Appendix A – Drawings

Manitoba WARM Windows

- W1 - Prototype version
- W2 - Commercial version

Building Envelope Drawings

- D1 - Floor Plan - Apartment Floor Framing & Balcony Knife Edge Detail
- D2 - Floor Plan – Apartment Roof Framing & Window Schedules
- D3 - Elevation – Windows and Doors
- D4 - Section – Floor and Sill
- D5 - Section – Roof and Window
- D6 - Bill of Material
- D7 - Greenstone Standard Connection Detail – Panel (103)
- D8 - Greenstone Standard Connection Detail – Corner (303)
- D9 - Greenstone Standard Connection Detail – Vertical Joint (441)
- D10 - Greenstone Standard Connection Detail – Roof (507)

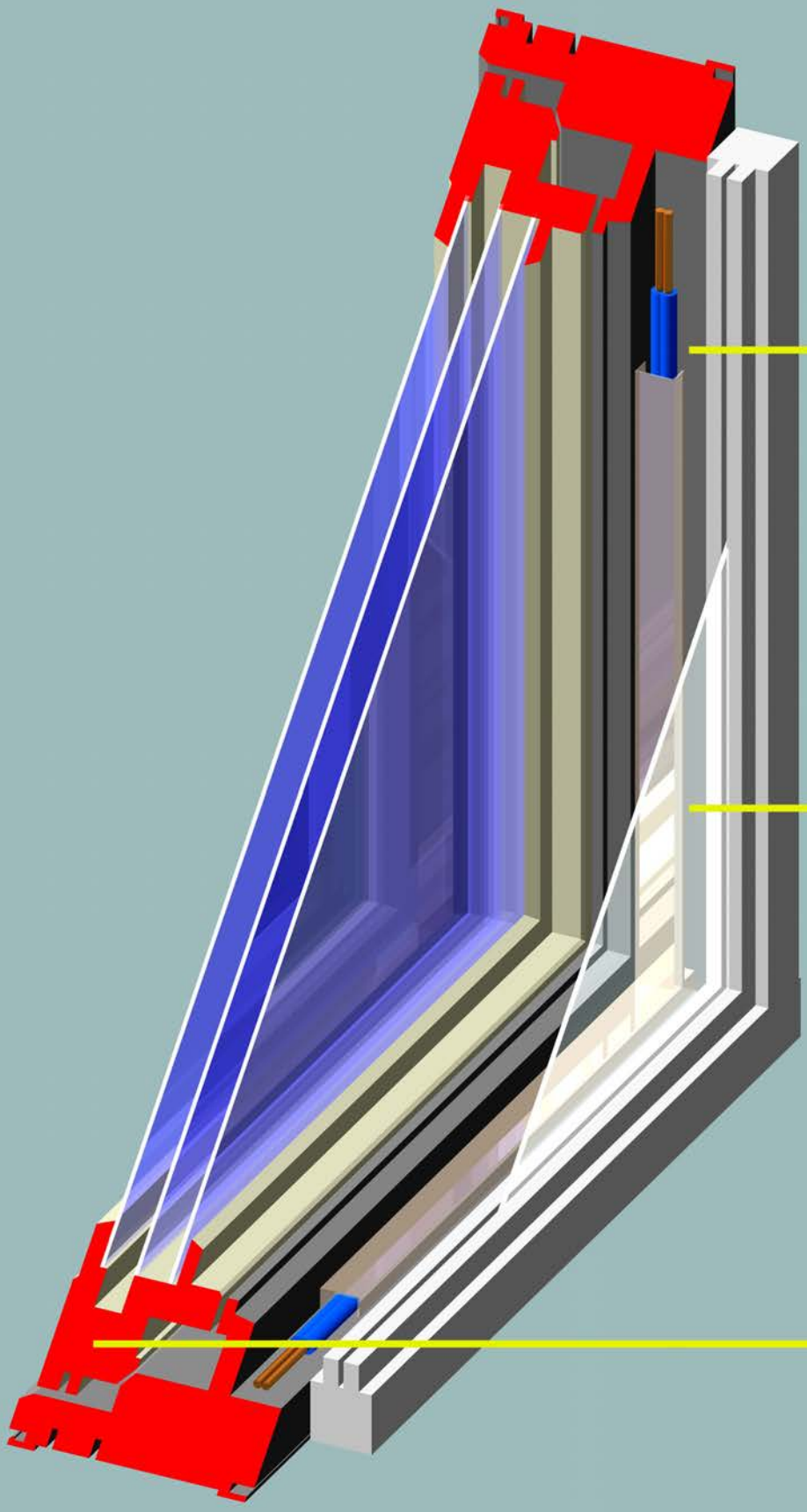
Balcony Structure

- D11 – Sketch of Self Supported Balcony Structure

Elevations

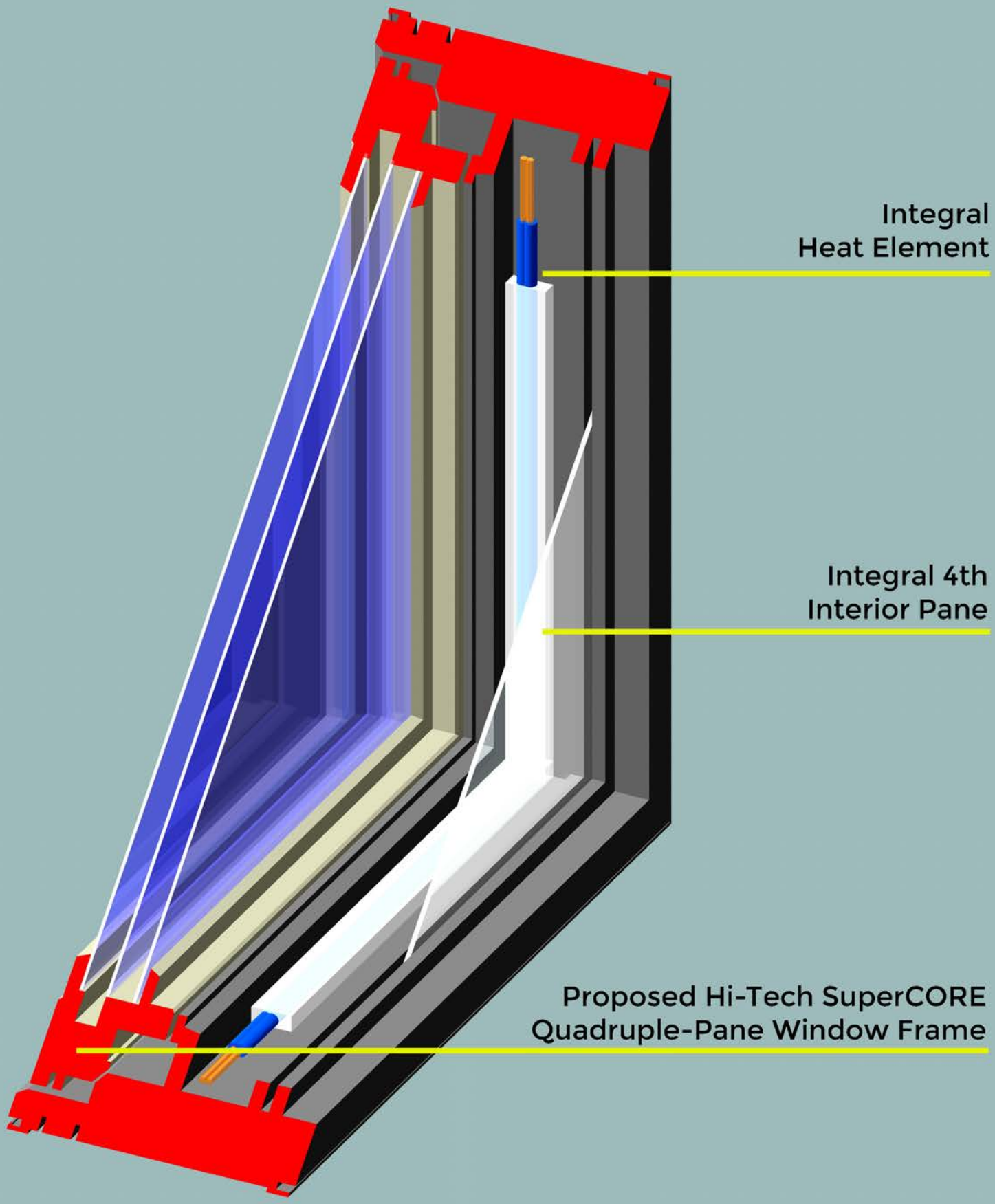
- D12 – Contextual Rendering Sketches
- D13 - Elevations

