

NORTHERN TERRITORY DEEMED TO COMPLY MANUAL – National Construction Code Volume 2 (Section 3.0.4 Structural resistance of materials in high wind areas)

This product has been determined to satisfy NCC Performance Requirement P2.1.1 for structural stability and resistance.

TABLE 1:

VELUX FCM SKYLIGHT MODEL /SIZE CODE	MAXIMUM ALLOWABLE ULTIMATE DESIGN WIND PRESSURE FOR SKYLIGHT SUPPORT FRAMING (kPa)
FCM 1430	10.00
FCM 2222	9.70
FCM 2230	9.70
FCM 2234	9.41
FCM 2246	9.70
FCM 2270	8.60
FCM 3030	7.27
FCM 3046	7.27
FCM 3434	6.53
FCM 3446	6.67
FCM 4646	5.00

TABLE 2:

WIND REGION	TERRAIN CATEGORY	ROOF GENERAL AREAS ULTIMATE DESIGN WIND PRESSURE (kPa)
C	1	5.02
	2	3.92
	2.5	3.35
	3	2.85
D	4	2.33
	1	8.10
	2	6.34
	2.5	5.42
	3	4.61
	4	3.76

Product Name **VELUX FCM - FIXED "CURB" MOUNTED DOUBLE GLAZED SKYLIGHT SUPPORT FRAMING**

Product Description
VELUX FCM SKYLIGHT FOR STEEL FRAME CONSTRUCTION

Manufacturer's Details
VELUX AUSTRALIA PTY LTD

78 HENDERSON ROAD, ALEXANDRIA, NSW 2015

Design Criteria

ULTIMATE DESIGN WIND PRESSURES TABULATED IN TABLE 2 HAVE BEEN CALCULATED IN ACCORDANCE WITH AS/NZS 1170.2:2011 USING THE PARAMETERS STATED BELOW. THE PRESSURES ARE APPLICABLE TO GENERAL ROOF AREAS WHERE THE LOCAL PRESSURE FACTOR (K_l) = 1.0, IN AND AWAY FROM EDGES AND CORNERS. MAXIMUM ROOF HEIGHT < 8.5M
 M_d (WIND DIRECTION MULTIPLIER) = 1.0
 M_s (SHIELDING MULTIPLIER) = 1.0
 M_t (TOPOGRAPHIC MULTIPLIER) = 1.0
 C_{pe} (EXTERNAL PRESSURE COEFFICIENT) = -0.9
 C_{pi} (INTERNAL PRESSURE COEFFICIENT) = +0.7
 K_i (LOCAL PRESSURE COEFFICIENT) = 1.0
 K_c (COMBINATION FACTOR) = 0.9
 ROOF ANGLE α < 35°

THE BUILDING DESIGNER OR ENGINEER SHALL CALCULATE THE SITE SPECIFIC ULTIMATE DESIGN WIND ROOF PRESSURE FOR THE BUILDING WITH DUE CONSIDERATION OF THE TERRAIN CATEGORY, SHIELDING AND TOPOGRAPHY. THE ULTIMATE DESIGN WIND PRESSURE SHALL BE CALCULATED IN ACCORDANCE WITH EITHER AS/NZS 1170.2:2011 OR AS 4055-2012 AS DEEMED APPLICABLE FOR THE BUILDING STRUCTURE. THE SKYLIGHT SELECTED FROM TABLE 1 SHALL HAVE A MAXIMUM ALLOWABLE ULTIMATE DESIGN WIND PRESSURE GREATER THAN THE SITE SPECIFIC ULTIMATE DESIGN WIND ROOF PRESSURE CALCULATED BY THE BUILDING DESIGNER OR ENGINEER.

NOTE: IT IS LIKELY THAT SOME SKYLIGHTS WILL NOT BE SUITABLE FOR PARTICULAR SITES.

Limitations

- SKYLIGHT SHALL BE INSTALLED IN ACCORDANCE WITH THE ENGINEERING DRAWINGS AND VELUX INSTALLATION MANUAL TO ENSURE A WATERTIGHT INSTALLATION IS ACHIEVED. COMPLY WITH AS1562.1-1992 (R2016) - DESIGN AND INSTALLATION OF SHEETS AND WALL CLADDING


DOCUMENT TITLE	HOW TO ACCESS
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INSTRUCTION NUMBER VAS 452195	AVAILABLE FROM WEBSITE
21.FCMA21.0A0.61	AVAILABLE FROM VELUX UPON REQUEST

- THIS DRAWING IS FOR THE SKYLIGHT SUPPORT FRAMING ONLY AS DOCUMENTED ON SHEETS 1 TO 6 INCLUSIVE AND EXCLUDES THE ALUMINIUM SKYLIGHT FRAMING ITSELF

Accepted for inclusion in Deemed to Comply Manual

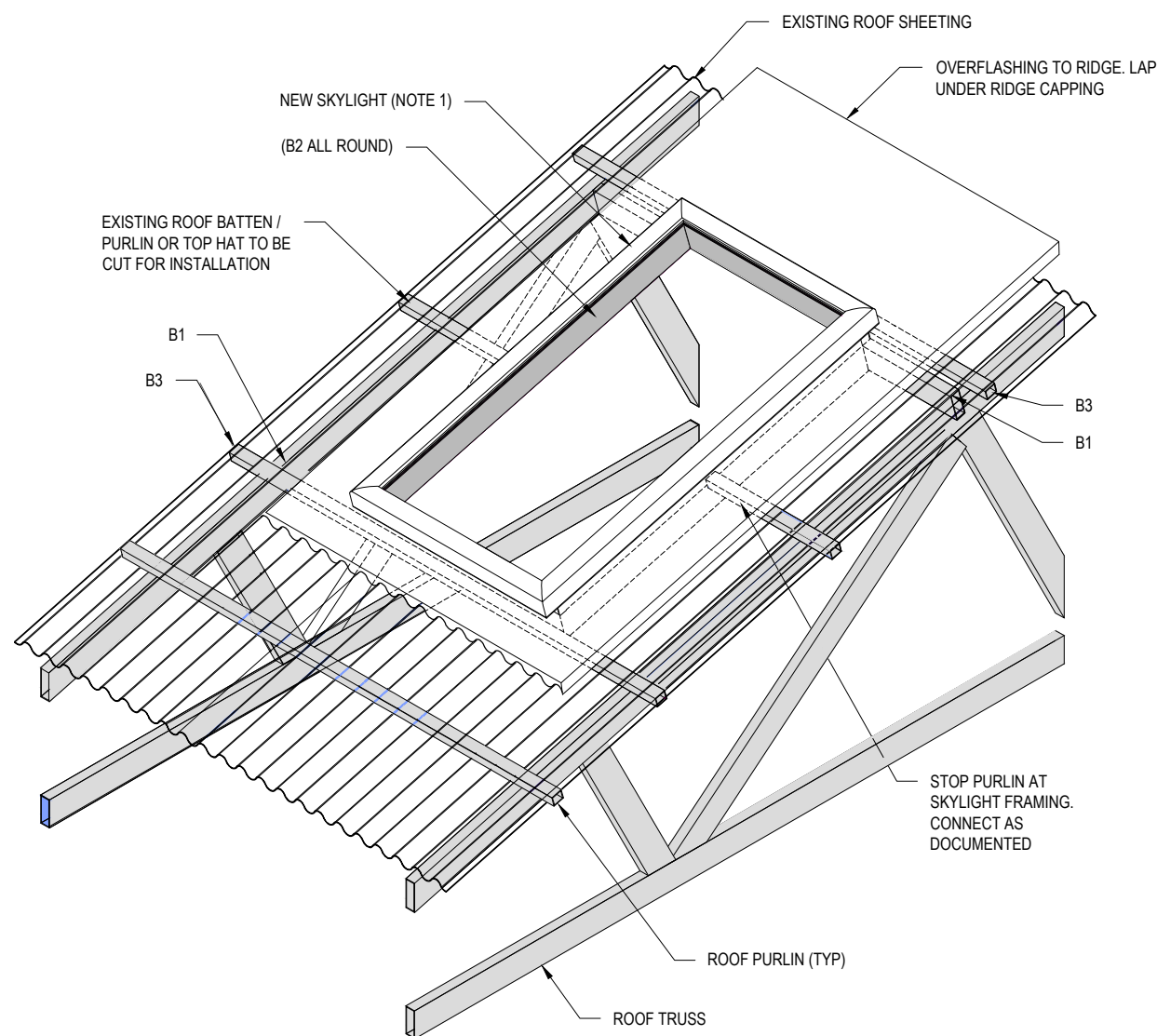
DTCM drawing number: M/118/01-06 DRAWING SHEET 1 of 6 REV. 3

