

International Truss Systems (Pty) Ltd

Standard Detail

MANUAL



Part 1 : Bracing Rules

Part 2 : Connection Details

Part 3 : Bracing Details

Part 4 : Remedial

Part 5 : Loading Tables

Part 6 : Glossary

April 2012 Edition



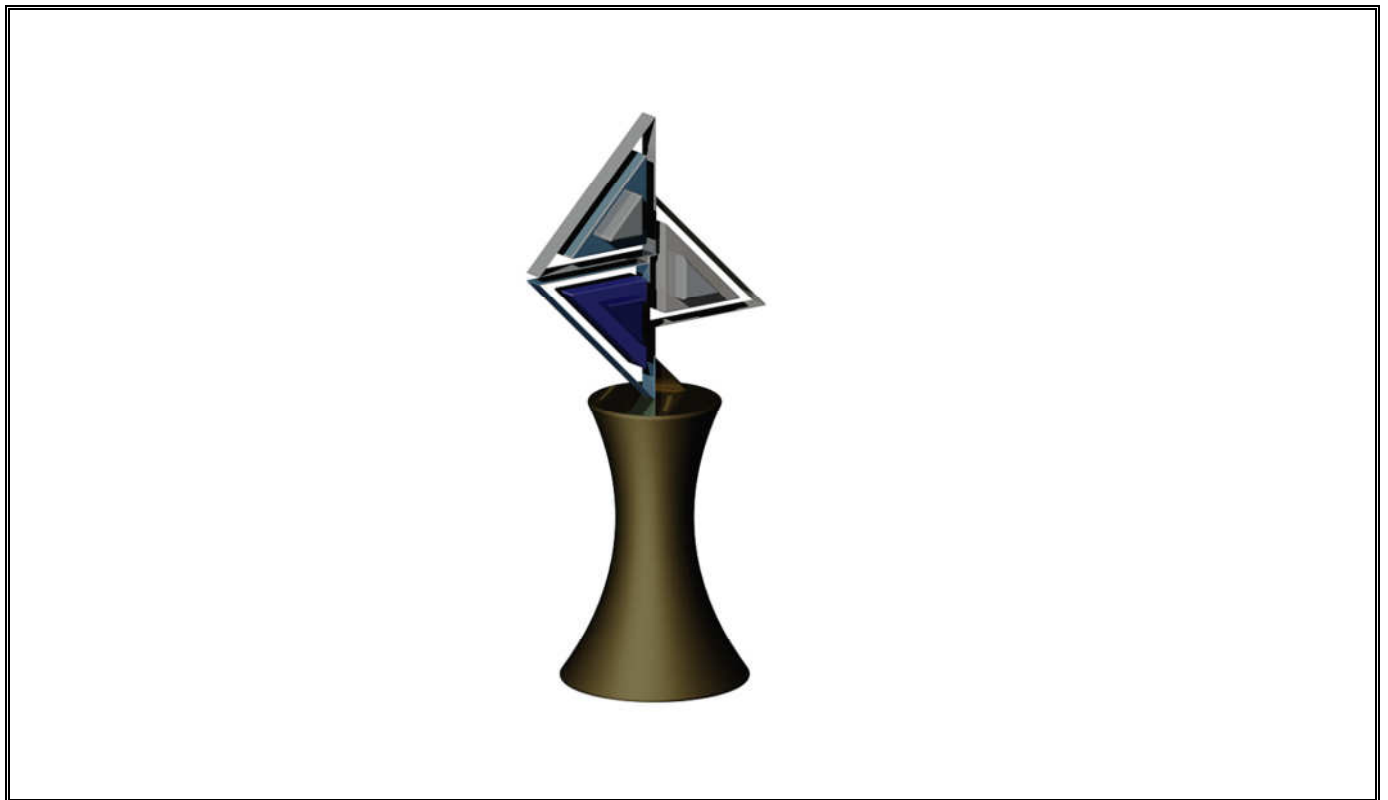
**International Leaders
in Roof Technology**

This Book belongs to:

Presented to:

From: ITS Head Office JHB

Company Logo.



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Basic Bracing Rules.

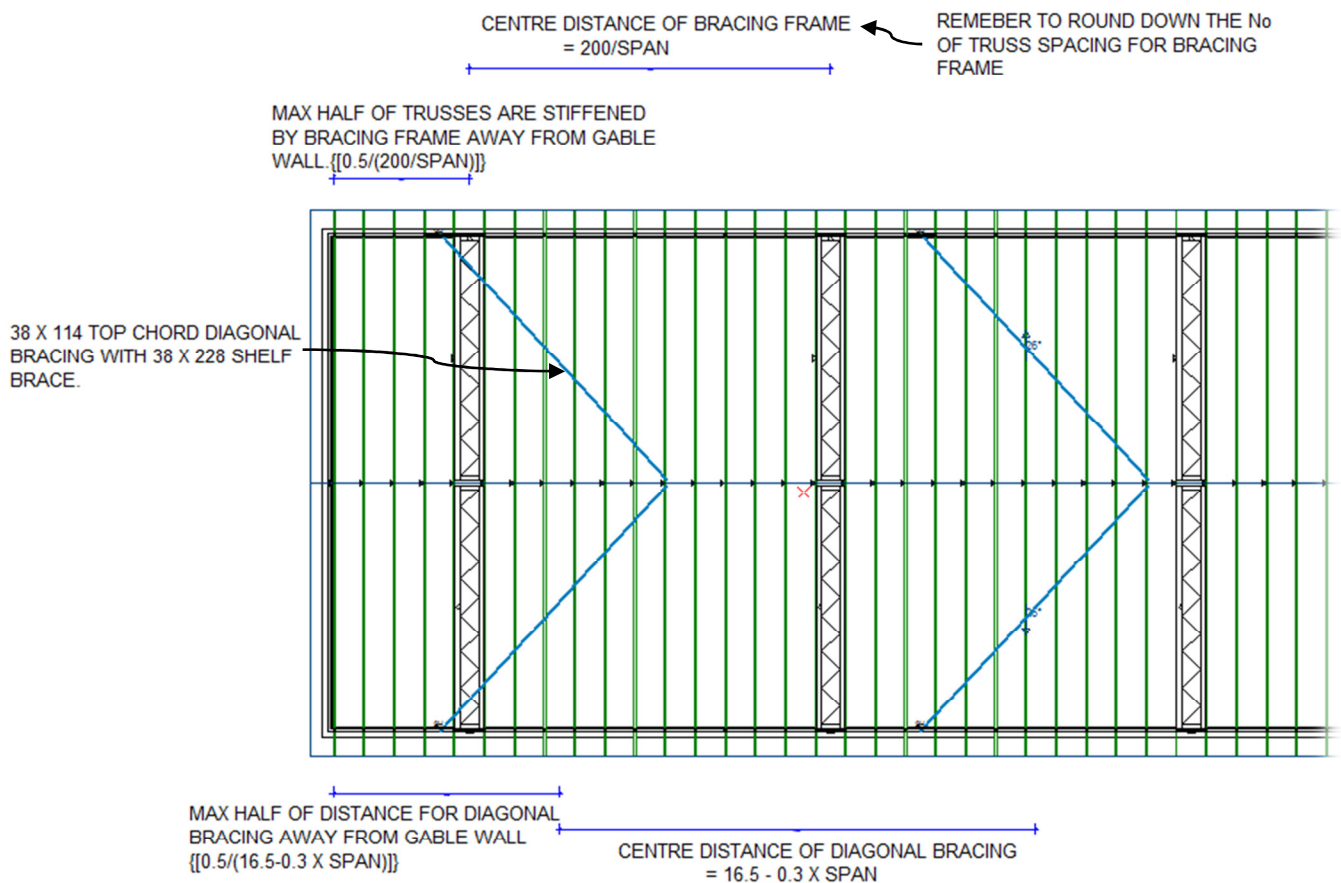


PLEASE NOTE:

Due to complexities of certain roofs the Design program may not always Brace the roof correctly. In these case's the bracing must be check and corrected manually to comply with these rules.

Bracing Rule Formula

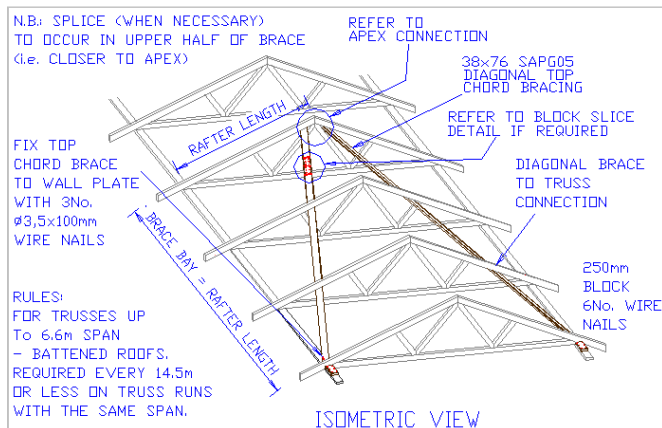
1. Formula for the position of Diagonal Bracing
 - $16.5 - (0.3 \times \text{Span of Truss}) = (\text{answer in meters})$
2. Formula for the position of Bracing Frames
 - $200/\text{Span of Truss} = (\text{answer is the number of trusses, rounded down.})$
3. Formular for a Double Bracing frame
 - $\text{Span of Truss}/\text{Truss Spacing} > 20 = \text{Double bracing frames are required.}$



Top Chord Bracing for Tiled Roofs. (Cement, Clay or Nutek Tiles/Slates)

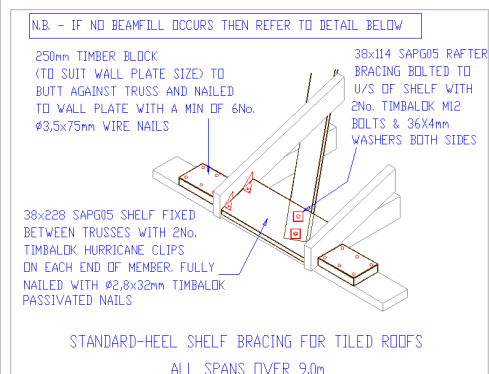
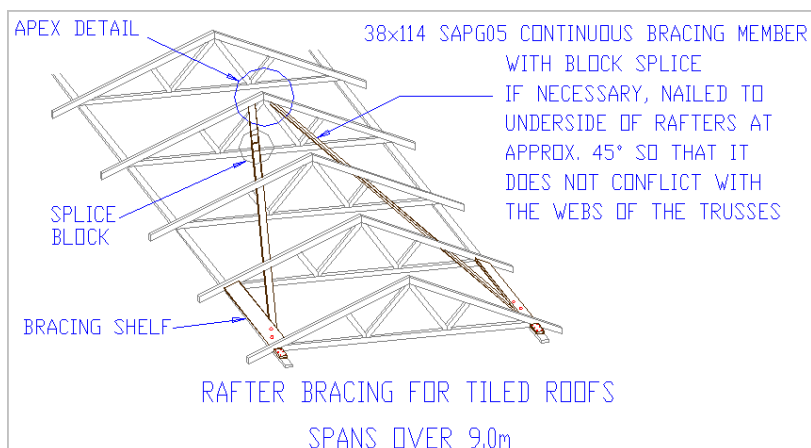
- **For Truss Spans up to 6.6m** from wallplate to wallplate use the following bracing detail.

- Use Formula 1 to determine the number of braced bays.

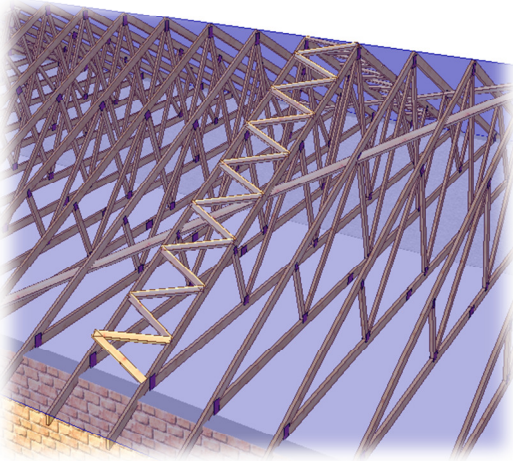
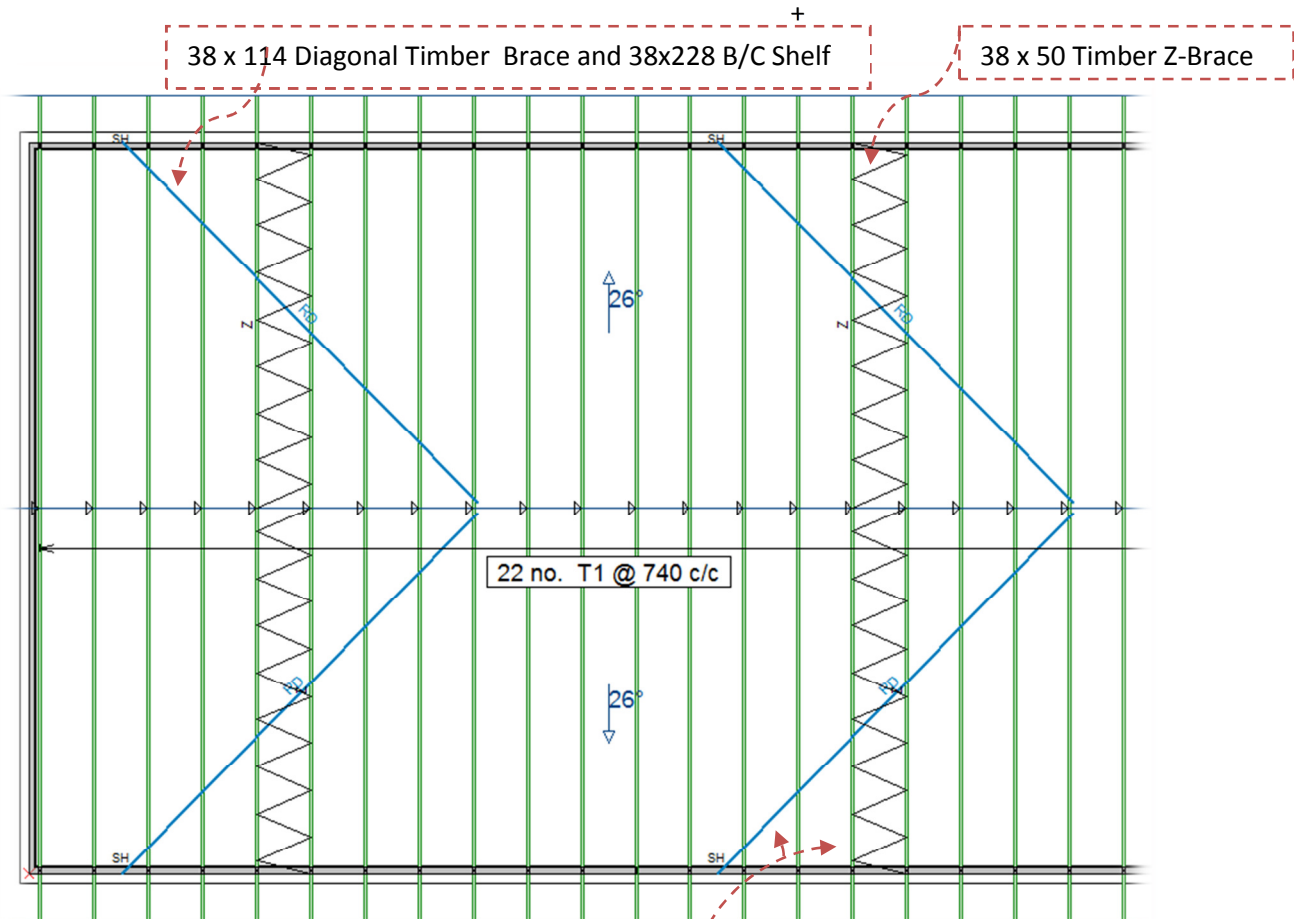


- **For Truss Spans over 6.6m to 9.0m** from w/p to w/p use the following bracing detail.

- Use Formula 1 to determine the number braced bays.



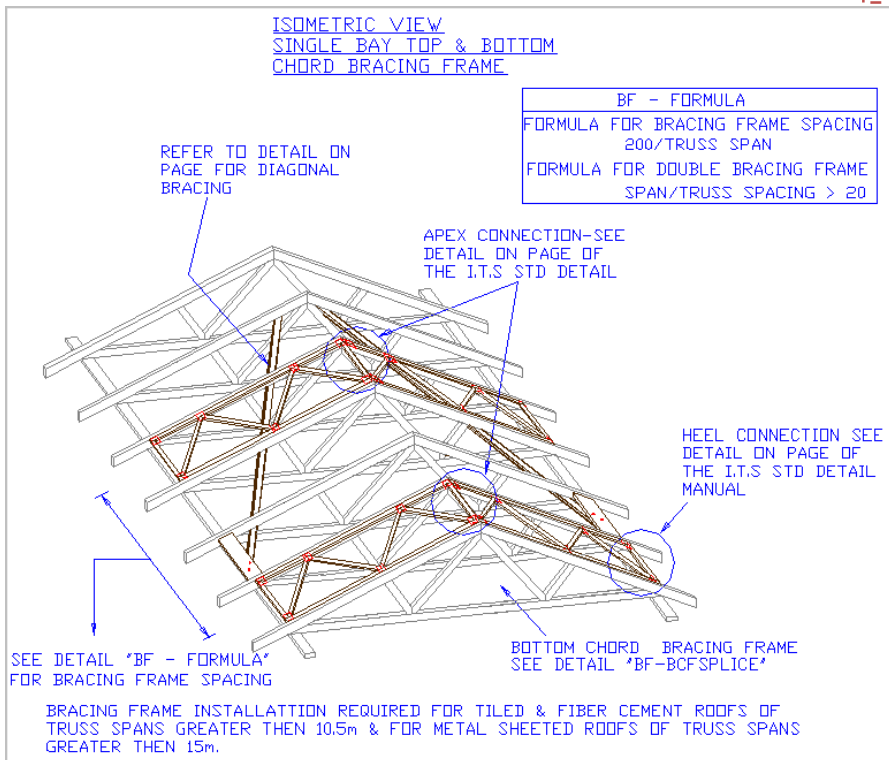
- **For Truss Spans over 9.0m to 10.5m** from w/p to w/p use the following bracing detail.



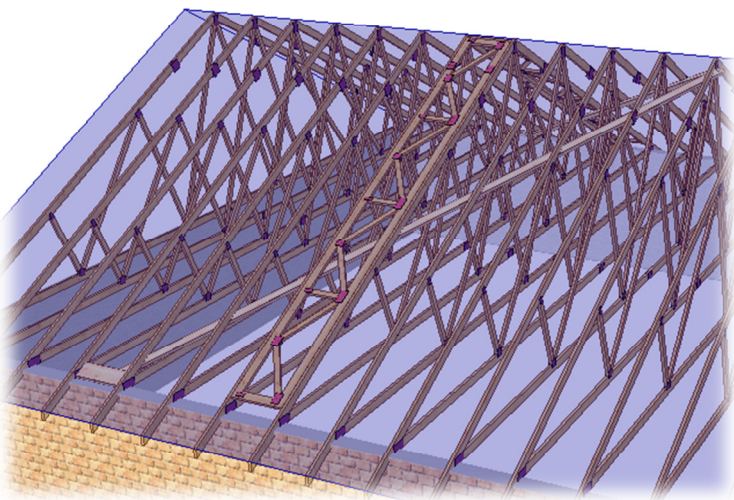
- Use Formula 1 to determine the number of braced bays

- **For Truss Spans over 10.5m up to 11.5m** from w/p to w/p use the following bracing detail.

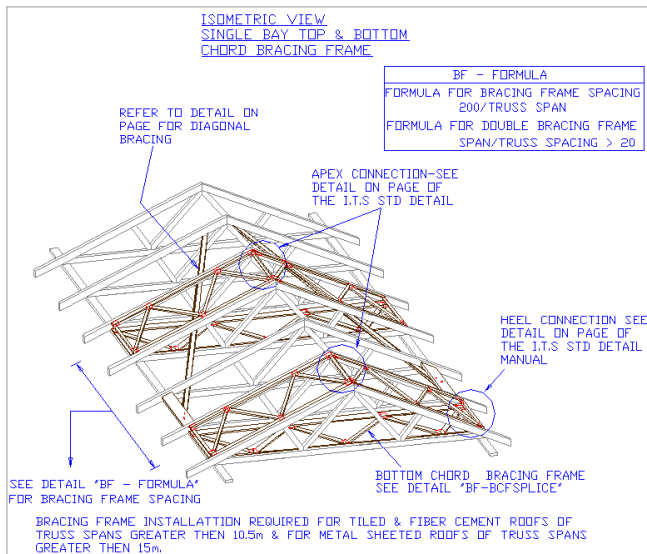
USE BRACING FRAME WITH
38 X 114 DIAGONAL BRACING and SHELF



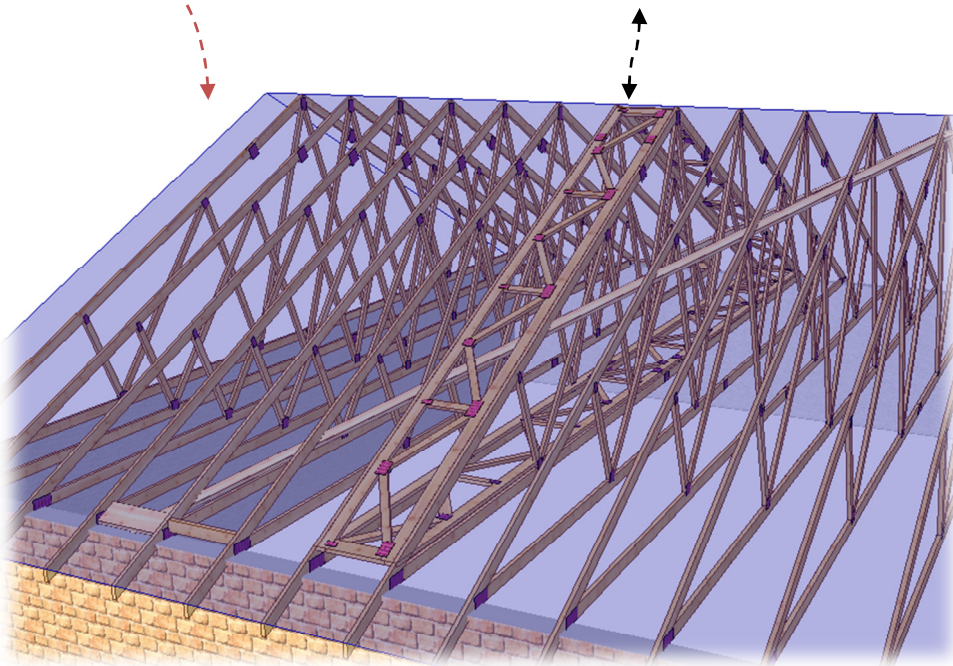
- Use Formula 1+2 to determine the
number of braced bays plus whether to have a
Double Bracing Frame.



➤ **For Truss Spans greater than 11.5m use the following bracing detail.**



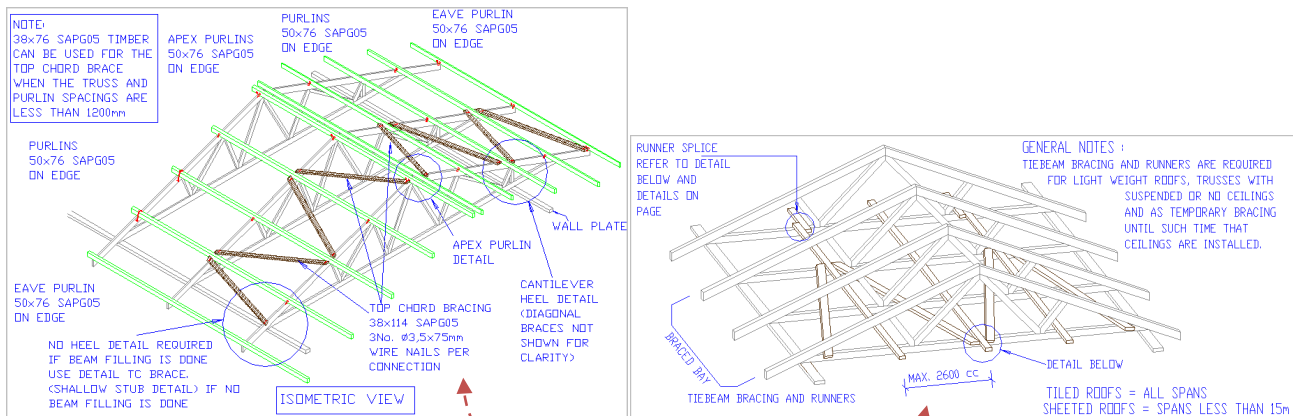
SPANS 11.5m & GREATER USE 38 X 114 DIAGONAL
BRACING WITH TOP & BOTTOM CHORD BRACING FRAME.



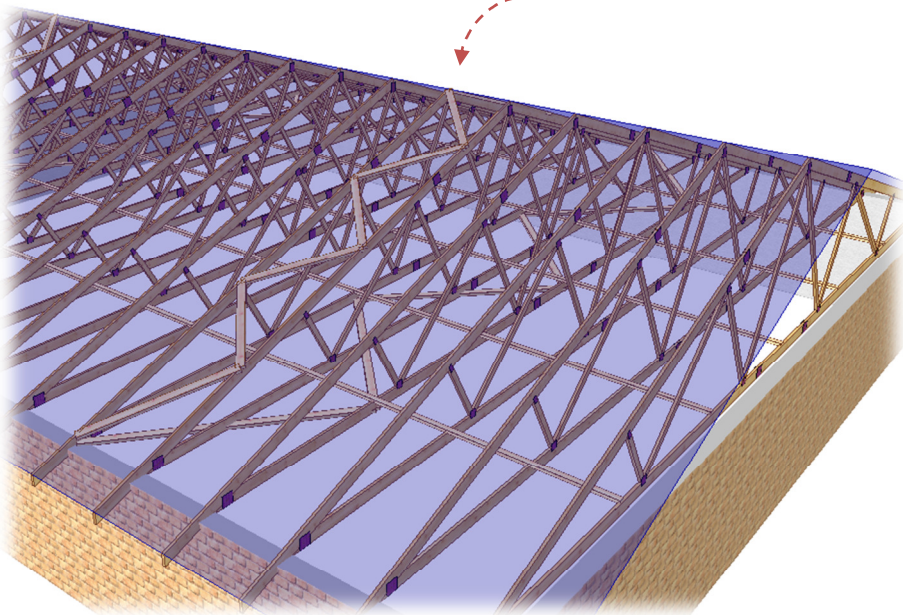
- Use Formula 1+2+3 to determine the number of braced bays plus whether a Double Bracing Frame is required.

Top Chord Bracing for Sheeted Roofs. (Metal, Asbestos, Nutec, - Any material under 0.3kN/m^2)

- **For Truss Spans less than 15m** from w/p to w/p use the following bracing details.

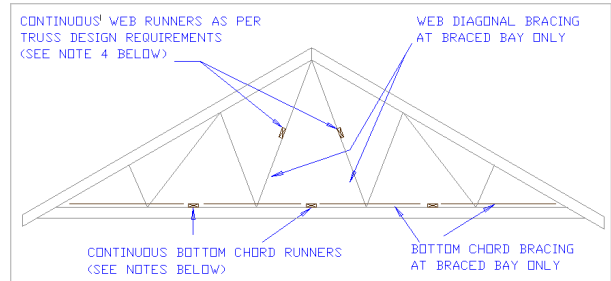
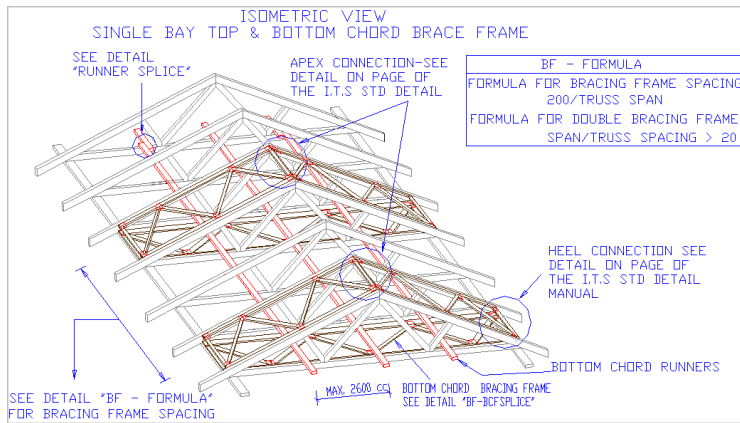


38x114 Top Chord Bracing + 38x76 Bottom Chord Bracing & Runners.



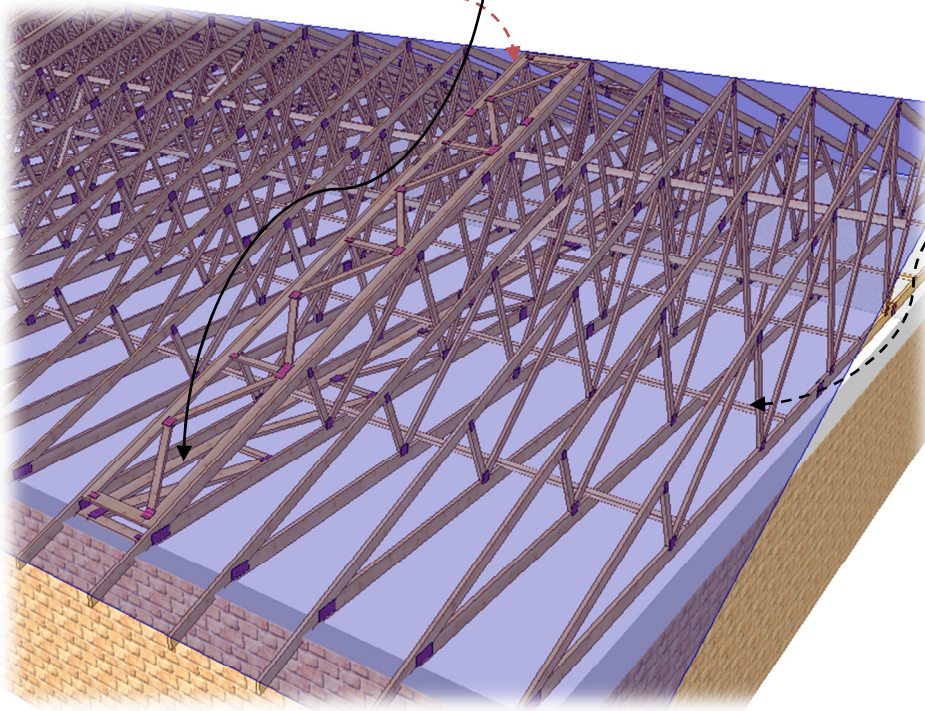
- Use Formula 1 to determine the Braced Bays.

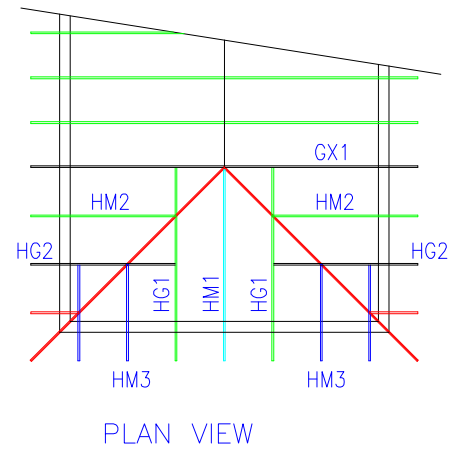
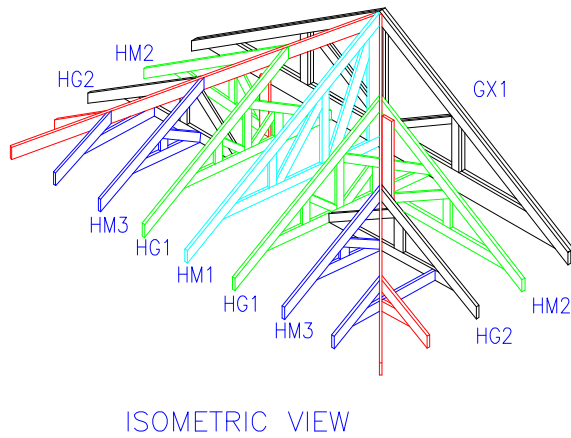
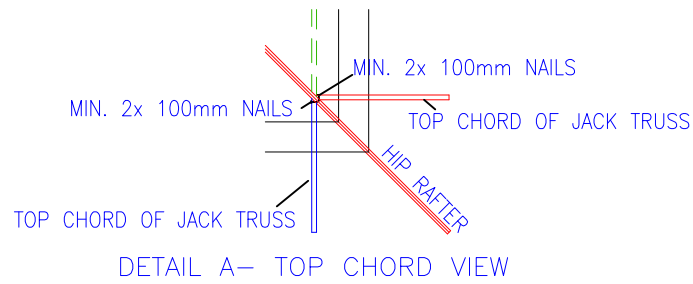
➤ **For Truss Spans of 15m and greater use the following bracing details.**



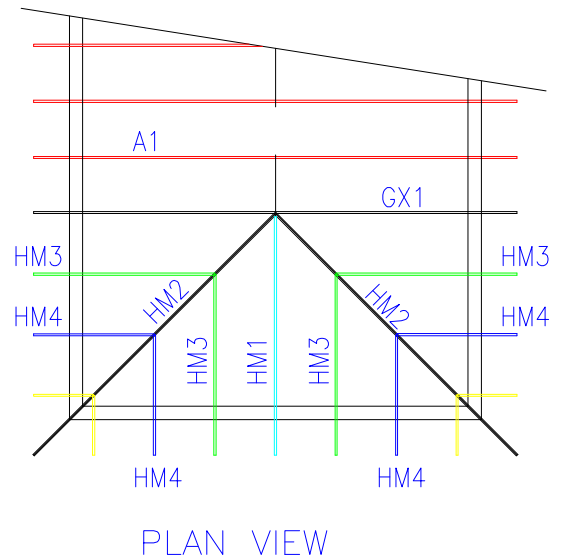
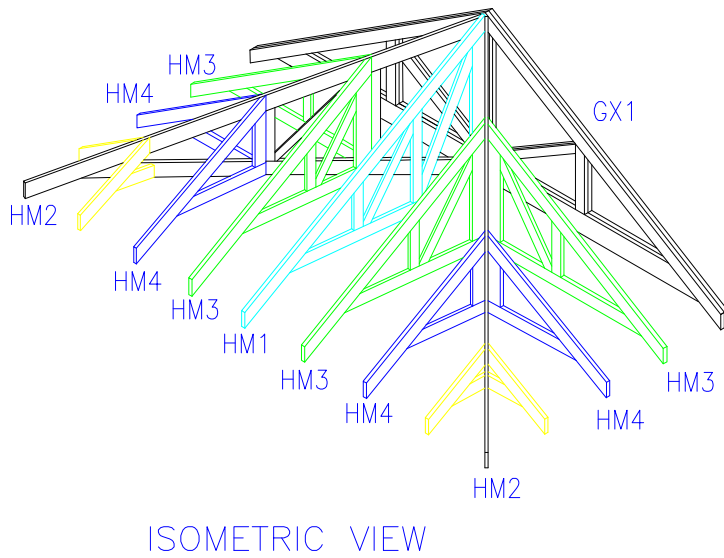
Top & Bottom Chord Bracing Frames + Bottom Chord Runners.

38x76 Bottom Chord Runners

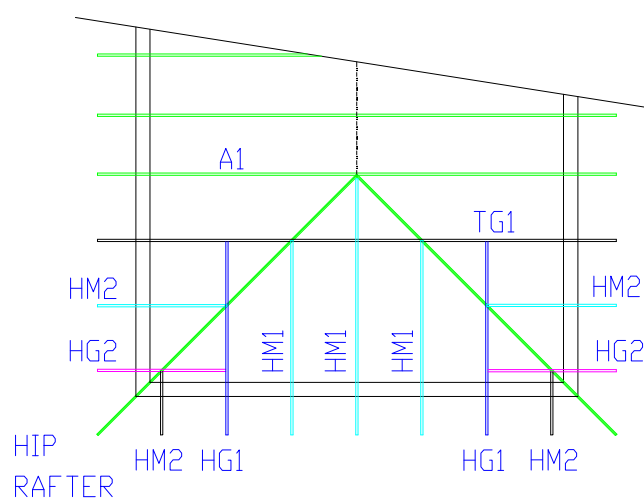
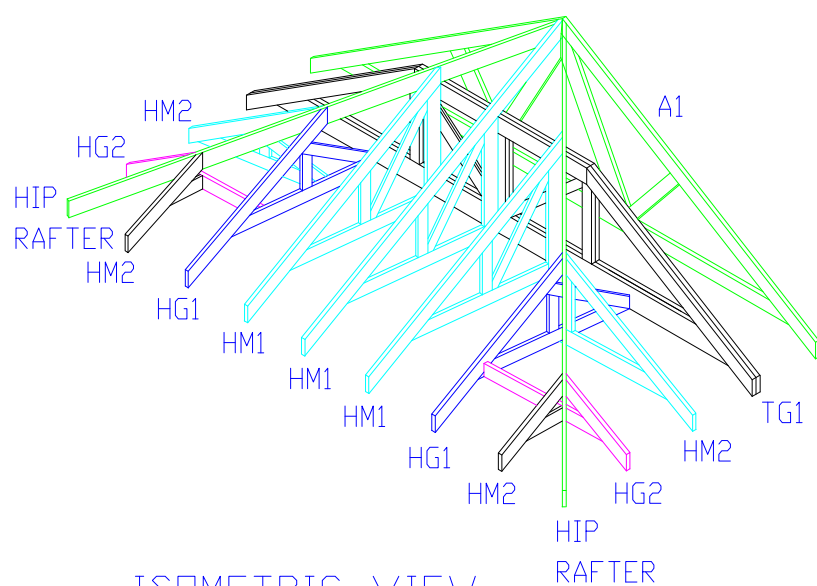




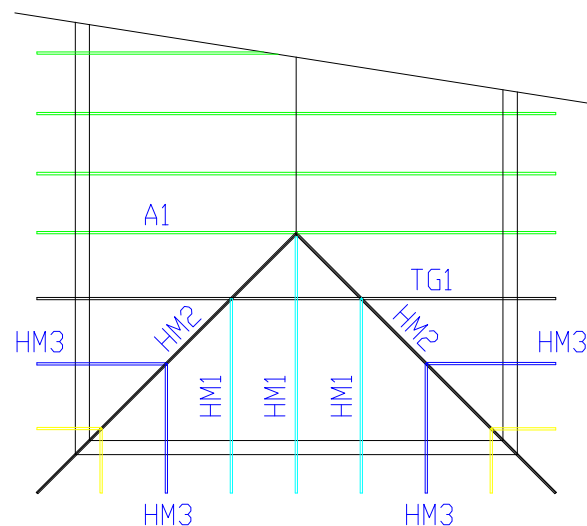
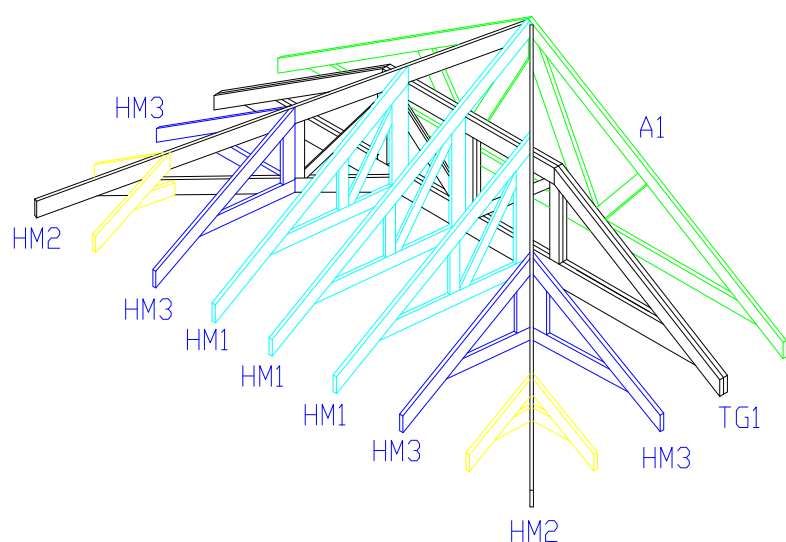
GIRDER BASE INFILL HIP



