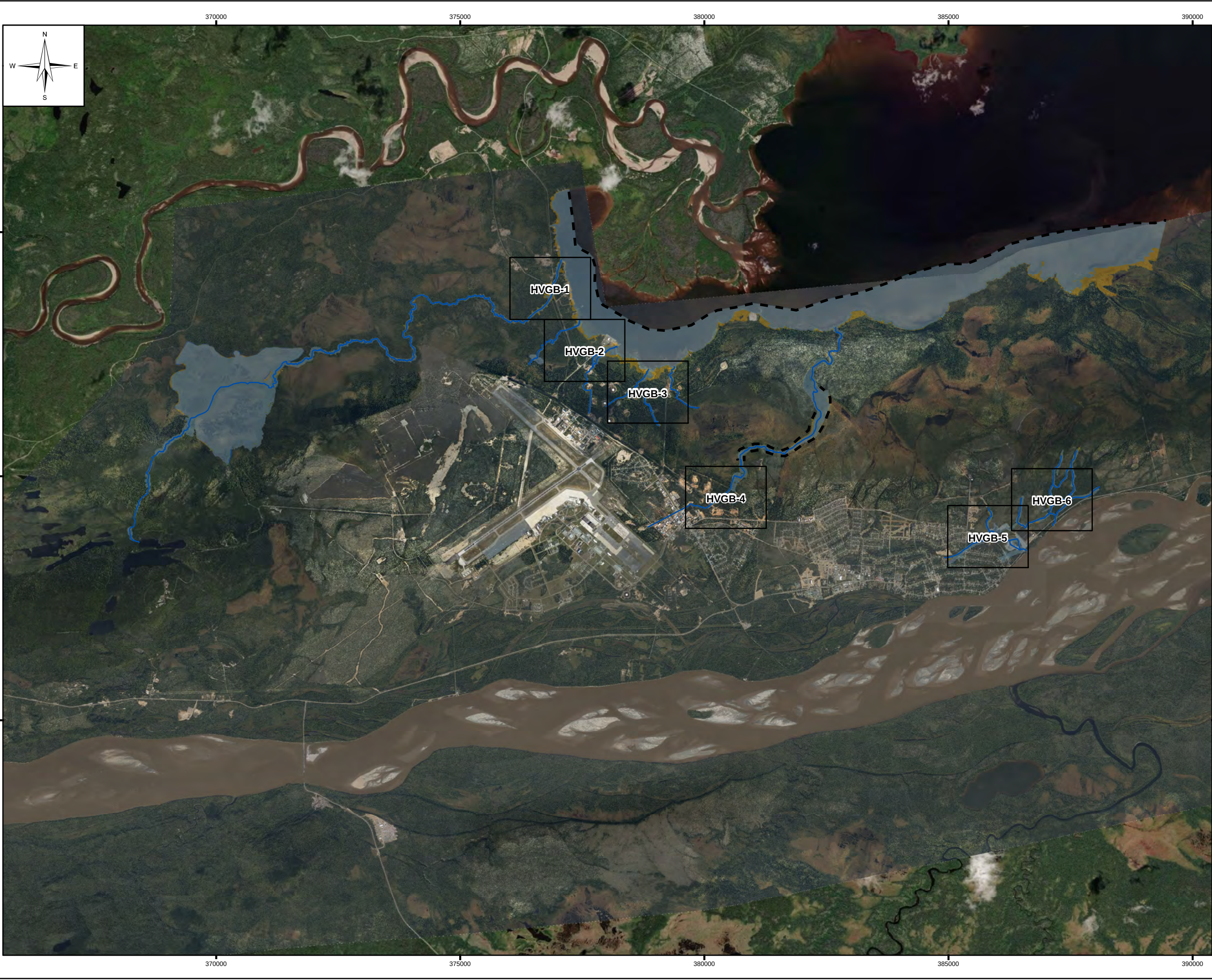




- LEGEND:
- Creek Centreline
 - Map Extents
 - Limit of Mapping
 - 1:20 Year Current Climate Open Water Flood Zone
 - 1:20 Year Open Water Flood Zone CLC LC1

- NOTES:
- Imagery is supplied by ATGIS Geomatics and dated as September 11 – 13, 2019, and by ESRI and DigitalGlobe, WV02 dated June 3, 2015.
 - Lake Melville shown at 0.22 metres.



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).

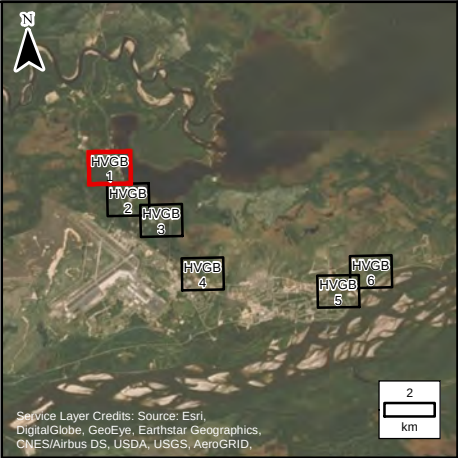
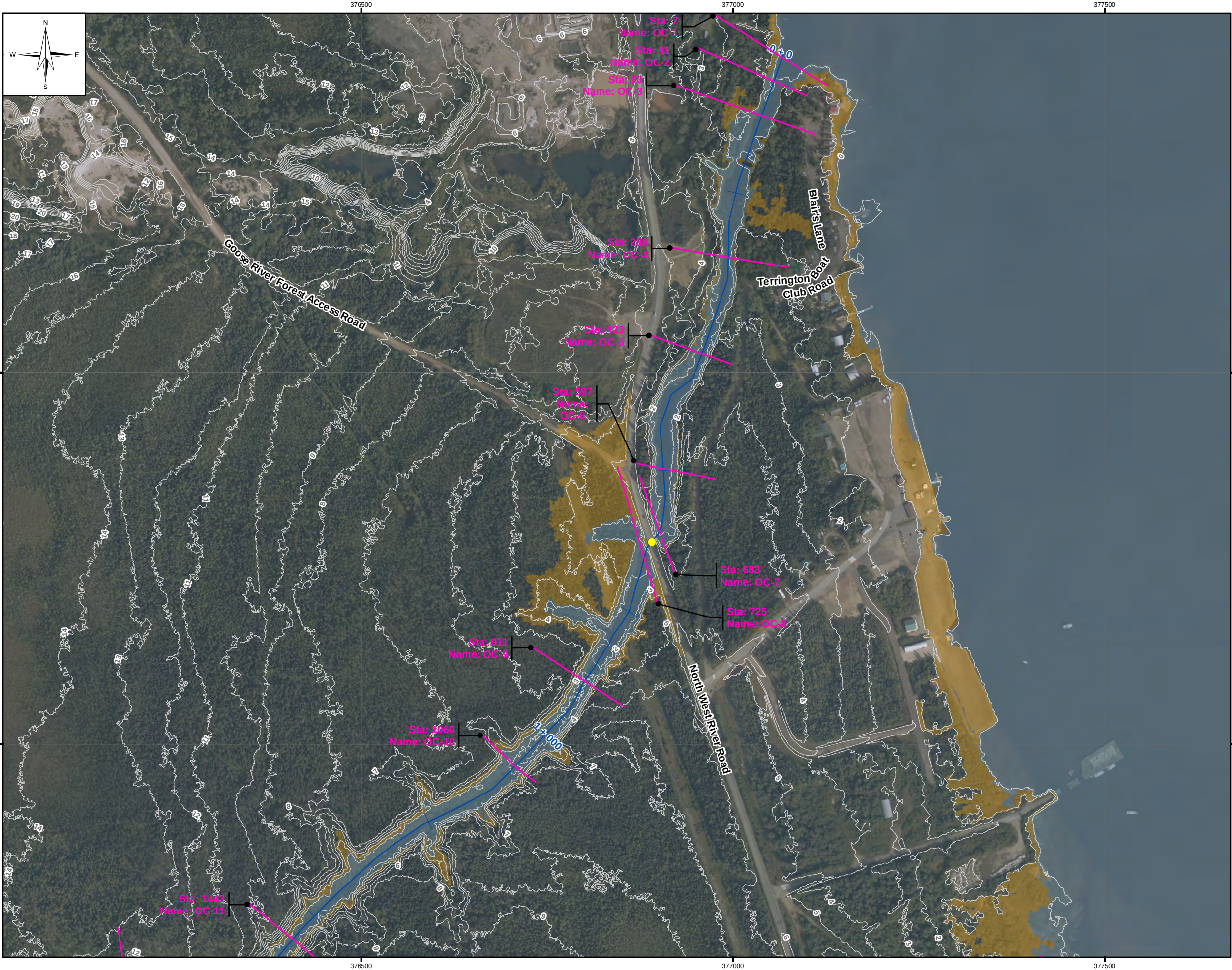
	0	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
	NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY

