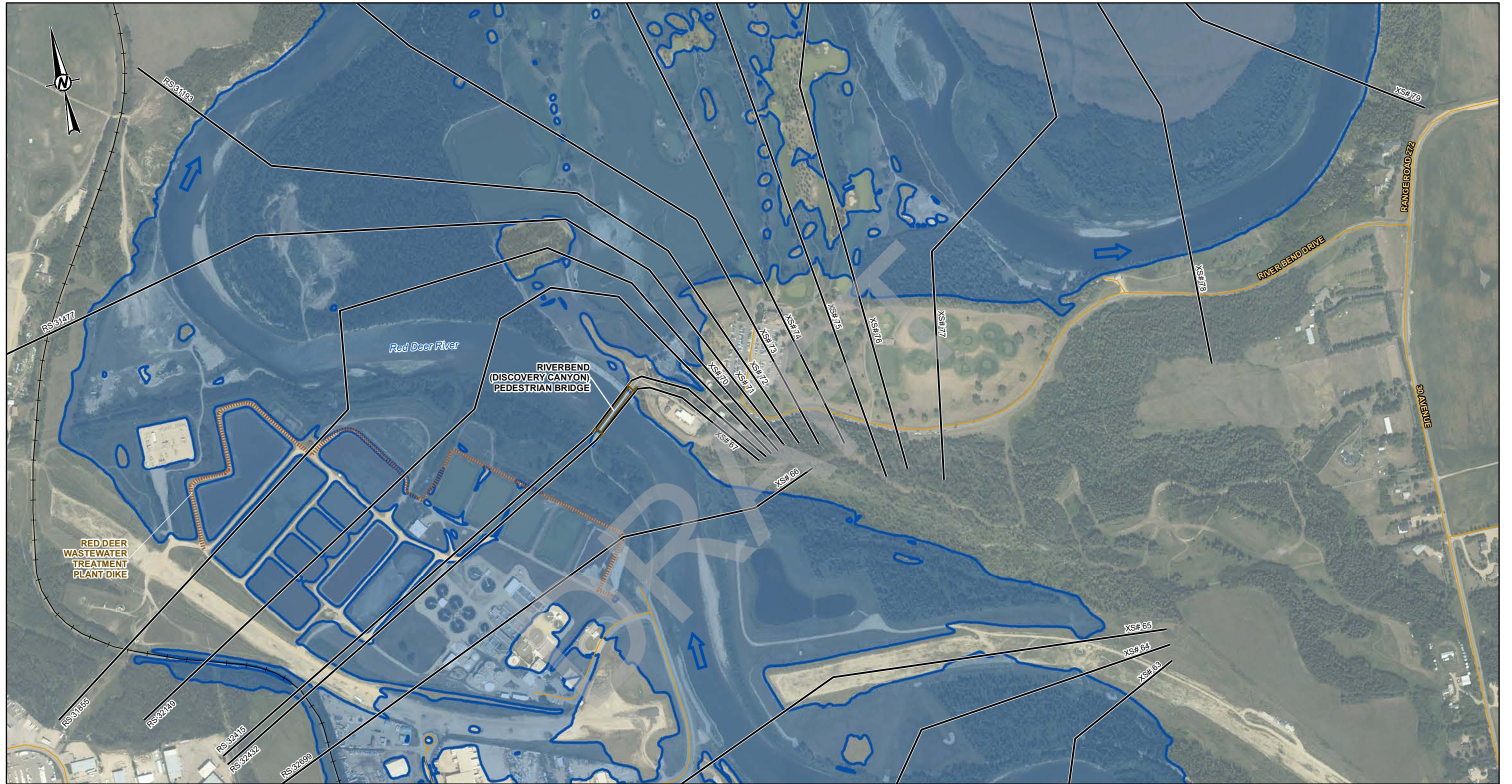
YYYY-MM-DD	2022-11-23
DESIGNED	PT
PREPARED	NB
REVIEWED	GT
APPROVED	WP

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

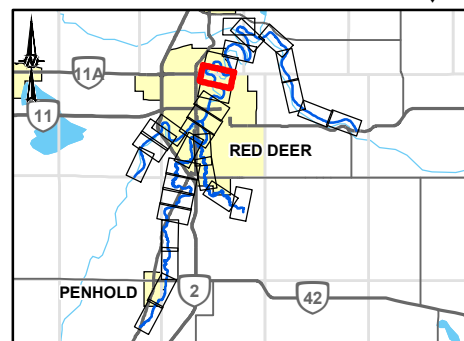
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**1000-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 8 OF 31



LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	1000-YEAR FLOOD INUNDATION EXTENT
■	1000-YEAR FLOOD EXTENT
■	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 3910 M ³ /S	



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PREPARED	NB
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APPROVED	WP

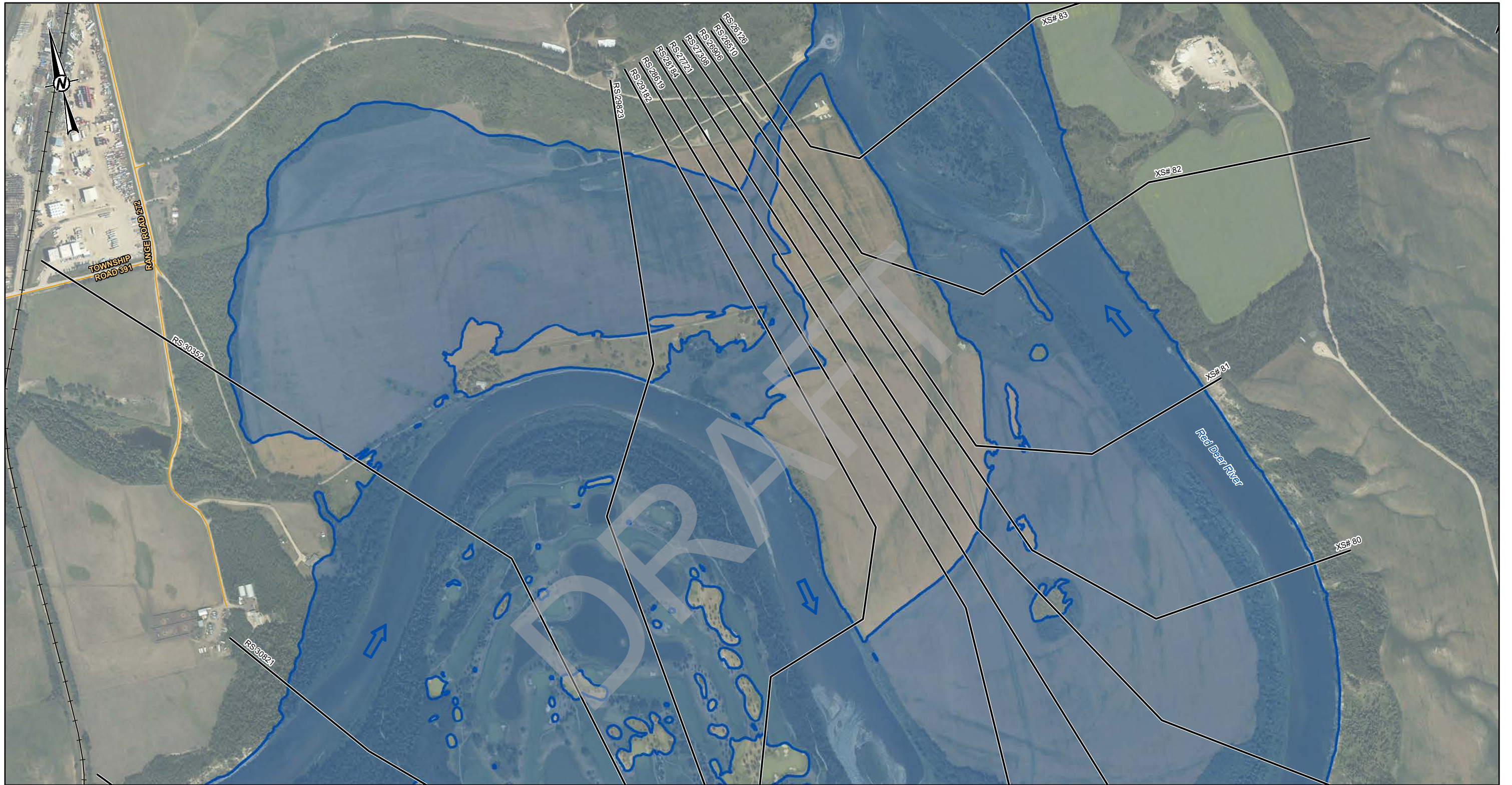
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

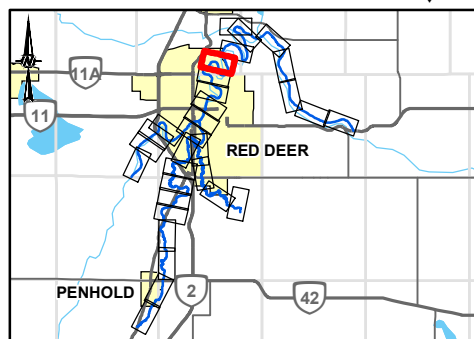
TITLE
**1000-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 9 OF 31

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LEGEND	
	CROSS SECTION
	CROSS SECTION NUMBER
	RIVER STATION (M)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	FLOOD CONTROL STRUCTURE
	CULVERT
	BRIDGE
	1000-YEAR FLOOD EXTENT
	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	DISCHARGE
	RED DEER RIVER BELOW WASKASOO CREEK = 3910 M ³ /S

