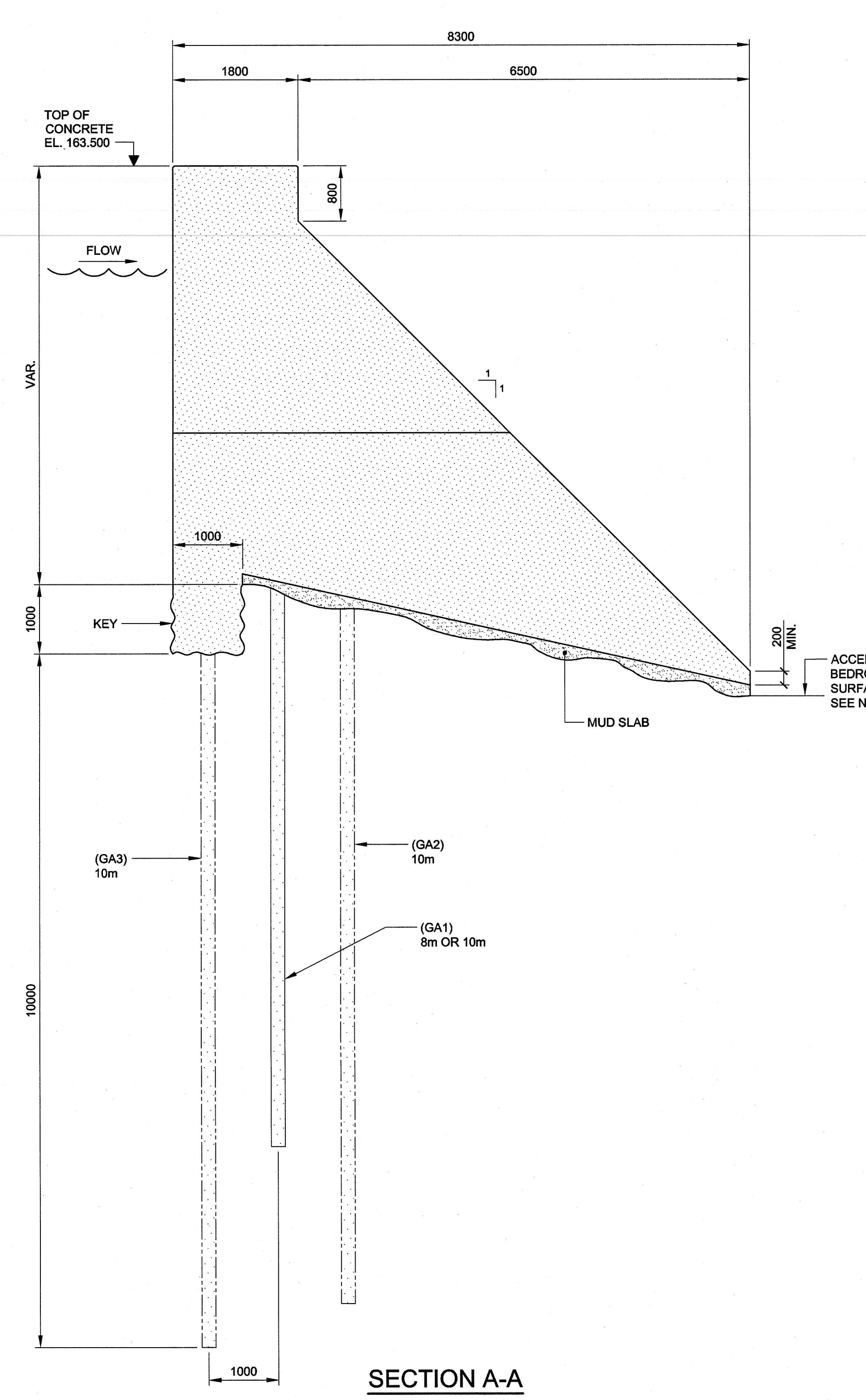


LEGEND

PLAN	ELEVATION
○ 1st PHASE	—————
● 2nd PHASE	-----
① 3rd PHASE	-----
② 4th PHASE	-----



NOTES

- SEE DRAWING CV-02-01 FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS.
- THIS TYPICAL DETAIL APPLIES EVERYWHERE THERE IS CONCRETE FOUND.
- SURFACE TREATMENTS (SEE FOUNDATION TREATMENT DETAILS):
 - MANUALLY CLEAN THE BEDROCK SURFACE ROUGHNESS.
 - EXCAVATE POTHOLES AND OTHER CAVITIES INCLUDING DETACHABLE ROCK FRAGMENTS FROM FAULT OR SHEAR ZONES.
 - CLEAR COMPLETELY THE FOUNDATION SURFACE OF ANY LOOSE ROCK USING WATER OR COMPRESSED AIR BLS.
 - RESURFACE STEEP FACES AND OVERHANG WITH CONCRETE BACKFILL AND CONTACT GROUTING, SEE DETAILS.
 - FILL THE OPEN JOINTS WITH LIQUID MORTAR AND TROUGH OR CAVITIES WITH CONCRETE BACKFILL, SEE DETAILS.
- ALL FOUNDATIONS MUST BE APPROVED BY THE CONSULTANT BEFORE ANY POURING OF CONCRETE. EXCAVATE COMPLETELY THE OVERBURDEN INCLUDING ANY MATERIAL, SEDIMENT AND TOPSOIL OVER THE BEDROCK. REMOVE BEDROCK UNTIL ACCEPTABLE BEDROCK SURFACE IS REACHED. THAT IS ALL WEAK ROCK ELEMENTS OR BLOCKS THAT CAN BE EASILY DETACHED MECHANICALLY WITH AN EXCAVATOR FROM THE SUBSTRATE SURFACE. ALL FOUNDATIONS EXCAVATIONS DONE BY A MECHANICAL EXCAVATOR MUST BE DONE UNDER THE SUPERVISION OF THE CONSULTANT. SEE DETAILS FOR THE SURFACE TREATMENTS OF THE STRUCTURE'S FOUNDATIONS.
- SUMMARY TECHNICAL NOTE ON THE BEDROCK FOUNDATION FOR THE NEW CONCRETE DAM: DETAILED RESULTS OF A 196 SECTIONAL INVESTIGATION AND OF THE PRE-ENGINEERING FIELD INVESTIGATIONS PROGRAM EXECUTED IN 2018 ARE PRESENTED IN THE SPECIFICATIONS APPENDICES. THESE INVESTIGATIONS SHOW THAT THE LOCAL BEDROCK CONSISTS UNIFORMLY OF A HIGHLY WEATHERED, INTENSELY FRACTURED COARSE GRAINED CALCITE MARBLE. THE ROCK QUALITY IS VERY POOR TO POOR IN THE UPPER PORTION OF THE BEDROCK