Chairperson Signature:



Chairperson Name: Paul Nowland

Date of Approval: 13/12/2021 Expiry Date: 13/12/2026



TYPICAL STEEL FRAMED INSTALLATION

SCALE N.T.S.

GENERAL NOTES

- G1 ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE ENGINEER'S DRAWINGS SHALL NOT BE SCALED.
- G2 DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING THAT NO PART IS OVER STRESSED UNDER CONSTRUCTION ACTIVITIES. TEMPORARY PROPPING SHALL BE PROVIDED AS REQUIRED. THE CONTRACTOR IS TO ALLOW FOR ALL TEMPORARY PROPPING.
- G3 WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT CURRENT STANDARDS INCLUDING ALL AMENDMENTS, AND THE LOCAL STATUTORY AUTHORITY, REGULATIONS ETC, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- G4 ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
- G5 WHERE DETAILS OF THE EXISTING STRUCTURE ARE SHOWN, THEY ARE TYPICAL ONLY FOR A GENERAL BUILDING TYPE. THE CONTRACTOR SHALL CONFIRM DETAILS OF THE EXISTING STRUCTURE, WHICH MAY VARY
- G6 OBTAIN NECESSARY PERMITS AND APPROVALS FROM RELEVANT AUTHORITIES BEFORE COMMENCING WORK ON-SITE.
- G7 THESE DRAWINGS DO NOT DETAIL TEMPORARY WORKS. CONSTRUCTION METHODS AND TEMPORARY WORKS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- G8 MAKE GOOD ANY DAMAGE TO EXISTING ELEMENTS AT COMPLETION OF WORKS

STRUCTURAL STEELWORK NOTES

- S1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100 (STEEL STRUCTURES) AND AS 1554 (WELDING CODE).
- S2 ALL SHS/RHS MEMBERS TO COMPLY WITH AS1163-C450L0
- S3 THE ENDS OF ALL SHS/RHS MEMBERS SHALL BE SEALED WITH 3mm PLATES WITH CONTINUOUS FILLET WELDS UNLESS OTHERWISE SHOWN.
- S4 ALL FIXINGS, BOLTS, NUTS, FASTENERS SHALL BE HOT DIP GALVANISED U.N.O
- S5 ALL INTERNAL STEELWORK SHALL BE GRIT BLASTED TO CLASS 2.5 TO AS 1627 AND COATED WITH ONE SHOP COAT OF INORGANIC ZINC SILICATE (75 um THICKNESS MIN), UNLESS NOTED OTHERWISE.
- S6 ALL SELF DRILLING SCREWS TO AS3566, CORROSION RESISTANCE CLASS 4 U.N.O.

Notes covering basis of DTC (Relevant test reports etc)


- IAN BENNIE AND ASSOCIATES TEST REPORT NUMBER 2009-098-S6. FIXED SKYLIGHT - FCM 4646 0004B CYCLONIC AND NONCYCLONIC TESTS TO AS4285 - 2007 FOR VELUX (AUST) PTY LTD. JANUARY 2010
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Checking Engineer

Name: ELISHA HARRIS
 Registration Number: 211370ES
 Date: 07-12-2021
 Signature: 