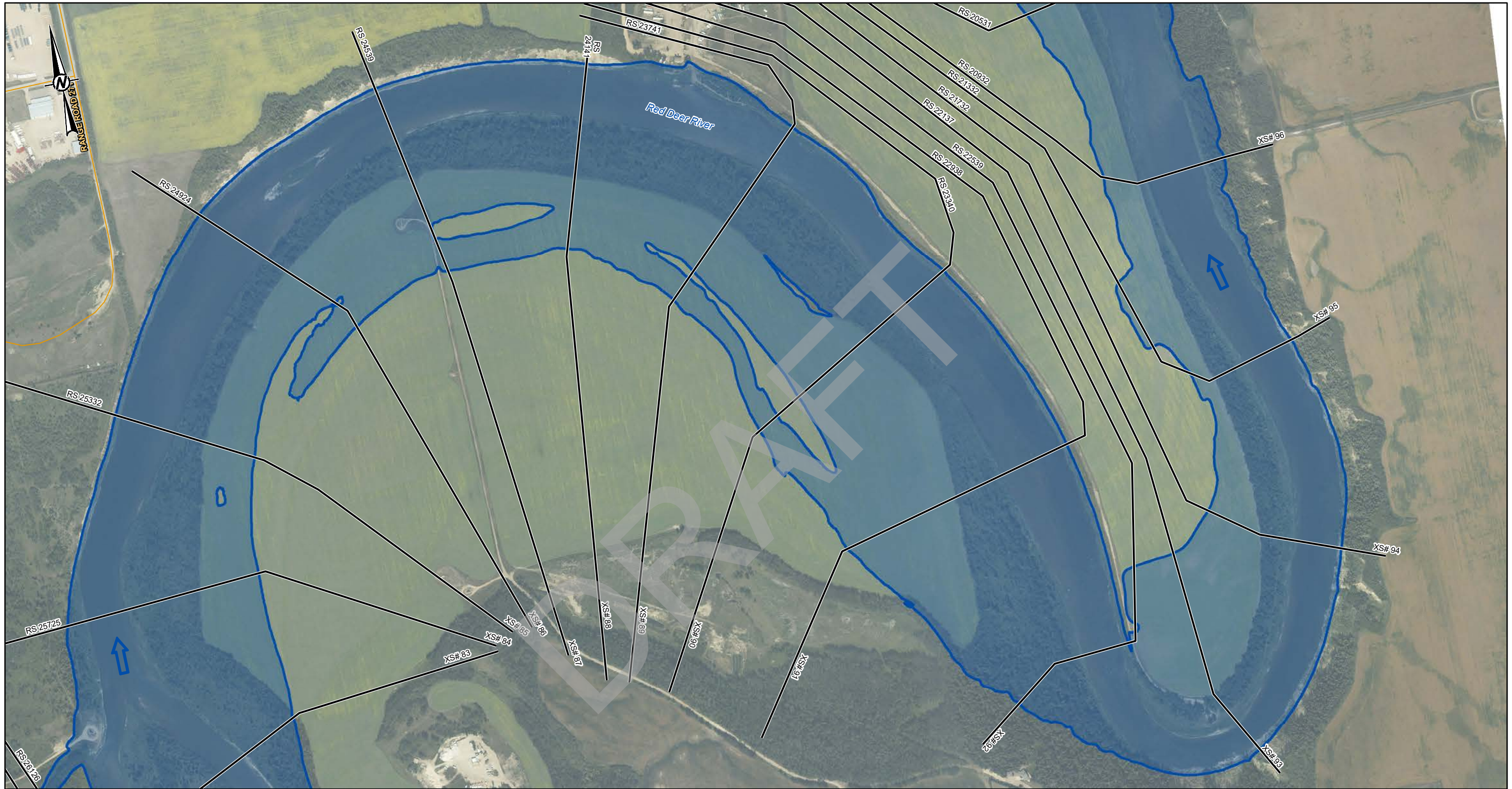


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CONSULTANT	GOLDER	
DATE	YYYY-MM-DD	2022-11-23
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

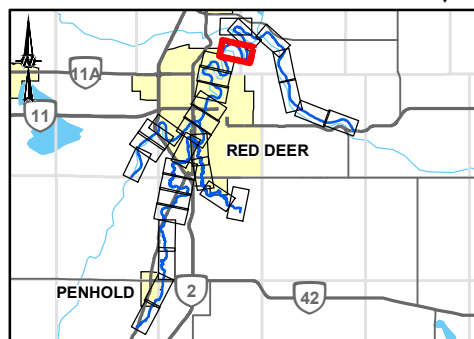
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 10 OF 31

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LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
—	STUDY BOUNDARY
➔	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
⬡	CULVERT
—	BRIDGE
■	1000-YEAR FLOOD INUNDATION EXTENT
■	1000-YEAR FLOOD EXTENT
■	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE	
RED DEER RIVER BELOW WASKASOO CREEK = 3910 M ³ /S	



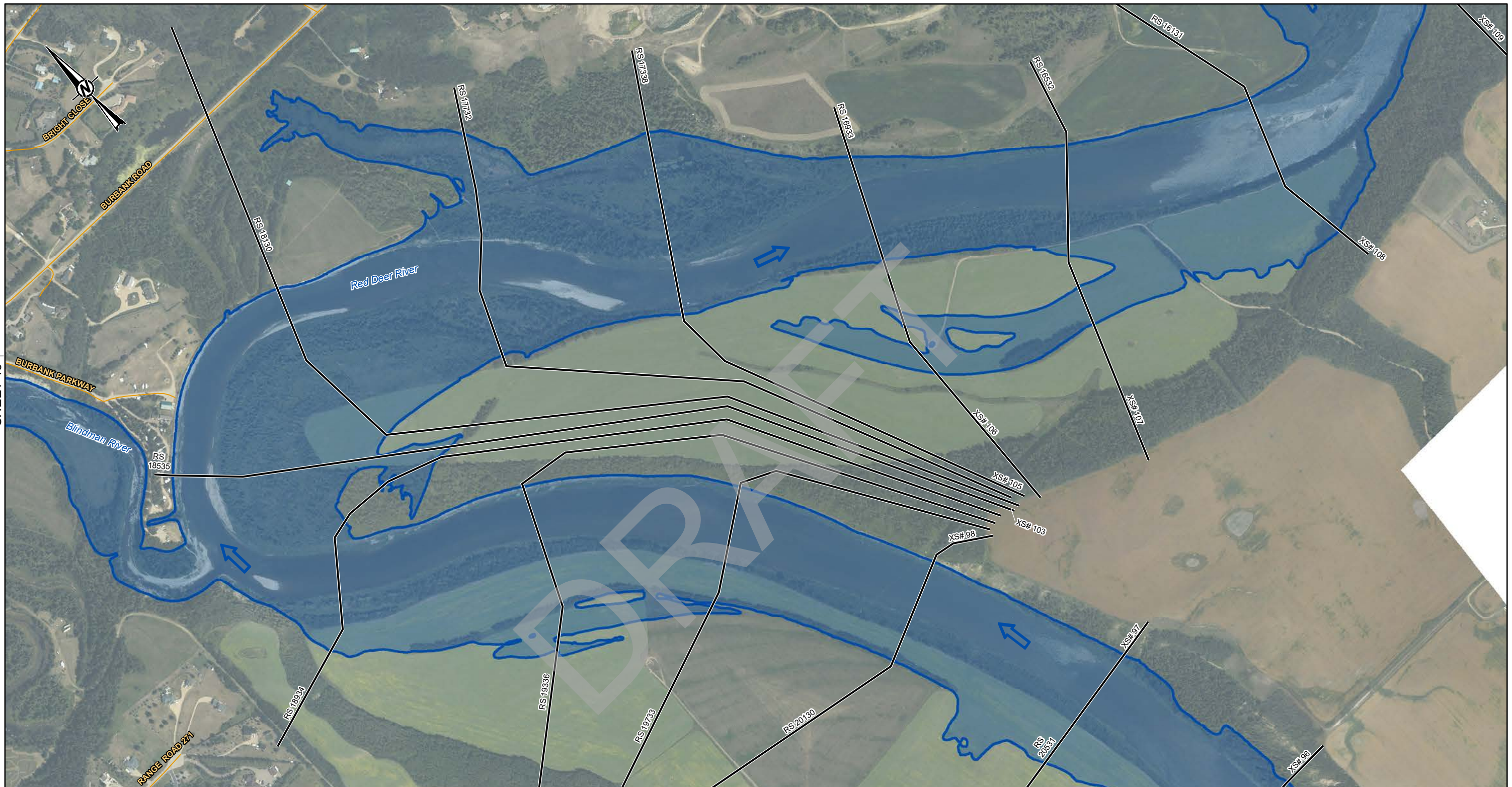
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CONSULTANT	GOLDER	
YYYY-MM-DD	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
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PROJECT		
RED DEER RIVER HAZARD STUDY		
TITLE		
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.
1783039	4000	2
		FIGURE
		SHEET 11 OF 31

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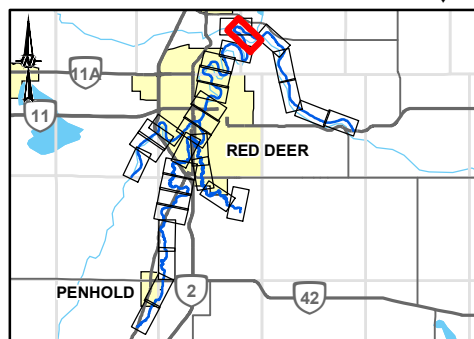
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SHEET 13 ↑

SHEET 14 ↓

LEGEND		
—	CROSS SECTION	1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	FLOOD CONTROL STRUCTURE	
○	CULVERT	
—	BRIDGE	
DISCHARGE		
RED DEER RIVER BELOW WASKASOO CREEK = 3910 M ³ /S		
RED DEER RIVER BELOW BLINDMAN RIVER = 4440 M ³ /S		



SHEET 11 ↓



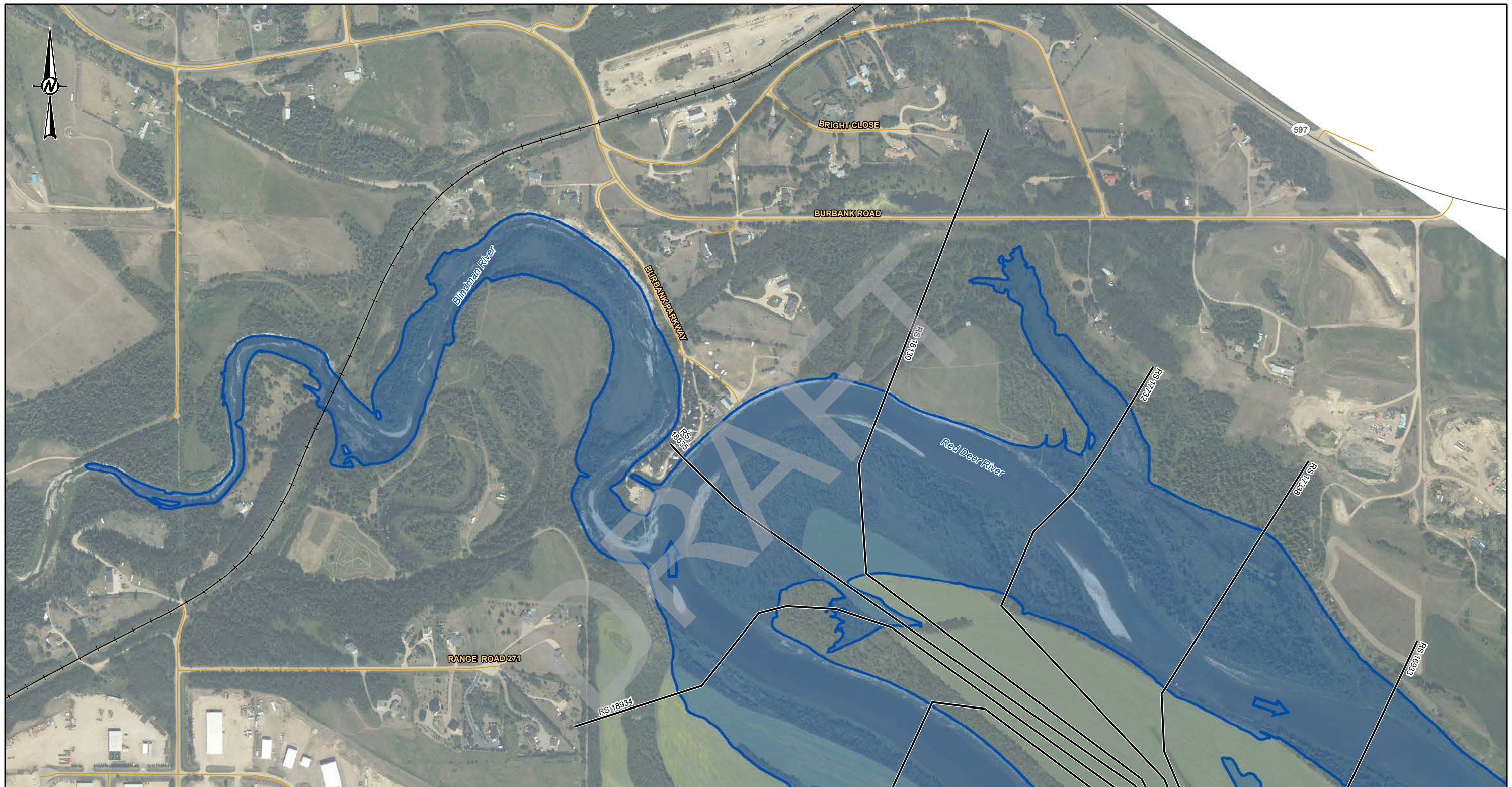
CLIENT	ALBERTA ENVIRONMENT AND PARKS	Alberta Government
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
APPROVED	WP	