PROPOSED TEST PROTOTYPE

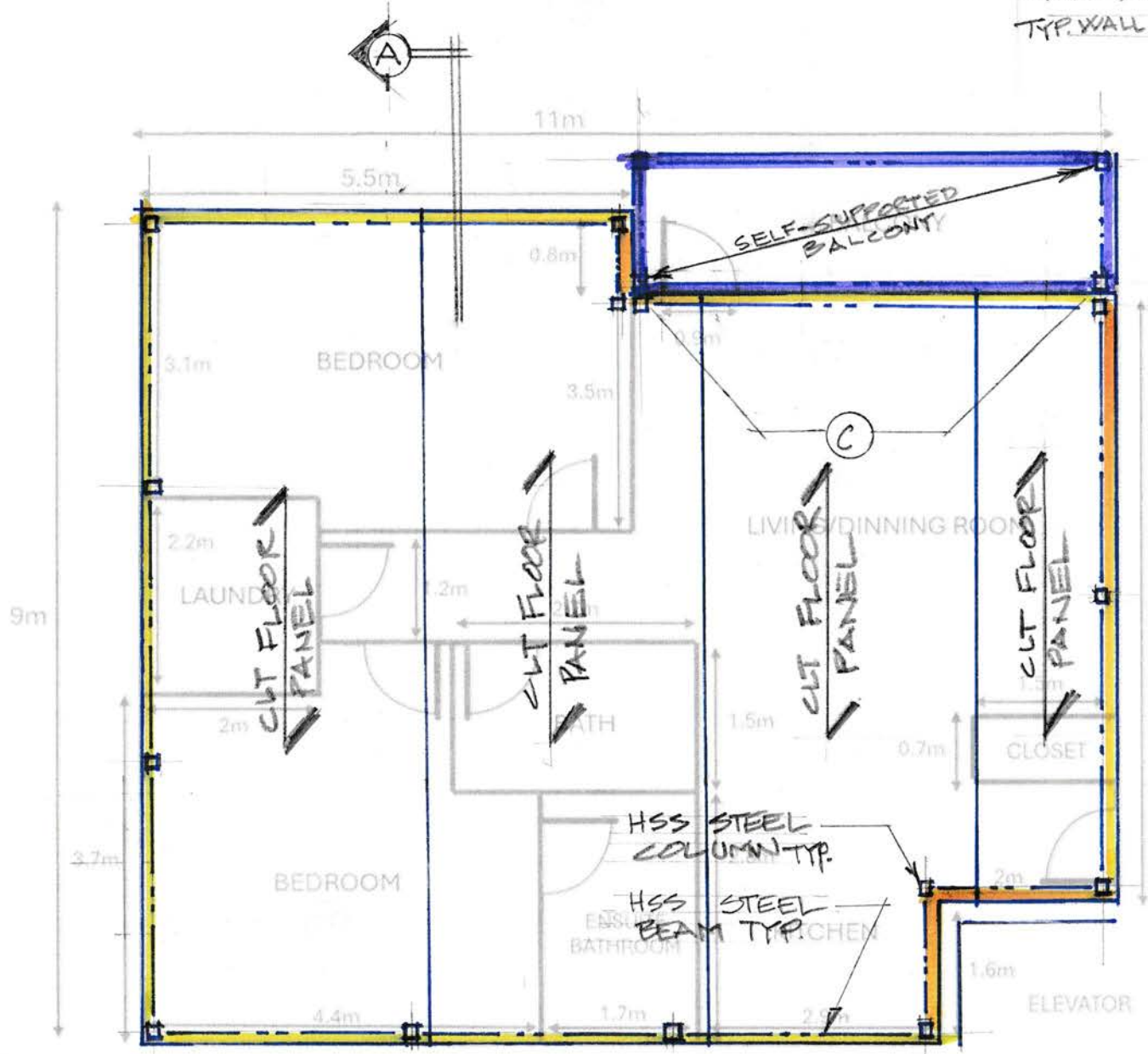


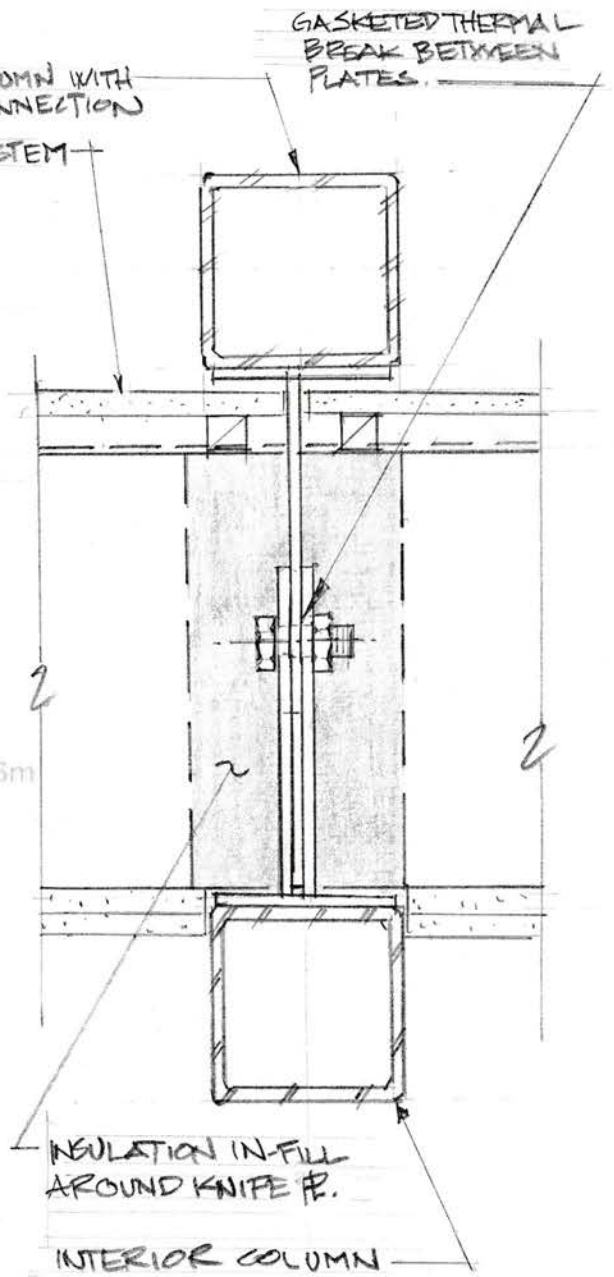
W1

PROPOSED MANUFACTURED UNIT



W2

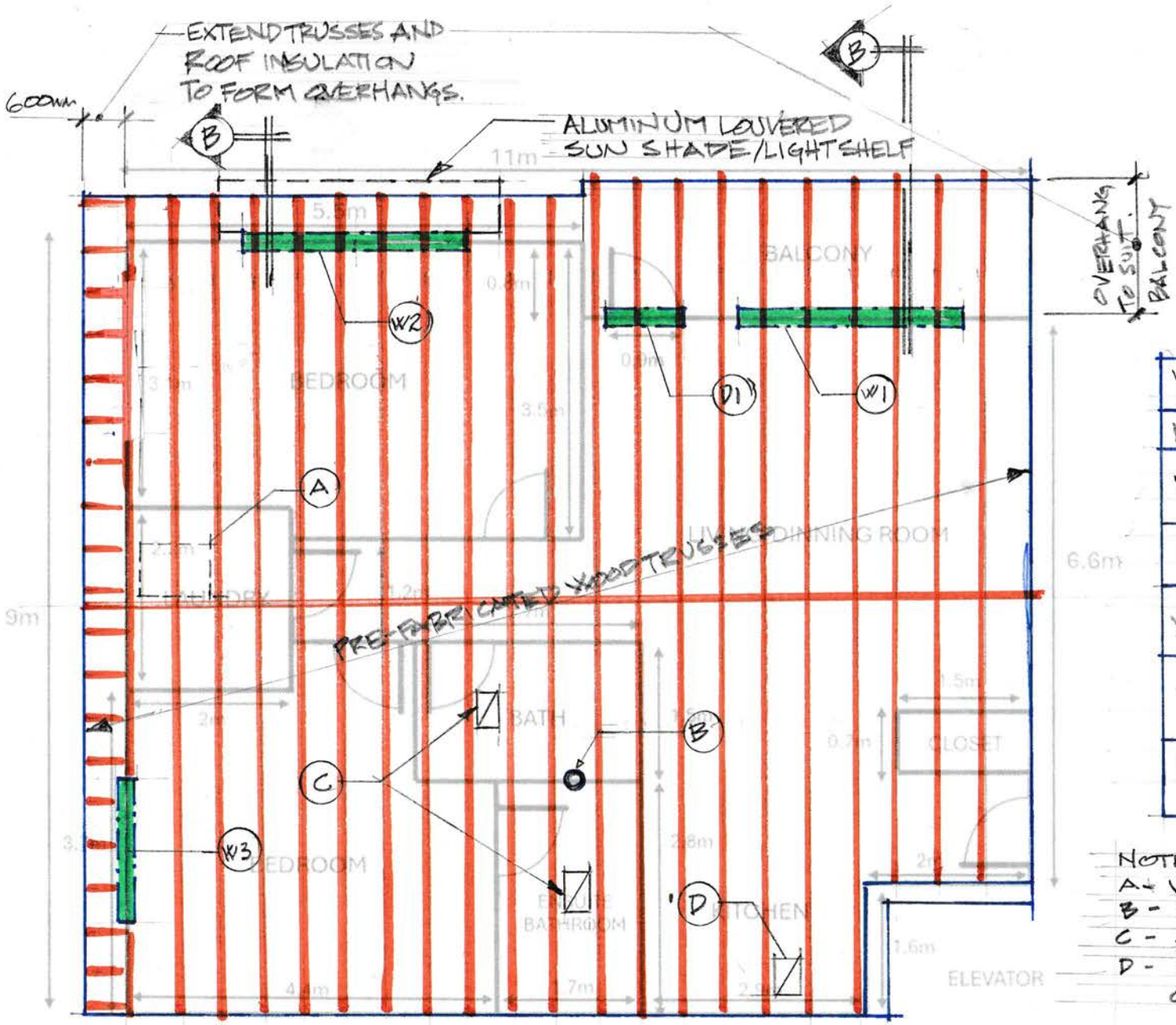




C PLAN DETAIL KNIFE PL. CONN.
N.T.S.

D1

FLOOR FRAMING PLAN
N.T.S.



