



LEGEND:

- Creek Centreline
 - Map Extents
 - Limit of Mapping
- Velocity (m/s)
- 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

NOTES:

- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019, and by ESRI and DigitalGlobe, WV02 dated June 3, 2015.



SCALE: 1:75,000 METRIC 11"x17"

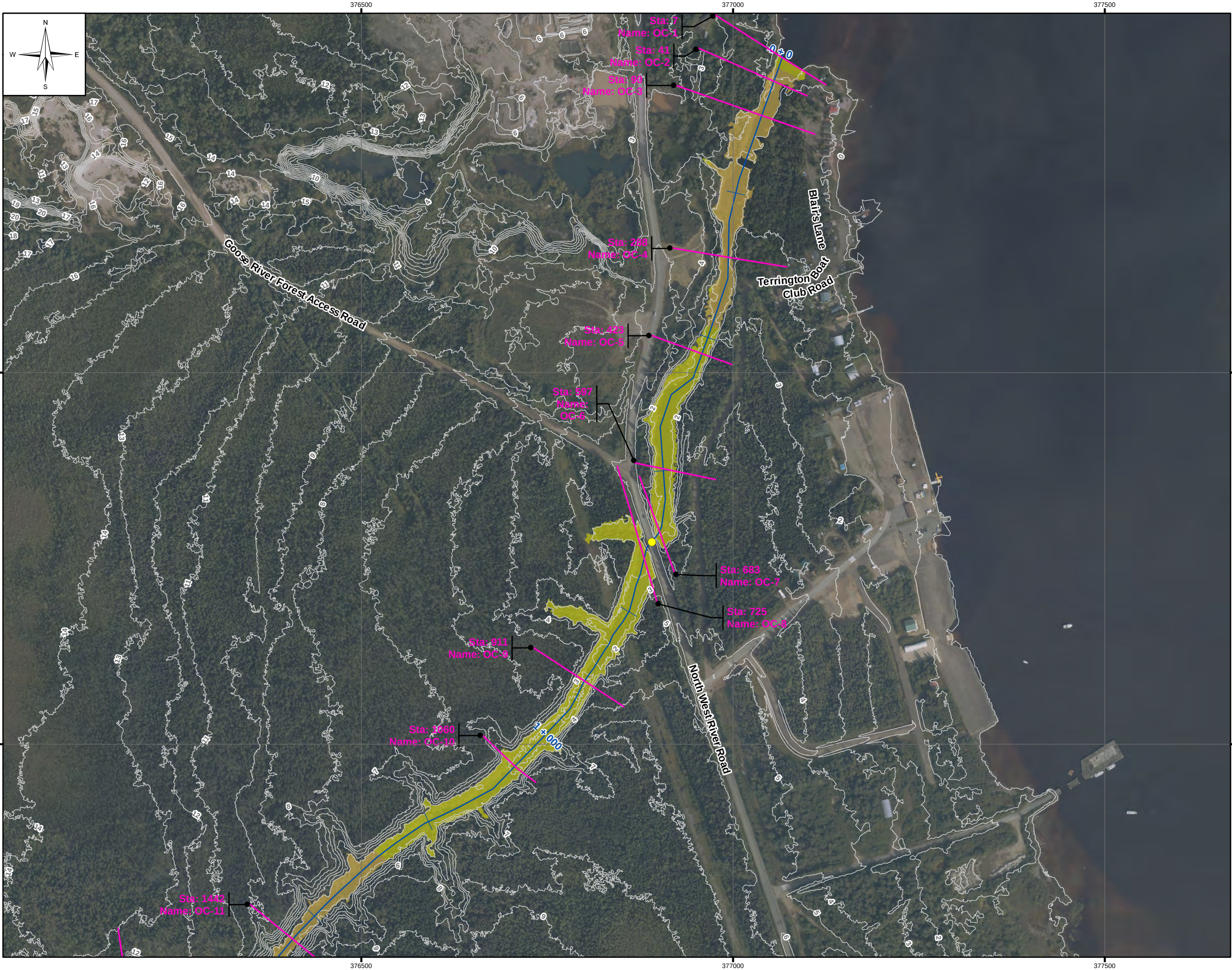
All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM), Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

NO.	DATE	DESCRIPTION	ISSUED BY	CHECK BY

CHURCHILL RIVER FLOOD RISK AND FORECASTING

OPEN WATER 1:20 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) CONDITIONS – CREEK OVERVIEW MAP

JUNE 2020	FIGURE 4.1	REV: 0
-----------	------------	--------

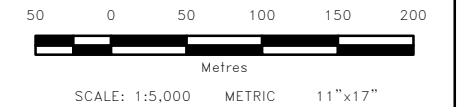


LEGEND:

- Sta: 1252
Name: LCA - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)**
- 0.0 – 1.0 m/s
- 1.0 – 2.0 m/s
- 2.0 – 3.0 m/s
- 3.0 – 4.0 m/s
- > 4.00 m/s

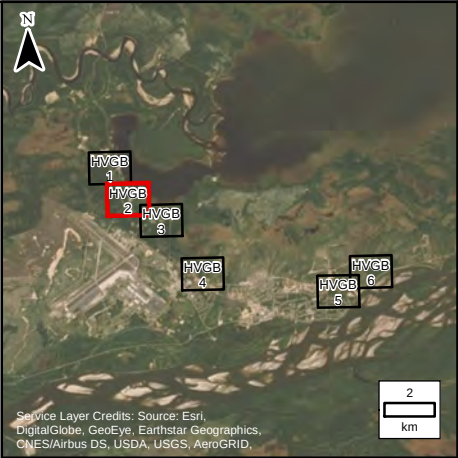
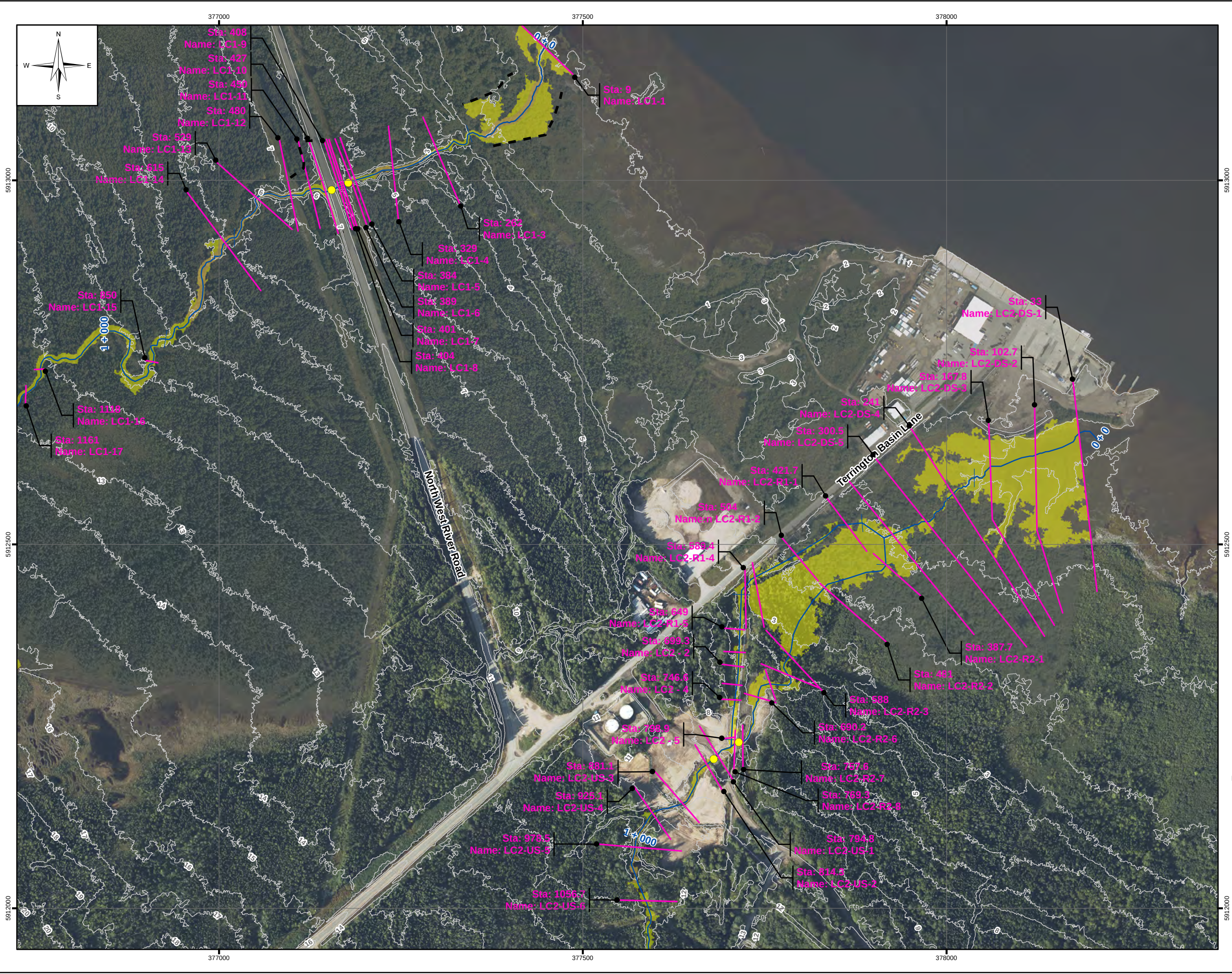
NOTES:

1. Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
2. Topography shown was developed by KGS Group from the LiDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM) Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

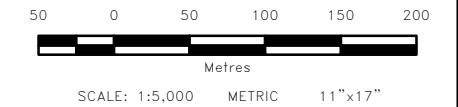
0 20/06/30		ISSUED WITH FINAL REPORT		DSB	MSW		
NO.		YY/MM/DD		DESCRIPTION		ISSUED BY	CHECK BY
REVISIONS / ISSUE							
							
CHURCHILL RIVER FLOOD RISK AND FORECASTING							
OPEN WATER 1:20 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-1							
JUNE 2020				FIGURE 4.2		REV: 0	



LEGEND:

- Sta: 1252
Name: LC1-15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)
 - 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

- NOTES:
- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
 - Topography shown was developed by KGS Group from the LIDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM) Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

0	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY

KGS
GROUP
CONSULTING
ENGINEERS

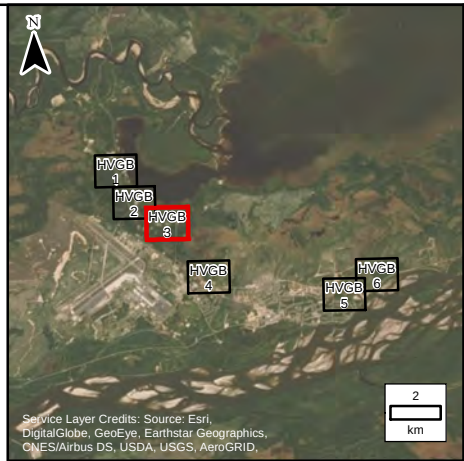
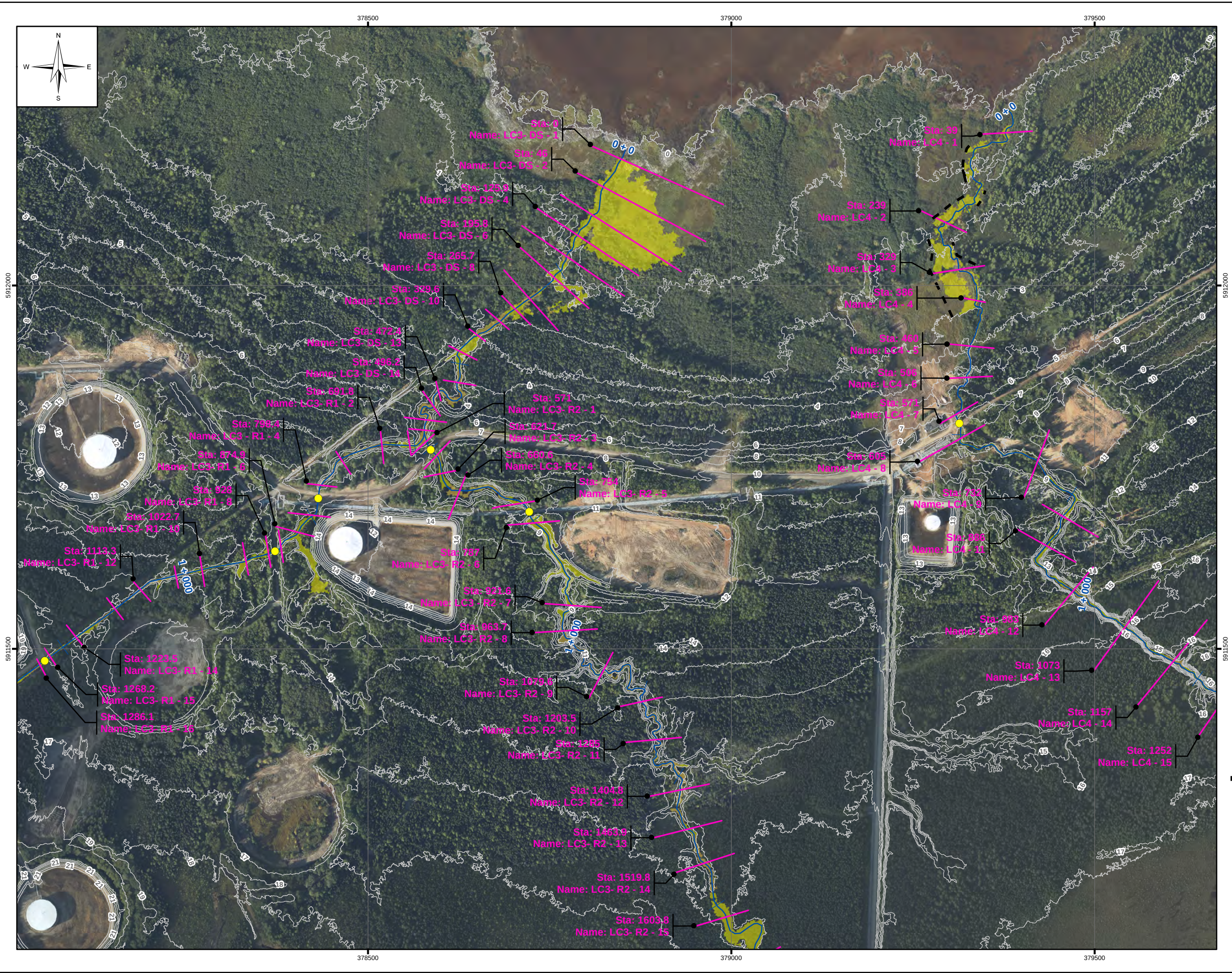
CHURCHILL RIVER FLOOD RISK AND FORECASTING

OPEN WATER 1:20 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-2

JUNE 2020	FIGURE 4.2	REV: 0
-----------	------------	--------

Portions of data Produced by KGS Group, under Licence with the Government of Canada © 2020 Her Majesty the Queen in Right of Canada, Department of Natural Resources. All rights reserved.