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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 12 OF 31

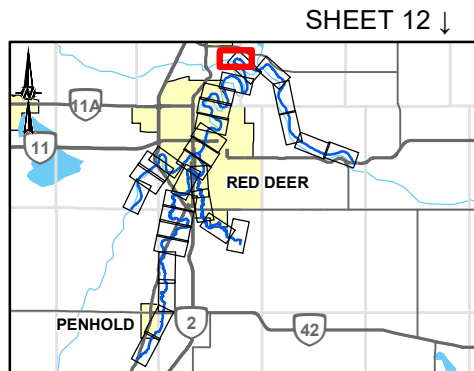
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SHEET 14 ↓

LEGEND		
—	CROSS SECTION	▬▬▬ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◊ CULVERT
▬▬▬	STUDY BOUNDARY	— — BRIDGE
➔	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
	1000-YEAR FLOOD INUNDATION EXTENT	
	▬▬▬ 1000-YEAR FLOOD EXTENT	
	▬▬▬ 1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)	
	DISCHARGE	
	RED DEER RIVER BELOW WASKASOO CREEK = 3910 M ³ /S	
	RED DEER RIVER BELOW BLINDMAN RIVER = 4440 M ³ /S	



SHEET 12 ↓



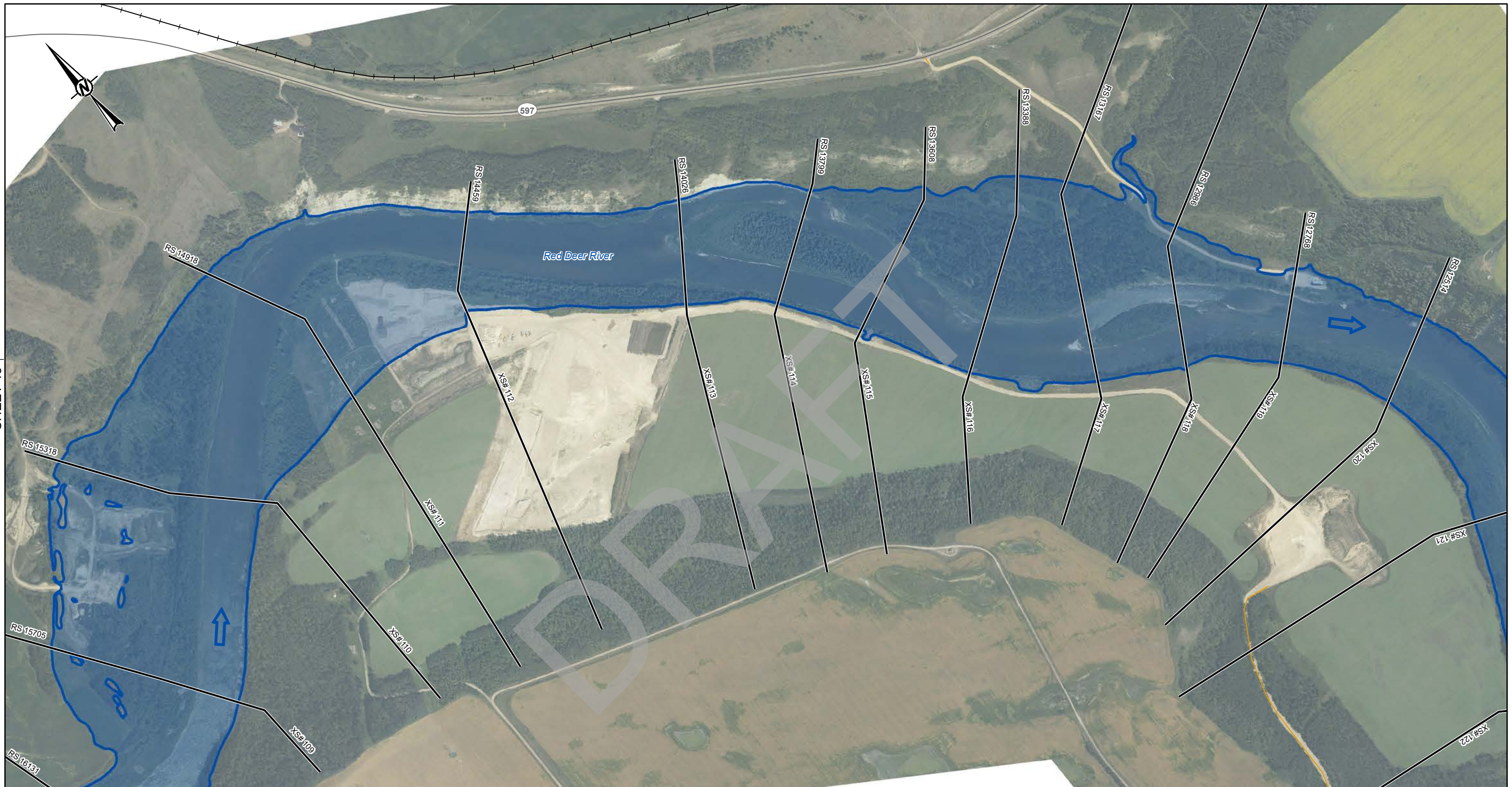
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CONSULTANT	GOLDER	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 13 OF 31

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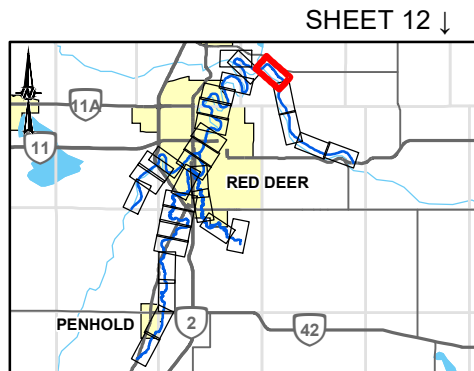
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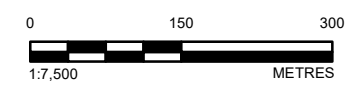
SHEET 13 ↑

↓ SHEET 15

LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	1000-YEAR FLOOD INUNDATION EXTENT
	1000-YEAR FLOOD EXTENT
	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
	RED DEER RIVER BELOW BLINDMAN RIVER = 4440 M ³ /S



SHEET 12 ↓



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CONSULTANT	GOLDER	
DATE	2022-11-23	
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PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 14 OF 31

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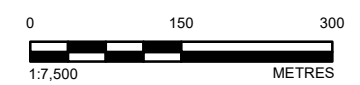
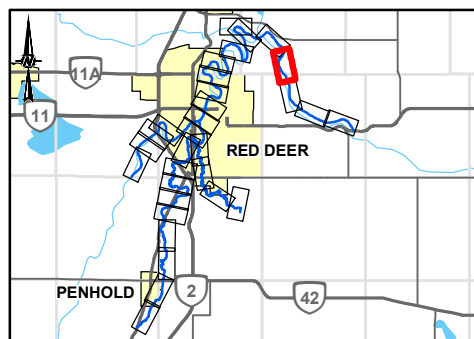
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SHEET 14 ↑

↓ SHEET 16

LEGEND		
—	CROSS SECTION	1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	
	FLOW DIRECTION	
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 4440 M ³ /S



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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 15 OF 31

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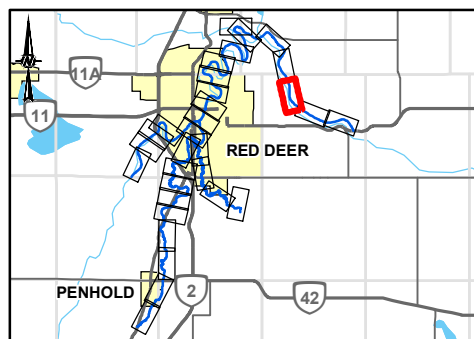
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SHEET 15 ↑

↓ SHEET 17

LEGEND		
—	CROSS SECTION	1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 4440 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	HYDRAULIC STRUCTURES	
—	CULVERT	
—	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 16 OF 31

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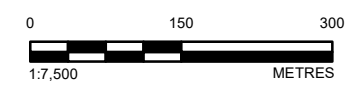
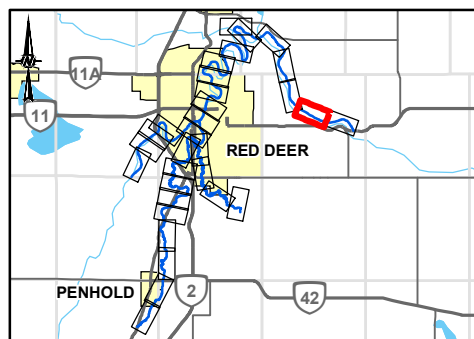
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SHEET 16 ↑

↓ SHEET 18

LEGEND		
—	CROSS SECTION	1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
▬▬▬	STUDY BOUNDARY	
➡	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	RED DEER RIVER BELOW BLINDMAN RIVER = 4440 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
▬▬▬	FLOOD CONTROL STRUCTURE	
◻	CULVERT	
▬▬▬	BRIDGE	



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PROJECT		RED DEER RIVER HAZARD STUDY	
TITLE		1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 17 OF 31