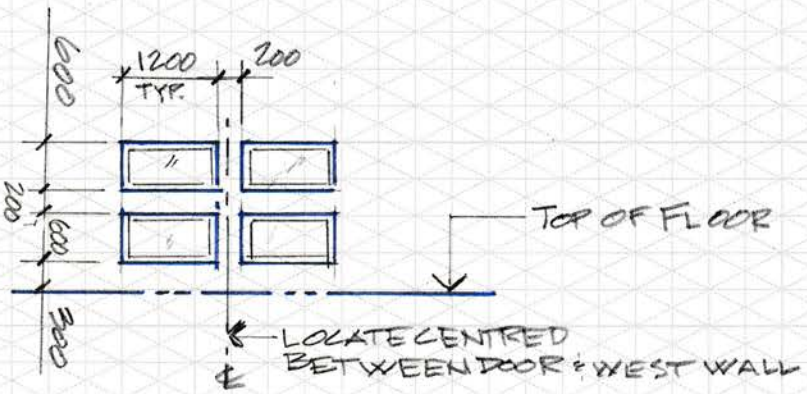
WINDOW SCHEDULE	
ITEM	SIZE
W1	4-1200x600
W2	2-600x1350
W3	2-600x1350
D1	1-900x2000

NOTES:
A - VENTLESS CLOTHES DRYER
B - PLUMBING VENT STACK
C - BATHROOM VENTS TO HRV
D - KITCHEN EXHAUST TO A COMMON SERVICE TO EXTERIOR