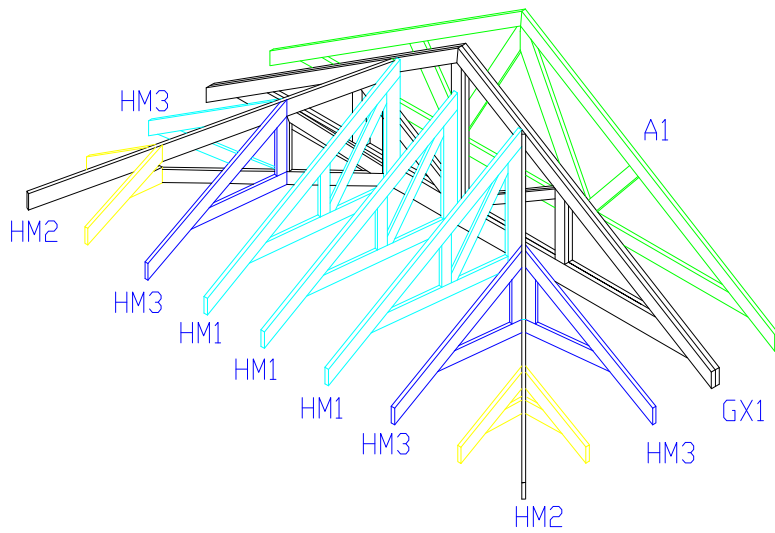
45° INFILL HIP



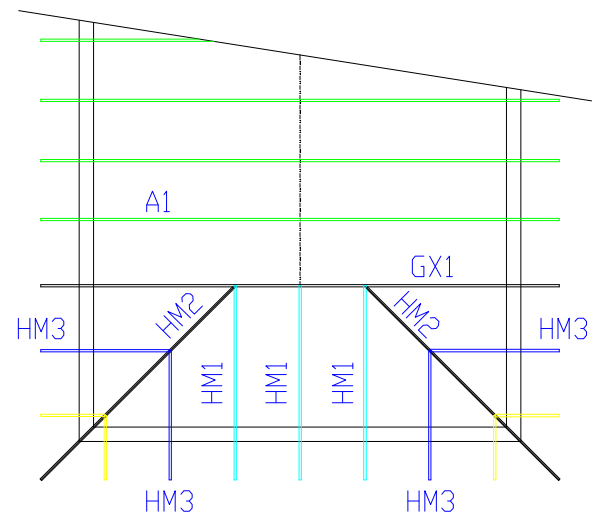
GIRDER BASE TRUNCATED HIP



45° TRUNCATED HIP

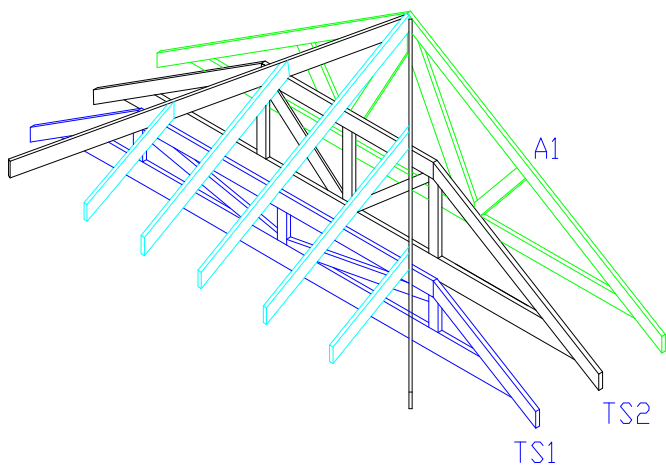


ISOMETRIC VIEW

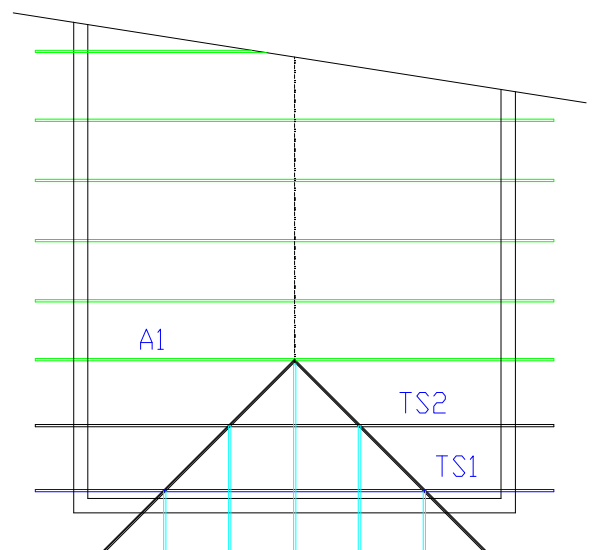


PLAN VIEW

DUTCH OR LOUVRE HIP

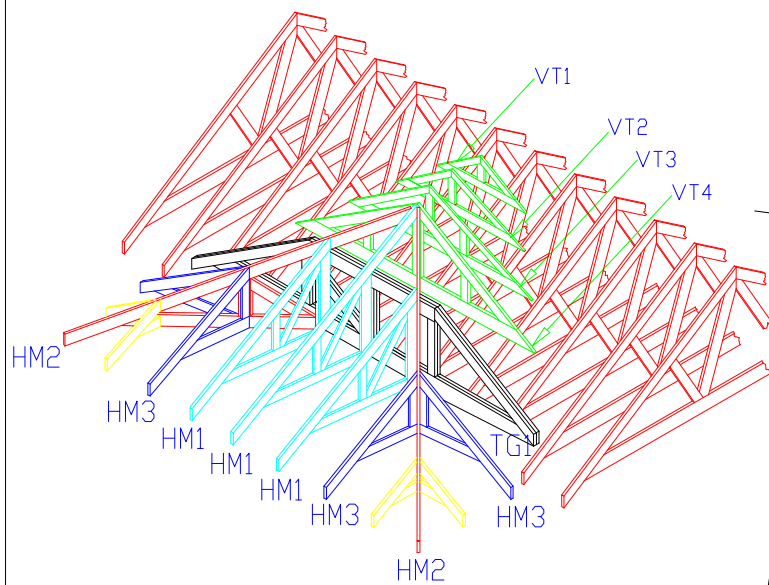


ISOMETRIC VIEW



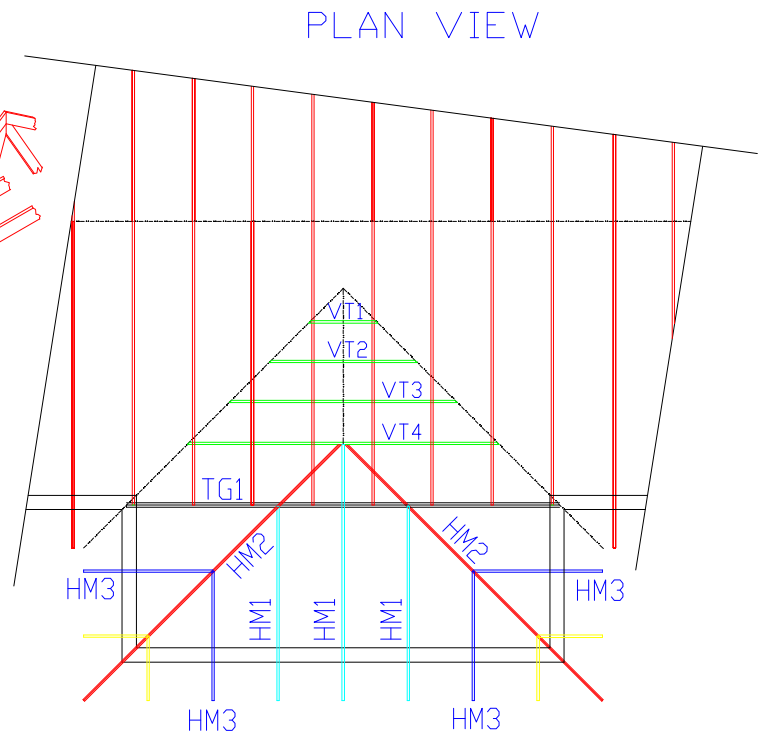
PLAN VIEW

PART GABLE HIP



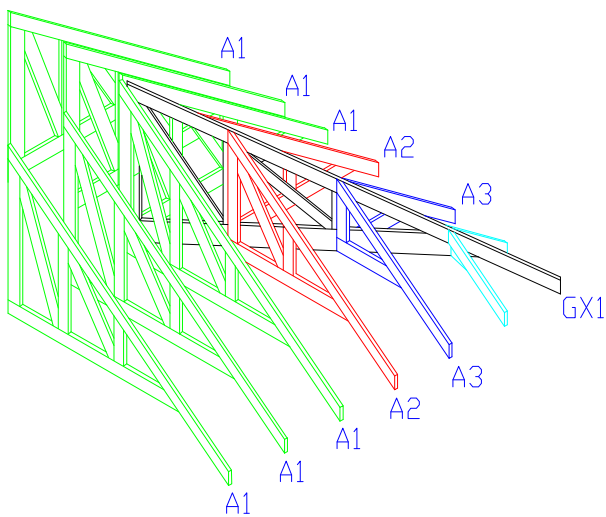
ISOMETRIC VIEW

VALLEY BRACING NOT SHOWN FOR CLARITY
SEE DETAILS

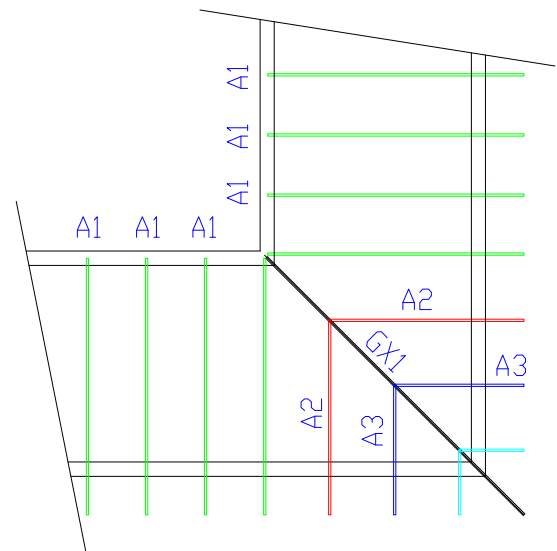


PLAN VIEW

HIP AND VALLEY COMBINATION

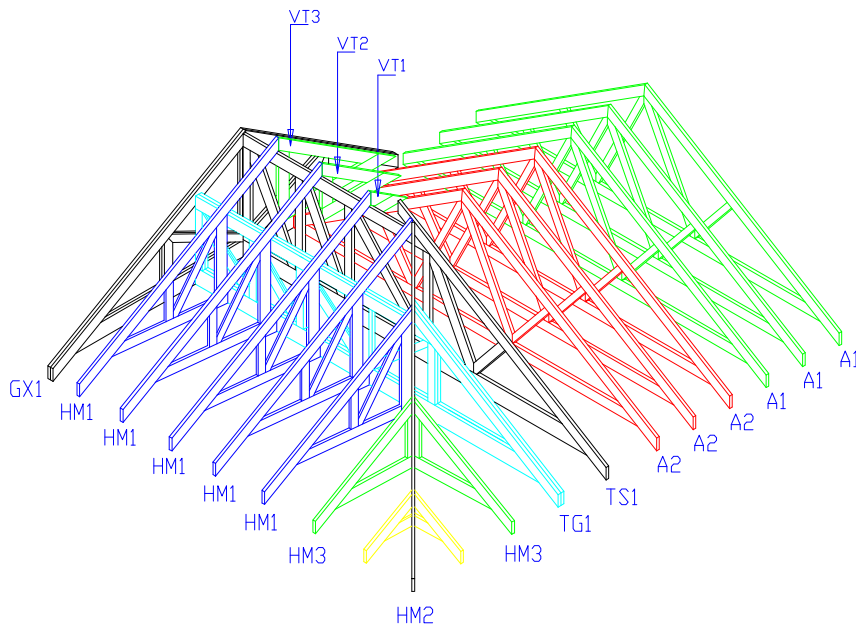


ISOMETRIC VIEW

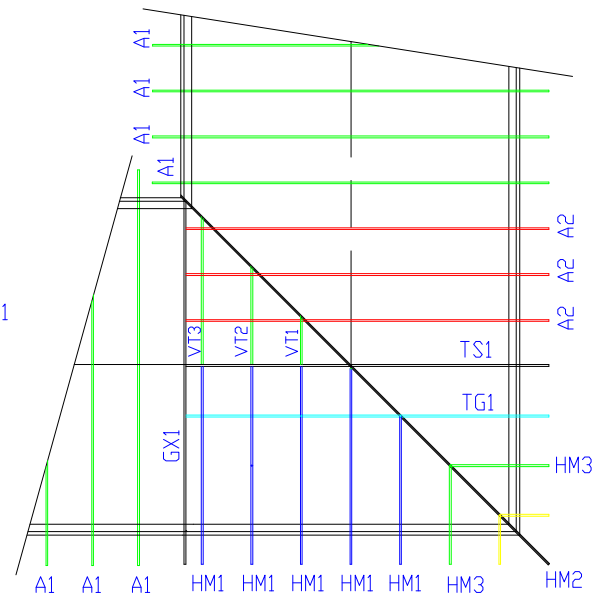


PLAN VIEW

45° INFILL MONO-PITCH HIP

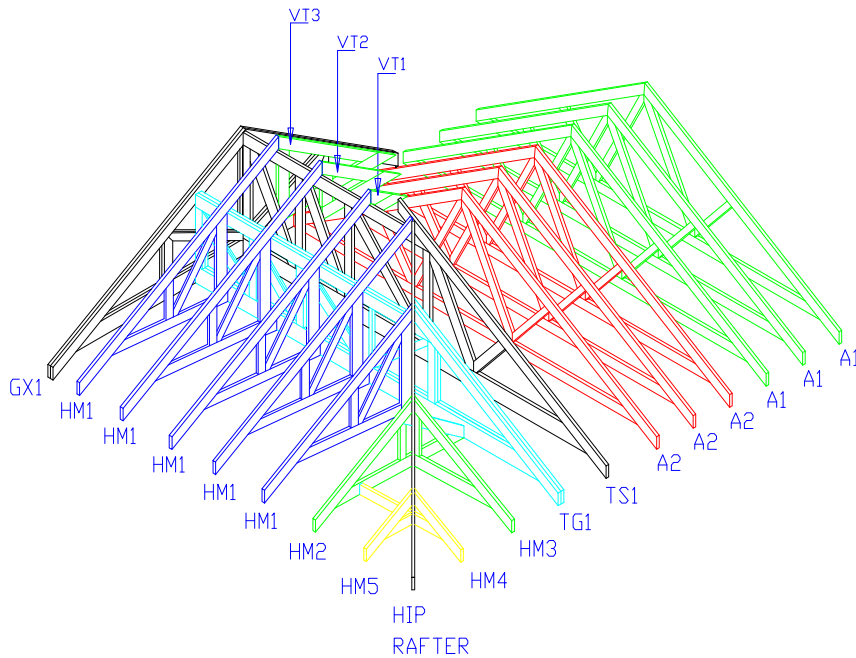


ISOMETRIC VIEW

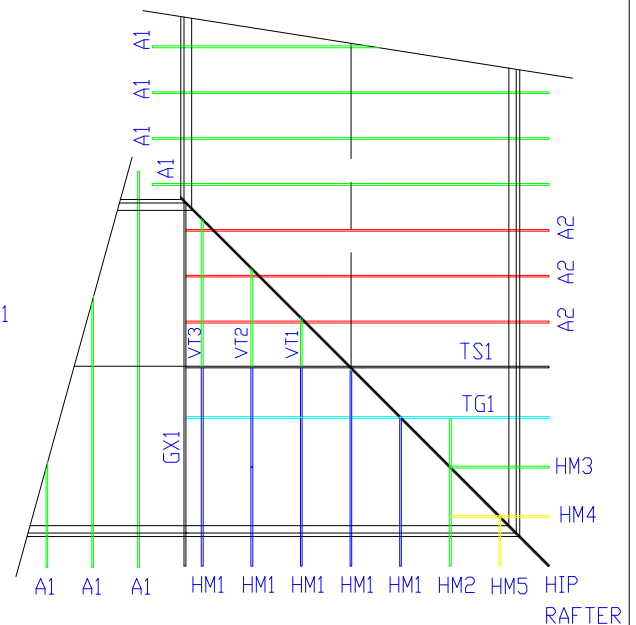


PLAN VIEW

45° INFILL TRUNCATED CORNER HIP



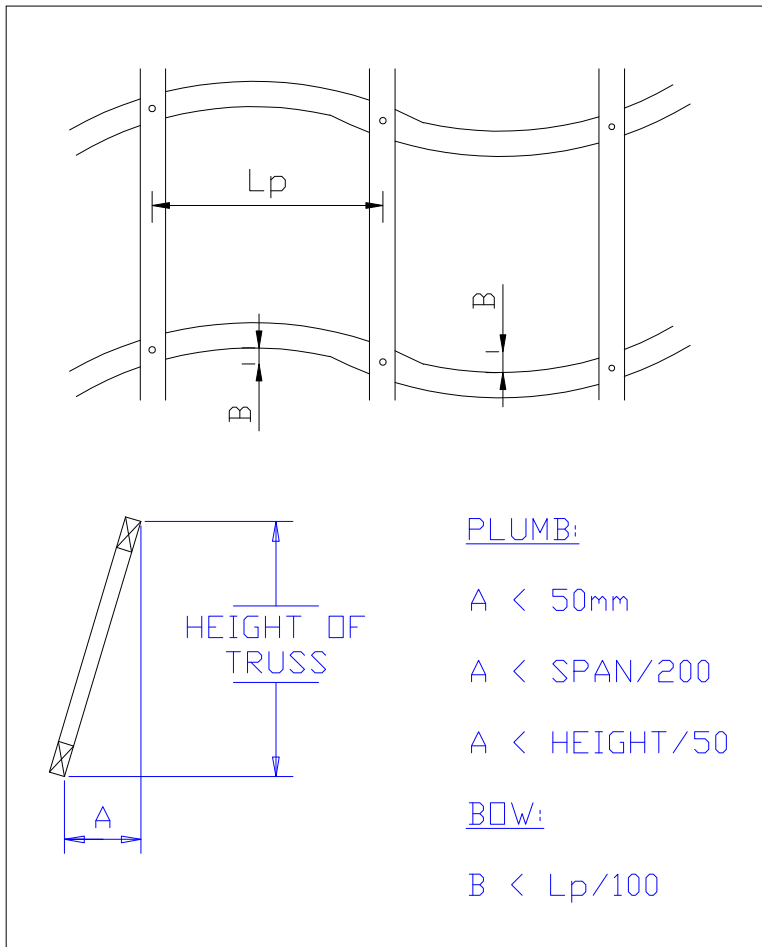
ISOMETRIC VIEW



PLAN VIEW

GIRDER BASE INFILL TRUNCATED CORNER HIP

LIFE SIZE (SCALE 1:1) SECTION OF 38x114 (SAPG05) RAFTER AT 30° SLOPE SHOWING MAXIMUM RAFTER AT 30° SLOPE SHOWING MAXIMUM THAN 3mm OFF CENTER.



PLUMB:

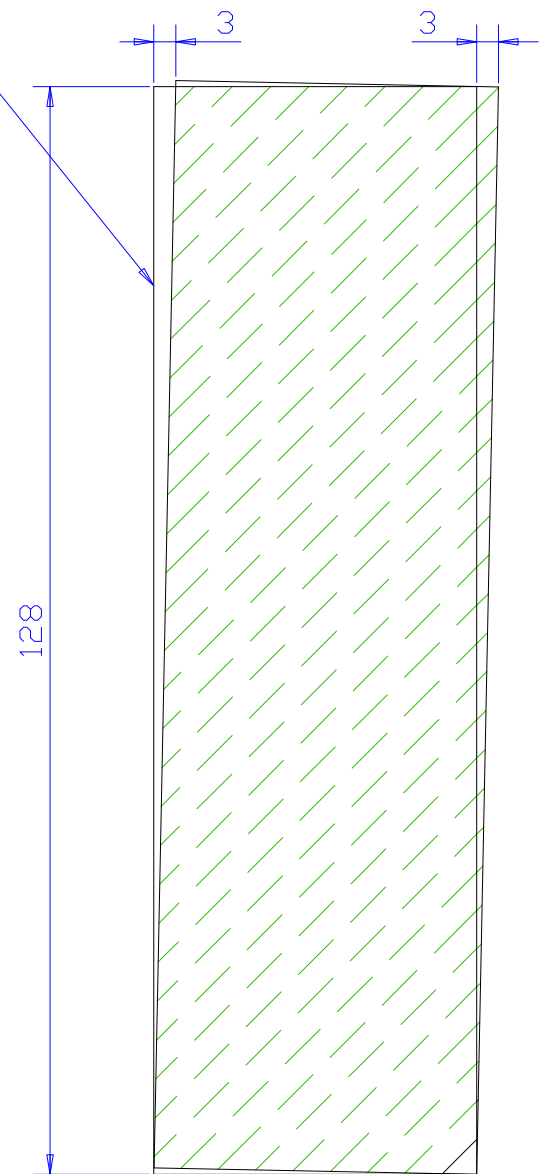
$A < 50\text{mm}$

$A < \text{SPAN}/200$

$A < \text{HEIGHT}/50$

BOW:

$B < L_p/100$



TOLERANCE IS CRITICAL FOR BOTH A GOOD ROOF LINE AND EFFECTIVE BRACING.

A PLUMB LINE OR LEVEL MUST BE USED.

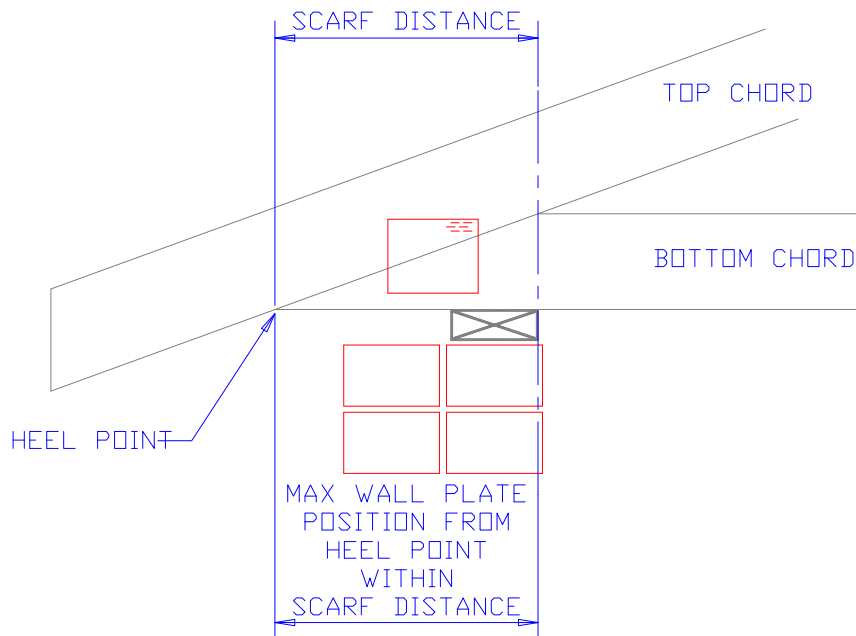
1. TRUSSES TO BE ERECTED WITH OVERALL BOW IN IT'S TOTAL RAFTER LENGTH LESS THAN $L/200$ AND LESS THAN 50mm ($L = \text{CHORD LENGTH}$). THE BOW BETWEEN BATTENS OR PURLINS MUST BE LESS THAN $L_p/100$ ($L_p = \text{BATTEN/PURLIN SPACING}$).
2. TRUSSES TO BE ERECTED WITH APEX NOT MORE THAN THE LESSOR OF $\text{SPAN}/200$ OR $\text{HEIGHT}/50$ FROM A VERTICAL PLANE THROUGH IT'S SUPPORTS.
3. AT ANY SECTION ,THE LOCAL OUT OF PLUMB SHOULD NOT EXCEED $\text{HEIGHT}/50$ OR 50mm, WHICHEVER IS THE LESSOR.

GENERALLY, IF A BOW OR TILT IS EVIDENT TO THE EYE, THE TRUSS HAS PROBABLY BEEN ERECTED OUTSIDE THE TOLERANCES.

ERECTION TOLERANCES:

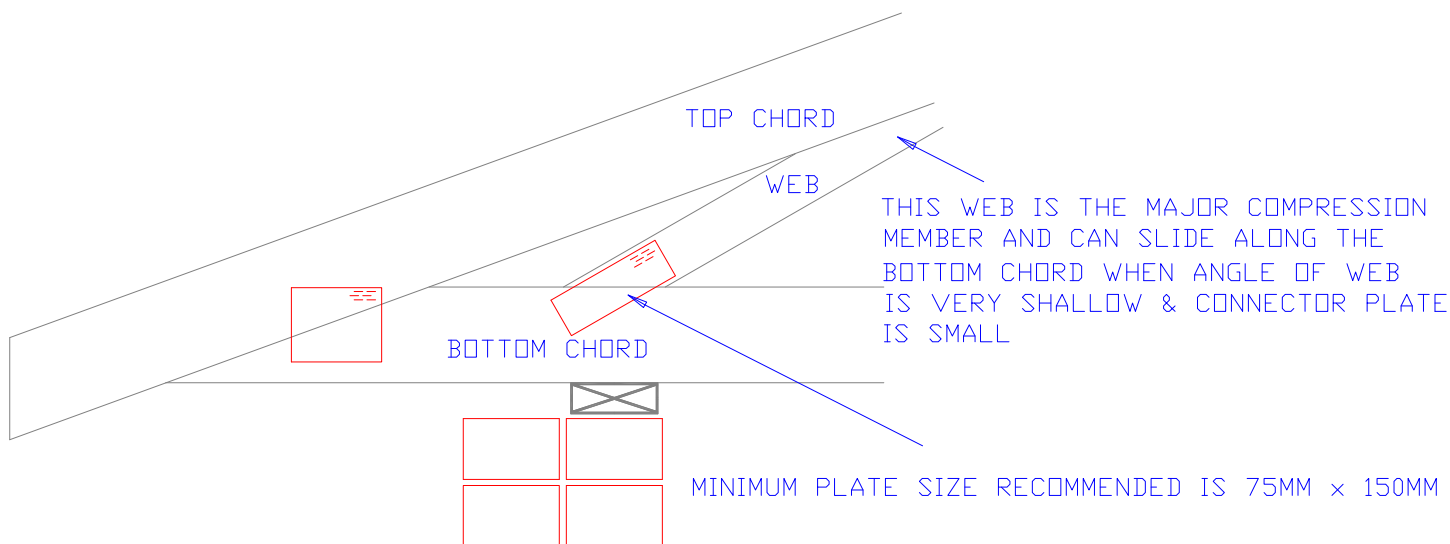
TRUSSES MUST BE ERECTED PLUMB, LEVEL
AND ALL CHORDS MUST BE STRAIGHT.

ERECTION TOLERANCES



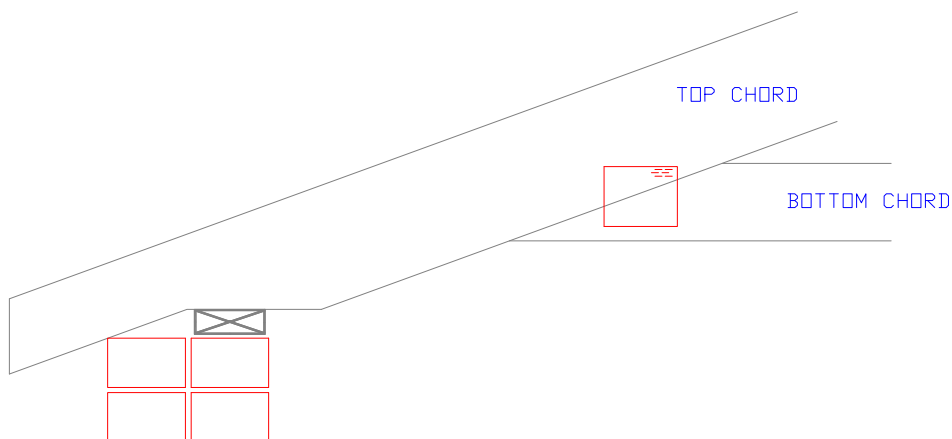
LIMIT OF WALL PLATE POSITIONING

NOTE: ANY SUPPORT OUTSIDE THE SCARF LENGTH IS A SPECIAL SUPPORT CONDITION



SPECIAL SUPPORT CONDITION BEYOND SCARF=CANTILEVER

NOTE: ALL CANTILEVERS MUST BE DESIGNED AS SUCH.

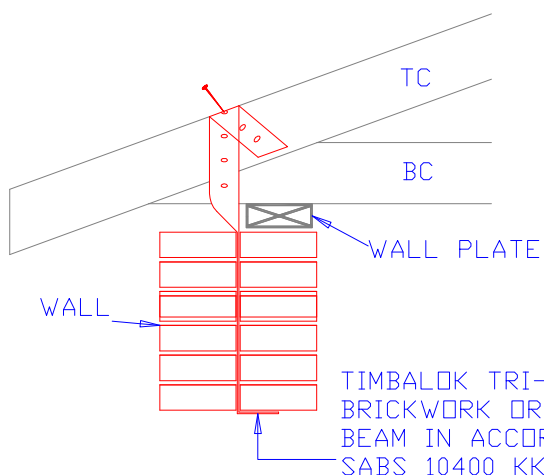


SPECIAL SUPPORT CONDITION ON OVERHANG=TOP CHORD SUPPORT

NOTE: ALL TOP CHORD SUPPORT MUST BE DESIGNED AS SUCH.

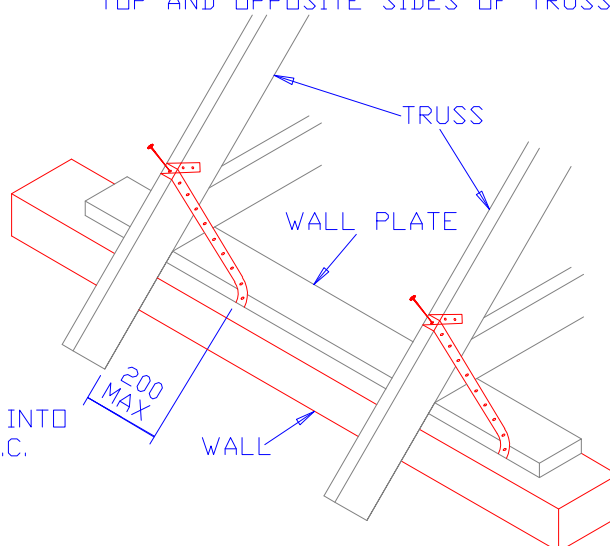
TILED ROOFS:

USE 4No. $\phi 2,8 \times 32$ mm TIMBALOK
PASSIVATED NAILS CONNECTED TO
TOP AND OPPOSITE SIDES OF TRUSS



SHEETED ROOFS:

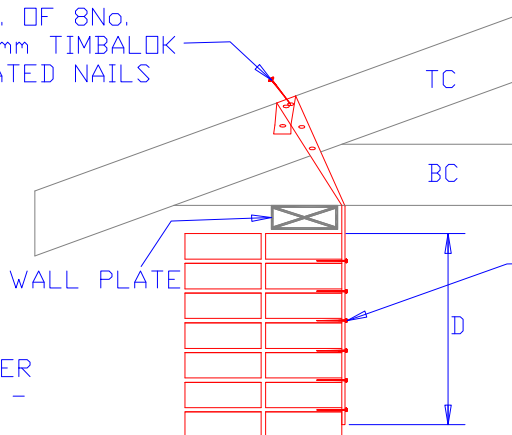
USE 8No. $\phi 2,8 \times 32$ mm TIMBALOK
PASSIVATED NAILS CONNECTED TO
TOP AND OPPOSITE SIDES OF TRUSS



NOTE: 25x1mm TIMBALOK TRI-STRAP MAY BE USED FOR HEAVY TILE ROOFS OR LIGHT ROOFS UP TO 8m SPAN IN LOW WIND RISK BUILT UP AREAS.

USE MIN. OF 8No.
 $\phi 2,8 \times 32$ mm TIMBALOK
PASSIVATED NAILS

PRODUCT	CODE
TRI-STRAP	TS03
90° TRUSS HANGER	UH12
TIMBALOK 32mm NAIL	NS35



FOR SHEETED ROOFS AT LESS
THAN 17.5 DEG. PITCH AND /OR
SPANNING MORE THAN 10m THE
TIE DOWN MUST BE DESIGNED.

TIMBALOK TRI-STRAP TO BE
FIXED TO WALL WITH MIN. OF
6No. MASONRY NAILS EVENLY
SPACED AND PLASTERED OVER

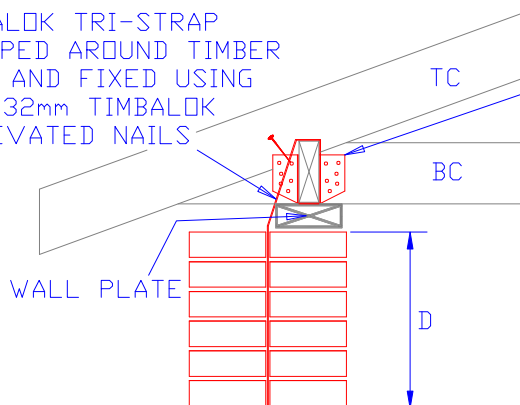
D = DEPTH TO BE AS PER
PART K SECTION "KK13" -
ROOF ANCHORING SABS
0400

MINIMUM ANCHOR LENGTH D = 600mm FOR SHEETED ROOFS
MINIMUM ANCHOR LENGTH D = 300mm FOR TILED ROOFS

NOTE:
THIS DETAIL IS ONLY TO BE USED WHEN THE HOOP IRON IS FURTHER THAN 200mm FROM THE TRUSS.

TIMBALOK TRI-STRAP
WRAPPED AROUND TIMBER
BEAM AND FIXED USING
 $\phi 2,8 \times 32$ mm TIMBALOK
PASSIVATED NAILS

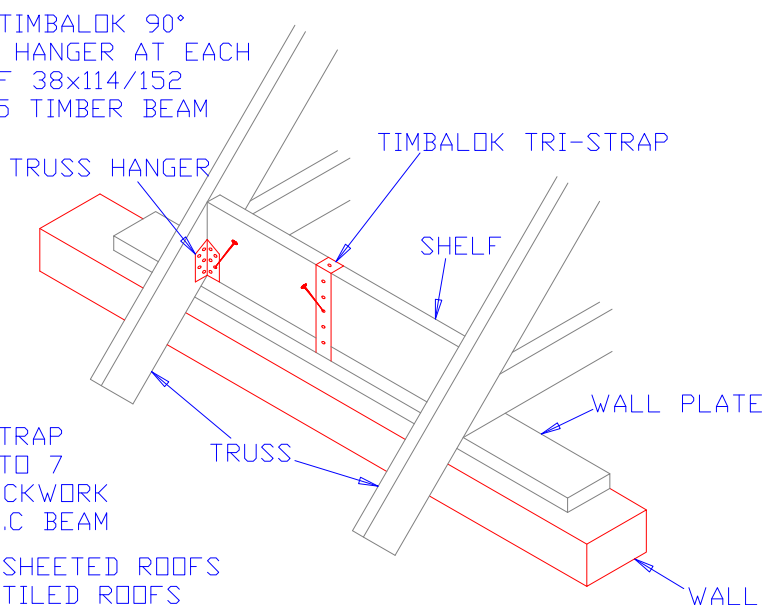
38mm TIMBALOK 90°
TRUSS HANGER AT EACH
END OF 38x114/152
SAPG05 TIMBER BEAM



D = DEPTH TO BE AS PER
PART K SECTION "KK13" -
ROOF ANCHORING SABS
0400

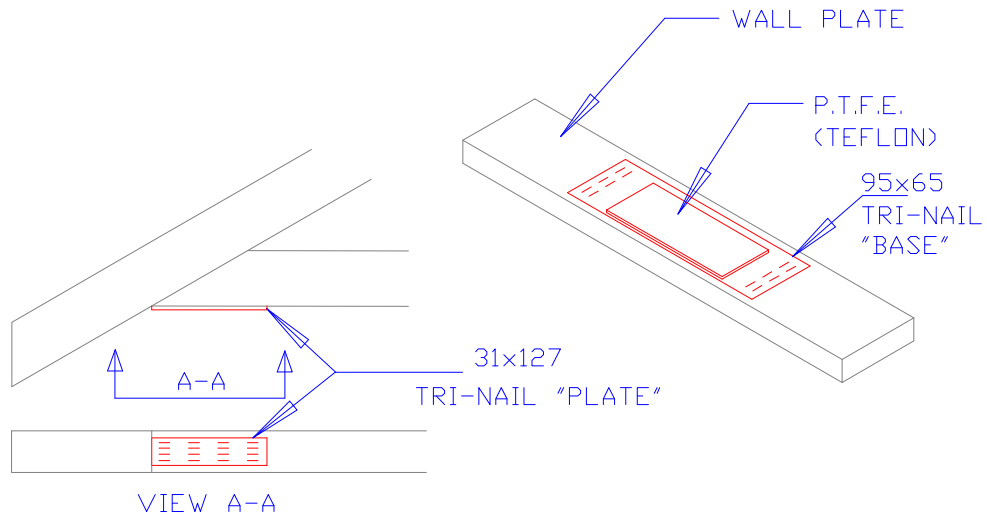
TIMBALOK TRI-STRAP
TO BE BUILT INTO 7
COURSES OF BRICKWORK
OR CAST INTO R.C. BEAM

MINIMUM ANCHOR LENGTH D = 600mm FOR SHEETED ROOFS
MINIMUM ANCHOR LENGTH D = 300mm FOR TILED ROOFS



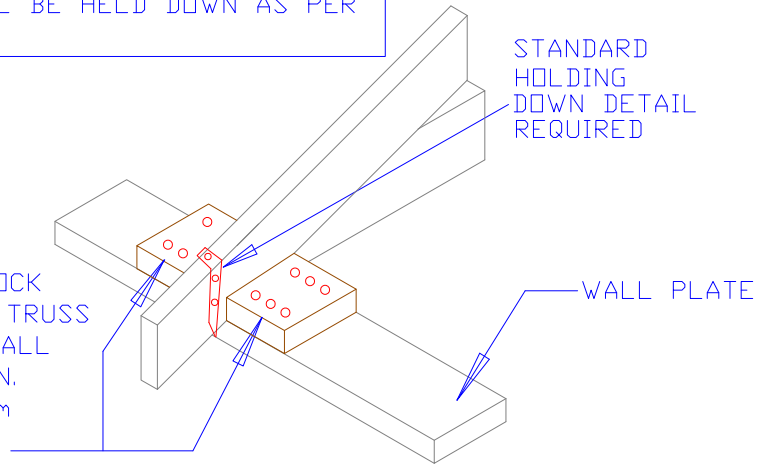
TRUSS HOLDING DOWN DETAIL

TIMBALOK GLIDE SHOE



ONLY ONE SIDE OF TRUSS IS REQUIRED TO HAVE THE GLIDE SHOE FITTED WHILE THE OTHER SIDE WILL BE HELD DOWN AS PER DETAIL ON PAGE

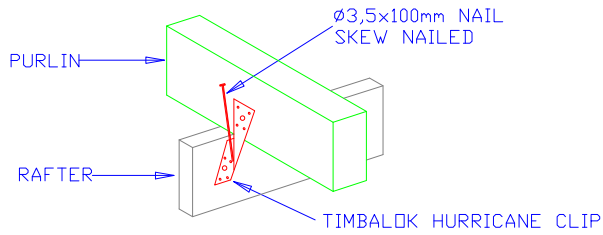
38x114 SAPG05 x 250mm TIMBER BLOCK BUTTING AGAINST TRUSS AND NAILED TO WALL PLATE WITH A MIN. OF 6No. $\varnothing 3.5 \times 75$ mm WIRE NAILS



PRODUCT	CODE
GLID SHOE TRI-STRAP	GS01 TS03

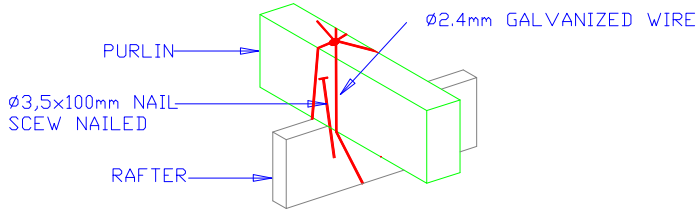
GLIDE SHOE DETAIL

TIMBALOK HURRICANE CLIP CONNECTION:



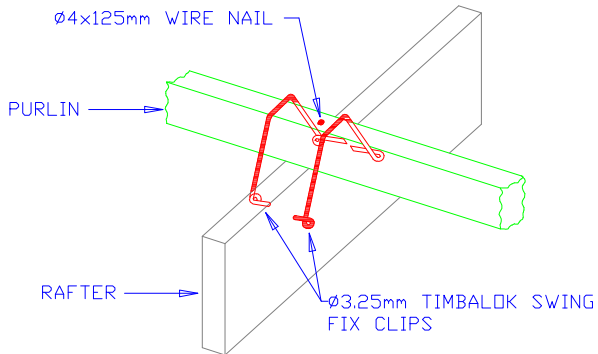
ALL TIMBALOK HURRICANE CLIPS TO BE FULLY NAILED WITH 4No. Ø2,8x32mm TIMBALOK PASSIVATED NAILS.

WIRE BOUND CONNECTION:



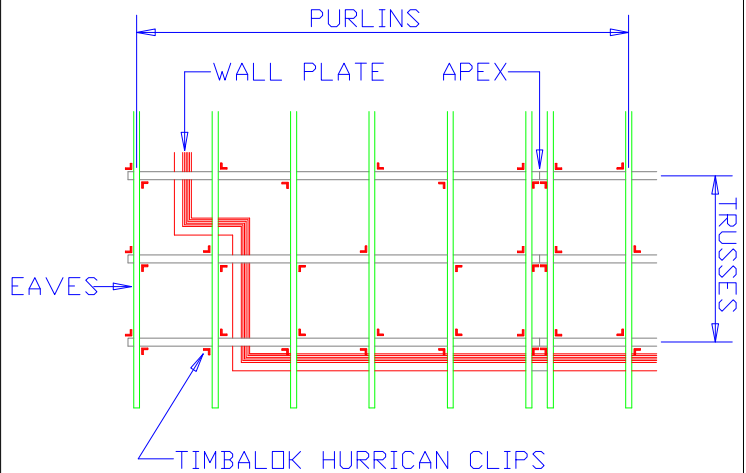
1No. 100mm SKEW DRIVEN NAIL AND TIED WITH Ø2.4mm GALVANIZED WIRE, BOUND TWICE AT EACH CONNECTION.

TIMBALOK SWING FIX CLIP CONNECTION:



1No. Ø4x125mm VERTICAL NAIL & 2No. Ø3.25mm TIMBALOK SWING FIX CLIPS FIXED AT EACH CONNECTION.

1No. FULLY NAILED TIMBALOK HURRICANE CLIP PER CONNECTION AT ALL OTHER CONNECTIONS. TIMBALOK HURRICANE CLIPS TO BE STAGGERED.



2No. FULLY NAILED TIMBALOK HURRICANE CLIPS PER CONNECTION AT ALL EAVES, OVERHANG PURLINS, RIDGE PURLINS AND GABLE ENDS. (i.e. ALL PERIMETER CONNECTIONS).

PLAN VIEW ON PURLINS

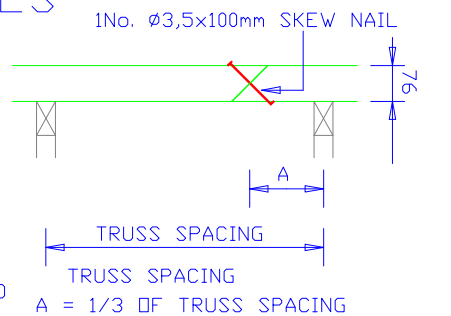
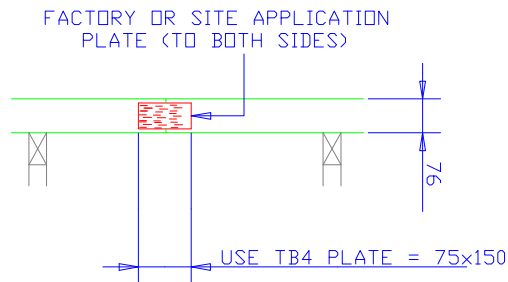
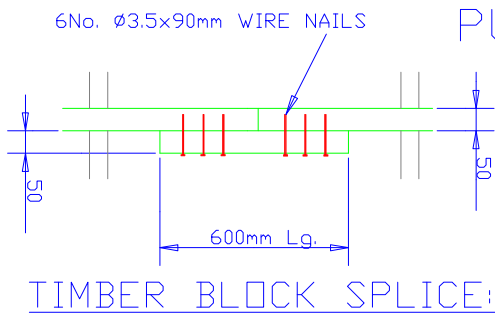
NOTE:

1. ALL PURLINS TO BE PLACED ON EDGE AND ERECTED TO THE CENTERS AS SPECIFIED ON THE TRUSS DESIGN.
2. PURLIN SPLICING TO BE STAGGERED. (REFER TO DETAILS BELOW).
3. 1 OR 2No. TIMBALOK HURRICANE CLIPS PER CONNECTION AS PER PLAN VIEW ABOVE.
4. ALL TIMBALOK HURRICANE CLIPS MUST BE FULLY NAILED WITH EITHER 5No. Ø2,8x32mm CLOUT NAILS OR 4No. TIMBALOK PASSIVATED NAILS INTO EACH MEMBER. (i.e. TRUSS AND PURLIN).

NOTE: IF ALTERNATIVE DETAILS ARE SUPPLIED BY THE DESIGN ENGINEER, THEY TAKE PREFERENCE TO THE ABOVE.

VARIOUS 50x76 (SAPG05) PURLIN CONNECTION OPTIONS

PURLIN SPLICE DETAILS

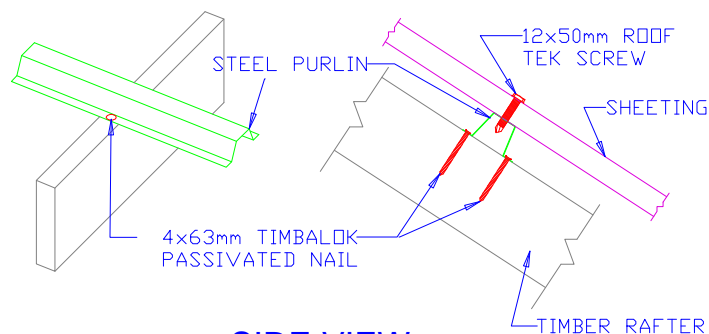


TIMBER BLOCK SPLICE:

PLATED SPLICE:

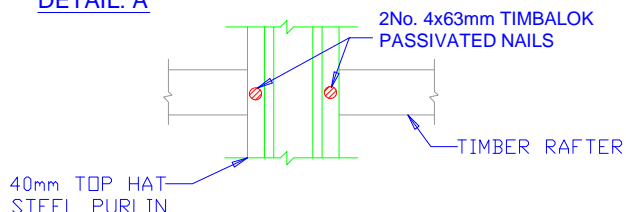
SPLAY CUT SPLICE

TRI-PURLIN CONNECTION:



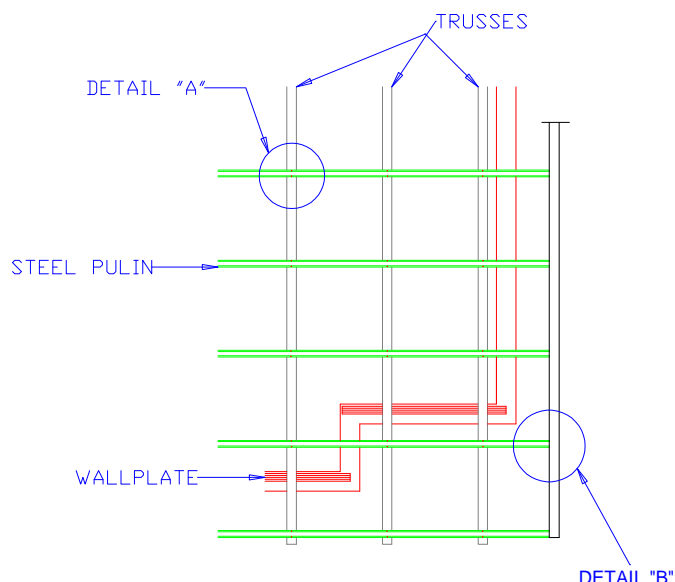
SIDE VIEW

DETAIL: A



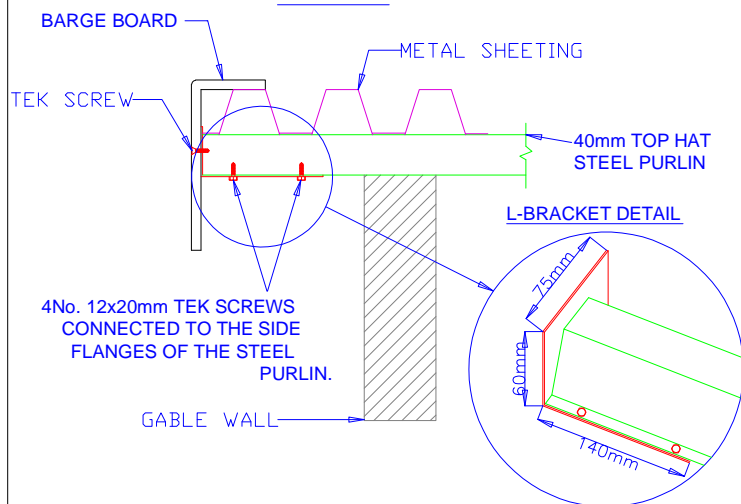
PRODUCT	CODE
TRI - PURLIN	TSP01
TIMBALOK 63mm NAIL	TSN01

PLAN VIEW ON PURLINS:



BARGE BOARD FIXING DETAIL.

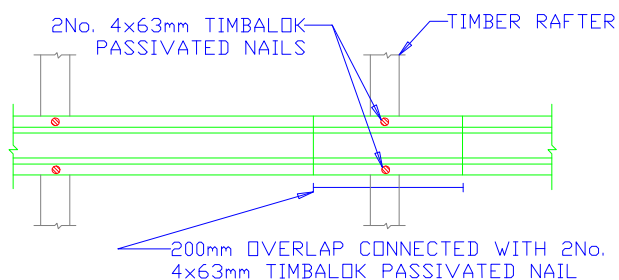
DETAIL: B



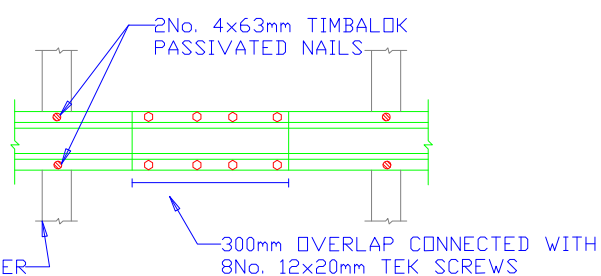
NOTE:

1. ALL PURLINS TO BE SET OUT TO THE CENTERS AS SPECIFIED ON THE TRUSS DESIGN / ROOF PLAN LAYOUT.
2. PURLIN SPLICING TO BE STAGGERED SO THAT THE SPLICE DOES NOT OCCUR IN THE SAME ROW. (REFER TO DETAILS BELOW FOR SPLICING).
3. MAXIMUM CENTERS FOR TRUSSES WITH SHEETING COVER IS 1400mmc/c AND PURLINS CENTERS AT MAXIMUM 1200mmc/c. FOR TILED ROOFS THE MAXIMUM TRUSS CENTERS ARE 1200mmc/c & THE BATTENS CENTERS AT MAXIMUM 400mmc/c.
NOTE: IF TRUSS CENTERS ARE SET OUT AT 1400mmc/c THEN CONSIDERATION IS TO BE GIVEN TO CEILING BRANDING TYPE AND FIXING.
4. TIMBALOK NAILS TO BE 4x63mm PASSIVATED FULLY DRIVEN INTO TIMBER RAFTER.

STEEL PURLIN SPLICE DETAILS



SPLICE ON A TRUSS:



SPLICE BETWEEN TRUSS:

GENERAL CEILING NOTES

GENERAL NOTES - FIXED CEILINGS

- 1) FOR THE CEILING TO BRACE THE BOTTOM CHORD OF THE TRUSS, THE BRANDERING WILL BE FIXED DIRECTLY TO THE UNDERSIDE OF THE BOTTOM CHORDS WITH ONE NAIL PER JOINT FOR MATERIAL OF SIZE 38mm X 38mm, CENTRED AT DISTANCES NOT EXCEEDING 450mm.
- 2) BRANDERING SHALL BE CONTINUOUS OVER AT LEAST THREE BAYS AND SHALL BE STAGGERED TO ENSURE THAT SPLICES DO NOT OCCUR IN ONE LINE.
- 3) TEMPORARY RUNNERS AND BOTTOM-CHORD BRACING SHALL BE INSTALLED IN ALL CASES IF A SHEETED ROOF COVERING IS TO BE SECURED BEFORE THE BRANDERING HAS BEEN FULLY SECURED AND BRACED UP TO X SPAN, THERE AFTER PERMANENT BOTTOM-CHORD BRACING AND RUNNERS WILL BE USED.
- 4) NAILS TO BE USED:
75mm WIRE NAILS TO BE 3.5 DIA
- 5) TIMBERS TO BE USED:
BRANDERING TO BE MIN GRADE 5 AND TO COMPLY WITH SANS 1783-4
- 4) BRANDERING TO BOTTOM CHORD CONNECTION:
38 X 38 - USE 1 NO. 75mm X 3.5mm DIA WIRE NAIL
38 X 50 ON EDGE - USE 1 NO. 100mm X 3.5mm DIA WIRE NAIL
50 X 50 - USE 1 NO. 100mm X 3.5mm DIA WIRE NAIL
- 6) BRACING RUNNER JOINTS TO BE STAGGERED AND SPLICED ACCORDING TO DETAILS PROVIDED. ALL BRACING MEMBERS TO COMPLY WITH THE DETAILS PROVIDED BY THE SYSTEM ENGINEER AND TO BE FIXED INTO POSITION BEFORE ROOF IS LOADED.. ALL BRACINGS WHERE REQUIRED MUST BE NAILED TO ALL PLY'S OF 2PLY, 3PLY AND 4PLY GIRDERS.

GENERAL NOTES - SUSPENDED CEILINGS OR NO CEILINGS INSTALLED

- 1) FOR THE CEILING TO BE HUNG FROM PURLINS, BRANDERING OR METAL T-SECTIONS, AS WITH SUSPENDED CEILINGS AND THE TRUSS SPACING DOES NOT EXCEED 1500mm, PERMANENT AND CONTINUOUS RUNNERS OF SIZE 38mm X 76mm SHALL BE PROVIDED AND FIXED TO THE BOTTOM CHORDS OF THE TRUSS WITH AT LEAST TWO WIRE NAILS PER CONNECTION OF RUNNER AND CHORD.
- 2) THE ROOF COVERING SHALL NOT BE FIXED UNTIL SUCH TIME AS THE RUNNERS AND BOTTOM CHORD DIAGONAL BRACING ARE IN POSITION AND ALL BRACING HAS BEEN INSTALLED.
- 3) NAILS TO BE USED:
75mm WIRE NAILS TO BE 3.5 DIA
- 4) TIMBERS TO BE USED:
RUNNERS TO BE MIN 38mm X 76mm GRADE 5
DIAGONAL BOTTOM CHORD BRACING TO BE MIN 38mm X 114mm GRADE 5
- 5) BRACING RUNNER JOINTS TO BE STAGGERED AND SPLICED ACCORDING TO DETAILS PROVIDED. ALL BRACING MEMBERS TO COMPLY WITH THE DETAILS PROVIDED BY THE SYSTEM ENGINEER AND TO BE FIXED INTO POSITION BEFORE ROOF IS LOADED.. ALL BRACINGS WHERE REQUIRED MUST BE NAILED TO ALL PLY'S OF 2PLY, 3PLY AND 4PLY GIRDERS.