REVISIONS / ISSUE

CHURCHILL RIVER FLOOD RISK AND FORECASTING

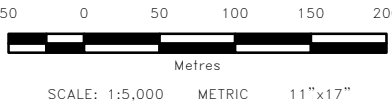
COMPARISON OF OPEN WATER 1:20 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) OVERVIEW MAP

JUNE 2020	FIGURE 6.1	REV: 0
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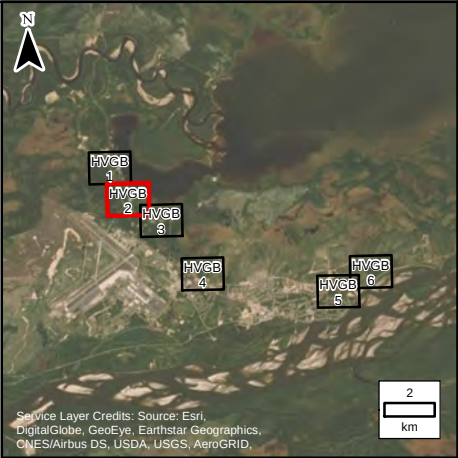
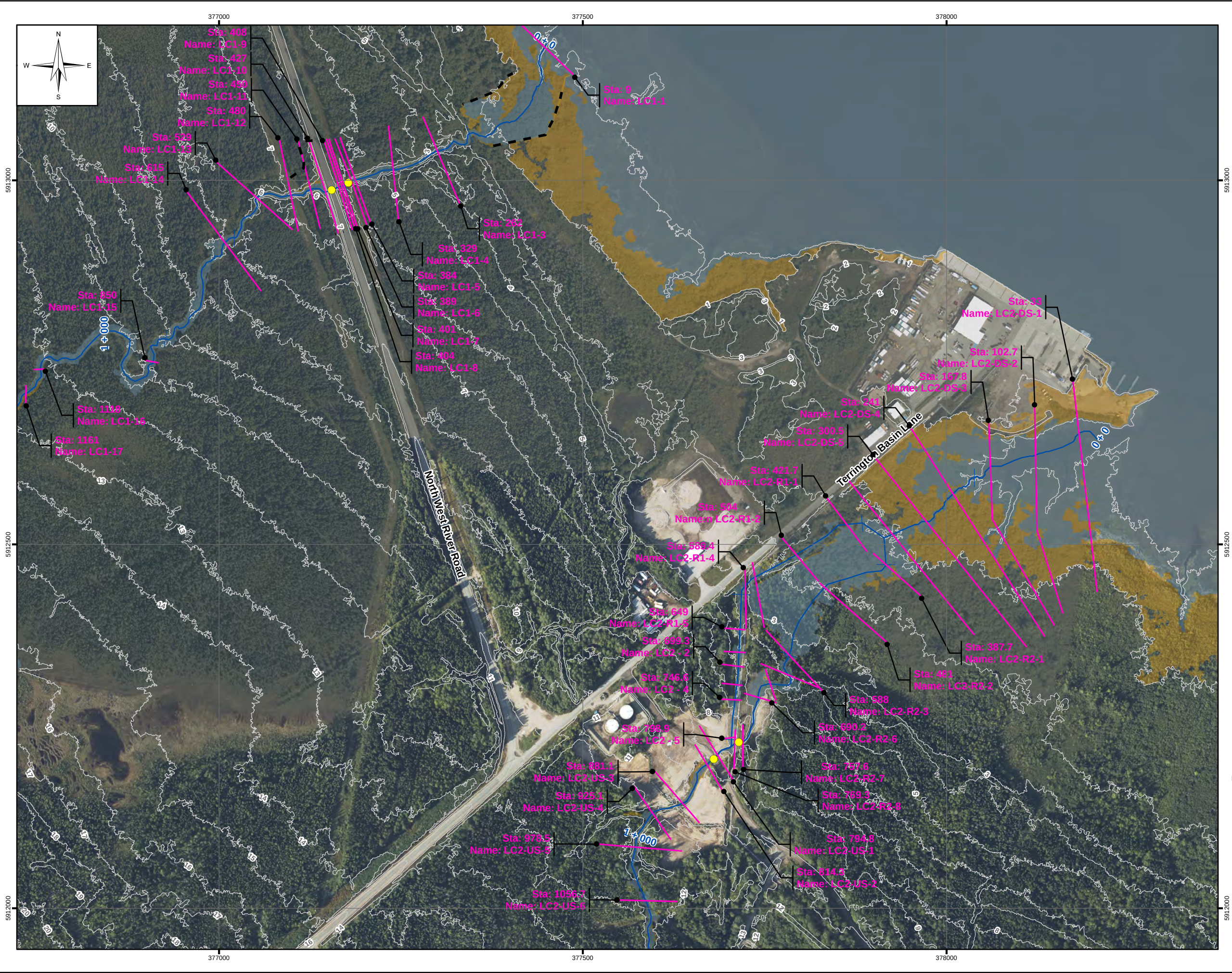
- LEGEND:**
- Sta: 1252
Name: LCA - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
 - Cross Section
 - Creek Centreline
 - 1m LIDAR Contour
 - Limit of Mapping
 - Modelled Culverts
 - 1:20 Year Current Climate Open Water Flood Zone
 - 1:20 Year Climate Change Open Water Flood Zone

- 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.
 3. Lake Melville shown at 0.22 metres.
 4. Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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					
COMPARISON OF OPEN WATER 1:20 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-1					
JUNE 2020		FIGURE 6.2		REV:	0

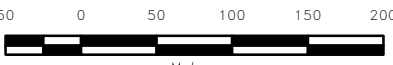


LEGEND:

- 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
- 1:20 Year Current Climate Open Water Flood Zone
- 1:20 Year Climate Change Open Water Flood Zone

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.
- Lake Melville shown at 0.22 metres.
- Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



