JOEL GILLELAND PORTFOLIO

- Junior Architectural Technologist -

LIBRARY DESIGN PROJECT

CASTLE DOWNS PUBLIC LIBRARY

THE GATHERING PLACE

The Castle Downs Public Library design is intended to be a community hub where everyone feels welcome to come relax, connect, or learn. The building features an angular, modern design that contrasts the landscaped park that will grow up around the library. Large glass facades welcome guests and provide views of the surrounding park. The site is designed to integrate with and connect people to the adjacent rec-center and transit station.

LIBRARY DESIGN PROJECT

MAIN FLOOR PLAN

SITE PLAN

SUSTAINABILITY

To align with our community's values, the Castle Downs Library includes many environmentally conscious design elements, including:

-Solar panels and solar tile south roof

-A 'living roof'

-Pedestrian & bike friendly

-New planting areas

-Thermally broken, triple glazing

-Geothermal heating

-Large reliance on natural light

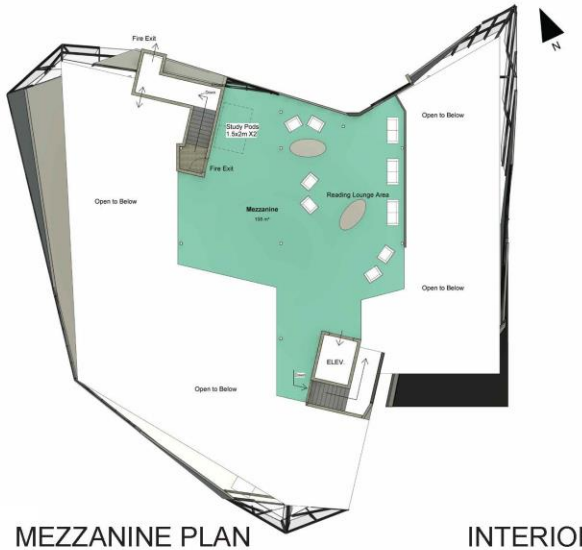
-Recycled cladding materials

LAYOUT

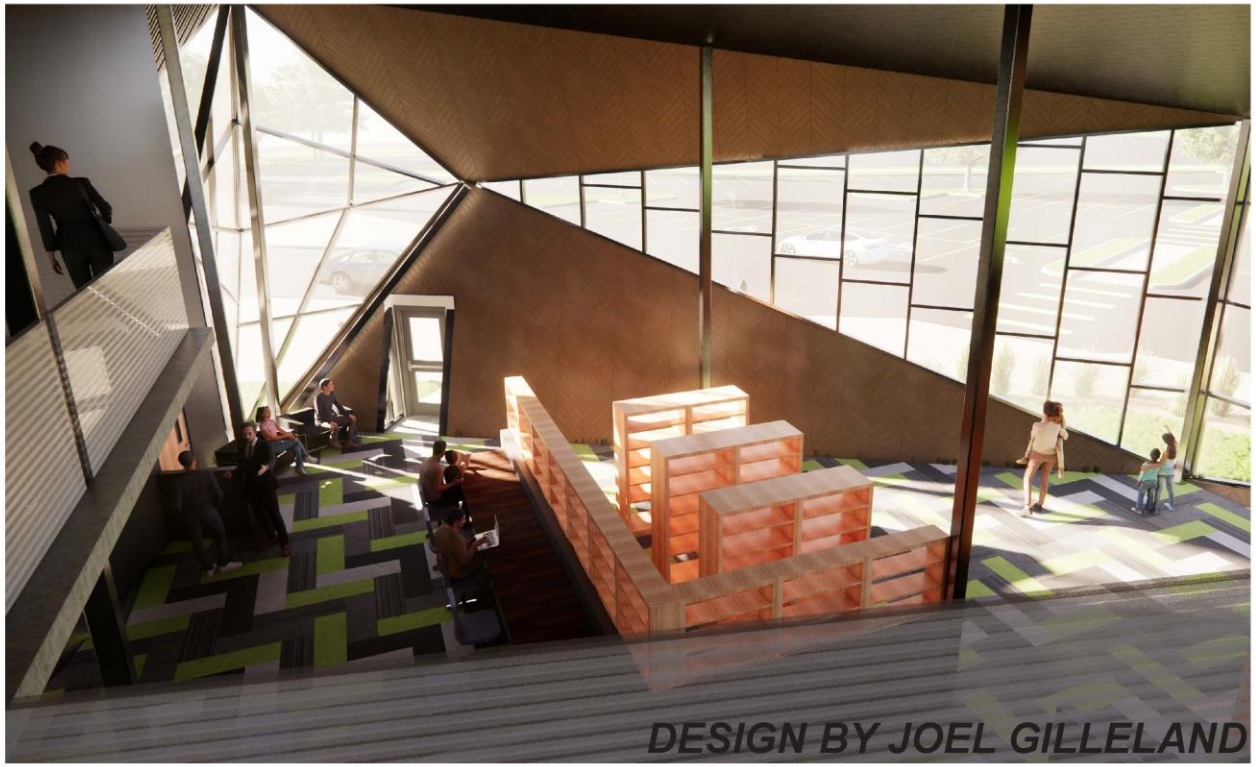
To create a welcoming environment, the library has an open layout with large glass exterior walls.

On the main floor one can find print materials, a children's area and a computer lounge, along with chairs and tables for reading or working.

The mezzanine has a lounge area for quietly enjoying a book.



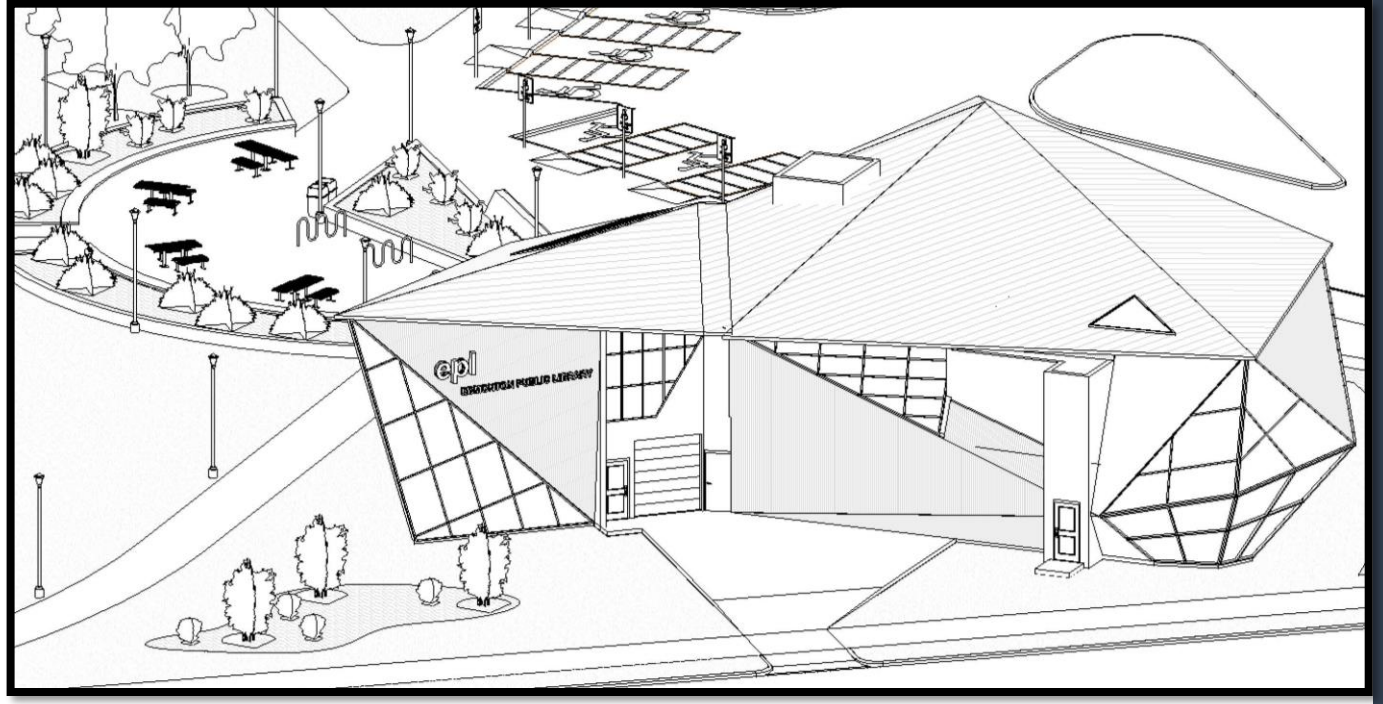
MEZZANINE PLAN

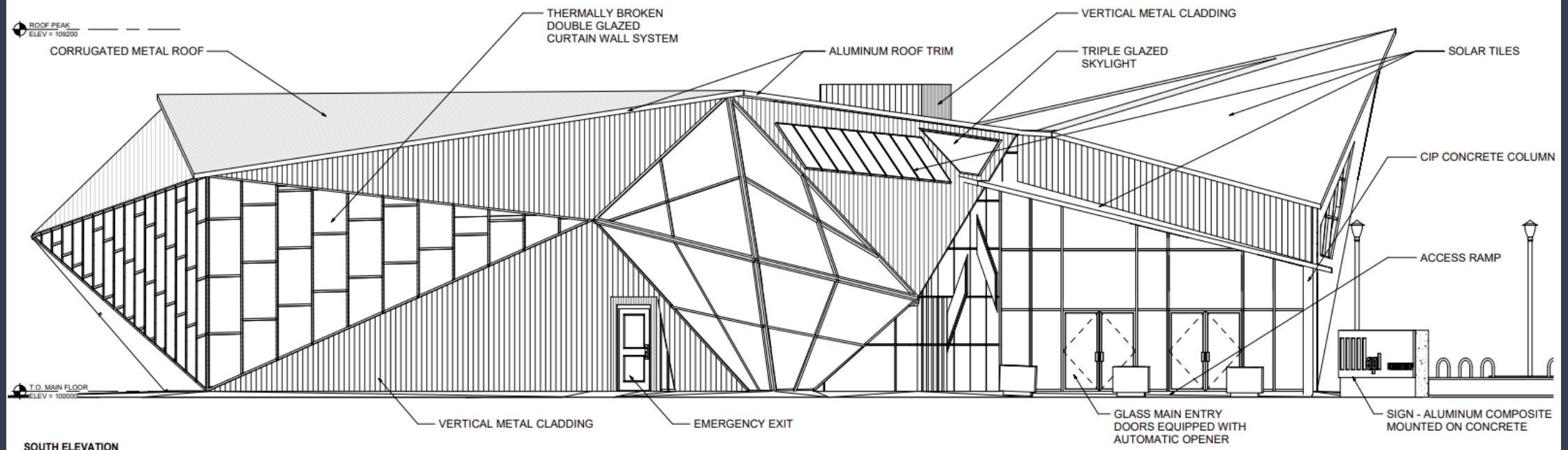


INTERIOR

LIBRARY DESIGN PROJECT

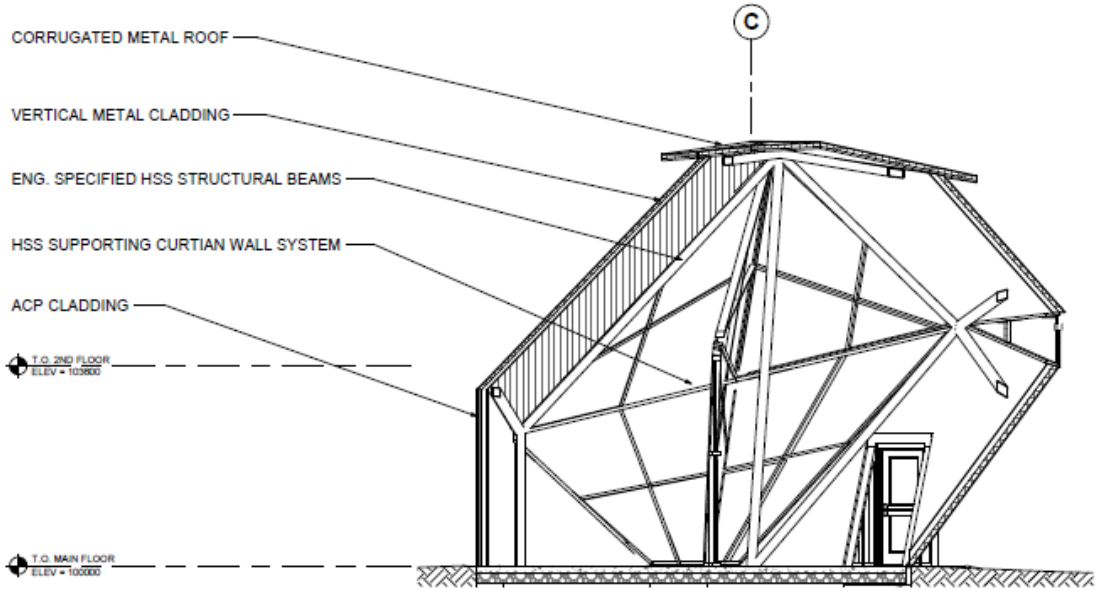
This project was part of a design course with the objective of designing a new public library for the Castle Downs neighborhood. I chose to use Revit to model my design and Enscape to create the renderings.