GENERAL ROOFING NOTES

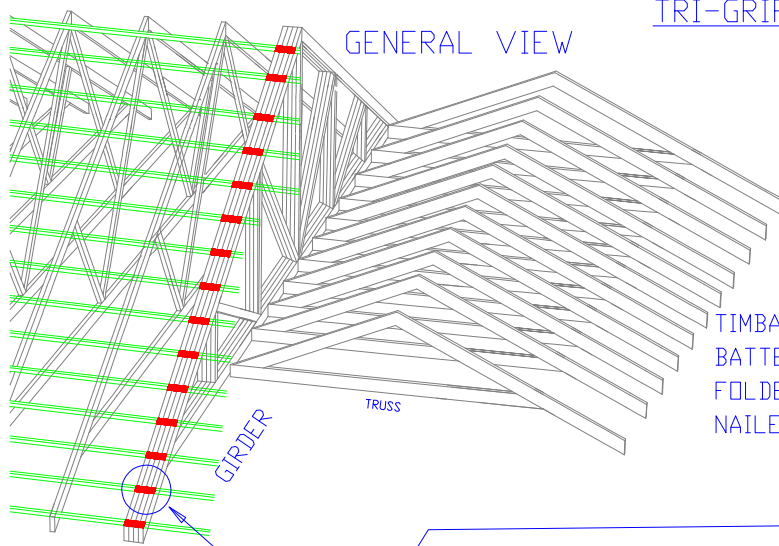
GENERAL NOTES - TILED ROOFS

- 1) NAILS TO BE USED:
Ø2,8x32mm TIMBALOK PASSIVATED NAILS AS SPECIFIED
Ø3,5x75mm & Ø3,5x100mm WIRE NAILS
MIN. NAIL SPACING = 10No. NAIL DIA (SABS 0163-2, 8.2.3.1)
MIN. NAIL DISTANCE = 5No. NAIL DIA (SABS 0163-2, 8.2.3.1)
MIN. END DISTANCE = 15No. NAIL DIA (SABS 0613-2, 8.2.3.1)
- 2) TIMBERS TO BE USED:
BRACING TIMBER TO BE A MIN OF SAPG05
BATTENS TO COMPLY WITH SANS 1783-4
WALL PLATES TO BE A MIN. OF 38x76 SAPG05
- 3) ALL TRUSSES TO BE PLUMB & STRAIGHT BEFORE BATTENS & BRACING ARE CONNECTED.
- 4) BATTEN TO RAFTER CONNECTION:
38x38 SAPG05 - USE 1No. Ø3.5x75mm WIRE NAIL
38x50 SAPG05 ON EDGE - USE 1No. Ø3.5x100mm WIRE NAIL
50x50 SAPG05 - USE 1No. Ø3.5x100mm WIRE NAIL
- 5) BATTEN JOINTS TO BE STAGGERED WHERE NO MORE THEN ONE BATTEN SPLICE IN ANY THREE ADJACENT BATTENS TO OCCUR ON ANY ONE RAFTER.
- 6) BRACING RUNNER JOINTS TO BE STAGGERED AND SPLICED ACCORDING TO DETAILS PROVIDED. ALL BRACING MEMBERS TO COMPLY WITH THE DETAILS PROVIDED BY THE SYSTEM ENGINEER AND TO BE FIXED INTO POSITION BEFORE ROOF IS LOADED.. ALL BRACINGS WHERE REQUIRED MUST BE NAILED TO ALL PLY'S OF 2PLY, 3PLY AND 4PLY GIRDERS.
- 7) LOADING ROOF TO BE DONE EQUALLY.
- 8) GEYSER'S TO SIT ON INTERNAL WALLS OR TO COMPLY WITH THE GEYSER PLATFORM DETAILS AS PROVIDED BY SYSTEM ENGINEER.
- 9) ALL ROOFS SHOULD TO BE INSPECTED BY THE SYSTEM ENGINEER OR AN I.T.C INSPECTOR IN ACCORDANCE WITH THE A19

GENERAL NOTES - SHEETED ROOFS

- 1) NAILS TO BE USED:
Ø2,8x32mm TIMBALOK PASSIVATED NAILS AS SPECIFIED
Ø3,5x75mm & Ø3,5x100mm WIRE NAILS
MIN. NAIL SPACING = 10No. NAIL DIA (SABS 0163-2, 8.2.3.1)
MIN. NAIL DISTANCE = 5No. NAIL DIA (SABS 0163-2, 8.2.3.1)
MIN. END DISTANCE = 15No. NAIL DIA (SABS 0613-2, 8.2.3.1)
- 2) TIMBERS TO BE USED:
BRACING TIMBER TO BE A MIN OF SAPG05
BATTENS TO COMPLY WITH SANS 1783-4
WALL PLATES TO BE A MIN. OF 38x76 SAPG05
- 3) ALL TRUSSES TO BE PLUMB & STRAIGHT BEFORE BATTENS & BRACING ARE CONNECTED.
- 4) PURLIN TO RAFTER CONNECTION:
50x76 SAPG05 ON EDGE - USE 1No. Ø3.5x100mm WIRE NAIL WITH 1No. TIMBALOK HURRICANE CLIP PER CONNECTION.
50x76 SAPG05 ON EDGE - USE 1No. Ø3.5x125mm WIRE NAIL WITH 2No. TIMBALOK SWING FIX CLIPS.
- 5) PURLIN JOINTS TO BE STAGGERED AS PER DETAILS PROVIDED.
- 6) BRACING RUNNER JOINTS TO BE STAGGERED AND SPLICED ACCORDING TO DETAILS PROVIDED. ALL BRACING MEMBERS TO COMPLY WITH THE DETAILS PROVIDED BY THE SYSTEM ENGINEER AND TO BE FIXED INTO POSITION BEFORE ROOF IS LOADED.. ALL BRACINGS WHERE REQUIRED MUST BE NAILED TO ALL PLY'S OF 2PLY, 3PLY AND 4PLY GIRDERS.
- 7) LOADING ROOF TO BE DONE EQUALLY.
- 8) GEYSER'S TO SIT ON INTERNAL WALLS OR TO COMPLY WITH THE GEYSER PLATFORM DETAILS AS PROVIDED BY SYSTEM ENGINEER.
- 9) ALL ROOFS SHOULD TO BE INSPECTED BY THE SYSTEM ENGINEER OR AN I.T.C INSPECTOR IN ACCORDANCE WITH THE A19

TRI-GRIP DETAIL



- 1.FOR BATTENS SPACED AT LESS THAN 400mm c/c CONNECT EVERY 2ND BATTEN TO GIRDER WITH TRI-GRIP BRACKETS AS SHOWN. SELECT BATTENS WHICH ARE CONTINUOUS OVER BRACED BAYS.
- 2.FOR PURLINS (USUALLY SPACED AT MORE THAN 800mm c/c) CONNECT EACH PURLIN AS SHOWN.

TIMBALOK TRI-GRIP BRACKET TO BE USED BOTH SIDES OF BATTEN / PURLIN, POSITIONED OFFSET AS SHOWN, FOLDED OVER ON OPPOSITE SIDES OF RAFTER AND FULLY NAILED WITH TIMBALOK PASSIVATED $\phi 2,8 \times 32$ mm NAILS.

ISOMETRIC VIEW

PLAN VIEW

BATTEN / PURLIN

BATTEN / PURLIN

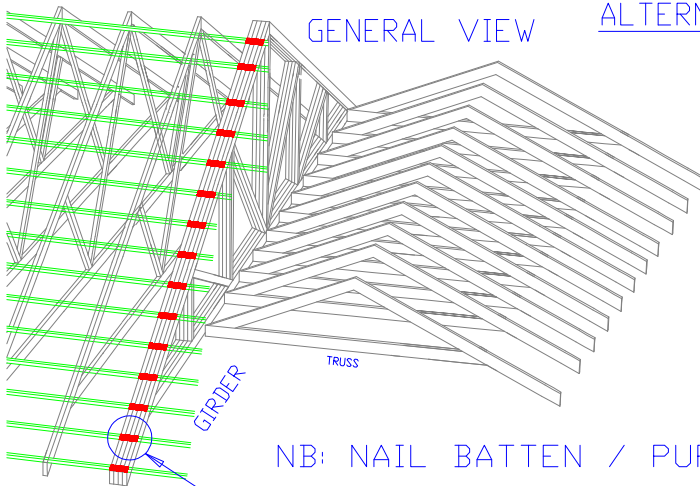
ELEVATION ON RAFTER

BATTEN / PURLIN

RAFTER

GIRDER TOP CHORD

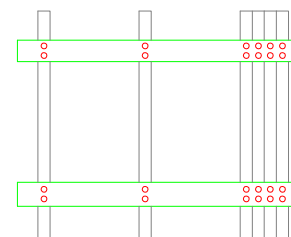
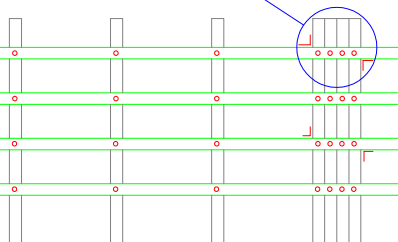
ALTERNATIVE DETAIL



- 1.FOR BATTENS SPACED AT LESS THAN 400mm c/c CONNECT EVERY 2ND BATTEN TO GIRDER WITH A PAIR OF METAL ANGLE CLIPS OR SIMILAR BRACKETS ON OPPOSITE SIDES AS SHOWN. SELECT BATTENS THAT ARE CONTINUOUS OVER BRACED BAYS.
- 2.WHERE NO CLIPS CAN BE USED DUE TO TILE UNDERLAY/DAMP PROOFING LAYER USE 38x76 SAPG05 RUNNERS AT 600mm C/C NAILED TO EACH PLY TO UNDERSIDE OF TOP CHORD & OVER TWO ADJACENT TRUSSES. 2No. $\phi 3,5 \times 75$ mm WIRE NAILS PER CONNECTION. (i.e. FOUR PLY = EIGHT NAILS - TWO NAILS INTO EACH PLY)

NB: NAIL BATTEN / PURLIN INTO EVERY PLY OF GIRDER

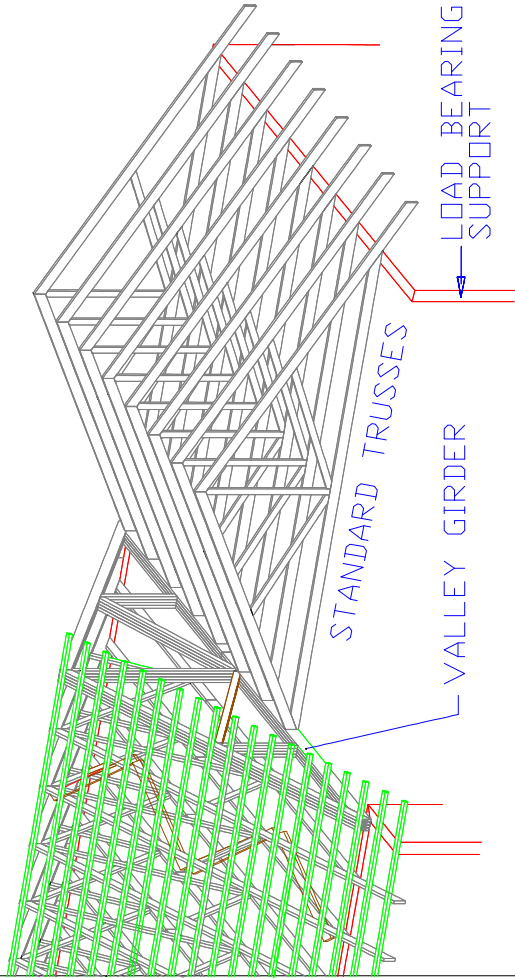
3. FOR PURLINS (USUALLY SPACED MORE THAN 800mm C/C) CONNECT EACH PURLIN WITH 4No. TIMBALOK HURRICANE CLIPS PER CONNECTION.



PURLIN/BATTEN TO MULTIPLY GIRDER DETAILS

CONCRETE OPTION

TYPICAL 3D VIEW - VALLEY GIRDER AND STANDARD TRUSSES



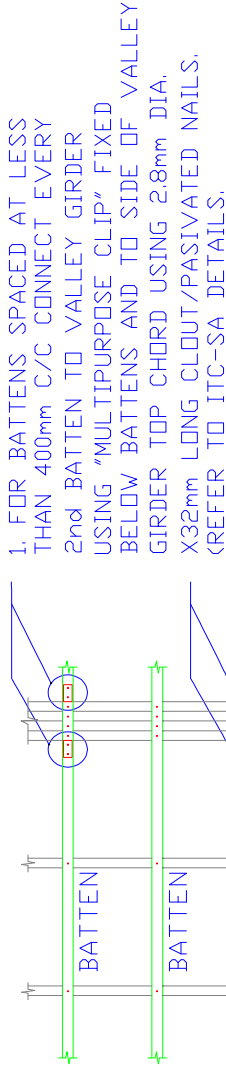
"MULTIPURPOSE CLIP" TO BATTEN CONNECTION

NB: NAIL BATTEN INTO EVERY PLY OF GIRDER USING 3.5mm DIA. X 75mm WIRE NAILS.

2ND, "MULTIPURPOSE CLIPS" TO UNDERSIDE OF BATTEN (ONE EACH SIDE) FULLY NAILED USING 2.8mm DIA. X 32mm LONG CLOUT/PASIVATED NAILS.

2,3 OR 4 PLY VALLEY GIRDER T.C.

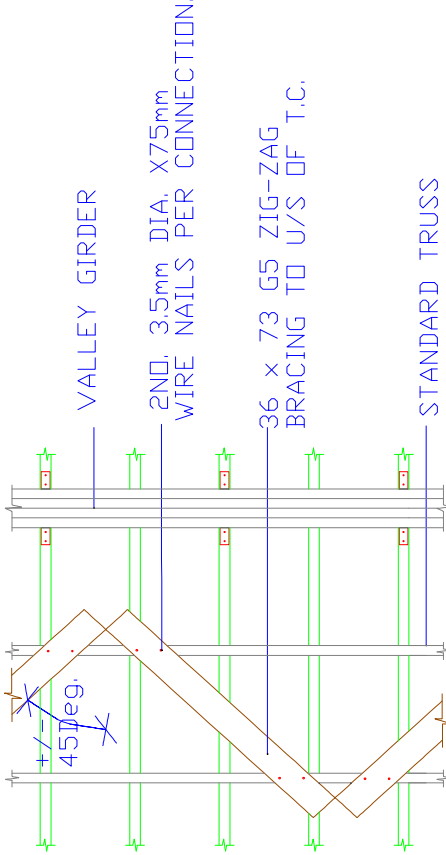
BATTEN TO VALLEY GIRDER TOP CHORD CONNECTION.



STANDARD TRUSS

2,3 OR 4 PLY GIRDER

NB: NAIL BATTEN INTO EVERY PLY OF GIRDER USING 3.5mm DIA. X75mm WIRE NAILS.



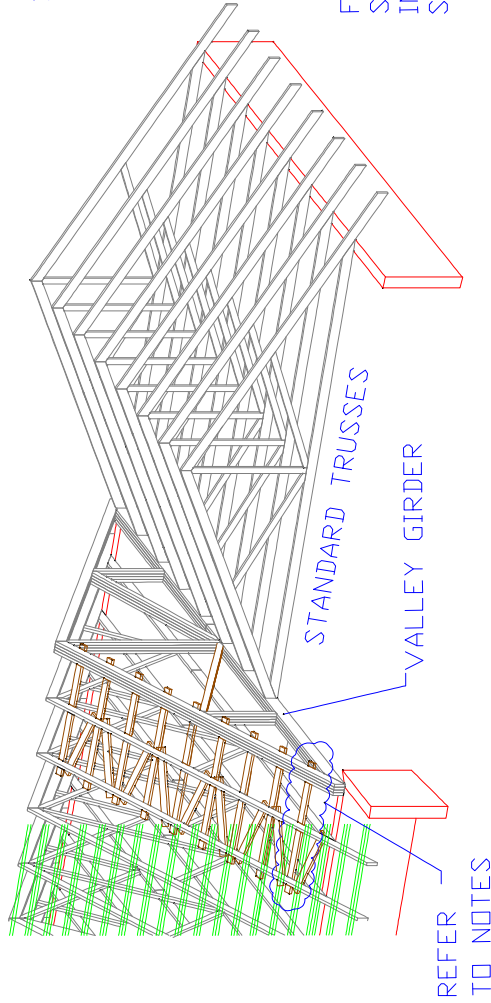
2ND, 3.5mm DIA. X75mm WIRE NAILS PER CONNECTION.
36 x 73 G5 ZIG-ZAG BRACING TO U/S OF T.C.

VALLEY - CONCRETE OPTION

CONCRETE TILE OPTION (ALTERNATIVE)

TYPICAL 3D VIEW - VALLEY GIRDER AND STANDARD TRUSSES

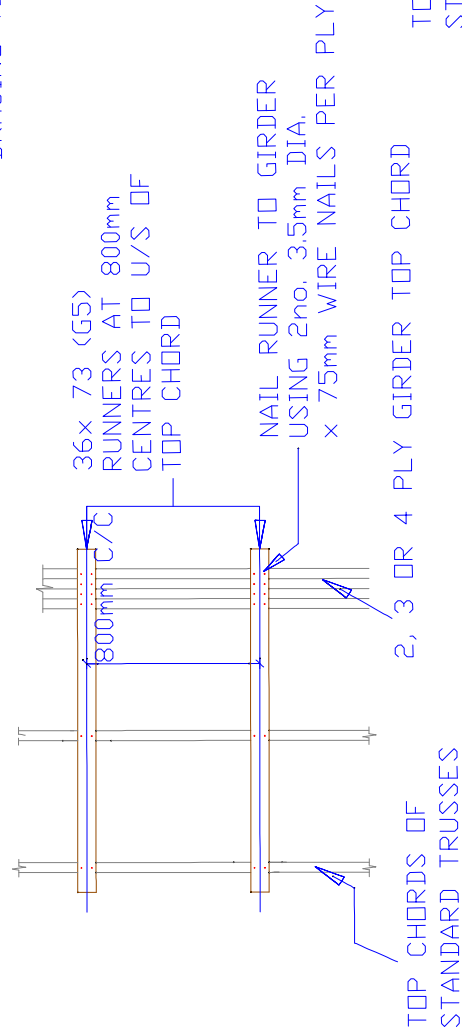
NOTES:



1. WHERE NO "MULTIPURPOSE CLIP" CAN BE USED DUE TO TILE UNDERLAY/INSULATION, USE 36x 73 G5 RUNNER AT 800mm CENTRES NAILED TO EACH PLY TO UNDERSIDE OF TOP CHORD AND OVER TWO ADJACENT TRUSSES, 2no. 3.5mm DIA. X 75mm WIRE NAILS PER CONNECTION. IE. FOUR PLY= EIGHT NAILS- TWO INTO EACH PLY

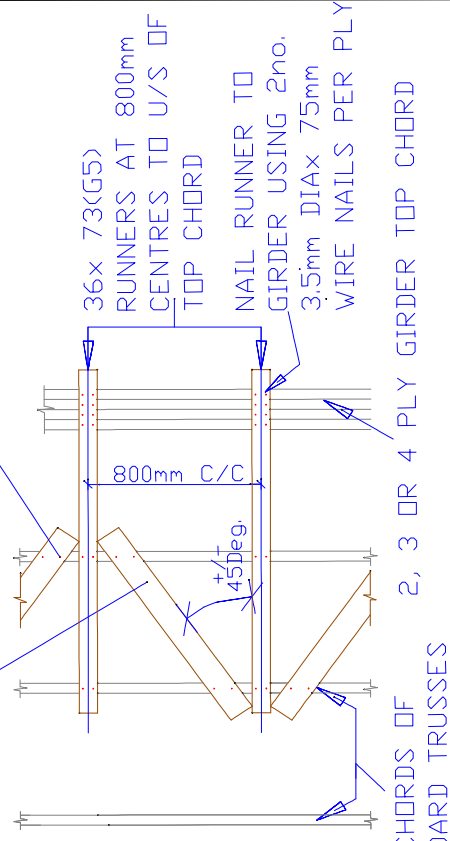
FOR SPANS BELOW 9000mm ADD ZIG-ZAG BRACING IN SECOND SPACING FROM GIRDER AS SHOWN BELOW, FOR SPANS IN EXCESS OF 9000mm ADD A TOP BRACING STIFFENER FRAME WITH FIXING AS PER ITC-SA DETAILS

NATIVE TO "MULTI PURPOSE CLIP" ADDERS AS SHOWN BELOW



36x 73(G5) ZIG-ZAG BRACING TO U/S OF T.C

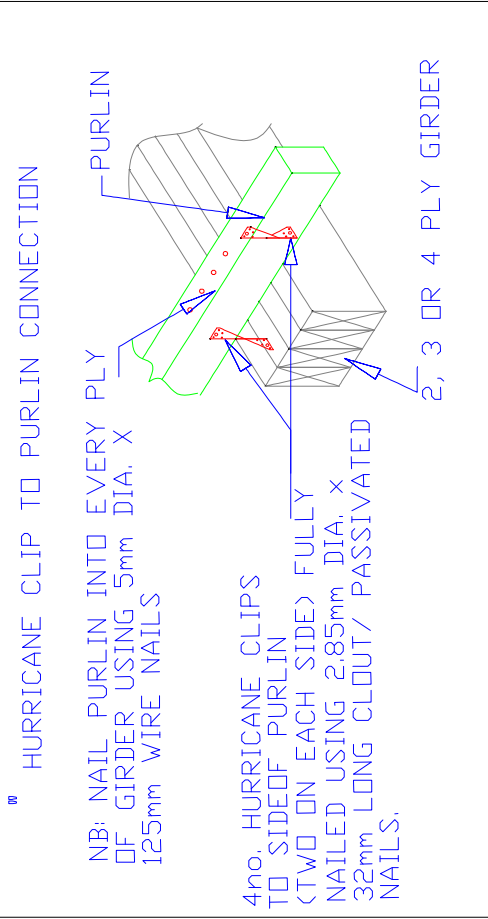
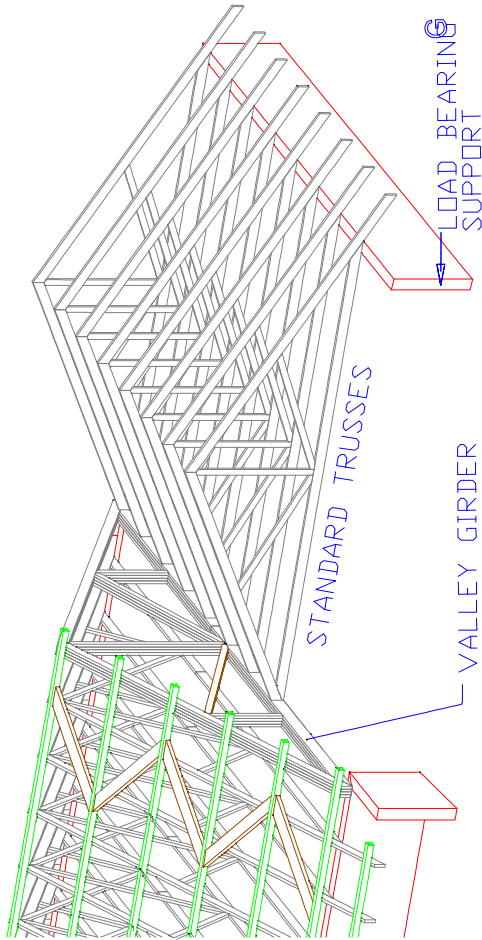
2no. 3.5mm DIA. X75mm WIRE NAILS PER CONNECTION



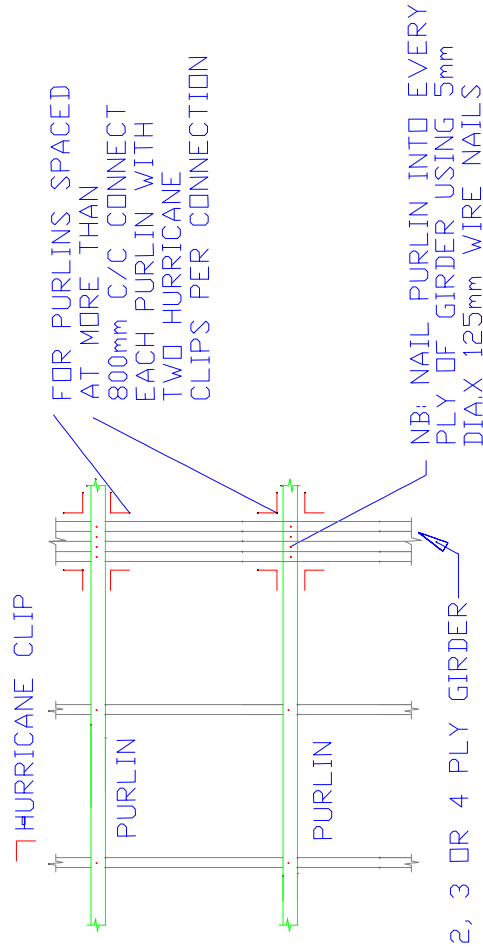
ALTERNATIVE OPTION, RUNNERS TO UNDERSIDE OF TOP CHORDS FOR THREE OR FOUR PLY VALLEY GIRDERS. TILED ROOF OPTION BATTENS AT 345 C/C AND LESS

METAL SHEET OPTION

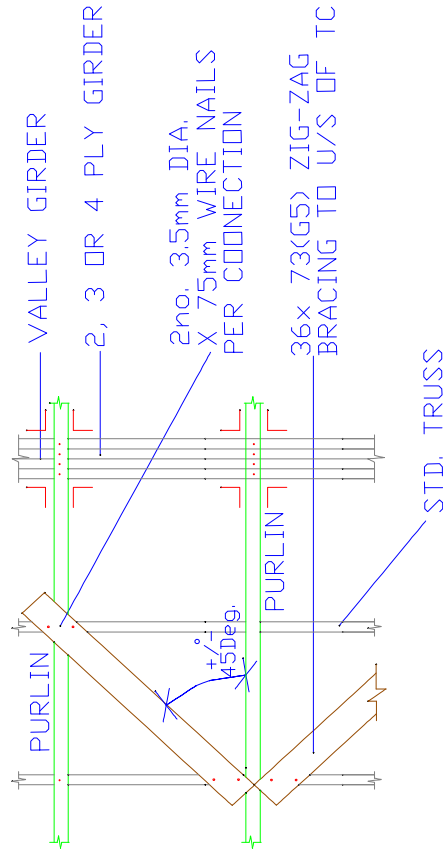
TYPICAL 3D VIEW – VALLEY GIRDER AND STANDARD TRUSSES



PURLIN TO VALLEY GIRDER TOP CHORD CONNECTION FOR PURLINS SPACED OVER 800mm C/C



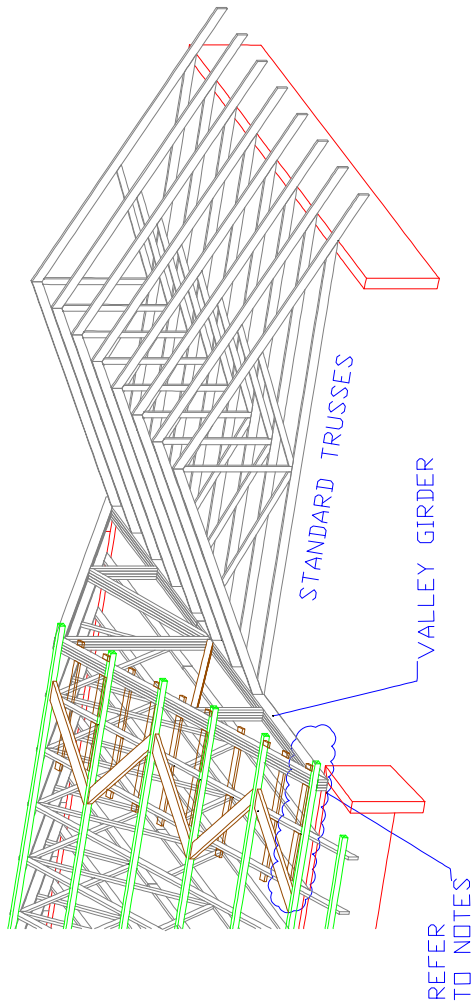
FOR SPANS BELOW 9000mm ADD ZIG-ZAG BRACING IN SECOND SPACING FROM GIRDER AS SHOWN BELOW FOR SPANS IN EXCESS OF 9000mm ADD A TOP CHORD BRACING STIFFENER FRAME WITH FIXING AS PER ITC-SA DETAILS



PURLIN CONNECTION TO THREE OR FOUR PLY GIRDERS.

METAL SHEETING OPTION (ALTERNATIVE)

TYPICAL 3D VIEW-VALLEY GIRDER AND STANDARD TRUSSES

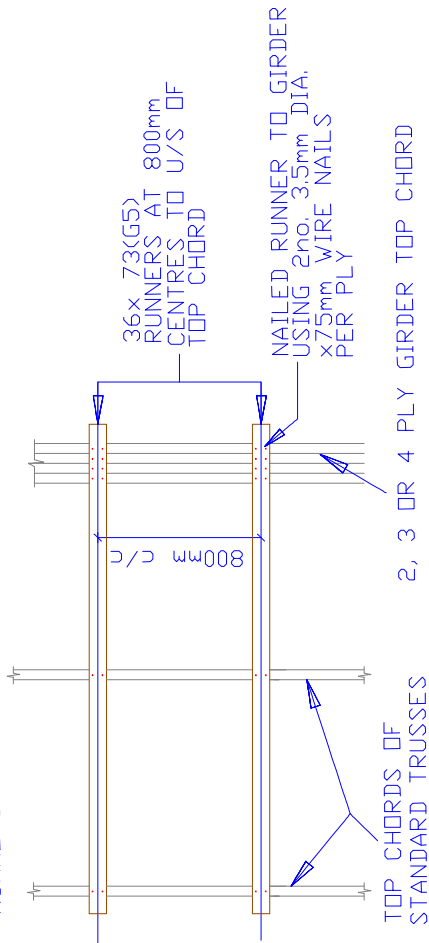


NOTES:

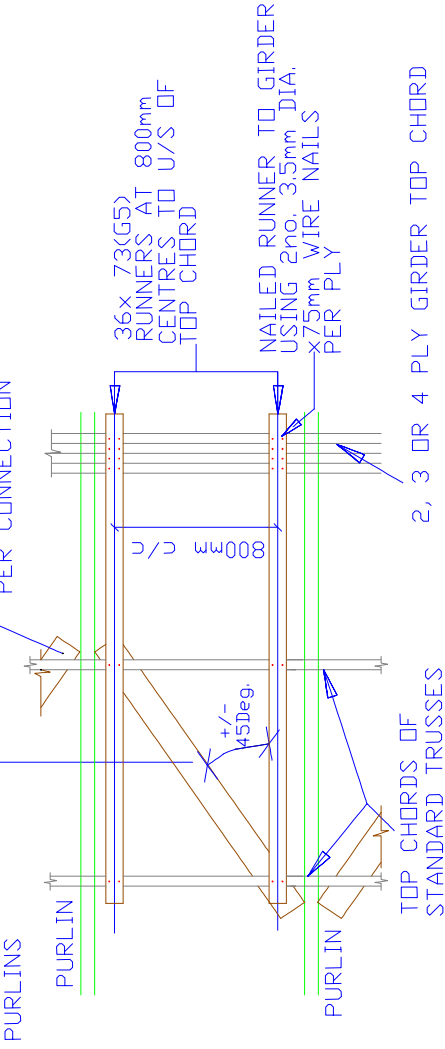
1. WHERE NO "MULTIPURPOSE CLIP" CAN BE USED DUE TO SISALATION, USE 36x 73(G5) RUNNERS AT 800mm CENTRES NAILED TO EACH PLY TO UNDERSIDE OF TOP CHORD AND OVER TWO ADJACENT TRUSSES, 2no. 3.5mm DIA. x75mm WIRE NAILS PER CONNECTION
(IE. FOUR PLY=EIGHT NAILS- TWO NAILS INTO EACH PLY

FOR SPANS BELOW 9000mm ADD ZIG-ZAG BRACING IN SECOND SPACING FROM GIRDER AS SHOWN BELOW, FOR SPANS IN EXCESS OF 9000mm ADD A TOP CHORD BRACING STIFFENER FRAME WITH FIXING AS PER ITC-SA DETAILS

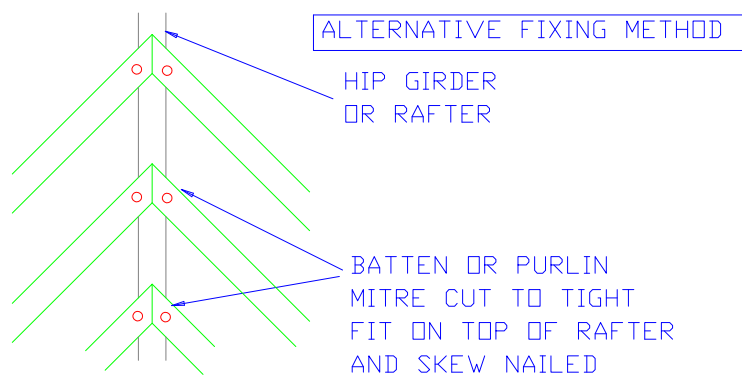
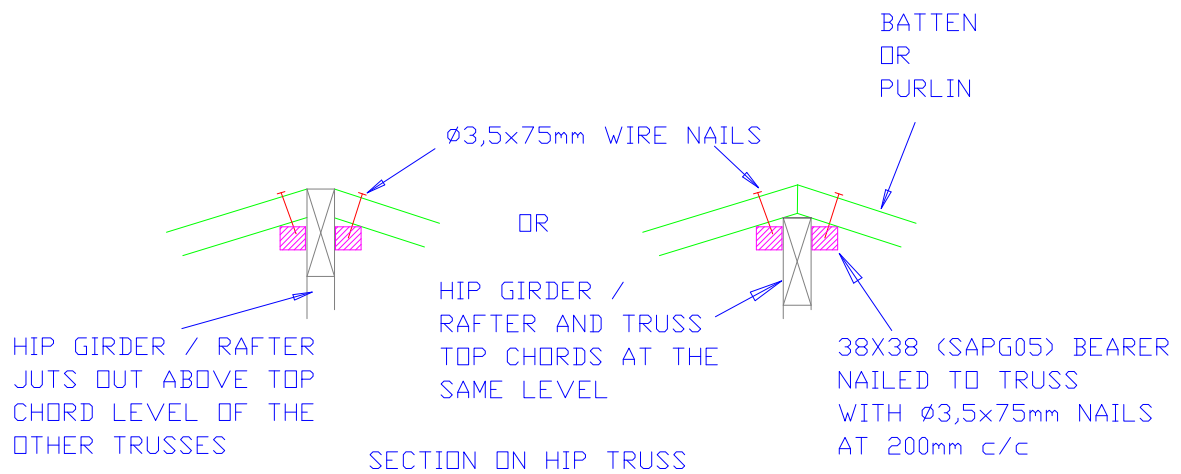
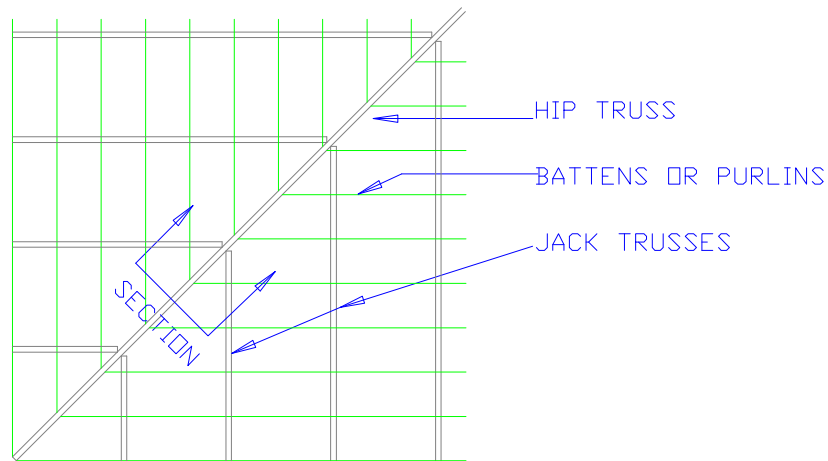
ALTERNATIVE TO "MULTI PURPOSECLIP" ADD RUNNERS AS SHOWN BELOW



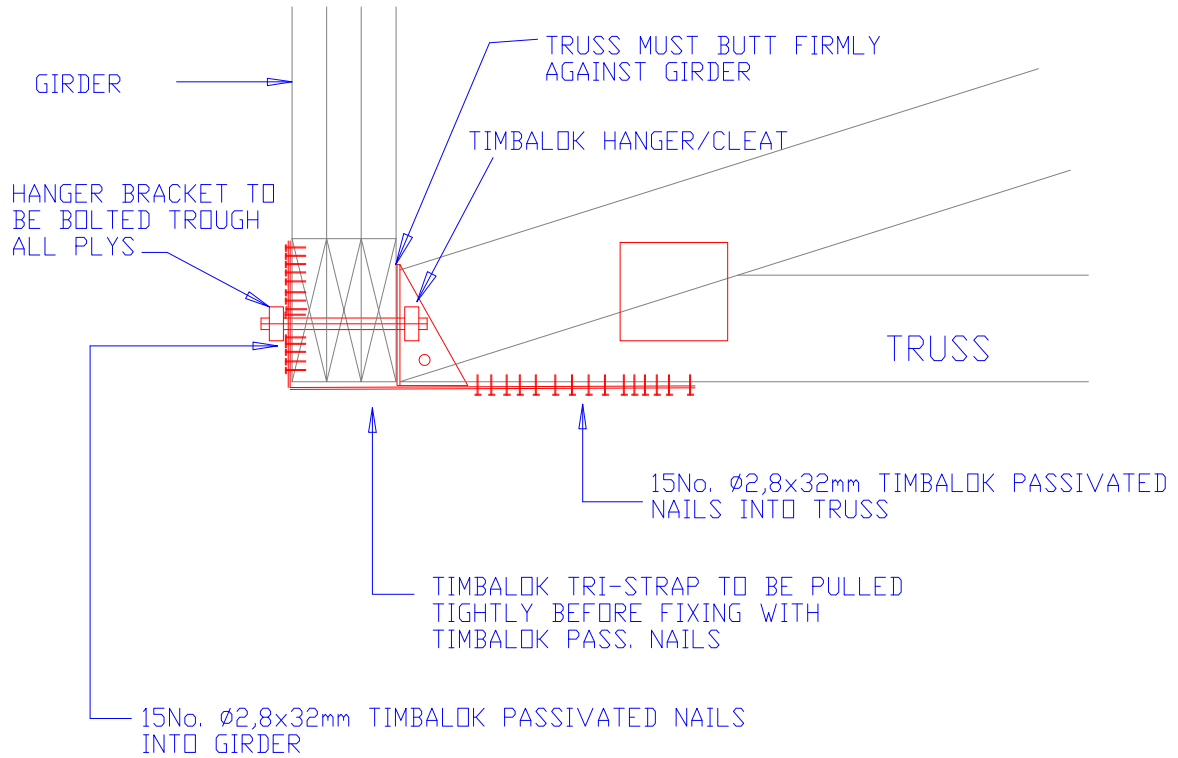
36x 73(G5) ZIG-ZAG BRACING BETWEEN PURLINS



ALTERNATIVE OPTION, RUNNERS TO UNDERSIDE OF TOP CHORDS FOR THREE OR FOUR PLY VALLEY GIRDERS, SHEETED ROOF OPTION PURLINS OVER 800 C/C



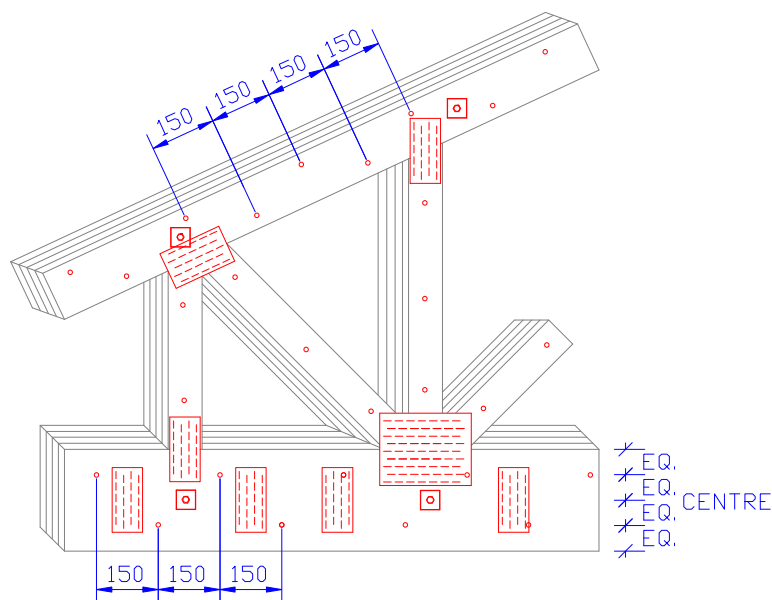
TRI-TORSION DETAIL



TORSIONAL RESTRAINT STRAP TO BE INSTALLED WHEN THE INCOMING TRUSS
SUPPORT REACTION IS $> 1.9\text{kN}$ OR WHERE THE GIRDER IS A MULTIPLE PLY

TORSIONAL RESTRAINT DETAIL

NOTE: GIRDERS TO BE BOLTED AND NAILED BEFORE ROOF IS LOADED.



TWO PLY GIRDER:

DOUBLE MEMBER GIRDER TO BE NAILED TOGETHER WITH $\varnothing 3,5 \times 100$ mm NAILS AT 150mm CENTERS STAGGERED ALONG THE TOP AND BOTTOM CHORDS AND AT 300mm CENTERS ALONG THE CENTER LINES OF THE WEBS. USE 1No. M12 BOLT WITH WASHERS AT EACH JOINT ALONG THE CENTER LINES OF CHORDS. ALL TIMBALOK TRUSS HANGERS AND CLEATS TO BE BOLTED AS PER DESIGNER SPECIFICATIONS. (AS SHOWN ON THE TRUSS DETAILS AND ROOF PLAN).

TWO PLY GIRDER: (INCOMING TRUSSES ON BOTH SIDES)

DOUBLE MEMBER GIRDER TO BE NAILED TOGETHER WITH $\varnothing 3,5 \times 100$ mm NAILS AT 150mm CENTERS STAGGERED ALONG THE TOP AND BOTTOM CHORDS AND AT 300mm CENTERS ALONG THE CENTER LINES OF THE WEBS.
NO BOLTS ARE REQUIRED WHERE THE SUPPORTED TRUSSES COME ONTO THE GIRDER FROM BOTH SIDES AND THE LOADS ARE SIMILAR.

THREE PLY GIRDER:

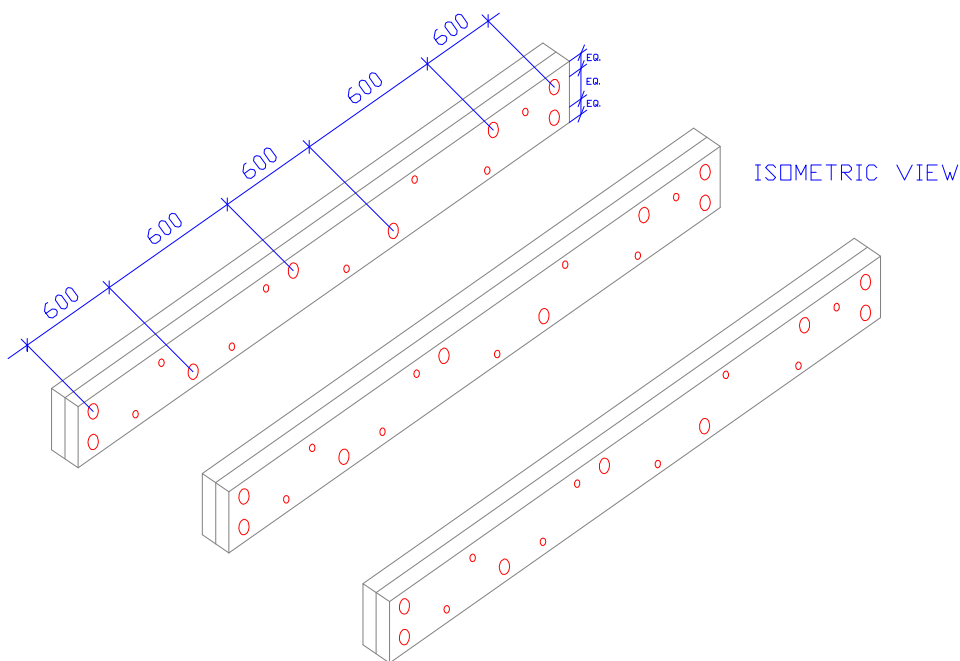
2No. TRUSSES TO BE NAILED TOGETHER WITH $\varnothing 3,5 \times 100$ mm NAILS AT 150mm CENTERS STAGGERED ALONG THE TOP AND BOTTOM CHORDS AND AT 300mm CENTERS ALONG THE CENTER LINES OF THE WEBS. THIRD MEMBER THEN TO BE SIMILARLY NAILED ONTO DOUBLE TRUSS. BOLT 1No. M12 BOLT AND WASHERS AT EACH JOINT ALONG THE CENTER LINES OF CHORDS. ALL TIMBALOK TRUSS HANGERS AND CLEATS TO BE BOLTED AS PER DESIGNER SPECIFICATIONS. (AS SHOWN ON THE TRUSS DETAILS AND ROOF PLAN).

FOUR PLY GIRDER:

2No. TRUSSES TO BE NAILED TOGETHER WITH $\varnothing 3,5 \times 100$ mm NAILS AT 150mm CENTERS STAGGERED ALONG THE TOP AND BOTTOM CHORDS AND AT 300mm CENTERS ALONG THE CENTER LINES OF THE WEBS. THIRD AND FORTH MEMBER THEN TO BE SIMILARLY NAILED TO EITHER SIDE OF THE DOUBLE TRUSS. BOLT 1No. M12 BOLT AND WASHERS AT EACH JOINT ALONG THE CENTER LINES OF CHORDS. ALL TIMBALOK TRUSS HANGERS AND CLEATS TO BE BOLTED AS PER DESIGNER SPECIFICATIONS. (AS SHOWN ON THE TRUSS DETAILS AND ROOF PLAN).

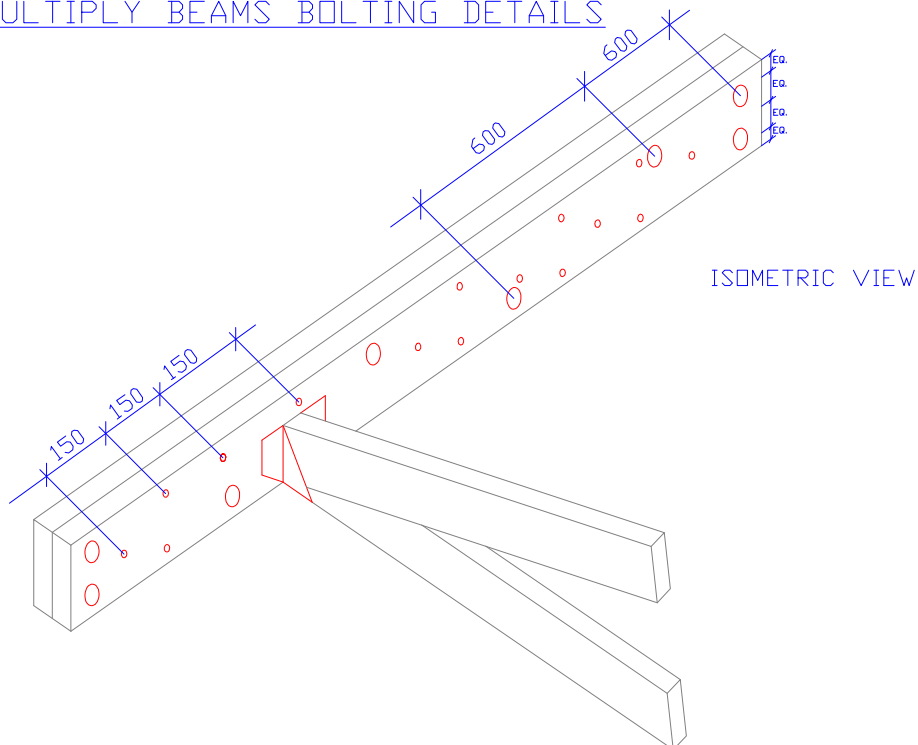
TWO, THREE AND FOUR PLY GIRDERS CONNECTION DETAILS

MULTIPLY RAFTERS BOLTING DETAILS



MULTIPLY RAFTERS TO BE NAILED TOGETHER WITH 3,5X100mm NAILS AT EACH 150mm CENTERS STAGGERED PLUS BOLTED USING M12 BOLTS WITH SQUARE WASHES AT EACH 600mm CENTERS STAGGERED TOGETHER WITH TWO BOLTS AT EACH END.

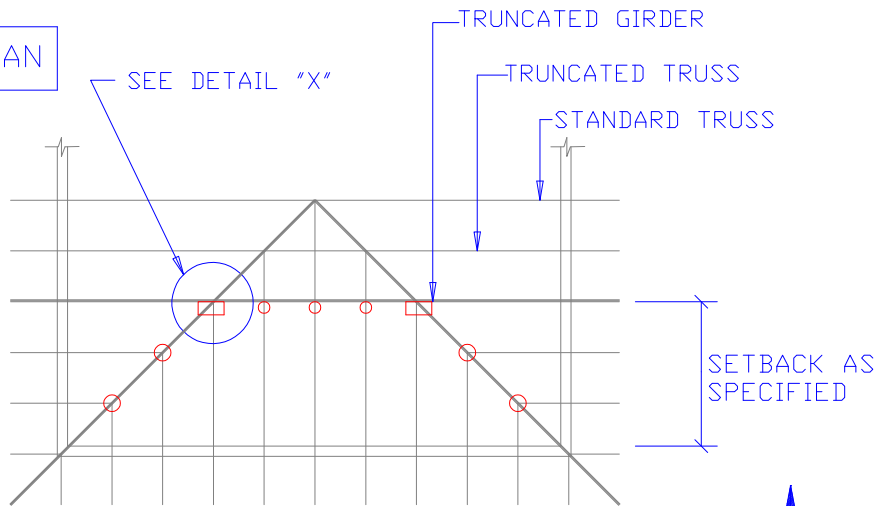
MULTIPLY BEAMS BOLTING DETAILS



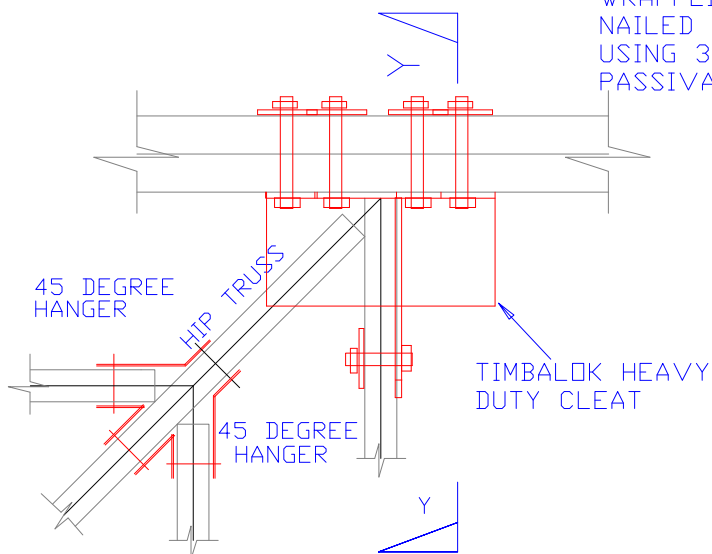
MULTIPLY BEAMS TO BE NAILED TOGETHER WITH 3,5X100mm NAILS AT EACH 150mm CENTERS STAGGERED PLUS BOLTED USING M12 BOLTS WITH SQUARE WASHES AT EACH 600mm CENTERS STAGGERED TOGETHER WITH TWO BOLTS AT EACH END.