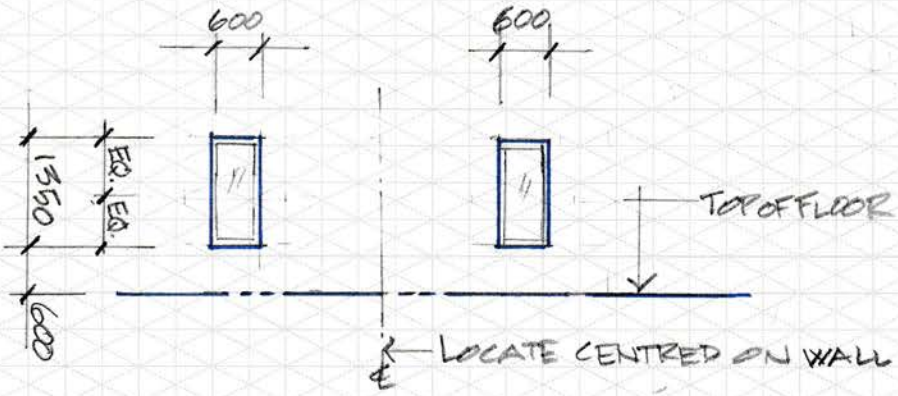
D2

ROOF FRAMING & WINDOWS

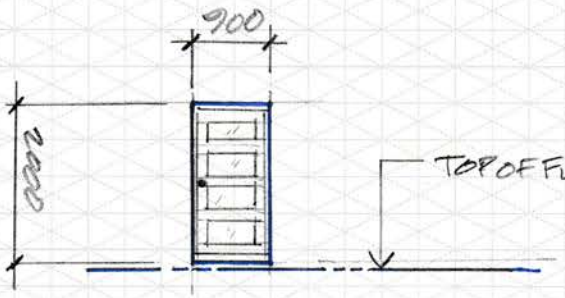
N.T.S.



W1 - LIVING ROOM - SOUTH FACING

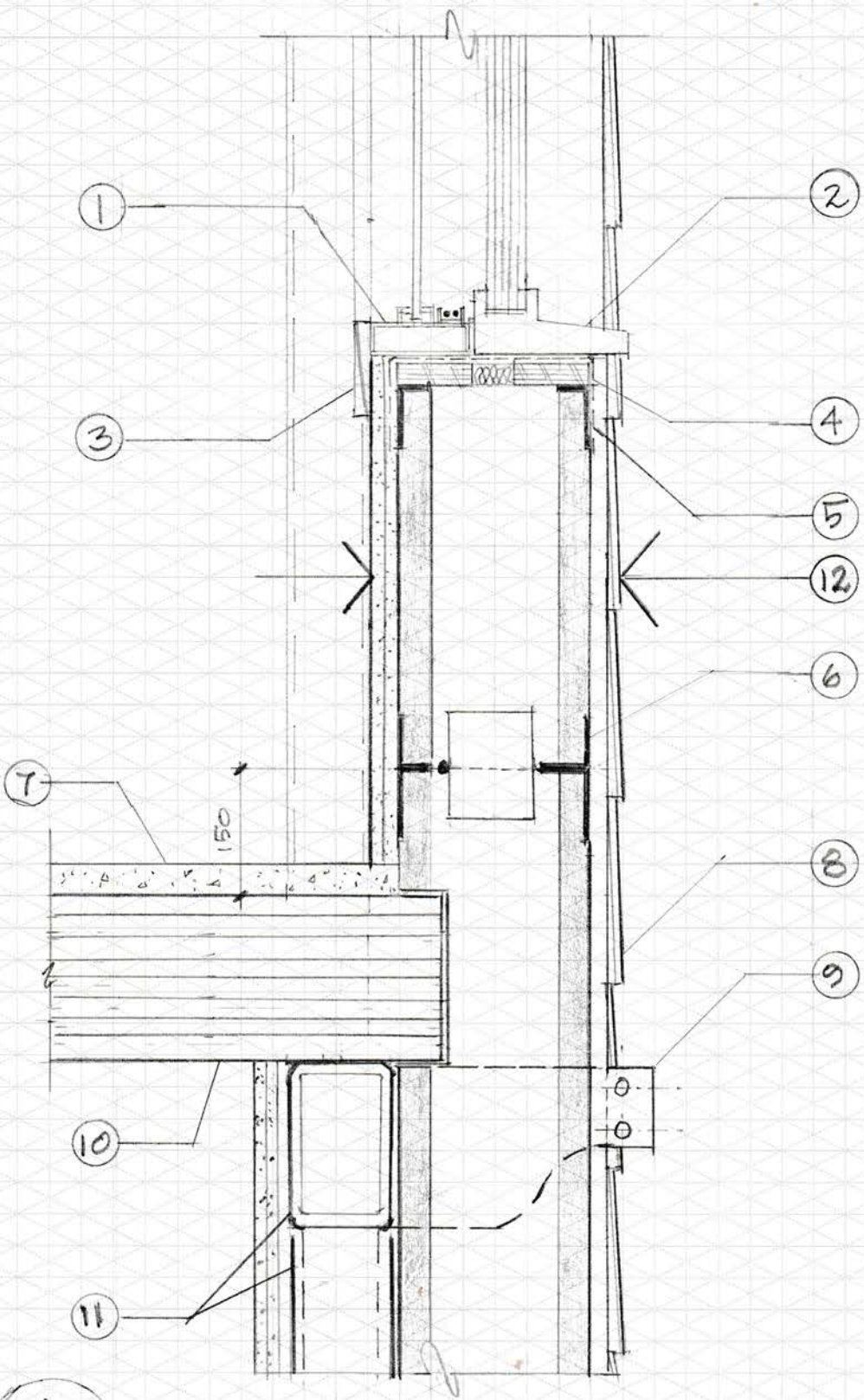


W2 - BEDROOM - SOUTH FACING
W3 - BEDROOM - EAST FACING.



