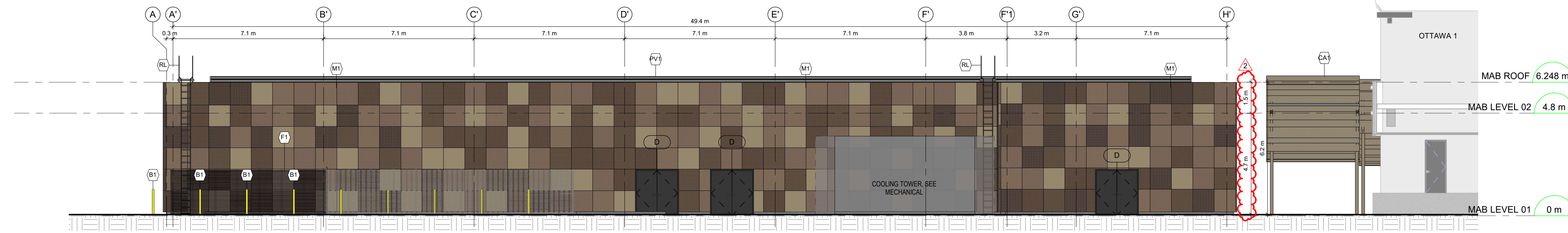
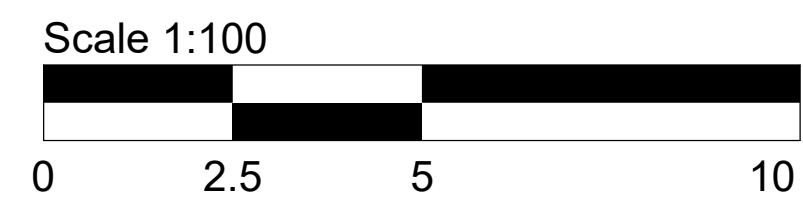
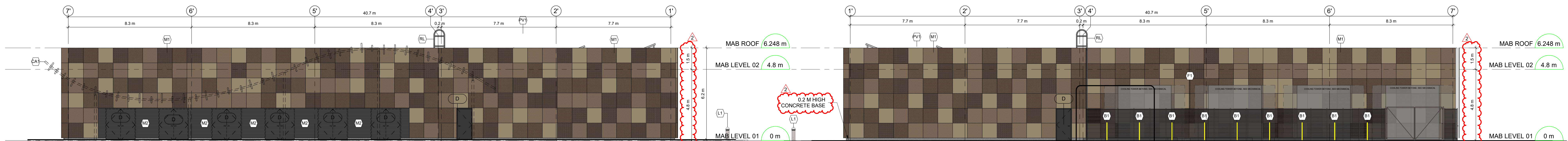
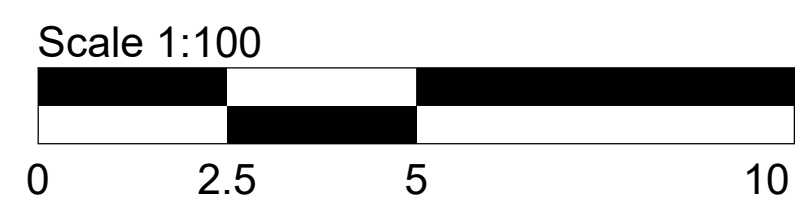