ROOF PLAN

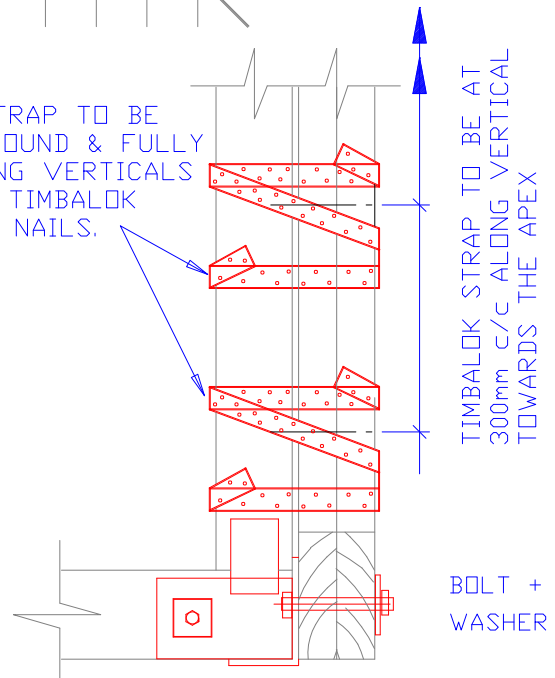
NB:
THE REQUIRED
HANGER OR CLEAT
TYPE FOR EACH
CONNECTION MUST
ALWAYS BE SHOWN
ON THE ROOF PLAN



TIMBALOK STRAP TO BE
WRAPPED AROUND & FULLY
NAILED ALONG VERTICALS
USING 32mm TIMBALOK
PASSIVATED NAILS.

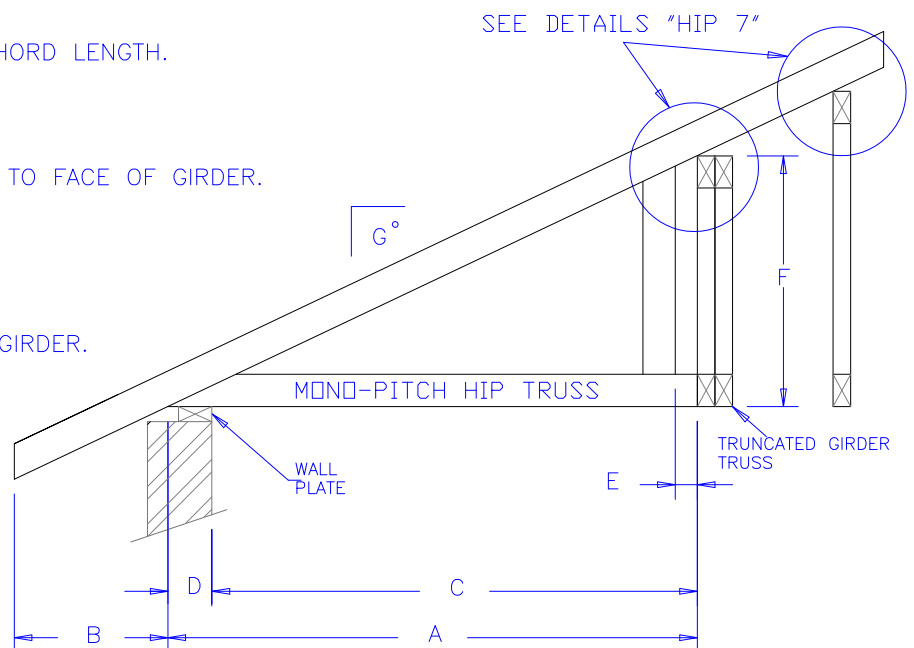


DETAIL X



SECTION Y-Y

- A – SPAN OF TRUSS / OVERALL B.CHORD LENGTH.
 $A = C + D$
- B – HORIZONTAL OVERHANG LENGTH.
- C – SETBACK DIM FROM I/SIDE WALL TO FACE OF GIRDER.
 $C = A - D$
- D – BEARING WIDTH.
- E – BOTTOM CHORD HORN LENGTH.
- F – OVERALL HEIGHT OF TRUNCATED GIRDER.
 $F = A * (\tan G)$
- G – PITCH OF TRUSS.



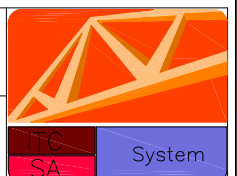
PRODUCT	CODE
TRI-STRAP	TS03
HEAVY DUTY CLEAT	HDC01
TIMBALOK M12 BOLTS	HBN100

TRUNCATED HIP CONNECTION DETAILS

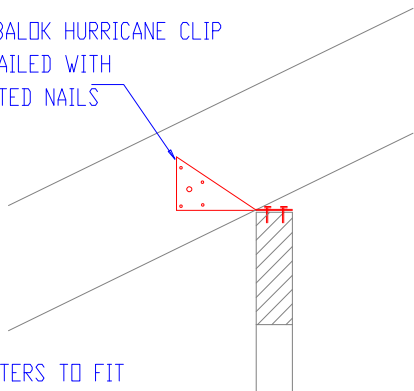
ITS STANDARD DETAIL
REF: HIP-TRUNC

PAGE: 30

REV: B
FEB 2011



1No. TIMBALOK HURRICANE CLIP
FULLY NAILED WITH
PASSIVATED NAILS

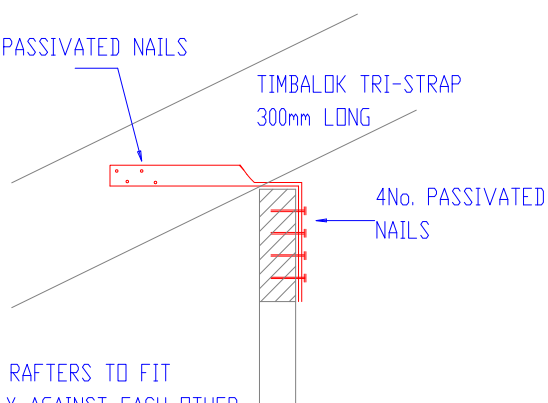


NOTE:
TRUSS RAFTERS TO FIT
TIGHTLY AGAINST EACH OTHER

TIMBALOK HURRICANE CLIP CONNECTION
OF FLY RAFTER & TRUNCATED TRUSS

4No. PASSIVATED NAILS

TIMBALOK TRI-STRAP
300mm LONG

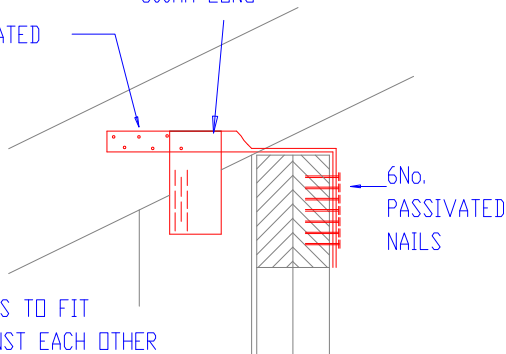


NOTE:
TRUSS RAFTERS TO FIT
TIGHTLY AGAINST EACH OTHER

TIMBALOK TRI-STRAP CONNECTION
OF FLY RAFTER & TRUNCATED TRUSS
OR SINGLE PLY GIRDERS

12x25mm TIMBALOK TRI-STRAP
500mm LONG

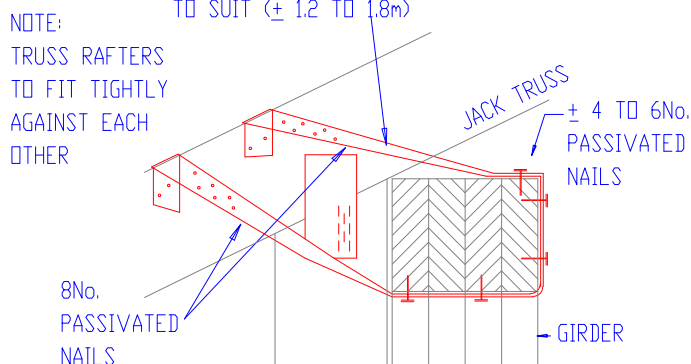
6No. PASSIVATED
NAILS



NOTE:
TRUSS RAFTERS TO FIT
TIGHTLY AGAINST EACH OTHER

TIMBALOK TRI-STRAP CONNECTION
OF FLY RAFTER & TRUNCATED
TWO PLY GIRDER

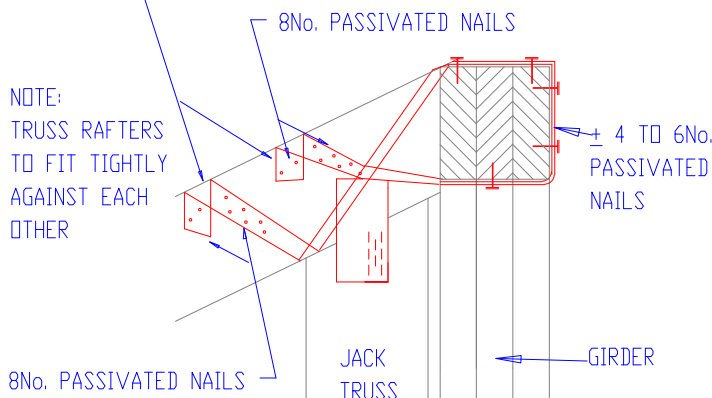
TIMBALOK TRI-STRAP LENGTH
TO SUIT (± 1.2 TO 1.8 m)



NOTE:
TRUSS RAFTERS
TO FIT TIGHTLY
AGAINST EACH
OTHER

TIMBALOK TRI-STRAP CONNECTION
OF FLY RAFTER & TRUNCATED
THREE & FOUR PLY GIRDER

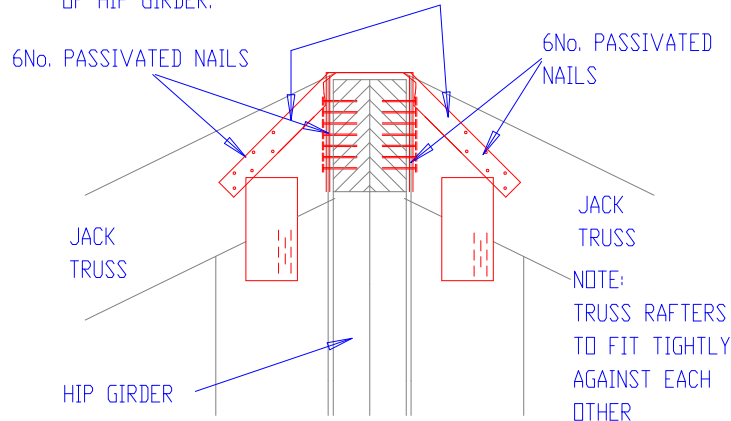
TIMBALOK TRI-STRAP LENGTH TO SUIT
(± 1.2 TO 1.8 m)



NOTE:
TRUSS RAFTERS
TO FIT TIGHTLY
AGAINST EACH
OTHER

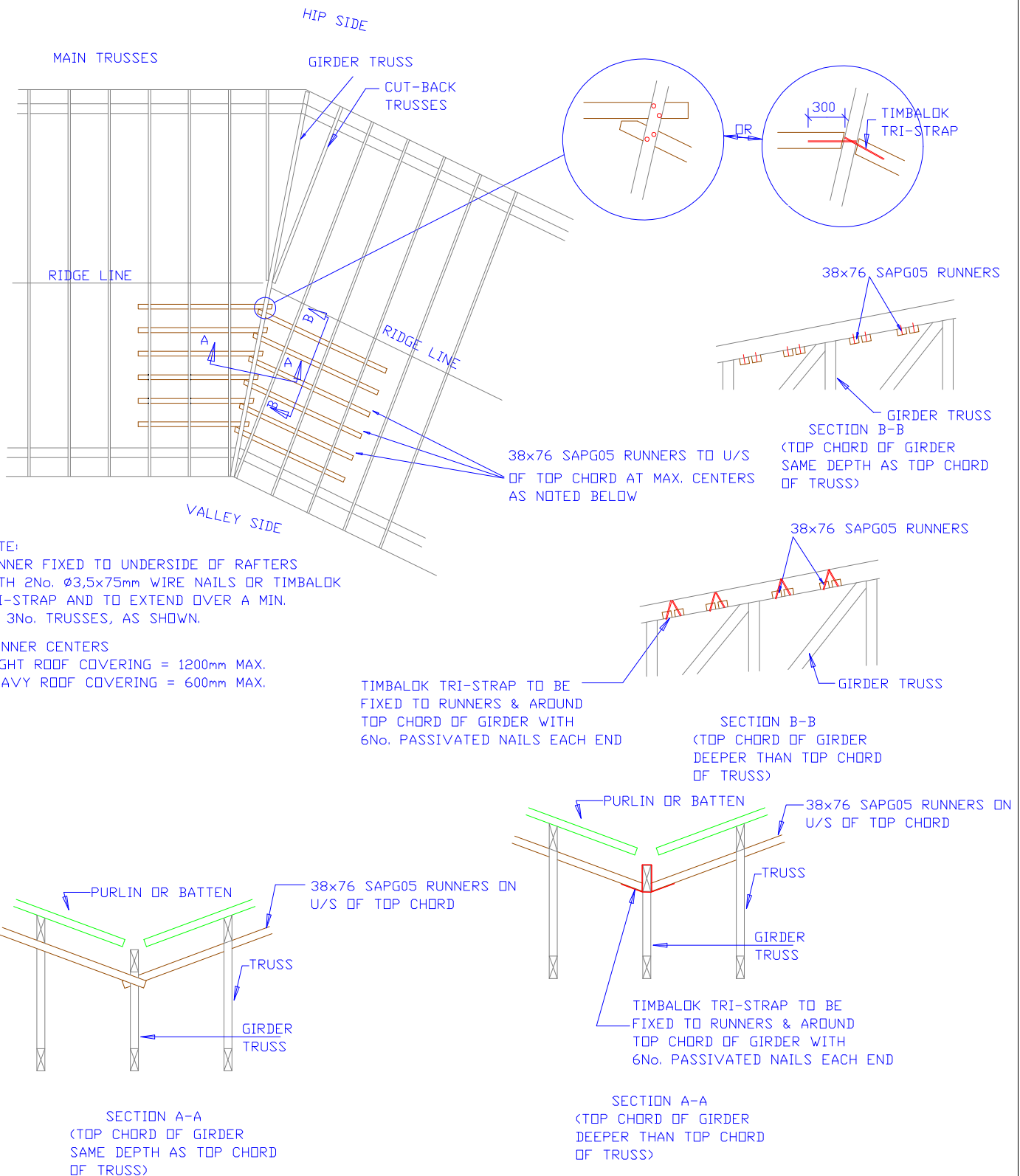
TIMBALOK TRI-STRAP CONNECTION OF
BUTT RAFTER & TRUNCATED THREE &
FOUR PLY GIRDER.
(TOP CHORDS AT THE SAME LEVEL)

TIMBALOK TRI-STRAP (500mm LONG) FIX TO JACK TRUSS,
OVER HIP GIRDER AND NAILED TO SIDE OF TOP CHORD
OF HIP GIRDER.



TIMBALOK TRI-STRAP CONNECTION OF
JACK TOP CHORD & HIP GIRDER WHERE
HORIZONTAL HOLDING IS NEEDED
(CANTILEVER HIP ENDS)

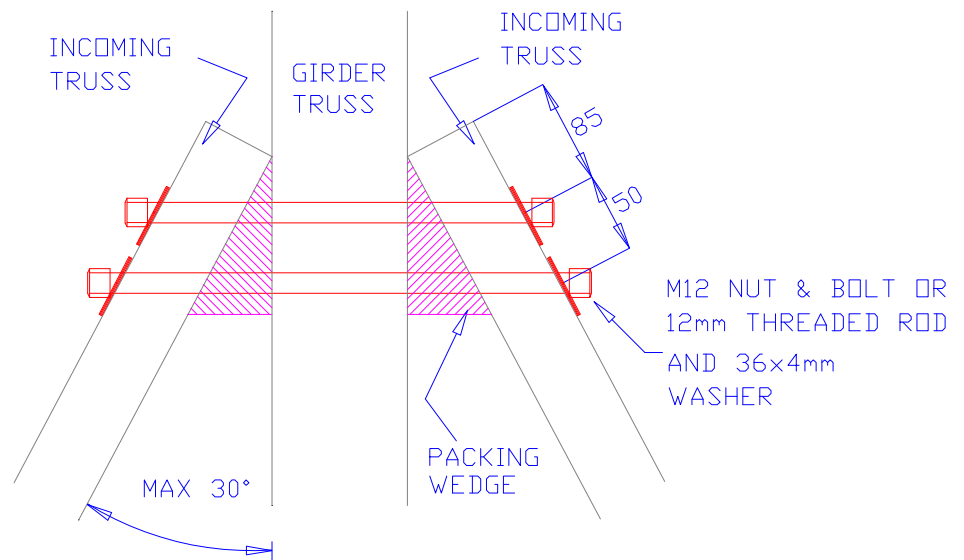
GIRDER TOP CHORD RESTRAINT FOR VALLEY SIDE OF CRANKED ROOF



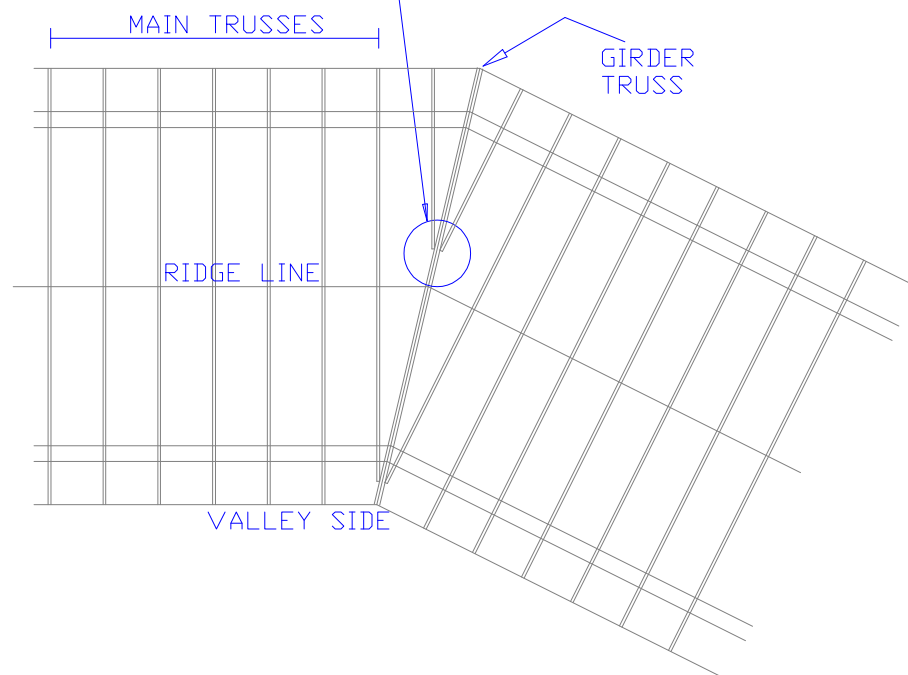
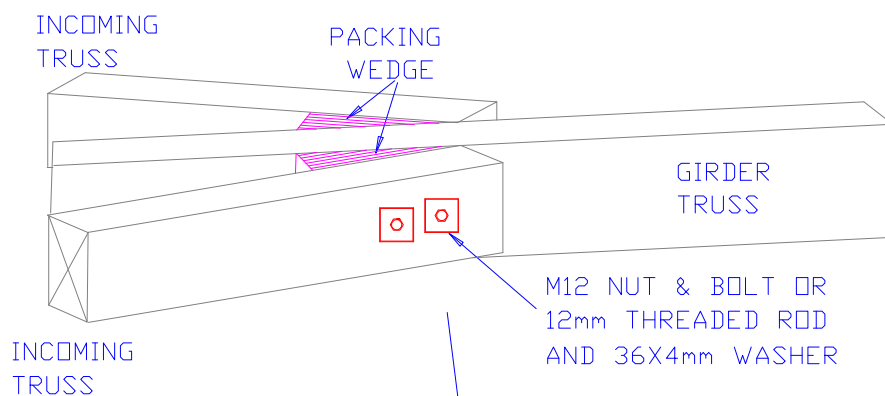
CRANK RESTRAINT DETAIL

CONNECTION DETAIL FOR INCOMING TRUSSES TO HIP & VALLEY GIRDER OF CRANKED ROOFS

MAXIMUM TOTAL LOAD		
No. BOLTS	No. PLIES	FORCE IN (KN)
1	1	1.7
2	1	3.4
1	2	3.4
2	2	6.8



TRUSS CONNECTION AT LESS THAN 30° INCOMING ONTO GIRDER

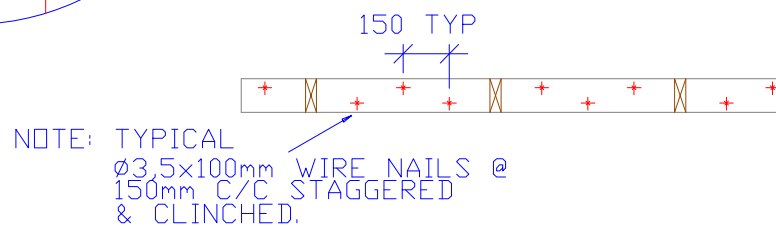
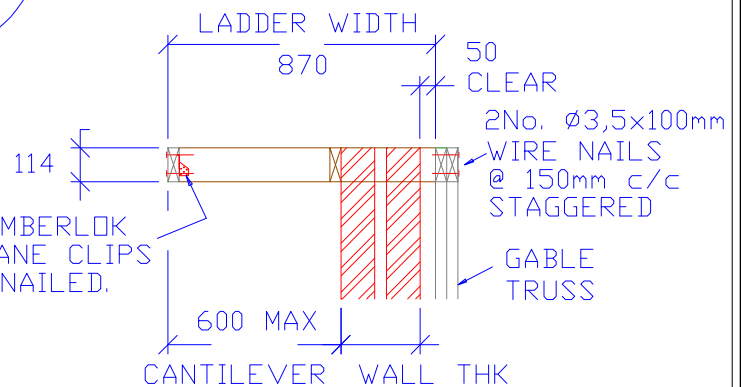
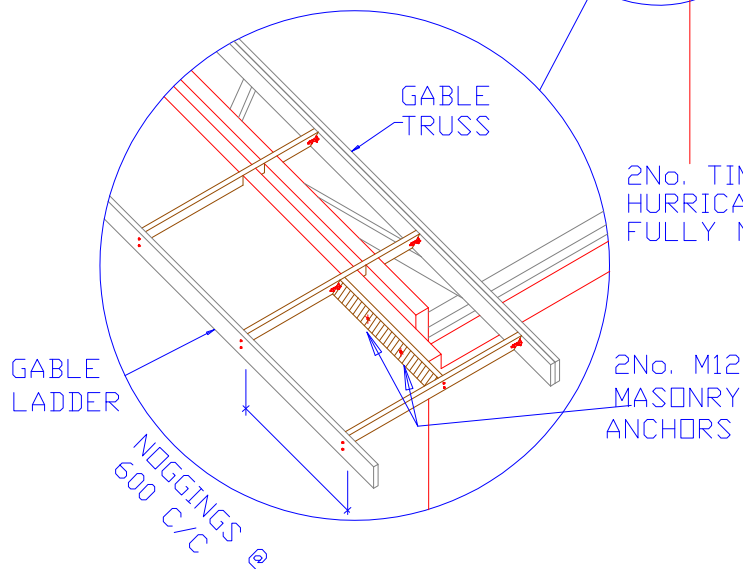
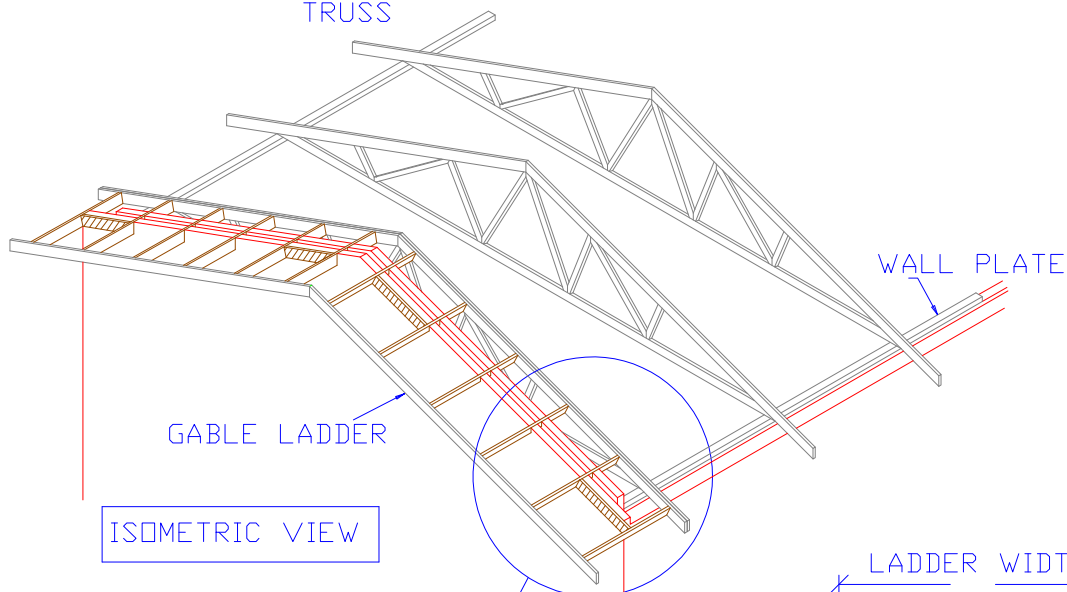
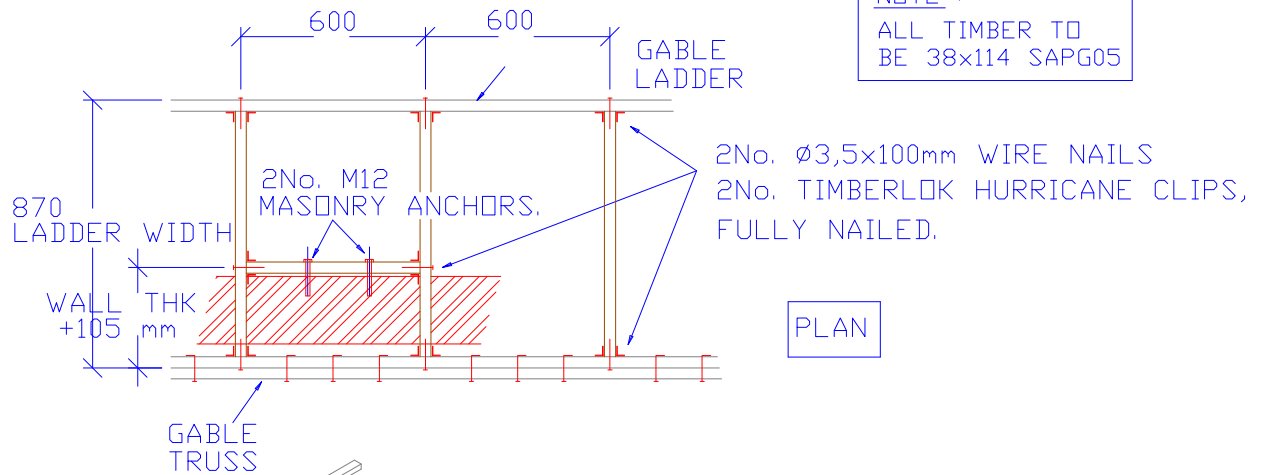


WEDGE CONNECTION FOR CRANKED ROOF

GABLE LADDER DETAILS FOR UP TO 600mm OVERHANG

NOTE :

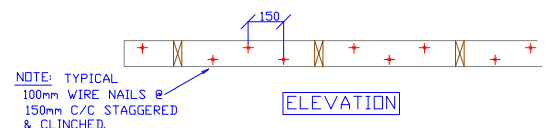
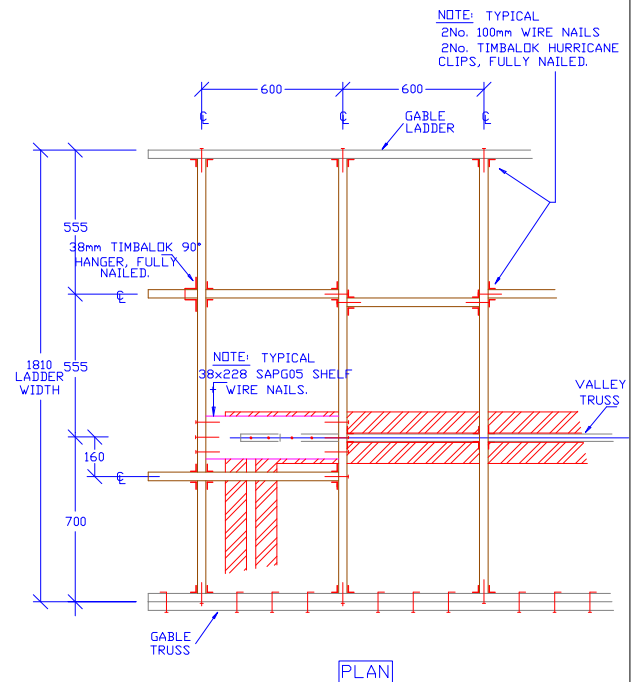
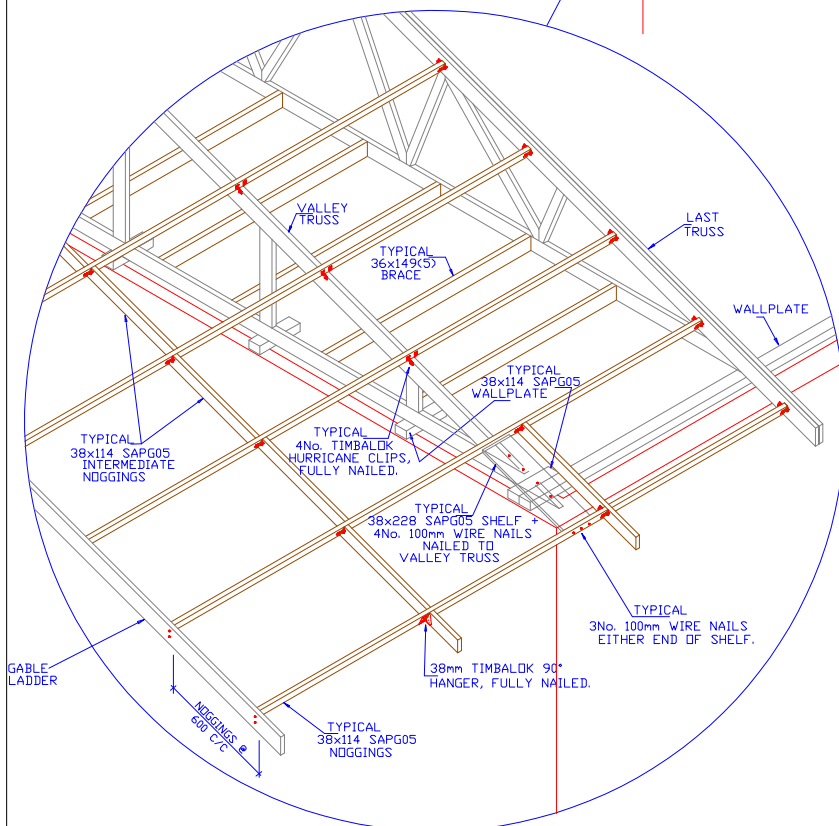
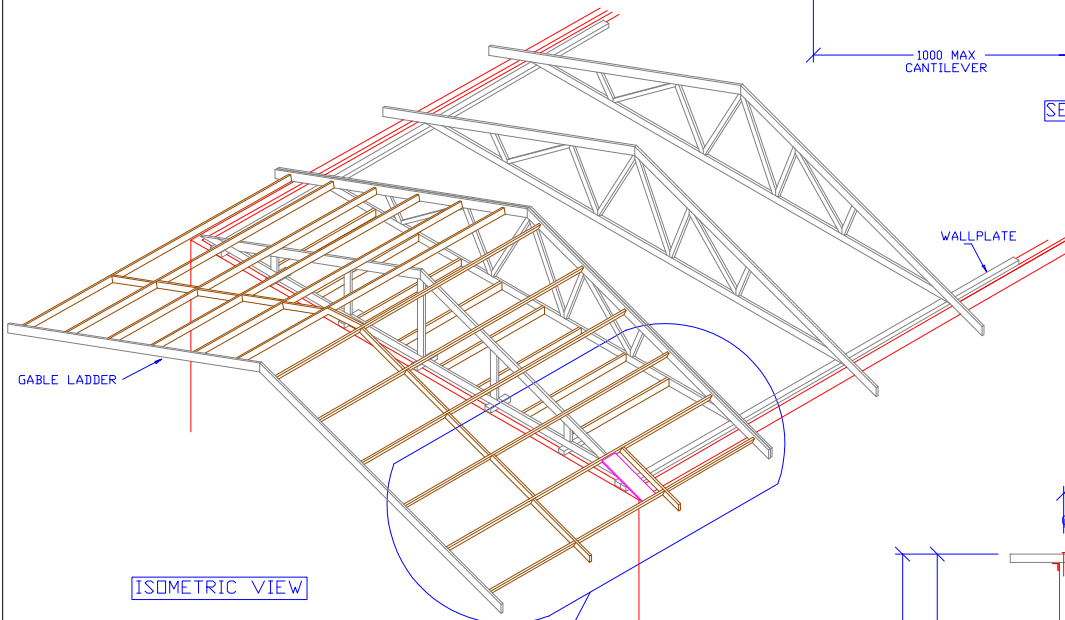
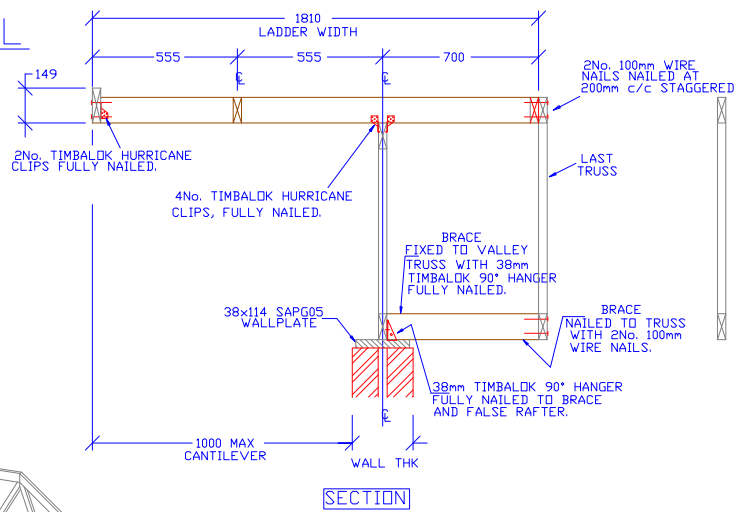
ALL TIMBER TO
BE 38x114 SAPG05



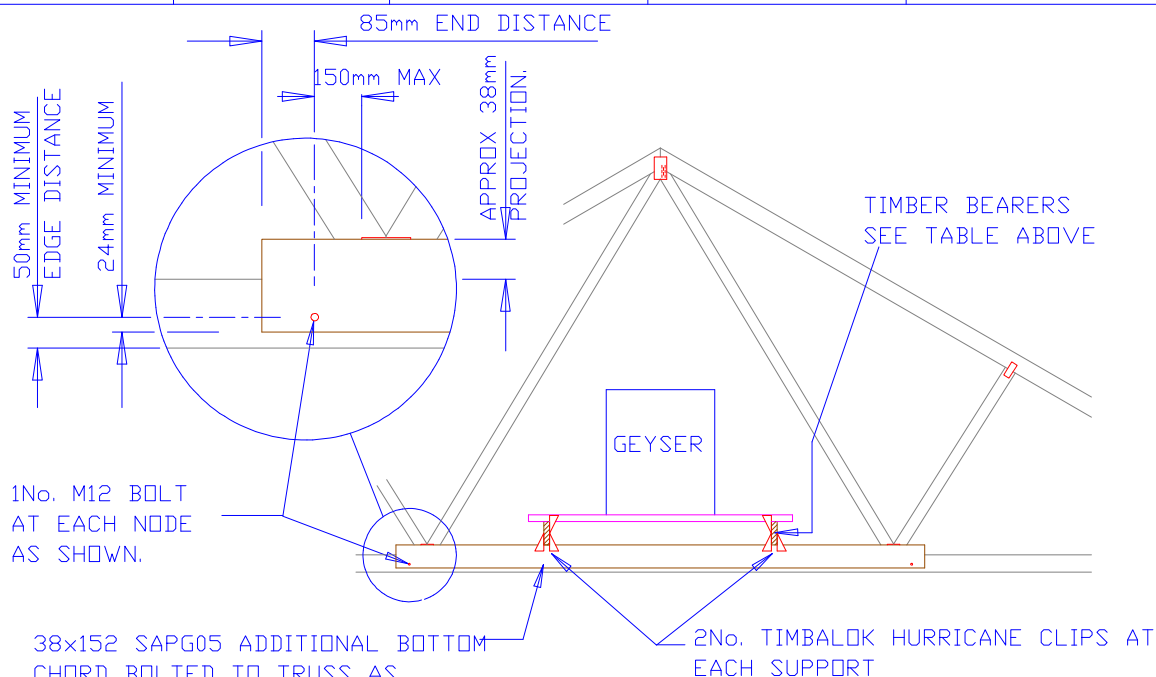
TYPICAL GABLE LADDER & DETAIL (UP TO 1000mm)

NOTE :

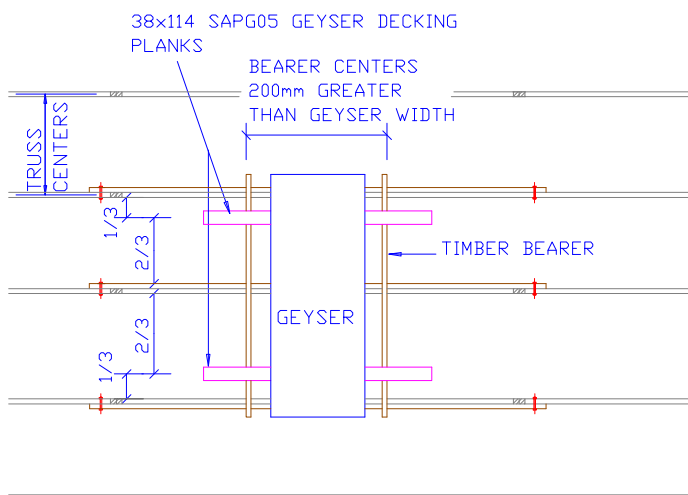
ALL TIMBER TO
BE 38 x 152 SAPG05
UNLESS OTHERWISE
NOTED.



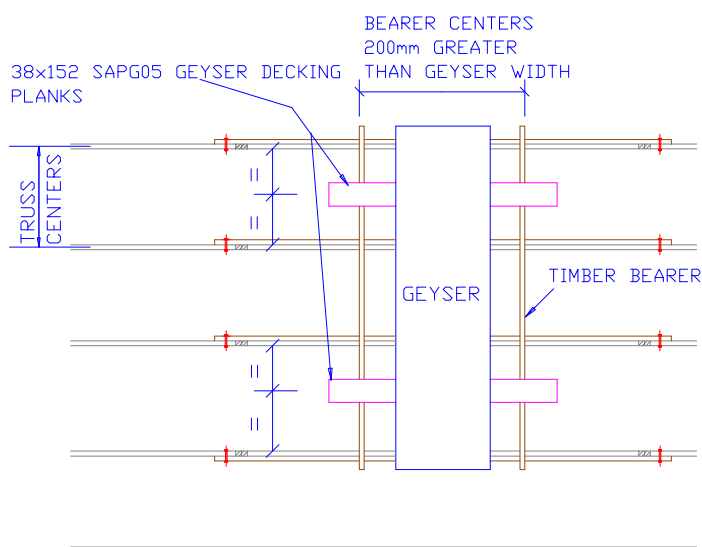
GEYSER CAPACITY (LITRES)	TOTAL LOAD INCL.WATER (NEWTONS)	TIMBER BEARER SIZES.		
		750 TRUSS C/C (mm)	1000 TRUSS C/C (mm)	1500 TRUSS C/C (mm)
100	1442	38x114 SAPG05	38x114 SAPG05	38x152 SAPG05
150	2200	38x114 SAPG05	38x114 SAPG05	38x152 SAPG05
200	2680	38x114 SAPG05	38x114 SAPG05	38x152 SAPG05
250	3340	38x152 SAPG05	38x152 SAPG05	38x152 SAPG05



ELEVATION



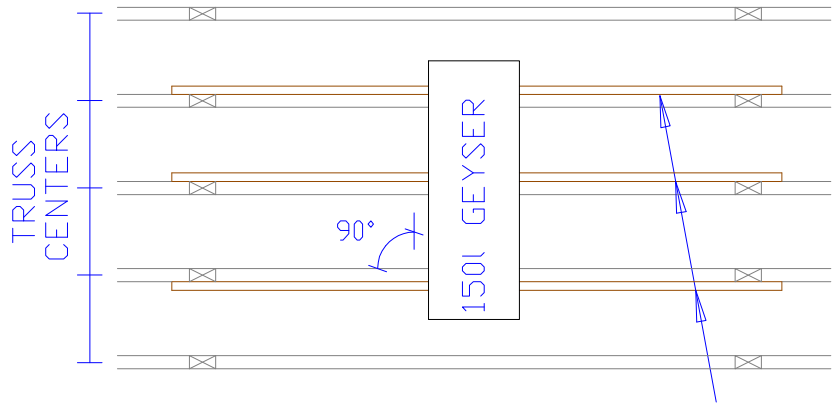
PLAN ARRANGEMENT
FOR 100 & 150L GEYSER



PLAN ARRANGEMENT
FOR 200 & 250L GEYSER

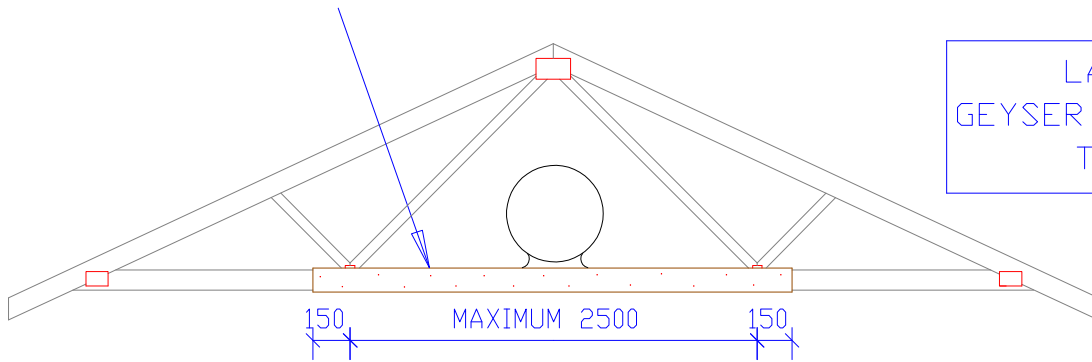
NOTE:

THE OBJECTIVE OF THESE DETAILS IS TO PROVIDE FOR THE INSTALLATION OF THE GEYSER ANYWHERE IN THE ROOF AND NOT NECESSARILY ON SPECIALLY DESIGNED TRUSSES, APPLYING THESE DETAILS THE LOAD IS DISTRIBUTED AND NORMAL TRUSS DESIGNS OUGHT TO BE SUITABLE IN MOST CASES WITHOUT ADDITIONAL REINFORCEMENT, HOWEVER IT IS NEVERTHELESS NECESSARY TO ENSURE THAT THE TRUSS TIMBER AND JOINTS ARE SUITABLE TO SUPPORT THE LOADS.

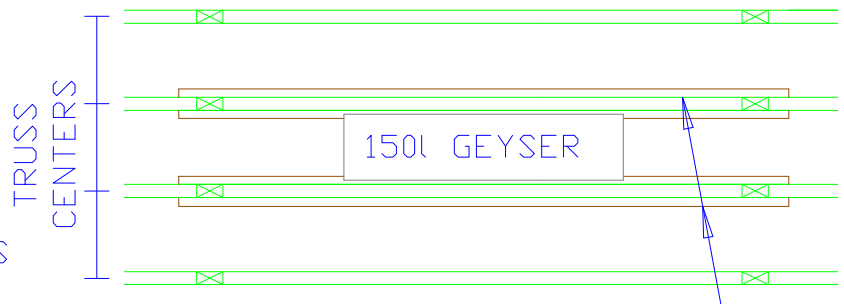


ONE ADDITIONAL BOTTOM CHORD
OF THE SAME SIZE AND GRADE
NAILED ON WITH $\varnothing 3,5 \times 75$ mm WIRE NAILS
AT 150mm STAGGERED CENTERS.
150mm OVERLAP PAST THE TRUSS
NODE AT EACH END.

ONE ADDITIONAL
BOTTOM CHORD
PER TRUSS

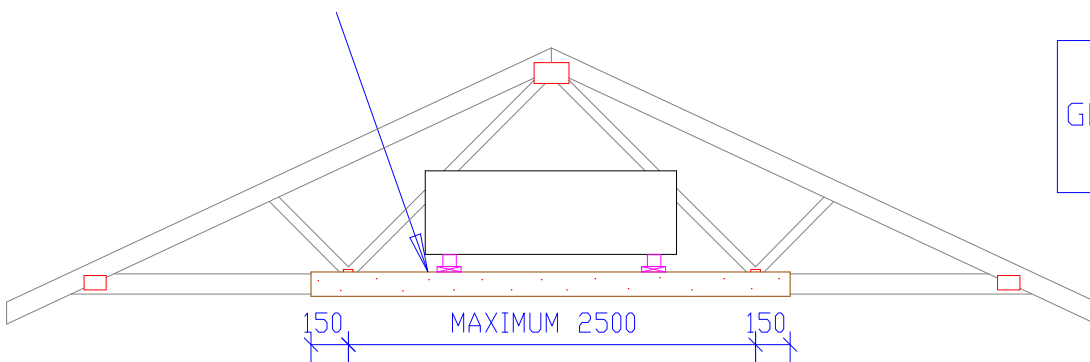


LAYOUT PLAN
GEYSER PERPENDICULAR
TO TRUSSES

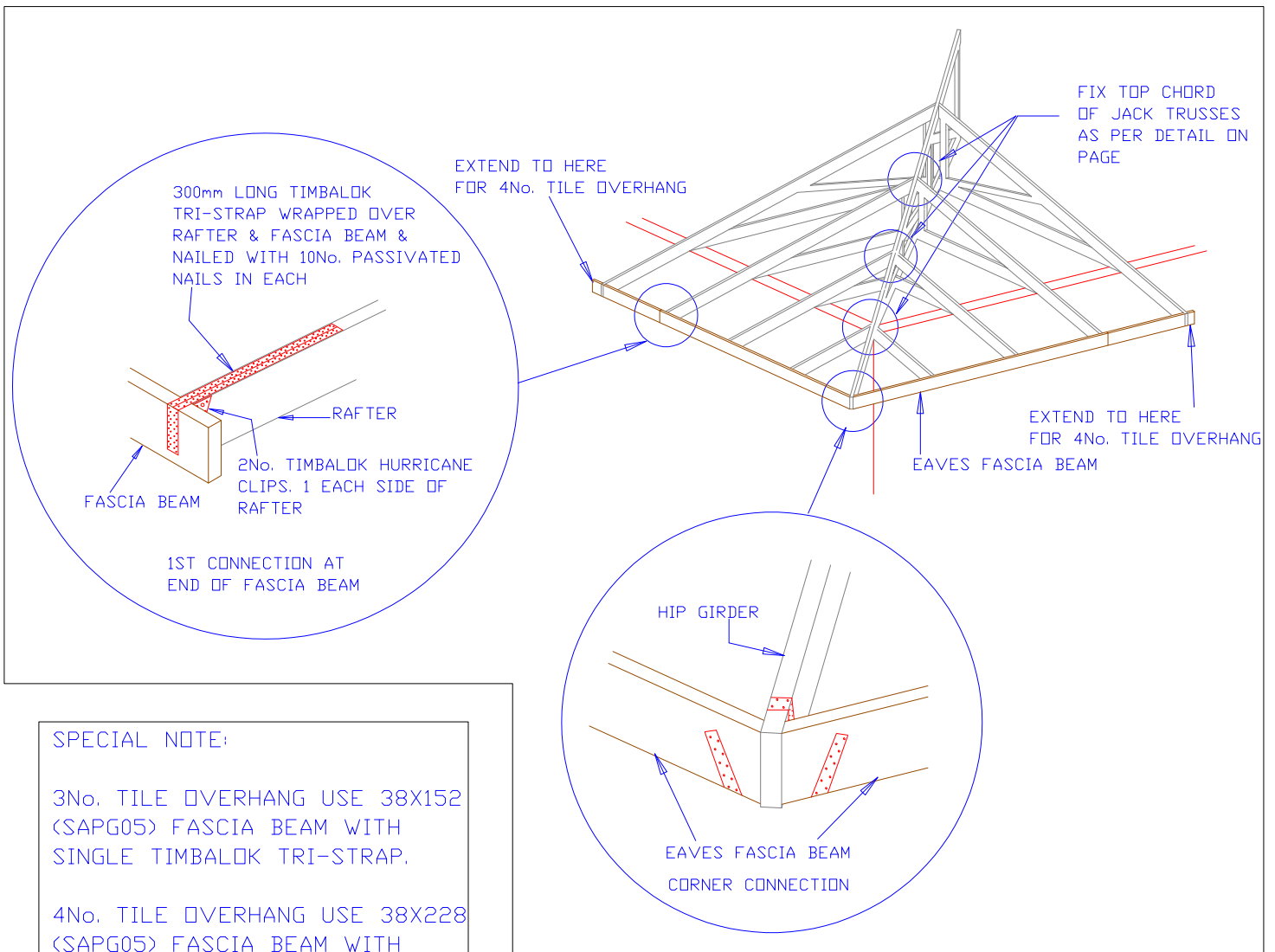
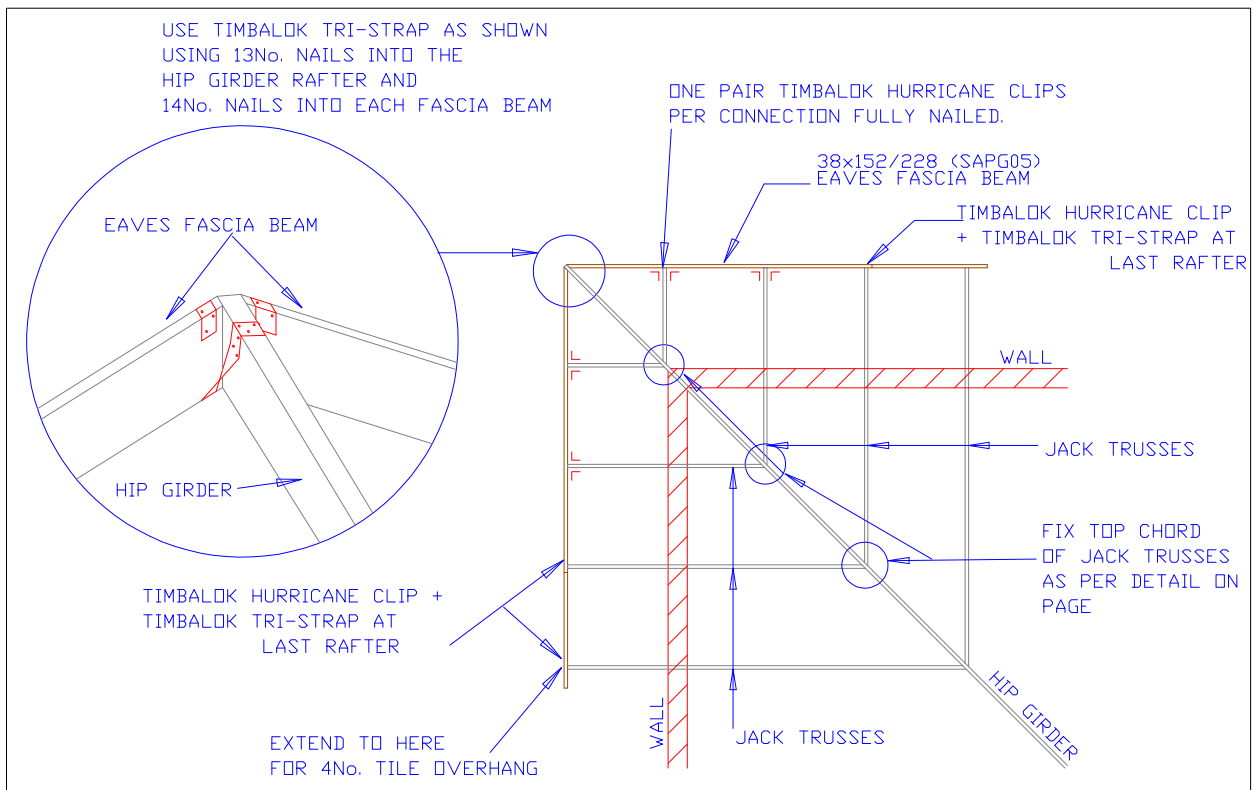


TWO ADDITIONAL BOTTOM CHORDS
OF THE SAME SIZE AND GRADE
NAILED ON WITH $\varnothing 3,5 \times 75$ mm WIRE NAILS
AT 150mm STAGGERED CENTERS.
150mm OVERLAP PAST THE TRUSS
NODE AT EACH END.