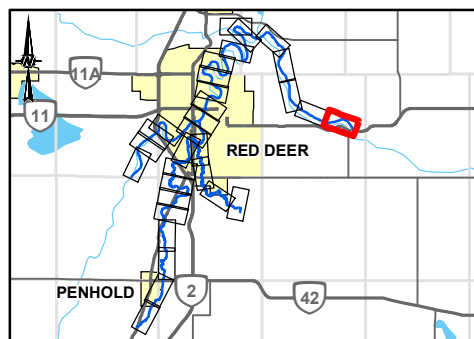
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SHEET 17 ↑



LEGEND		
—	CROSS SECTION	■■■■■ FLOOD CONTROL STRUCTURE
XS#100	CROSS SECTION NUMBER	HYDRAULIC STRUCTURES
RS 304	RIVER STATION (M)	◻ CULVERT
—	STUDY BOUNDARY	— BRIDGE
→	FLOW DIRECTION	
—	LOCAL ROAD	
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
		1000-YEAR FLOOD INUNDATION EXTENT
		■ 1000-YEAR FLOOD EXTENT
		■ 1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
		DISCHARGE
		RED DEER RIVER BELOW BLINDMAN RIVER = 4440 M ³ /S



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 18 OF 31

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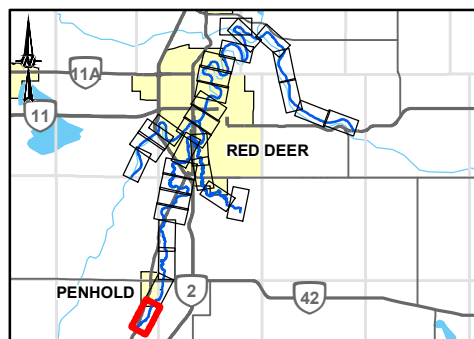
SHEET 20

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LEGEND

—	CROSS SECTION		FLOOD CONTROL STRUCTURE		1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER		HYDRAULIC STRUCTURES		1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)		CULVERT		1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY		BRIDGE		
	FLOW DIRECTION				
	LOCAL ROAD				
	PRIMARY HIGHWAY				
	SECONDARY HIGHWAY				
	RAILWAY				

DISCHARGE
WASKASOO CREEK ABOVE HIGHWAY 42 = 61.8 M³/S



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ALBERTA ENVIRONMENT AND PARKS

CONSULTANT
GOLDER

Alberta Government

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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 19 OF 31

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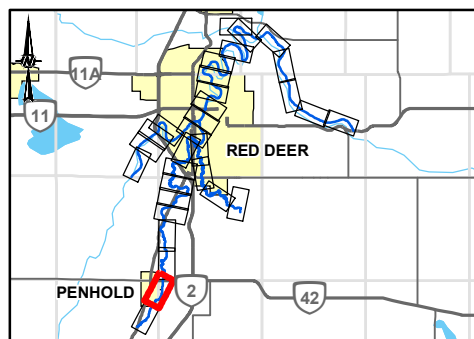
SHEET 19 ↑

↓ SHEET 21

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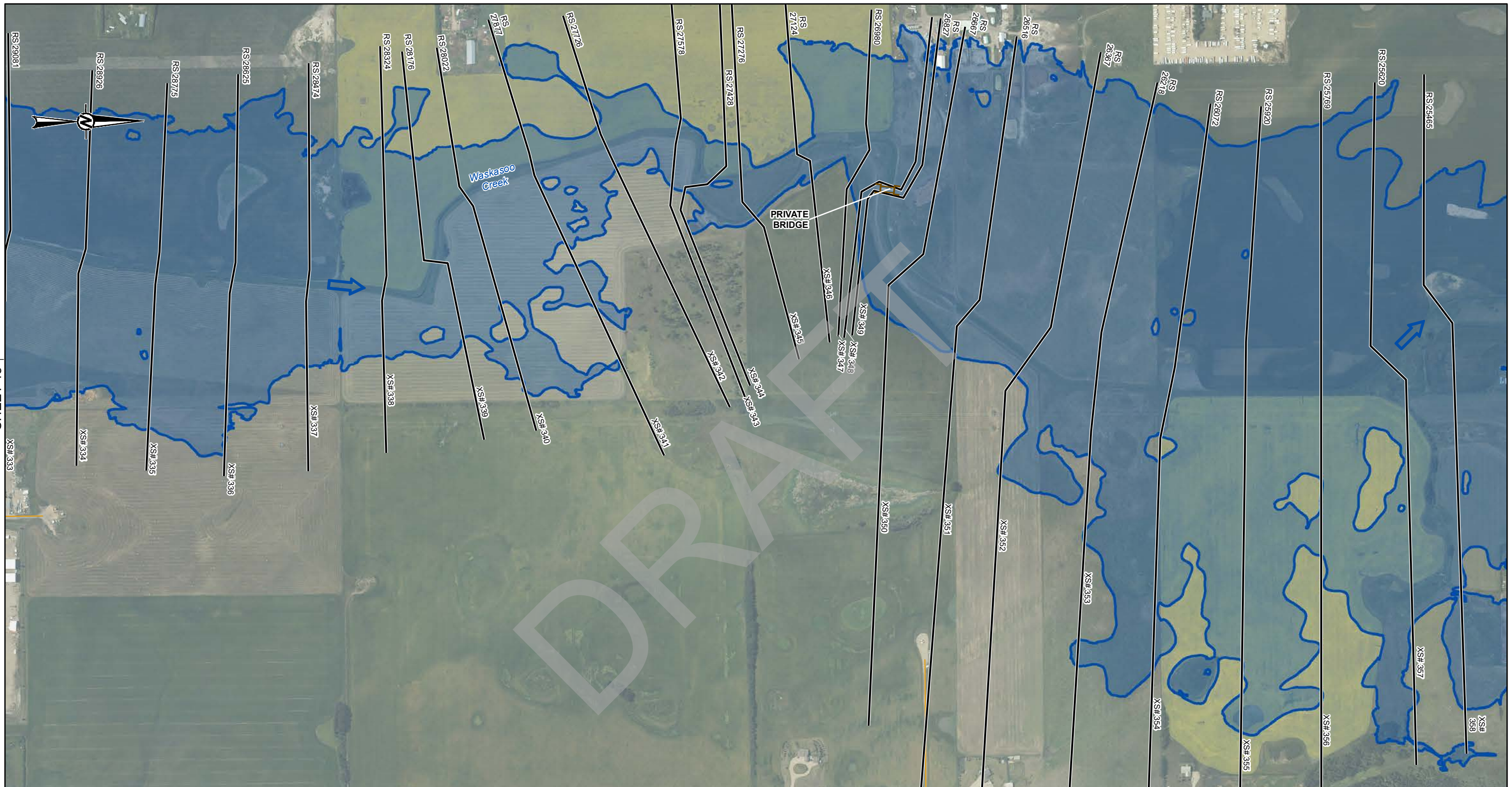
LEGEND		
—	CROSS SECTION	1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	WASKASOO CREEK ABOVE HIGHWAY 42 = 61.8 M ³ /S
	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 72 M ³ /S
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 20 OF 31

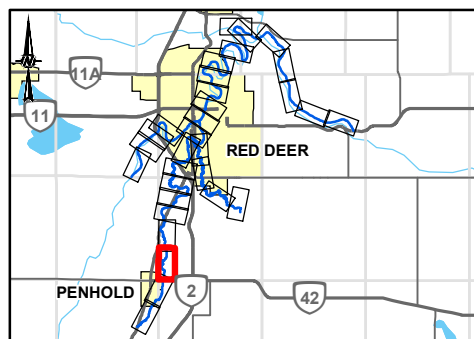
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↑ SHEET 18

↑ SHEET 22

LEGEND		
—	CROSS SECTION	1000-YEAR FLOOD INUNDATION EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT
RS 304	RIVER STATION (M)	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
—	STUDY BOUNDARY	
→	FLOW DIRECTION	DISCHARGE
—	LOCAL ROAD	WASKASOO CREEK ABOVE PIPER CREEK = 72 M ³ /S
—	PRIMARY HIGHWAY	
—	SECONDARY HIGHWAY	
+	RAILWAY	
—	FLOOD CONTROL STRUCTURE	
—	HYDRAULIC STRUCTURES	
—	CULVERT	
—	BRIDGE	

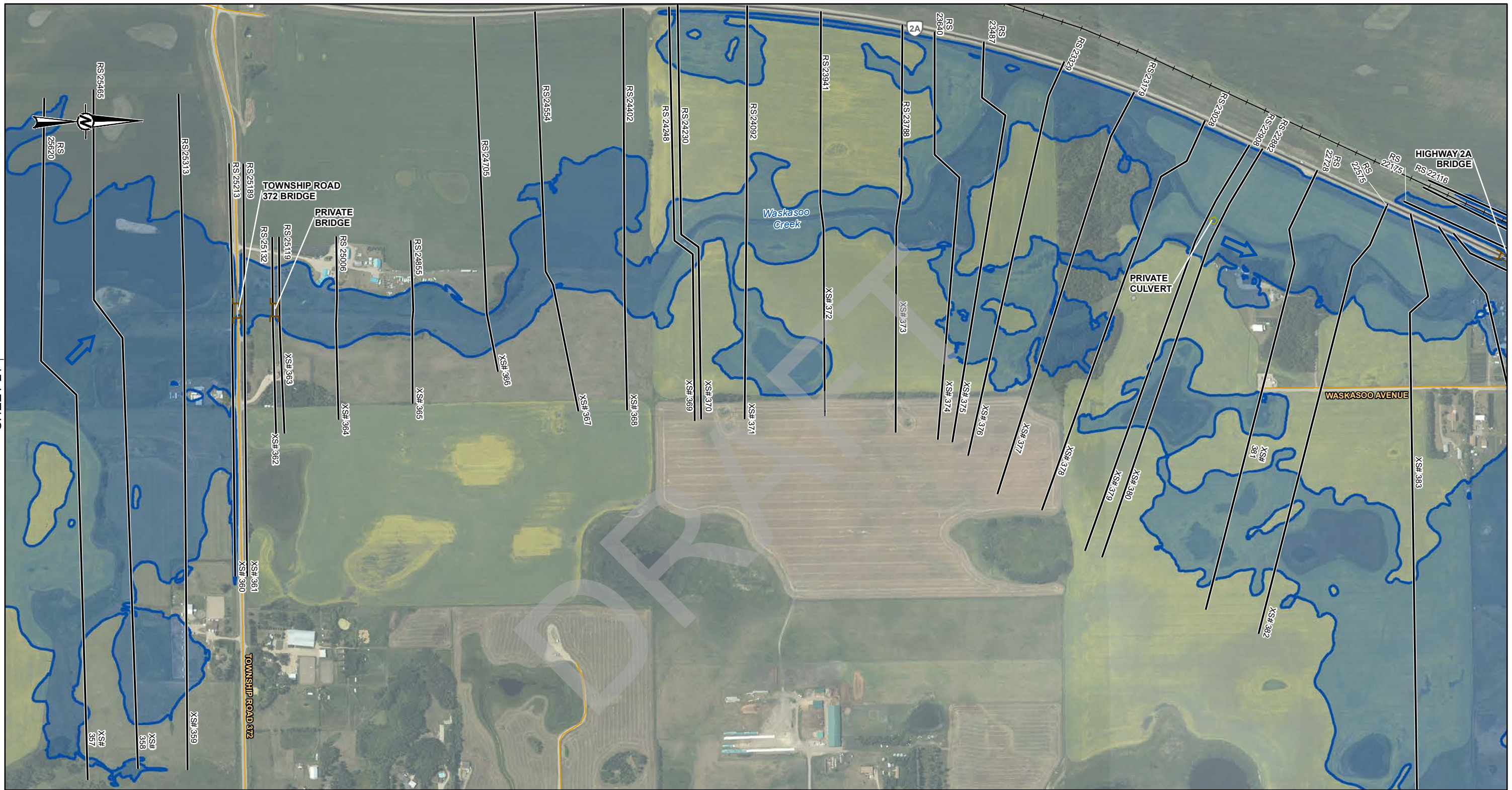


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CONSULTANT	GOLDER	
DATE	2022-11-23	
DESIGNED	PT	
PREPARED	NB	
REVIEWED	GT	
APPROVED	WP	

