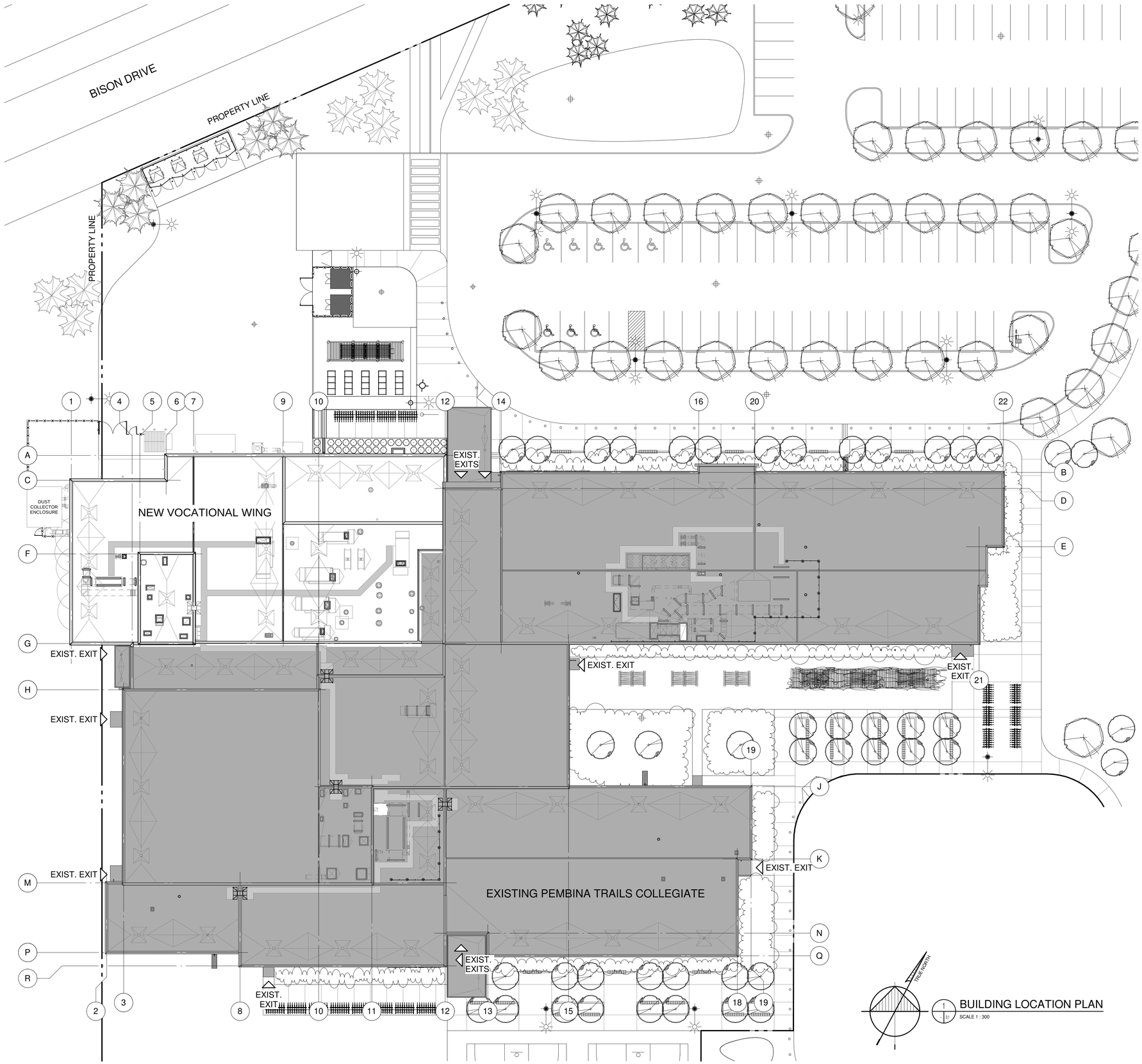

BUILDING CODE ANALYSIS SUMMARY:

GOVERNING DOCUMENT: NATIONAL BUILDING CODE OF CANADA 2020 COMPLETE WITH MANITOBA AMENDMENTS

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF A NEW ONE STOREY, 1,555.4 SQUARE METRE VOCATIONAL ADDITION (PLUS 122.3 SQUARE METRE MECHANICAL MEZZANINE) TO AN EXISTING HIGH SCHOOL FACILITY ON A CLEAN SITE IN A NEW RESIDENTIAL DEVELOPMENT IN SOUTHWEST WINNIPEG, MANITOBA.