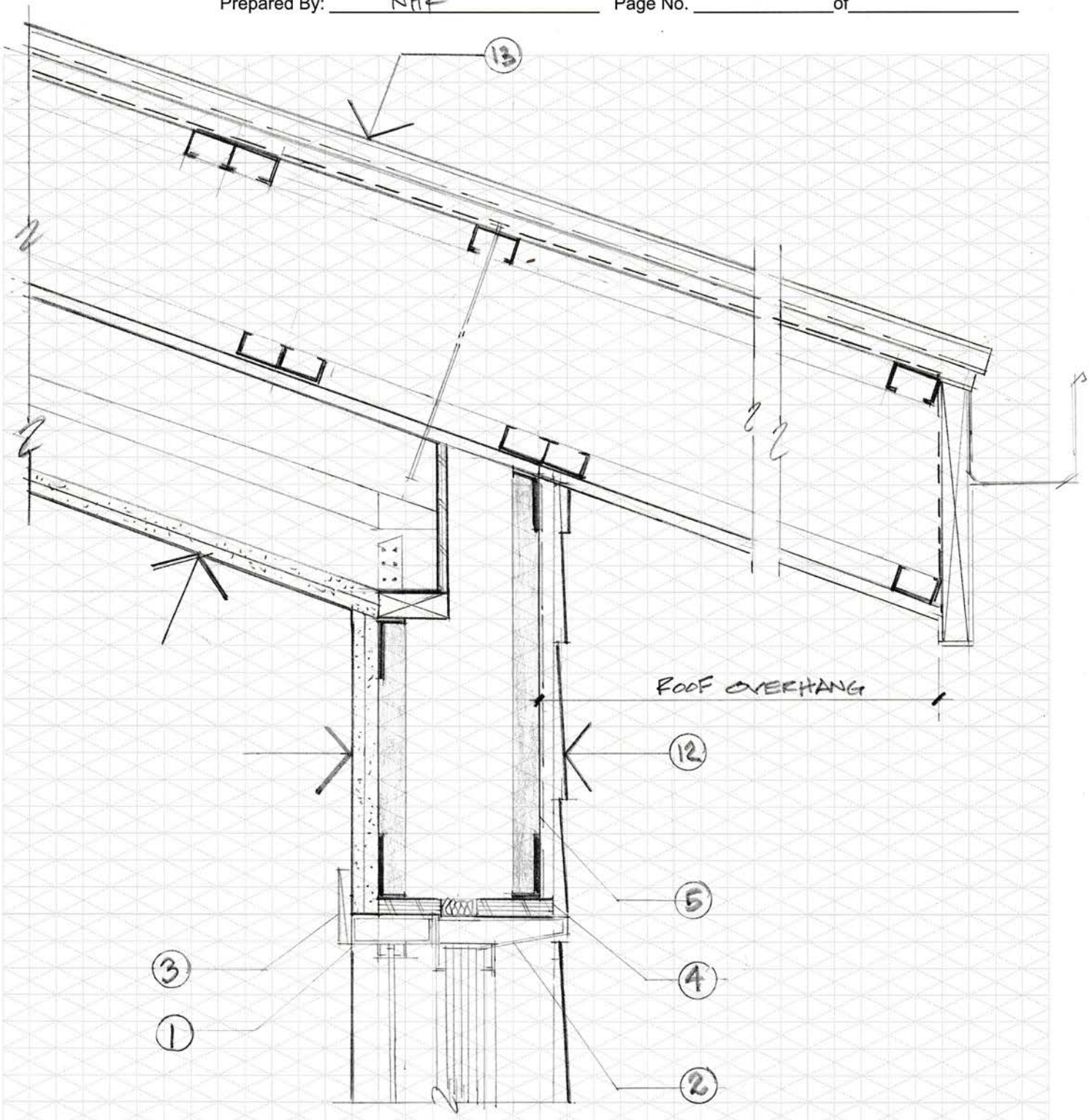
D1 - LIVING ROOM SOUTH FACING

D3



D4

A FLOOR & SILL SECTION
N.T.S.



B ROOF & WINDOW HEAD SECTION
N.T.S.

D5

1. WARM WINDOW INNER PANE WITH HEAT TRACE
2. WARM WINDOW OUTER PANES
3. WINDOW CASING
4. SPLIT WINDOW BUCK P.T. PLYWOOD
5. SELF ADHERED MEMBRANE CONTINUOUS SEAL AGAINTS MOISTURE & AIR INTRUSION ALL AROUND WINDOW OPG.
6. GS CONNECTION - 441 CONTINUOUS WALL SYSTEM
7. CONCRETE TOPPING & FLOORING
8. FIBRE CEMENT SIDING HARDIE BOARD
9. STEEL KNIFE PLATE CONNECTION FOR SELF SUPPORTED BALCONY.
10. CROSS-LAMINATED TIMBER FLOOR PANELS
11. STRUCTURAL STEEL SUPPORT COLUMNS AND BEAMS

TYPICAL WALL SYSTEM MATERIALS

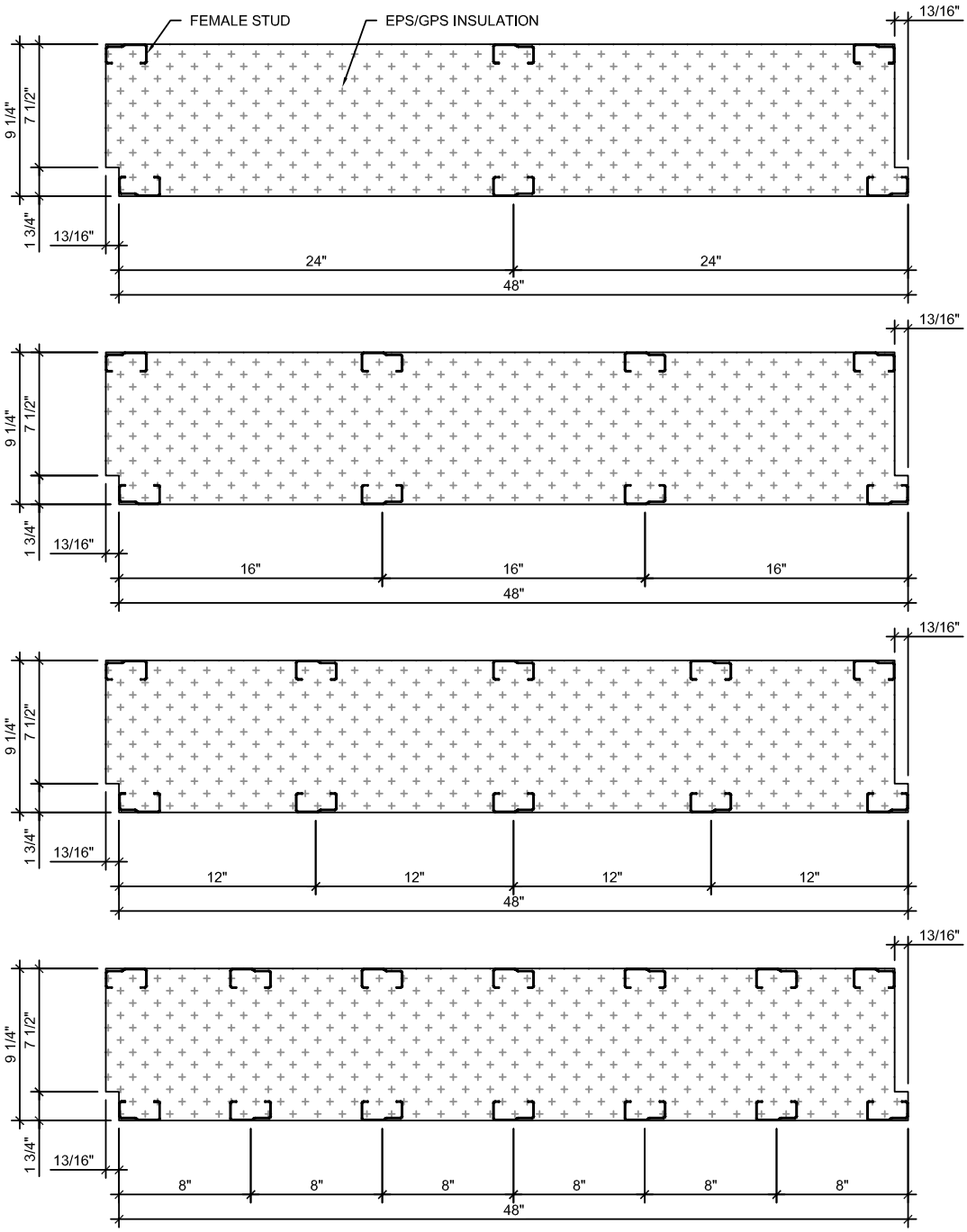
12. FIRE RATED GYPROC
VAPOUR PERMEABLE MEMBRAE
9¼" GPS GREEN STONE PANELS
SEALTAPE ALONG EACH STUD ON INTERIOR FACE OF PANEL
SELF ADHERED MEMBRANE FOR CONT. SEAL AGAINST MOISTURE & AIR INTRUSION
20MM FURRING STRIPS P.T. VERTICAL (MATCH STUD SPACING)
FIBRE CEMENT SIDING.