REFERENCE(S)			
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PROJECT			
RED DEER RIVER HAZARD STUDY			
TITLE			
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS			
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 21 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

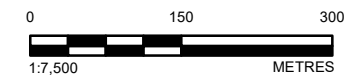
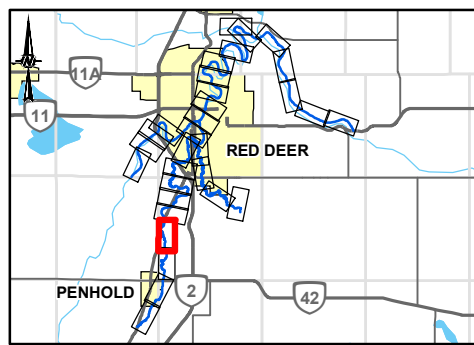
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SHEET 21 ↑

↑ SHEET 23

LEGEND		
— CROSS SECTION	▬ FLOOD CONTROL STRUCTURE	 1000-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	 1000-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	◻ CULVERT	 1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
▬ STUDY BOUNDARY	▬ BRIDGE	
➔ FLOW DIRECTION		
— LOCAL ROAD		
— PRIMARY HIGHWAY		
— SECONDARY HIGHWAY		
— RAILWAY		
		DISCHARGE
		WASKASOO CREEK ABOVE PIPER CREEK = 72 M ³ /S



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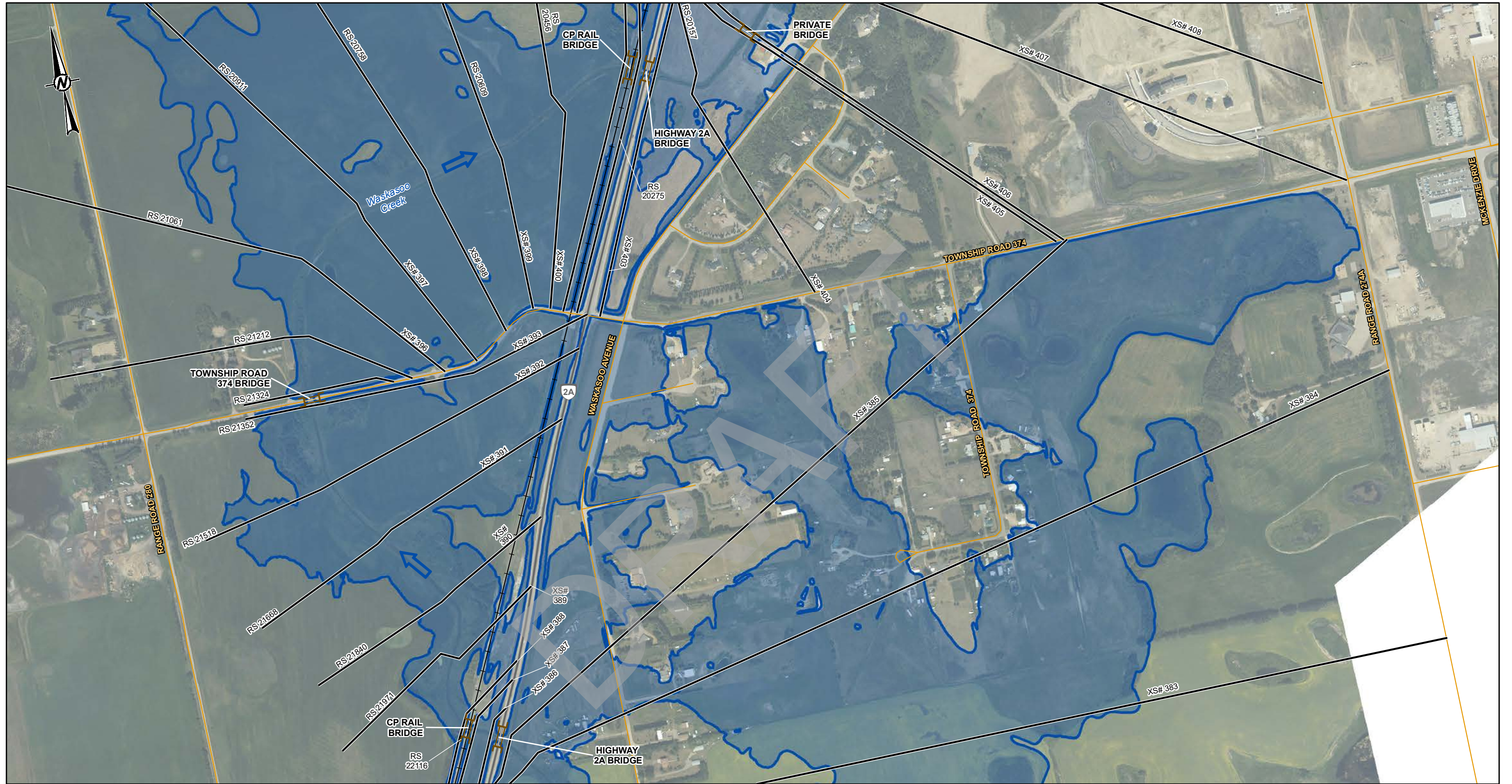
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

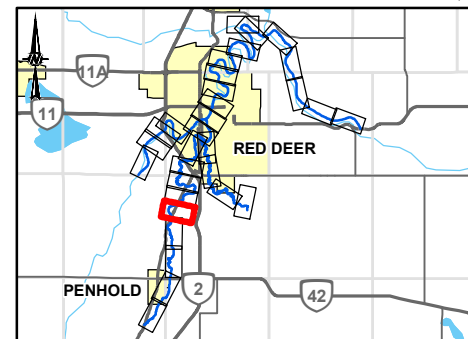
TITLE
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 22 OF 31

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LEGEND		1000-YEAR FLOOD INUNDATION EXTENT
—	CROSS SECTION	1000-YEAR FLOOD EXTENT
XS#100	CROSS SECTION NUMBER	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
RS 304	RIVER STATION (M)	
	STUDY BOUNDARY	DISCHARGE
	FLOW DIRECTION	WASKASOO CREEK ABOVE PIPER CREEK = 72 M ³ /S
	LOCAL ROAD	
	PRIMARY HIGHWAY	
	SECONDARY HIGHWAY	
	RAILWAY	
	FLOOD CONTROL STRUCTURE	
	CULVERT	
	BRIDGE	



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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

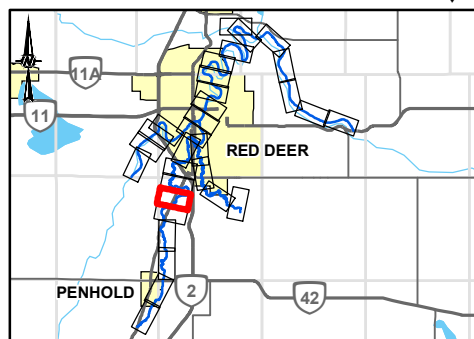
PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**1000-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 23 OF 31



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	1000-YEAR FLOOD INUNDATION EXTENT
	1000-YEAR FLOOD EXTENT
	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	STUDY BOUNDARY
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 72 M ³ /S	



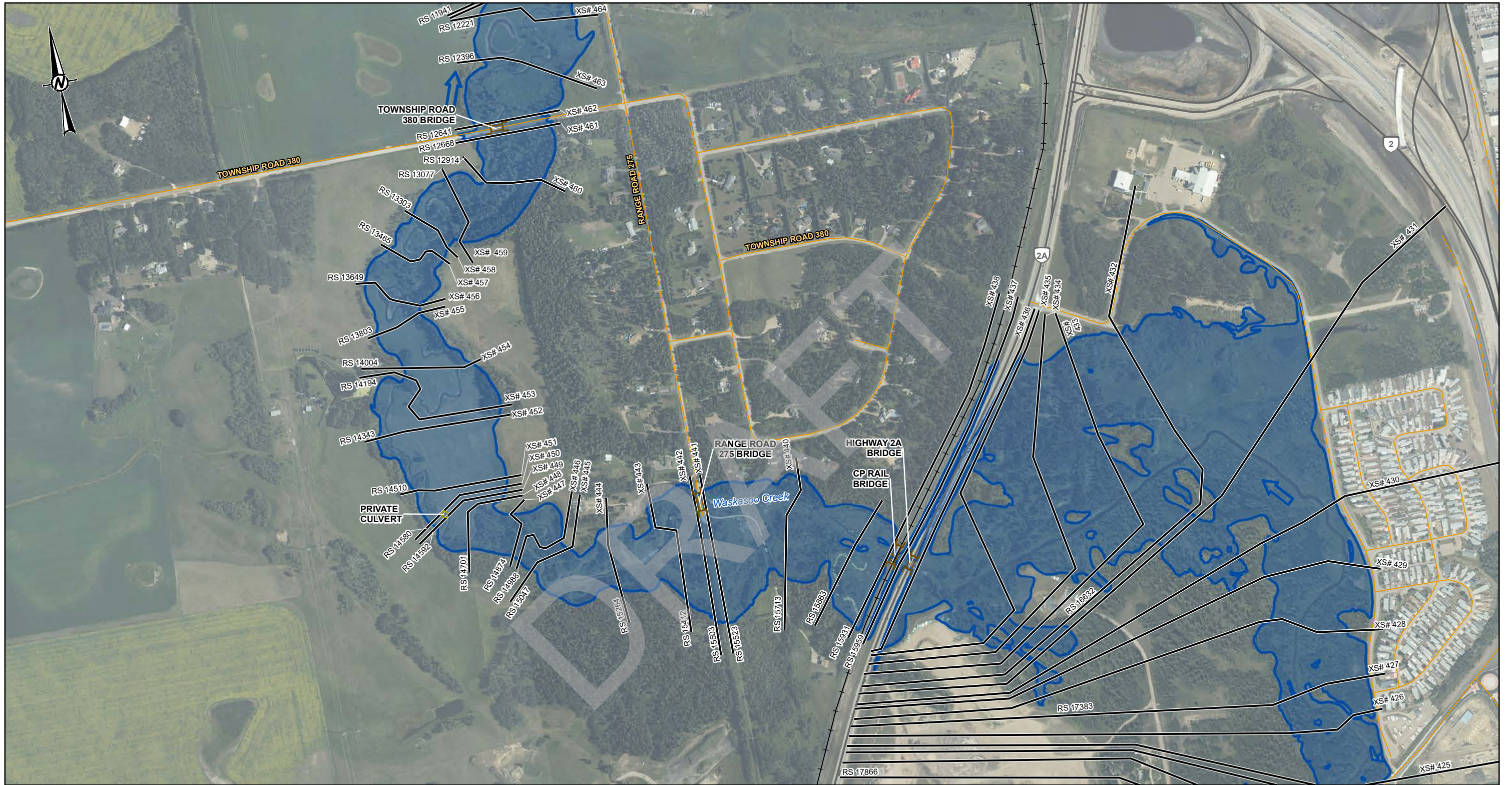
CLIENT	ALBERTA ENVIRONMENT AND PARKS	ALBERTA Government
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
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REVIEWED	GT	
APPROVED	WP	