Must be an Australian registered structural engineer

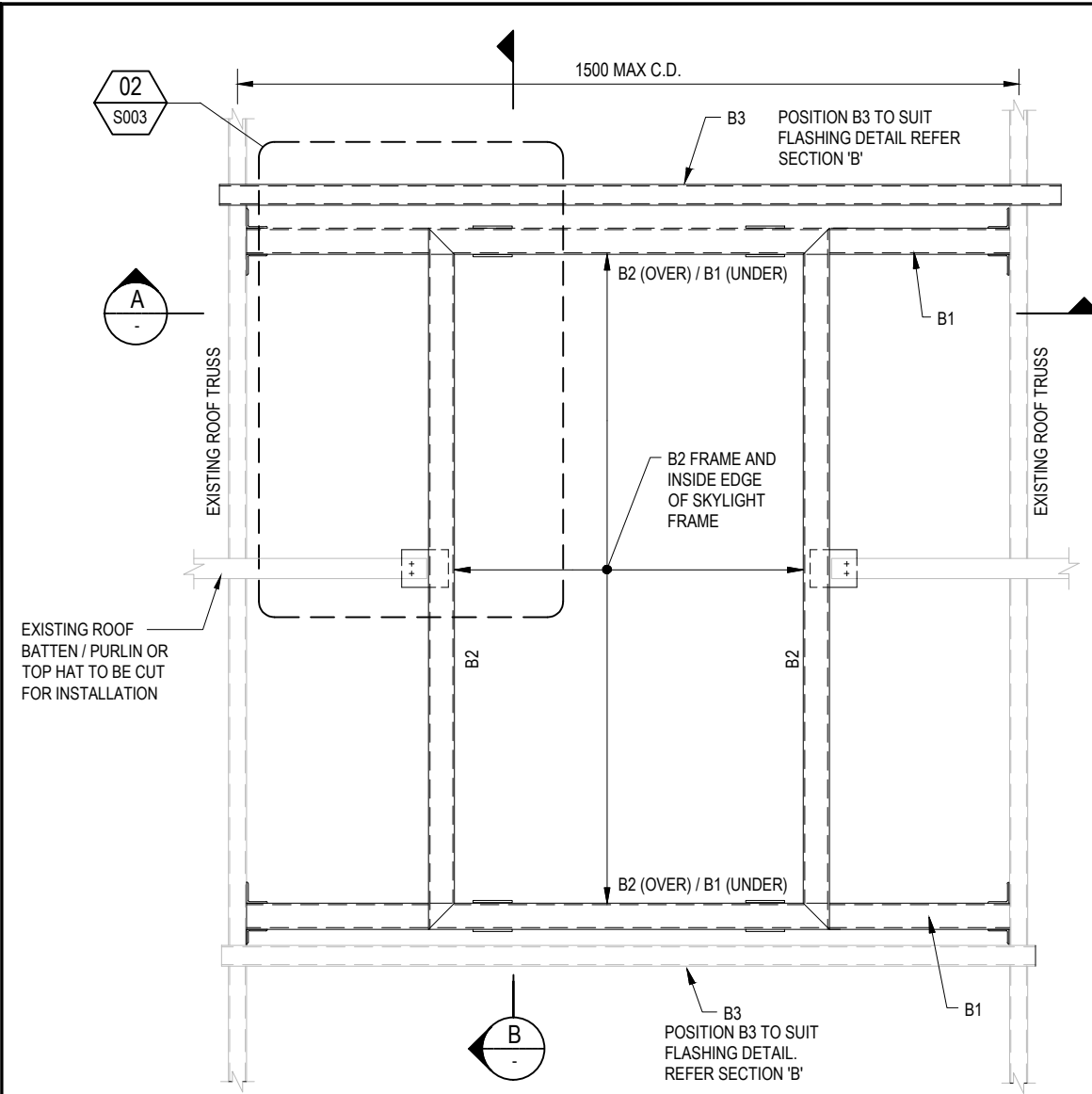
Certifying Engineer

Name: GRAEME BURMEISTER
 NT Registration Number: 25995ES
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NORTHERN TERRITORY DEEMED TO COMPLY MANUAL – National Construction Code Volume 2 (Section 3.0.4 Structural resistance of materials in high wind areas)

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STEEL SUPPORT FRAMING PLAN - STEEL ROOF TRUSS CONSTRUCTION

SCALE N.T.S.

NOTE: LARGER SKYLIGHT UNITS MAY STRADDLE ROOF TRUSSES. WHEN SKYLIGHT UNIT STRADDLES ROOF TRUSS, SUPPORT BEAMS (B1's) AND ADDITIONAL ROOF PURLINS (B3's) WILL BE REQUIRED EACH SIDE OF THE TRUSS BEING STRADDLED.

MARK	DESCRIPTION
B1	100x50x2.0 RHS TRIMMER FRAMING BEAM. REFER TO CONNECTION DETAIL FOR FIXING.
B2	150x50x2.0 RHS UPSTAND FRAMING BEAM. REFER TO CONNECTION DETAIL FOR FIXING.
B3	ADDITIONAL PURLIN TO MATCH ROOF PURLINS

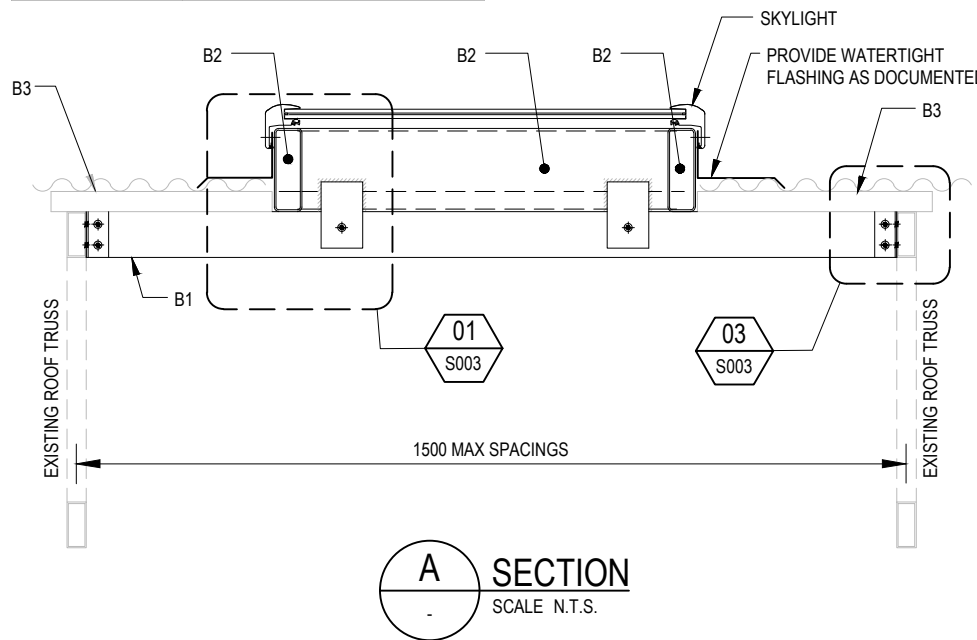
NOTES:
1. SKYLIGHT TO BE FIXED WITH BUILDEX METAL TEKS, 10g SELF DRILLING SCREWS. FIXING IN ACCORDANCE WITH VELUX PRODUCT INSTRUCTION NUMBER 302192 AND INSTRUCTION NUMBER VAS 452195.

TABLE 1:

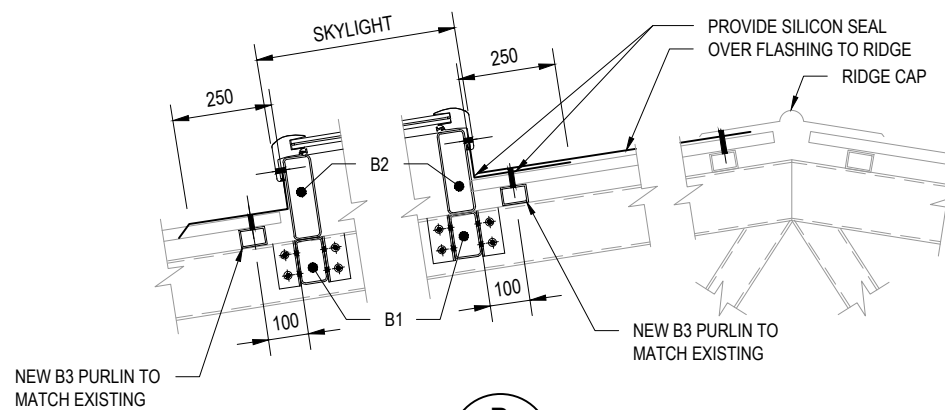
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A SECTION
SCALE N.T.S.