TYP. ROOF SYS. MATERIALS

13. FIRE RATED GYPROC
VAPOUR PERMEABLE MEMBRANE
ENGINEERED ROOF TRUSS
12MM P.T. ROOF SHEATHING
11.5" GPS GS PANELS WITH SEALTAPE ALONG EACH GIRT. ON INTERIOR FACE OF PANEL
SELF ADHERED MEMBRANE FOR CONT. SEAL AGAINST MOISTURE INTRUSION
20MM FURRING STRIPS P.T.
METAL ROOFING 26ga.

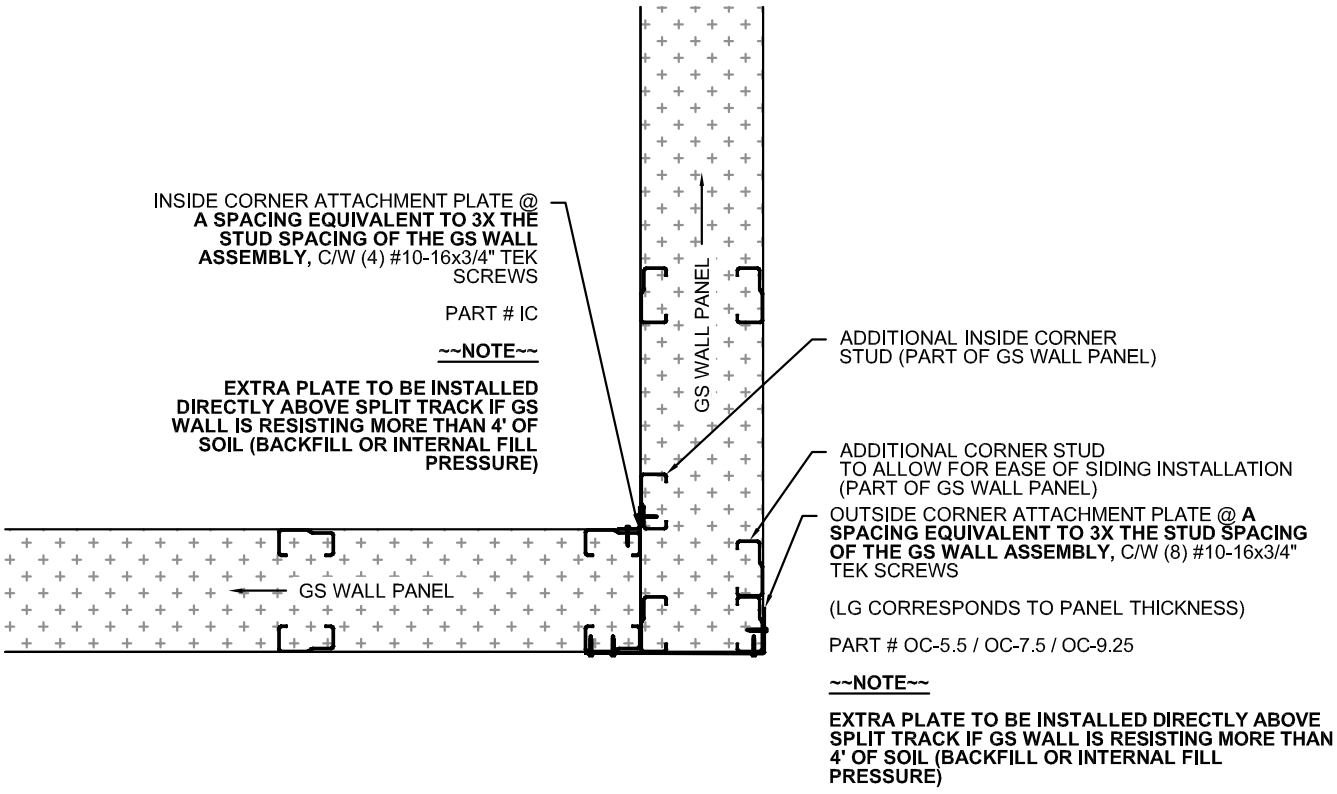
REFER TO GS CONNECTION 507 FOR OVERHANG CONDITION AND ADD'L. FRAMING.

D6



9 1/4" GS PANEL W
O/C STUD SPACING OPTIONS
N.T.S.
103

D7



~~NOTE~~

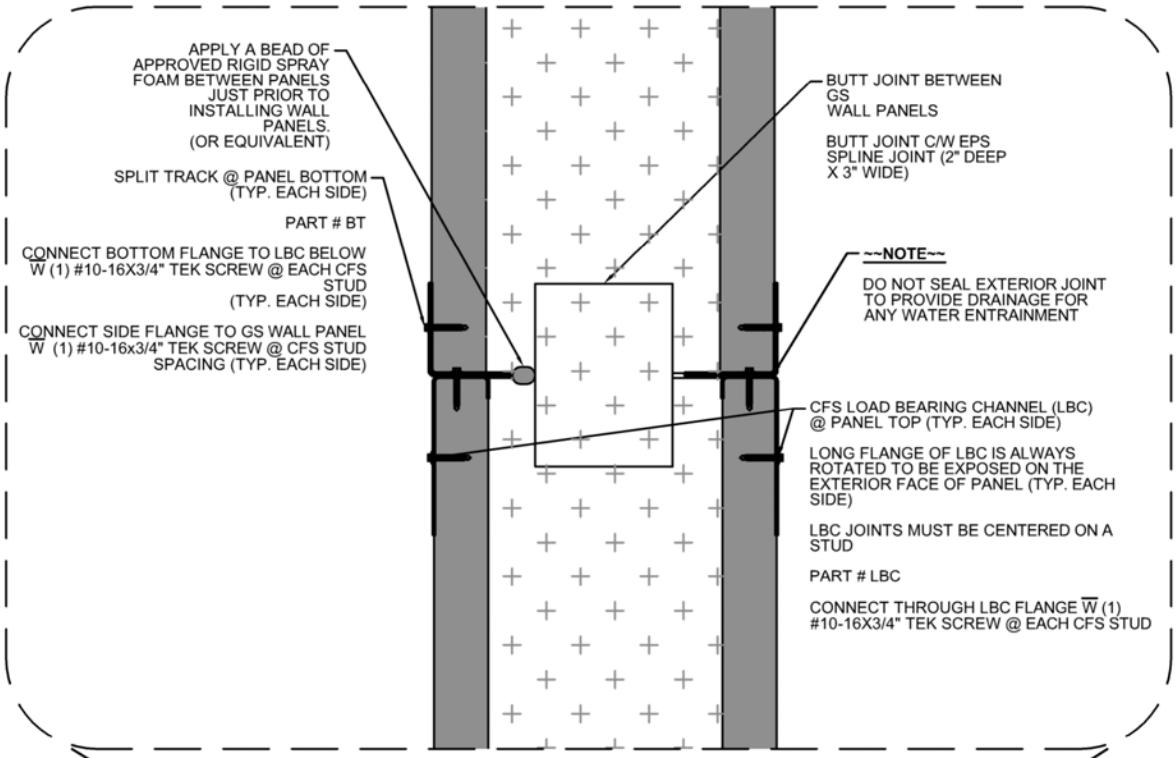
1. IF GS WALLS ARE RESISTING MORE THAN 4' OF SOIL (BACKFILL OR INTERNAL FILL PRESSURE), ALL CONNECTION PLATES MUST BE INSTALLED @ 24" O/C