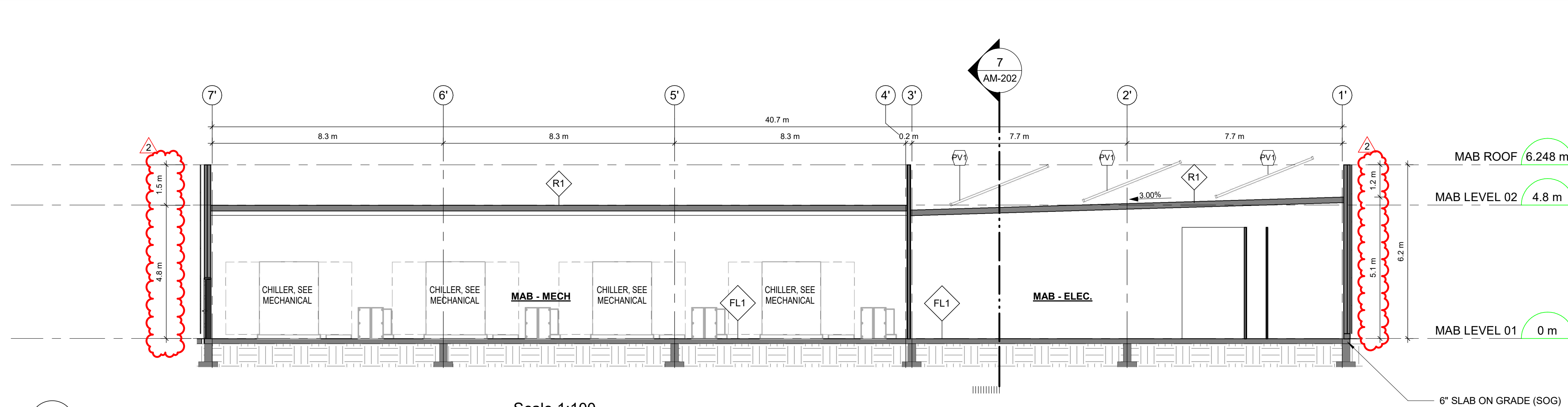
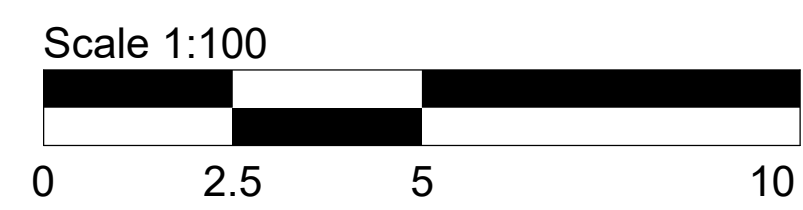
1 MAB BLDG ELEVATION - EAST FACE
AM-202 Scale: 1:100



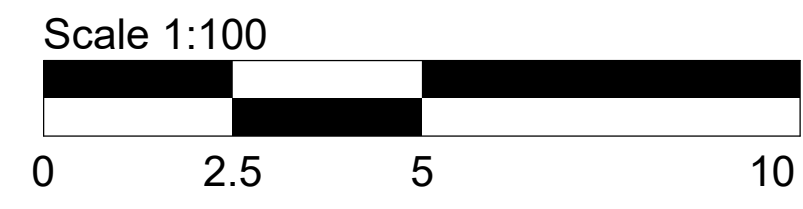
2 MAB BLDG ELEVATION - WEST FACE
AM-202 Scale: 1:100



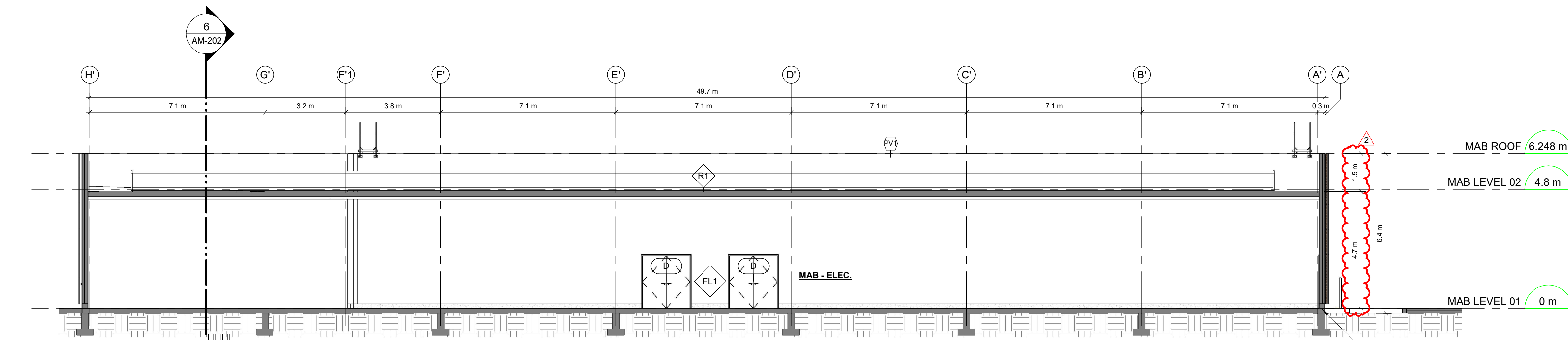
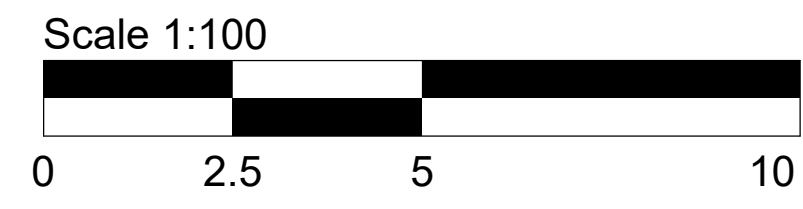
4 MAB BLDG ELEVATION - SOUTH FACE
AM-202 Scale: 1:100