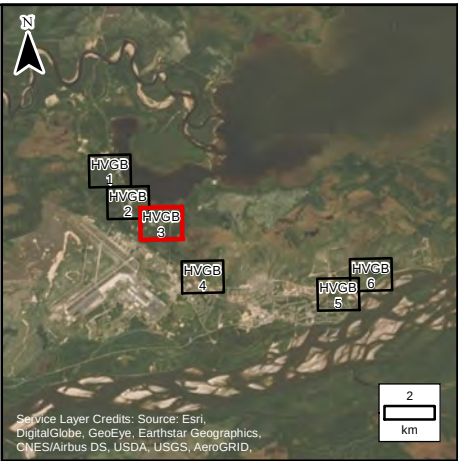
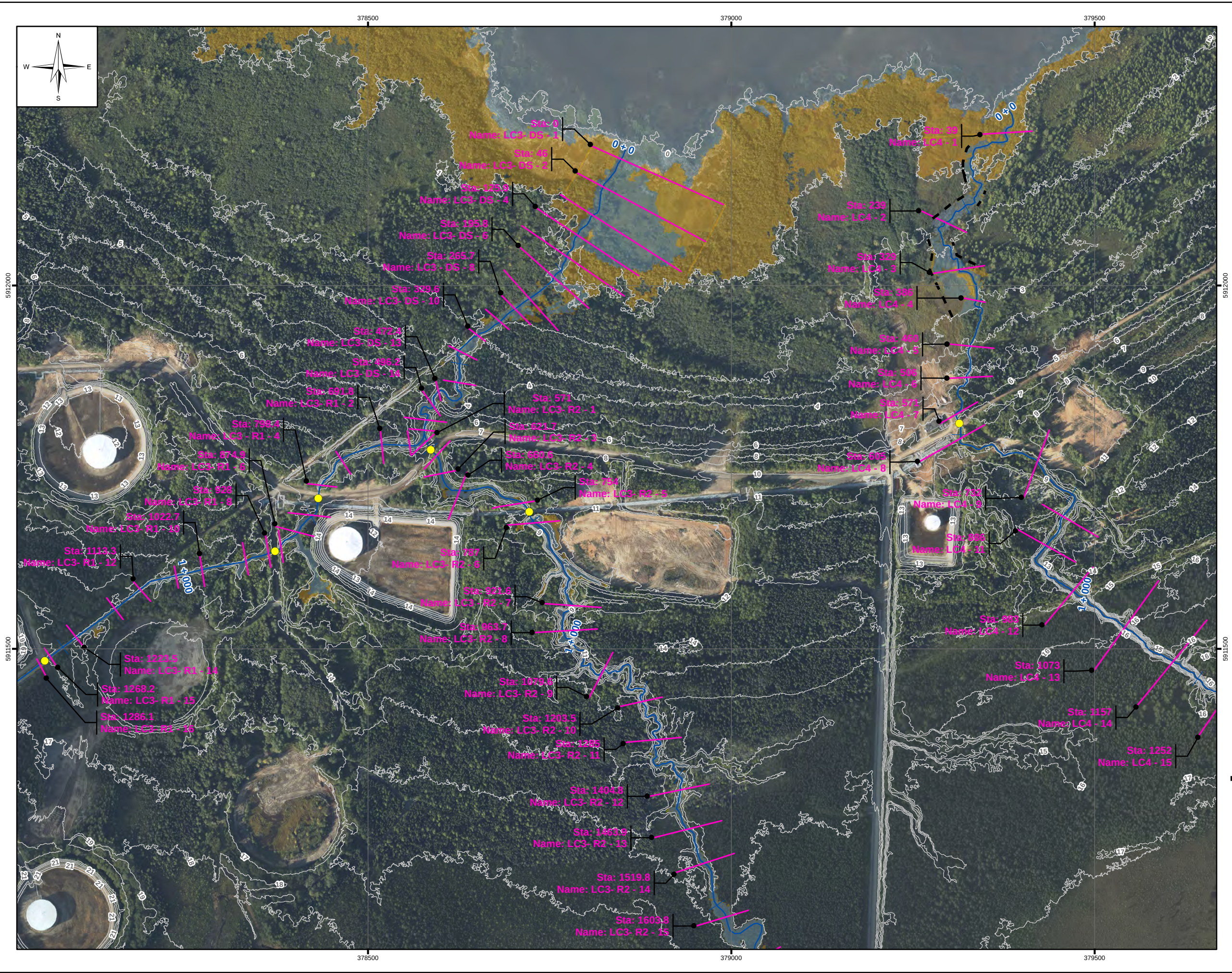
SCALE: 1:5,000 METRIC 11"x17"

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					
COMPARISON OF OPEN WATER 1:20 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-2					
JUNE 2020		FIGURE 6.2		REV:	0

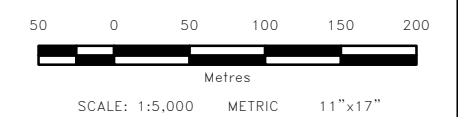
Portions of data Produced by KGS Group, under Licence with the Government of Canada © 2020 Her Majesty the Queen in Right of Canada, Department of Natural Resources. All rights reserved.

File Name: P:\Projects\2018\18-3217-001\Drawings\GIS\MXD\Flood_Mapping_Creeks\18-3217-001_Fig6.2_11x17.mxd
11"x17" PLOT SCALE 1:1



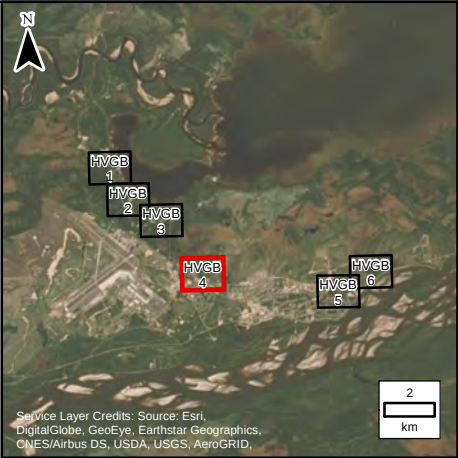
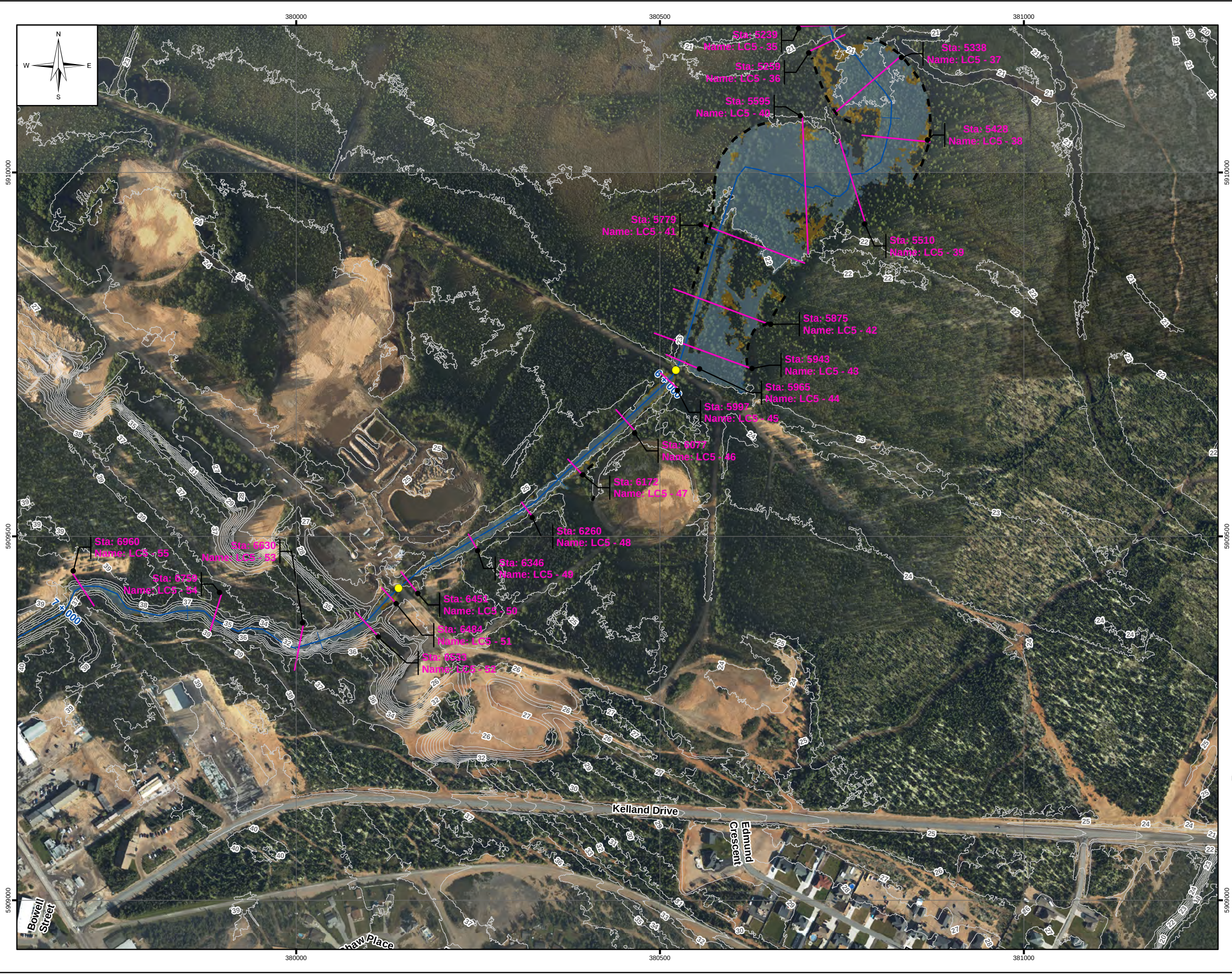
- LEGEND:**
- Sta: 1252 Name: LC4 - 15 AEP 1:20: 12.0 m AEP 1:100: 12.1 m
 - Cross Section
 - Creek Centreline
 - 1m LIDAR Contour
 - Limit of Mapping
 - Modelled Culverts
 - 1:20 Year Current Climate Open Water Flood Zone
 - 1:20 Year Climate Change Open Water Flood Zone