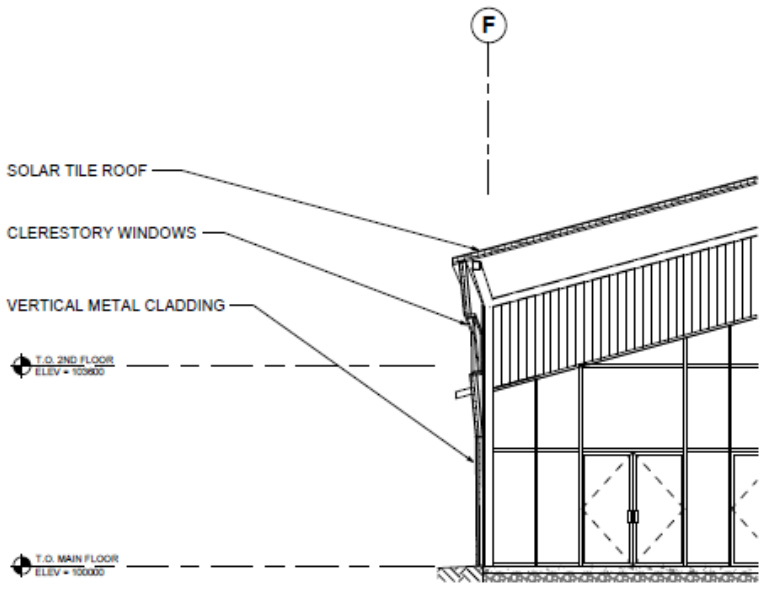


SOUTH ELEVATION

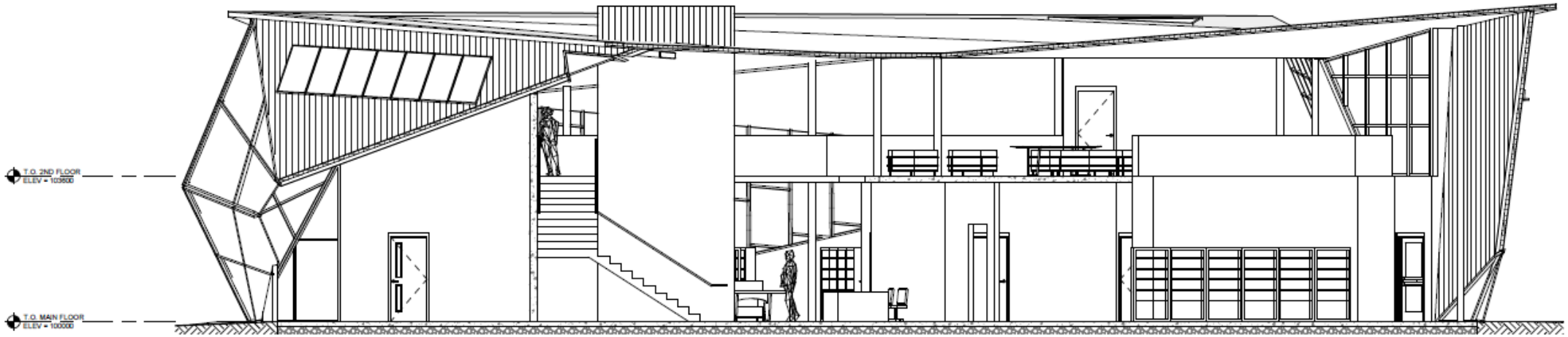
LIBRARY DESIGN PROJECT



1 FRONT CURTAIN WALL SECTION
SCALE = 1 : 50



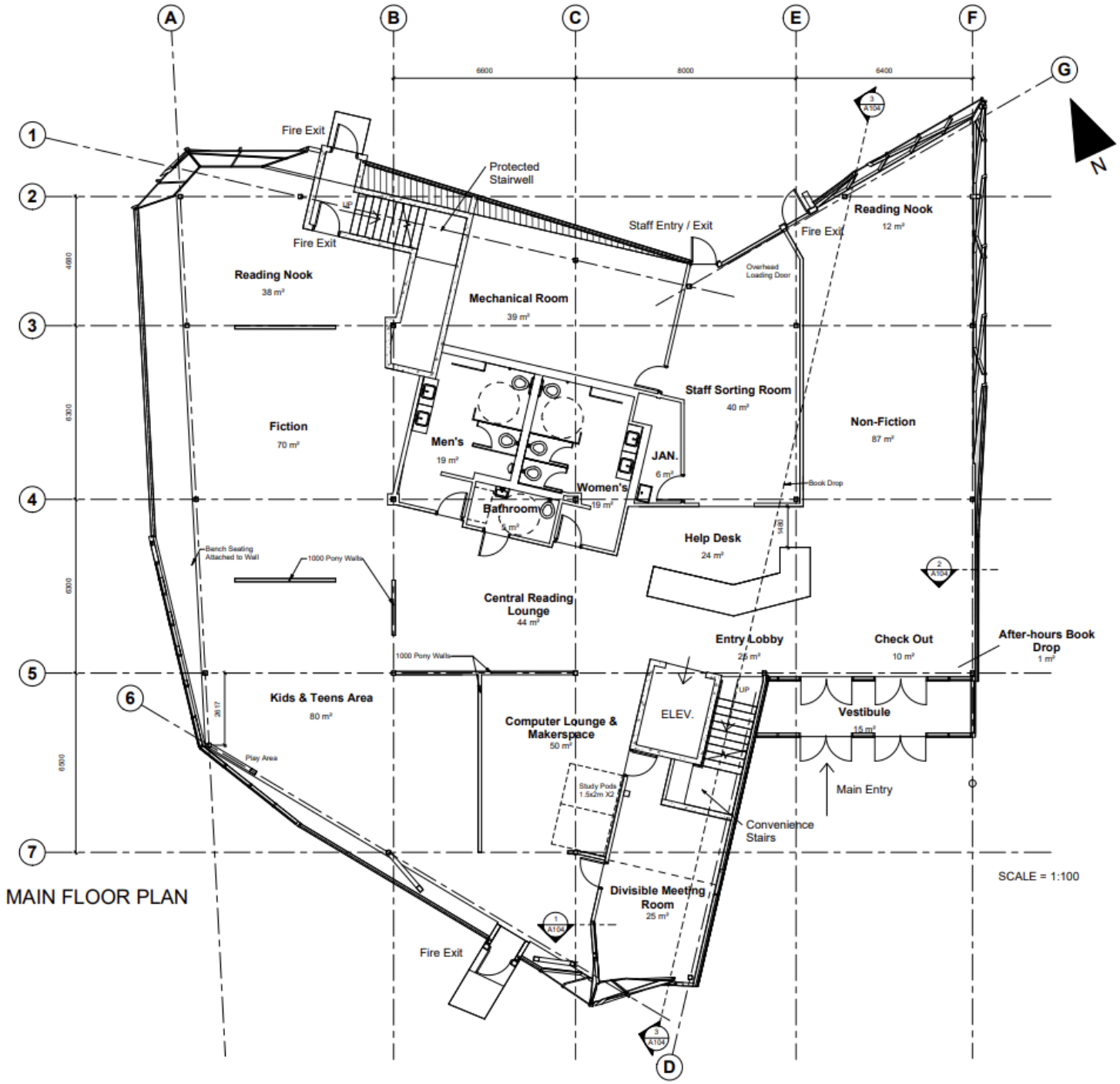
2 ENTRYWAY SECTION
SCALE = 1 : 50



3 WEST FACING SECTION
SCALE = 1 : 50

DESIGN DRAWINGS ONLY - NOT INTENDED FOR CONSTRUCTION

LIBRARY DESIGN PROJECT

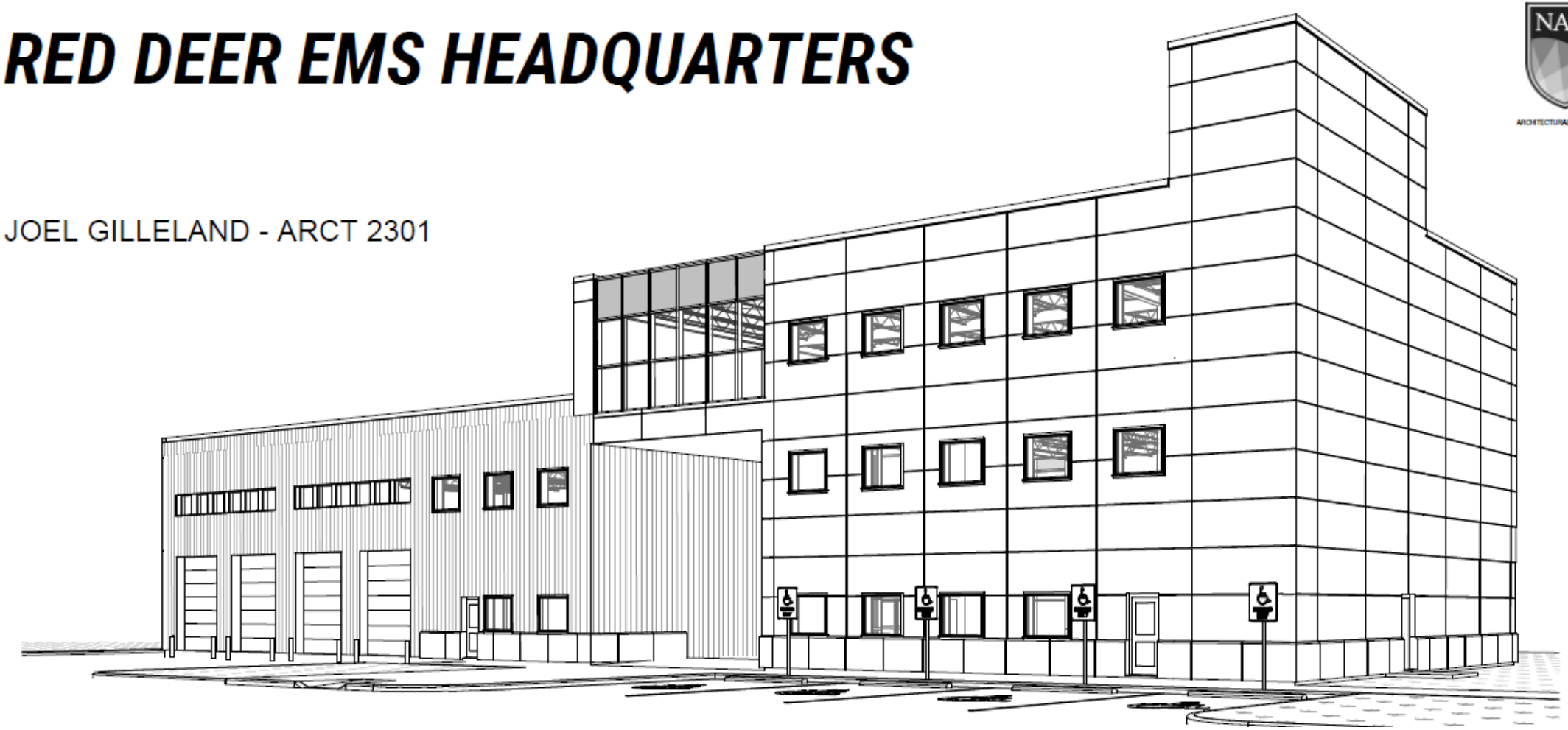


MAIN FLOOR PLAN

EMS HEADQUARTERS

RED DEER EMS HEADQUARTERS

JOEL GILLELAND - ARCT 2301



In this academic project, I used Revit to create schedules, wall sections, and building sections for the envelope of an ambulance station. I also created construction details using AutoCAD. This design is not my own, as the main focus of the project was on modeling and drafting.

EMS HEADQUARTERS

EXTERIOR WALL ASSEMBLIES

WALL TYPE	CONSTRUCTION ASSEMBLY
W1	6 ACRYLIC STUCCO 100 RIGID ISULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W2	PREFINISHED VERTICAL METAL CLADDING 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ 600 O.C. VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W3	6 ACRYLIC STUCCO W/MESH REINFORCED BASE COAT 13 CEMENT BOARD 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ 600 O.C. VAPOUR BARRIER (SELF ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W4	ALUMINUM COMPOSITE PANNELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARRS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W5	100 PRECAST CONCRETE PANELS 25 AIR SPACE 100 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 GYPSUM BOARD
W6	ALUMINUM COMPOSITE PANELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF-ADHERED) 200 C.I.P. CONCRETE
W7	100 PRECAST CONCRETE PANELS 25 AIR SPACE 100 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 200 C.I.P. CONCERTE
W8	ALUMINUM COMPOSITE PANELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF-ADHERED) GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C.