TWO ADDITIONAL
BOTTOM CHORD
PER TRUSS



LAYOUT PLAN
GEYSER PARALLEL
TO TRUSSES



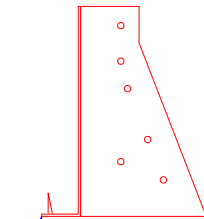
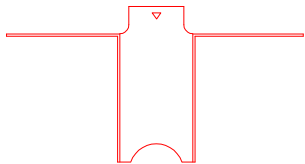
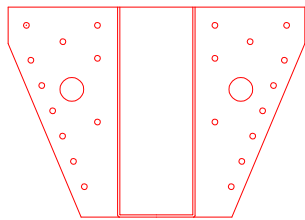
SPECIAL NOTE:

3No. TILE OVERHANG USE 38X152 (SAPG05) FASCIA BEAM WITH SINGLE TIMBALOK TRI-STRAP.

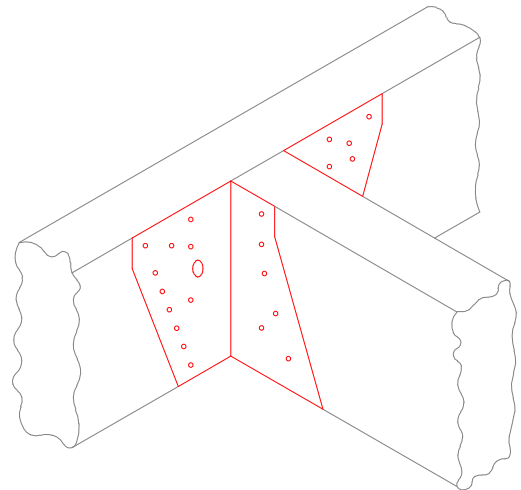
4No. TILE OVERHANG USE 38X228 (SAPG05) FASCIA BEAM WITH DOUBLE TIMBALOK TRI-STRAP.

EAVES BEAM CONNECTION DETAIL

TIMBALOK 90° TRUSS HANGERS



UNIQUE UNDER
CHORD TEMPORARY
FIXING SPIKE.



USE:

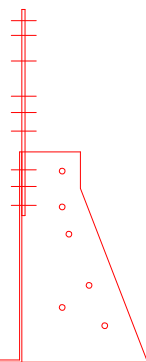
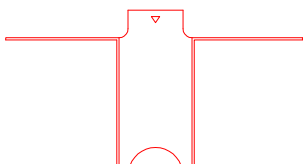
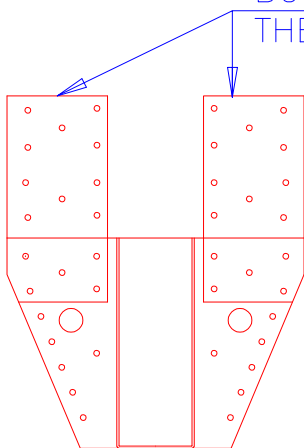
M12 BOLTS + WASHERS
&/OR $\phi 2.8 \times 32\text{mm}$
PASSIVATED NAILS.

NOTE: BOLTING RECOMMENDED
ON MULTIPLY GIRDERS.
M12 BOLTS + WASHERS

UH10 NAILED	2.2 KN
UH12 NAILED	4.2 KN
UH12 BOLTED	4.2 KN

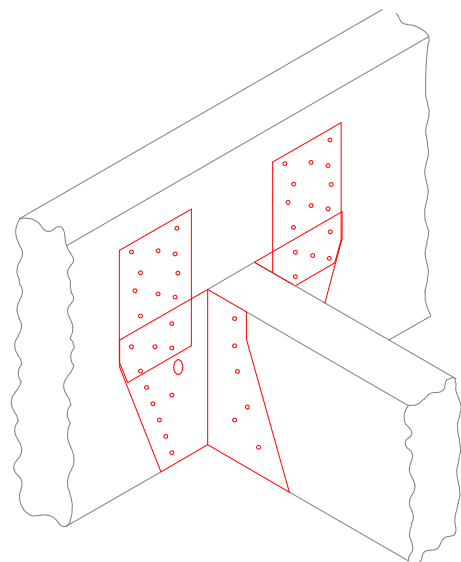
TIMBALOK 90° TRUSS HANGERS & BOOSTER GUSSET

BOOSTER BRACKET PLACED ON
THE FRONT FACE OF HANGER.



UNIQUE UNDER
CHORD TEMPORARY
FIXING SPIKE.

NOTE: BOLTING RECOMMENDED
ON MULTIPLY GIRDERS.
M12 BOLTS + WASHERS



NOTE:

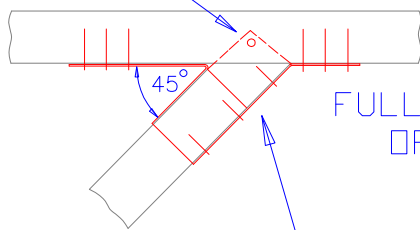
MIN 5No. NAILS TO BE NAILED
THROUGH HANGER & BOOSTER
BRACKET.
ALL NAILING TO BE $\phi 2.8 \times 32\text{mm}$
PASSIVATED NAILS.

FULLY NAILED	7.8 KN
--------------	--------

38mm \times 90° T/H

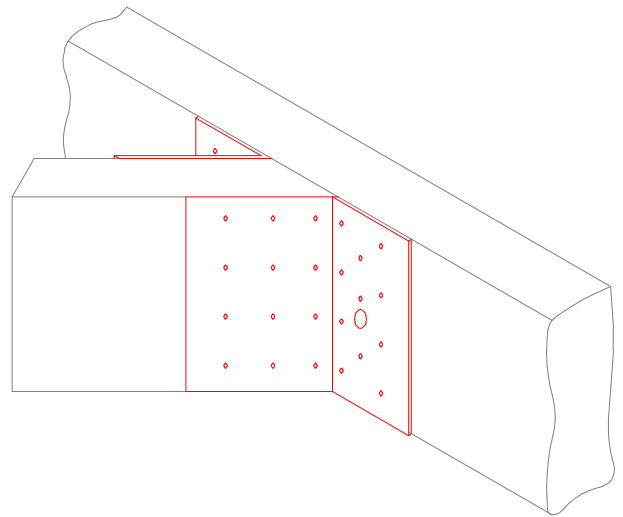
TIMBALOK 45° TRUSS HANGERS

UNIQUE UNDER CHORD
FIXING LUG

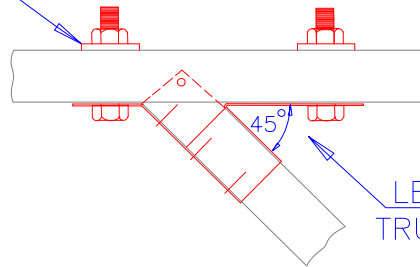


FULLY NAILED
OPTION

RIGHT HAND
TRUSS HANGER



TRI-FIX STRUCTURAL
TIMBER WASHER
35x35x4mm



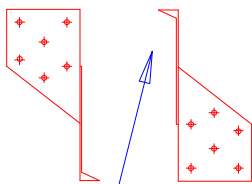
BOLTED
OPTION

USE :
M12 BOLTS + WASHERS
&/OR Ø2.8x32mm
PASSIVATED NAILS.

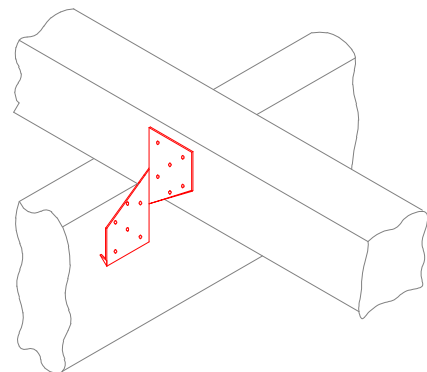
LEFT HAND
TRUSS HANGER

NAILED	4.2 KN
BOLTED	4.2 KN
NAILED & BOLTED	4.2 KN

TIMBALOK HURRICANE CLIPS



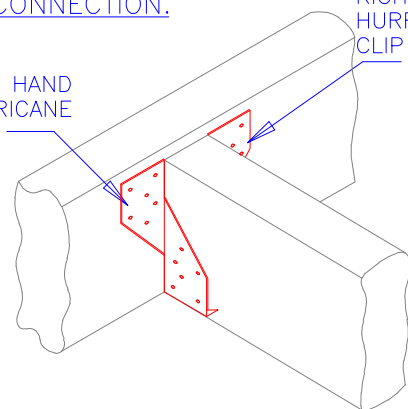
UNIQUE TEMPORARY
FIXING SPIKE



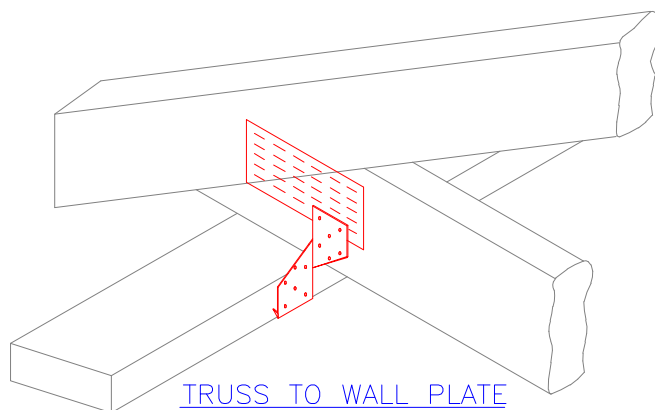
PURLIN TO RAFTER
CONNECTION.

RIGHT HAND
HURRICANE
CLIP

LEFT HAND
HURRICANE
CLIP



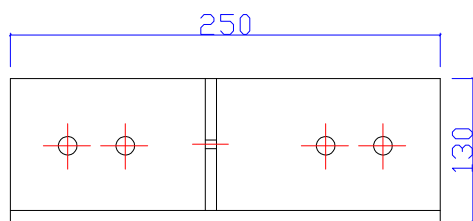
ALTERNATIVE JOIST TO BEAM
CONNECTION.



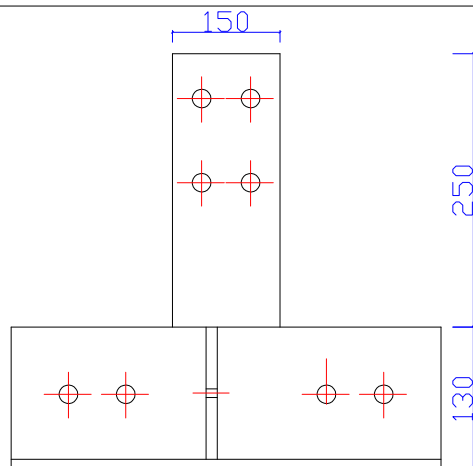
TRUSS TO WALL PLATE
CONNECTION.

USE :
Ø2.8x32mm
PASSIVATED NAILS.

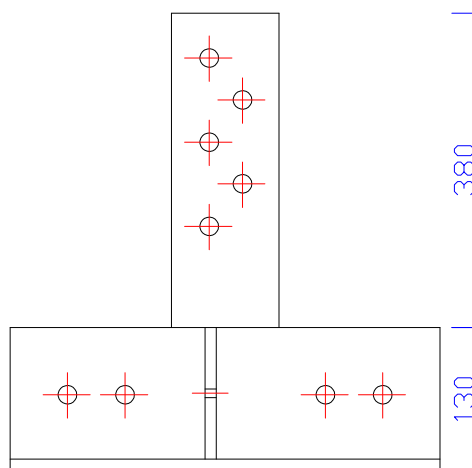
FULLY NAILED	1.5 KN
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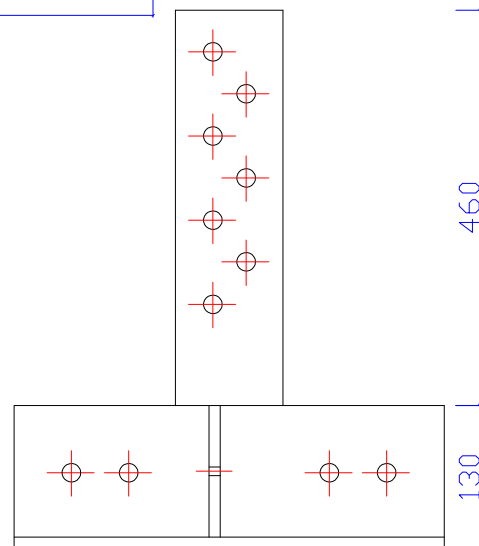
HDC1



HDC2

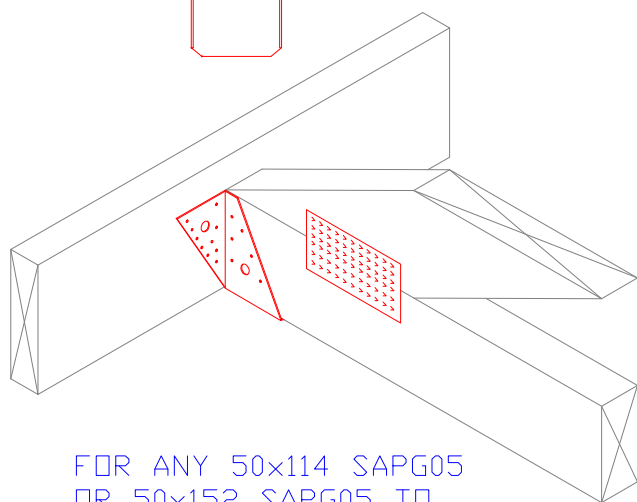
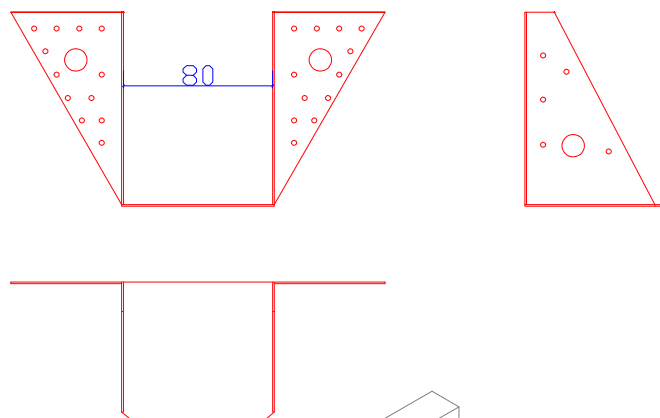
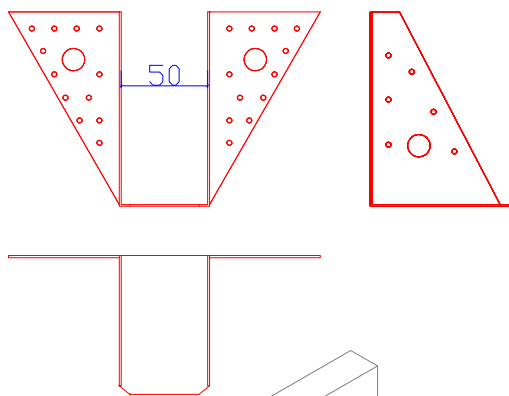


HDC3

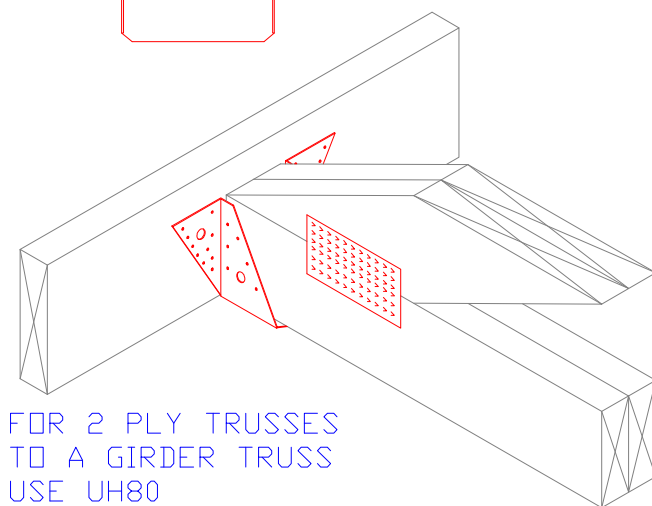


HDC4

HDC1 [7 KN]
HDC2 [16 KN]
HDC3 [20 KN]
HDC4 [30 KN]



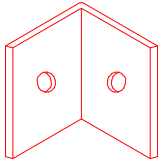
FOR ANY 50x114 SAPG05
OR 50x152 SAPG05 TO
GIRDER TRUSS USE UH50



FOR 2 PLY TRUSSES
TO A GIRDER TRUSS
USE UH80

TIMBALOK MULTI PURPOSE BRACKETS

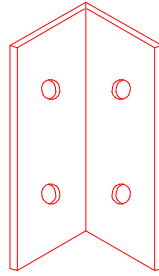
MP1



$\phi 10\text{mm}$
HOLES

50x50x50x3mm THK

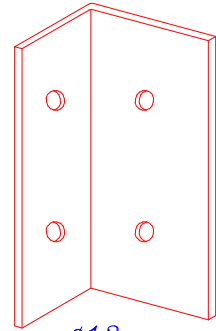
MP2



$\phi 10\text{mm}$
HOLES

100x50x50x3mm THK

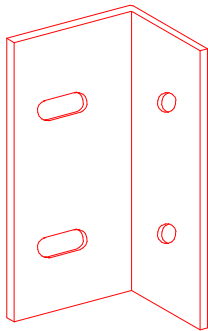
MP3



$\phi 13\text{mm}$
HOLES

150x75x55x3mm THK

MP4

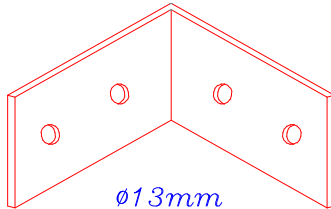


30mm
SLOTS

$\phi 13\text{mm}$
HOLES

150x100x80x3mm THK

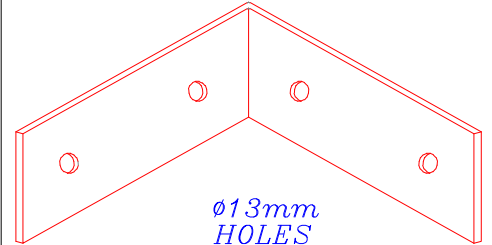
MP5



$\phi 13\text{mm}$
HOLES

100x100x50x3mm THK

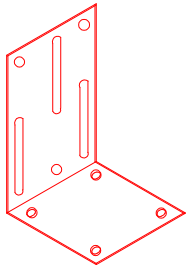
MP6



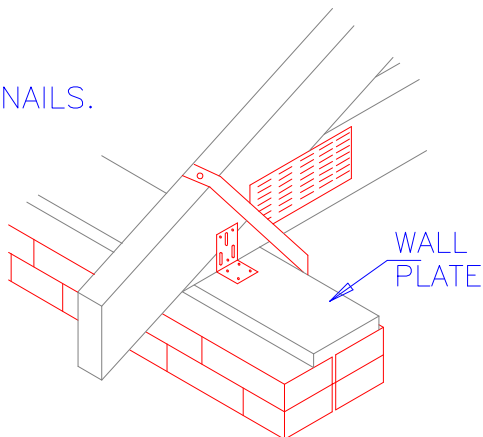
$\phi 13\text{mm}$
HOLES

150x150x50x5mm THK

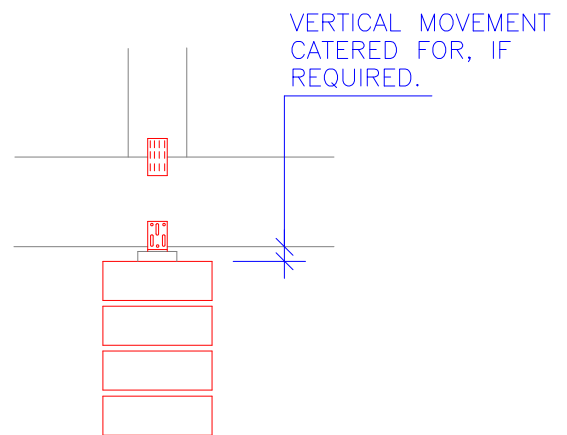
TIMBALOK TRI-FIX TRUSS CLIPS



USE :
 $\phi 2.8 \times 32\text{mm}$
PASSIVATED NAILS.

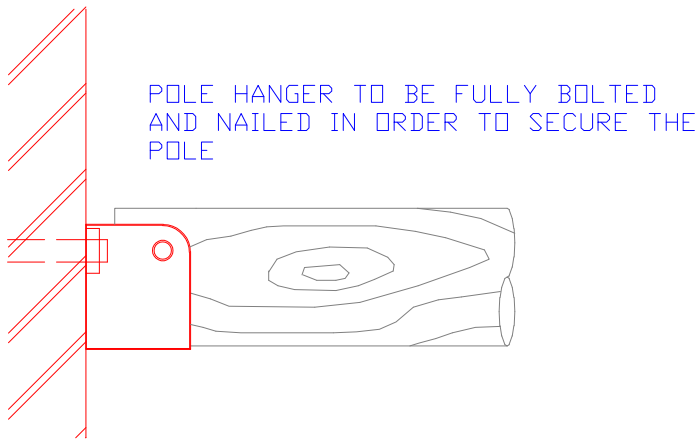


TRUSS HEEL RESTRAINT
WITH TRI-STRAP

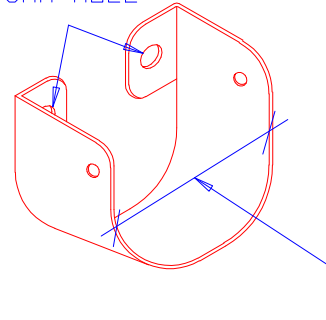


BOTTOM CHORD
LATERAL RESTRAINT
OVER NON-BEARING WALL

TIMBALOK POLE HANGERS



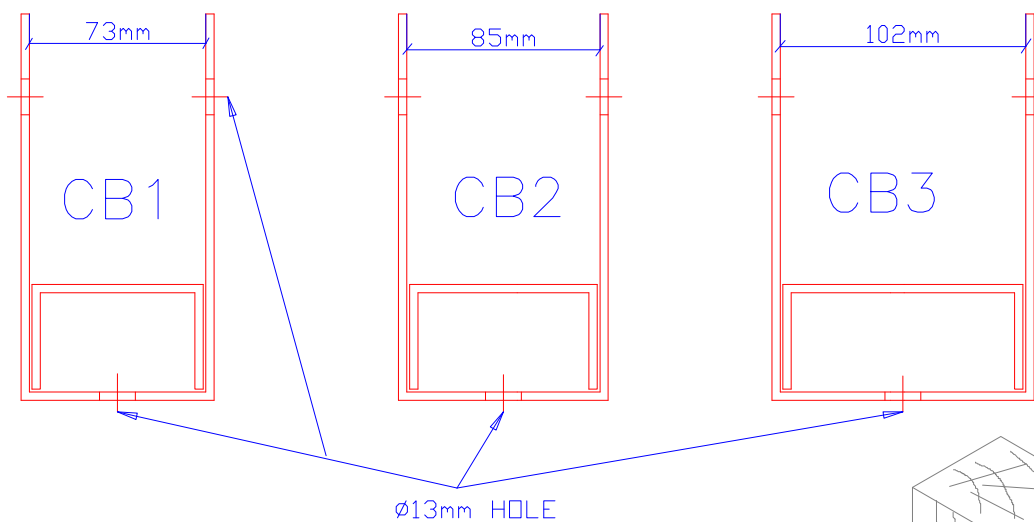
Ø8mm HOLE



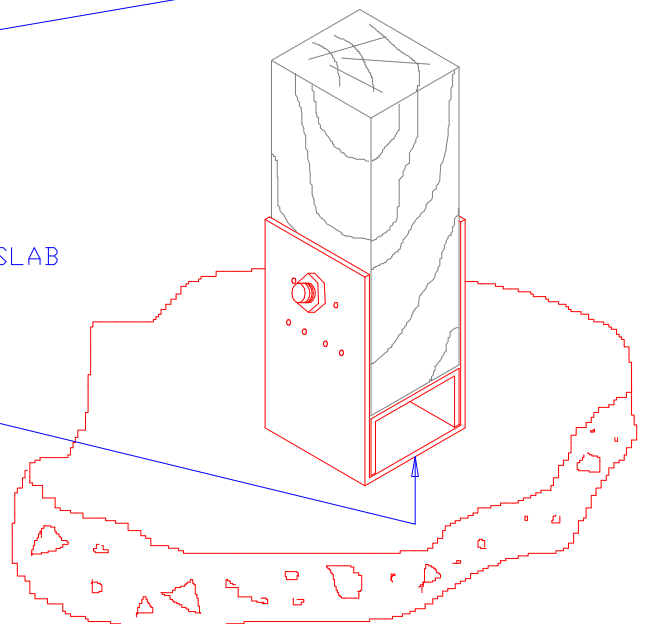
POLE HANGER ACCOMMODATES UP TO Ø100mm TIMBER POLE

NOTE:
THE HOLDING VALUE'S OF THE HANGER DIFFER WHEN THE HANGER IS BOLTED INTO CONCRETE OR INTO TIMBER. FOR THIS PURPOSE PLEASE CONSULT THE SYSTEM ENGINEER.

TIMBALOK COLUMN BASES



COLUMN BASE BOLTED TO SLAB UNDERNEATH



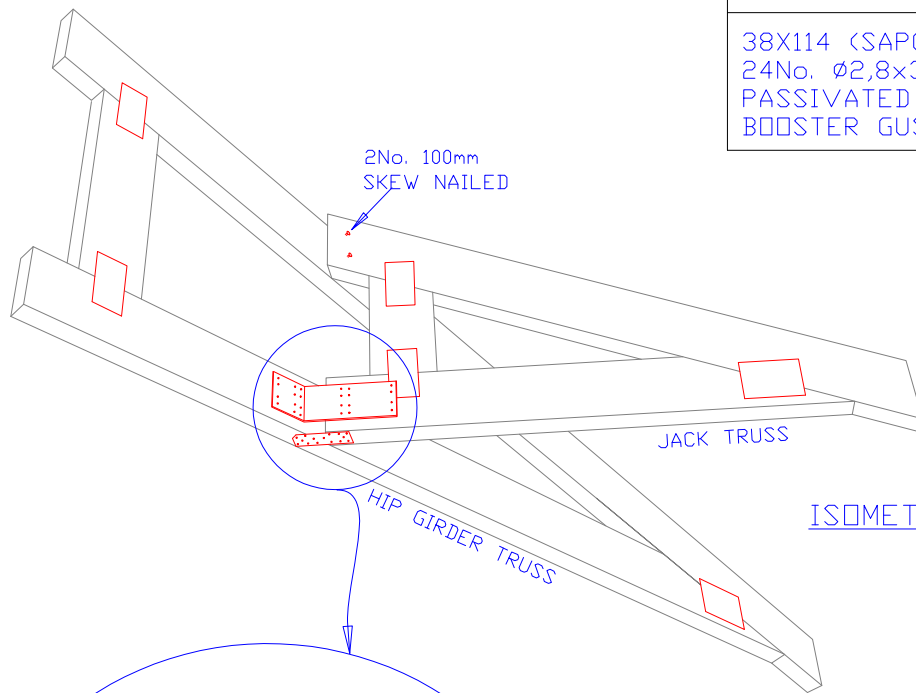
POLE HANGER & COLUMN BASE

TIMBALOK ACUTE-ANGLE BRACKET

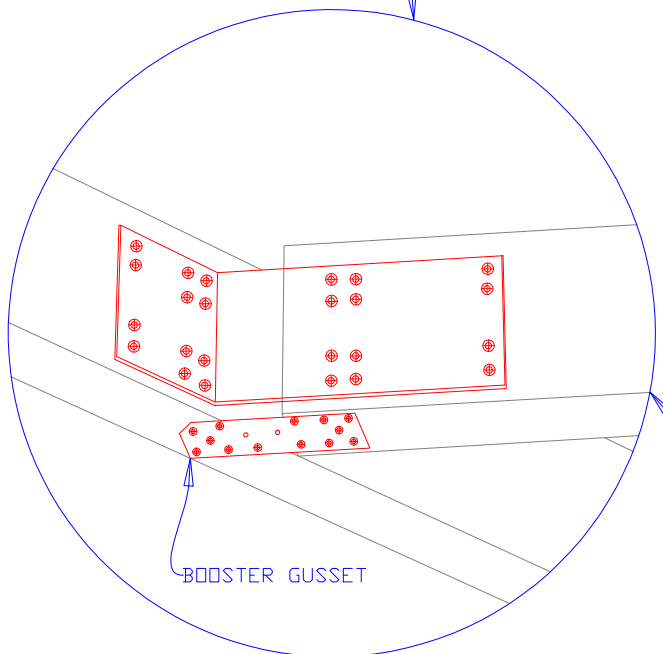
SAFE WORKING LOADS:

38X114 (SAPG05) TIMBER +
24No. Ø2,8x32mm TIMBALOK
PASSIVATED NAILS +
BOOSTER GUSSET PLATE.

2,41kN



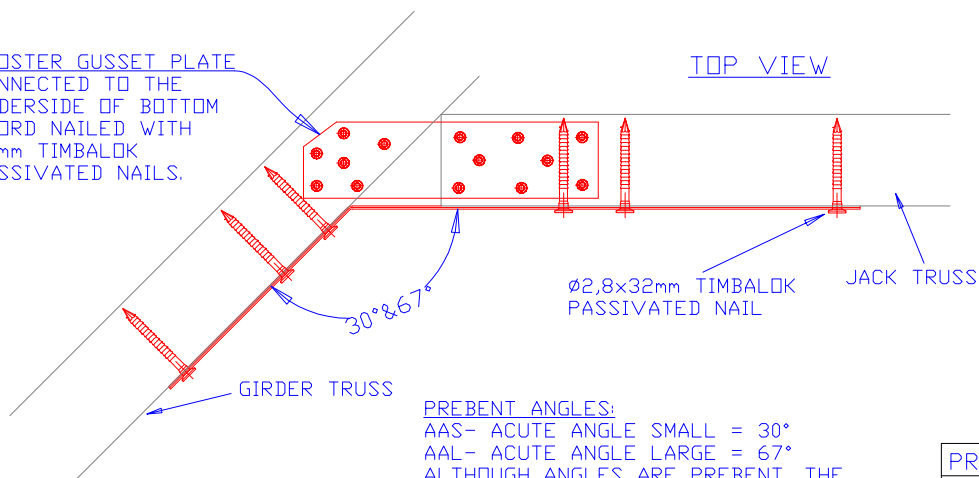
ISOMETRIC VIEW



ACUTE ANGLE BRACKET TO BE USED
WITH A BOOSTER GUSSET PLATE FULLY
NAILED USING Ø2,8x32mm TIMBALOK
PASSIVATED NAILS

BOOSTER GUSSET PLATE
CONNECTED TO THE
UNDERSIDE OF BOTTOM
CHORD NAILED WITH
32mm TIMBALOK
PASSIVATED NAILS.

TOP VIEW



PREBENT ANGLES:

AAS- ACUTE ANGLE SMALL = 30°
AAL- ACUTE ANGLE LARGE = 67°
ALTHOUGH ANGLES ARE PREBENT, THE
BRACKETS CAN BE FURTHER BENT TO
SUIT APPLICATION.

PRODUCT	CODE
ACUTE-ANGLE BRACKET	AAS/AAL
BOOSTER GUSSET	HBG01
TIMBALOK 32mm NAIL	HNS325

N.B.: SPLICE (WHEN NECESSARY)
TO OCCUR IN UPPER HALF OF BRACE
(i.e. CLOSER TO APEX)

REFER TO
APEX CONNECTION

38x76 SAPG05
DIAGONAL TOP
CHORD BRACING

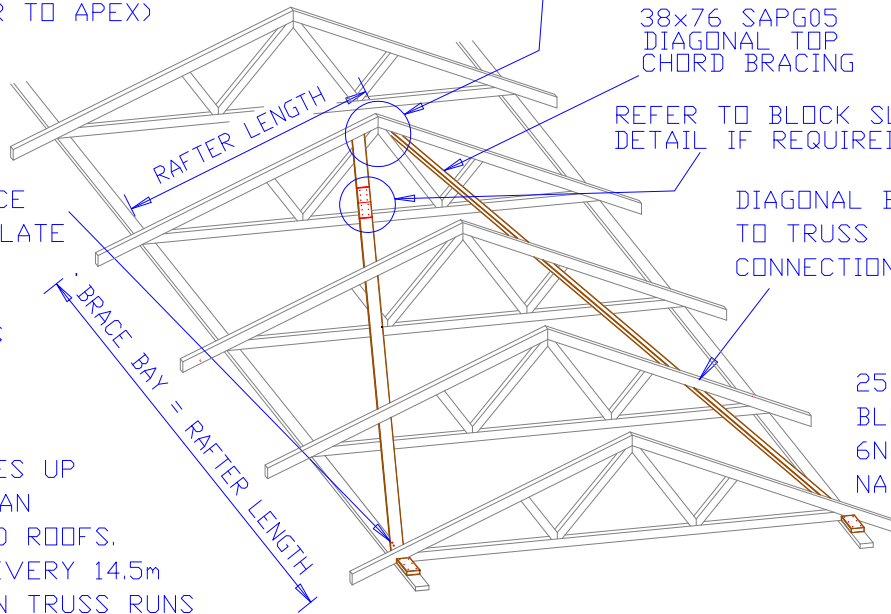
REFER TO BLOCK SLICE
DETAIL IF REQUIRED

DIAGONAL BRACE
TO TRUSS
CONNECTION

250mm
BLOCK
6No. WIRE
NAILS

FIX TOP
CHORD BRACE
TO WALL PLATE
WITH 3No.
Ø3,5x100mm
WIRE NAILS

RULES:
FOR TRUSSES UP
TO 6.6m SPAN
- BATTENED ROOFS.
REQUIRED EVERY 14.5m
OR LESS ON TRUSS RUNS
WITH THE SAME SPAN.



ISOMETRIC VIEW

TRUSS RAFTER

WEBS

2No. Ø3,5x75mm
WIRE NAILS

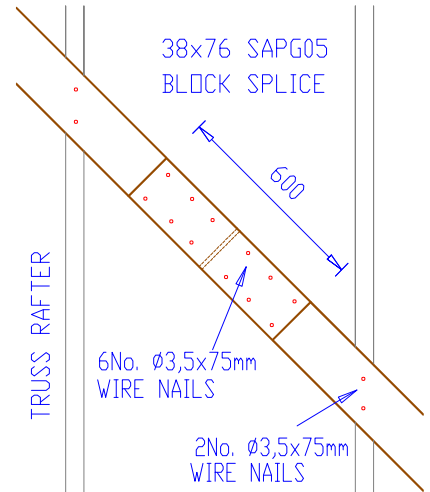
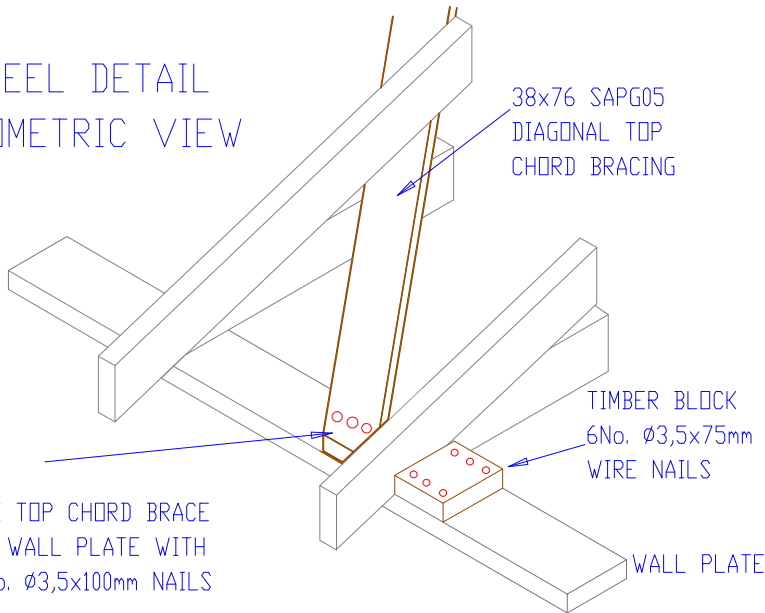
APEX DETAIL

HEEL DETAIL
ISOMETRIC VIEW

38x76 SAPG05
DIAGONAL TOP
CHORD BRACING

TIMBER BLOCK
6No. Ø3,5x75mm
WIRE NAILS

FIX TOP CHORD BRACE
TO WALL PLATE WITH
3No. Ø3,5x100mm NAILS



BLOCK SPLICE DETAIL

NB:
BRACE MUST
BUTT AGAINST
TRUSS

BRACING MEMBER

OUTSIDE OF WALL

CONTACT LINE

3No. Ø3,5x100mm
WIRE NAILS

HEEL DETAIL
PLAN VIEW

TRUSS

TIMBER BLOCK
6No. Ø3,5x75mm
WIRE NAILS

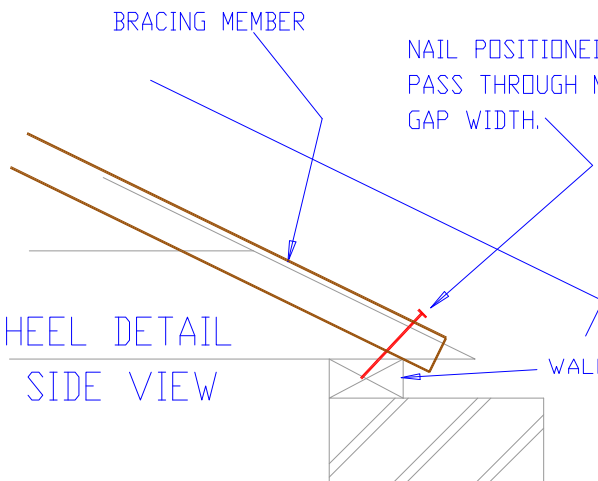
WALL PLATE

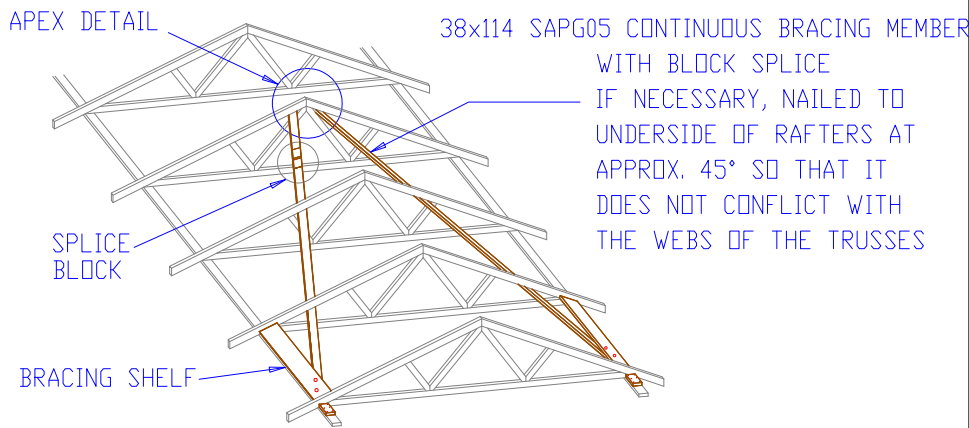
BRACING MEMBER

NAIL POSITIONED TO
PASS THROUGH MINIMUM
GAP WIDTH.

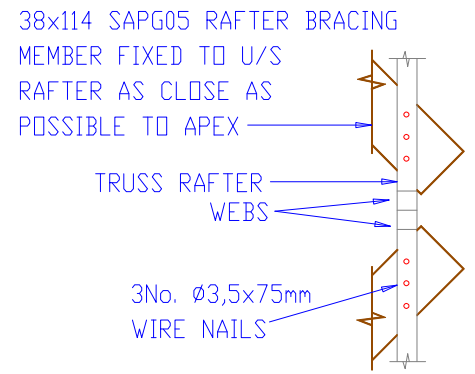
HEEL DETAIL
SIDE VIEW

WALL PLATE





RAFTER BRACING FOR TILED ROOFS
SPANS OVER 6.6m UP TO 9.0m



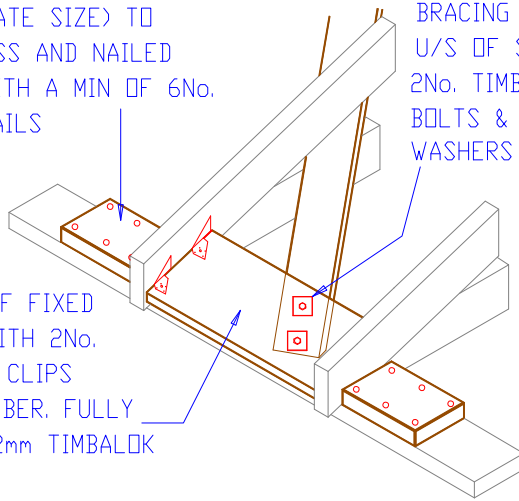
APEX DETAIL

N.B. - IF NO BEAMFILL OCCURS THEN REFER TO DETAIL BELOW

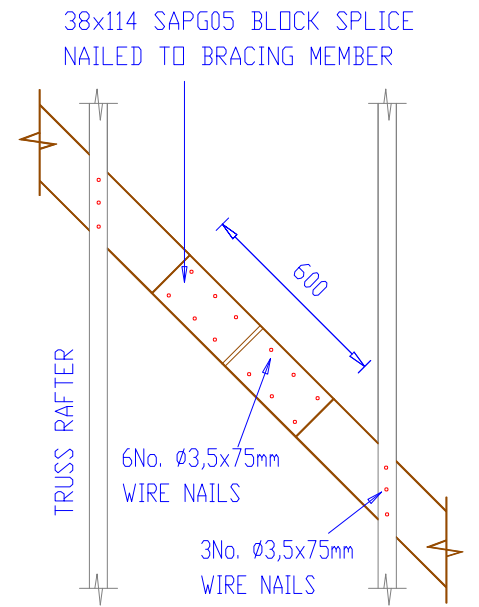
250mm TIMBER BLOCK
(TO SUIT WALL PLATE SIZE) TO BUTT AGAINST TRUSS AND NAILED TO WALL PLATE WITH A MIN OF 6No. Ø3,5x75mm WIRE NAILS

38x114 SAPG05 RAFTER BRACING BOLTED TO U/S OF SHELF WITH 2No. TIMBALOK M12 BOLTS & 36X4mm WASHERS BOTH SIDES

38x228 SAPG05 SHELF FIXED BETWEEN TRUSSES WITH 2No. TIMBALOK HURRICANE CLIPS ON EACH END OF MEMBER. FULLY NAILED WITH Ø2,8x32mm TIMBALOK PASSIVATED NAILS



STANDARD-HEEL SHELF BRACING FOR TILED ROOFS
ALL SPANS OVER 6.6M UP TO 9.0m



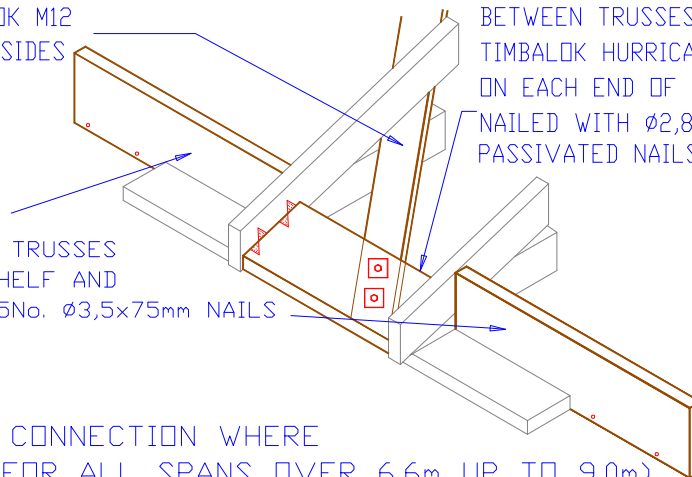
N.B.: SPLICE (WHEN NECESSARY) TO OCCUR IN UPPER HALF OF BRACE (i.e. CLOSER TO APEX)

BLOCK SPLICE

38x114 SAPG05 RAFTER BRACING BOLTED TO U/S OF SHELF WITH 2No. TIMBALOK M12 BOLTS & 36X4mm WASHERS BOTH SIDES

38x152/228 SAPG05 VERTICAL SHELVES FITTED TIGHTLY BETWEEN 2No. TRUSSES ON EITHER SIDE OF BRACING SHELF AND NAILED TO WALL PLATE WITH 5No. Ø3,5x75mm NAILS

38x228 SAPG05 SHELF FIXED BETWEEN TRUSSES WITH 2No. TIMBALOK HURRICANE CLIPS ON EACH END OF MEMBER. FULLY NAILED WITH Ø2,8x32mm TIMBALOK PASSIVATED NAILS

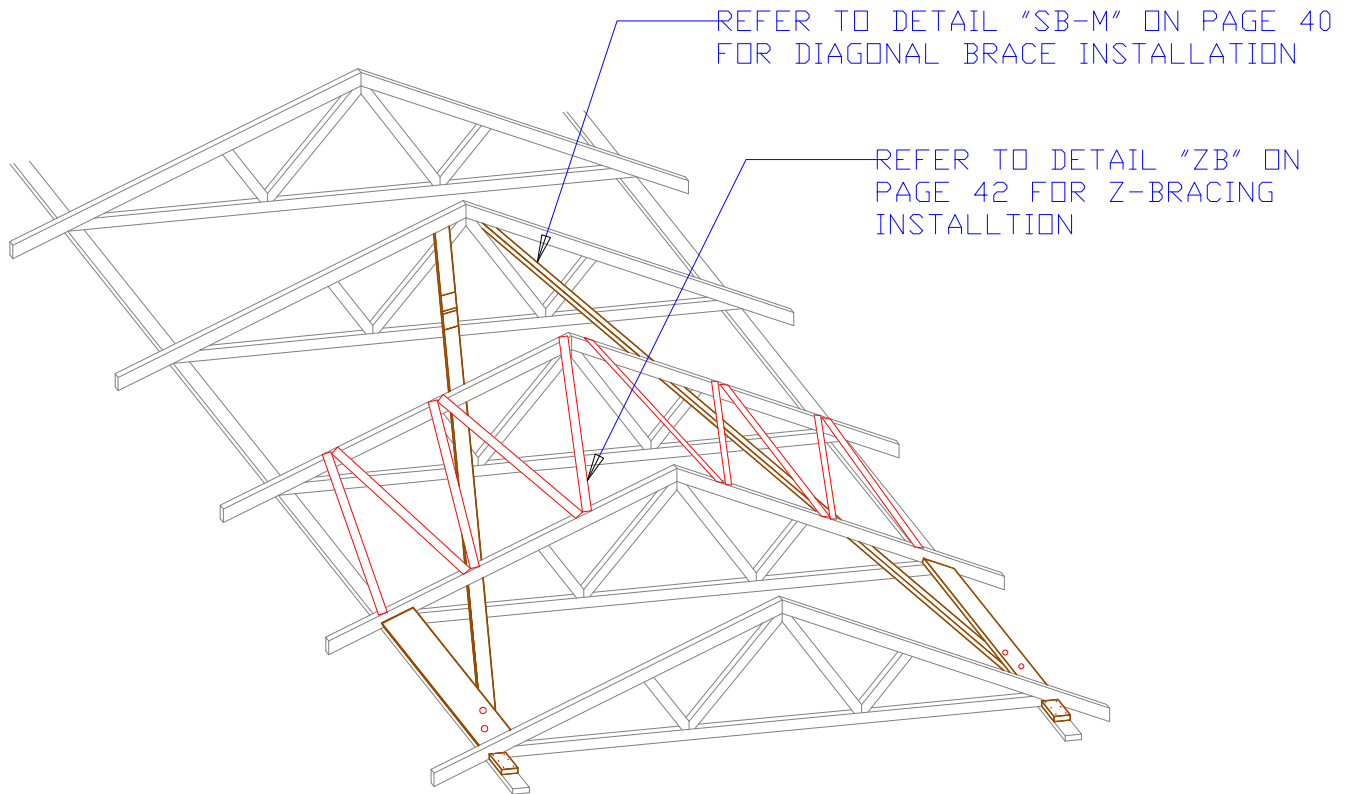


STANDARD-HEEL BRACING CONNECTION WHERE BEAMFILL IS NOT USED. (FOR ALL SPANS OVER 6.6m UP TO 9.0m)

FORMULA FOR BRACED BAYS:
 $16.5 - (0.3 \times \text{TRUSS SPAN}) = (\text{ANSWER IN METERS})$

BRACING DETAIL FOR SPANS OVER 9m UP TO 10.5m

ISOMETRIC VIEW OF Z-BRACE WITH DIAGONAL BRACE



FORMULA FOR BRACED BAYS:
 $16.5 - (0.3 \times \text{TRUSS SPAN}) = (\text{ANSWER IN METERS})$

BRACING DETAIL FOR TRUSS SPANS OF 10.5m TO 11.5m

ISOMETRIC VIEW
SINGLE BAY TOP
CHORD BRACING FRAME

BF - FORMULA
FORMULA FOR BRACING FRAME SPACING 200/TRUSS SPAN
FORMULA FOR DOUBLE BRACING FRAME SPAN/TRUSS SPACING > 20

REFER TO DETAIL ON
PAGE 40 FOR DIAGONAL
BRACING

APEX CONNECTION-SEE
DETAIL ON PAGE 48 OF
THE I.T.S STD DETAIL

HEEL CONNECTION SEE
DETAIL ON PAGE 52 OF
THE I.T.S STD DETAIL
MANUAL

SEE DETAIL "BF - FORMULA"
FOR BRACING FRAME SPACING

BRACING FRAME INSTALLATION REQUIRED FOR TILED & FIBER CEMENT ROOFS OF TRUSS SPANS GREATER THEN 10.5m & FOR METAL SHEETED ROOFS OF TRUSS SPANS GREATER THEN 15m.