B SECTION
SCALE N.T.S.

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Chairperson Signature:

Chairperson Name: **Paul Nowland**

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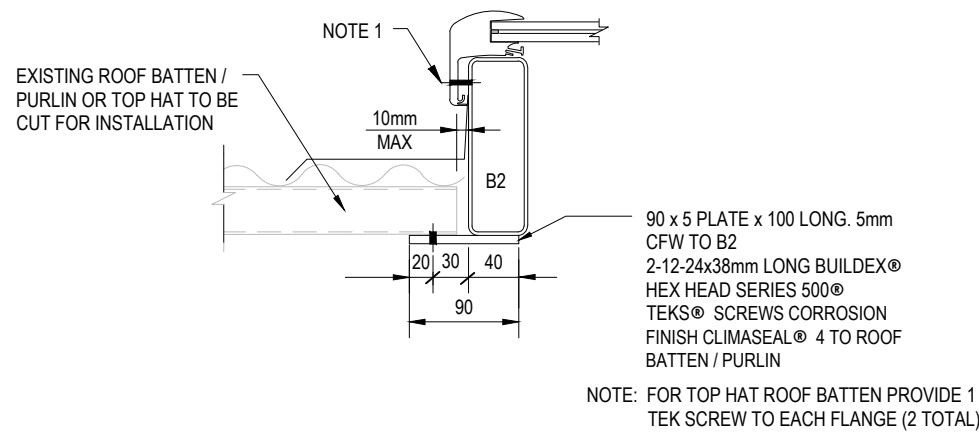
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PURLIN CONNECTION DETAIL (STEEL)

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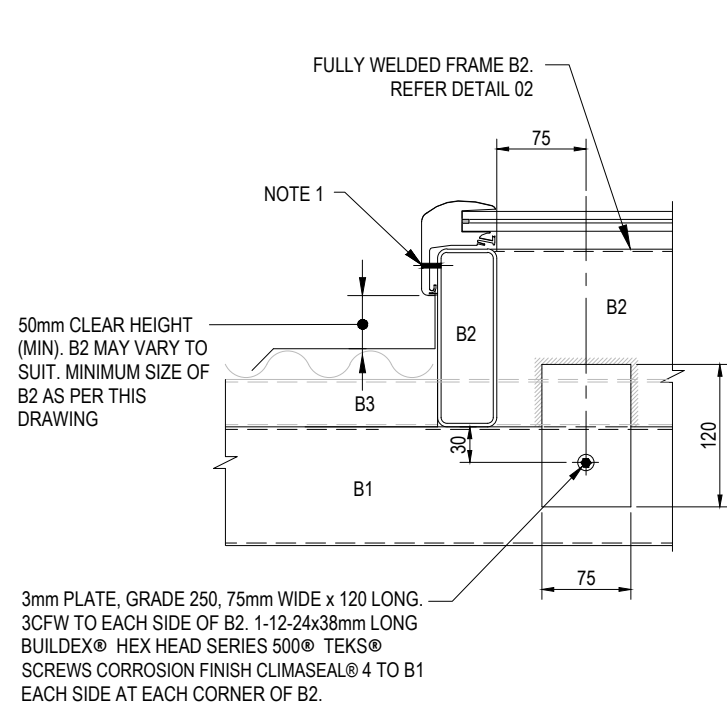
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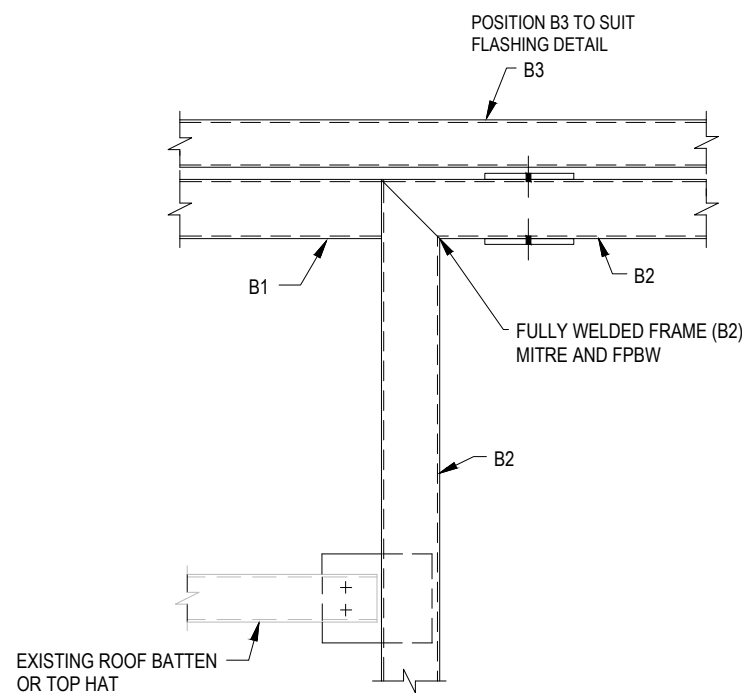
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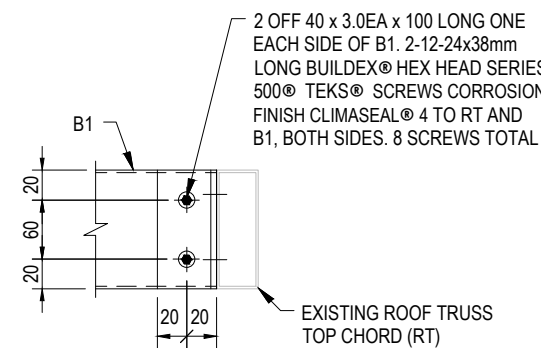
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01 DETAIL
S002 SCALE N.T.S.