2. SINGLE COMPONENT URETHANE FOAM IS **NOT** APPROVED TO SEAL AIR/VAPOUR AND **NOT** TO BE CONSIDERED AIR TIGHT

90° CORNER (PLAN)

N.T.S. 303

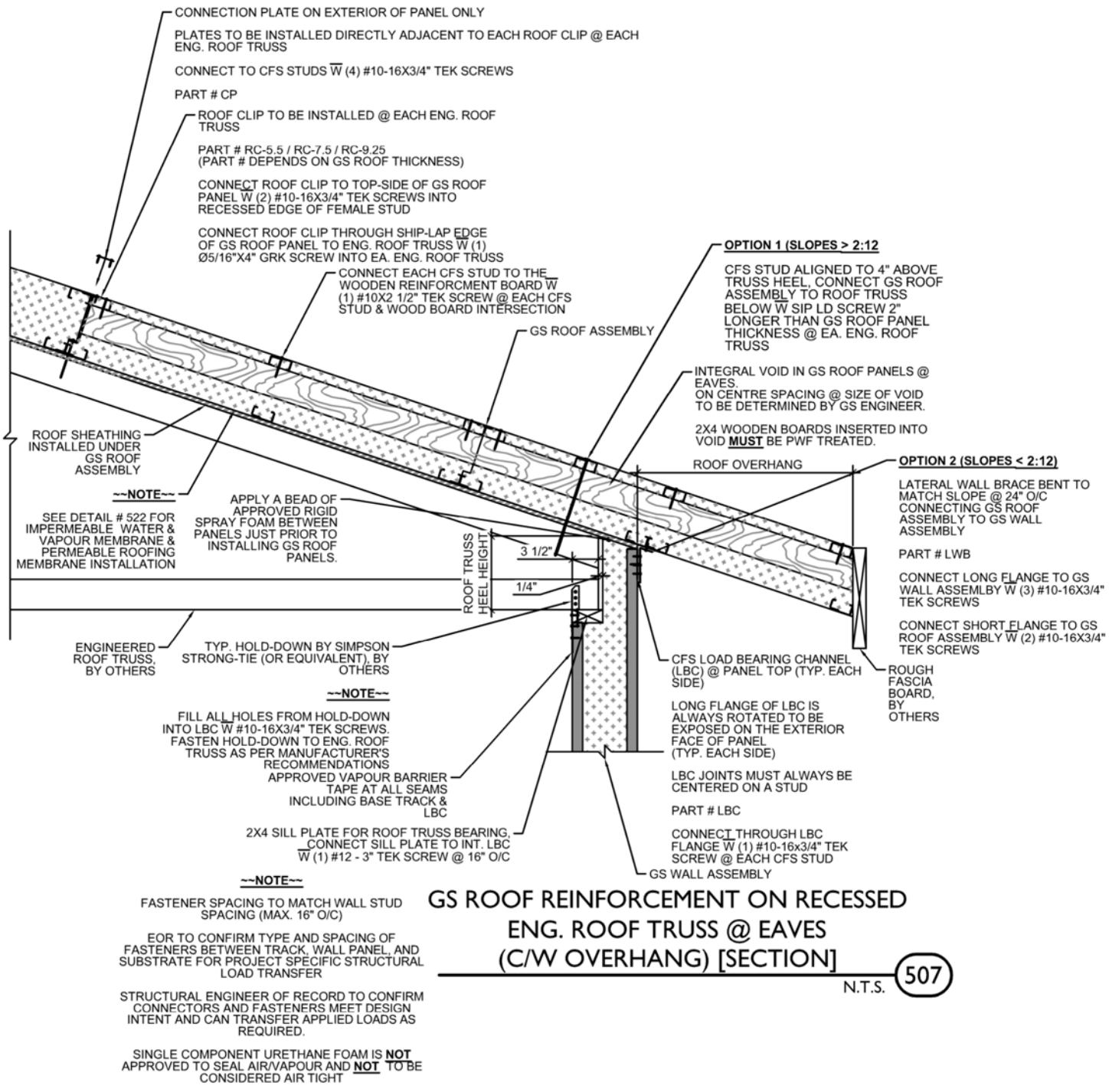
D8



GS BASE INSTALLATION LOWER GS WALL (CONTINUOUS) [SECTION]

N.T.S. 441

D9



GS ROOF REINFORCEMENT ON RECESSED ENG. ROOF TRUSS @ EAVES (C/W OVERHANG) [SECTION]