TOP & BOTTOM CHORD BRACING FRAME DETAIL FOR TRUSS SPANS OF 11.5m TO 15m

ISOMETRIC VIEW SINGLE BAY TOP & BOTTOM CHORD BRACING FRAME

BF - FORMULA
FORMULA FOR BRACING FRAME SPACING 200/TRUSS SPAN
FORMULA FOR DOUBLE BRACING FRAME SPAN/TRUSS SPACING > 20

REFER TO DETAIL ON
PAGE 40 FOR DIAGONAL
BRACING

APEX CONNECTION-SEE
DETAIL ON PAGE 48 OF
THE I.T.S STD DETAIL

HEEL CONNECTION SEE
DETAIL ON PAGE 52 OF
THE I.T.S STD DETAIL
MANUAL

SEE DETAIL "BF - FORMULA"
FOR BRACING FRAME SPACING

BOTTOM CHORD BRACING FRAME
SEE DETAIL "BF-BCFSPLICE"

BRACING FRAME INSTALLATION REQUIRED FOR TILED & FIBER CEMENT ROOFS OF TRUSS SPANS GREATER THEN 11.5m & FOR METAL SHEETED ROOFS OF TRUSS SPANS GREATER THEN 15m.

ISOMETRIC VIEW SINGLE BAY TOP & BOTTOM CHORD BRACE FRAME

SEE DETAIL
"RUNNER SPLICE"

APEX CONNECTION-SEE
DETAIL ON PAGE 48 OF
THE I.T.S STD DETAIL

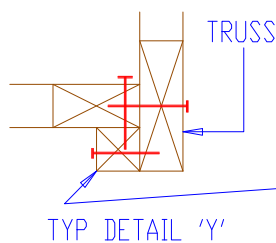
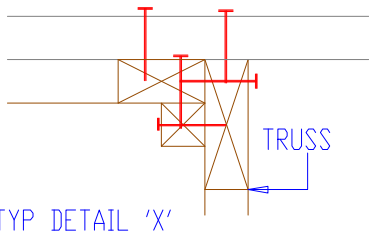
BF - FORMULA
FORMULA FOR BRACING FRAME SPACING 200/TRUSS SPAN
FORMULA FOR DOUBLE BRACING FRAME SPAN/TRUSS SPACING > 20

HEEL CONNECTION SEE
DETAIL ON PAGE 52 OF
THE I.T.S STD DETAIL
MANUAL

BOTTOM CHORD RUNNERS

MAX. 2600 C/C BOTTOM CHORD BRACING FRAME
SEE DETAIL "BF-BCFSPLICE" ON PAGE 48

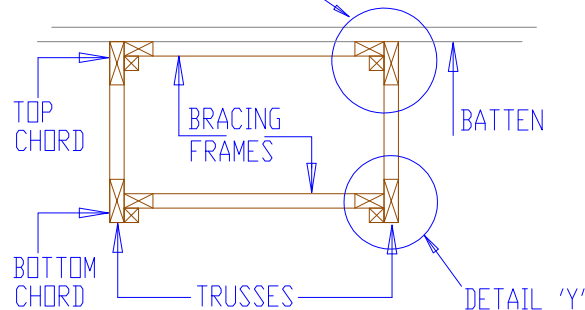
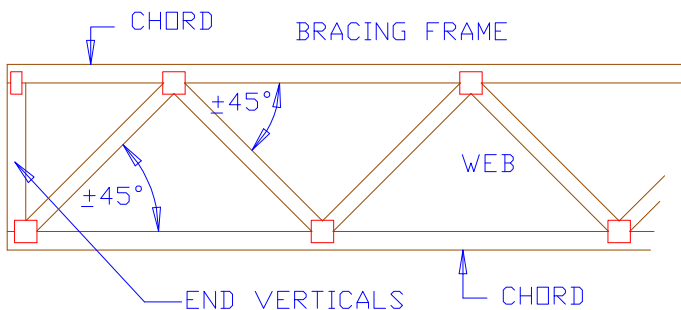
SEE DETAIL "BF - FORMULA" FOR
BRACING FRAME SPACING ON PAGE 44



38x38 SAPG05 CONTINUOUS
BEARER NAILED AT 300c/c
WITH Ø3.5x75mm WIRE NAILS

SINGLE BAY FRAME DETAILS
DETAIL 'X'

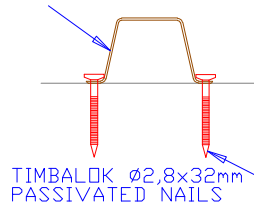
TO SUIT TRUSS SPACING



BRACING FRAME INSTALLATION REQUIRED FOR TILED & FIBER CEMENT ROOFS OF TRUSS SPANS GREATER
THEN 11.5m AND FOR METAL SHEETED ROOFS OF TRUSS SPANS GREATER THEN 15m

RUNNER SPLICE DETAIL

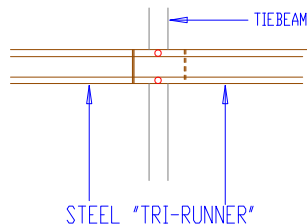
TIMBALOK TRI RUNNER



TYPICAL
CONNECTION

USE 2No. Ø2,8x32mm TIMBALOK
PASSIVATED NAILS AT EACH
TRUSS CONNECTION

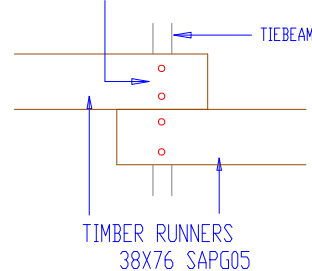
JOIN THE TRI-RUNNER AT
THE TRUSS INTERSECTION
WITH MIN. OF 100mm
RUNNER OVERLAP



OR

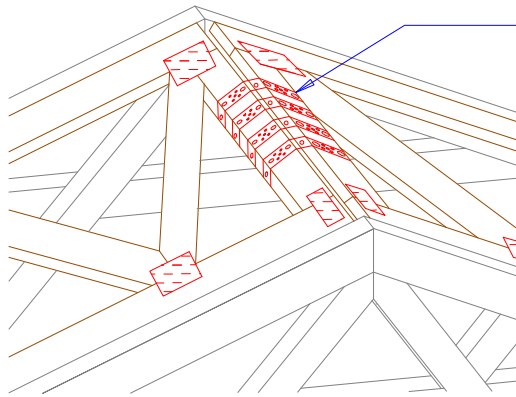
TIMBER RUNNER JOIN DETAIL

2No. Ø3.5x75mm WIRE NAILS
(PER RUNNER)



TIMBER RUNNERS
38x76 SAPG05

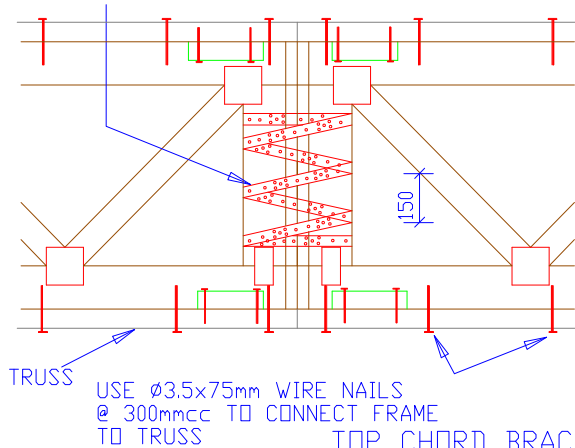
ISOMETRIC VIEW OF APEX SPLICE



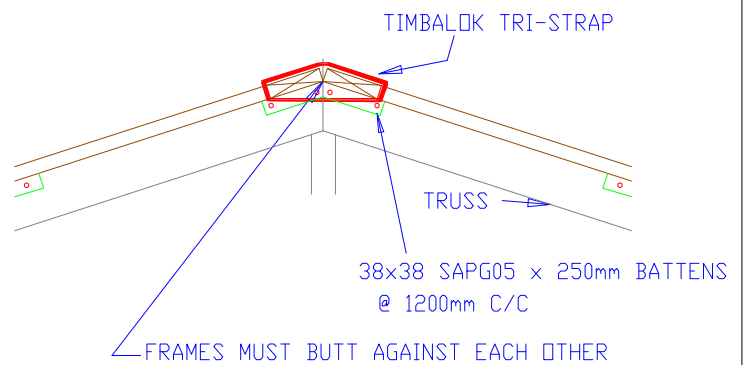
TIMBALOK TRI-STRAP TO BE WRAPPED AROUND BOTH BRACING FRAME ENDS FULLY NAILED USING $\phi 3,5 \times 32\text{mm}$ TIMBALOK PASSIVATED NAILS

PLAN VIEW ON SPLICE

TIMBALOK TRI-STRAP FULLY NAILED USING TIMBALOK PASSIVATED $\phi 2,8 \times 32\text{mm}$ NAILS



SECTION THROUGH BRACING FRAMES



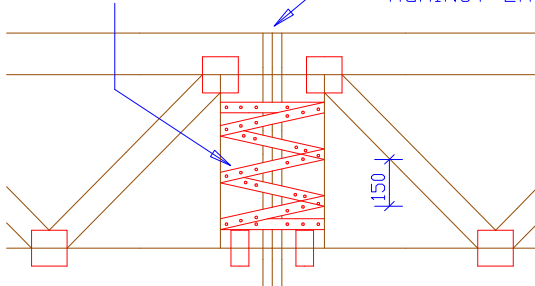
TOP CHORD BRACING FRAME CONNECTION AT APEX

BRACING / STIFFENER FRAME CONNECTION DETAILS AT APEX

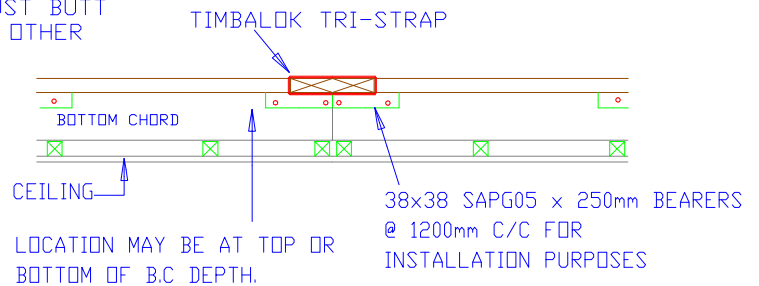
PLAN VIEW ON SPLICE

TIMBALOK TRI-STRAP FULLY NAILED USING TIMBALOK PASSIVATED $\phi 2,8 \times 32\text{mm}$ NAILS

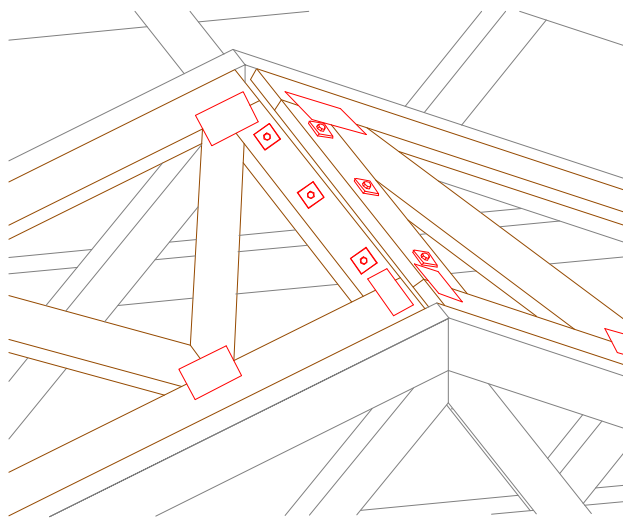
NB: FRAMES MUST BUTT AGAINST EACH OTHER



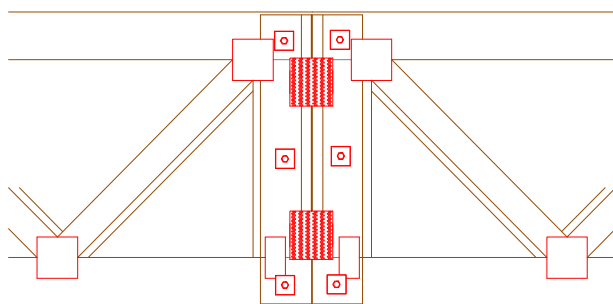
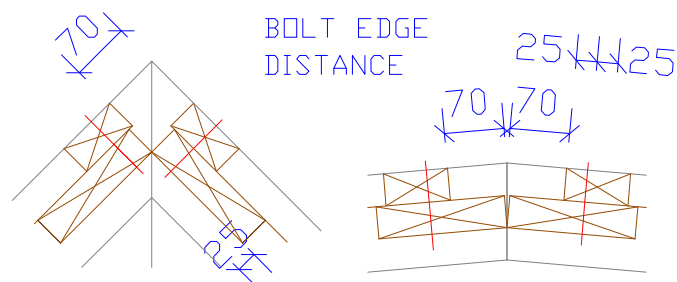
SECTION THROUGH BRACING FRAMES



BOTTOM CHORD BRACING FRAME SPLICE CONNECTION

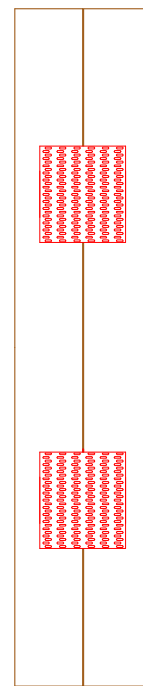


ISOMETRIC VIEW OF APEX SPLICE



PLAN VIEW OF APEX SPLICE

1.

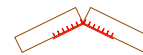


1. 2No. PIECES OF 38x152 SAPG05 TIMBER CONNECTED WITH 2No. 150x150mm TRI-NAIL PLATE (MINIMUM PLATE SIZE) ON ONE SIDE ONLY

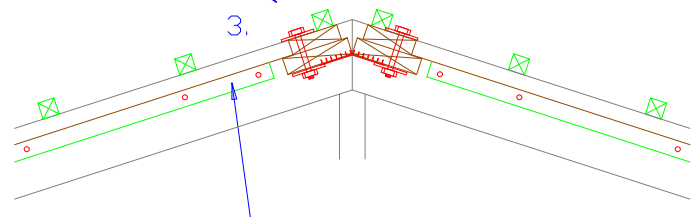
2. MEMBERS BENT TO SUIT TRUSS PITCH

3. CONNETOR PIECES BOLTED TO THE UNDER-SIDE OF THE BRACING FRAMES WITH M12 BOLTS WITH 36x4mm WASHERS EACH SIDE. 3No. BOLTS PER FRAME. BOLTS MUST BE POSITIONED TO CLEAR APEX BATTEN. MIN. EDGE DISTANCE OF 25mm.

2.



3.

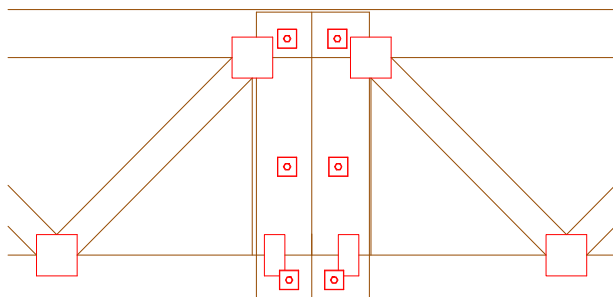


38x38 SAPG05 BATTEN
SUPPORT BATTEN
SHORT OF APEX

TYPICAL SECTION THROUGH BRACING FRAMES

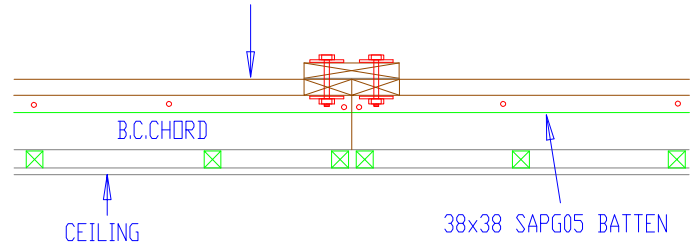
BRACING / STIFFENER FRAME CONNECTION DETAILS AT APEX

38X152/228 SAPG05 OR SPLICE CONNECTOR AS ABOVE



PLAN VIEW ON SPLICE

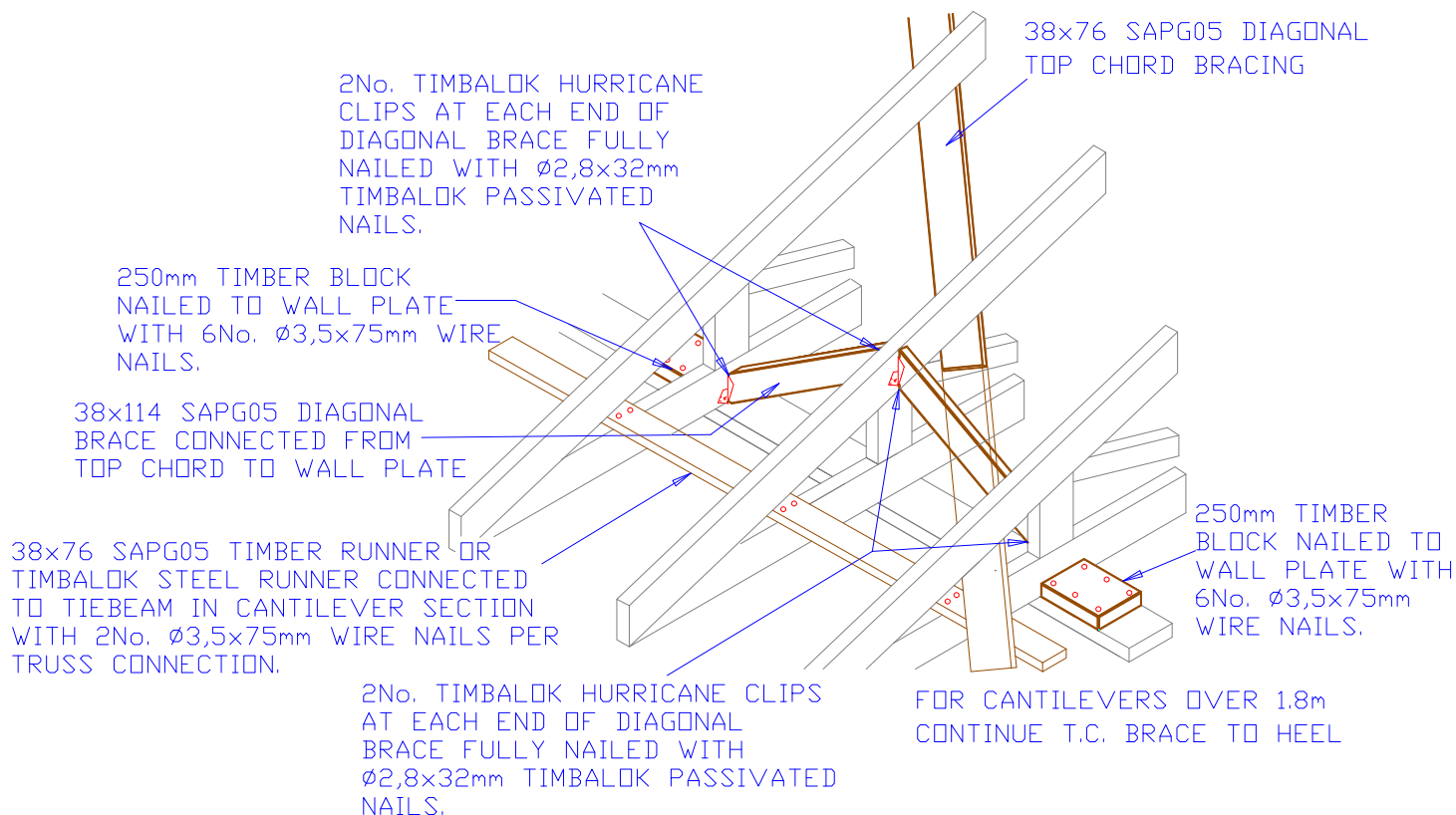
FRAMES MUST BUTT AGAINST EACH OTHER



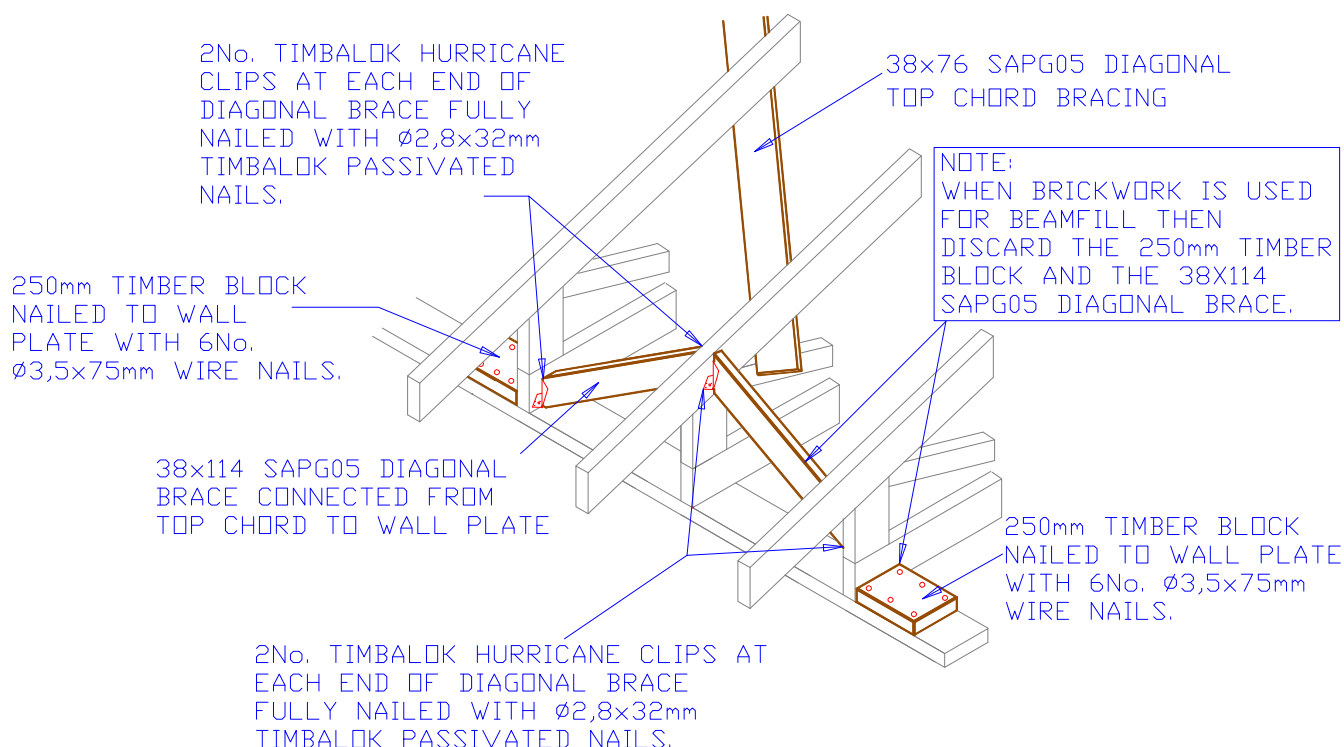
TYPICAL SECTION THROUGH BRACING FRAMES

TYPICAL BOTTOM CHORD BRACING FRAME SPLICE CONNECTION
AT CENTRE OF TRUSS BOTTOM CHORDS - SHEETED ROOFS ONLY

ALTERNATIVE BRACING FRAME CONNECTIONS OF APEX AND BC SPLICE



CANTILEVER WALL DETAIL OF STABILITY BRACING - TILED ROOFS FOR TRUSS ENDS NOT BUILT INTO BRICKWORK - TRUSS SPANS 6.6m & LESS



STUB WALL DETAIL OF STABILITY BRACING - TILED ROOFS FOR TRUSS ENDS NOT BUILT INTO BRICKWORK - TRUSS SPANS 6.6m & LESS

38x114 SAPG05 DIAGONAL TOP CHORD
BRACING CONNECTED TO UNDERSIDE
OF TRUSS WITH 2No. $\phi 3,5 \times 75$ mm WIRE NAILS.

NOTE:
USE SAME DETAIL FOR
STUB ENDS.

BRICK BEAMFILL
(NB: BOTH TOP & BOTTOM
CHORDS MUST BE SECURELY
BUILT INTO BRICKWORK)

38x114 SAPG05 DIAGONAL TOP CHORD
BRACING BOLTED TO UNDERSIDE
OF SHELF WITH TWO M12 TIMBALOK
BOLTS & 36x4mm SQUARE
WASHERS ON BOTH SIDE.

38x228 SAPG05 SHELF FIXED
BETWEEN TRUSSES WITH 2No.
TIMBALOK HURRICANE CLIPS ON
EACH SIDE OF SHELF.

38x76 SAPG05 TIMBER RUNNER OR
TIMBALOK STEEL RUNNER CONNECTED TO
TIEBEAM IN CANTILEVER SECTION WITH
2No. $\phi 3,5 \times 75$ mm WIRE NAILS PER TRUSS
CONNECTION.

CANTILEVER SHELF FOR STABILITY BRACING - TILED ROOFS TRUSS ENDS BUILT INTO BRICKWORK - TRUSS SPANS OVER 6.6m

38x114 SAPG05 DIAGONAL TOP CHORD
BRACING CONNECTED TO UNDERSIDE
OF TRUSS WITH 2No. $\phi 3,5 \times 75$ mm WIRE NAILS.

38x114 SAPG05 DIAGONAL MEMBERS TO EACH
SIDE OF SHELF FROM TOP CHORD TO
WALL PLATE CONNECTED USING 2No.
TIMBALOK HURRICANE CLIPS FULLY
NAILED USING $\phi 2,8 \times 32$ mm TIMBALOK
PASSIVATED NAILS.

NOTE:
USE SAME DETAIL FOR
STUB ENDS.

38x114 SAPG05 DIAGONAL TOP CHORD
BRACING BOLTED TO UNDERSIDE
OF SHELF WITH 2No. M12 TIMBALOK
BOLTS & 36x4mm SQUARE
WASHERS ON BOTH SIDE.

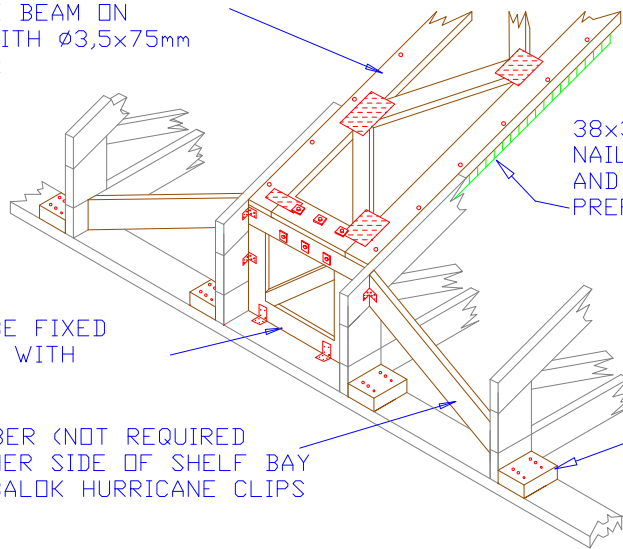
250mm TIMBER BLOCK NAILED
TO WALL PLATE WITH 6No.
 $\phi 3,5 \times 75$ mm WIRE NAILS.

38x228 SAPG05 SHELF FIXED BETWEEN
TRUSSES WITH 2No. TIMBALOK
HURRICANE CLIPS ON EACH SIDE
OF SHELF.

38x76 SAPG05 TIMBER RUNNER OR TIMBALOK
STEEL RUNNER CONNECTED TO TIEBEAM IN
CANTILEVER SECTION WITH 2No. $\phi 3,5 \times 75$ mm
WIRE NAILS PER TRUSS CONNECTION.

CANTILEVER SHELF FOR STABILITY BRACING - TILED ROOFS TRUSS ENDS NOT BUILT INTO BRICKWORK - TRUSS SPANS OVER 6.6m

PREFABRICATED BRACING FRAME TO BE FIXED TO RAFTER AND TIE BEAM ON 38x38 SAPG05 BEARERS WITH Ø3,5x75mm WIRE NAILS AT 300mm c/c



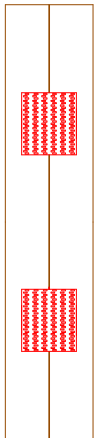
38x38 SAPG05 BATTEN TO BE NAILED @ 300mm c/c TO RAFTER AND TIE BEAM TO SUPPORT PREFABRICATED BRACING FRAME

PRE-FABRICATED FRAME TO BE FIXED BETWEEN STUB-END TRUSSES WITH HURRICANE CLIPS.

38x114 SAPG05 BRACING MEMBER (NOT REQUIRED WITH BEAM FILLING) TO EITHER SIDE OF SHELF BAY TO BE FIXED WITH 4No. TIMBALOK HURRICANE CLIPS

TIMBER BLOCK 38x114 SAPG05 x 200mm TO BE NAILED TO WALL PLATE WITH 6No. Ø3,5x75mm WIRE NAILS

1.

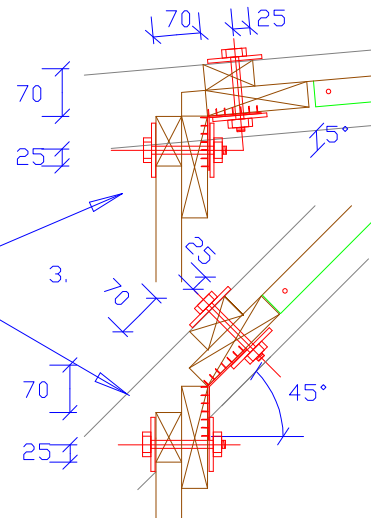
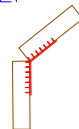


1. 2No. PIECES OF 38x152 SAPG05 TIMBER CONNECTED WITH 2No. 150x150mm (MINIMUM PLATE SIZE) FACTORY PRESSED NAIL PLATES ON ONE SIDE ONLY

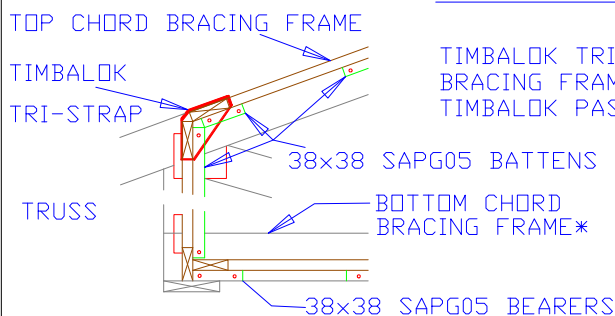
2. MEMBERS BENT TO SUIT TRUSS PITCH

3. CONNETOR PIECES BOLTED TO THE UNDERSIDE OF BRACING FRAMES WITH M12 BOLTS WITH 4No. 36mm WASHERS EACH SIDE. 3No. BOLTS PER FRAME. BOLTS MUST AVOID APEX BATTEN. MIN. EDGE DISTANCE OF 25mm.

2.



ALTERNATIVE FIXING FRAME DETAIL

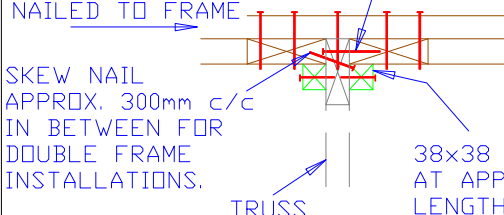


*POSITIONING FLUSH WITH THE TOP OF THE BOTTOM CHORD OPTIONAL

TYPICAL SECTION THROUGH BRACING FRAMES

38x38 SAPG05 BATTEN OR 50x76 SAPG05 PURLIN NAILED TO TRUSS AND NAILED TO FRAME

SKEW NAIL APPROX. 300mm c/c IN BETWEEN FOR DOUBLE FRAME INSTALLATIONS.



38x38 SAPG05 APPROX. 250mm BATTENS AT APPROX. 1200mm c/c (OR CONTINUOUS LENGTH) FOR INSTALLATION PURPOSES.

(ALSO FIXING FOR B.C. RUNNERS)

WALL PLATE

VERTICAL BRACING FRAME

TOP CHORD BRACING FRAME

BOTTOM CHORD BRACING FRAME

TRUSS

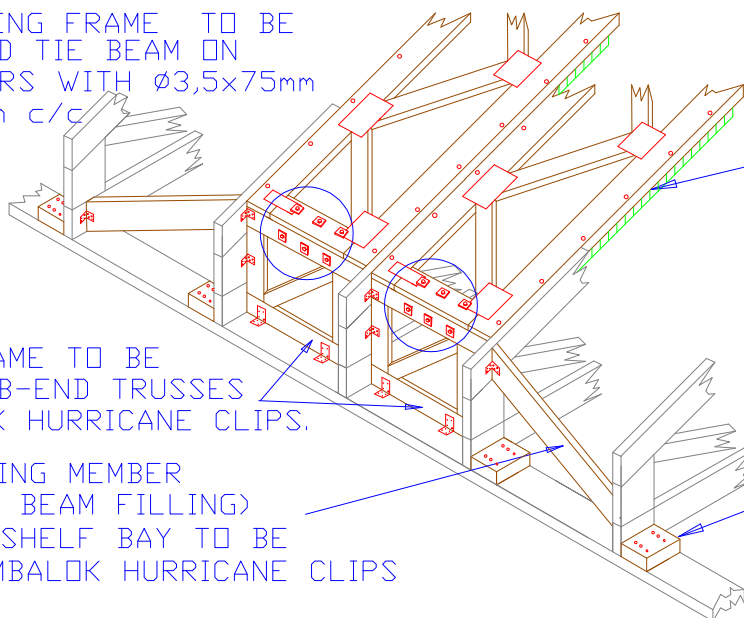
TIMBER BLOCK 38x114 SAPG05 x 200mm TO BE NAILED TO WALL PLATE WITH 6No. Ø3,5x75mm WIRE NAILS

TYPICAL SECTION THROUGH CHORDS

38x114 SAPG05 BRACING MEMBER
(NOT REQUIRED WITH BEAM FILLING)
TO EITHER SIDE OF SHELF BAY TO BE
FIXED WITH 4No. TIMBALOK HURRICANE CLIPS

38x38 SAPG05 MEMBER
NAILED @ 300mm c/c
TO T. & B. CHORDS
TO SUPPORT PREFAB
BRACING FRAME

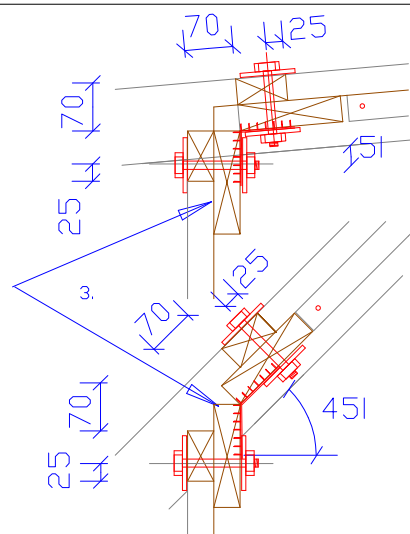
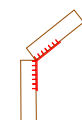
TIMBER BLOCK
38x114 SAPG05
x 200mm TO BE
NAILED TO WALL
PLATE WITH
6No. $\varnothing 3,5 \times 75$ mm
WIRE NAILS



2. MEMBERS BENT TO SUIT TRUSS PITCH

3. CONNETTOR PIECES BOLTED TO THE UNDERSIDE OF BRACING FRAMES WITH M12 BOLTS WITH 4No. 36mm WASHERS EACH SIDE. 3No. BOLTS PER FRAME. BOLTS MUST AVOID APEX BATTEN. MIN. EDGE DISTANCE OF 25mm.

CONNECTION 1



CONNECTION 2

TOP CHORD BRACING FRAME

TIMBALOK TRI-STRAP

TIMBALOK TRI-SRAP NAILED
TO BRACING FRAME USING
Ø2,8x32mm TIMBALOK PASSIVATED
NAILS

38x38 SAPG05 BEARERS

TRUSS

BOTTOM CHORD
BRACING FRAME*

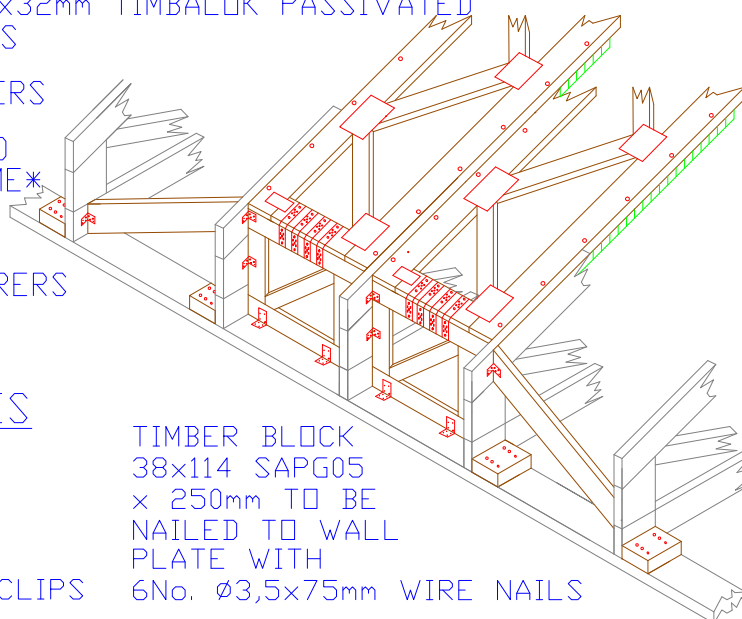
38x38 SAPG05 BEARFRS

*POSITIONING FLUSH WITH THE TOP
OF THE BOTTOM CHORD OPTIONAL

SECTION THROUGH BRACING FRAMES

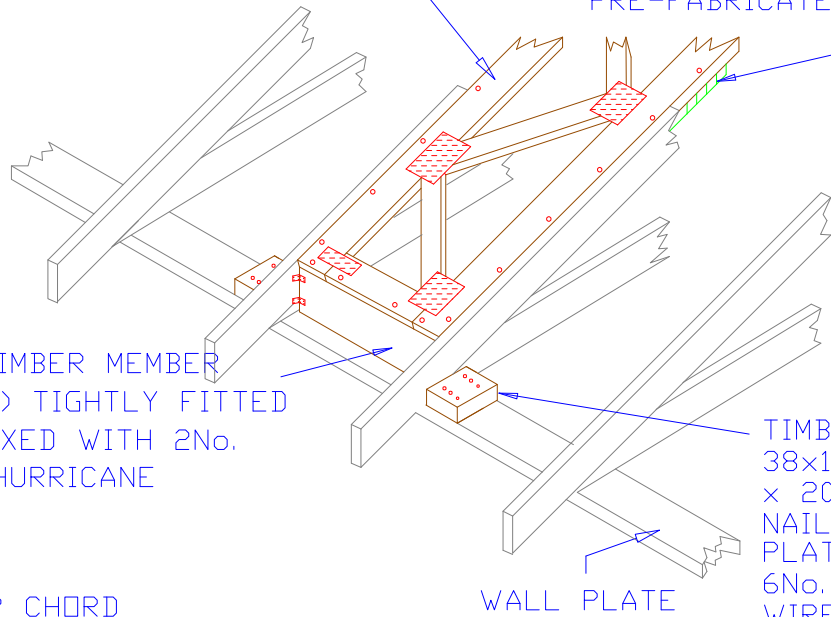
38x114 SAPG05 BRACING MEMBER
(NOT REQUIRED WITH BEAM FILLING)
TO EITHER SIDE OF SHELF BAY TO BE
FIXED WITH 4No. TIMBALOK HURRICANE CLIPS

TIMBER BLOCK
38x114 SAPG05
x 250mm TO BE
NAILED TO WALL
PLATE WITH
6No. Ø3.5x75mm WIRE NAILS



PREFABRICATED BRACING FRAME
TO BE FIXED TO RAFTER AND TIE
BEAM ON 38x38 SAPG05 MEMBERS WITH
Ø3,5x75mm WIRE NAILS AT 300mm c/c

38x38 SAPG05 BATTEN
TO BE NAILED
@ 300mm c/c TO RAFTER
AND TIE BEAM TO SUPPORT
PRE-FABRICATED FRAME



38x114/152/228 SAPG05 TIMBER MEMBER
(TO SUIT TOP CHORD SIZE) TIGHTLY FITTED
BETWEEN TRUSSES AND FIXED WITH 2No.
FULLY NAILED TIMBALOK HURRICANE
CLIPS AT EACH END

TIMBER BLOCK
38x114 SAPG05
x 200mm TO BE
NAILED TO WALL
PLATE WITH
6No. Ø3,5x75mm
WIRE NAILS

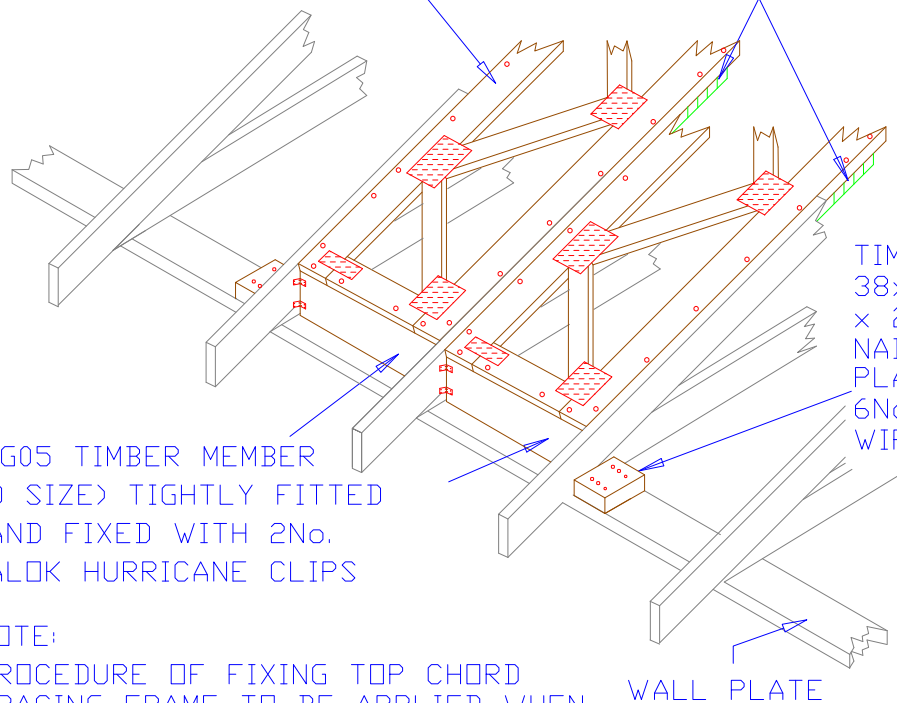
NOTE:

PROCEDURE OF FIXING TOP CHORD
BRACING FRAME TO BE APPLIED WHEN
FIXING BOTTOM CHORD BRACING FRAME.

SINGLE BAY PREFABRICATED BRACING / STIFFENER FRAME STANDARD HEEL SUPPORT

PREFABRICATED BRACING FRAME
TO BE FIXED TO RAFTER AND TIE
BEAM ON 38x38 SAPG05 MEMBERS WITH
75mm WIRE NAILS AT 300mm c/c

38x38 SAPG05 MEMBER TO BE NAILED
@ 300mm c/c TO RAFTER
AND TIE BEAM TO SUPPORT
PRE-FABRICATED FRAME



TIMBER BLOCK
38x114 SAPG05
x 250mm TO BE
NAILED TO WALL
PLATE WITH
6No. Ø3,5x75mm
WIRE NAILS

38x114/152/228 SAPG05 TIMBER MEMBER
(TO SUIT TOP CHORD SIZE) TIGHTLY FITTED
BETWEEN TRUSSES AND FIXED WITH 2No.
FULLY NAILED TIMBALOK HURRICANE CLIPS
AT EACH END

NOTE:

PROCEDURE OF FIXING TOP CHORD
BRACING FRAME TO BE APPLIED WHEN
FIXING BOTTOM CHORD BRACING FRAME.