- 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.
 3. Lake Melville shown at 0.22 metres.
 4. Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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				
COMPARISON OF OPEN WATER 1:20 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-3				
JUNE 2020		FIGURE 6.2	REV: 0	

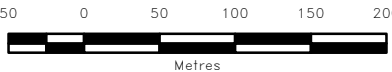


LEGEND:

- 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
- 1:20 Year Current Climate
Open Water Flood Zone
- 1:20 Year Climate Change
Open Water Flood Zone

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.
- Lake Melville shown at 0.22 metres.
- Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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

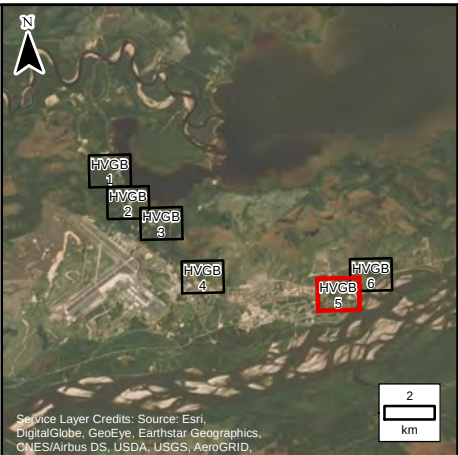
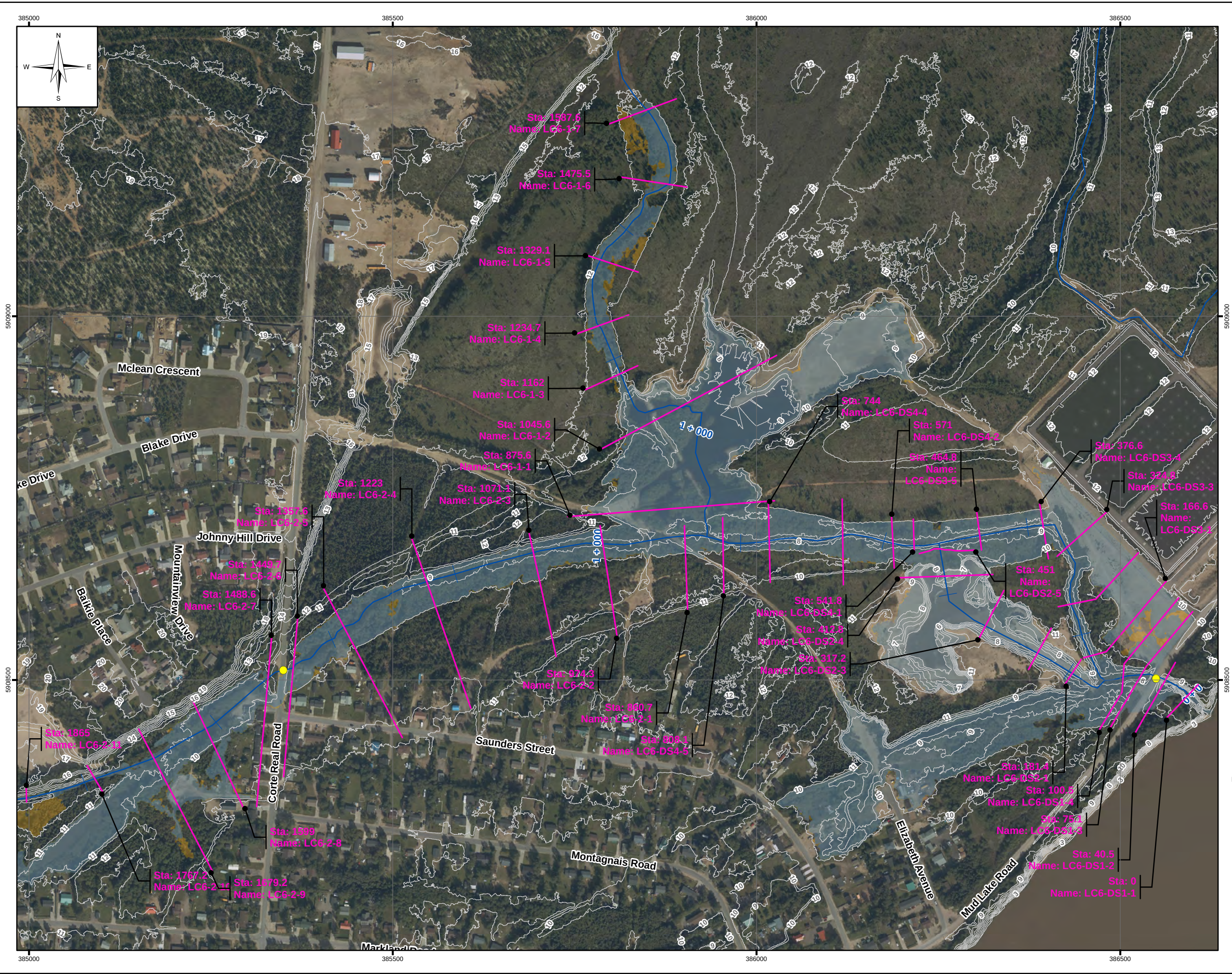
All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS (NAD83), Modified Transverse Mercator Projection (MTM)
Zone 4. Elevations are in metres above sea level (MSL), Canadian Geodetic Vertical Datum 2013 (CGVD2013).

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

COMPARISON OF OPEN WATER 1:20 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-4

JUNE 2020	FIGURE 6.2	REV: 0
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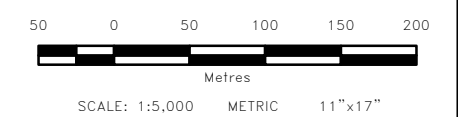


LEGEND:

- 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
- 1:20 Year Current Climate
Open Water Flood Zone
- 1:20 Year Climate Change
Open Water Flood Zone

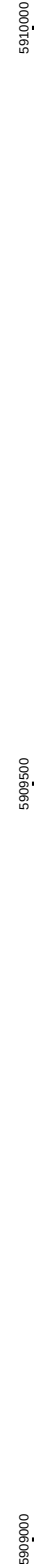
NOTES:

- 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.
- Lake Melville shown at 0.22 metres.
- Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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).

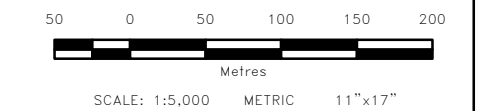
0 20/06/30		ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
REVISIONS / ISSUE				
				
CHURCHILL RIVER FLOOD RISK AND FORECASTING				
COMPARISON OF OPEN WATER 1:20 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-5				
JUNE 2020		FIGURE 6.2	REV: 0	



Sta: 1252
Name: LC4 - 15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m

	Creek Centreline
	1m LiDAR Contour
	Limit of Mapping
	Modelled Culverts
	1:20 Year Current Climate Open Water Flood Zone
	1:20 Year Climate Change Open Water Flood Zone

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.
3. Lake Melville shown at 0.22 metres.
4. Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.