PARAPET ASSEMBLIES

WALL TYPE	CONSTRUCTION ASSEMBLY
PT1	6 ACRYLIC STUCCO 100 RIGID INSULATION SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT2	PREFINISHED VERTICAL METAL CLADDING 25 AIR SPACE 100 RIGID INSULATION 125 HORIZONTAL Z-BARS @ 600 O.C. SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT3	6 ACRYLIC STUCCO W/ MESH REINFORCED BASE COAT 13 CEMENT BOARD 25 AIR SPACE 100 RIGID INSULATION 125 HORIZONTAL Z-BARS @ 600 O.C. SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT4	ALUMINUM COMPOSITE PANELS 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS SHEATHING MEMBRANE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. RSI 3.5 BATT INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER-FLASHING
PT5	190 ALUMINUM CURTAIN WALL, THERMALLY BROKEN SINGLE PANE INSULATED SPANDREL PANEL 25 AIR SPACE 13 GYPSUM BOARD SHEATHING 152 STEEL STUDS @ 406 O.C. 13 PLYWOOD VAPOUR BARRIER (SELF-ADHERED) 64 Z-BARS VERTICAL @ PERIMETER OF STUDS 64 RIGID INSULATION 13 PRE-PRIMED PLYWOOD MEMBRANE COUNTER FLASHING

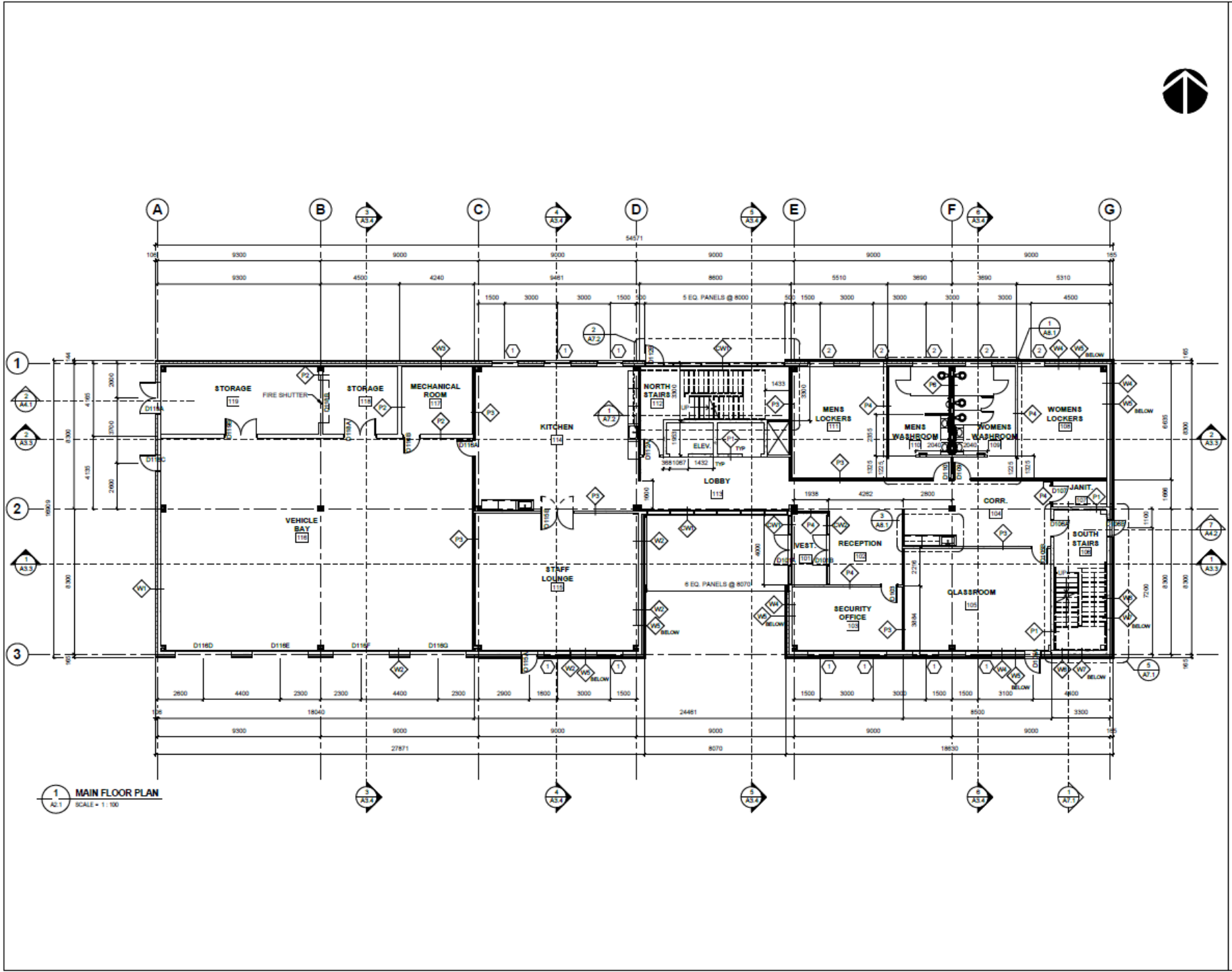
ROOF ASSEMBLIES

ROOF TYPE	CONSTRUCTION ASSEMBLY
R1	2-PLY SBS MODIFIED BITUMEN MEMBRANE SYSTEM 25 FIBREBOARD 250 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD 38 STEEL DECK
R2	2-PLY SBS MODIFIED BITUMEN MEMBRANE SYSTEM 25 FIBREBOARD 250 RIGID INSULATION (SLOPED) VAPOUR BARRIER (SELF-ADHERED) 200 C.I.P. CONCRETE
R3	2-PLY SBS MODIFIED BITUMEN MEMBRANE SYSTEM 25 FIBREBOARD 200 RIGID INSULATION VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD 38 STEEL DECK

SOFFIT ASSEMBLIES

SOFFIT TYPE	CONSTRUCTION ASSEMBLY
S1	900 x 900 ALUMINUM COMPOSITE PANEL 25 AIR SPACE 100 RIGID INSULATION 125 Z-BARS, GRID @ PERIMETER OF PANELS VAPOUR BARRIER (SELF-ADHERED) 13 GYPSUM BOARD SHEATHING 22 HAT SECTION FURRING @ 600 O.C., PARALELL TO OWSJ 38 CARRYING CHANNELS @ 600 O.C. SUSPENSION RODS @ 1200 O.C.

EMS HEADQUARTERS



NAIT

SCHOOL OF SUSTAINABLE BUILDING AND ENVIRONMENTAL MANAGEMENT

ARCHITECTURAL TECHNOLOGY

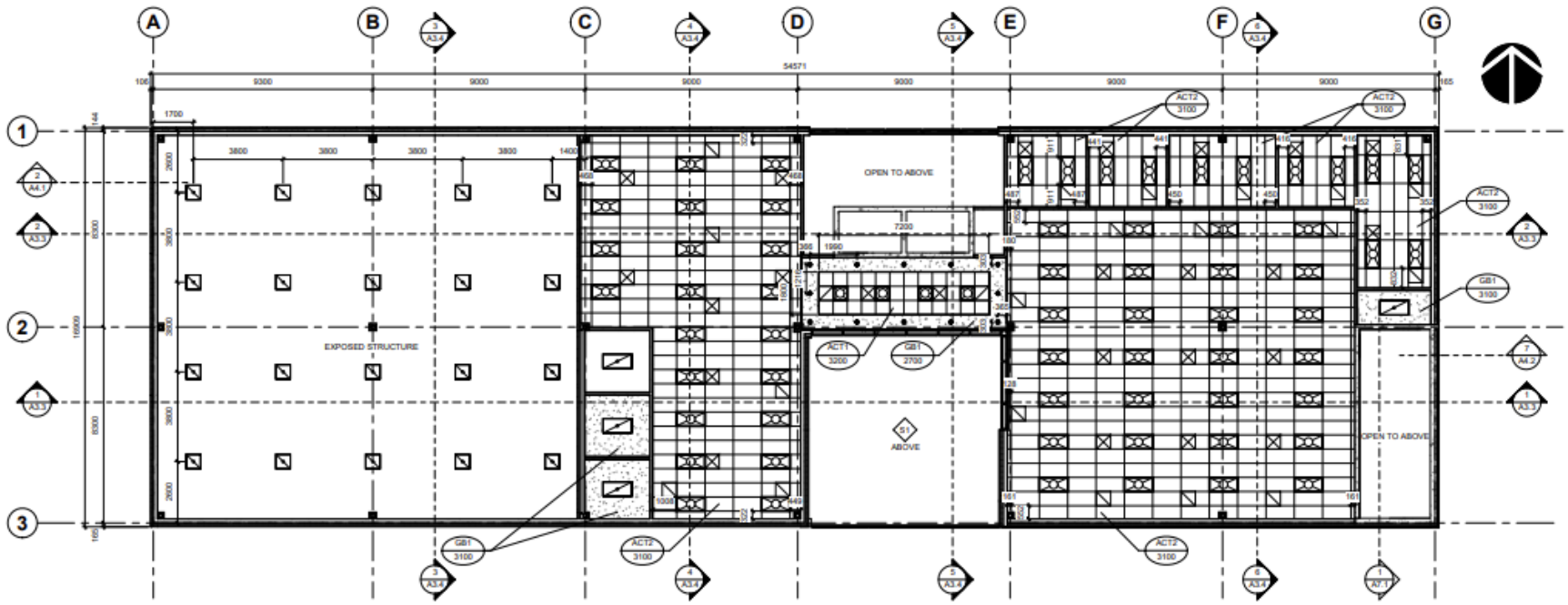
No.	Description	Date

NAIT AMBULANCE HEADQUARTERS

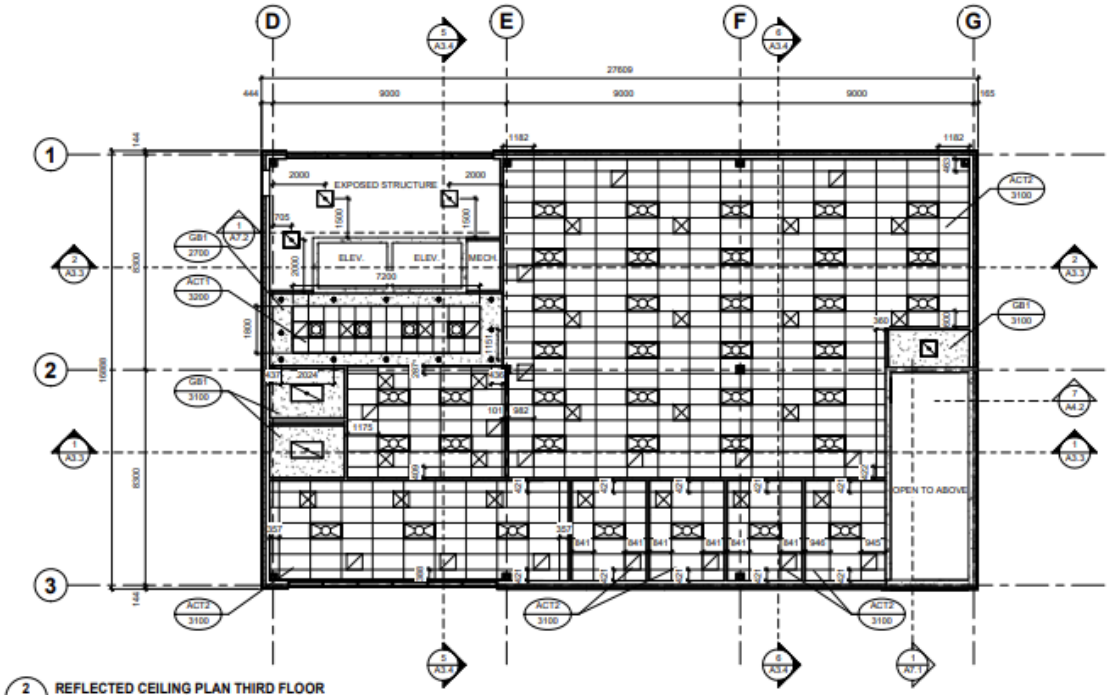
MAIN FLOOR PLAN

Class Number	ARCT2401 A01
Date	2024 APR 26
Drawn by	J.G.
Instructor	A.L.
	A2.1
Scale	1 : 100

EMS HEADQUARTERS



1 A2.5 REFLECTED CEILING PLAN SECOND FLOOR
SCALE = 1 : 100



2 A2.5 REFLECTED CEILING PLAN THIRD FLOOR
SCALE = 1 : 100

CEILING EQUIPMENT & FINISHES

- 152 RECESSED INCANDESCENT 120V POT LIGHT
- 610 x 610 SUPPLY AIR DIFFUSER @ ADJ. CLG. HT.
- 610 x 610 RETURN AIR DIFFUSER @ ADJ. CLG. HT.
- 610 x 610 120V RECESSED TROFFER LIGHT
- 610 x 610 120V SUSPENDED OR SURFACE MOUNTED LIGHT
- 1220 x 610 120V RECESSED TROFFER LIGHT
- 1220 x 610 120V SUSPENDED OR SURFACE MOUNTED LIGHT
- GB1 - GYPSUM BOARD CEILING
  38 METAL CHANNEL
  13 GYPSUM BOARD
- ACT1 - SUSPENDED T-BAR CEILING SYSTEM
  16 THICK 610 x 610 ACOUSTIC TILES
- ACT2 - SUSPENDED T-BAR CEILING SYSTEM
  16 THICK 1220 x 610 ACOUSTIC TILES