File Name: P:\Projects\2018\18-3217-001\Drawings\GIS\MXD\Flood_Mapping_Creeks\18-3217-001_Fig4.2_11x17.mxd
11"x17" PLOT SCALE 1:1

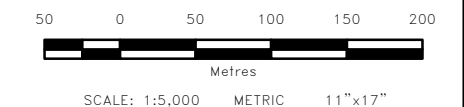


LEGEND:

- Sta: 1252
Name: LC4 - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)
 - 0.0 - 1.0 m/s
 - 1.0 - 2.0 m/s
 - 2.0 - 3.0 m/s
 - 3.0 - 4.0 m/s
 - > 4.00 m/s

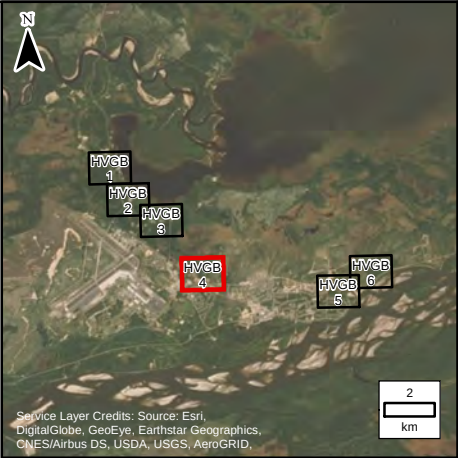
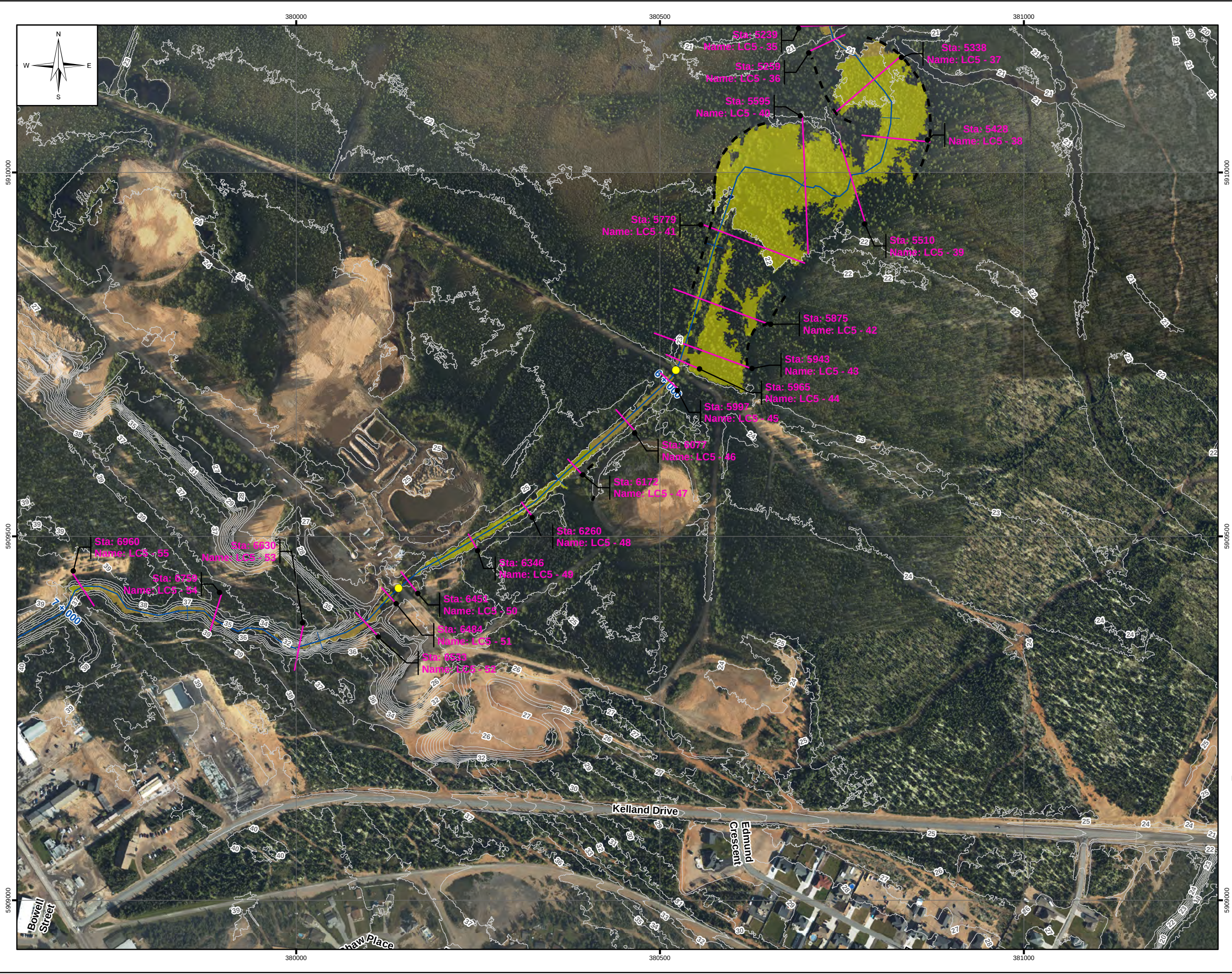
NOTES:

- Imagery is supplied by ATLAS Geomatics and dated as September 11 - 13, 2019.
- Topography shown was developed by KGS Group from the LIDAR captured by ATLAS Geomatics on September 11 - 13, 2019.



All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM) Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

0		20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION		ISSUED BY	CHECK BY
REVISIONS / ISSUE					
					
CHURCHILL RIVER FLOOD RISK AND FORECASTING					
OPEN WATER 1:20 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-3					
JUNE 2020			FIGURE 4.2	REV:	0

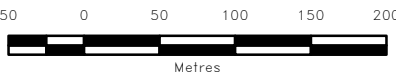


LEGEND:

- Sta: 1252
Name: LC5 - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)
 - 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

NOTES:

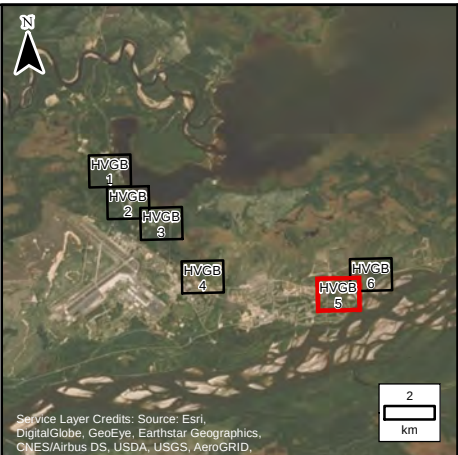
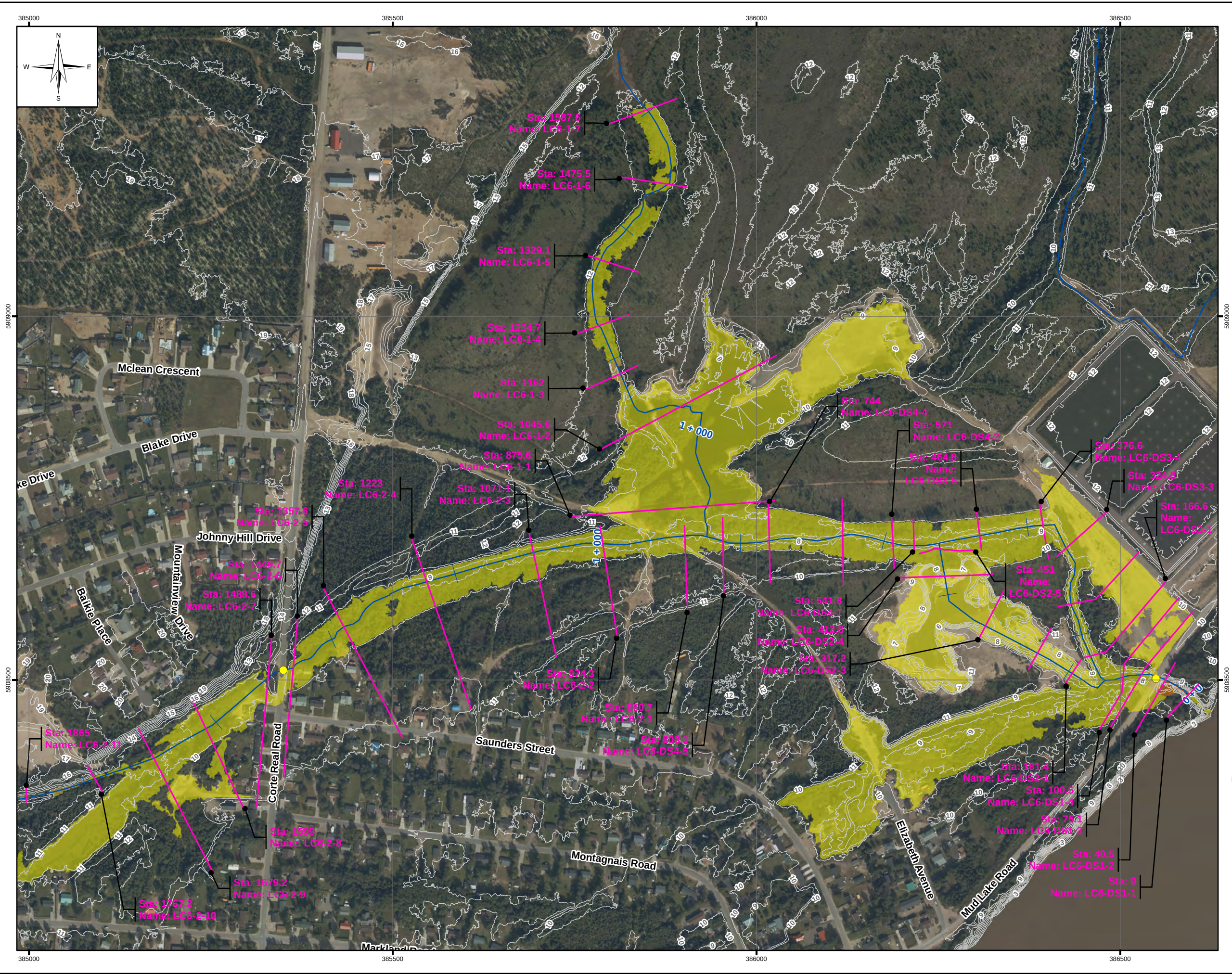
- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
- Topography shown was developed by KGS Group from the LIDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



SCALE: 1:5,000 METRIC 11"x17"

All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM)
Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

0	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
REVISIONS / ISSUE				
				
CHURCHILL RIVER FLOOD RISK AND FORECASTING				
OPEN WATER 1:20 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-4				
JUNE 2020		FIGURE 4.2		REV: 0



LEGEND:

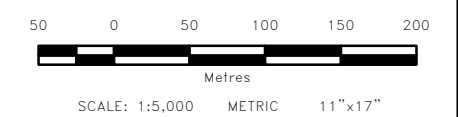
- Sta: 1252
Name: LC4-15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts

Velocity (m/s)

- 0.0 – 1.0 m/s
- 1.0 – 2.0 m/s
- 2.0 – 3.0 m/s
- 3.0 – 4.0 m/s
- > 4.00 m/s

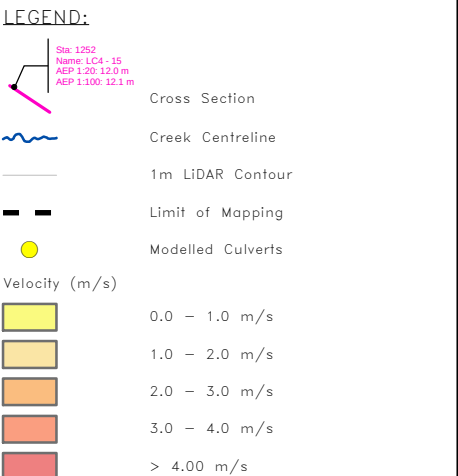
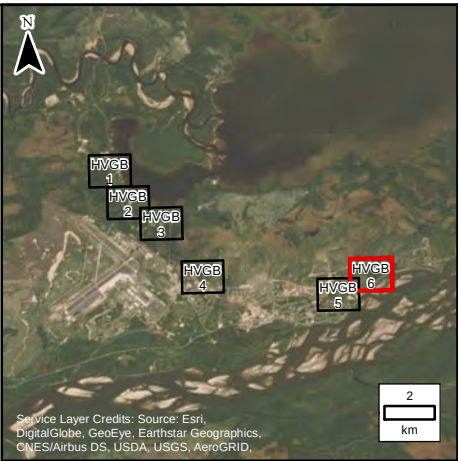
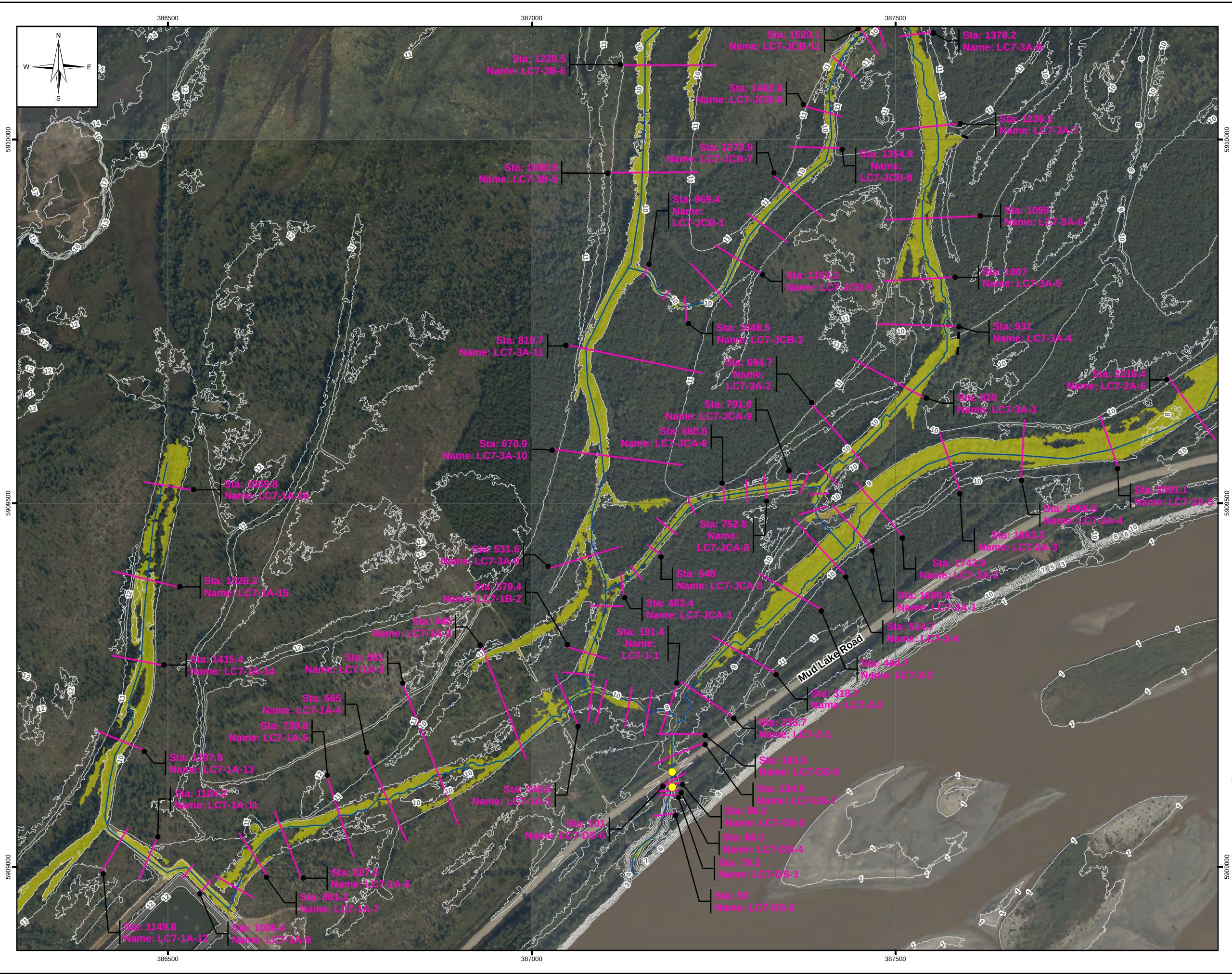
NOTES:

- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
- Topography shown was developed by KGS Group from the LIDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



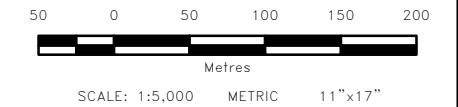
All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM) Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

0 20/06/20		ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
REVISIONS / ISSUE				
				
CHURCHILL RIVER FLOOD RISK AND FORECASTING				
OPEN WATER 1:20 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-5				
JUNE 2020		FIGURE 4.2		REV: 0



NOTES:

- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
- Topography shown was developed by KGS Group from the LIDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM), Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

Q	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
REVISIONS / ISSUE				
				
CHURCHILL RIVER FLOOD RISK AND FORECASTING				
OPEN WATER 1:20 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-6				
JUNE 2020		FIGURE 4.2	REV:	0



LEGEND:

- Creek Centreline
- Map Extents
- Limit of Mapping
- Velocity (m/s)
 - 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

NOTES:

- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019, and by ESRI and DigitalGlobe, WV02 dated June 3, 2015.



SCALE: 1:75,000 METRIC 11"x17"

All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM), Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

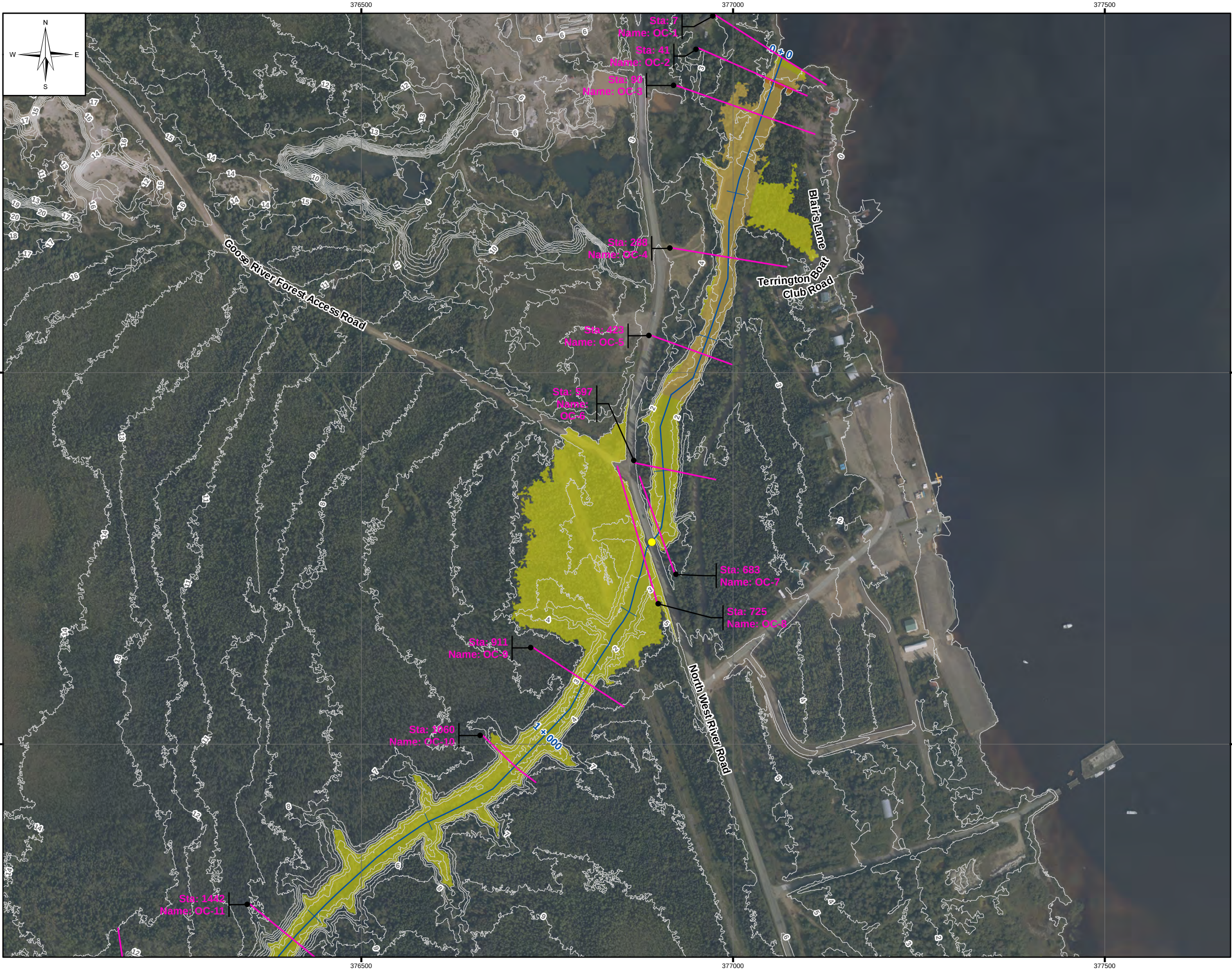
0	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
REVISIONS / ISSUE				

KGS
GROUP
CONSULTING
ENGINEERS

CHURCHILL RIVER FLOOD RISK AND FORECASTING

OPEN WATER 1:100 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) CONDITIONS – CREEK OVERVIEW MAP

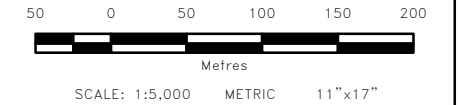
JUNE 2020	FIGURE 4.3	REV: 0
-----------	------------	--------



LEGEND:

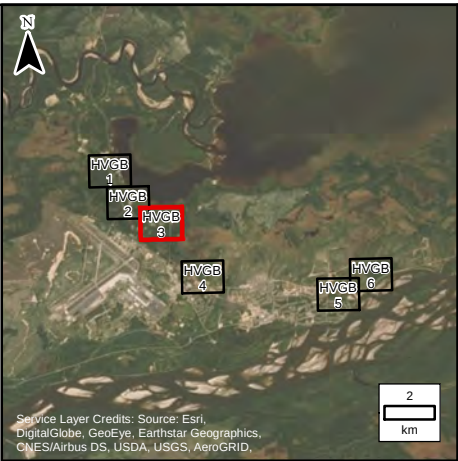
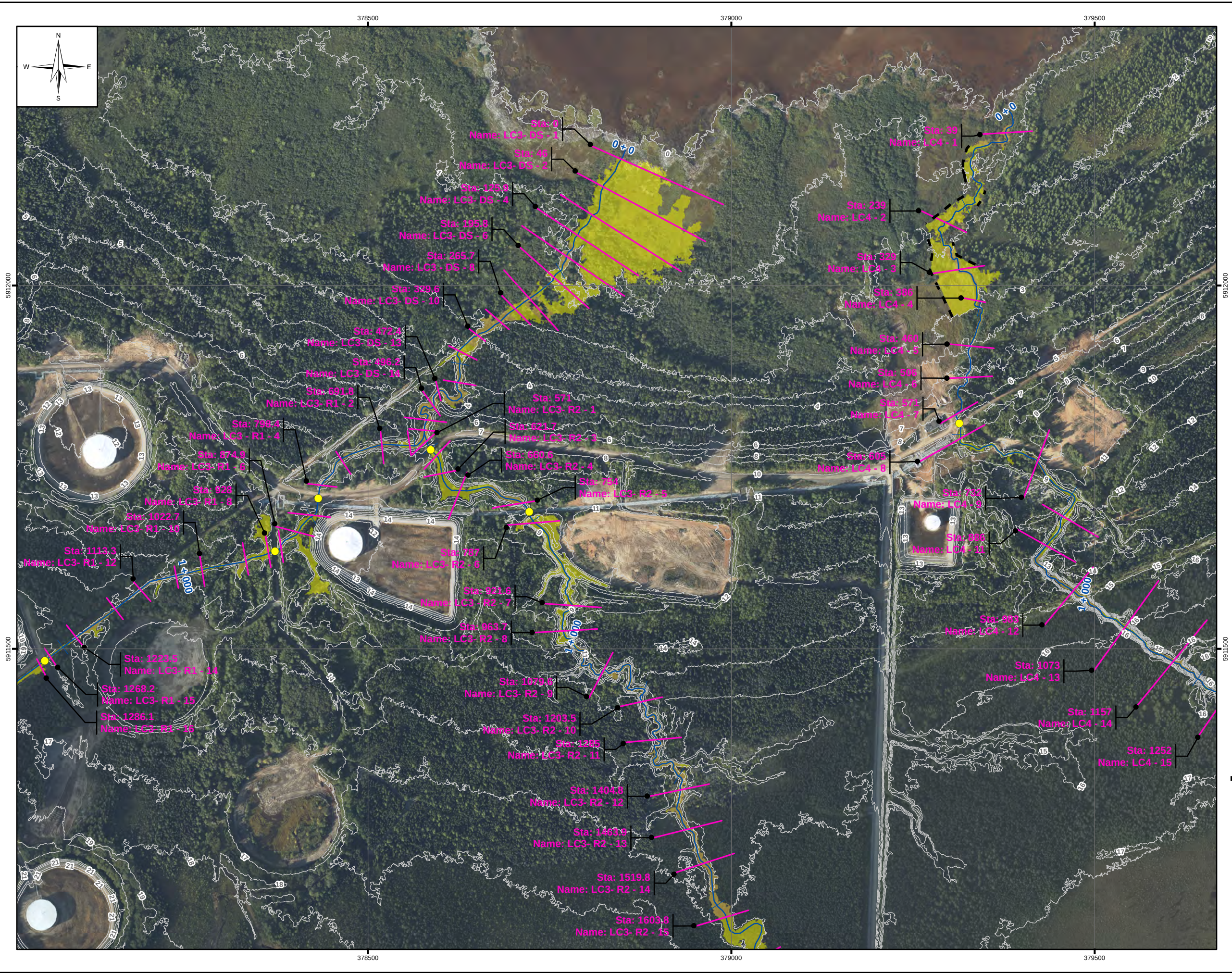
- Sta: 1252
Name: LCA - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.5 m
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)**
 - 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

- NOTES:**
- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
 - Topography shown was developed by KGS Group from the LiDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM) Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

0 20/06/30		ISSUED WITH FINAL REPORT		DSB	MSW
NO.	YY/MM/DD	DESCRIPTION		ISSUED BY	CHECK BY
REVISIONS / ISSUE					
					
CHURCHILL RIVER FLOOD RISK AND FORECASTING					
OPEN WATER 1:100 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-1					
JUNE 2020		FIGURE 4.4			REV: 0

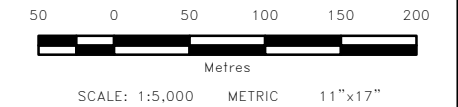


LEGEND:

- Sta: 1252
Name: LC4 - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)
 - 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