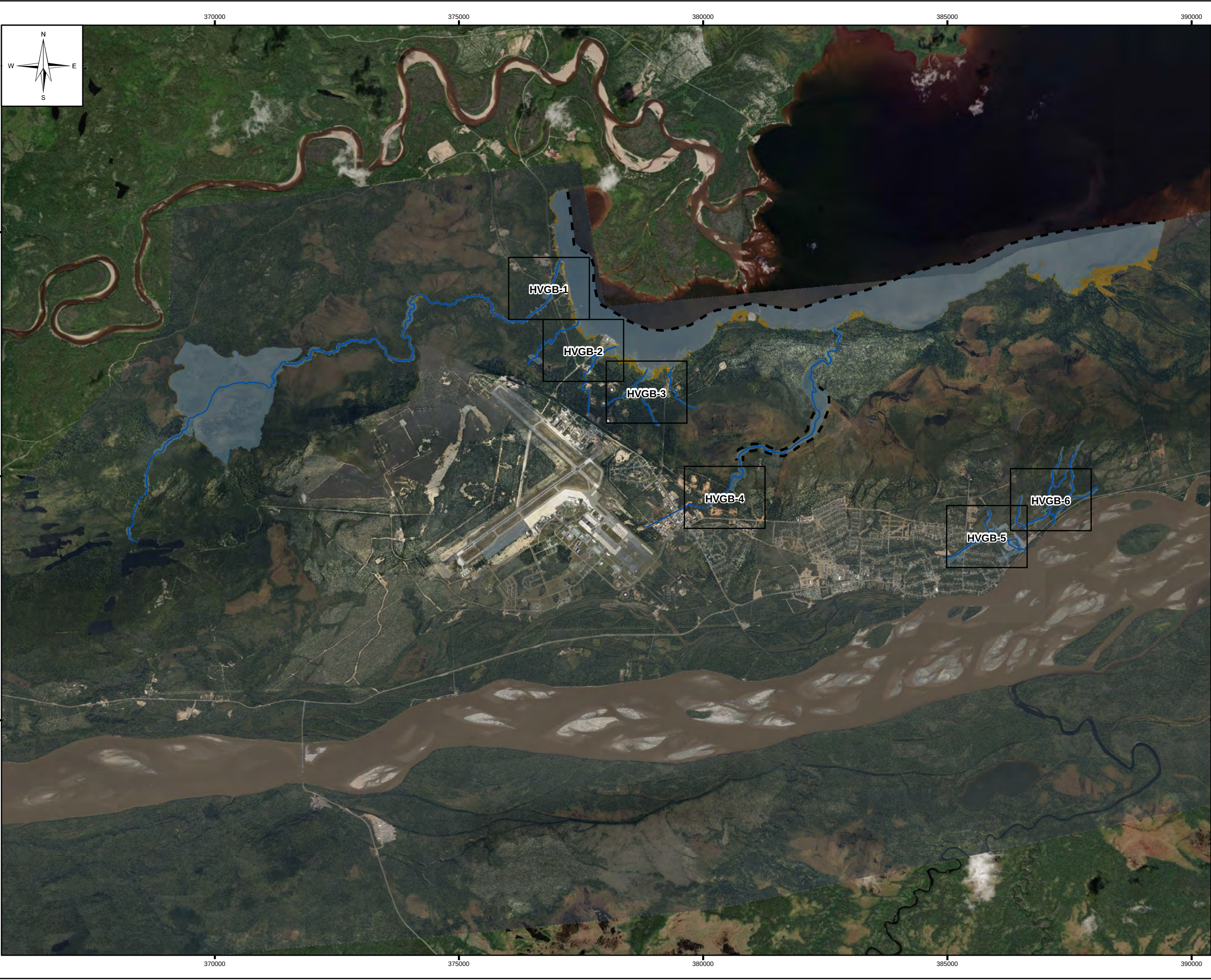


All units are metric and in metres unless otherwise specified.
Horizontal Projection: North American Datum 1983 CSRS
(NAD83), Modified Transverse Mercator Projection (MTM)
Zone 4. Elevations are in metres above sea level (MSL),
Canadian Geodetic Vertical Datum 2013 (CGVD2013).

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

COMPARISON OF OPEN WATER 1:20 YEAR FLOOD ZONE
FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT
DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-6



- LEGEND:
- Creek Centreline
 - Map Extents
 - Limit of Mapping
 - 1:100 Year Current Climate Open Water Flood Zone
 - 1:20 Year Climate Change Open Water Flood Zone

- NOTES:
- Imagery is supplied by ATGIS Geomatics and dated as September 11 – 13, 2019, and by ESRI and DigitalGlobe, WV02 dated June 3, 2015.
 - Lake Melville shown at 0.22 metres.



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).

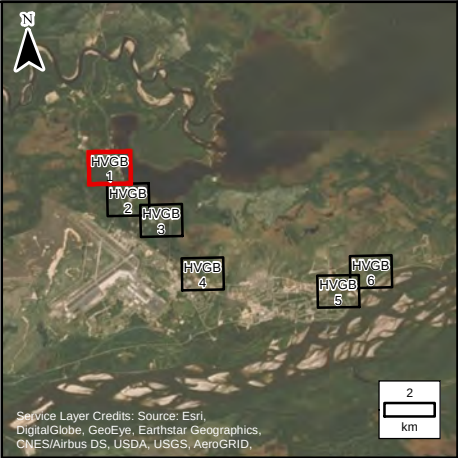
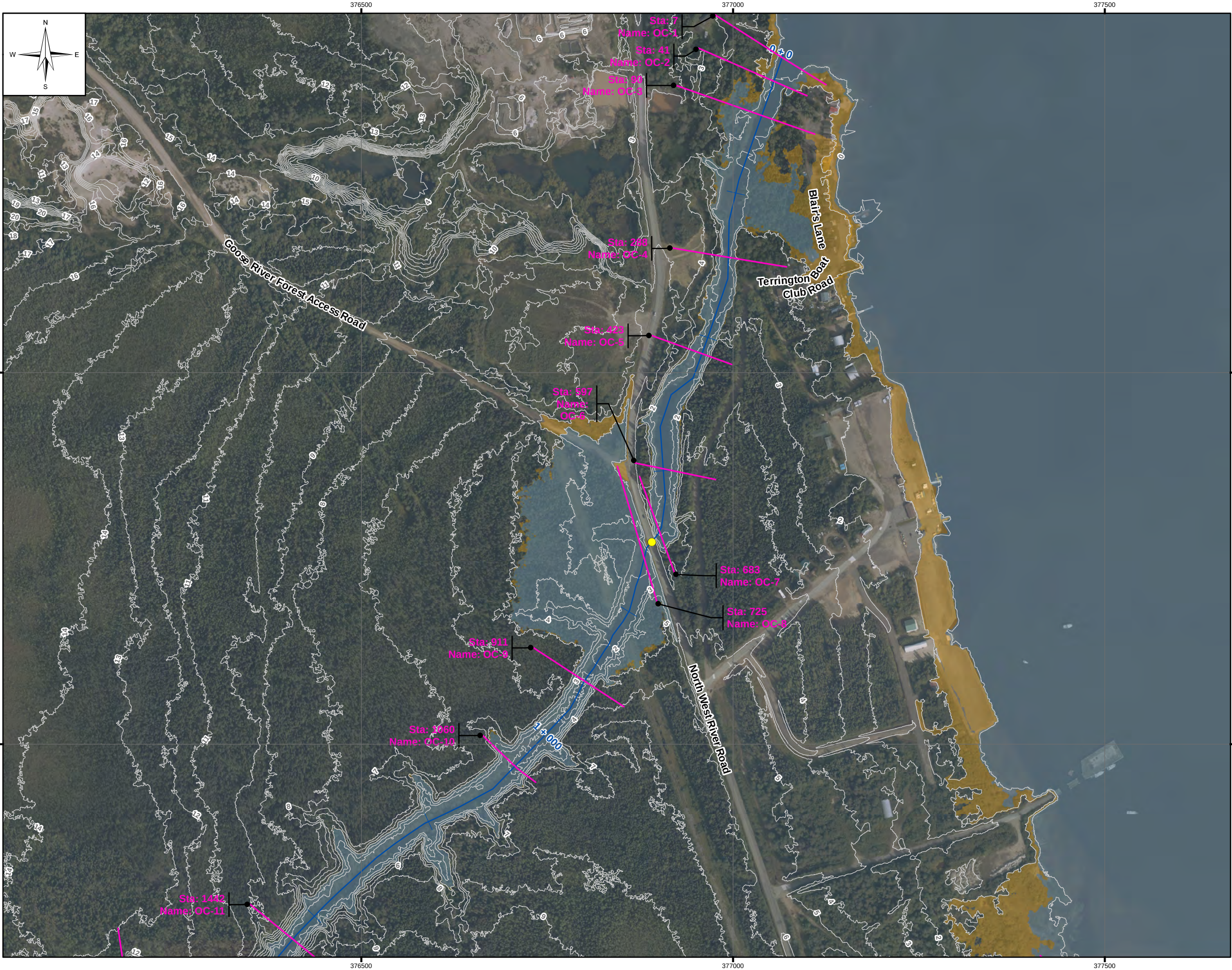
0	20/06/30	ISSUED WITH FINAL REPORT	DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY	CHECK BY
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CHURCHILL RIVER FLOOD RISK AND FORECASTING