AND BECOMES FAIR IN QUALITY WITH DEPTHS AROUND 3 TO 10 METERS BELOW GROUND SURFACE AT SOME BENCHMARK LOCATIONS. THE MARBLE STRUCTURE IS DOMINATED BY SEVERAL JOINTS AND FRACTURE SETS, TOGETHER WITH VEDOS AND EXCAVATION CAVITIES. A TURBULENT FLOW WITHIN THE BEDROCK WAS ALSO INDICATED WITH WASH OUT OR VOID FILLING IN SOME OF THE TEST LOCATIONS. ACCORDING TO CIMA'S OPINION, THE PARAMETER VALUES GIVEN IN TABLE 1.1 OF CIMA'S 2018 REPORT ARE VALID FOR ONLY A SMALL BLOCK OF INTACT ROCK. THE ROCK MASS IS OF VERY POOR TO POOR QUALITY, AND A STRONG LEAKAGE WAS OBSERVED UNDER THE EXISTING DAM AND THROUGH THE ROCK JUNCTIONS. THE FOLLOWING PARAMETERS SHOULD BE USED FOR DESIGN (EX. DEWATERING AND WATER DIVERSION WORKS):
 - ASSUMPTION OF A SIGNIFICANT FLOW (OVER 100 l/s) THROUGH THE BEDROCK FOUNDATION ACROSS THE WHOLE WIDTH OF THE STREAM.
 - AN UPPER BEDROCK LAYER WITH A HYDRAULIC CONDUCTIVITY OF 10-1 cm/s AND A THICKNESS OF 7 METERS AND AN UNDERLYING BEDROCK LAYER WITH A CONDUCTIVITY OF 10-3 cm/s.
 - FRICTION ANGLE AT THE CONCRETE/ROCK INTERFACE: PEAK = 31°, RESIDUAL = 23°.

No	Date	Issues and/or modifications	by
3	2018-02-22	ISSUED FOR TENDER	J.K.
2	2016-11-04	ISSUED FOR REVIEW	J.K.
1	2016-08-02	PRELIMINARY DESIGN - 66% STAGE	J.K.
0	2016-08-02	PRELIMINARY	J.K.

3	2018-02-22	ISSUED FOR TENDER	J.K.
2	2016-11-04	ISSUED FOR REVIEW	J.K.
1	2016-08-02	PRELIMINARY DESIGN - 66% STAGE	J.K.
0	2016-08-02	PRELIMINARY	J.K.

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2018-02-22

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PROFESSIONAL ENGINEER
PROVINCE OF QUEBEC

project: BOBS LAKE DAM REPLACEMENT
BOLINGBROKE - ONTARIO

title: FOUNDATION TREATMENT PLAN
SECTIONS AND DETAILS

drawn	H. OTMANI	scale	AS SHOWN
checked	J. CARON	date	2015-07-28
designed	J. FRANCOEUR	reference	
approved	J. KONCZYNSKI		