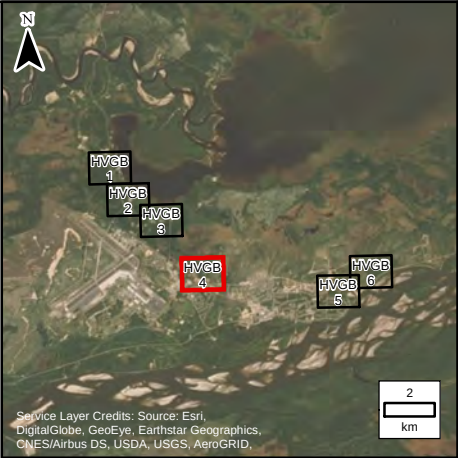
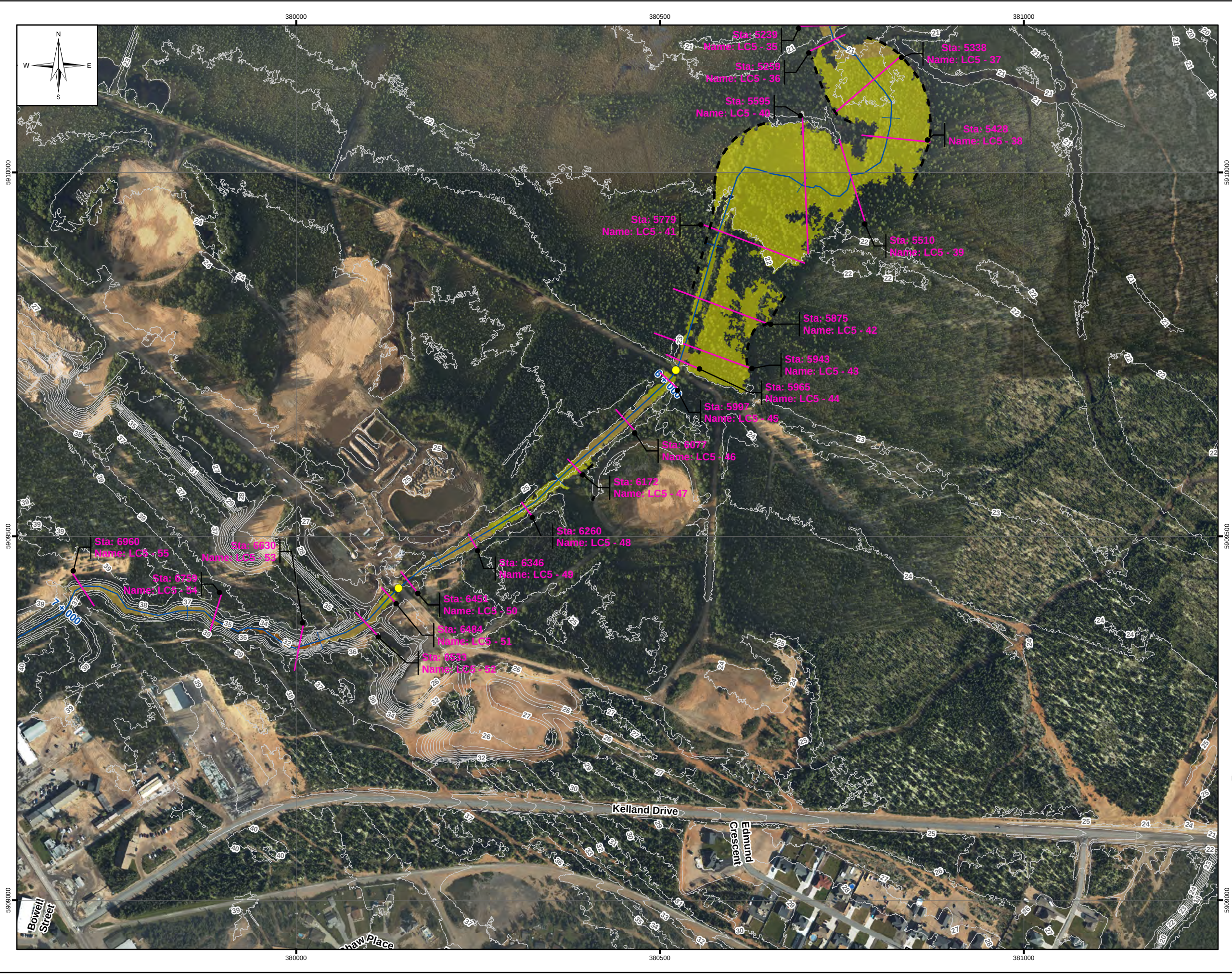
NOTES:

1. Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
2. Topography shown was developed by KGS Group from the LiDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM)
Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

Q	20/06/30	ISSUED WITH FINAL REPORT		DSB	MSW
NO.	YY/MM/DD	DESCRIPTION		ISSUED BY	CHECK BY
REVISIONS / ISSUE					
					
CHURCHILL RIVER FLOOD RISK AND FORECASTING					
OPEN WATER 1:100 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-3					
JUNE 2020		FIGURE 4.4		REV:	0

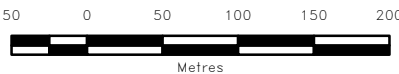


LEGEND:

- Sta: 1252
Name: LC5 - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)
 - 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

NOTES:

- Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
- Topography shown was developed by KGS Group from the LIDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



SCALE: 1:5,000 METRIC 11"x17"

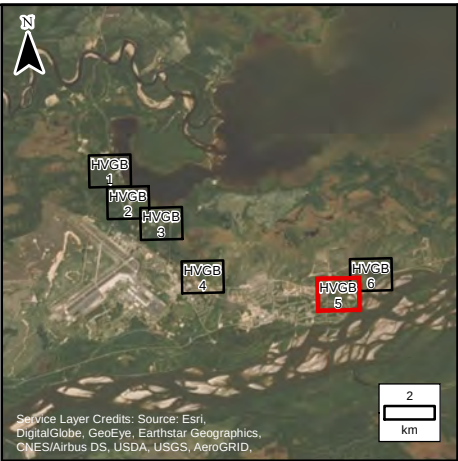
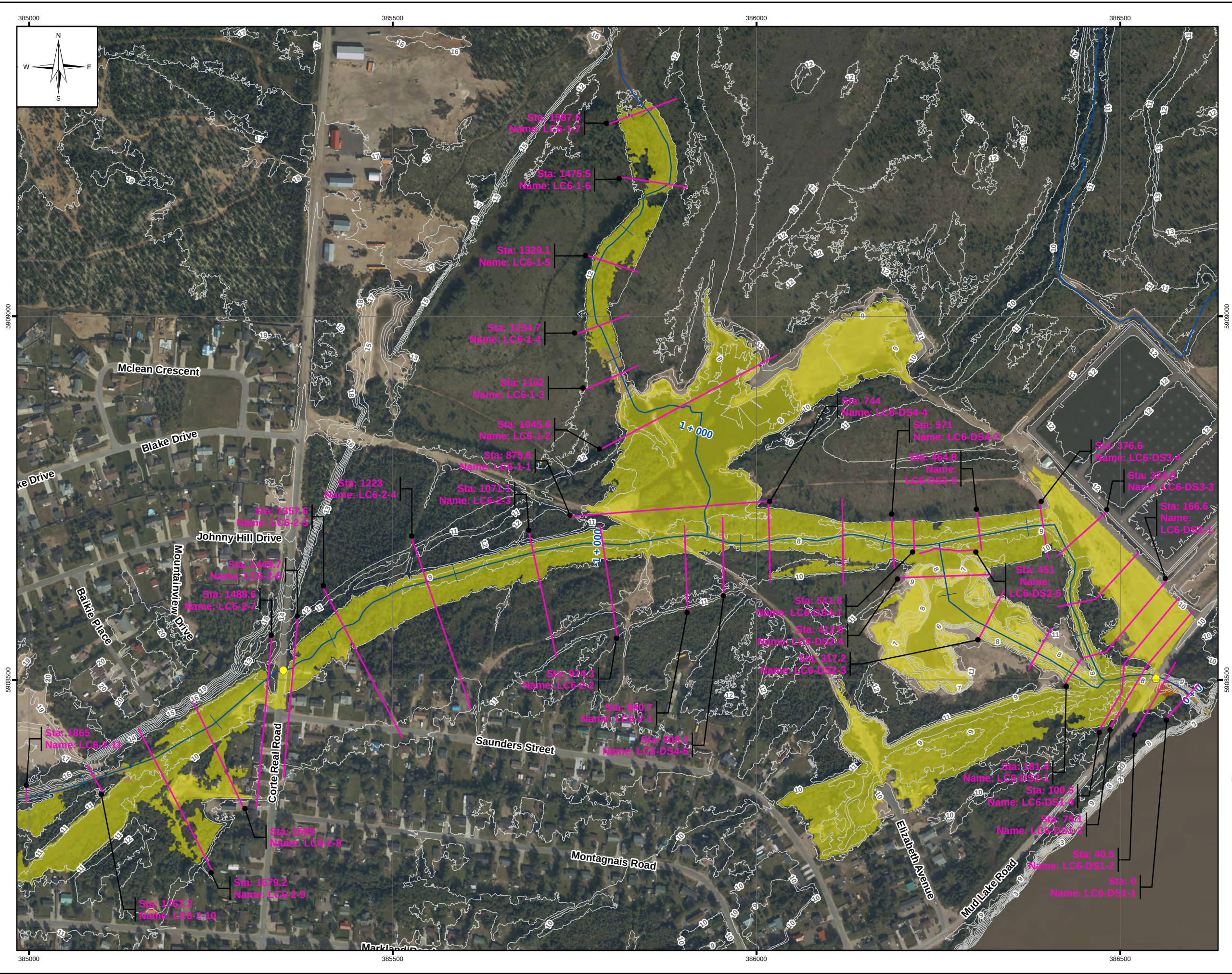
All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM)
Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