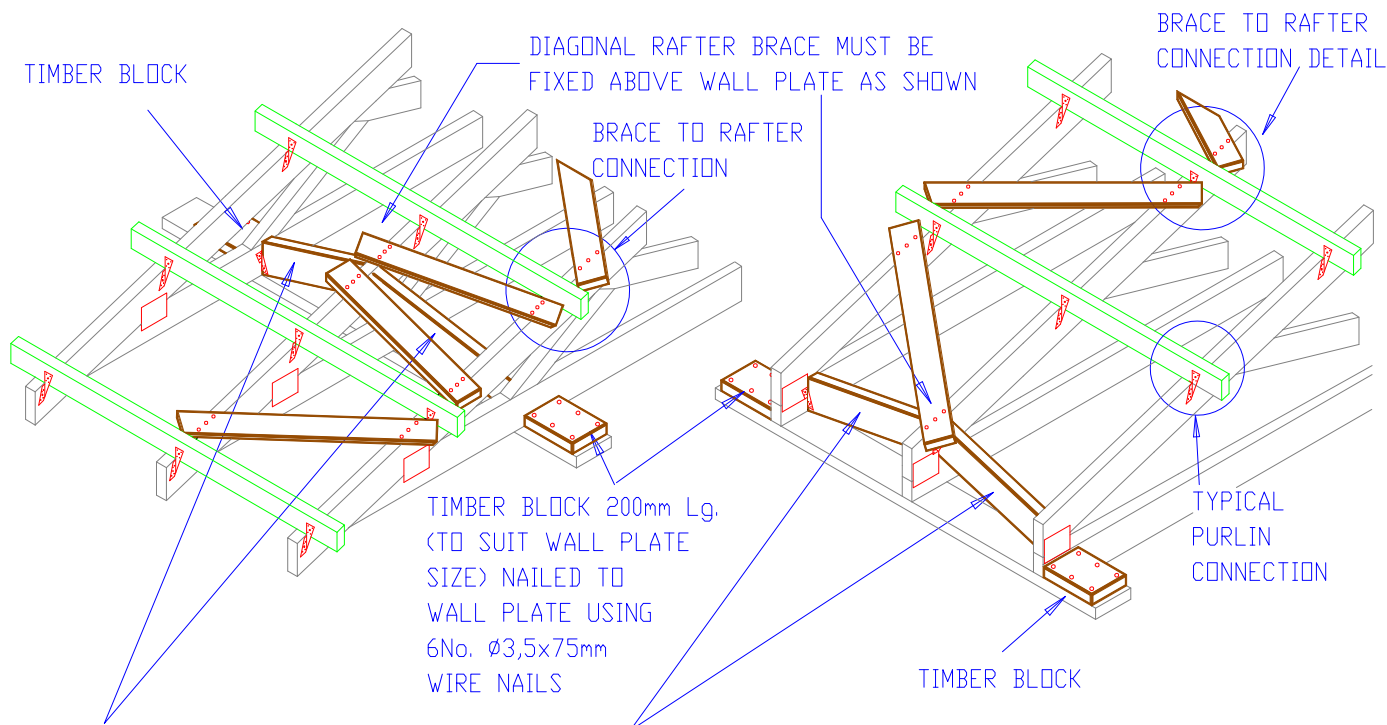
DOUBLE BAY PRE-FABRICATED BRACING / STIFFENER FRAME STANDARD HEEL SUPPORT

SINGLE AND DOUBLE BAY BRACING / STIFFENER FRAME HEEL CONNECTION DETAIL.

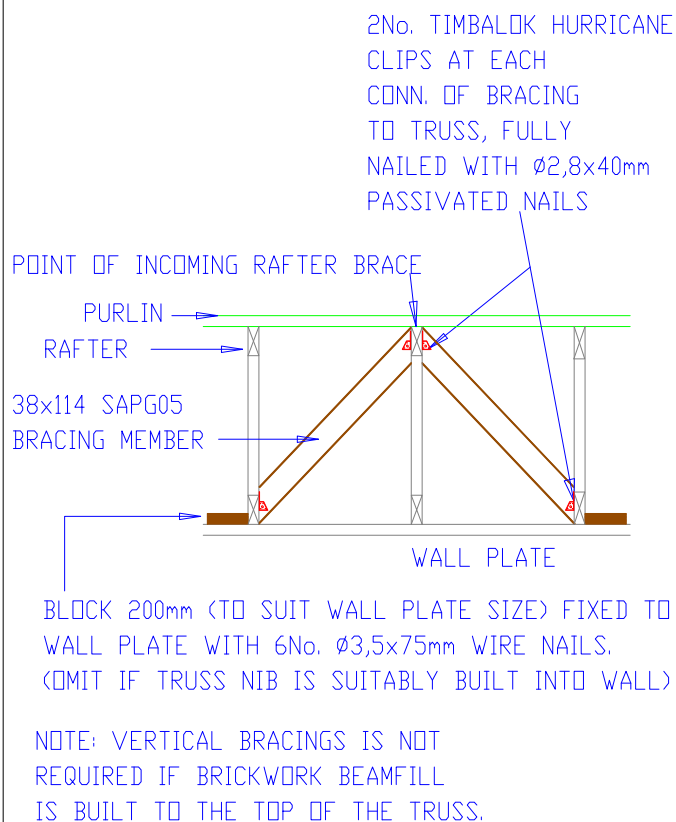
ITS STANDARD DETAIL
REF: HD-F

PAGE: 57

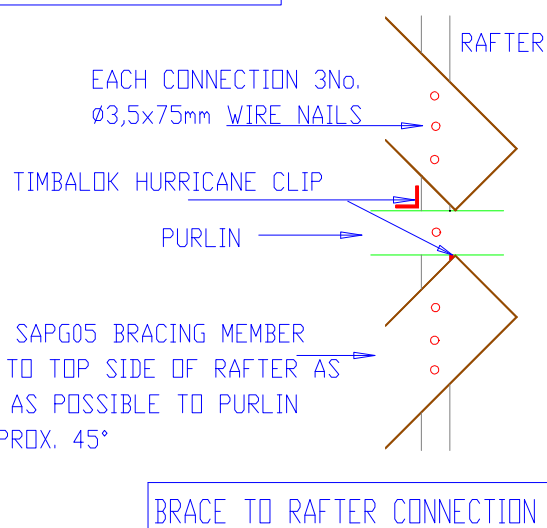
REV: A
FEB 2011

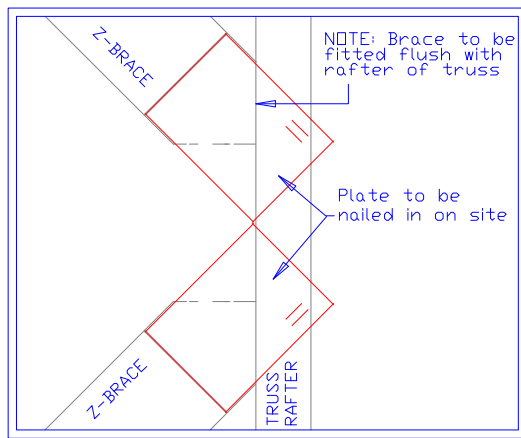


2No. 38x114 SAPG05 BRACING MEMBERS TO FIT TIGHTLY BETWEEN 3No. TRUSSES AND FIXED TO RAFTER AND TIEBEAM OF TRUSSES. EACH CONNECTION USE 2No. TIMBALOK HURRICANE CLIPS FULLY NAILED WITH $\varnothing 2,8 \times 40\text{mm}$ PASSIVATED NAILS. (WHERE BEAM INFILL OCCURS AND IS OF A STRUCTURALLY ACCEPTABLE CONSTRUCTION THESE 2No. BRACING MEMBERS MAY BE OMITTED.)

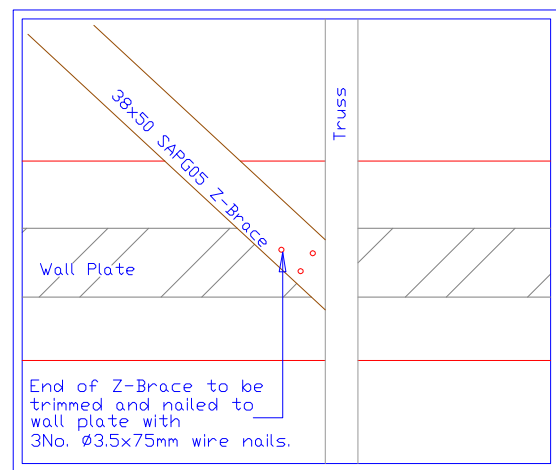


NOTE:
38x76 SAPG05 TIMBER CAN BE USED FOR THE TOP CHORD BRACE WHEN THE TRUSS AND PURLIN SPACINGS ARE LESS THAN 1200mm

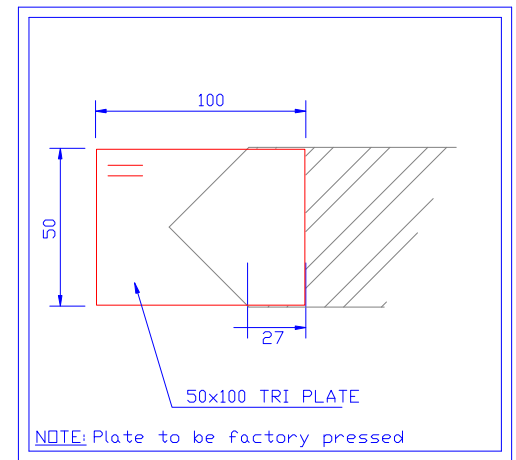
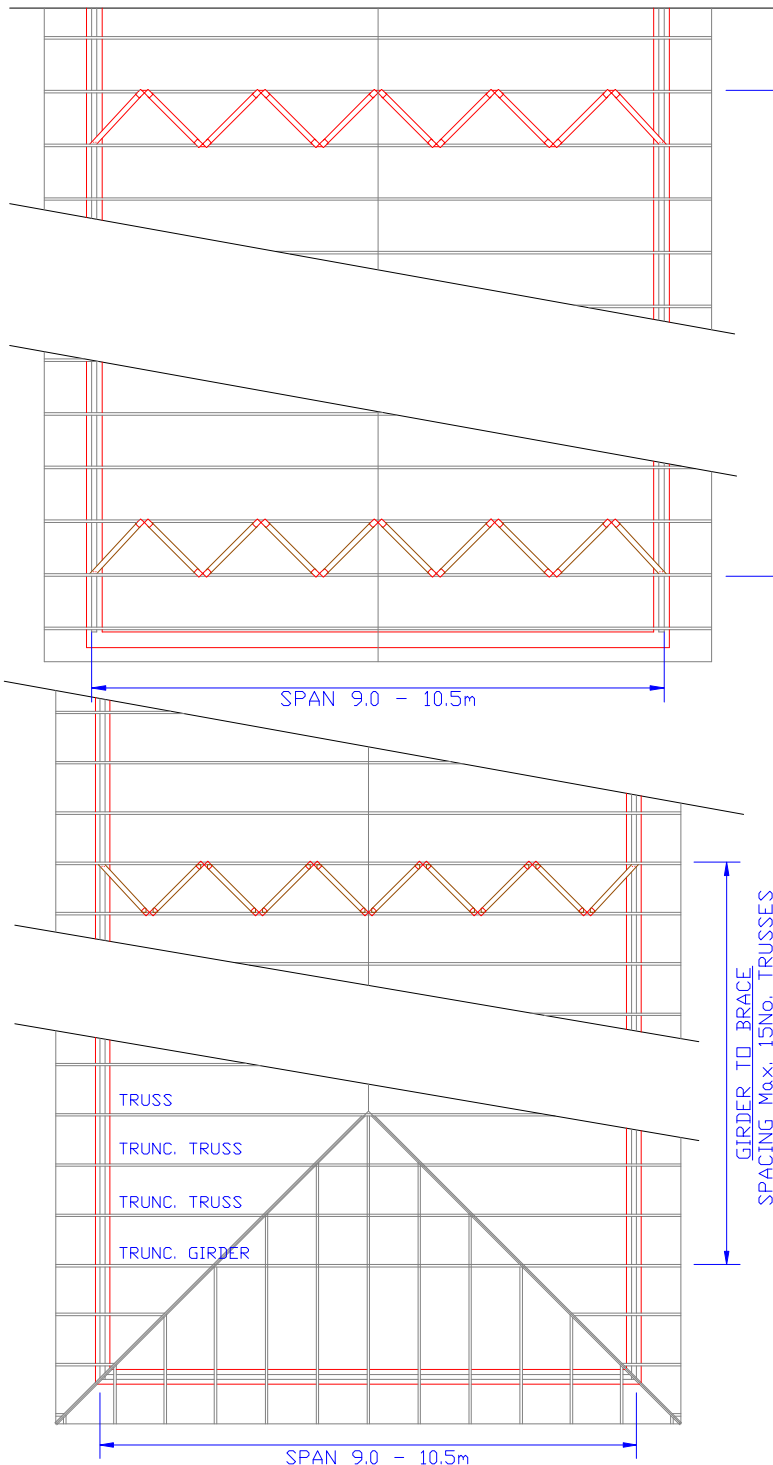




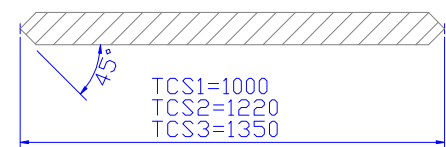
Z-BRACE / RAFTER CONNECTION DETAIL



Z-Brace Wall Plate Connection Detail



Z-BRACE PLATING DETAIL



38x50 SAPG05 Z-BRACE

TRUNCATED TRUSSES - 1 TRUSS
Truss Spacing @ 760mm

GIRDER PLYS COUNT AS FOLLOWS

PLYS	TRUSS COUNT
1	1
2	3
3	4
4	5

NOTE: A MAX. OF 15No. TRUSSES OR 14No. TRUSS SPACING BETWEEN Z-BRACES.

TRUSSES

WALL PLATE

HEEL JOINT

BRACING MUST BE
FIXED ABOVE
WALL PLATE

EACH CONN. 3No.
Ø3,5x75mm WIRE
NAILS.

BRACING MEMBERS
TO BE 38x114 SAPG05
NAILED TO TOP
SIDE OF TOP CHORD

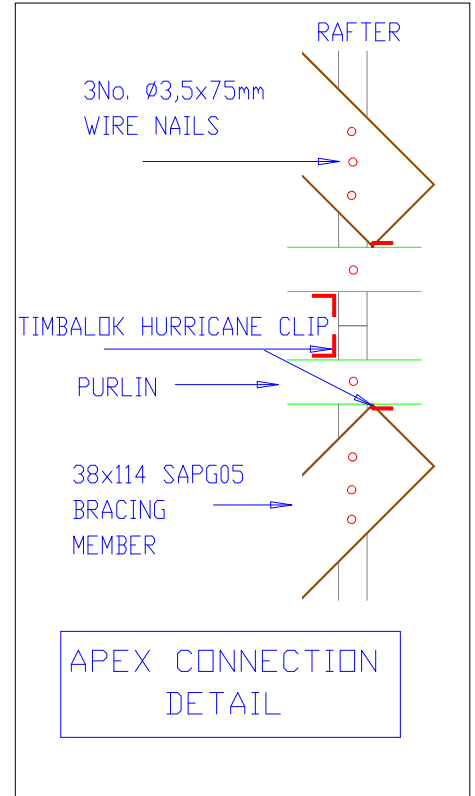
PLAN VIEW

APEX
DETAIL

STANDARD
DETAIL -
SEE PAGE

TOP CHORD

PURLINS



NOTE:
38x76 SAPG05 TIMBER
CAN BE USED FOR THE
TOP CHORD BRACE
WHEN THE TRUSS AND
PURLIN SPACINGS ARE
LESS THAN 1200mm

APEX PURLINS
50x76 SAPG05
ON EDGE

PURLINS
50x76 SAPG05
ON EDGE

EAVE PURLIN
50x76 SAPG05
ON EDGE

PURLINS
50x76 SAPG05
ON EDGE

EAVE PURLIN
50x76 SAPG05
ON EDGE

NO HEEL DETAIL REQUIRED
IF BEAM FILLING IS DONE
USE DETAIL TC BRACE.
(SHALLOW STUB DETAIL) IF NO
BEAM FILLING IS DONE

ISOMETRIC VIEW

APEX PURLIN
DETAIL

TOP CHORD BRACING
38x114 SAPG05
3No. Ø3,5x75mm
WIRE NAILS PER
CONNECTION

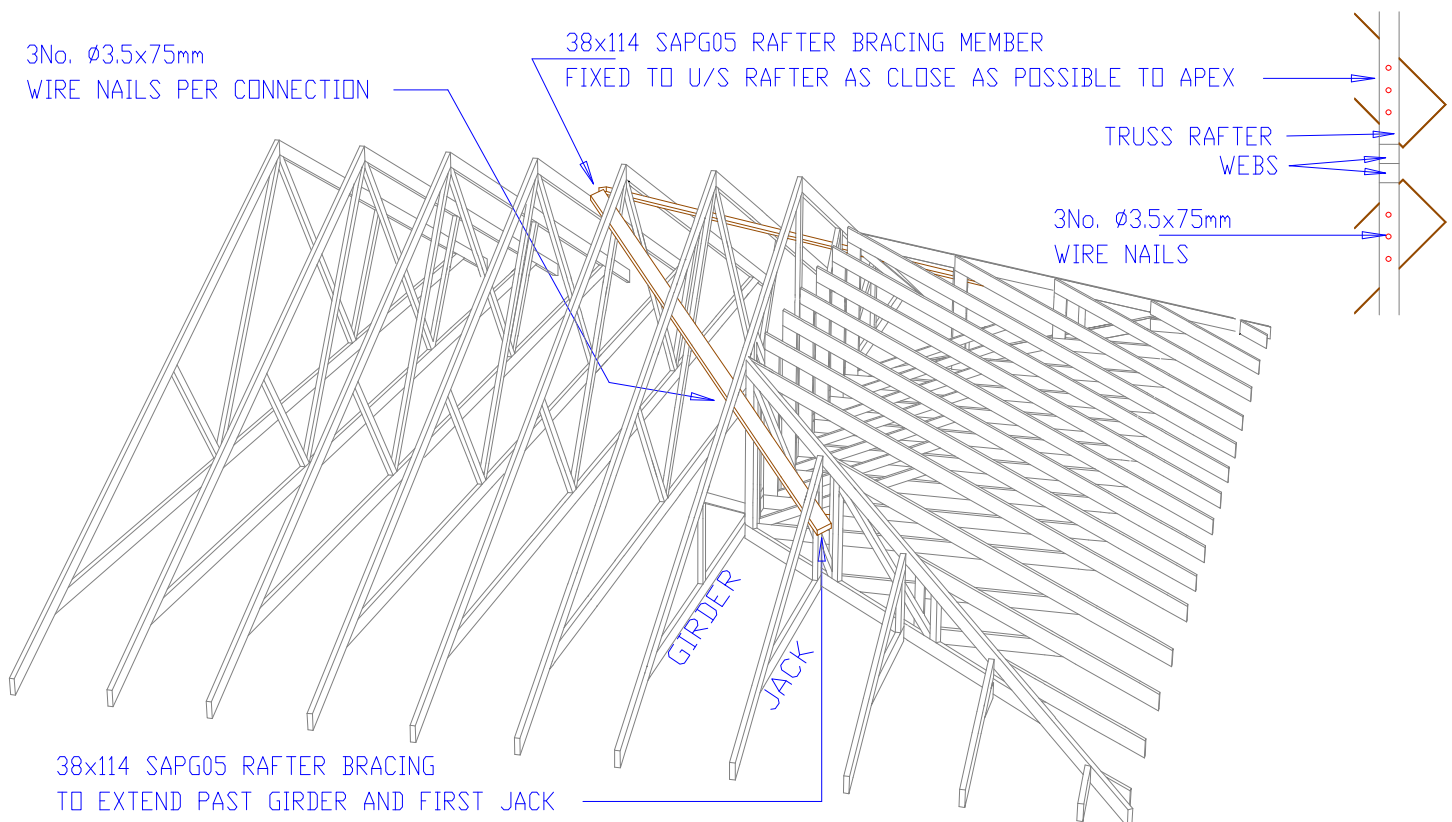
CANTILEVER
HEEL DETAIL
(DIAGONAL
BRACES NOT
SHOWN FOR
CLARITY)

WALL PLATE

NOTE: FOR TILED ROOFS

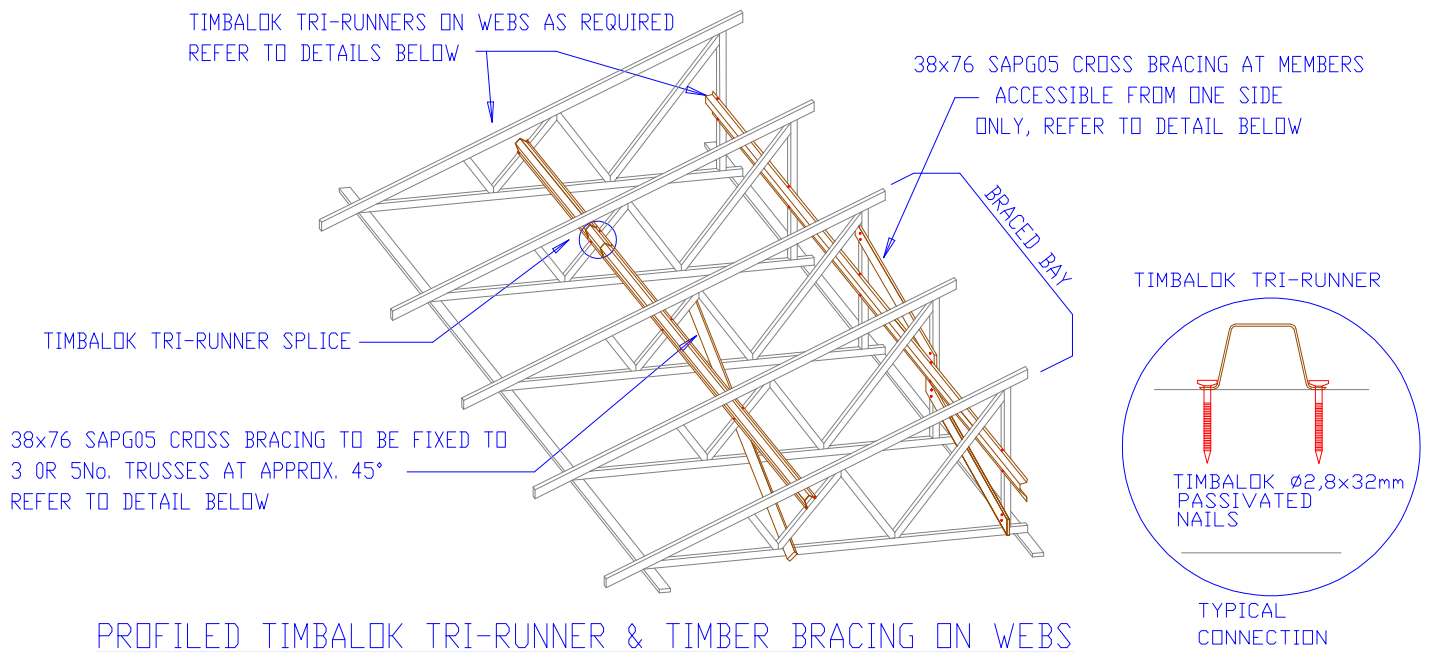
FOR TRUSS SPANS OF 6.6m AND LESS THE HIP AND BRACING WILL ACT AS STABILITY AND ANTI-BUCKLE BRACING. THE HIP AND NEXT DIAGONAL TOP CHORD BRACING WILL BE A MAXIMUM OF 5.5m (CENTER TO CENTER) APART.

FOR TRUSS SPANS OF GREATER THAN 6.6m THE HIP AND BRACING WILL ACT AS STABILITY BRACING ONLY. THE HIP AND NEXT DIAGONAL TOP CHORD BRACING WILL BE A MAXIMUM OF 9.5m (CENTER TO CENTER) APART.

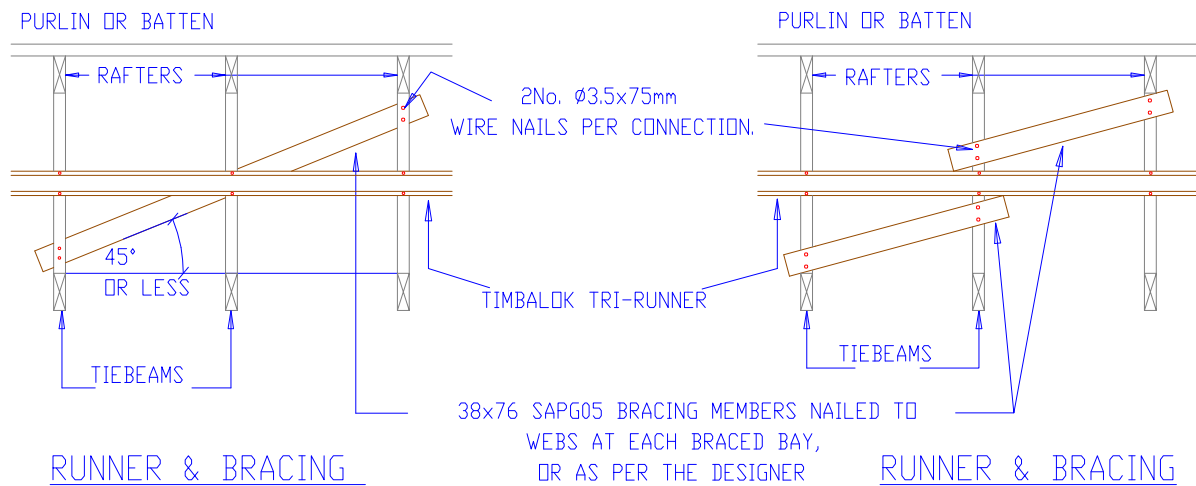


LOUVRE GABLE BRACING TO BE INSTALLED WHERE LOUVRE SECTION IS LESS THAN 1/4 OF SPAN
STANDARD STABILITY BRACING TO BE INSTALLED WHERE LOUVRE SECTION IS GREATER THAN 1/4 OF SPAN

TOP CHORD BRACING OF LOUVRE HIP END TILED ROOFS AND SHEETED ROOFS
(OR USE TOP CHORD BRACING FOR SHEETED ROOFS IN SIMILAR FASHION TO
BRACE THE LOUVRE PART.)

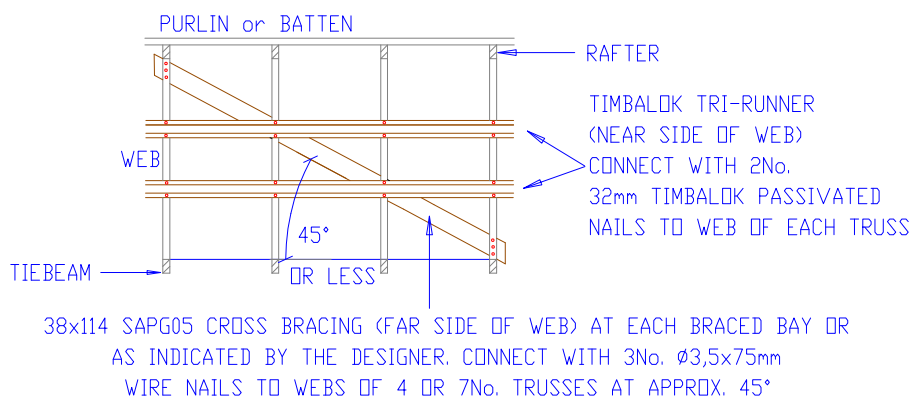


PROFIED TIMBALOK TRI-RUNNER & TIMBER BRACING ON WEBS

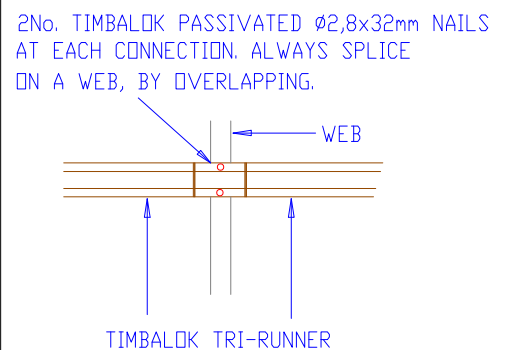


RUNNER & BRACING OPPOSITE

RUNNER & BRACING ON THE SAME SIDE



WEB BRACING WHERE 2No. RUNNERS OCCUR



RUNNER SPLICE

38X76 SAPG05 WEB RUNNERS
SEE TRUSS DESIGNS FOR
WEB RUNNER REQUIREMENTS

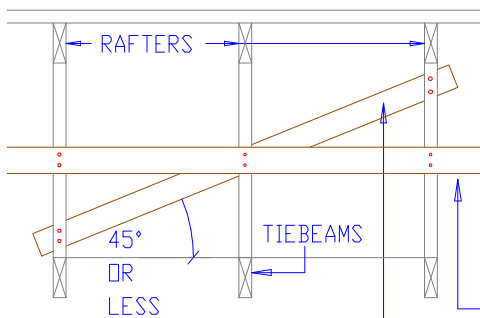
38x76 SAPG05 CROSS BRACING AT MEMBERS
ACCESSIBLE FROM ONE SIDE
ONLY

REFER TO DETAIL
"RUNNER SPLICE"

38x76 SAPG05 CROSS BRACING TO BE FIXED
TO 3, 5 OR 7No. TRUSSES AT
APPROXIMATELY 45°.

WEB AND RUNNER BRACING

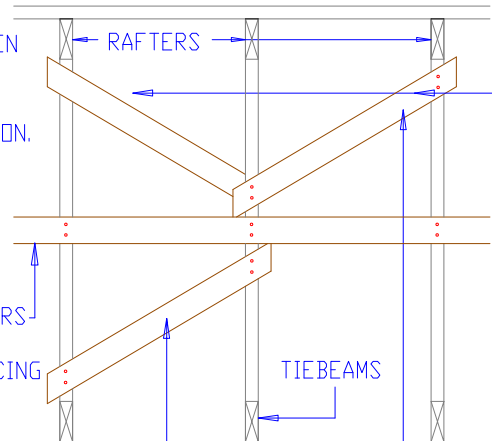
PURLIN OR BATTEN



SINGLE WEB RUNNER

PURLIN OR BATTEN

2No. Ø3.5x75mm
WIRE NAILS PER CONNECTION.



THIS
MEMBER
CAN
ALSO
BE
MOVED
TO
DOTTED
LINE
POSITION

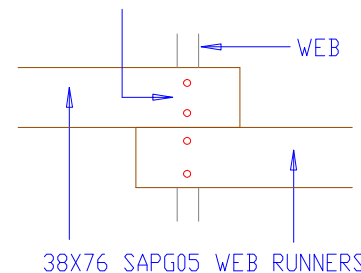
38X76 SAPG05 WEB RUNNERS
38x76 SAPG05 DIAGONAL BRACING
MEMBERS NAILED TO WEBS AT
EACH BRACED BAY, OR AS
INDICATED BY THE DESIGNER

WEB RUNNER AND BRACE ON THE SAME SIDE

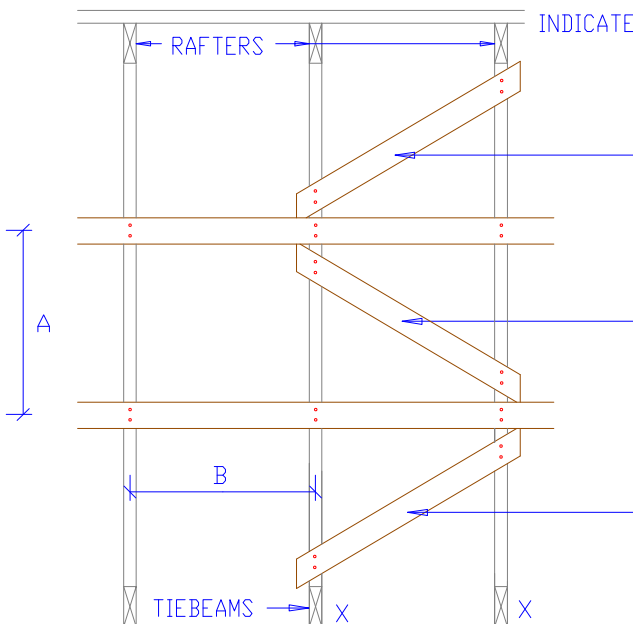
DIAGONAL BRACES
TO BE AT APPROX.
45°.
DISTANCE BETWEEN
RUNNERS DIVIDED
BY TRUSS SPACING,
PLUS ONE EQUALS
TRUSSES TO CROSS

$$\frac{A}{B} + 1 = \text{No. X}$$

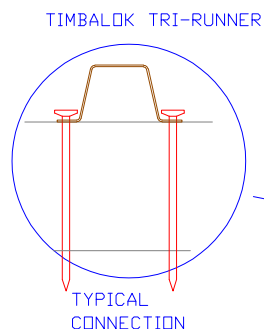
2No. Ø3.5x75mm WIRE NAILS (PER RUNNER)



WEB RUNNER SPLICE

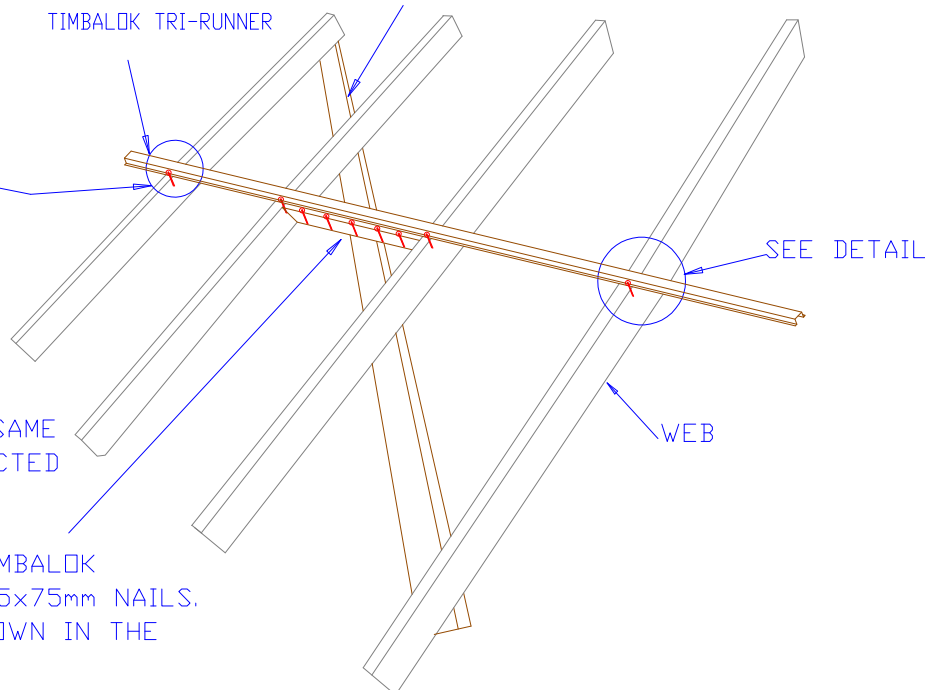


WEB BRACING WHERE 2No. RUNNERS OCCUR



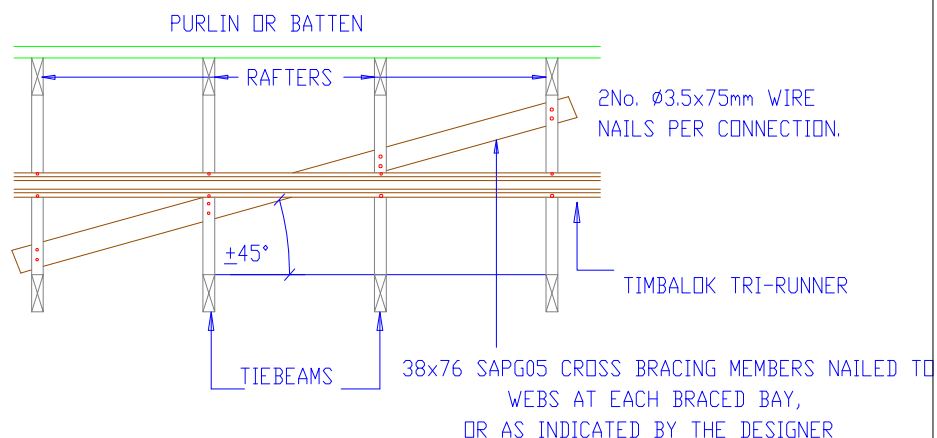
TIMBALOK TRI-RUNNER

38x76 SAPG05 BRACING MEMBER
FIXED TO UNDERSIDE OF WEB
WITH 2No. $\phi 3.5 \times 75$ mm WIRE
NAILS PER WEB CONNECTION
& BLOCK CONNECTION.



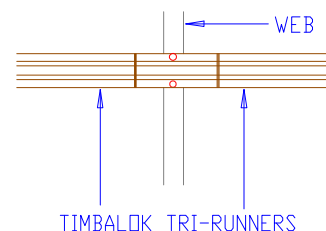
BRACING BLOCK WITH THE SAME
DEPTH AS THE WEB, CONNECTED
WITH 2No. $\phi 3.5 \times 75$ mm WIRE
NAILS AT EACH END INTO
WEB AND CONNECTED TO TIMBALOK
TRI-RUNNER WITH 10No. $\phi 3.5 \times 75$ mm NAILS.
(5No. ON EACH SIDE AS SHOWN IN THE
CONNECTION ABOVE.)

TIMBALOK TRI-RUNNER WITH TIMBER BRACING CONNECTION WHERE
RUNNERS AND BRACING DO NOT INTERSECT ON A TRUSS MEMBER



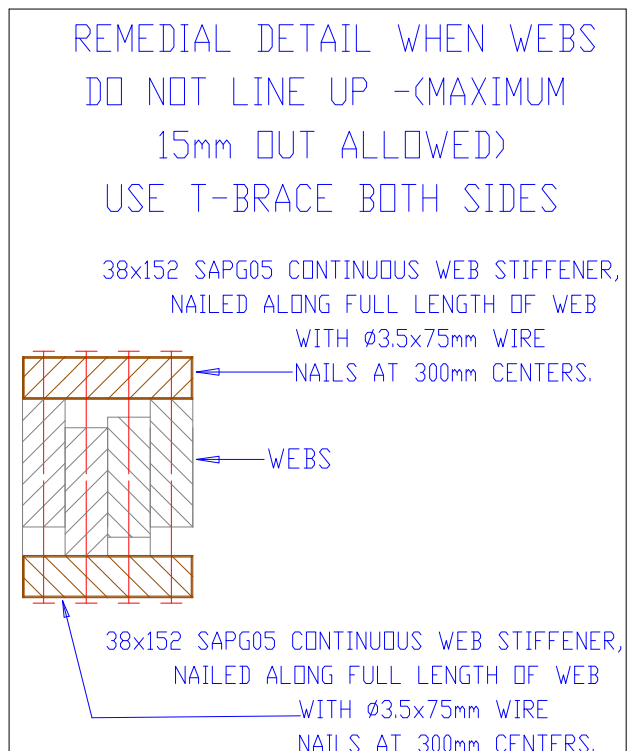
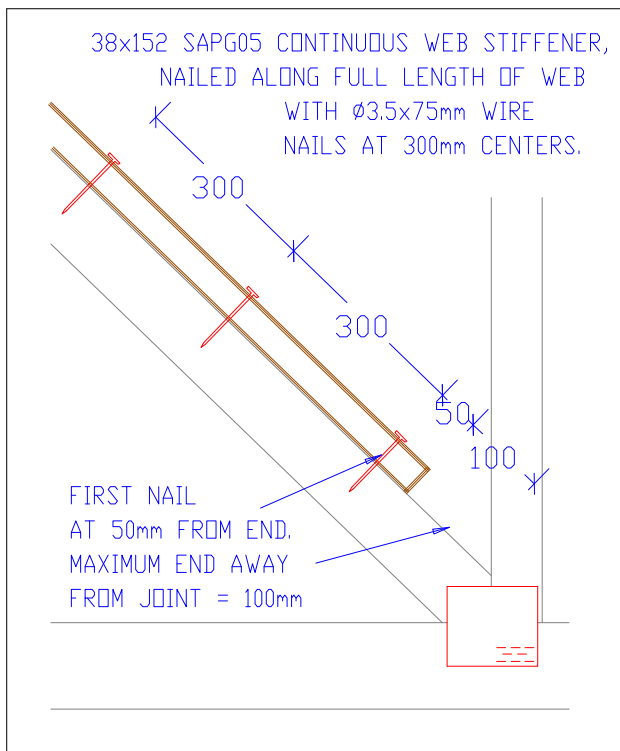
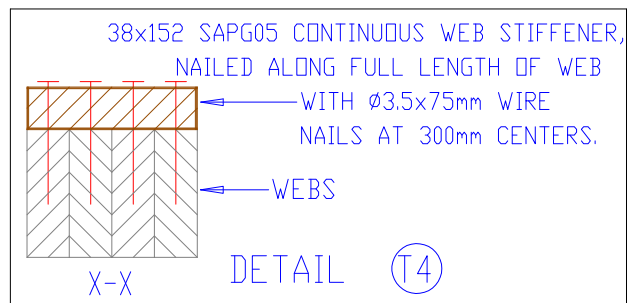
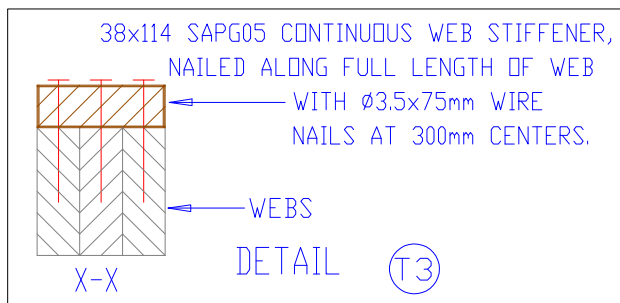
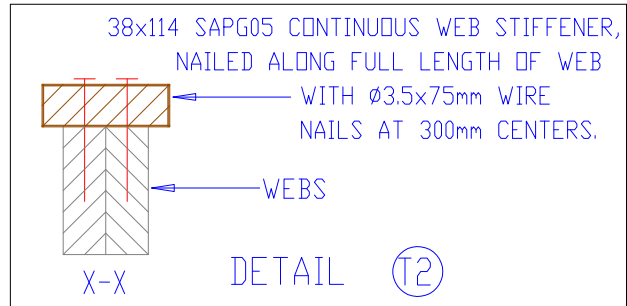
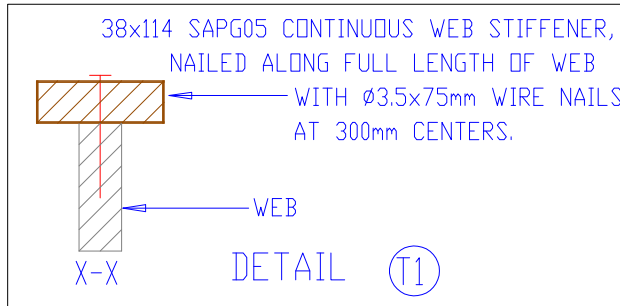
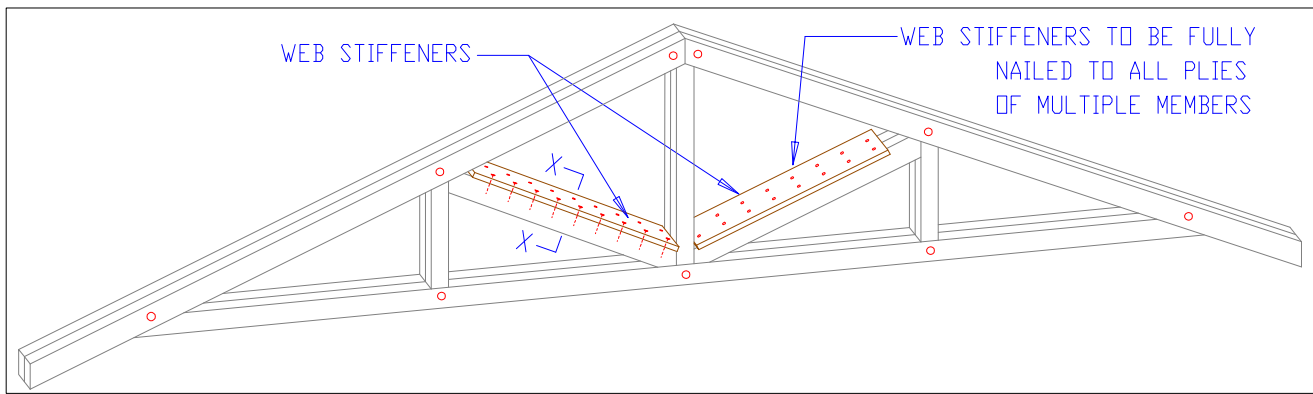
BRACE FIXING DETAIL

2No. $\phi 3.5 \times 75$ mm WIRE NAILS
AT EACH CONNECTION. ALWAYS SPLICE
ON A WEB, BY OVERLAPPING.



TIMBALOK TRI-RUNNER SPLICE

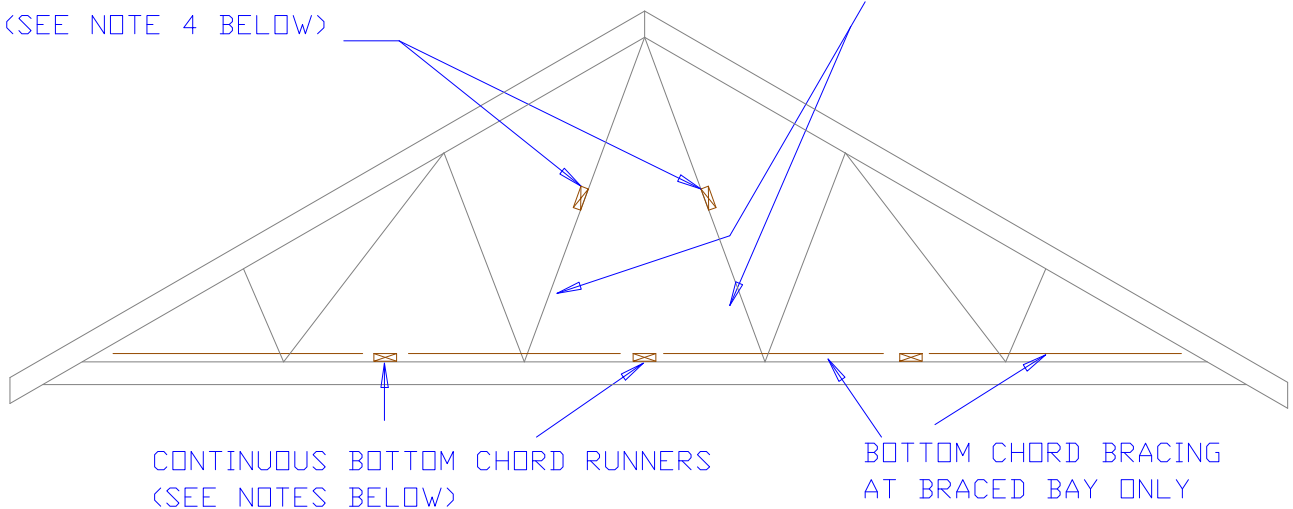
WEB RESTRAINTS WITH TIMBALOK TRI-RUNNERS & TIMBER
BRACING WHERE THE TIMBALOK TRI-RUNNER AND BRACING CROSS
AWAY FROM THE TRUSS MAXIMUM TRUSS SPACING OF 1200mm



WEB STIFFENER OR T-BRACING ON WEBS AS PER TRUSS DESIGN REQUIREMENTS - USED WHEN LESS THAN THREE WEBS NEEDING LATERAL RESTRAINT LINE UP / ARE IN PLANE

CONTINUOUS WEB RUNNERS AS PER
TRUSS DESIGN REQUIREMENTS
(SEE NOTE 4 BELOW)

WEB DIAGONAL BRACING
AT BRACED BAY ONLY



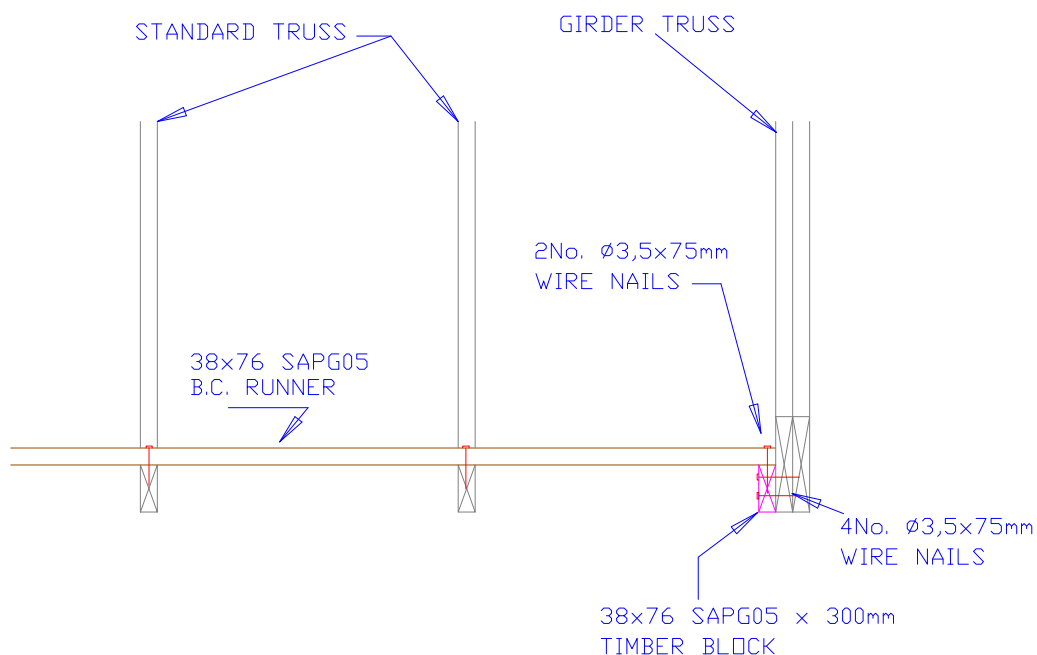
RUNNERS/BINDERS ARE ESSENTIAL IN THE FOLLOWING CASES.

RUNNERS ARE ALSO REFERED TO AS BINDERS.