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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

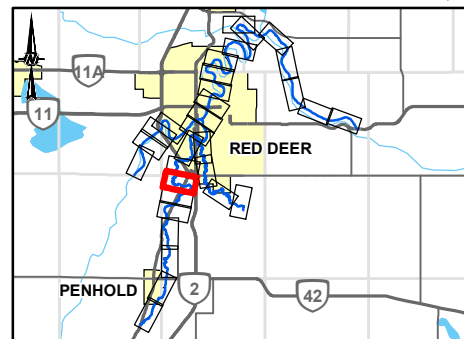
PROJECT	RED DEER RIVER HAZARD STUDY
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS
PROJECT NO.	1783039
CONTROL	4000
REV.	2
FIGURE	SHEET 24 OF 31

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LEGEND	
—	CROSS SECTION
XS#100	CROSS SECTION NUMBER
RS 304	RIVER STATION (M)
■	STUDY BOUNDARY
→	FLOW DIRECTION
—	LOCAL ROAD
—	PRIMARY HIGHWAY
—	SECONDARY HIGHWAY
+	RAILWAY
	FLOOD CONTROL STRUCTURE
○	CULVERT
—	BRIDGE
■	1000-YEAR FLOOD INUNDATION EXTENT
■	1000-YEAR FLOOD EXTENT
■	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
DISCHARGE WASKASOO CREEK ABOVE PIPER CREEK = 72 M ³ /S	



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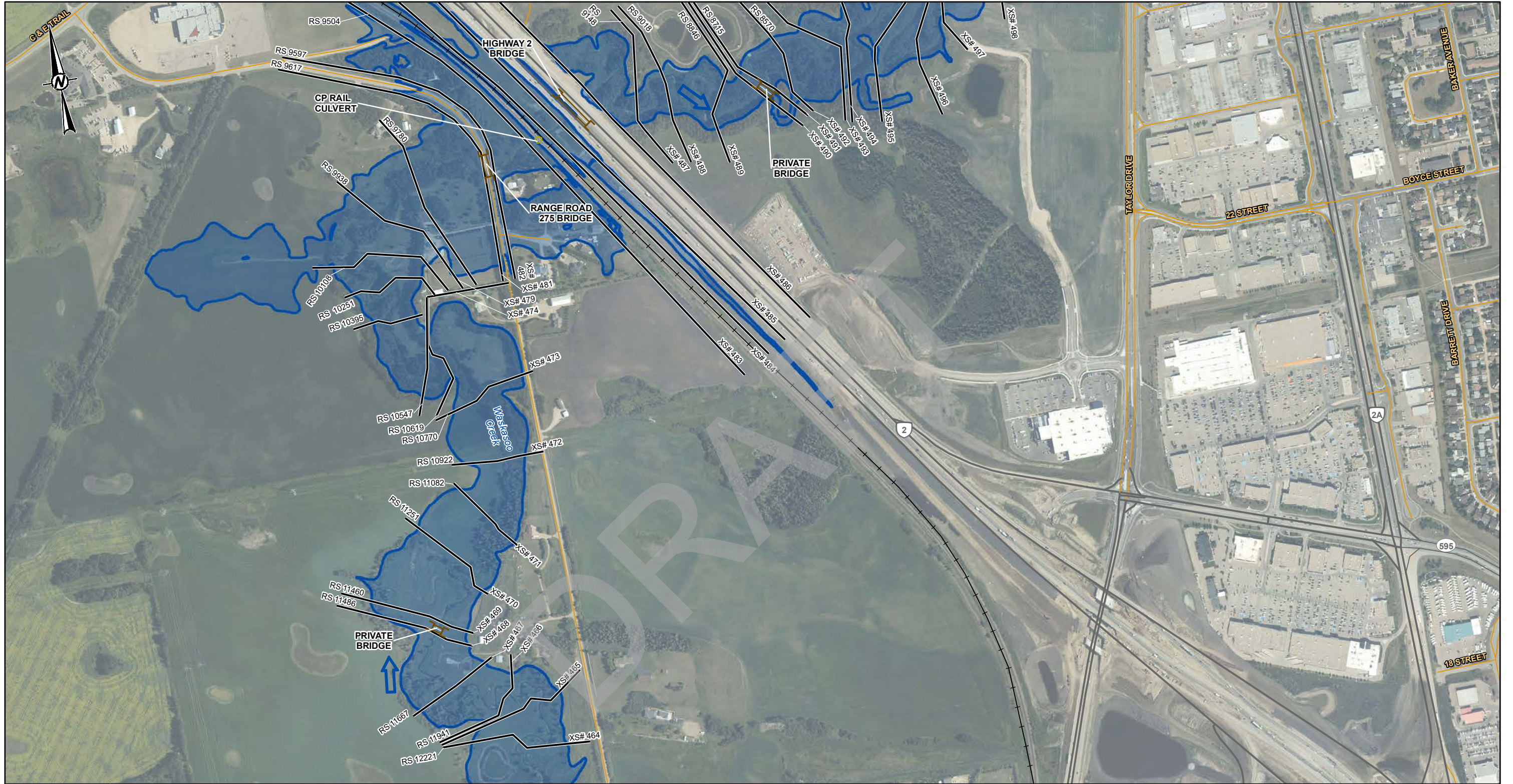
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PROJECT
RED DEER RIVER HAZARD STUDY

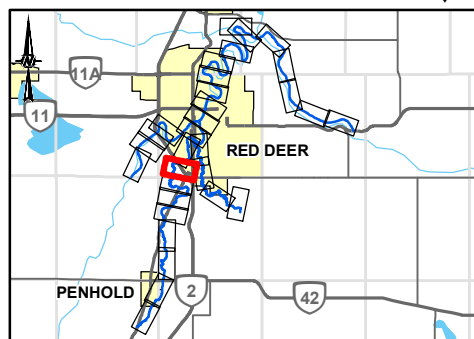
TITLE
**1000-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 25 OF 31

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B



LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	1000-YEAR FLOOD INUNDATION EXTENT
	1000-YEAR FLOOD EXTENT
	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
WASKASOO CREEK ABOVE PIPER CREEK = 72 M ³ /S	



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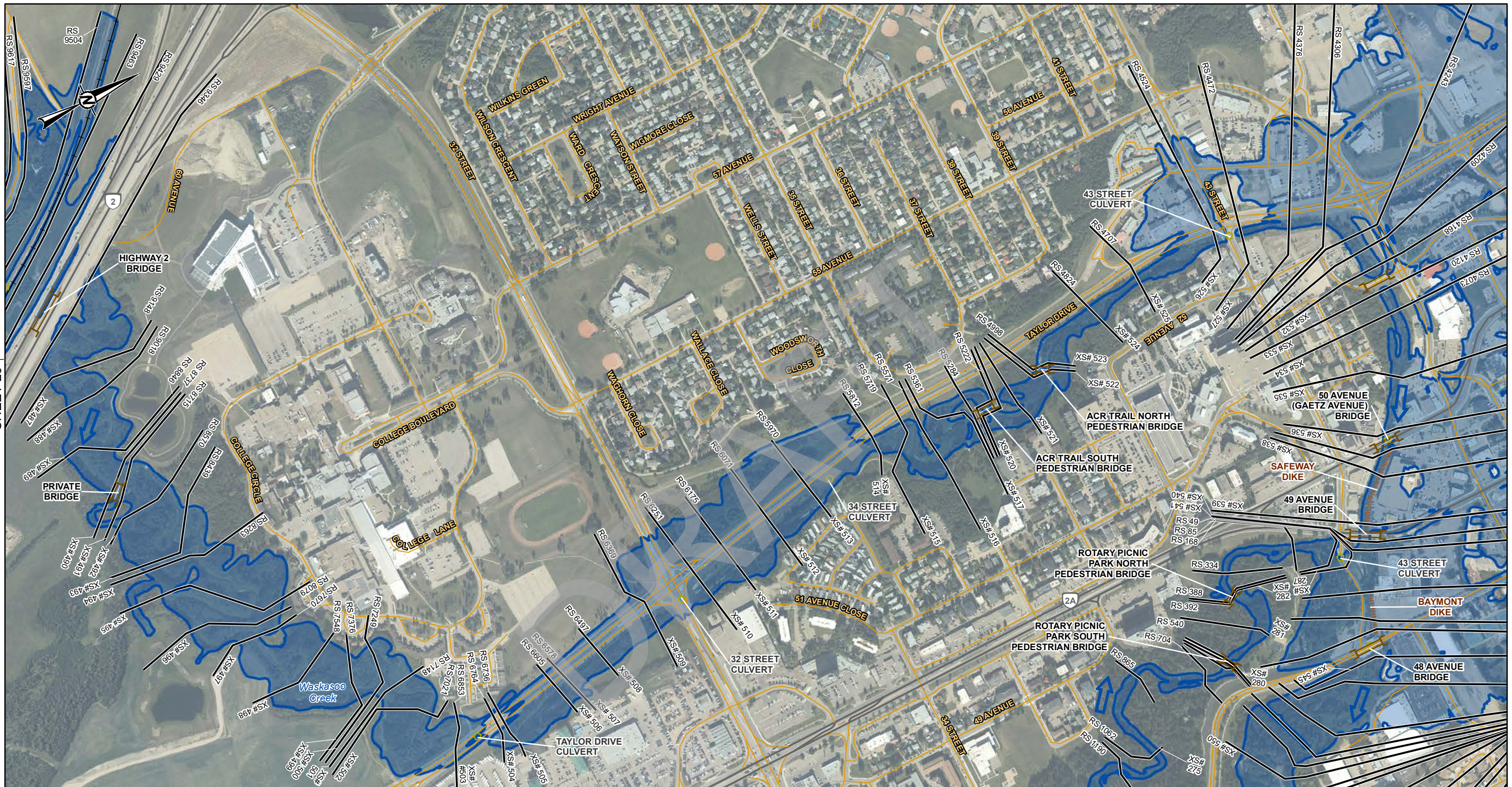
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT	RED DEER RIVER HAZARD STUDY	
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS	
PROJECT NO.	CONTROL	REV.
1783039	4000	2
FIGURE	SHEET 26 OF 31	