02 DETAIL
S002 SCALE N.T.S.



03 DETAIL
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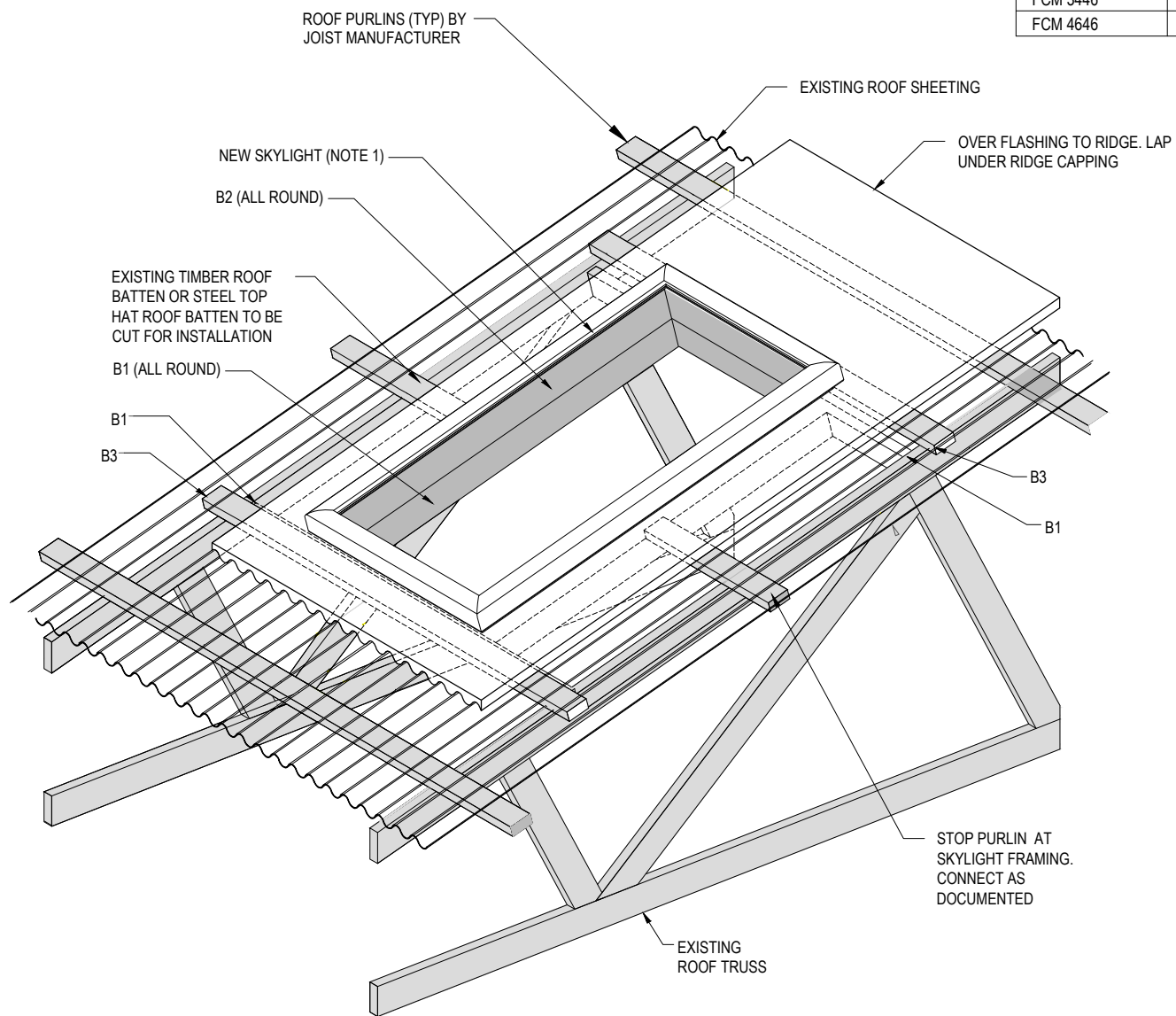
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TIMBER NOTES

- T1 DESIGN, WORKMANSHIP AND MATERIALS TO BE TO AS1720, AS1684, AS5604 AND AS/NZS1604, AS/NZS 4357 INCLUDING BRACING, BLOCKING, TIE DOWNS, etc.
- T2 ALL TIMBER SHALL BE STRUCTURAL LAMINATED VENEER LUMBER MANUFACTURED IN ACCORDANCE WITH AS/NZS 4357 fb = 48MPa
- T3 TIMBER VISIBLE IN FINAL WORKS TO BE APPEARANCE GRADE. ENSURE EXPOSED SURFACES OF TIMBER ACCESSIBLE TO PUBLIC IN FINISHED WORKS ARE SMOOTH, FREE OF DEFECTS INCLUDING SHAKES, SPLITS etc, AND DO NOT PRESENT A SAFETY HAZARD. PROTECT TIMBER FROM WEATHER DURING CONSTRUCTION, INCLUDING ERECTED TIMBER FRAMING.
- T4 PRE-DRILL HOLES AT 0.8 x NAIL DIAMETER IN HARDWOODS AND AREAS SUBJECT TO SPLITTING.
- T5 ALL SELF DRILLING SCREWS TO AS3566, CORROSION RESISTANCE CLASS 4 U.N.O.

Notes covering basis of DTC (Relevant test reports etc)


- IAN BENNIE AND ASSOCIATES TEST REPORT NUMBER 2009-098-S6. FIXED SKYLIGHT - FCM 4646 0004B CYCLONIC AND NONCYCLONIC TESTS TO AS4285 - 2007 FOR VELUX (AUST) PTY LTD. JANUARY 2010
- CALDERONE AND ASSOCIATES PTY LTD. SKYLIGHT GLASS REPORT FOR VELUX AUSTRALIA PTY LTD 5 DECEMBER 2014

Checking Engineer

Name: ELISHA HARRIS
 Registration Number: 211370ES
 Date: 07-12-2021
 Signature: 