NAIT
SCHOOL OF SUSTAINABLE BUILDING AND ENVIRONMENTAL MANAGEMENT
ARCHITECTURAL TECHNOLOGY

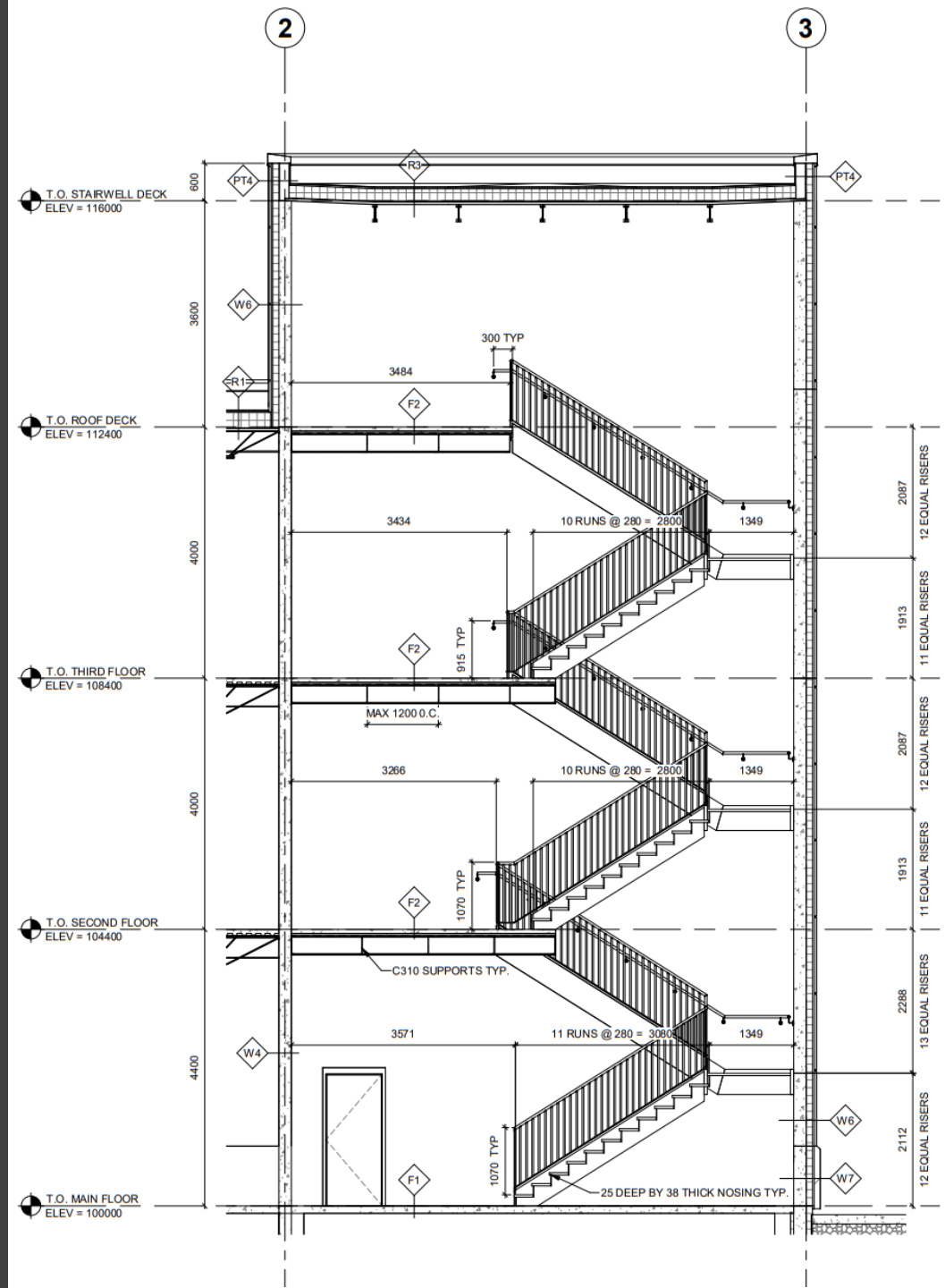
No.	Description	Date

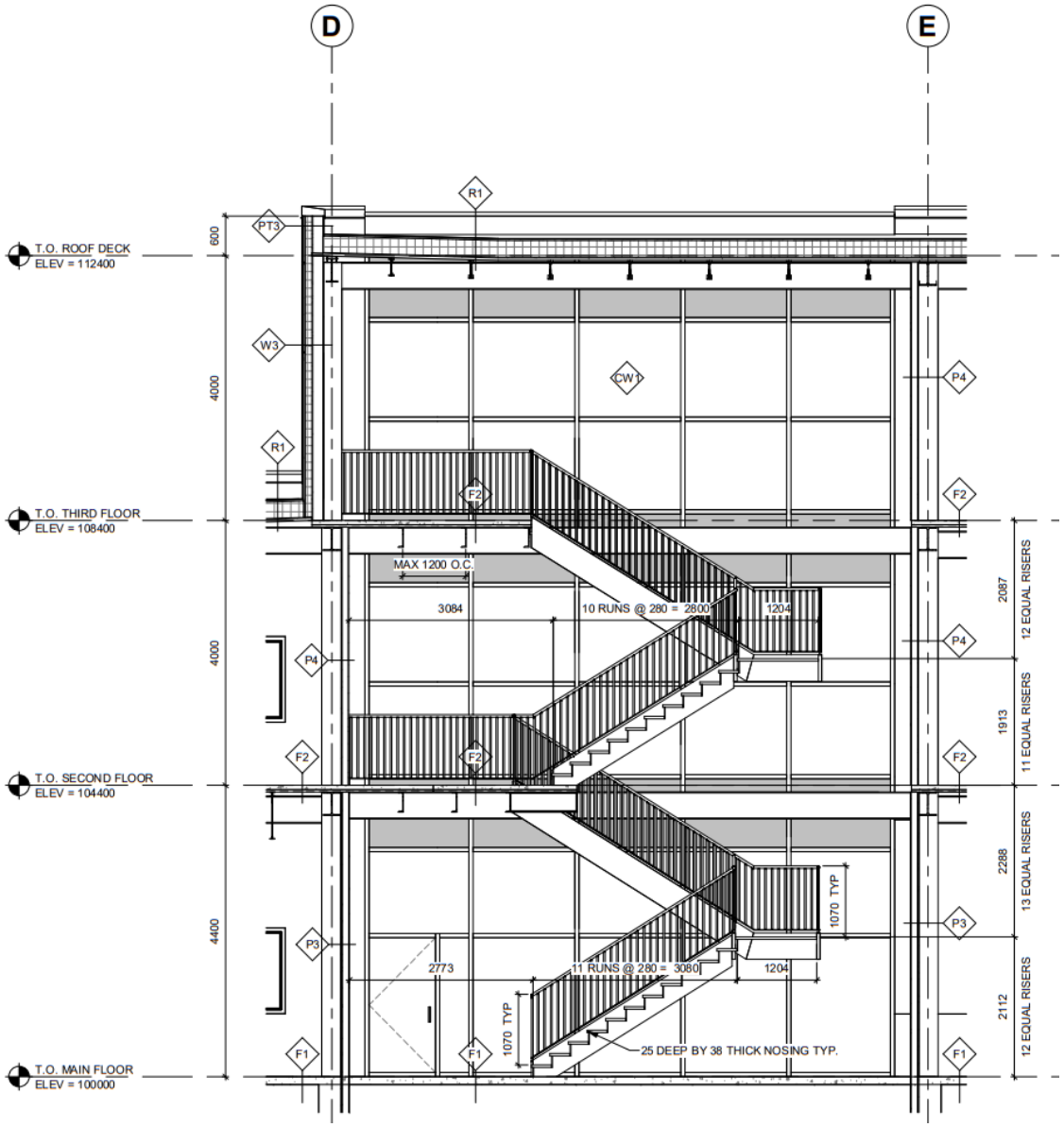
NAIT AMBULANCE HEADQUARTERS

SECOND & THIRD FLOOR RCP

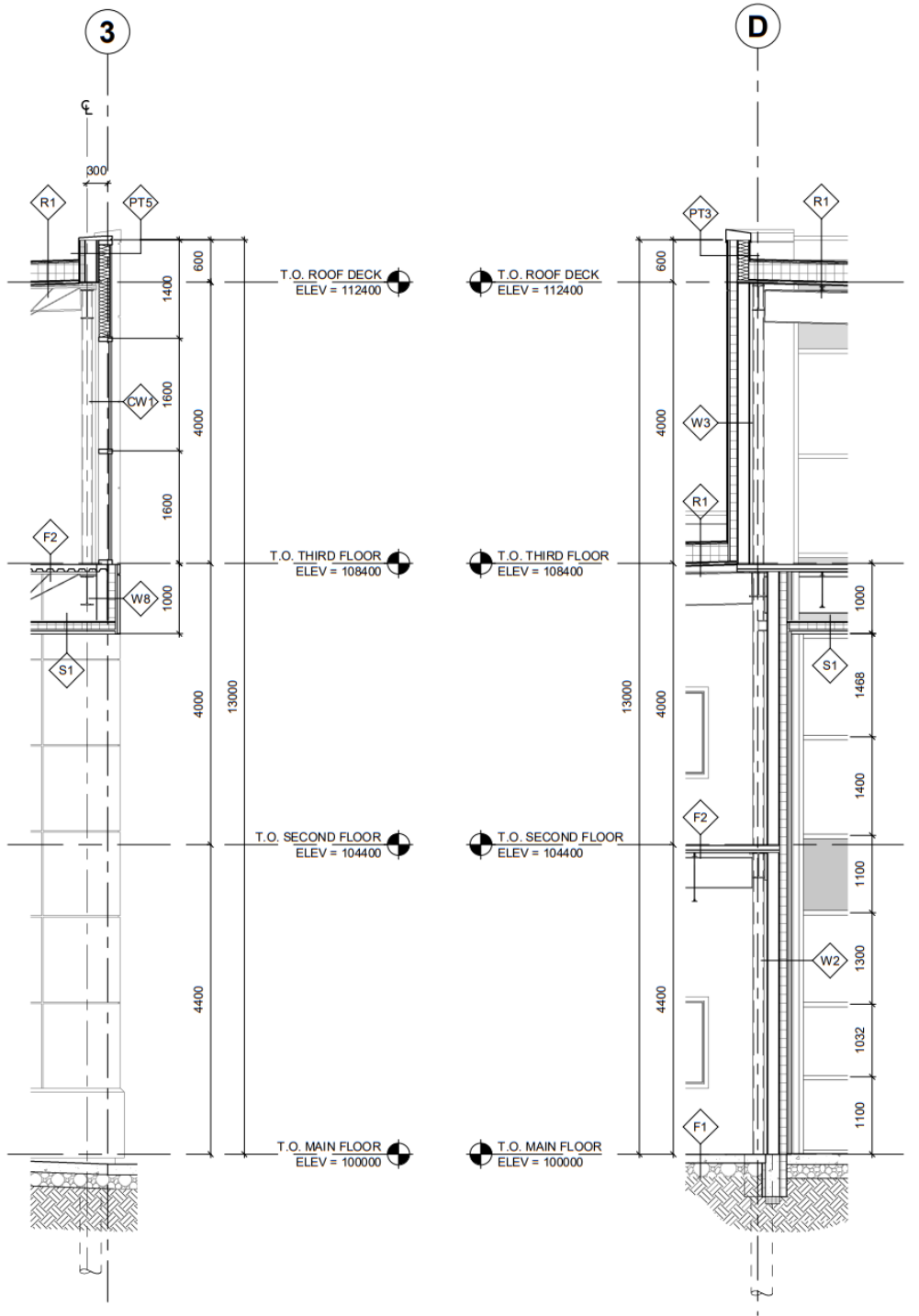
Class Number	ARCT2401 A01
Date	2024 APR 26
Drawn by	J.G.
Instructor	A.L.
	A2.5
Scale	1 : 100