THE CONSTRUCTION WILL INCLUDE CONCRETE GRADE BEAMS ON CONCRETE PILES, CONCRETE HOLLOW CORE FLOOR CONSTRUCTION AND A STEEL FRAMED ROOF SYSTEM. THE BUILDING SUPER-STRUCTURE CONSISTS OF CONCRETE UNIT MASONRY PARTITIONS ALONG WITH STRUCTURAL STEEL FRAMING WITH STEEL STUD AND GYPSUM BOARD PARTITION INFILL.

THE LOWER EXTERIOR WALL FINISHES ARE TO BE BRICK VENEER, WHILE THE UPPER EXTERIOR WALL FINISHES OF THE MECHANICAL MEZZANINE ARE TO BE PREFINISHED STEEL WALL CLADDING. THE SITE WILL INCLUDE CONCRETE DRIVE AISLES, WALKWAYS AND CURBING.

BUILDING SIZE

BUILDING AREA AT GRADE IS 7,809.1 SQ. METRES TOTAL
(1,555.4 SQ. METRES NEW ADDITION)
(6,253.7 SQUARE METERS EXISTING BUILDING)

- ADDITION MAIN FLOOR AREA: 1,555.4 SM
- ADDITION MECHANICAL MEZZANINE: 122.3 SM
- GFA TOTAL BUILDING ADDITION: 1,677.7 SM

BUILDING HEIGHT FROM GRADE: 9.4 M NEW ADDITION (13.3 M EXISTING)

PART 3 ANALYSIS SUMMARY

3.1.5.5 USE OF COMBUSTIBLE COMPONENTS IN A NON-LOAD BEARING EXTERIOR WALL IS PERMITTED IF PROTECTED BY A THERMAL BARRIER AND CONFORMS TO CAN/ULC S134

3.1.5.12 USE OF COMBUSTIBLE INTERIOR WALL FINISHES, OTHER THAN FOAMED PLASTICS, ARE PERMITTED PROVIDED THEY ARE NOT MORE THAN 25 mm THICK AND HAVE A FLAME SPREAD RATING NOT MORE THAN 150. USE OF COMBUSTIBLE CEILING FINISHES, OTHER THAN FOAMED PLASTICS, ARE PERMITTED PROVIDE THEY ARE NOT MORE THAN 25 mm THICK AND HAVE A FLAME SPREAD RATING NOT MORE THAN 25 EXCEPT THAT 10% OF A CEILING ARE WITHIN EACH FIRE COMPARTMENT IS PERMITTED TO HAVE A FLAME SPREAD RATING OF 150

3.1.8.7 EXCEPT AS PROVIDED IN 3.1.8.9. A SMOKE DAMPER OR A COMBINATION SMOKE/FIRE DAMPER SHALL BE INSTALLE DIN CONFORMANCE WITH 3.1.8.11 IN DUCTS OR AIR-TRANSFER OPENINGS THAT PENETRATE AN ASSEMBLY REQUIRED TO BE A FIRE SEPARATION, WHERE THE FIRE SEPARATION

- SEPARATES A PUBLIC CORRIDOR,
- CONTAINS AN EGREE DOOR PER 3.4.2.4(2)
- SERVES AN ASSEMBLY OCCUPANCY
- IS INSTALLED TO MEET REQUIREMENTS OF CLAUSE 3.3.1.7(1)(b) OR SENTENCE 3.3.3.5.(4).

NOTE: REFER TO 3.1.8.8. AND 3.1.8.9. WHICH NOTE EXCEPTIONS WHERE REQUIREMENTS FOR FIRE AND SMOKE DAMPERS ARE PERMITTED TO BE WAIVED.