N.T.S. 507

D10

Date: FEB 16, 2026 Project No. ~~WARM WINDOWS~~ - 2

Prepared By: NHK Page No. _____ of _____

(1) INSULATED COMPOSITE ENVELOPE

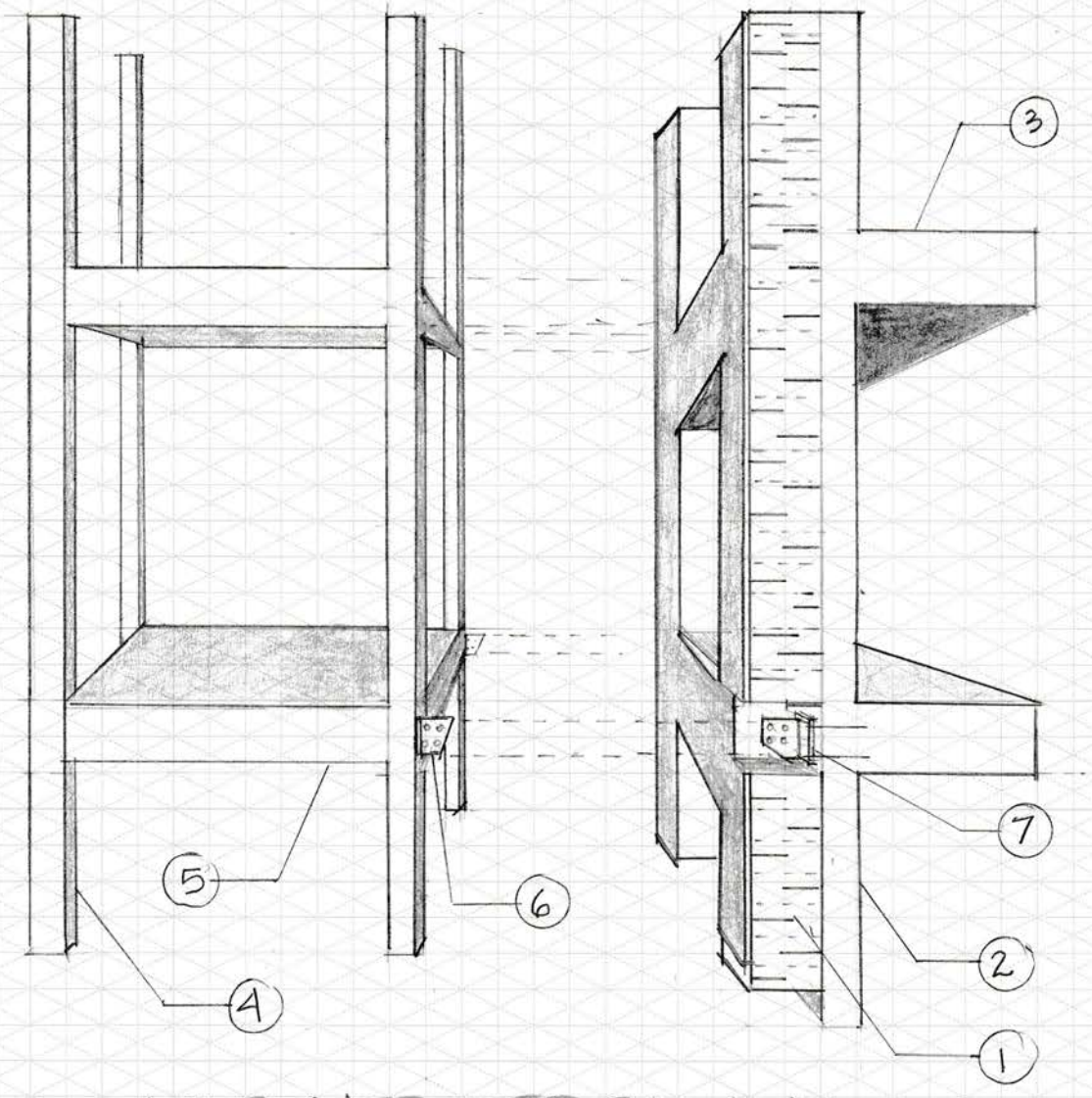
(2) STRUCTURAL FRAME

(3) FLOOR SYSTEM

(4) BALCONY COLUMNS

(5) PREFAB. ALUM. OR CLT BALCONY FLOOR FRAMING

(6) (7) DISCRETE KNIFE PLATE CONNECTIONS (STEEL).



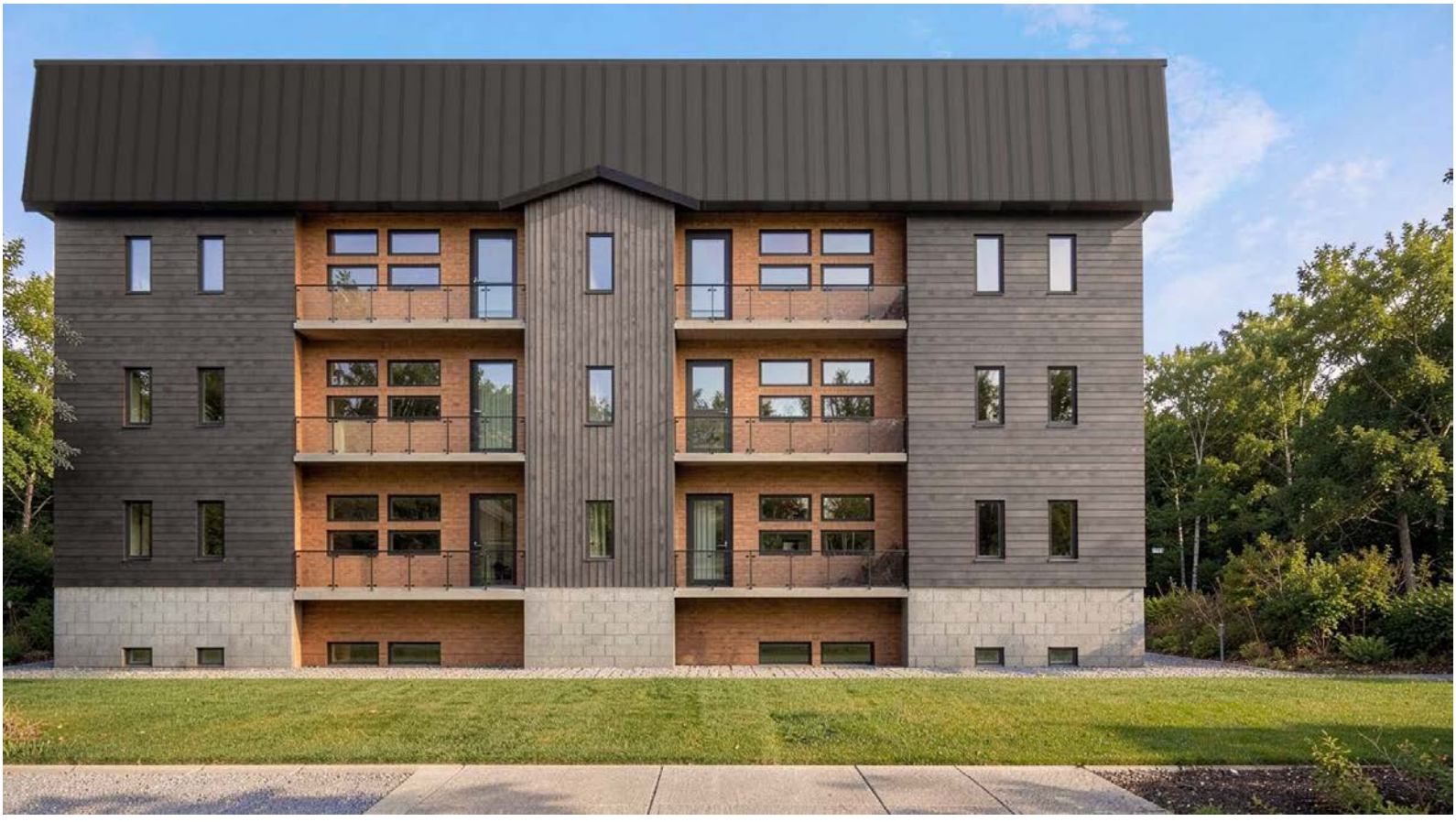
SELF-SUPPORTED BALCONY

N.T.S.

D11

Contextual Rendering Sketch

Our building envelope finish materials includes fibre cement exterior panels, such as Cedral Fibre Cement Siding or Hardie Panel Siding, and metal roofing from a Manitoba company such as IroSTEEL in Winkler. These products are available in many colours, styles and textures and offer tremendous flexibility to customize each MURB unit with an identity to suit the neighbourhood and with appropriate contextual sensitivity. Our building envelope features large windows, made possible by the combination of the Manitoba WARM Window and exceptional thermal performance of the envelope.



Contextual Rendering Sketch

1 North Elevation
1 : 300

2 East Elevation
1 : 300

3 West Elevation
1 : 300

4 South Elevation
1 : 300

D13