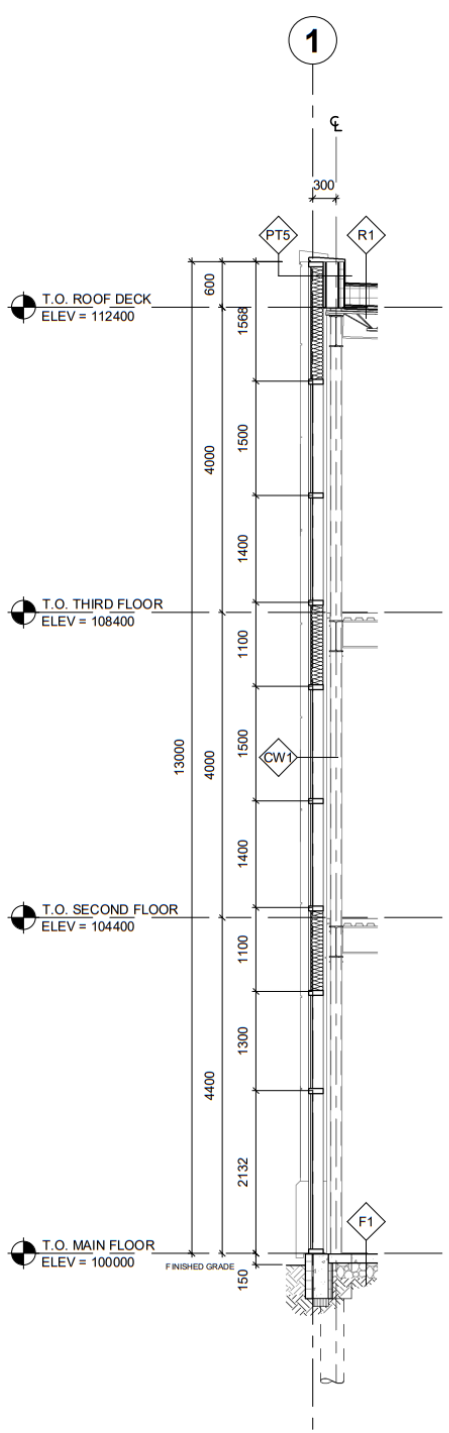
EMS HEADQUARTERS

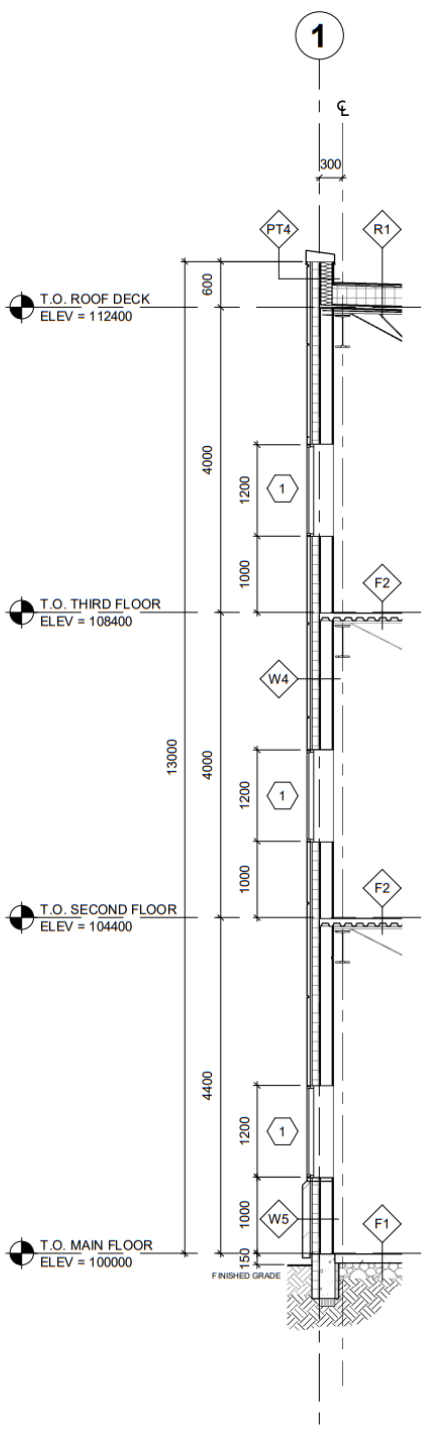


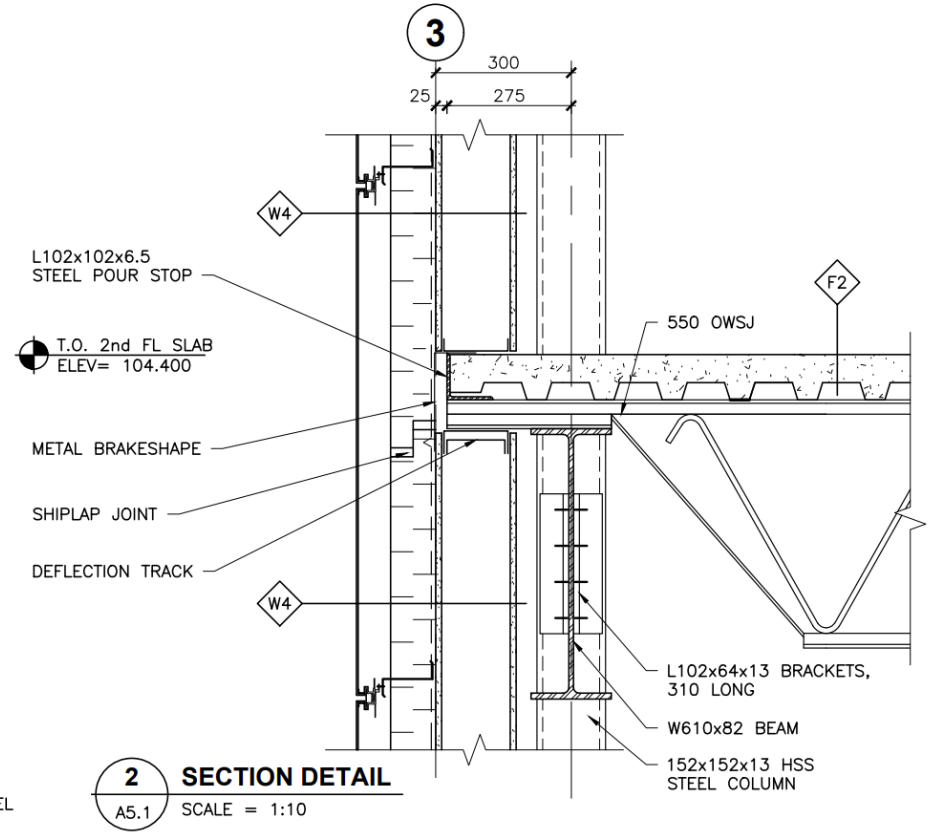


EMS HEADQUARTERS

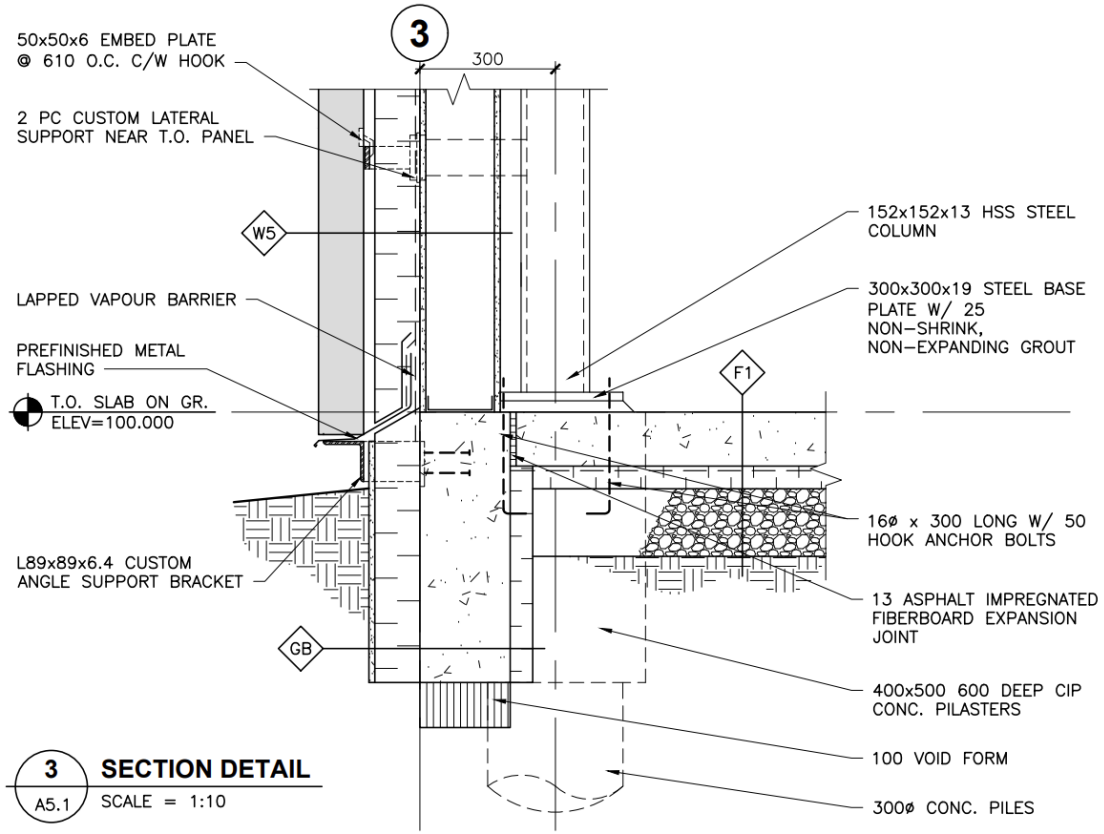






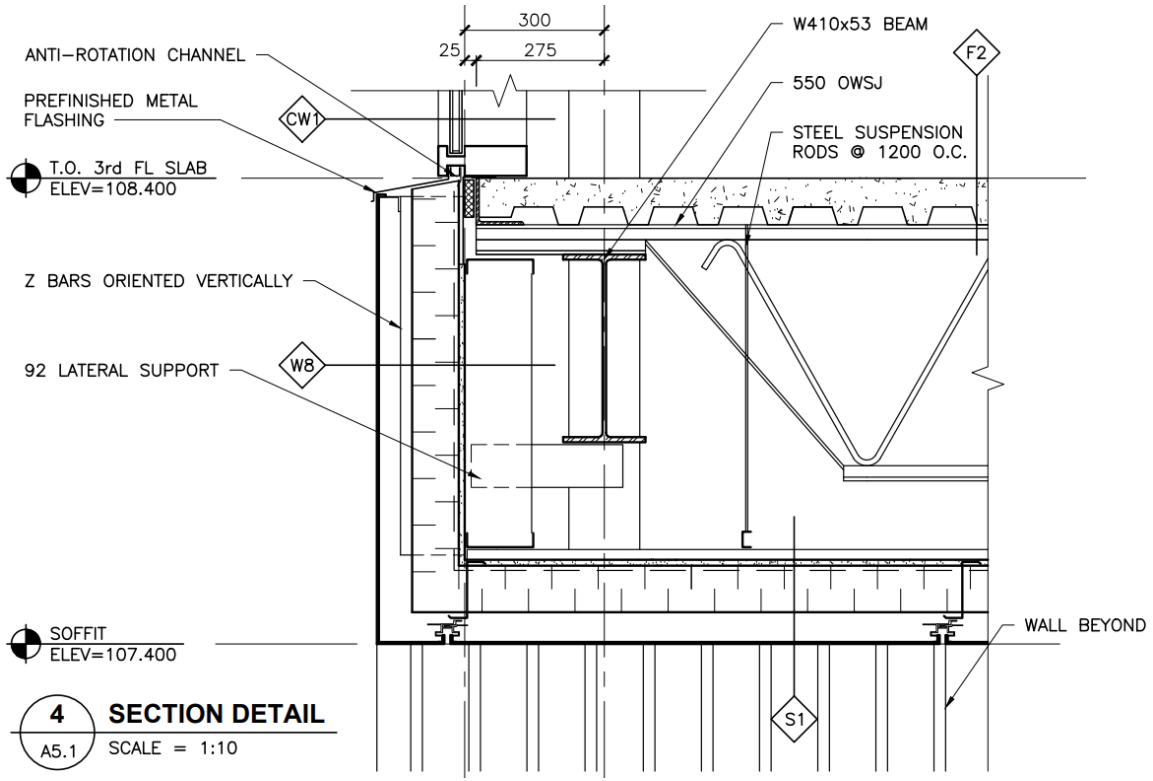


2nd floor detail with ACP cladding

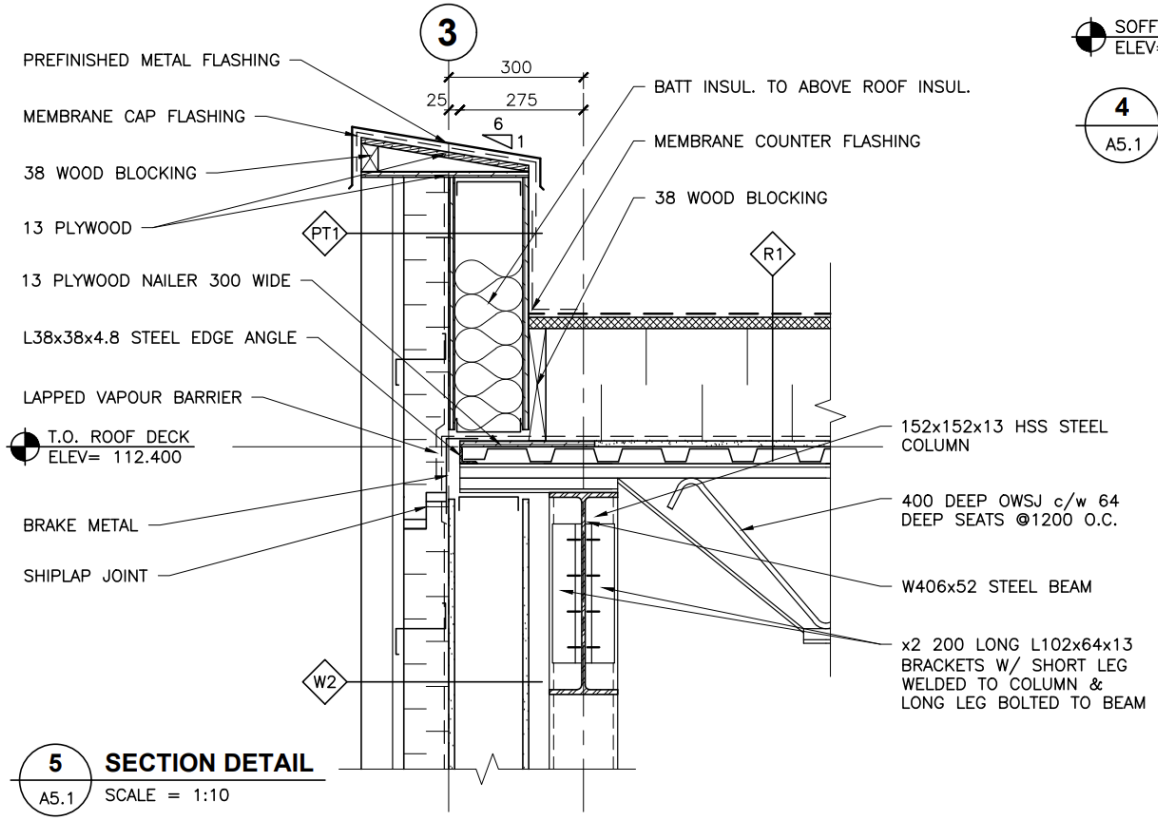


Precast concrete panel base connection

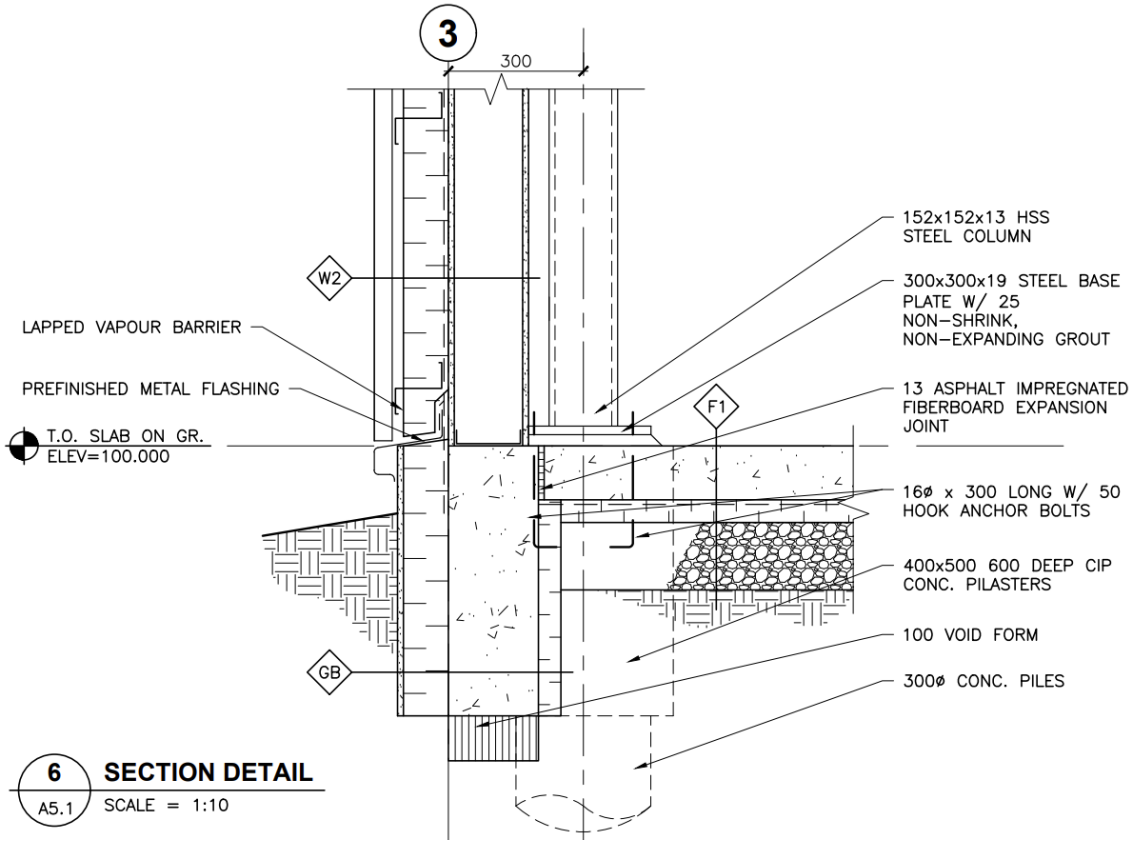
EMS HEADQUARTERS



Warm soffit with ACP finish

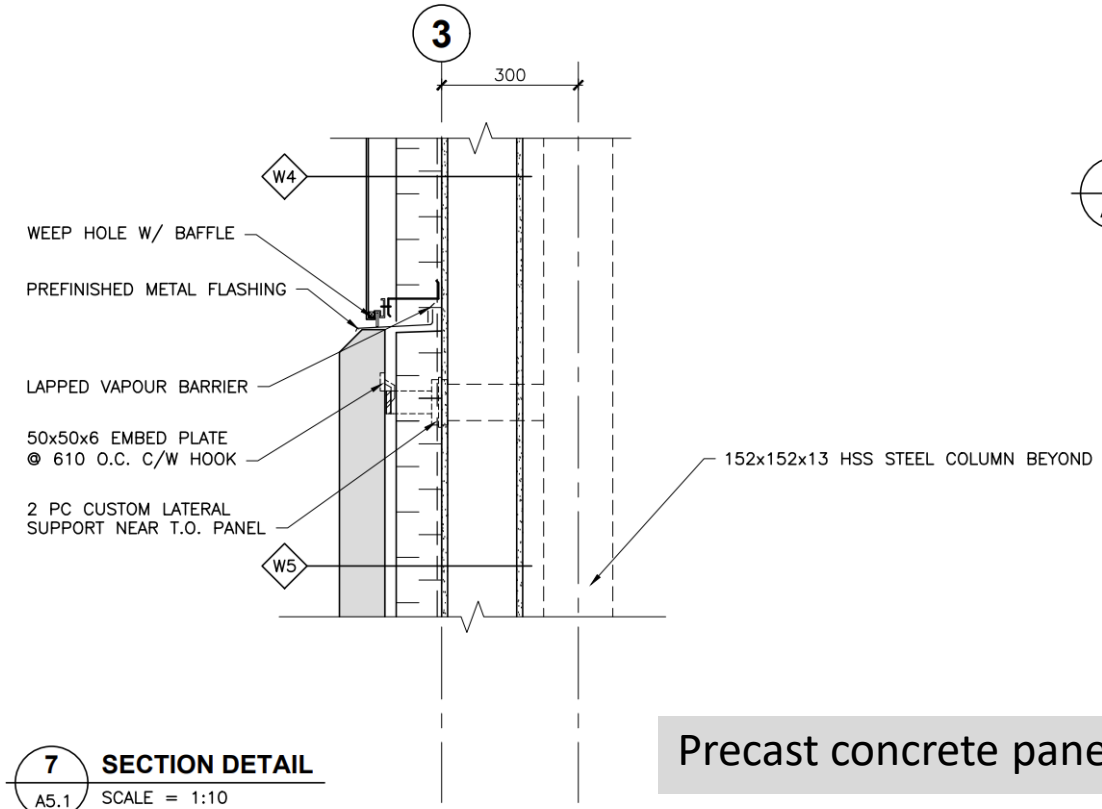


Steel stud infill wall at parapet with vertical metal cladding finish



6 A5.1 **SECTION DETAIL**
SCALE = 1:10

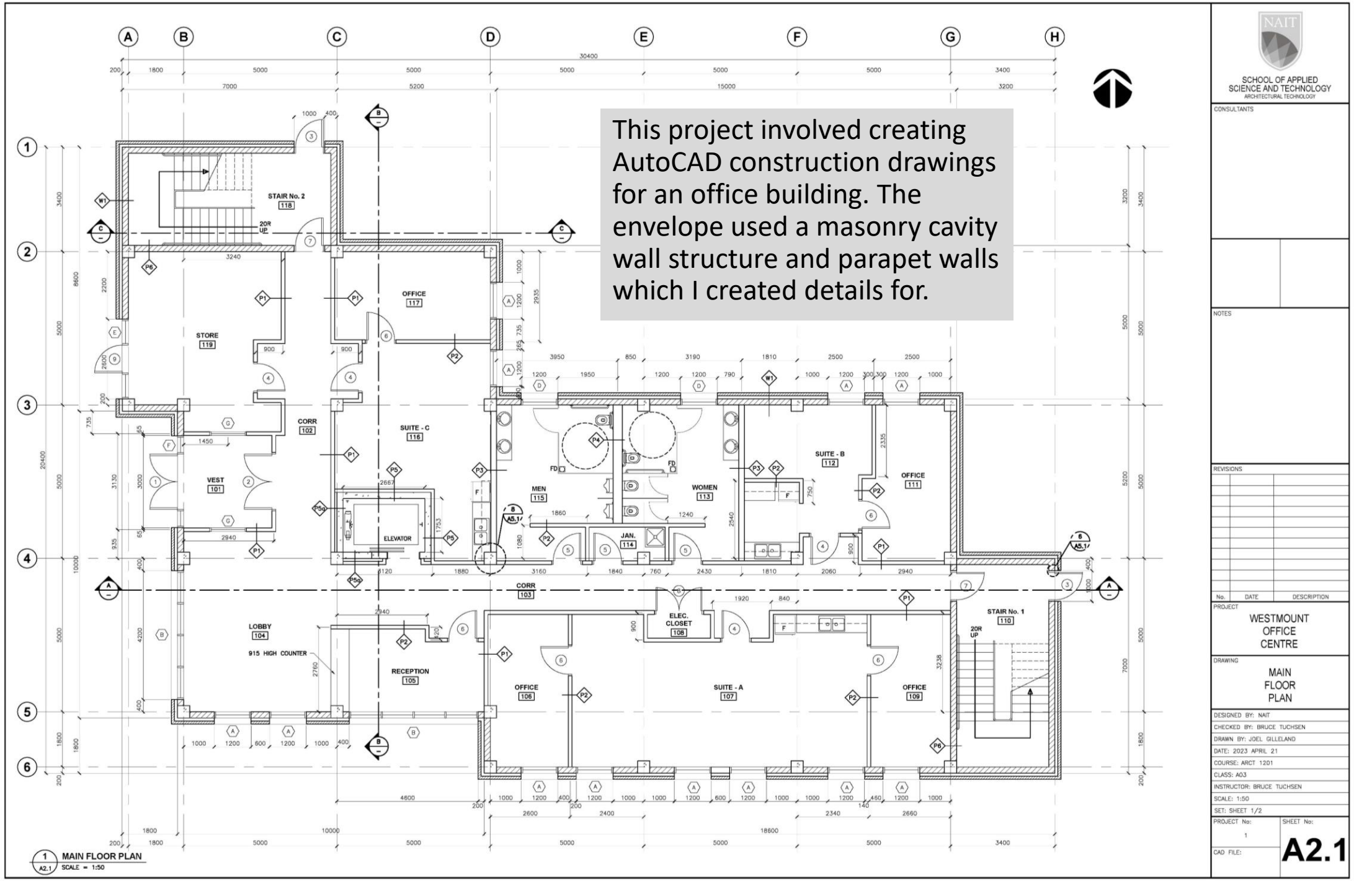