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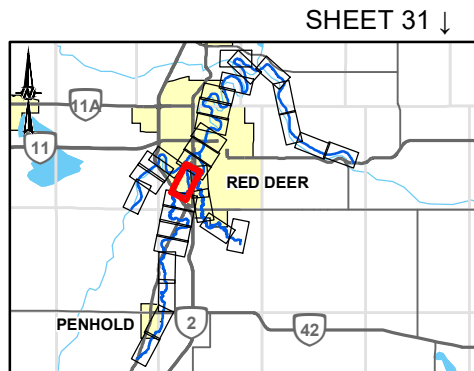
SHEET 26 ↑

↓ SHEET 5

LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	1000-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	1000-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE
 WASKASOO CREEK ABOVE PIPER CREEK = 72 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 107 M³/S
 PIPER CREEK ABOVE WASKASOO CREEK = 36.3 M³/S



SHEET 31 ↓



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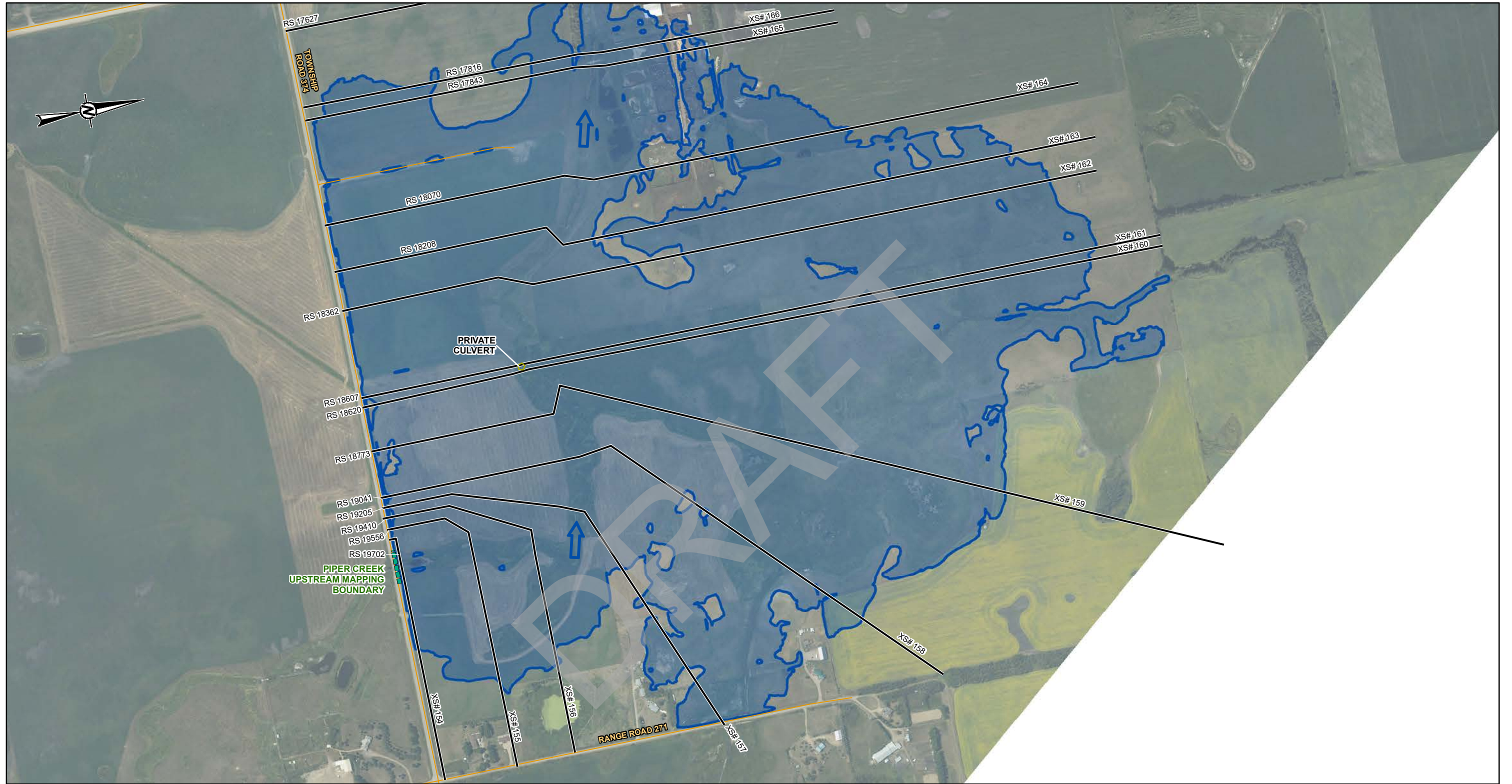
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 DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

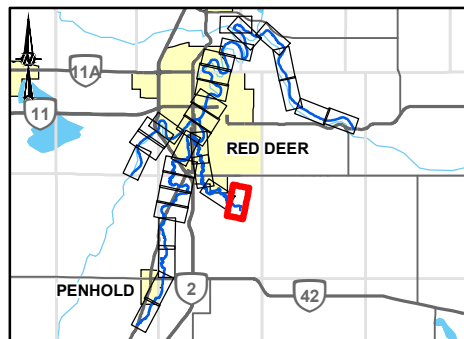
TITLE
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 27 OF 31

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LEGEND	
	CROSS SECTION
	FLOOD CONTROL STRUCTURE
	1000-YEAR FLOOD INUNDATION EXTENT
	1000-YEAR FLOOD EXTENT
	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
	STUDY BOUNDARY
	FLOW DIRECTION
	LOCAL ROAD
	PRIMARY HIGHWAY
	SECONDARY HIGHWAY
	RAILWAY
	CULVERT
	BRIDGE
	DISCHARGE
PIPER CREEK ABOVE HIGHWAY 595 = 32.8 M ³ /S	



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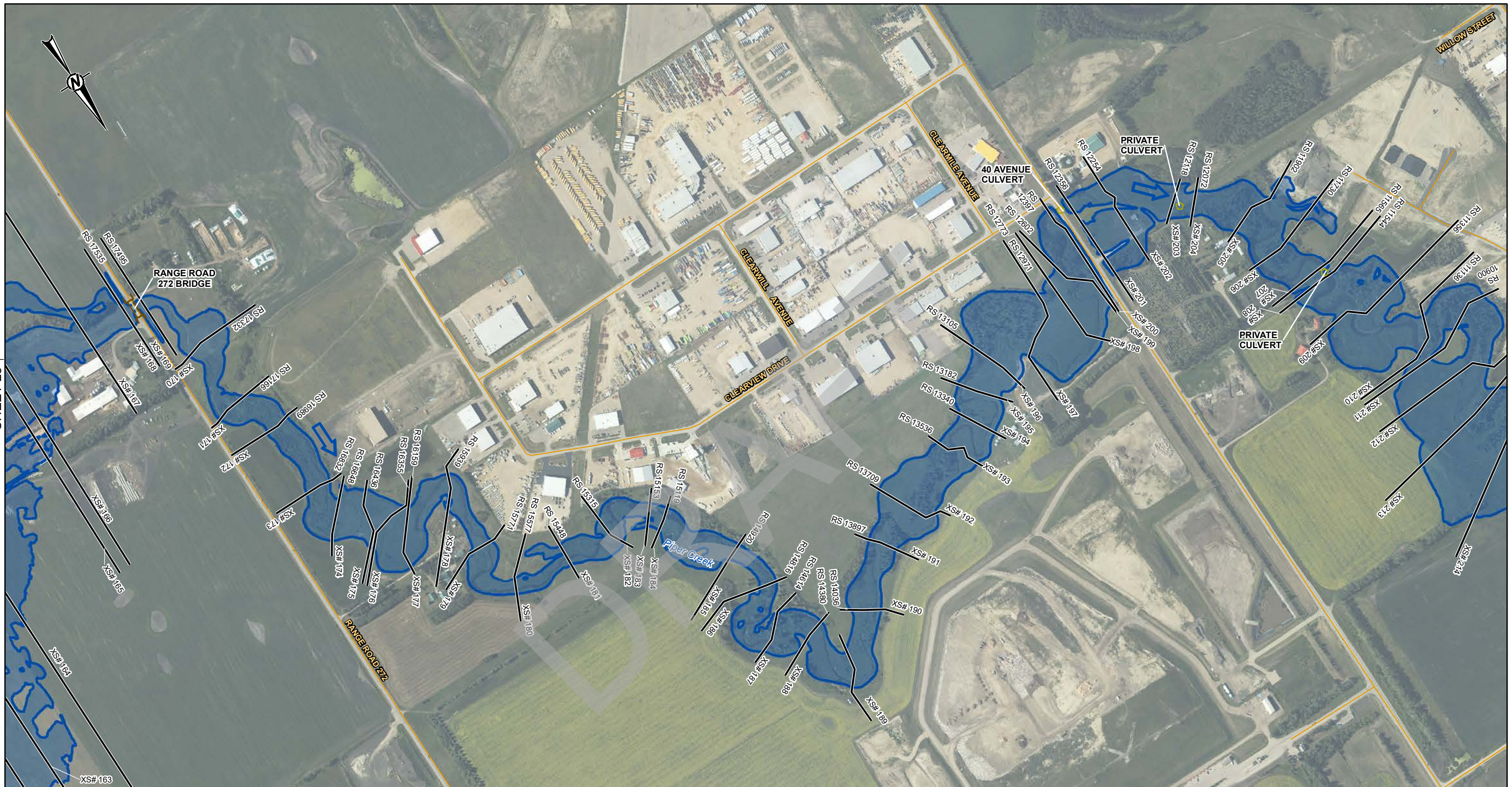
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DATUM: NAD 83 CSRS PROJECTION: 3TM 114

PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
**1000-YEAR FLOOD INUNDATION EXTENT
REGULATED FLOWS**

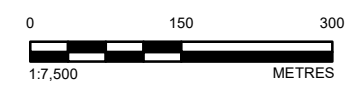
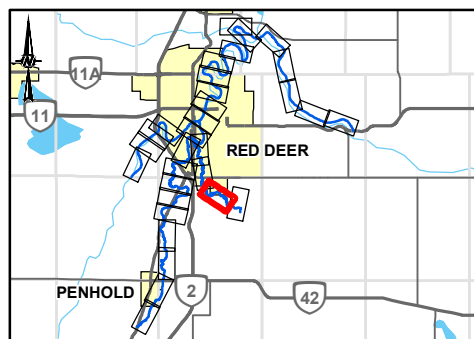
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 28 OF 31

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	1000-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	1000-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 32.8 M ³ /S
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		



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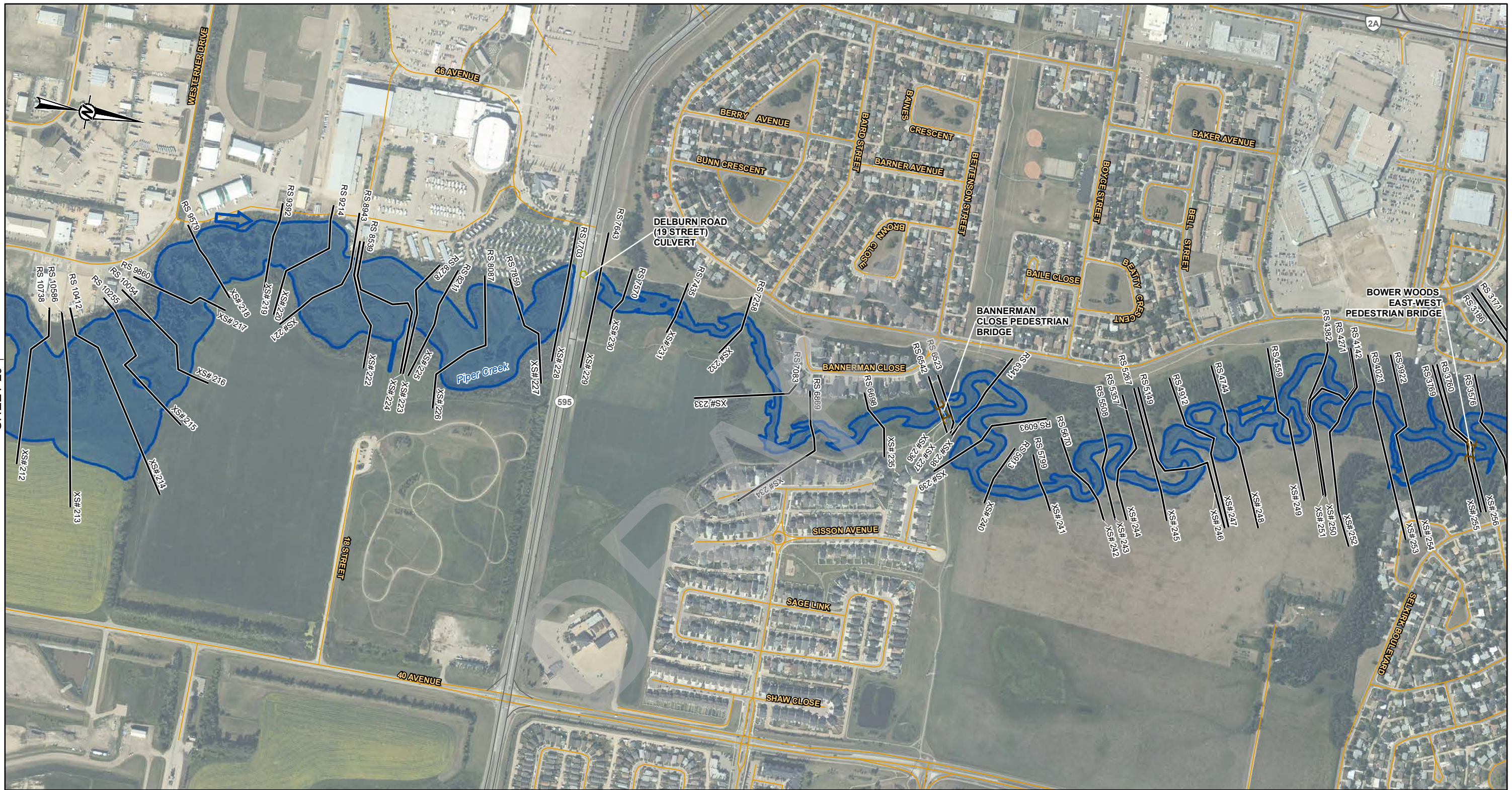
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 29 OF 31

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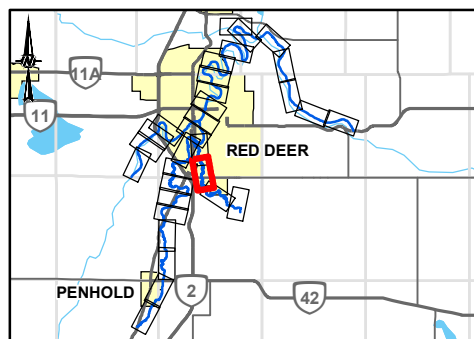
SHEET 31

SHEET 30

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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	1000-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	1000-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		DISCHARGE
LOCAL ROAD		PIPER CREEK ABOVE HIGHWAY 595 = 32.8 M ³ /S
PRIMARY HIGHWAY		PIPER CREEK ABOVE WASKASOO CREEK = 36.3 M ³ /S
SECONDARY HIGHWAY		
RAILWAY		



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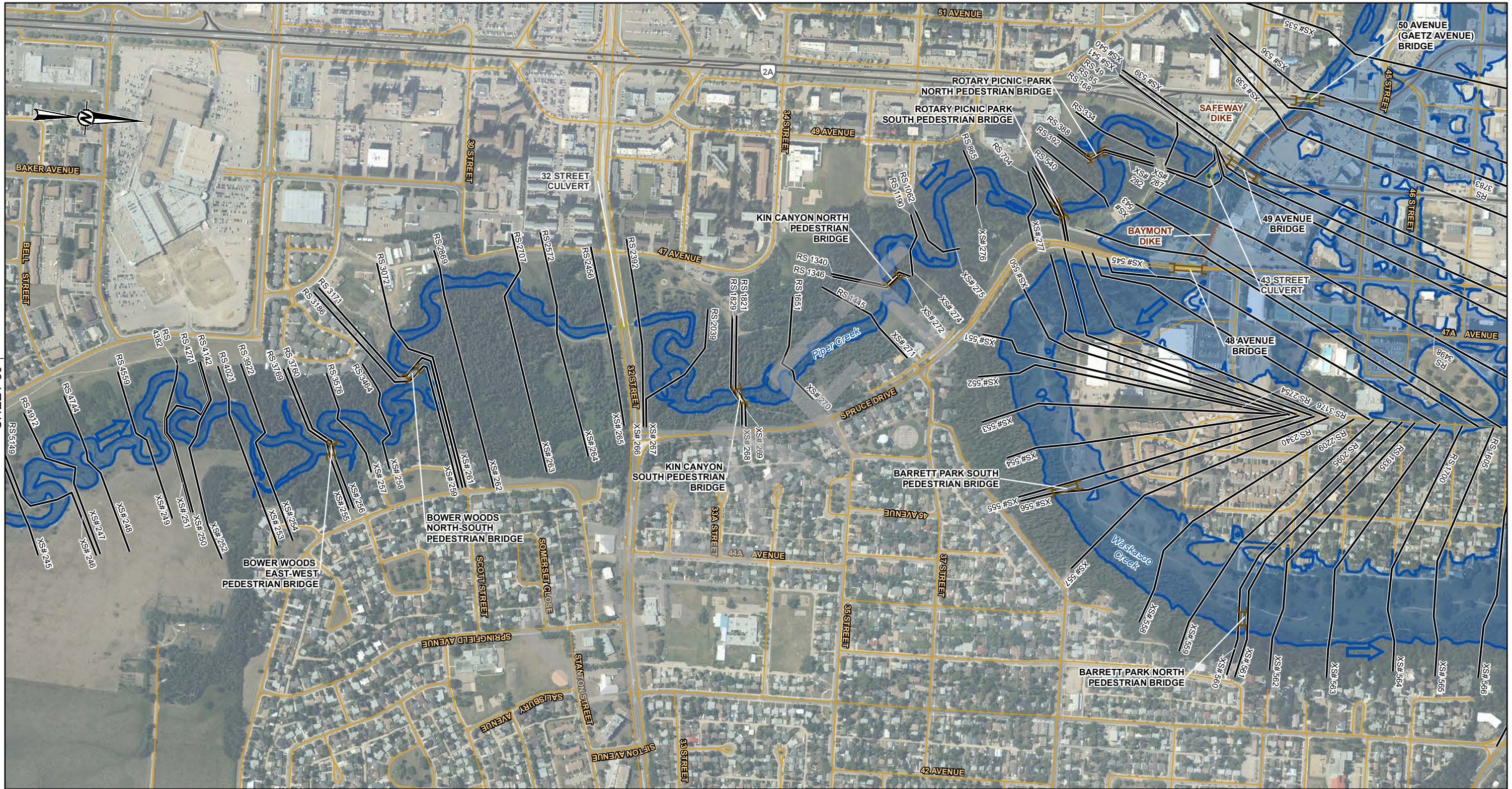
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PROJECT
RED DEER RIVER HAZARD STUDY

TITLE
1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS

PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 30 OF 31



SHEET 30 ↑

SHEET 5 ↓

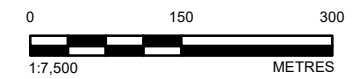
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LEGEND

CROSS SECTION	FLOOD CONTROL STRUCTURE	1000-YEAR FLOOD INUNDATION EXTENT
XS#100 CROSS SECTION NUMBER	HYDRAULIC STRUCTURES	1000-YEAR FLOOD EXTENT
RS 304 RIVER STATION (M)	CULVERT	1000-YEAR FLOOD EXTENT (FLOOD CONTROL STRUCTURE FAILURE)
STUDY BOUNDARY	BRIDGE	
FLOW DIRECTION		
LOCAL ROAD		
PRIMARY HIGHWAY		
SECONDARY HIGHWAY		
RAILWAY		

DISCHARGE

PIPER CREEK ABOVE WASKASOO CREEK = 36.3 M³/S
 WASKASOO CREEK ABOVE PIPER CREEK = 72 M³/S
 WASKASOO CREEK BELOW PIPER CREEK = 107 M³/S



CLIENT	ALBERTA ENVIRONMENT AND PARKS	
CONSULTANT	GOLDER	
DESIGNED	PT	2022-11-23
PREPARED	NB	
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PROJECT	RED DEER RIVER HAZARD STUDY		
TITLE	1000-YEAR FLOOD INUNDATION EXTENT REGULATED FLOWS		
PROJECT NO.	CONTROL	REV.	FIGURE
1783039	4000	2	SHEET 31 OF 31

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