Must be an Australian registered structural engineer

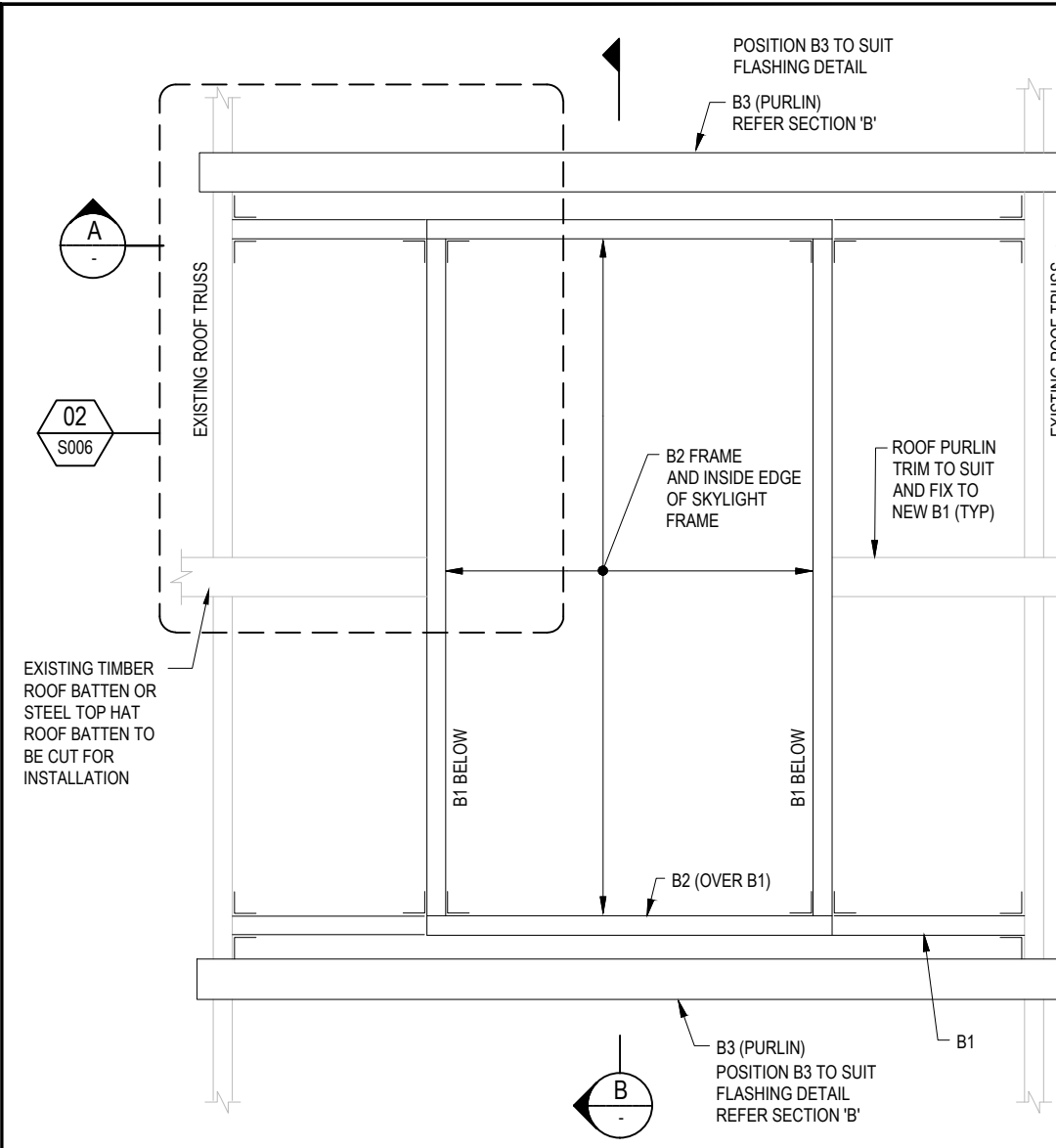
Certifying Engineer

Name: GRAEME BURMEISTER
 NT Registration Number: 25995ES
 Date: 07-12-2021
 Signature: 

Must be a registered structural engineer in the Northern Territory

NORTHERN TERRITORY DEEMED TO COMPLY MANUAL – National Construction Code Volume 2 (Section 3.0.4 Structural resistance of materials in high wind areas)

This product has been determined to satisfy NCC Performance Requirement P2.1.1 for structural stability and resistance.



TIMBER SUPPORT FRAMING PLAN - TIMBER ROOF TRUSS CONSTRUCTION

SCALE N.T.S.

NOTE: LARGER SKYLIGHT UNITS MAY STRADDLE ROOF TRUSSES. WHEN SKYLIGHT UNIT STRADDLES ROOF TRUSS, SUPPORT BEAMS (B1's) AND ADDITIONAL ROOF PURLINS (B3's) WILL BE REQUIRED EACH SIDE OF THE TRUSS BEING STRADDLED.

MARK	DESCRIPTION
B1	120 x 35 HYPAN LVL TRIMMER FRAMING BEAM. REFER TO CONNECTION DETAIL FOR FIXING.
B2	130 x 35 HYPAN LVL UPSTAND FRAMING BEAM. REFER TO CONNECTION DETAIL FOR FIXING.
B3	ADDITIONAL PURLIN TO MATCH MAIN ROOF PURLIN

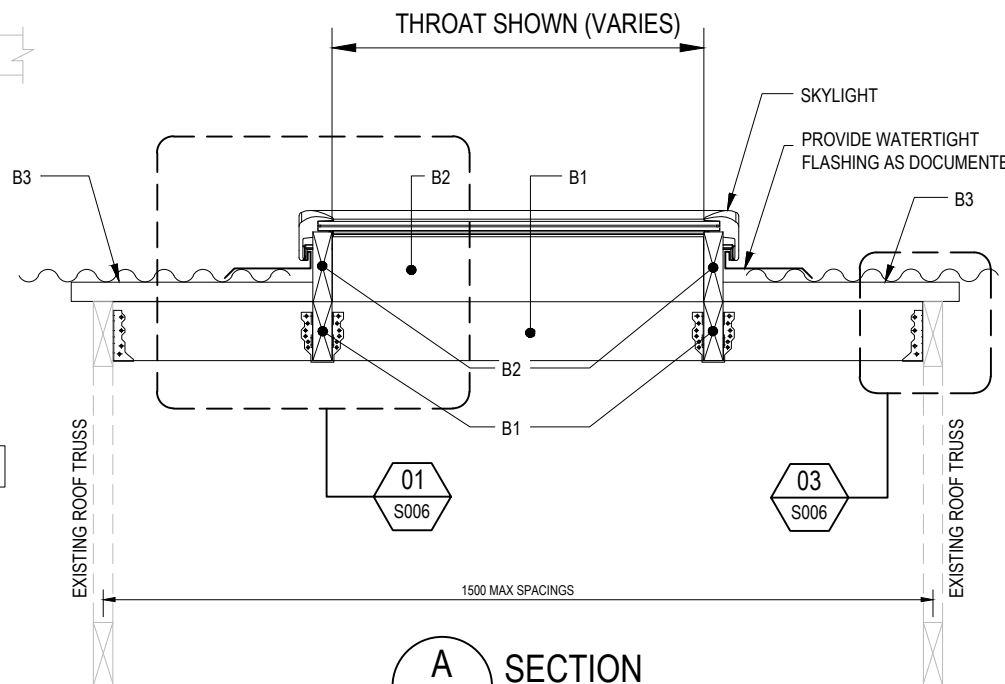
NOTES:
 1. SKYLIGHT TO BE FIXED WITH BUILDDEX TYPE 17, 10g SELF-DRILLING SCREWS, 30mm EMBEDMENT. FIXINGS IN ACCORDANCE WITH VELUX PRODUCT INSTRUCTION NUMBER 302192 AND INSTRUCTION NUMBER VAS 452195.
 2. PRE DRILL PILOT HOLES FOR TIMBER SCREWS.