COMPARISON OF OPEN WATER 1:100 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) OVERVIEW MAP

JUNE 2020	FIGURE 6.3	REV: 0
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- 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
 - 1:100 Year Current Climate
Open Water Flood Zone
 - 1:20 Year Climate Change
Open Water Flood Zone

- 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.
 - Lake Melville shown at 0.22 metres.
 - Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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).

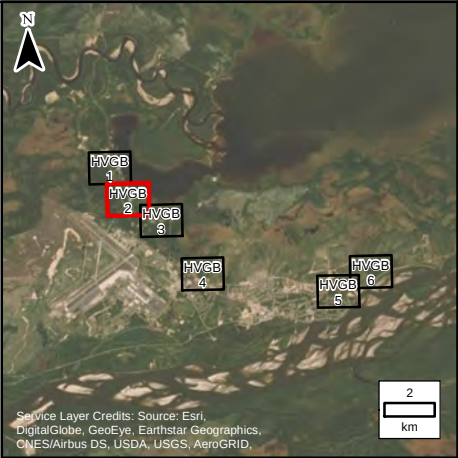
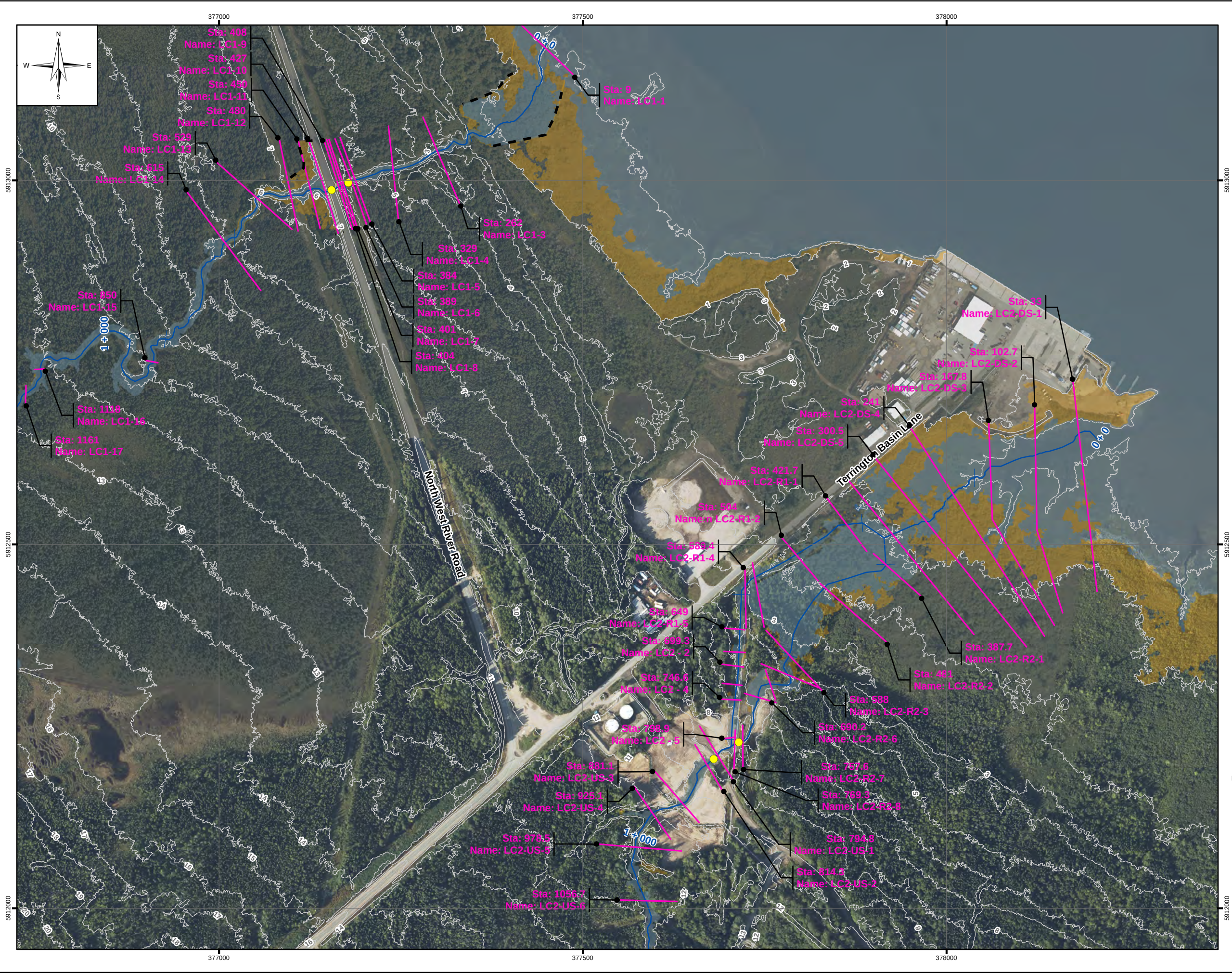
0 20/06/30 ISSUED WITH FINAL REPORT		DSB	MSW
NO.	YY/MM/DD	DESCRIPTION	ISSUED BY
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CHURCHILL RIVER FLOOD RISK AND FORECASTING

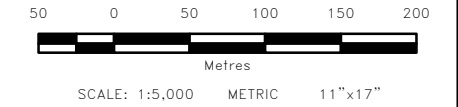
COMPARISON OF OPEN WATER 1:100 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-1