Vertical metal cladding base detail



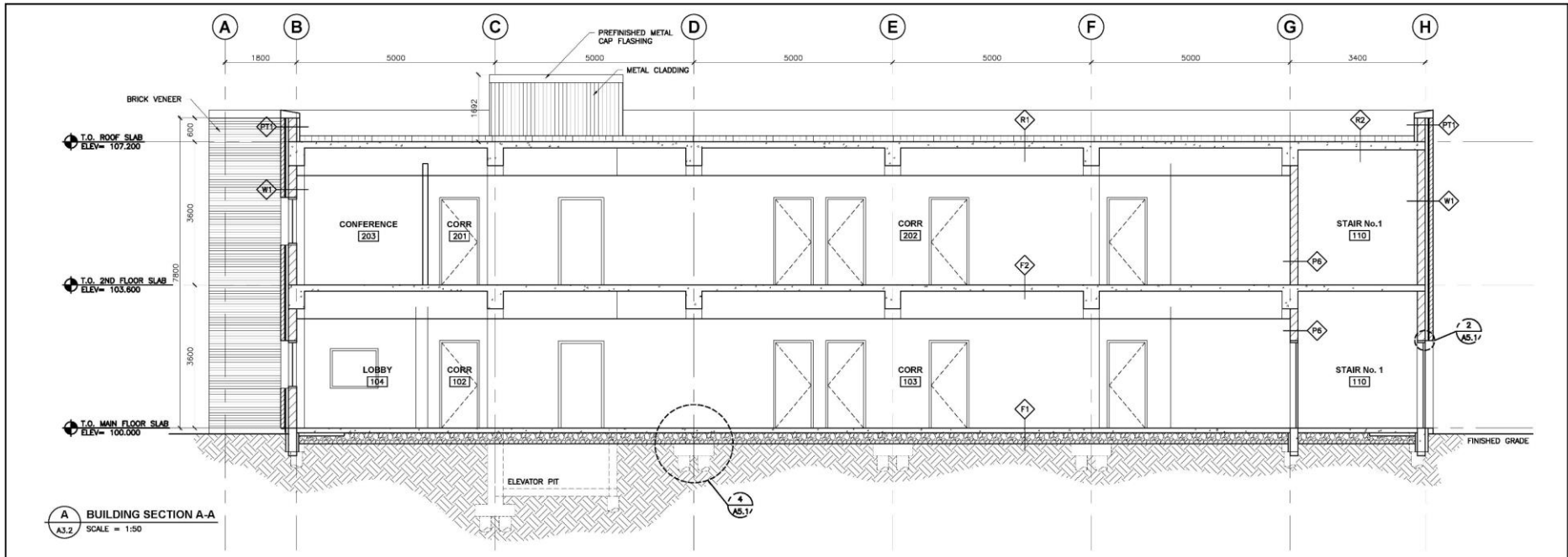
7 A5.1 **SECTION DETAIL**
SCALE = 1:10

Precast concrete panel and ACP connection

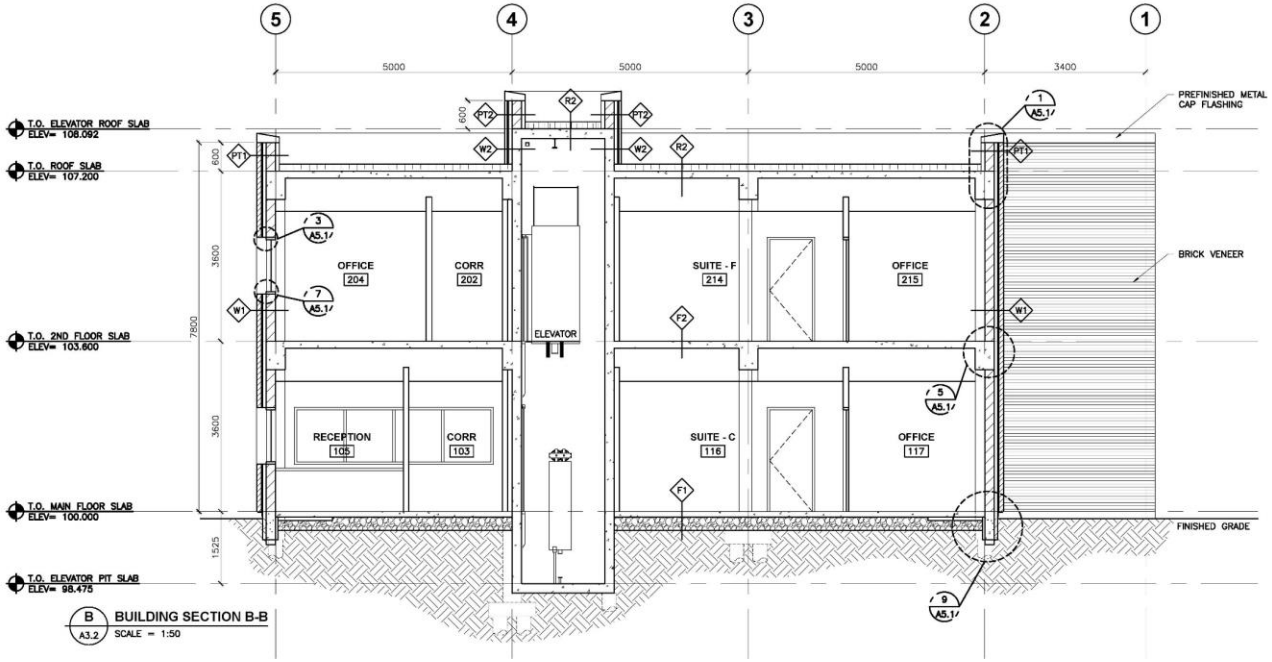
WESTMOUNT OFFICE



WESTMOUNT OFFICE



A A3.2 BUILDING SECTION A-A
SCALE = 1:50



B A3.2 BUILDING SECTION B-B
SCALE = 1:50

NAIT
SCHOOL OF APPLIED SCIENCE AND TECHNOLOGY
ARCHITECTURAL TECHNOLOGY

CONSULTANTS

NOTES

REVISIONS

No.	DATE	DESCRIPTION

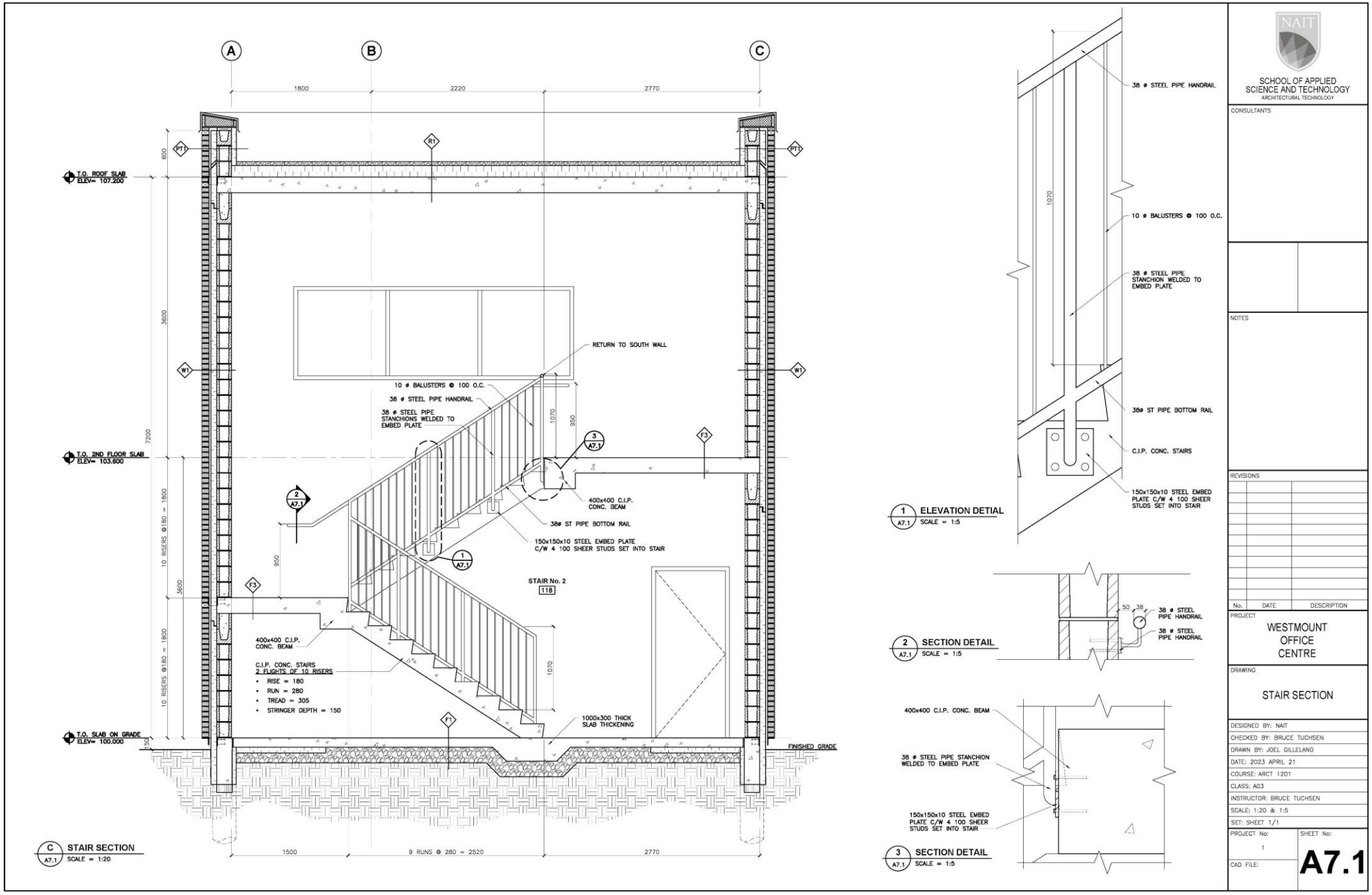
PROJECT
WESTMOUNT OFFICE CENTRE

DRAWING
BUILDING SECTIONS

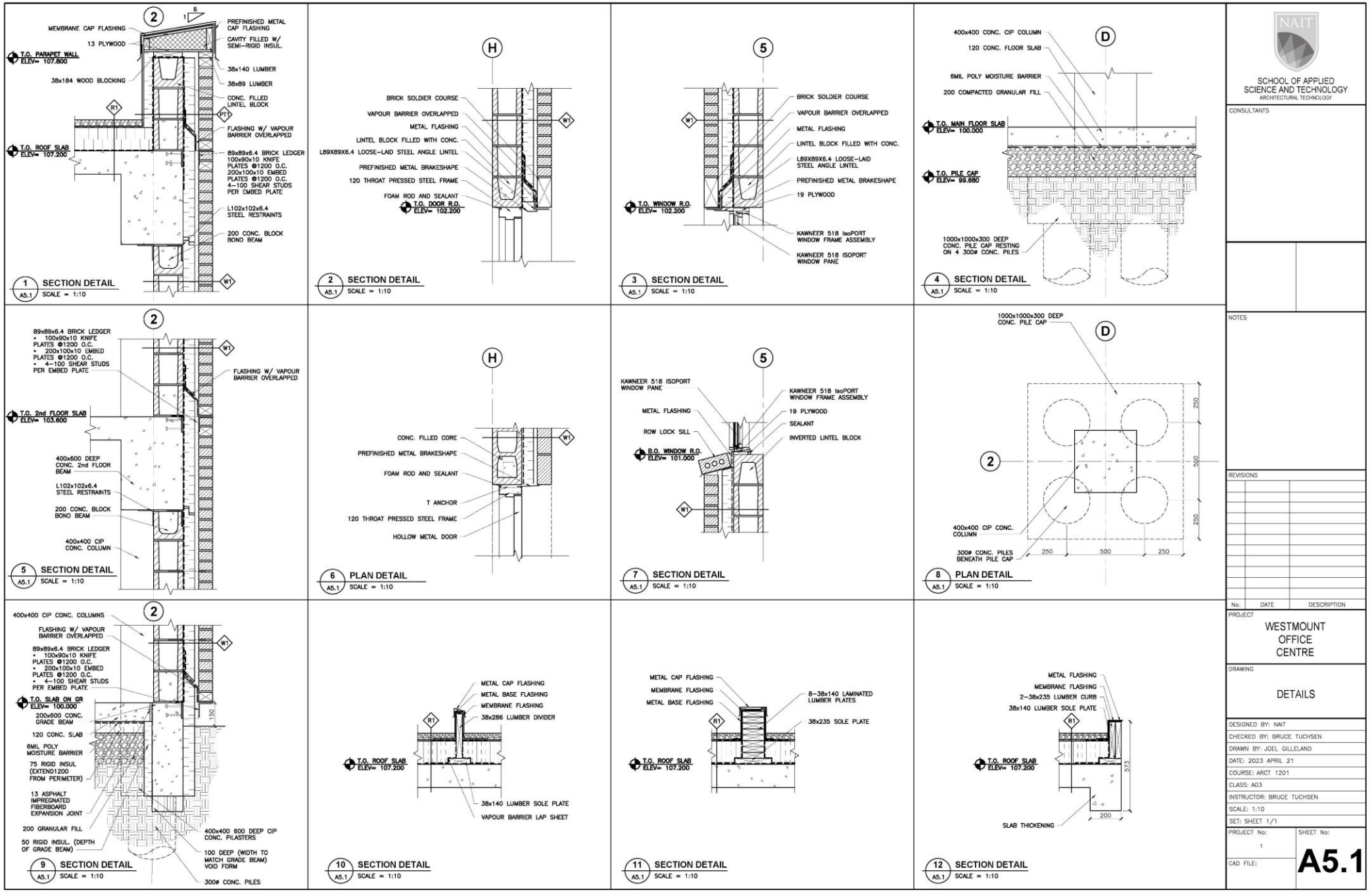
DESIGNED BY: NAIT