TABLE 1:

VELUX FCM SKYLIGHT MODEL / SIZE CODE	MAXIMUM ALLOWABLE ULTIMATE DESIGN WIND PRESSURE FOR SKYLIGHT SUPPORT FRAMING (kPa)
FCM 1430	10.00
FCM 2222	9.70
FCM 2230	9.70
FCM 2234	9.41
FCM 2246	9.70
FCM 2270	8.60
FCM 3030	7.27
FCM 3046	7.27
FCM 3434	6.53
FCM 3446	6.67
FCM 4646	5.00

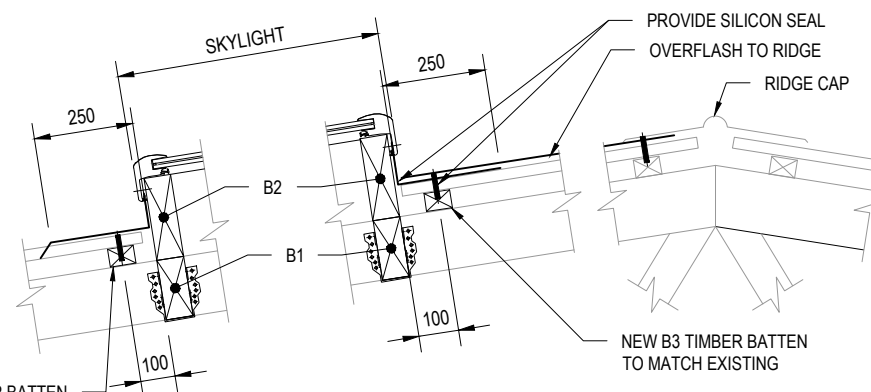
TABLE 2:

WIND REGION	TERRAIN CATEGORY	ROOF GENERAL AREAS ULTIMATE DESIGN WIND PRESSURE (kPa)
C	1	5.02
	2	3.92
	2.5	3.35
	3	2.85
D	1	8.10
	2	6.34
	2.5	5.42
	3	4.61
4	3	4.61
	4	3.76



A SECTION

SCALE N.T.S.



B SECTION

SCALE N.T.S.

Product Name **VELUX FCM - FIXED "CURB" MOUNTED DOUBLE GLAZED SKYLIGHT SUPPORT FRAMING**

Product Description
VELUX FCM SKYLIGHT FOR TIMBER FRAME CONSTRUCTION

Manufacturer's Details
VELUX AUSTRALIA PTY LTD

78 HENDERSON ROAD, ALEXANDRIA, NSW 2015

Design Criteria

ULTIMATE DESIGN WIND PRESSURES TABULATED IN TABLE 2 HAVE BEEN CALCULATED IN ACCORDANCE WITH AS/NZS 1170.2:2011 USING THE PARAMETERS STATED BELOW. THE PRESSURES ARE APPLICABLE TO GENERAL ROOF AREAS WHERE THE LOCAL PRESSURE FACTOR (K_l) = 1.0, IN AND AWAY FROM EDGES AND CORNERS. MAXIMUM ROOF HEIGHT < 8.5M
 M_d (WIND DIRECTION MULTIPLIER) = 1.0
 M_s (SHIELDING MULTIPLIER) = 1.0
 M_t (TOPOGRAPHIC MULTIPLIER) = 1.0
 C_{pe} (EXTERNAL PRESSURE COEFFICIENT) = -0.9
 C_{pi} (INTERNAL PRESSURE COEFFICIENT) = +0.7
 K_l (LOCAL PRESSURE COEFFICIENT) = 1.0
 K_c (COMBINATION FACTOR) = 0.9
 ROOF ANGLE α < 35°

THE BUILDING DESIGNER OR ENGINEER SHALL CALCULATE THE SITE SPECIFIC ULTIMATE DESIGN WIND ROOF PRESSURE FOR THE BUILDING WITH DUE CONSIDERATION OF THE TERRAIN CATEGORY, SHIELDING AND TOPOGRAPHY. THE ULTIMATE DESIGN WIND PRESSURE SHALL BE CALCULATED IN ACCORDANCE WITH EITHER AS/NZS 1170.2:2011 OR AS 4055-2012 AS DEEMED APPLICABLE FOR THE BUILDING STRUCTURE. THE SKYLIGHT SELECTED FROM TABLE 1 SHALL HAVE A MAXIMUM ALLOWABLE ULTIMATE DESIGN WIND PRESSURE GREATER THAN THE SITE SPECIFIC ULTIMATE DESIGN WIND ROOF PRESSURE CALCULATED BY THE BUILDING DESIGNER OR ENGINEER.

NOTE: IT IS LIKELY THAT SOME SKYLIGHTS WILL NOT BE SUITABLE FOR PARTICULAR SITES.

Limitations

- SKYLIGHT SHALL BE INSTALLED IN ACCORDANCE WITH THE ENGINEERING DRAWINGS AND VELUX INSTALLATION MANUAL TO ENSURE A WATERTIGHT INSTALLATION IS ACHIEVED. COMPLY WITH AS1562.1-1992 (R2016) - DESIGN AND INSTALLATION OF SHEETS AND WALL CLADDING

DOCUMENT TITLE	HOW TO ACCESS
VELUX PRODUCT INSTRUCTION NUMBER 302192	AVAILABLE FROM VELUX UPON REQUEST
INSTRUCTION NUMBER VAS 452195	AVAILABLE FROM WEBSITE
21.FCMA21.0A0.61	AVAILABLE FROM VELUX UPON REQUEST

- THIS DRAWING IS FOR THE SKYLIGHT SUPPORT FRAMING ONLY AS DOCUMENTED ON SHEETS 1 TO 6 INCLUSIVE AND EXCLUDES THE ALUMINIUM SKYLIGHT FRAMING ITSELF

Accepted for inclusion in Deemed to Comply Manual

DTCM drawing number: M/118/01-06 DRAWING SHEET 5 of 6 REV. 3

Chairperson Signature:

Chairperson Name: Paul Nowland

Date of Approval: 13/12/2021 Expiry Date: 13/12/2026

Notes covering basis of DTC (Relevant test reports etc)

- IAN BENNIE AND ASSOCIATES TEST REPORT NUMBER 2009-098-S6. FIXED SKYLIGHT - FCM 4646 0004B CYCLONIC AND NONCYCLONIC TESTS TO AS4285 - 2007 FOR VELUX (AUST) PTY LTD. JANUARY 2010
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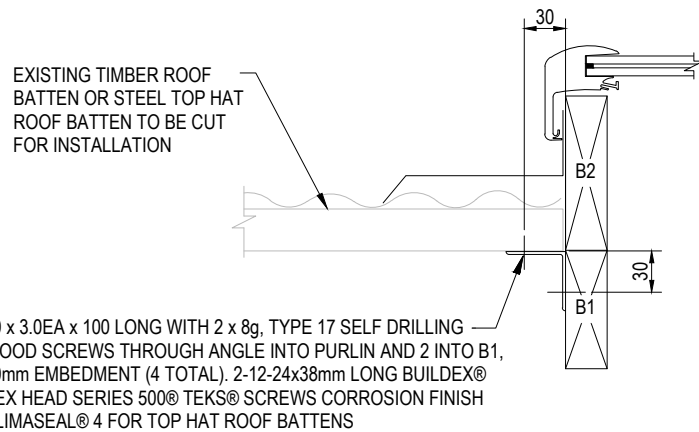
Certifying Engineer

Name: GRAEME BURMEISTER
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 Signature:

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NORTHERN TERRITORY DEEMED TO COMPLY MANUAL – National Construction Code Volume 2 (Section 3.0.4 Structural resistance of materials in high wind areas)

This product has been determined to satisfy NCC Performance Requirement P2.1.1 for structural stability and resistance.