0	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
REVISIONS / ISSUE				

CHURCHILL RIVER FLOOD RISK AND FORECASTING

OPEN WATER 1:100 YEAR VELOCITY DISTRIBUTION
FOR CURRENT CLIMATE, CURRENT DEVELOPMENT
(CC-CD) – HVGB-4

JUNE 2020	FIGURE 4.4	REV: 0
-----------	------------	--------

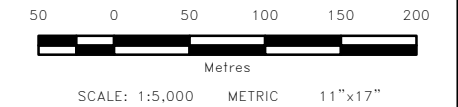


LEGEND:

- Sta: 1252
Name: LC4-15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- Velocity (m/s)
 - 0.0 – 1.0 m/s
 - 1.0 – 2.0 m/s
 - 2.0 – 3.0 m/s
 - 3.0 – 4.0 m/s
 - > 4.00 m/s

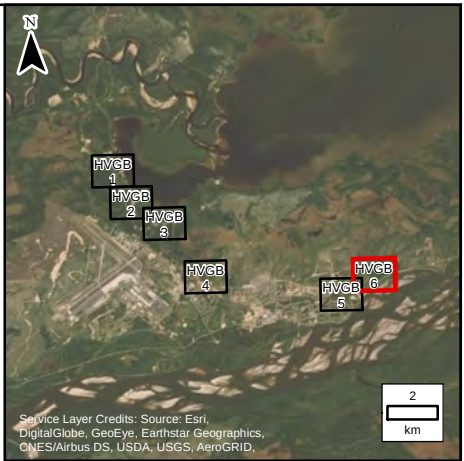
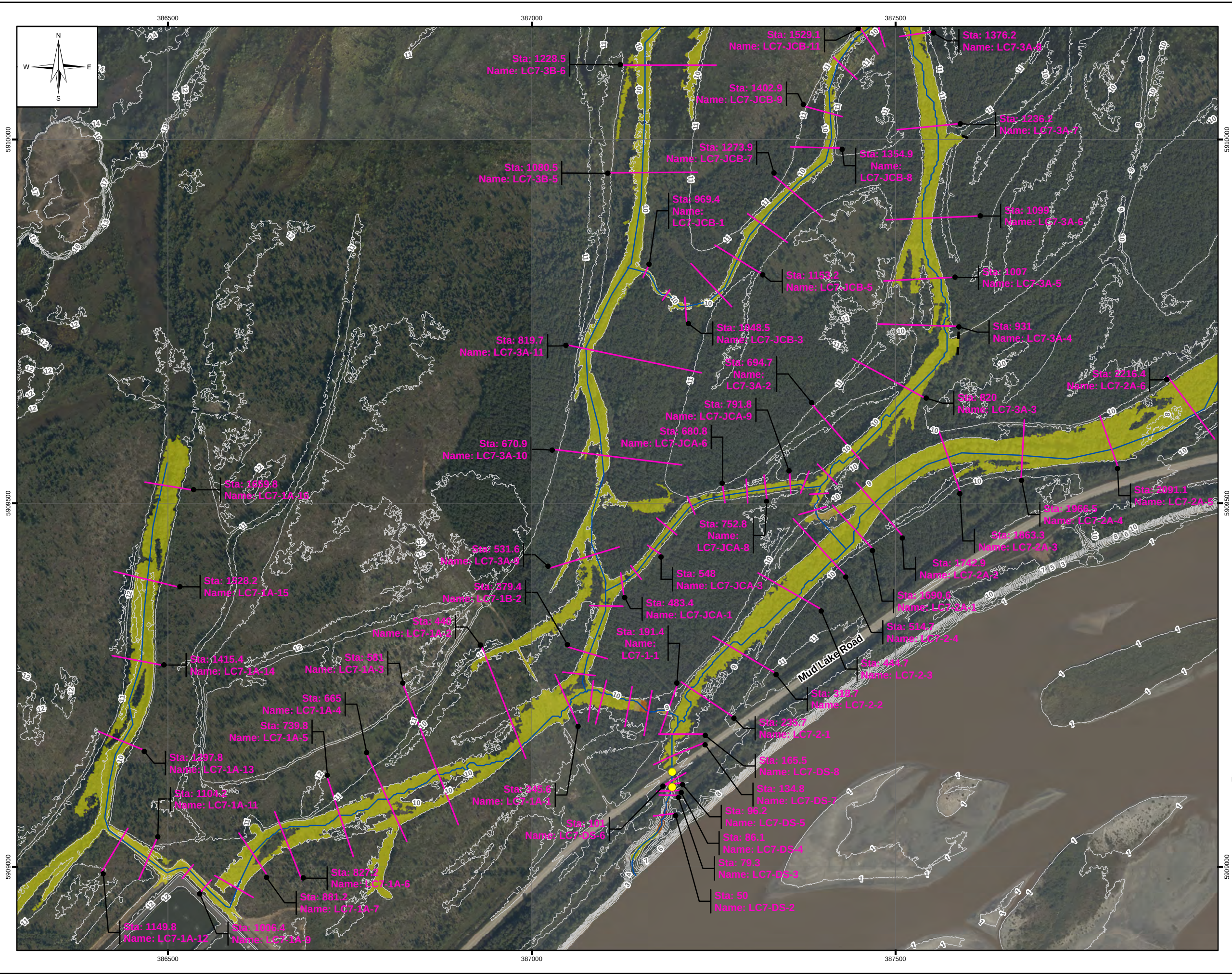
NOTES:

1. Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
2. Topography shown was developed by KGS Group from the LiDAR captured by ATLAS Geomatics on September 11 – 13, 2019.

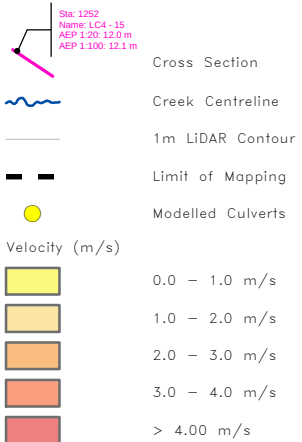


All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM) Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

0 20/06/30		ISSUED WITH FINAL REPORT		DSB	MSW
NO.	YY/MM/DD	DESCRIPTION		ISSUED BY	CHECK BY
REVISIONS / ISSUE					
					
CHURCHILL RIVER FLOOD RISK AND FORECASTING					
OPEN WATER 1:100 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-5					
JUNE 2020		FIGURE 4.4		REV: 0	

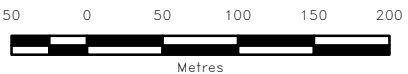


LEGEND:



NOTES:

1. Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
2. Topography shown was developed by KGS Group from the LiDAR captured by ATLAS Geomatics on September 11 – 13, 2019.



All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM) Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

35050000

0	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
REVISIONS / ISSUE				
KGS GROUP CONSULTING ENGINEERS		 Newfoundland Labrador		
CHURCHILL RIVER FLOOD RISK AND FORECASTING				
OPEN WATER 1:100 YEAR VELOCITY DISTRIBUTION FOR CURRENT CLIMATE, CURRENT DEVELOPMENT (CC-CD) – HVGB-6				
JUNE 2020		FIGURE 4.4	REV:	0