JUNE 2020	FIGURE 6.4	REV: 0
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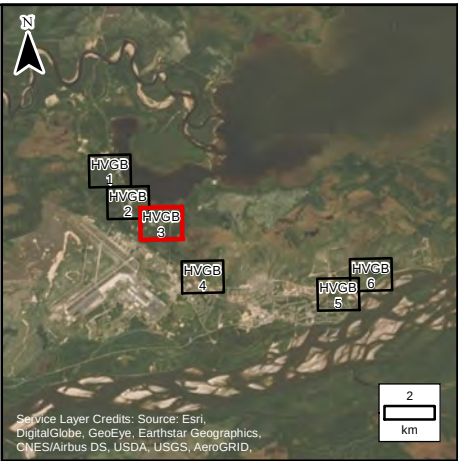
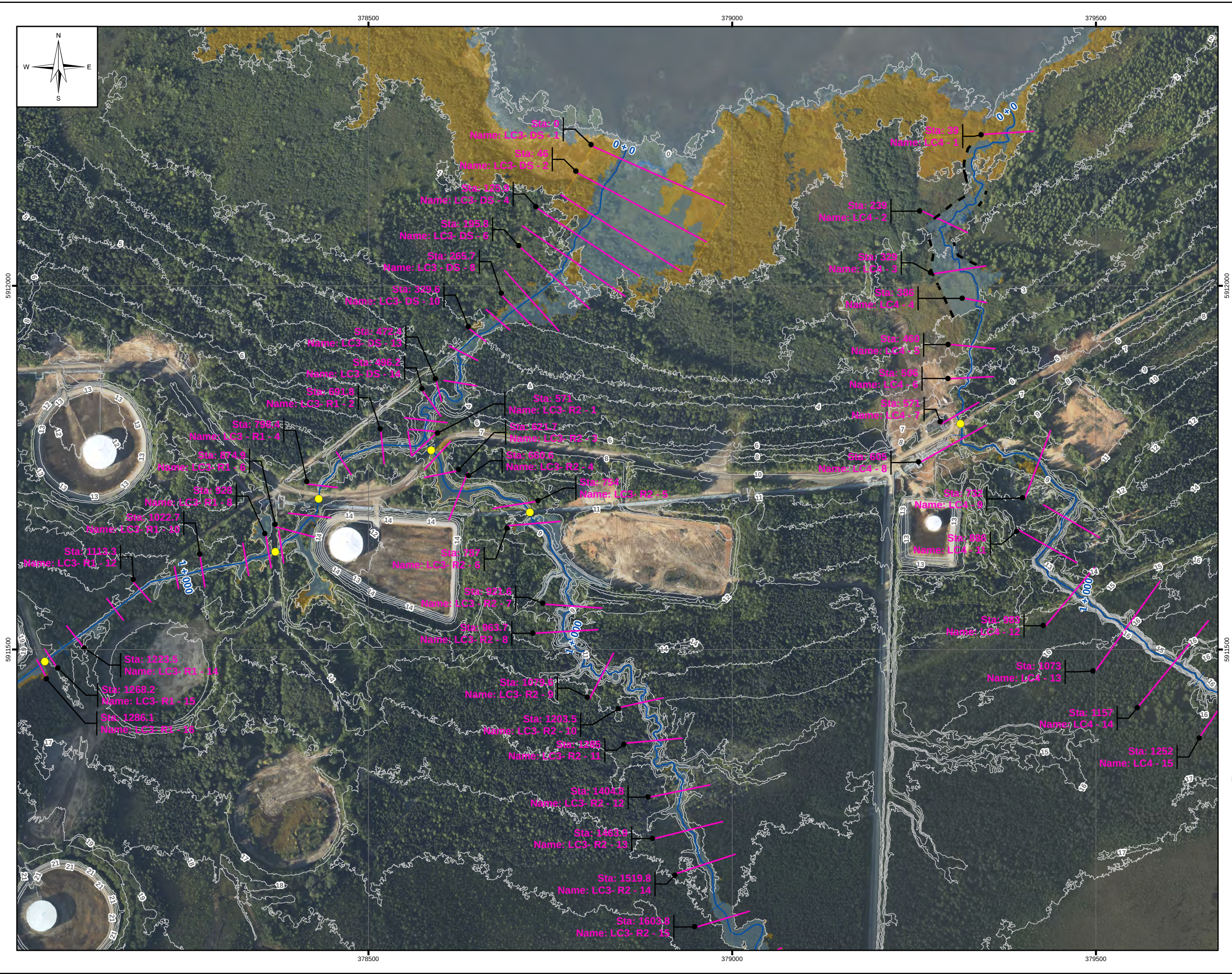
- LEGEND:**
- Sta: 1252
Name: LC4-15
AEP 1:20: 12.0 m
AEP 1:100: 12.1 m
 - Creek Centreline
 - 1m LIDAR Contour
 - Limit of Mapping
 - Modelled Culverts
 - 1:100 Year Current Climate Open Water Flood Zone
 - 1:20 Year Climate Change Open Water Flood Zone

- 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.
 - Lake Melville shown at 0.22 metres.
 - Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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).

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REVISIONS / ISSUE					
					
CHURCHILL RIVER FLOOD RISK AND FORECASTING					
COMPARISON OF OPEN WATER 1:100 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-2					
JUNE 2020		FIGURE 6.4		REV:	0



LEGEND:

- Cross Section
- Creek Centreline
- 1m LIDAR Contour
- Limit of Mapping
- Modelled Culverts
- 1:100 Year Current Climate Open Water Flood Zone
- 1:20 Year Climate Change Open Water Flood Zone

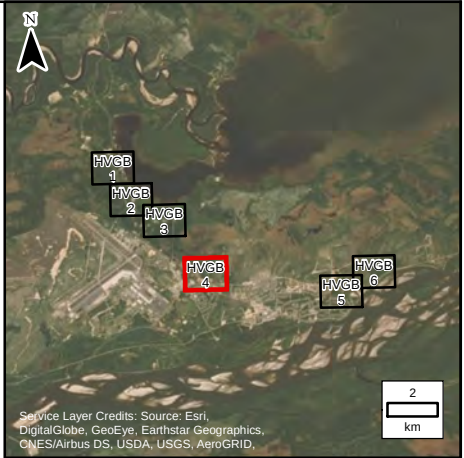
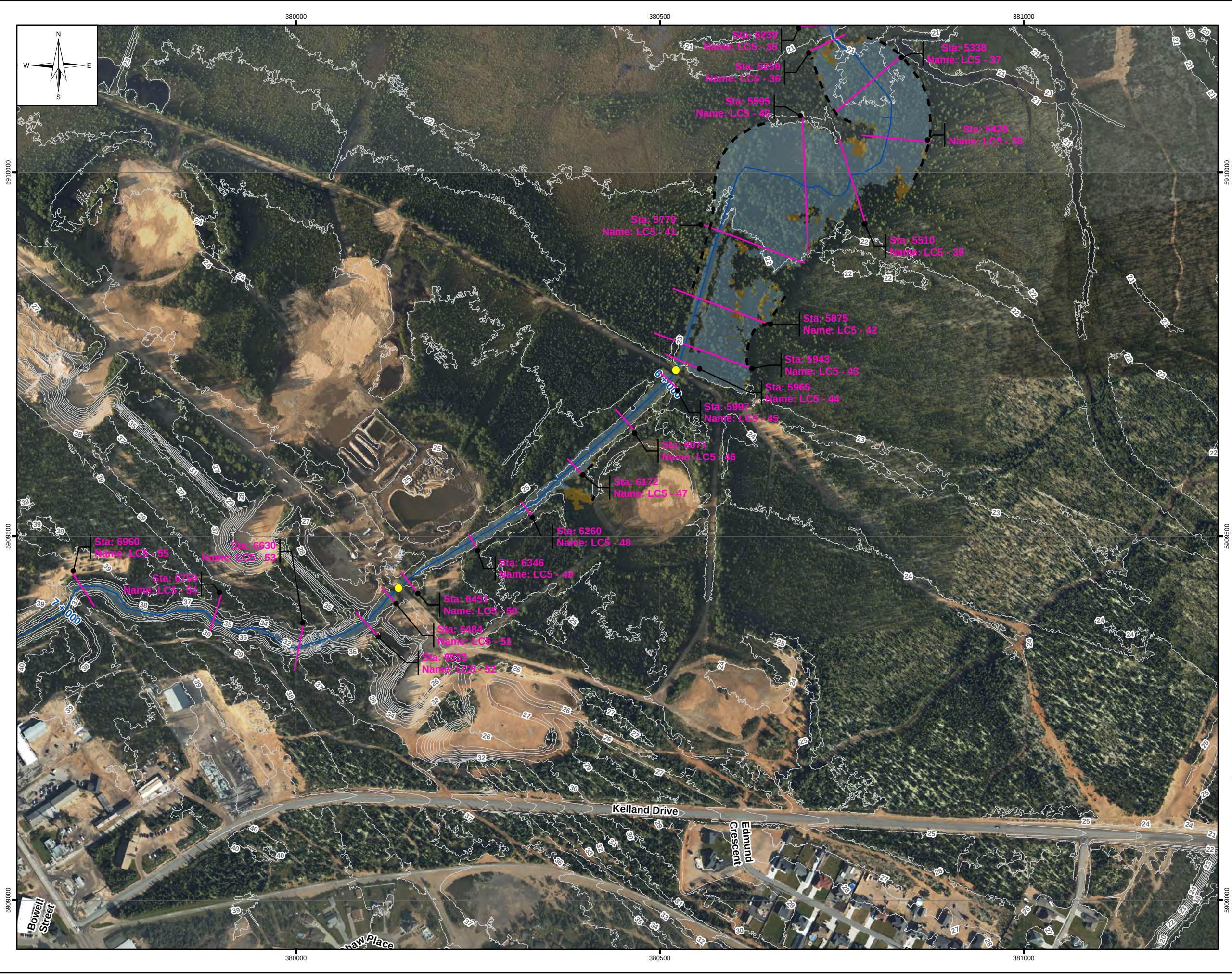
- NOTES:**
1. Imagery is supplied by ATLAS Geomatics and dated as September 11 – 13, 2019.
 2. Topography shown was developed by KGS Group from the LiDAR captured by ATLAS Geomatics on September 11 – 13, 2019.
 3. Lake Melville shown at 0.22 metres.
 4. Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.