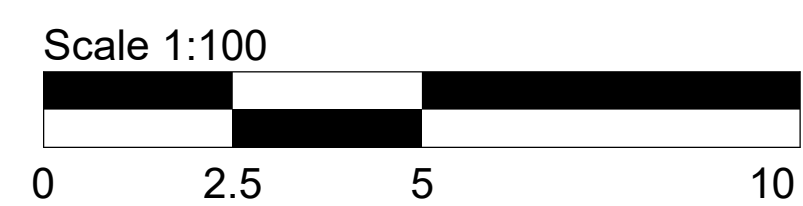
3 MAB BLDG ELEVATION - NORTH FACE
AM-202 Scale: 1:100



6 SECTION 01
AM-202 Scale: 1:100



7 SECTION 02
AM-202 Scale: 1:100



AMANDA DAVIDSON
PLANNER
PLANNING, DEVELOPMENT AND BUILDING SERVICES
DEPARTMENT, CITY OF OTTAWA

APPROVED
By Amanda Davidson at 10:29 am, Aug 17, 2026

Bird-Safe Grate Design Requirements

- MAXIMUM OPENING SIZE (POROSITY):
 - 20 MM x 20 MM
 - OR 10 MM x 50 MM
- These dimensions prevent small birds from getting trapped or injured in grates.

APPLICABLE TO:

- VENTILATION GRATES
- PIPE GRATES
- ANY GRADE-LEVEL OR BUILDING-INTEGRATED GRATING NEAR VEGETATION OR OPEN AREAS
- AVOID REFLECTIVE SURFACES NEAR GRATES (BIRDS MAY FLY TOWARD REFLECTIONS)
- USE NON-REFLECTIVE FINISHES AND VISUAL MARKERS ON ADJACENT GLASS
- INTEGRATE GRATES FLUSH WITH SURFACES TO AVOID CREATING LEDGES OR GAPS THAT ATTRACT NESTING.

OTTAWA BIRD-SAFE DESIGN GUIDELINE

SEPTEMBER 2023

- (1) When grating is used, solid plates or grates with integrated protective measures to prevent bird collisions should be used. Protective measures should be applied to the entire surface of the grating, including the edges and corners.
- (2) When grating is used, solid plates or grates with integrated protective measures to prevent bird collisions should be used. Protective measures should be applied to the entire surface of the grating, including the edges and corners.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

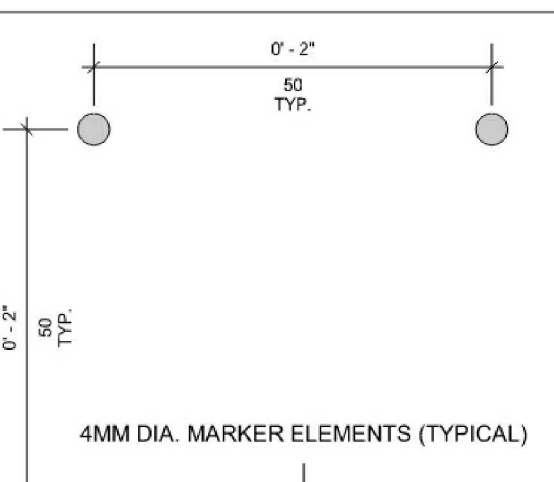
- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.