CHECKED BY: BRUCE TUCHSEN
DRAWN BY: JOEL GILLELAND
DATE: 2023 APRIL 21
COURSE: ARCT 1201
CLASS: A03
INSTRUCTOR: BRUCE TUCHSEN
SCALE: 1:50
SET: SHEET 1/1

PROJECT No: 1
CAD FILE:
SHEET No: A3.2

WESTMOUNT OFFICE



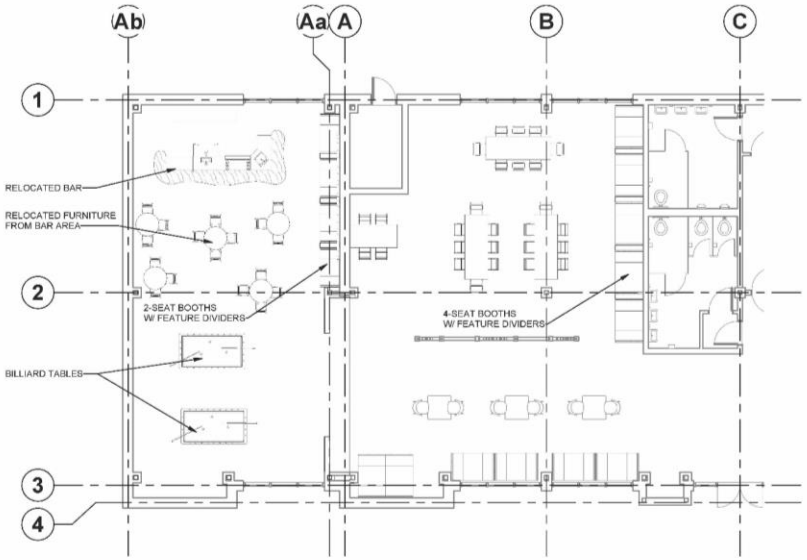
WESTMOUNT OFFICE



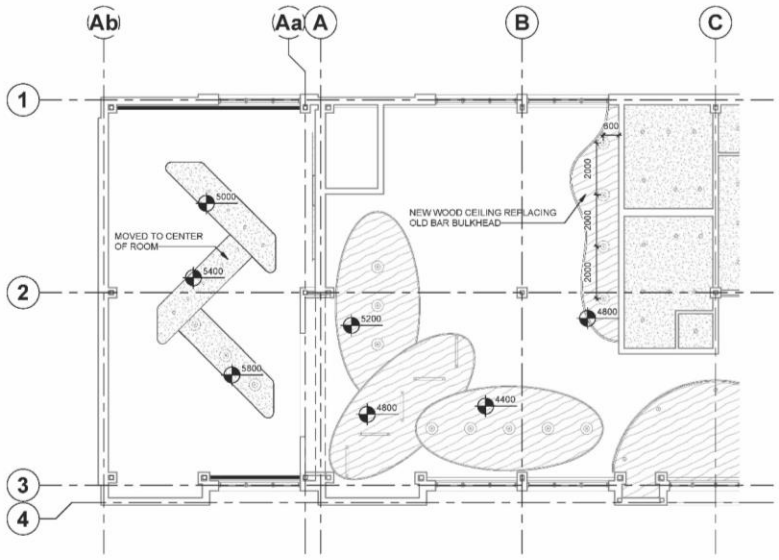
BLUE PARROT RENOVATION

The Blue Parrot was a Revit project where I used design options and phasing to create several different layouts and an expansion to an existing restaurant. I had already modeled the original building in a previous semester. The next two pages show two layout/design options for the proposed restaurant renovation.