PURLIN CONNECTION DETAIL (TIMBER)

SCALE N.T.S.

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	4	3.76

Product Name **VELUX FCM - FIXED "CURB" MOUNTED DOUBLE GLAZED SKYLIGHT SUPPORT FRAMING**

Product Description
VELUX FCM SKYLIGHT FOR TIMBER FRAME CONSTRUCTION

Manufacturer's Details
VELUX AUSTRALIA PTY LTD

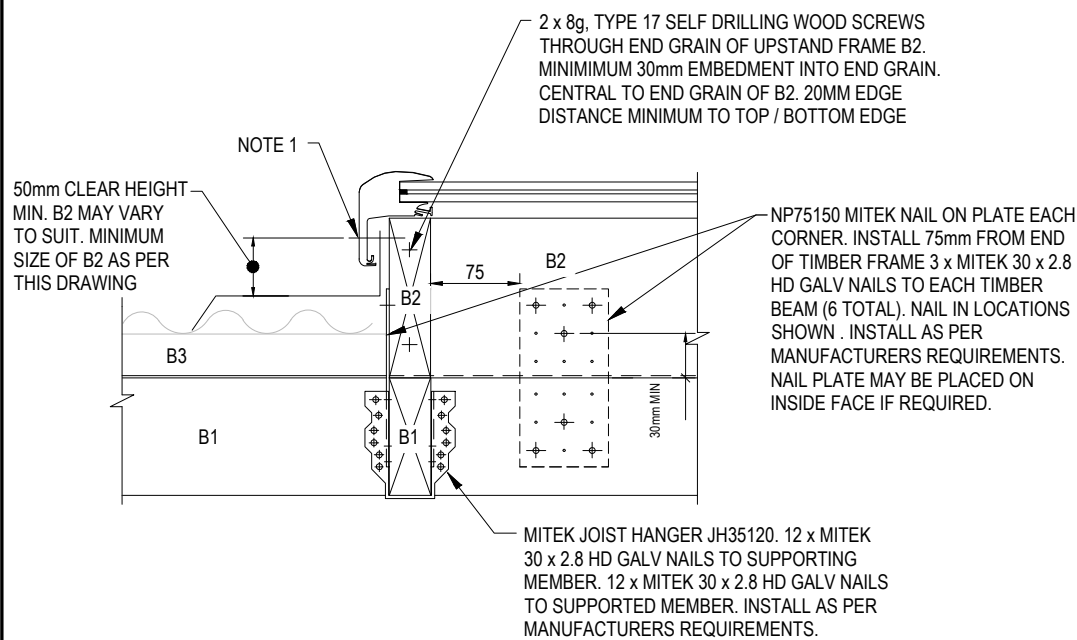
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Design Criteria

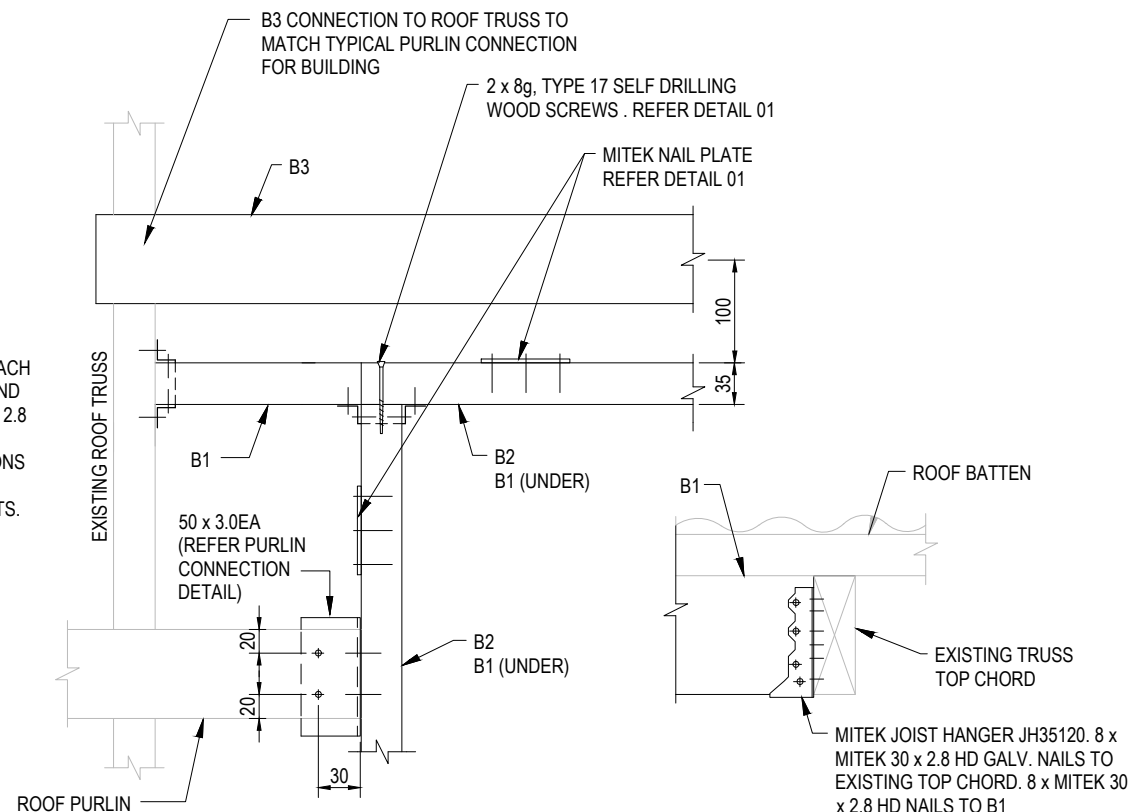
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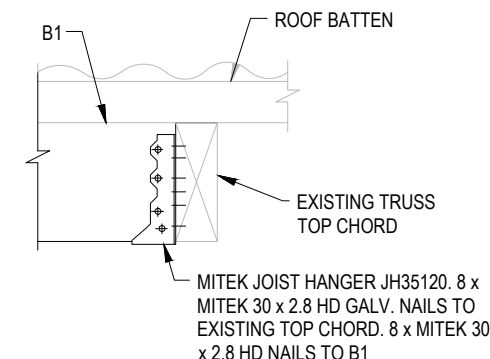
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01 DETAIL
S005 SCALE N.T.S.



02 DETAIL
S005 SCALE N.T.S.



03 DETAIL
S005 SCALE N.T.S.

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Accepted for inclusion in Deemed to Comply Manual

DTCM drawing number: M/118/01-06 DRAWING SHEET 6 of 6 REV. 3

Chairperson Signature:

Chairperson Name: Paul Nowland

Date of Approval: 13/12/2021 Expiry Date: 13/12/2026

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