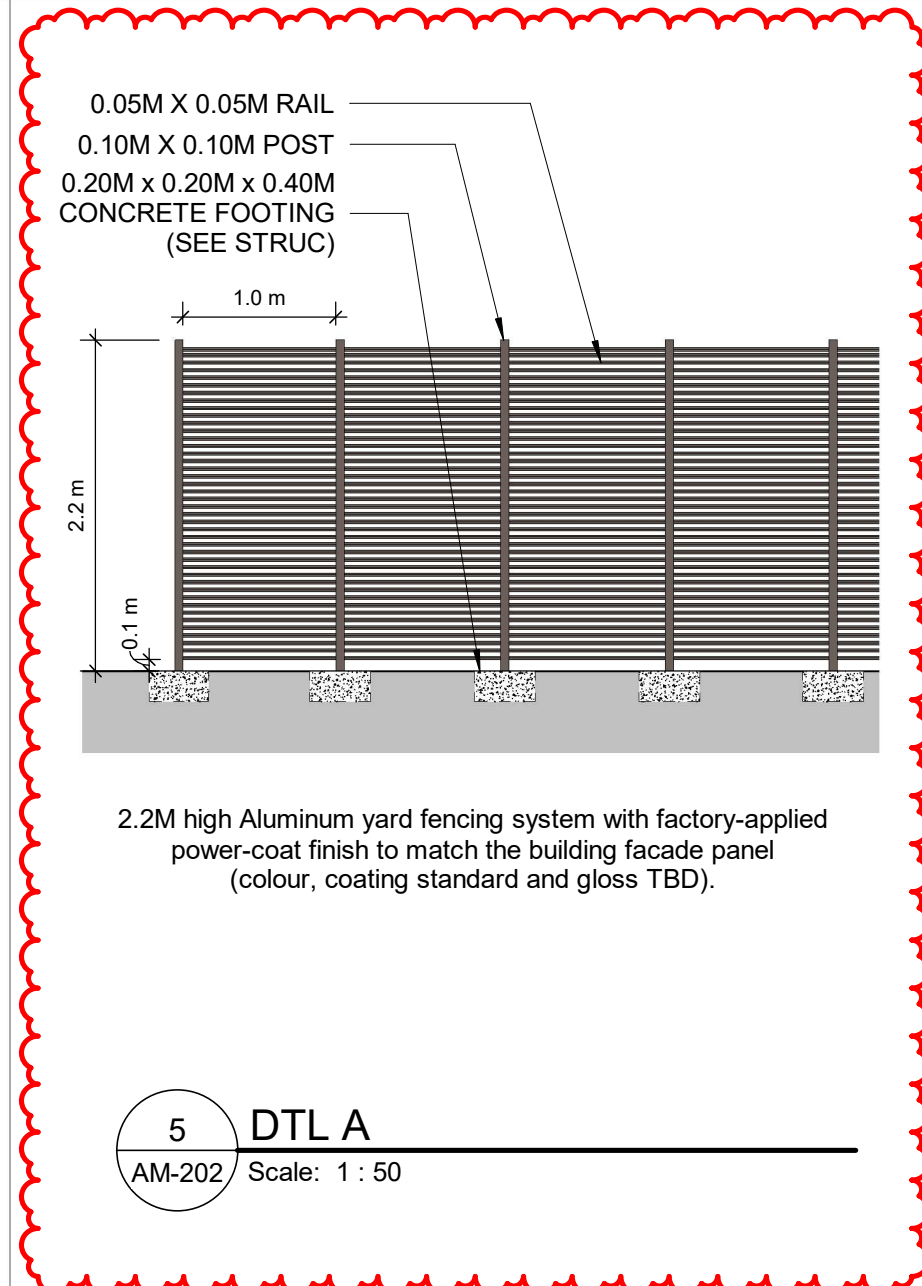
- Recommendations for Bird-Safe Grates:
 - Based on the design of the grates, the grates should be designed to prevent bird collisions. The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.
 - The grates should be designed to prevent bird collisions by using a grid pattern with a maximum opening size of 20 mm x 20 mm or 10 mm x 50 mm.



FRIT PATTERN
- THREAT FACTOR 24
- COLOUR:
V951 WHITE
- 1/8" DOTS (SCREEN
5006); 40%
COVERAGE



(Right) View from the second floor of Ottawa 1 overlooks structural steel beams forming a canopy in the foreground. Behind them, the bronze-toned perforated facade and multiple rooftop mechanical units with safety railings are visible, along with PV panels installed on the roof of the MAB. The backdrop of green trees and a bright sky emphasize the integration of architectural, sustainable, and functional elements.