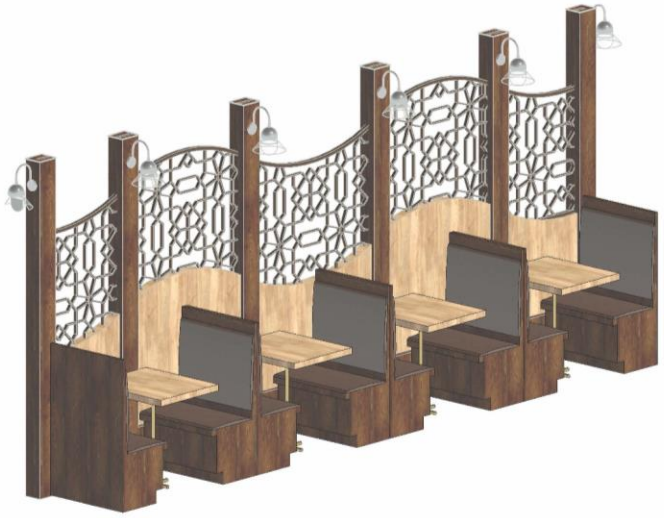
BLUE PARROT RENOVATION



1 A2.4 MFP NEW CONSTRUCTION - OPTION 1
SCALE = 1 : 100



2 A2.4 RCP NEW CEILING - OPTION 1
SCALE = 1 : 100



3 A2.4 OPTION 1 FEATURE WALL
SCALE =

NAIT
SCHOOL OF SUSTAINABLE BUILDING AND ENVIRONMENTAL MANAGEMENT
ARCHITECTURAL TECHNOLOGY

No.	Description	Date

NAIT

BLUE PARROT

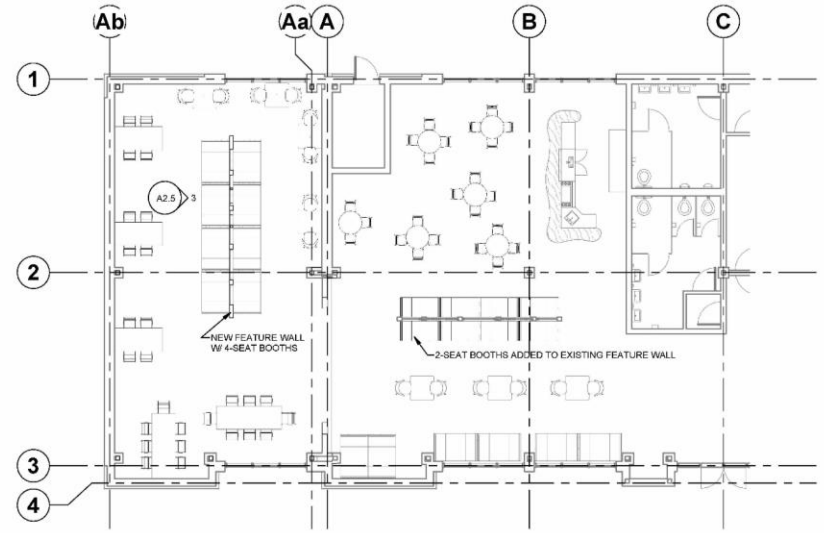
DESIGN OPTION 1

Class Number	ENDS 2430 A01
Date	3/17/2024
Drawn by	J. GILLELAND
Instructor	D. HOLLIDAY

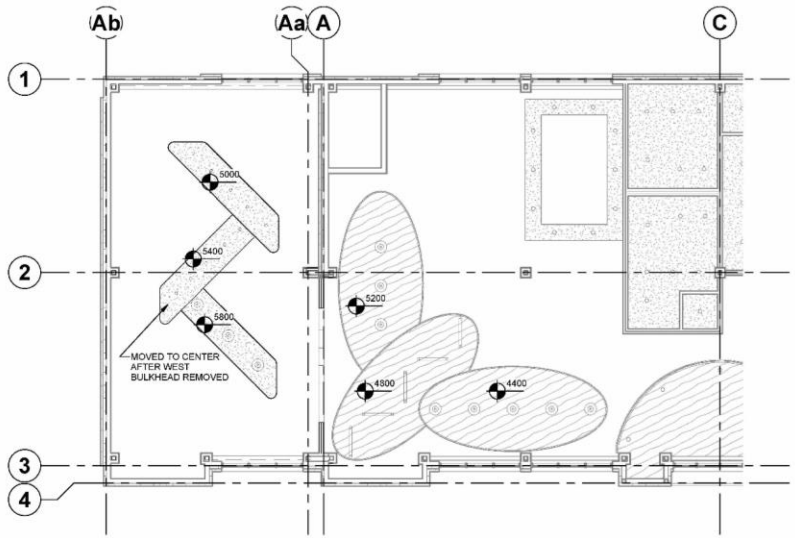
A2.4

Scale 1 : 100

BLUE PARROT RENOVATION



1 A2.5 **MFP NEW CONSTRUCTION - OPTION 2**
SCALE = 1 : 100



2 **RCP NEW CEILING - OPTION 2**
SCALE = 1 : 100

3 A2.5 **OPTION 2 FEATURE WALL**
SCALE = 1 : 20

SCHOOL OF SUSTAINABLE BUILDING AND ENVIRONMENTAL MANAGEMENT
ARCHITECTURAL TECHNOLOGY

No.	Description	Date

NAIT

BLUE PARROT

DESIGN OPTION 2

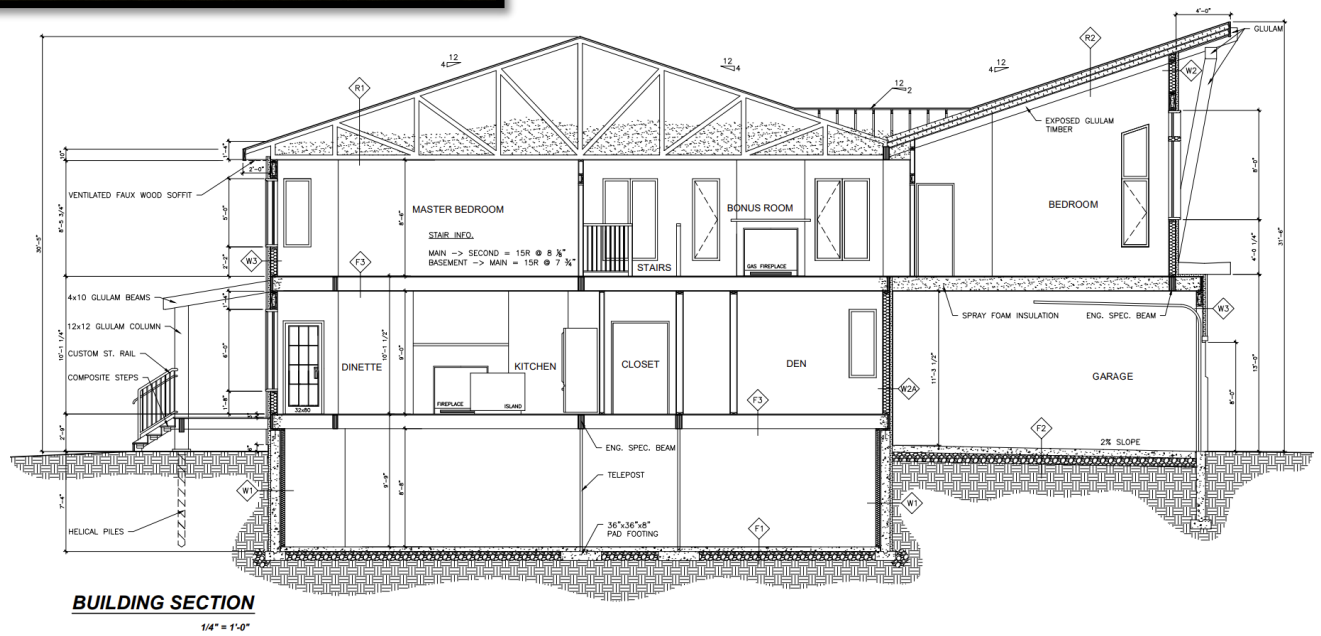
Class Number	ENDS 2430 A01
Date	3/17/2024
Drawn by	J. GILLELAND
Instructor	D. HOLLIDAY
	A2.5
Scale	As indicated

DESIGNS & RENDERINGS

These are some of my renderings that were part of an academic group project where we redesigned a small-scale commercial façade. Our main challenge during the project was creating uniformity along the strip as each member worked on different parts of the project.

DESIGNS & RENDERINGS

This was one of my designs for a residential design course. I wanted to combine an alpine architectural style with a modern theme. I used AutoCAD to create the construction drawing package which included plans, elevations, and the section shown on the right.

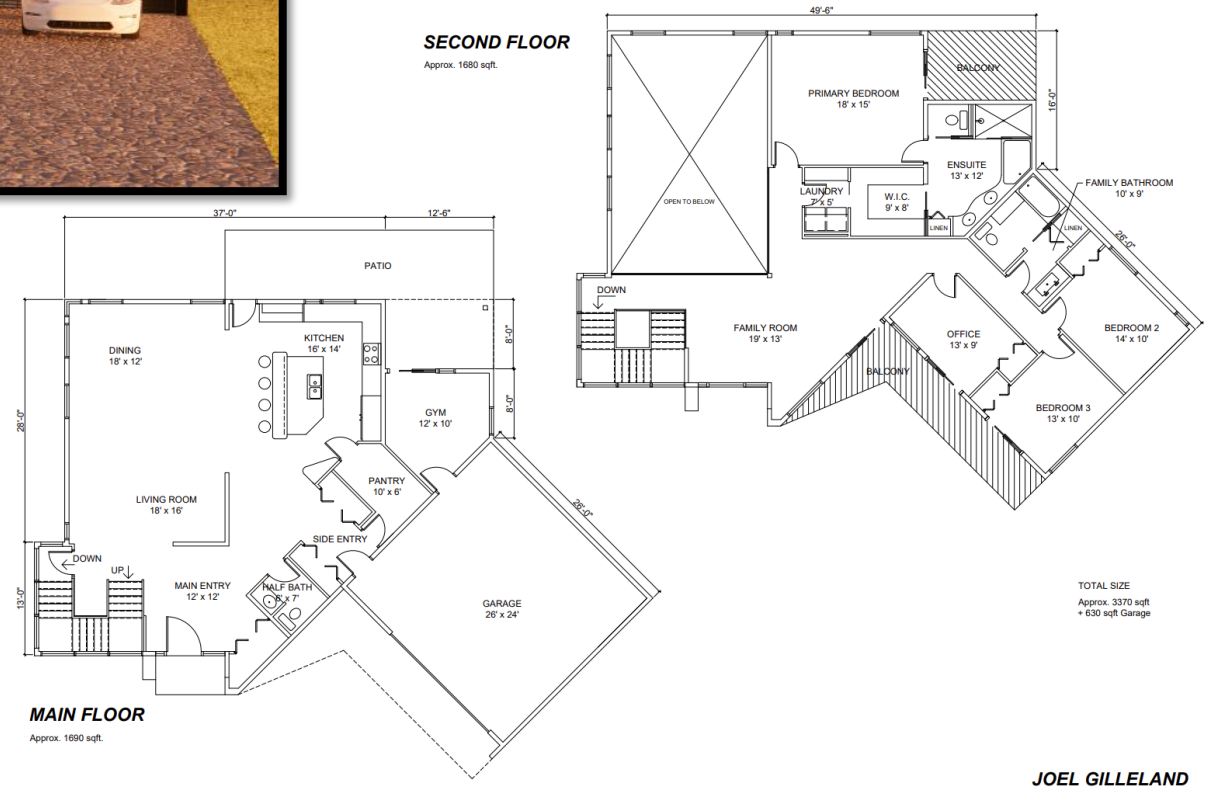


BUILDING SECTION

1/4" = 1'-0"

DESIGNS & RENDERINGS

Here is another custom home design I created for my residential design course. I used SketchUp to create the model and AutoCAD to draw the floor plans. A complete construction document package was not created as this was a design project only.



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