3.2.2.9 FLOOR ASSEMBLIES OVER A CRAWLSPACE IS NOT REQUIRED TO BE A FIRE SEPARATION OR HAVE A FIRE RESISTANCE RATING IF THE CRAWLSPACE HAS NO OCCUPANCY, IS NOT A PLENUM, CONTAINS NO FLUE PIPES, AND DOES NOT EXCEED THE INDICATED 1.8 M HEIGHT BELOW THE LOWEST PART OF THE FLOOR ASSEMBLY.

3.2.3 100% UNPROTECTED OPENINGS PERMITTED. NO LIMITING DISTANCES LESS THAN 9 M.

3.2.3.7 NO CONSTRAINTS ON CONSTRUCTION OF EXPOSING BUILDING FACES, AS IN ALL CASES 100% UNPROTECTED OPENINGS ARE PERMITTED.

3.2.4 A FIRE ALARM SYSTEM IS REQUIRED. THE BUILDING SHALL CONFORM TO THE REQUIREMENTS PUT FORTH IN SECTION 3.2.4.

3.2.5.4 CONFORMING ACCESS ROUTES FOR FIRE FIGHTERS SHALL BE PROVIDED.

3.2.5.8 STANDPIPE SYSTEM IS NOT REQUIRED.

3.2.5.16 PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE NFC.

3.2.8.1 FLOOR AREAS OF MEZZANINES SHALL TERMINATE AT A 1 HOUR FSR, AN EXTERIOR WALL, OR A 1 HOUR FSR VERTICAL SHAFT.

3.3.1.2 COOKING EQUIPMENT USED IN PROCESSES PRODUCING GREASE LADEN VAPOURS SHALL BE DESIGNED AND INSTALLED IN CONFORMANCE WITH ARTICLES 3.6.3.5, 6.3.1.6. AND 6.9.1.3.

3.3.1.4 PUBLIC CORRIDOR RATING REQUIREMENTS ARE WAIVED IN A NON-CARE, TREATMENT, DETENTION OR RESIDENTIAL OCCUPANCY. FIRE SEPARATION REQUIREMENTS ARE WAIVED AS THE BUILDING IS SPRINKLERED THROUGHOUT AND TRAVEL DISTANCES DO NOT EXCEED 45 M.

3.3.1.22 JANITOR ROOMS ARE TO BE PROVIDED WITH A FIRE SEPARATION WITHOUT A FIRE RESISTANCE RATING (0 HOUR - NON-RATED FIRE SEPARATION).

3.3.1.26 WELDING SHOP/CLASSROOM SPACES ARE TO BE SEPARATED FROM THE REMAINDER OF THE BUILDING BY A 1 HOUR FIRE SEPARATION.

3.3.6.3 STORAGE OF CYLINDERS OF DANGEROUS GOODS CLASSIFIED AS FLAMMABLE GASES WILL NOT BE STORED INDOORS. A SEPARATE TANK STORAGE SHED IS TO BE PROVIDED AS INDICATED.

3.4.2.5 TRAVEL DISTANCES SHALL NOT EXCEED 45 M.

3.4.6.19 CONFORMING FLOOR NUMBERING SHALL BE PROVIDED ON THE WALL ON THE STAIR SIDE AND ON THE FLOOR SIDE AT THE LATCH SIDE OF DOORS TO EXIT STAIRS AT ALL FLOOR LEVELS.

3.6.2 FUEL FIRED APPLIANCES IN SERVICE ROOMS SHALL BE SEPARATED BY A 1 HOUR FSR.

OCCUPANCY CLASSIFICATION

3.2.2.24 - GROUP A, DIVISION 2, UP TO 6 STOREYS, SPRINKLERED

- BUILDING IS NON-COMBUSTIBLE CONSTRUCTION
- BUILDING IS SPRINKLERED
- BUILDING FACES 3 STREETS
- BUILDING IS THREE STOREYS
- FLOOR ASSEMBLIES ARE FIRE SEPARATIONS WITH A 1 HOUR FSR
- MEZZANINES ARE SEPARATED BY VERTICAL FIRE SEPARATIONS WITH A 1 HOUR FSR EXCEPT WHERE THEY TERMINATE AT AN EXTERIOR WALL OR RATED VERTICAL SHAFT
- MEZZANINE FLOORS ARE FIRE SEPARATIONS WITH A 1 HOUR FSR
- LOADBEARING ELEMENTS HAVE A RATING MATCHING THAT OF THE SUPPORTED ASSEMBLY