5 DTL A
AM-202 Scale: 1:50



(Top) This view from the second floor of Ottawa 1 overlooks structural steel beams forming a canopy in the foreground. Behind them, the bronze-toned perforated facade and multiple rooftop mechanical units with safety railings are visible, along with PV panels installed on the roof of the MAB. The backdrop of green trees and a bright sky emphasize the integration of architectural, sustainable, and functional elements.

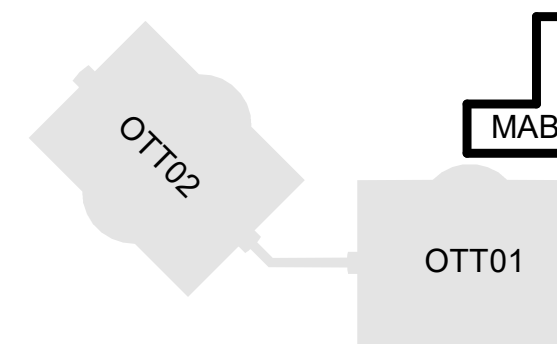
MATERIAL SCHEDULE		
MARK	FINISH	COLOUR
FL1	EXPOSED CONCRETE, SLAB ON GRADE	
M1	PRE-FINISHED RAINSCREEN METAL SYSTEM	SHADES OF BRONZE
M2	METAL LOUVERS	
D	MAN DOOR	BLACK
R1	BITUMINOUS ROOFING	
L1	LANDSCAPE BOLLARD DOWNLIGHTING - DARK SKY COMPLIANT	BLACK
C1	CONCRETE PAD	
F1	METAL FENCING, 100MM O.C.	SHADES OF BRONZE
PV1	PHOTOVOLTAIC PANELS	
CA1	METAL EXTERIOR CANOPY	SHADES OF BRONZE
RL	METAL ROOF ACCESS LADDER	BLACK
BL	CONCRETE BOLLARD	YELLOW



(Right) A pathway connecting Ottawa 1 and the MAB showcases a bronze-toned perforated facade complemented by a sleek canopy structure. Lush landscaping and defined pedestrian routes create a welcoming transition.



COPYRIGHT
This drawing has been prepared solely for the intended use, thus any reproduction or distribution for any purpose other than authorized by Arcadis is forbidden. Written dimensions shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and Arcadis shall be informed of any variations from the dimensions and conditions shown on the drawing. Shop drawings shall be submitted to Arcadis for general conformance before proceeding with fabrication.
Arcadis Architects (Canada) Inc.



ISSUES	DESCRIPTION	DATE
1	ISSUED FOR SPC ROUND 1	2020.12.12
2	RESPONSE TO SPC ROUND 1 COMMENTS	2020.05.08

NOT FOR CONSTRUCTION

CONSULTANTS
ARUP
47 Clarence Street, Suite 202,
Ottawa, ON, K1N 5P9
TEECOM
55 California Street,
Suite 100
San Francisco, CA
94111
(415) 435-2800
www.teecom.com

SENEZ CO
FIRE SCIENCE & ENGINEERING
63 Skyway Avenue, Suite 102
Toronto, ON, M9W 6N6

TOTAL OPENING CONSULTANTS
895 Don Mills Rd. Suite 900,
Toronto, ON M3C 1V3

CBRE
340 Albert Street, Suite 1900
Ottawa, ON, K1R 7Y6
Matrix
6131 Perth Street Richmond,
ON, K2A 2Z0

SEAL
ONTARIO ASSOCIATION
OF ARCHITECTS
MATTHEW J. BELAEN
LICENCE
7701

PRIME CONSULTANT
ARCADIS
333 Preston Street - Suite 500
Ottawa ON K1S 5N4 Canada
tel 613 225 1311
www.arcadis.com

PROJECT
Cisco Ottawa Campus - MAB
MAB
2000 Innovation Drive,
Kanata, ON K2K 3E8

PROJECT NO: MAB-30298433	APPLICATION NO: PC2025-0127
DRAWN BY: ARCADIS	CHECKED BY: YB
PROJECT MGR: YB	APPROVED BY: TW

SHEET TITLE
BUILDING ELEVATIONS & SECTIONS
SHEET NUMBER
AM-202
ISSUE
2

Rev No: 001-13-35-0165