50 0 50 100 150 200
Metres

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				
COMPARISON OF OPEN WATER 1:100 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-3				
JUNE 2020		FIGURE 6.4		REV: 0

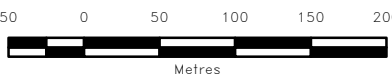


LEGEND:

- 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
- 1:100 Year Current Climate
Open Water Flood Zone
- 1:20 Year Climate Change
Open Water Flood Zone

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.
- Lake Melville shown at 0.22 metres.
- Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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

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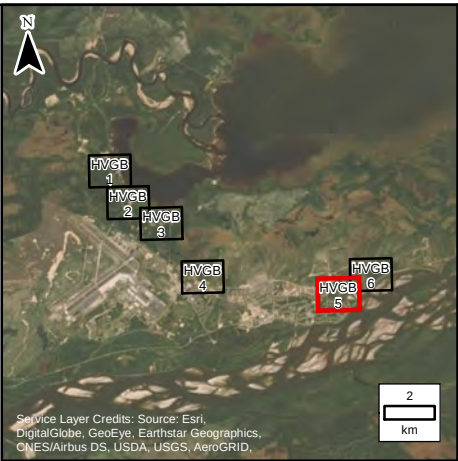
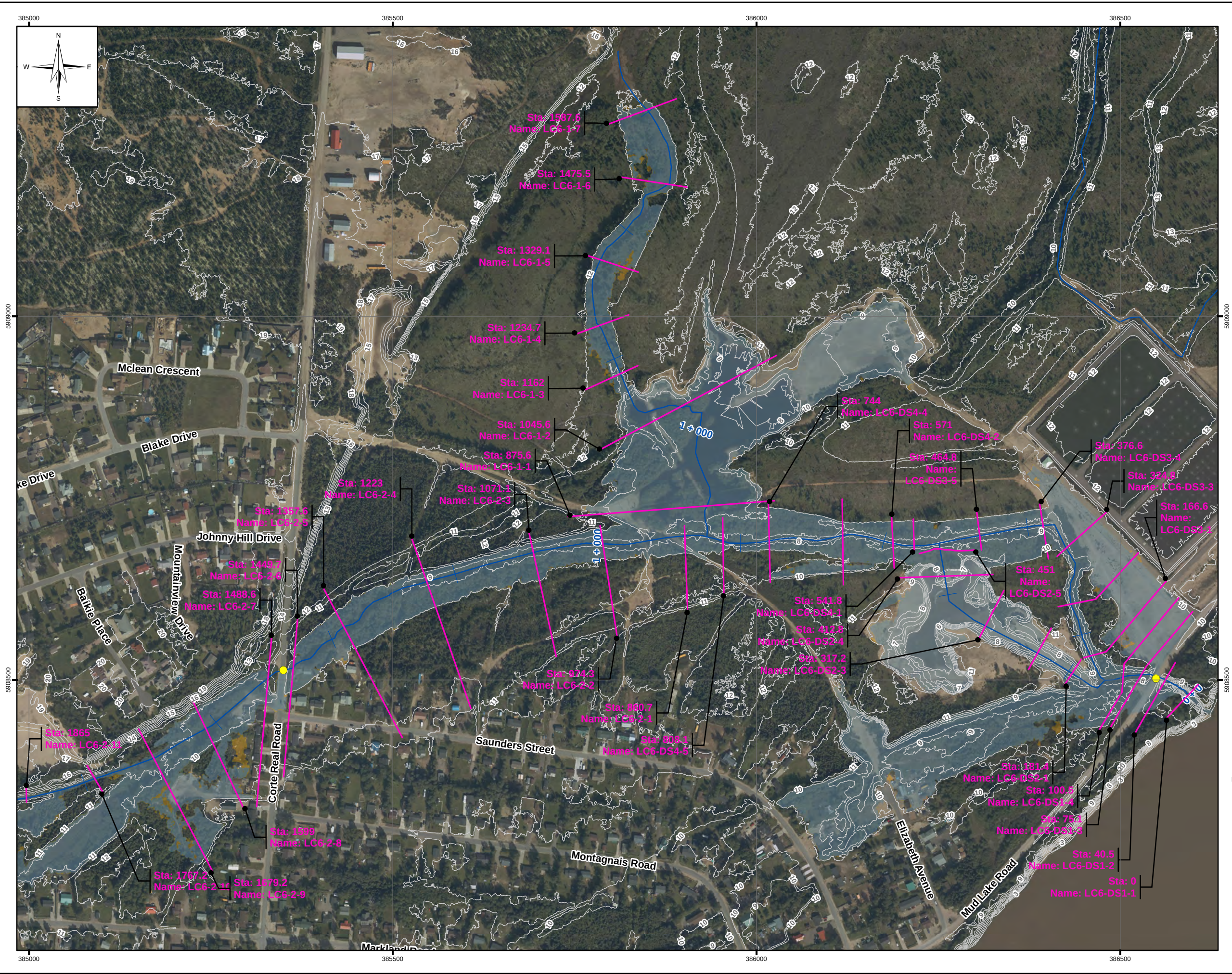
KGS GROUP CONSULTING ENGINEERS

Newfoundland Labrador

CHURCHILL RIVER FLOOD RISK AND FORECASTING

COMPARISON OF OPEN WATER 1:100 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-4

JUNE 2020	FIGURE 6.4	REV: 0
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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
- 1:100 Year Current Climate
Open Water Flood Zone
- 1:20 Year Climate Change
Open Water Flood Zone

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.
- Lake Melville shown at 0.22 metres.
- Annotation not shown for all cross sections on maps HVGB-2, HVGB-3, HVGB-5 and HVGB-6 for clarity.



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

KGS
GROUP
CONSULTING
ENGINEERS

CHURCHILL RIVER FLOOD RISK AND FORECASTING

COMPARISON OF OPEN WATER 1:100 YEAR FLOOD ZONE FOR CURRENT CLIMATE/CLIMATE CHANGE, CURRENT DEVELOPMENT (CC-CD) & (CLC-CD) – HVGB-5

JUNE 2020	FIGURE 6.4	REV: 0
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