OCCUPANT LOAD

EXISTING DESIGN OCCUPANT LOAD IS 1200 STUDENTS AND 135 STAFF, FOR A TOTAL BUILDING OCCUPANT LOAD OF 1335. THE OCCUPANT LOAD OF THE HIGH SCHOOL FACILITY IN IT'S ENTIRETY SHALL REMAIN UNCHANGED. NOTE THAT SELECT ROOM OCCUPANT LOADS ARE NOTED ON ADJACENT PLANS FOR THOSE SPACES WITH LARGER OR SPECIFIC OCCUPANT LOAD REQUIREMENTS.

WATER CLOSETS

BASED ON A DESIGN OCCUPANT LOAD OF 1200 STUDENTS AND 135 STAFF/FACULTY, PER TABLE 3.7.2.2.A

STUDENTS:	REQUIRED - 14 FEMALE, 8 MALE WATER CLOSETS PROVIDED - 13 FEMALE + 11 MALE + 5 UTRs + 2 UNISEX
STAFF/FACULTY:	REQUIRED - 2 MALE, 3 FEMALE WATER CLOSETS PROVIDED - 7 UNISEX + 1 UTR

TRAVEL DISTANCE BETWEEN BARRIER FREE WATER CLOSETS AND UNIVERSAL TOILET ROOMS SHALL NOT EXCEED 45 M.

PART 5 SUMMARY

GENERAL NOTE - BUILDING IS COMPLIANT WITH PERFORMANCE PATH REQUIREMENTS OF NATIONAL ENERGY CODE OF CANADA (DOCUMENTATION SUBMITTED UNDER SEPARATE COVER). PART 5 COMPLIANCE IS TIED TO BUILDING PERFORMANCE REQUIREMENTS SET FORTH IN NEC. BUILDING CONFORMS TO ALL REQUIREMENTS OF PART 5, INCLUDING:

- RESISTANCE TO LOADS AND DETERIORATION
- RESISTANCE TO WIND LOADS
- RESISTANCE TO HEAT TRANSFER
- RESISTANCE TO AIR LEAKAGE
- RESISTANCE TO VAPOUR DIFFUSION
- PROTECTION FROM PRECIPITATION
- PROTECTION FROM SURFACE WATER
- PROTECTION FROM MOISTURE IN THE GROUND
- PROTECTION FROM SOUND TRANSFER

5.2 WIND LOAD REQUIREMENTS DETERMINED BY NRCC ONLINE CALCULATOR.

5.9 STC RATINGS INDICATED ON WALL TYPE LEGENDS ARE BASED ON NATIONAL BUILDING CODE, TABLES IN APPENDIX SECTION A-9.

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No.	REVISION/DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	JT	04.01.24

SEAL

PROVINCE OF MANITOBA — LM ARCHITECTURAL GROUP No. 052 — APPROVED PARTNERSHIP OF CORPORATIONS

PROVINCE OF MANITOBA — JONATHAN D. TRENHOLM — REGISTERED ARCHITECT

2024-04-02

HW DRAWN	HW CHECKED	JT DESIGNED	JT APPROVED
DATE 2024.04.01	USER APPROVAL		

Winnipeg

THE CITY OF WINNIPEG
ASSETS & PROJECT MANAGEMENT DEPARTMENT
MUNICIPAL ACCOMMODATIONS DIVISION
3-65 GARRY STREET, R3C 4K4

PROJECT

PEMBINA TRAILS COLLEGIATE
VOCATIONAL WING
TENDER NO. 954-2023B
50 FRONTIER TRAIL, WINNIPEG, MANITOBA, R3Y 2H1

SHEET TITLE

BUILDING LOCATION PLAN

SCALE	PROJECT No:	SHEET No:
As indicated	2020-127	A0.1