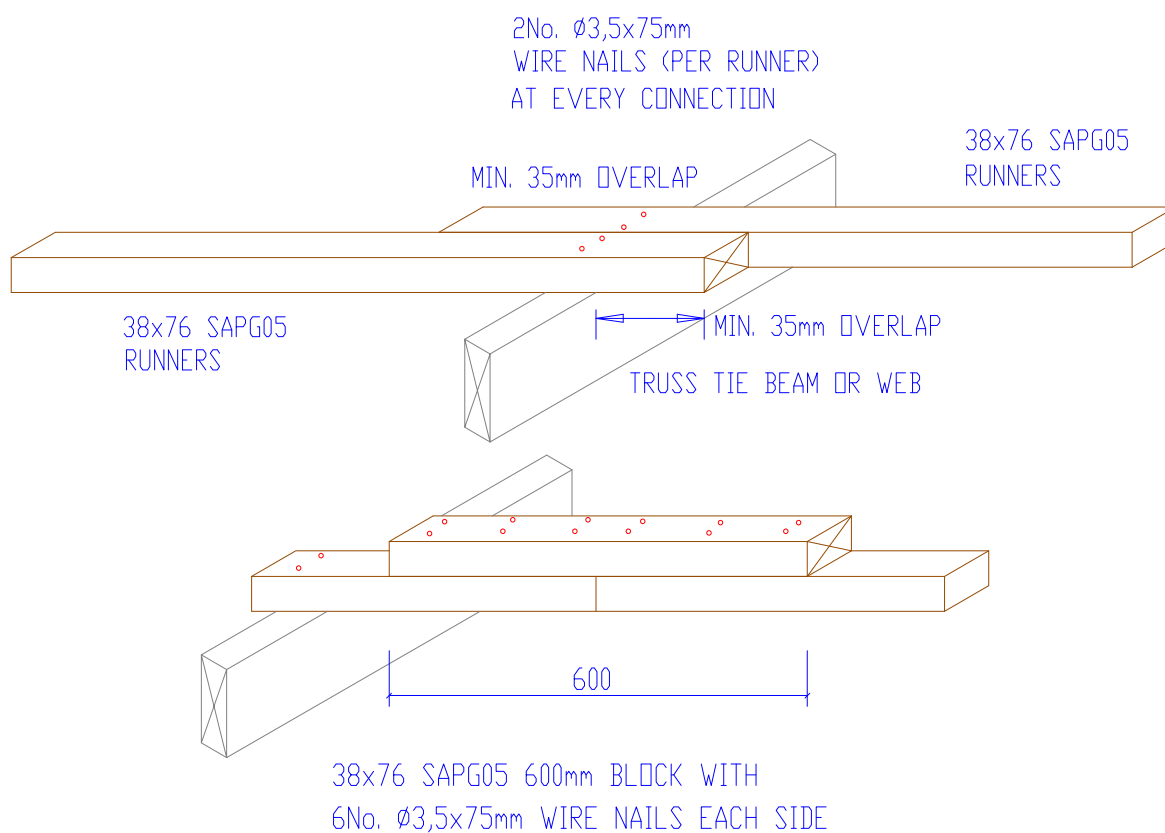
- 1) ON BOTTOM CHORDS OF CANTILEVER TRUSSES OVER CANTILEVER SECTION AND ADJACENT BAY. HERE THE BOTTOM CHORD IS IN COMPRESSION THEREFORE RUNNERS MUST BE AT 1800mm MAX. CENTERS.
- 2) ON BOTTOM CHORDS OF TRUSSES WITH LIGHT-WEIGHT ROOF COVERING BEFORE PERMANENT CEILINGS ARE INSTALLED DIRECTLY TO UNDERSIDE OF TIE BEAM. THE BOTTOM CHORD IS IN TENSION THEREFOR RUNNERS MUST BE AT 2600mm MAX. CENTERS.
- 3) ON BOTTOM CHORDS OF ROOFS WITH SUSPENDED CEILINGS OR WITHOUT CEILINGS. THE BOTTOM CHORD IS IN TENSION THEREFOR RUNNERS MUST BE AT 2600mm MAX. CENTERS.
- 4) ON TENSION WEBS LONGER THAN 2600 mm AND COMPRESSION WEBS LONGER THAN 1800mm U.O.S.

UNLESS OTHERWISE SHOWN :-

- 1) MAXIMUM SPACING OF RUNNERS FOR 38mm TIE-BEAM = 2600mm
- 2) MAXIMUM SPACING OF RUNNERS FOR 50mm TIE-BEAM = 3450mm



CONNECTION OF B.C. RUNNER/BINDER TO GIRDER B.C.

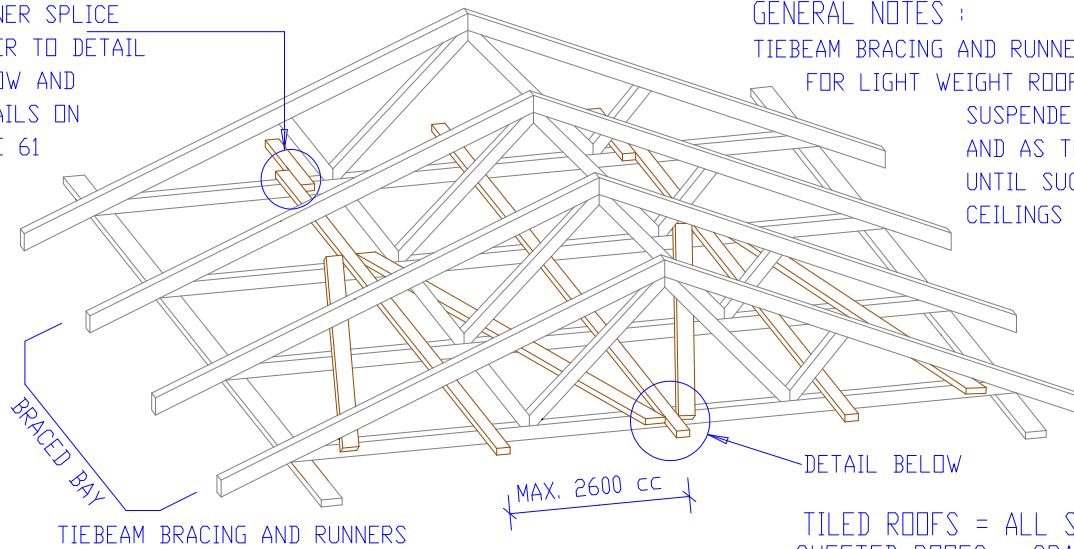


RUNNER/BINDER SPLICING DETAILS

RUNNER SPLICE
REFER TO DETAIL
BELOW AND
DETAILS ON
PAGE 61

GENERAL NOTES :

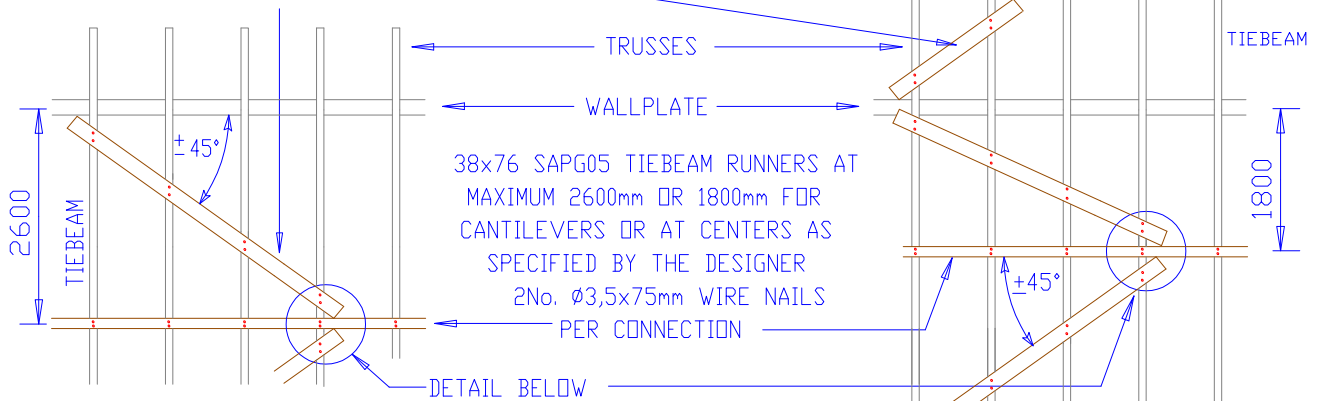
TIEBEAM BRACING AND RUNNERS ARE REQUIRED
FOR LIGHT WEIGHT ROOFS, TRUSSES WITH
SUSPENDED OR NO CEILINGS
AND AS TEMPORARY BRACING
UNTIL SUCH TIME THAT
CEILINGS ARE INSTALLED.



TILED ROOFS = ALL SPANS
SHEETED ROOFS = SPANS LESS THAN 15m

38x114 SAPG05 BRACING MEMBERS TO BE NAILED
TO TOP SIDE OF TIEBEAM OVER 3 OR 4No.
TRUSSES AT APPROX 45°.
2No. Ø3,5x75mm NAILS PER CONNECTION

38x114 SAPG05 CANTILEVER BRACING MEMBER WITH
38x76 SAPG05 TIEBEAM RUNNER AS SPECIFIED BY DESIGNER



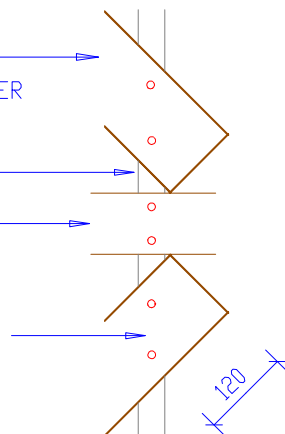
PLAN VIEW - STANDARD HEEL

PLAN VIEW - CANTILEVER HEEL

38x76 SAPG05 BRACING MEMBER
FIXED TOP SIDE OF TIEBEAM AS
CLOSE AS POSSIBLE TO TIEBEAM RUNNER

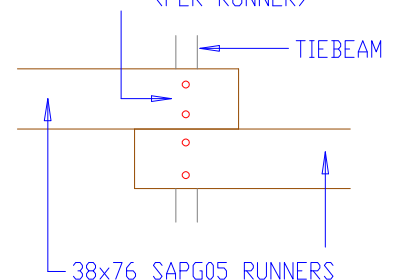
TIEBEAM
TIEBEAM RUNNER

EACH CONNECTION 2No.
Ø3,5x75mm WIRE NAILS

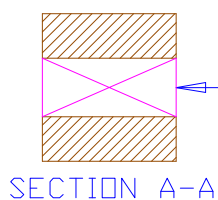
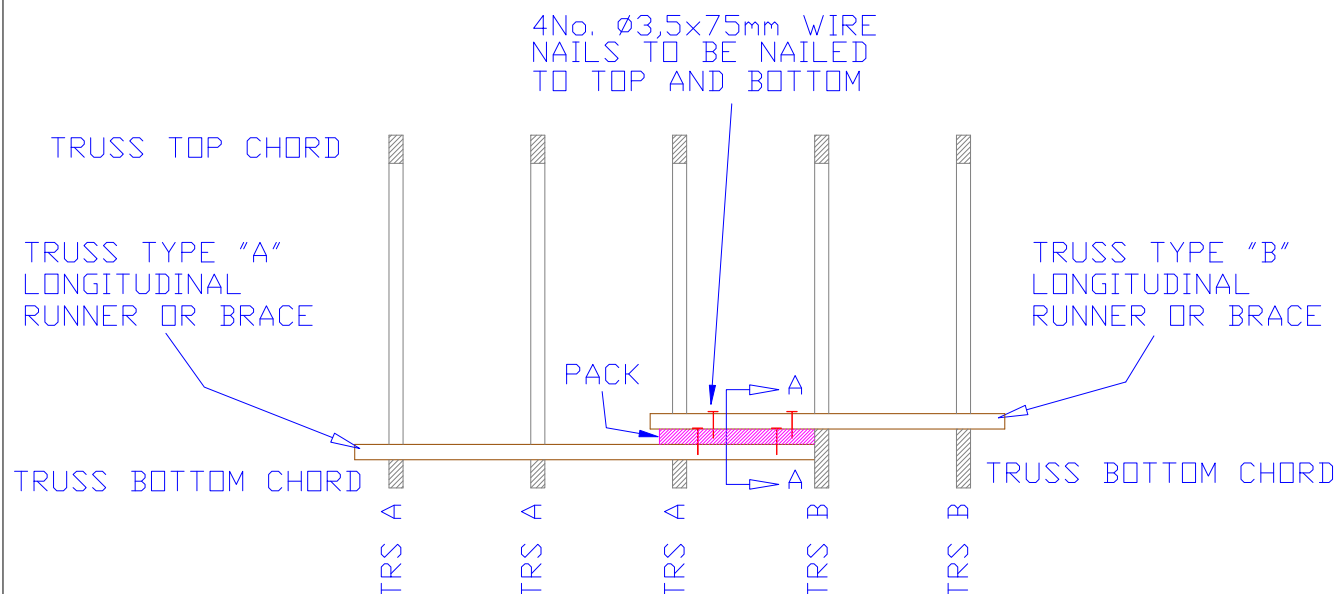


TIEBEAM BRACING CONNECTION

2No. Ø3,5x75mm WIRE NAILS
(PER RUNNER)



TIEBEAM RUNNER SPLICE

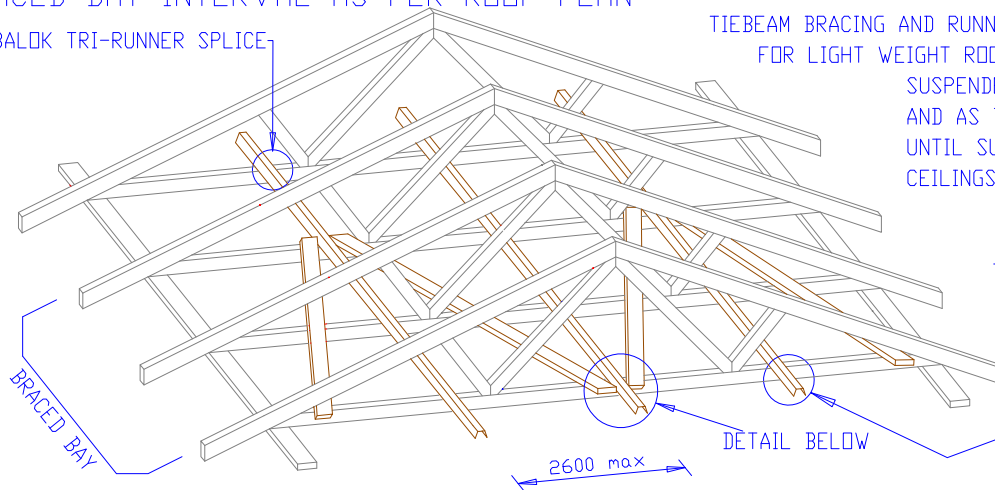


36mm OR 2 NO. 36mm PACK TO SUIT DIFFERENCE IN BOTTOM CHORD DEPTHS.

CHORD 'A'	CHORD 'B'	PACK SIZE	LENGTH mm
114	152	NONE	ONE TRUSS SPACE
114	228	50x76 SAPG05	
152	228	50x38 SAPG05	

BRACED BAY INTERVAL AS PER ROOF PLAN

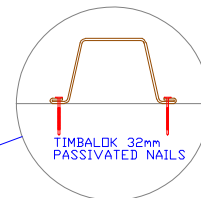
TIMBALOK TRI-RUNNER SPLICE



GENERAL NOTES :

TIEBEAM BRACING AND RUNNERS ARE REQUIRED FOR LIGHT WEIGHT ROOFS, TRUSSES WITH SUSPENDED OR NO CEILINGS AND AS TEMPORARY BRACING UNTIL SUCH TIME THAT CEILINGS ARE INSTALLED.

TIMBALOK TRI-RUNNER

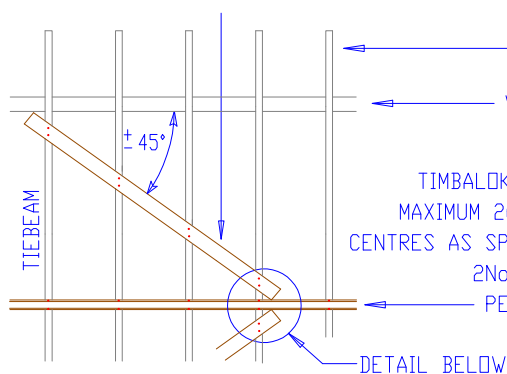


TIEBEAM BRACING AND RUNNERS

TILES - SPANS LESS THAN 11.5m * SHEETING - SPANS LESS THAN 15m

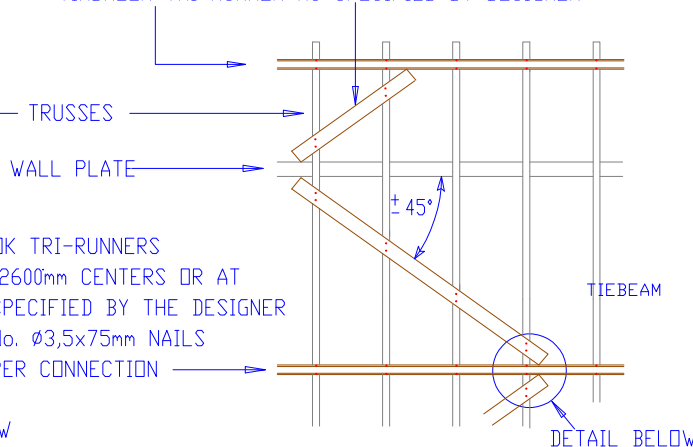
38x114 SAPG05 BRACING MEMBERS TO BE NAILED TO TOP SIDE OF TIEBEAM OVER THREE OR FOUR TRUSSES AT APPROX 45°.

2No. Ø3,5x75mm NAILS PER CONNECTION



PLAN VIEW - STANDARD HEEL

38x114 SAPG05 CANTILEVER BRACING MEMBER WITH TIMBALOK TRI-RUNNER AS SPECIFIED BY DESIGNER



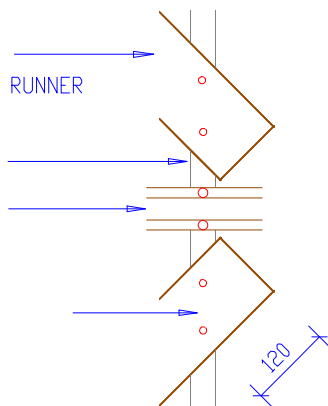
PLAN VIEW - CANTILEVER HEEL

38x114 SAPG05 BRACING MEMBER FIXED TOP SIDE OF TIEBEAM AS CLOSE AS POSSIBLE TO TIEBEAM RUNNER

TIMBALOK TRI-RUNNER

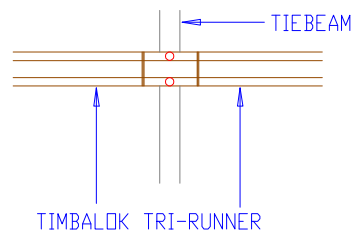
EACH CONNECTION 2No. Ø3,5x75mm WIRE NAILS

TIEBEAM



BRACING CONNECTION

2No. Ø3,5x75mm WIRE NAILS AT EACH CONNECTION. ALWAYS SPLICE ON A BOTTOM CHORD, BY OVERLAPPING.



RUNNER SPLICE

BC RESTRAINTS WITH TIMBALOK TRI-RUNNERS FOR A MAXIMUM TRUSS SPACING OF 1200mm

ITS STANDARD DETAIL
REF: BCRB-T

PAGE: 70

REV: A
FEB 2011

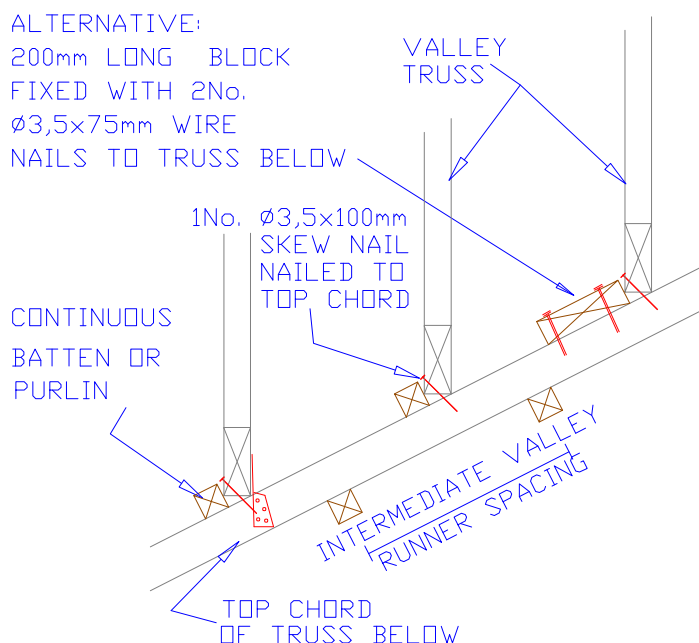
TILED ROOFS

CONCRETE, ASBESTOS, METAL, CLAY OR SLATE FIX 38x38 SAPG05 RUNNERS BETWEEN VALLEY TRUSSES TO UNDERSIDE OF RAFTER WITH 1No. $\phi 3.5 \times 75\text{mm}$ WIRE NAIL AT EACH CONNECTION, TO EXTEND UP TO AT LEAST 1No. TRUSS PAST VALLEY LINE.

SHEETED ROOFS

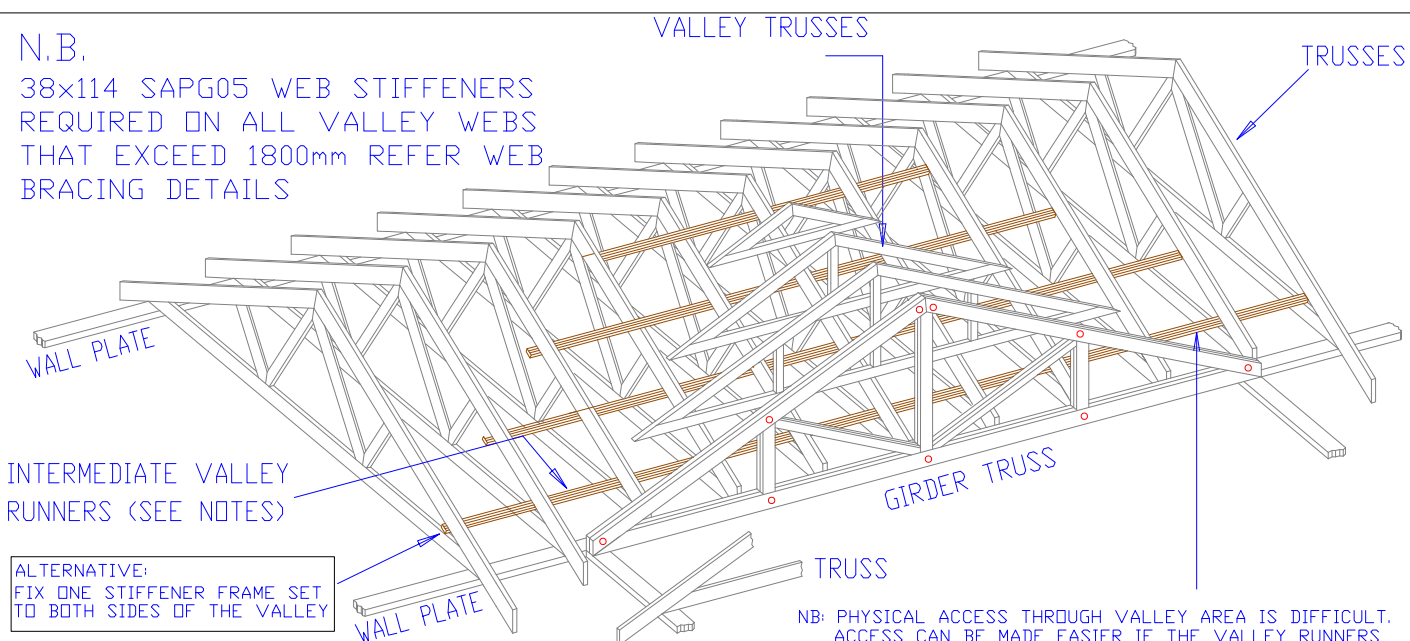
WHEN VALLEY TRUSS CENTERS ARE GREATER THAN PURLIN CENTERS, INSTALL 38x76 SAPG05 RUNNERS AS PER TILED ROOFS. FIX VALLEY TRUSSES TO RAFTERS WITH 2No. TIMBALOK HURRICANE CLIP AT EACH CONNECTION FULLY NAILED WITH $\phi 2,8 \times 32\text{mm}$ PASSIVATED NAILS.

ALTERNATIVE:
200mm LONG BLOCK
FIXED WITH 2No.
 $\phi 3,5 \times 75\text{mm}$ WIRE
NAILS TO TRUSS BELOW



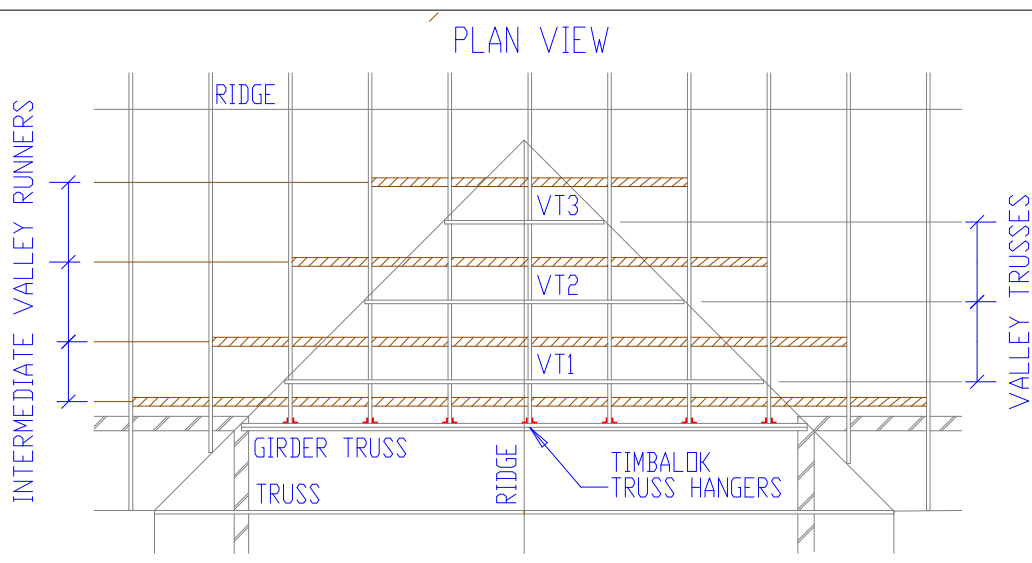
N.B.

38x114 SAPG05 WEB STIFFENERS REQUIRED ON ALL VALLEY WEBS THAT EXCEED 1800mm REFER WEB BRACING DETAILS

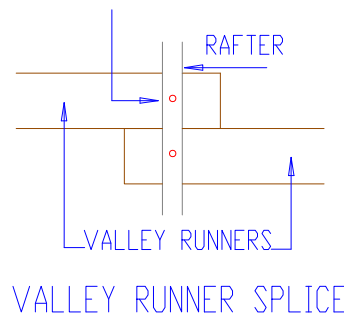


NB: PHYSICAL ACCESS THROUGH VALLEY AREA IS DIFFICULT. ACCESS CAN BE MADE EASIER IF THE VALLEY RUNNERS ARE PLACED UNDERNEATH THE VALLEY TRUSSES.

PLAN VIEW



1No. $\phi 3.5 \times 75\text{mm}$ WIRE NAILS PER 38x38 SAPG05 RUNNER
2No. $\phi 3.5 \times 75\text{mm}$ WIRE NAILS PER 38x76 SAPG05 RUNNER



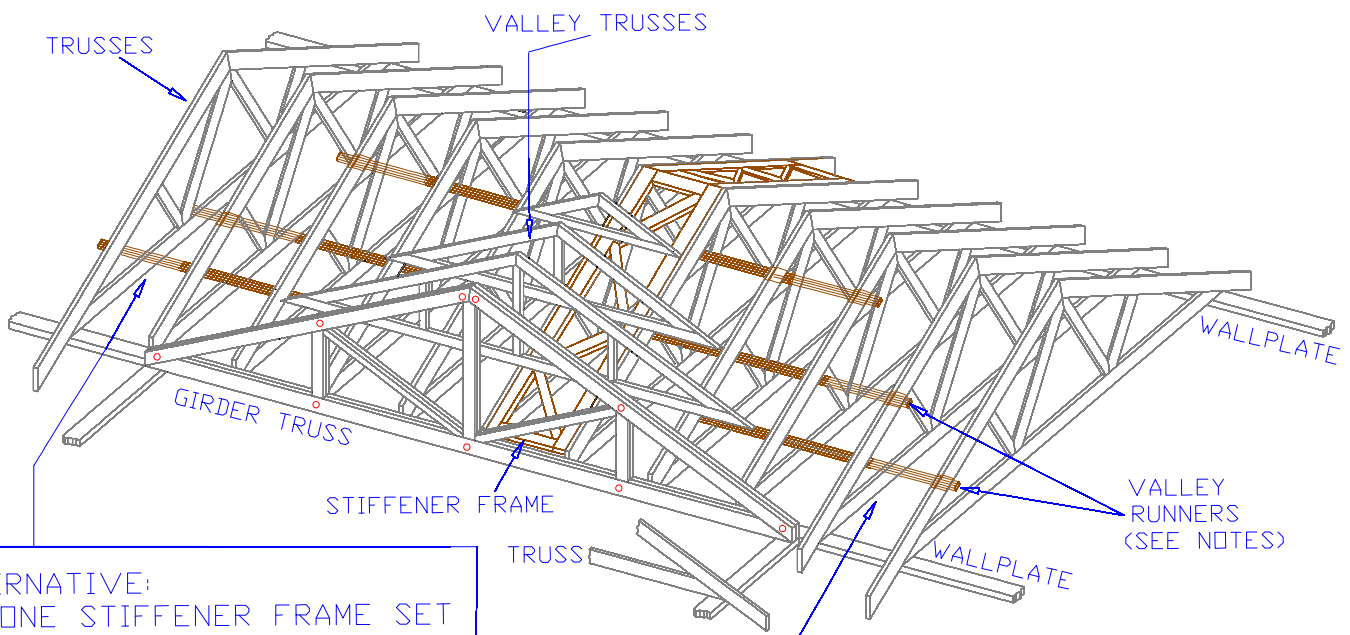
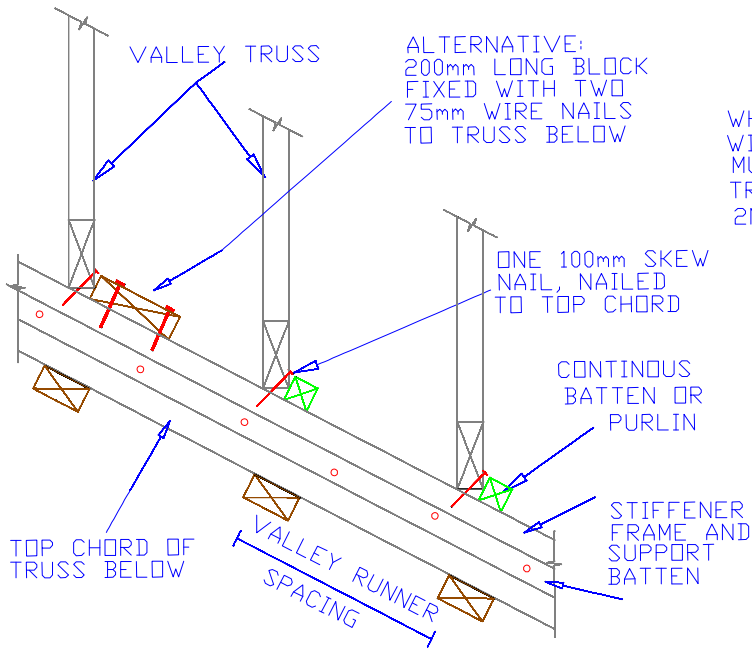
TILED ROOFS OVER 10.5m SPAN

WHEN THE VALLEY STIFFENER FRAME LIES WITHIN THE VALLEY LINES, 38x 76 RUNNERS MUST BE FIXED UNDERNEATH THE VALLEY TRUSSES TO THE UNDERSIDE OF RAFTER WITH 2No. 3.5mm DIA. x75mm NAILS AT EACH CONNECTION

THE RUNNERS MUST EXTEND AT LEAST TWO FULL TRUSS SPACINGS PAST THE VALLEY LINE.

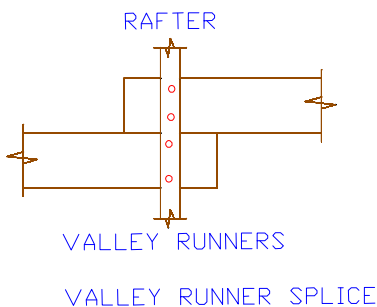
RUNNERS ARE PLACED UNDER THE VALLEY TRUSSES TO MAKE IT POSSIBLE TO GAIN ACCESS TO THE ROOF SPACE BEYOND THE VALLEY AND GIRDER

N.B
38x 76(G5) WEB STIFFENERS REQUIRED ON ALL VALLEY WEBS THAT EXCEED 1800mm REFER WEB BRACING DETAILS.

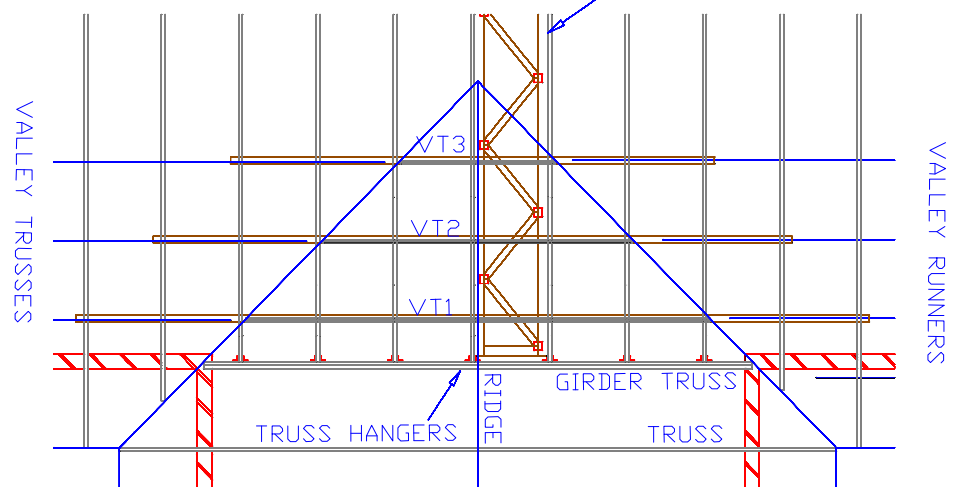


ALTERNATIVE:
FIX ONE STIFFENER FRAME SET TO BOTH SIDES OF THE VALLEY

2No.3.5mm x75mm NAILS
PER 38x 76 RUNNER



PLAN VIEW



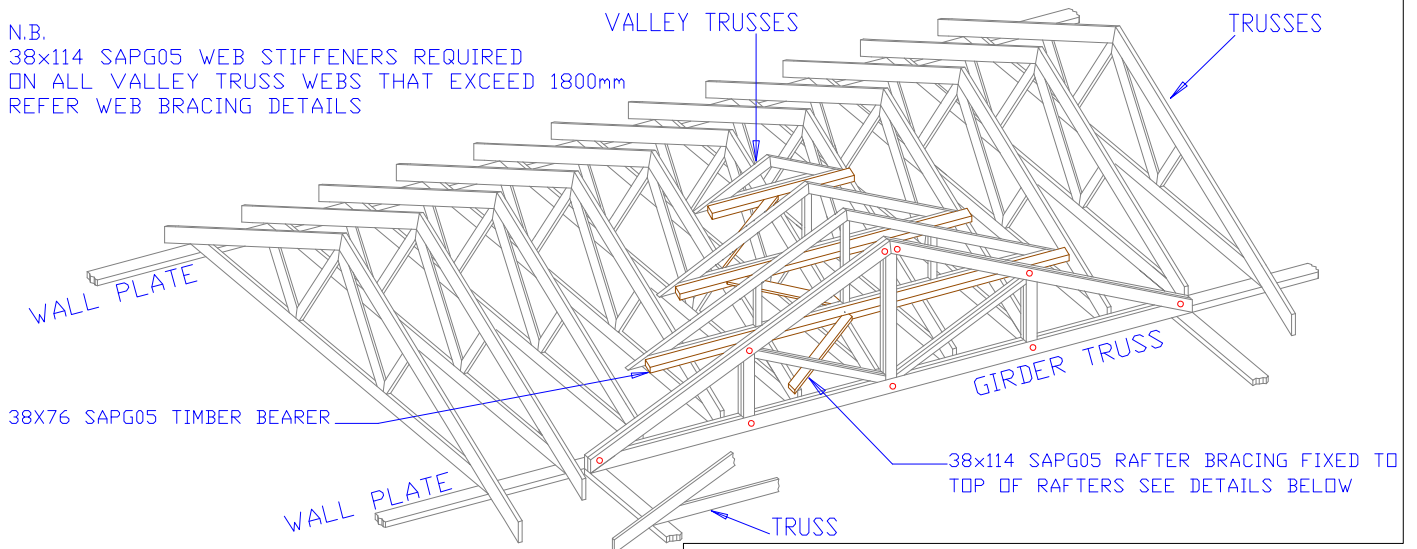
VALLEY RUNNERS FOR TILED ROOFS OVER 10.5m SPAN WHERE THE STIFFENER FRAME IS WITHIN THE VALLEY LINES

INTERMEDIATE VALLEY RUNNERS FOR TILES AND SHEETING

ITS STANDARD DETAIL
REF: VALLEY - 1 PG 72

REV: A

N.B.
38x114 SAPG05 WEB STIFFENERS REQUIRED
ON ALL VALLEY TRUSS WEBS THAT EXCEED 1800mm
REFER WEB BRACING DETAILS

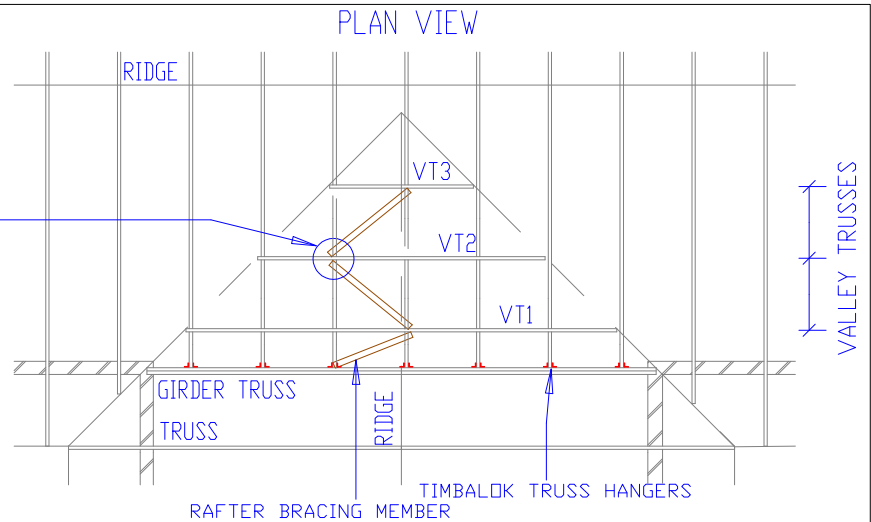
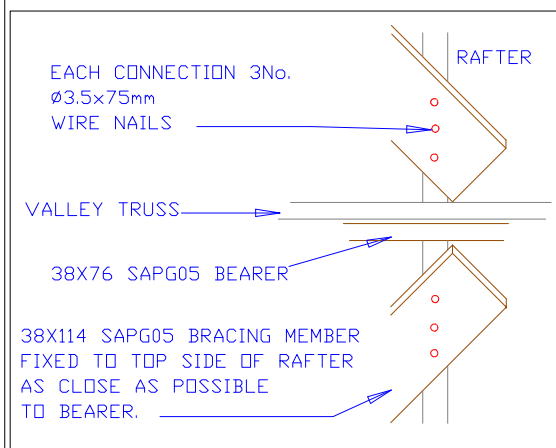


TILED ROOFS

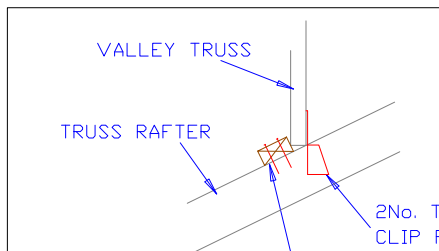
FOR HEAVY TILED ROOFS WHERE WIND UPLIFT WILL NOT OCCUR, THE TIMBALOK HURRICANE CLIP CONNECTION OF THE VALLEY TRUSS IS NOT REQUIRED.

SHEETED ROOFS

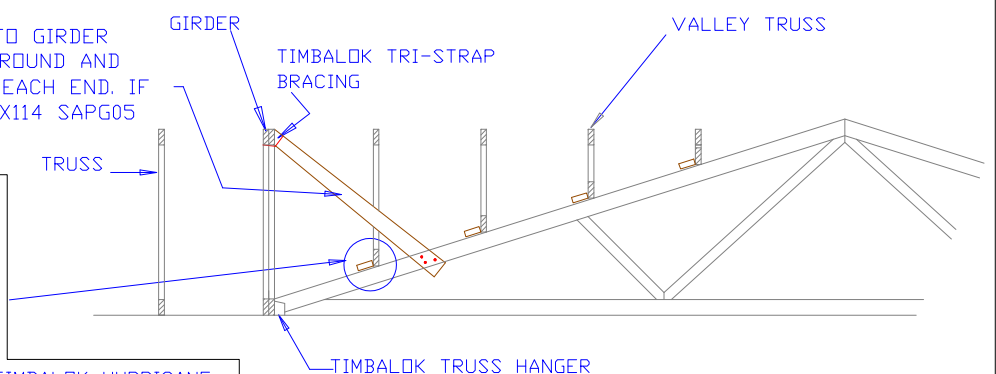
WHEN VALLEY TRUSS CENTERS ARE GREATER THAN PURLIN CENTERS INSTALL ADDITIONAL 38X76 SAPG05 RUNNERS MIDWAY BETWEEN VALLEY TRUSSES AND PROVIDE ADDITIONAL BRACING MEMBERS ACCORDINGLY. 2No. TIMBALOK HURRICANE CLIPS AT EACH CONNECTION TO BE FULLY NAILED WITH $\phi 2,8 \times 32$ mm PASSIVATED NAILS.



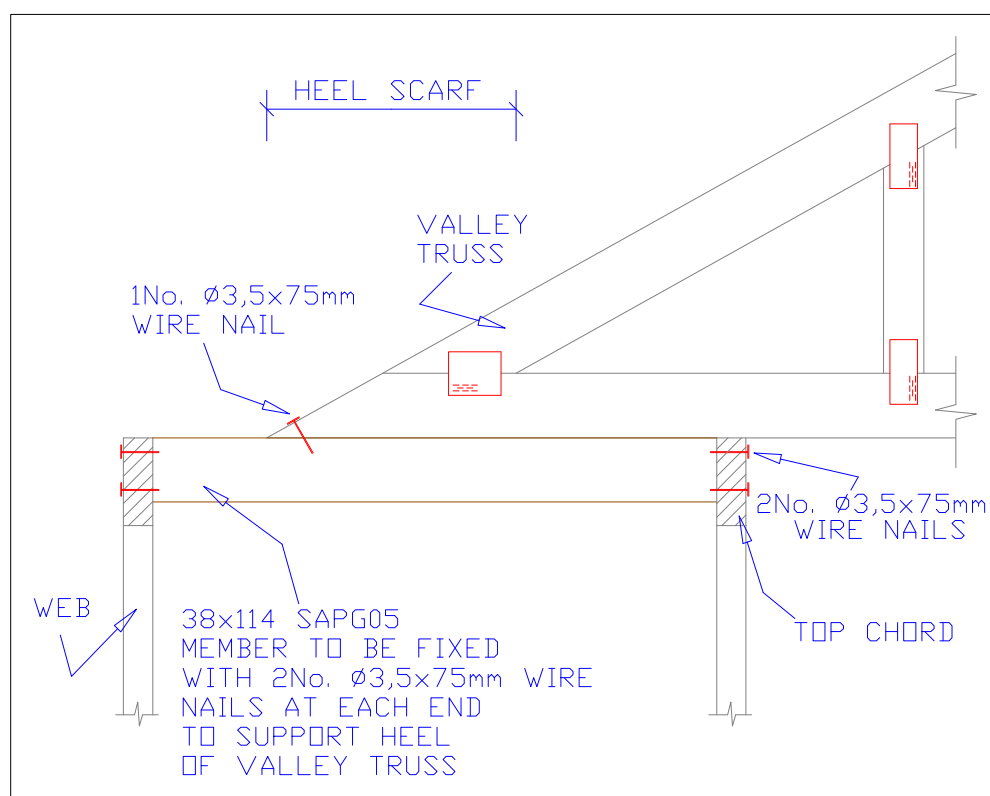
38X114 SAPG05 GIRDER RAFTER BRACE REQUIRED WHERE NO RAFTER BRACING IS INSTALLED FOR GIRDER. FIX TO EACH TRUSS WITH 3No. $\phi 3,5 \times 75$ mm WIRE NAILS AND FIX TO GIRDER WITH TIMBALOK TRI-STRAP WRAPPED AROUND AND FIXED WITH 3No. PASSIVATED NAILS EACH END. IF BRACE IS LONGER THAN 1800mm FIX 38X114 SAPG05 T-BRACE.



38X76 SAPG05 CONTINUOUS BEARER OR 200MM BLOCKS FIXED WITH 2No. $\phi 3,5 \times 75$ mm WIRE NAILS TO RAFTER. VALLEY TRUSS SKEW NAILED TO BEARER AT EACH TRUSS CONNECTION.



VALLEY TRUSS SUPPORT WHERE HEEL CANTILEVERS



VALLEY TRUSS SUPPORT WHERE HEEL CANTILEVERS

TYPICAL:
INTERSECTION OF TIMBALOK TRI-STRAP
WITH TOP CHORD & TIMBER PACK USE
A MIN OF 2No. $\phi 3.5 \times 75$ mm WIRE
NAIL PER CONNECTION.

TYPICAL:
38x114 SAPG05 x 200mm
TIMBER PACK NAILED TO
TOP CHORD WITH A MIN OF
3No. $\phi 3.5 \times 75$ mm WIRE NAILS

38x152 SAPG05 SHELF
FIXED BETWEEN TRUSSES
WITH 2No. TIMBALOK
HURRICANE CLIPS ON EACH
SIDE OF MEMBER.

TIMBALOK TENSIONER

SEE DETAIL BELOW FOR
CORRECT TENTIONER
POSITIONS.

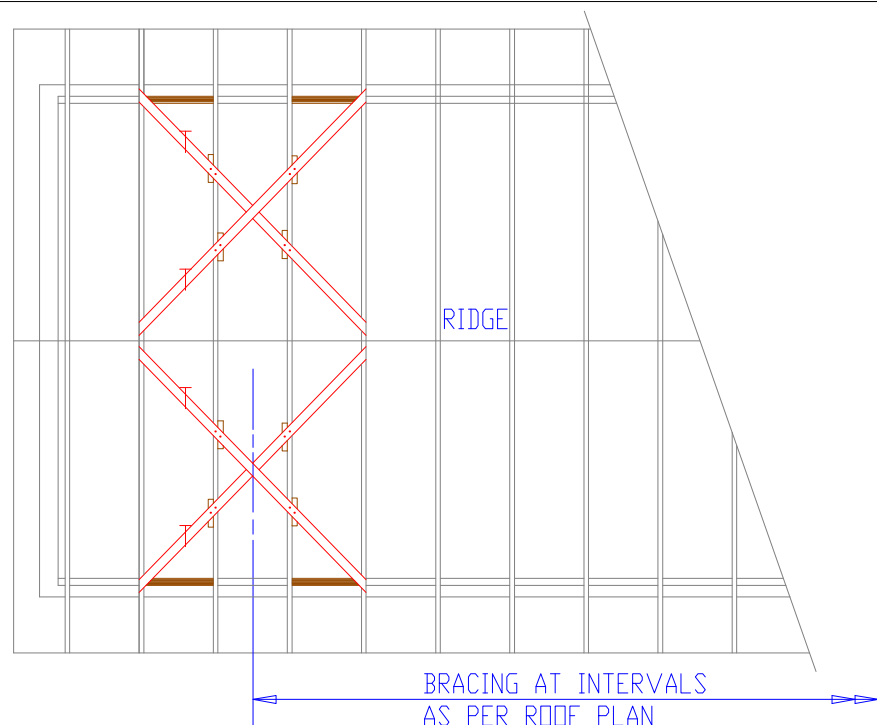
WALL PLATE

38x114 SAPG05 x
250mm TIMBER BLOCK
BUTTING AGAINST TRUSS
AND NAILED TO WALL
PLATE WITH A MIN.
OF 6No. $\phi 3.5 \times 75$ mm WIRE NAILS

TYPICAL:
38x114 SAPG05 x
250mm TIMBER BLOCK
BUTTING AGAINST TRUSS
AND NAILED TO WALL
PLATE WITH A MIN.
OF 6No. $\phi 3.5 \times 75$ mm WIRE NAILS

38x152 SAPG05 SHELF
FIXED BETWEEN TRUSSES
WITH 2No. TIMBALOK
HURRICANE CLIPS ON EACH
SIDE OF MEMBER.

PLAN OF ROOF
WITH TIMBALOK
TENSIONER (T)
POSITIONS.

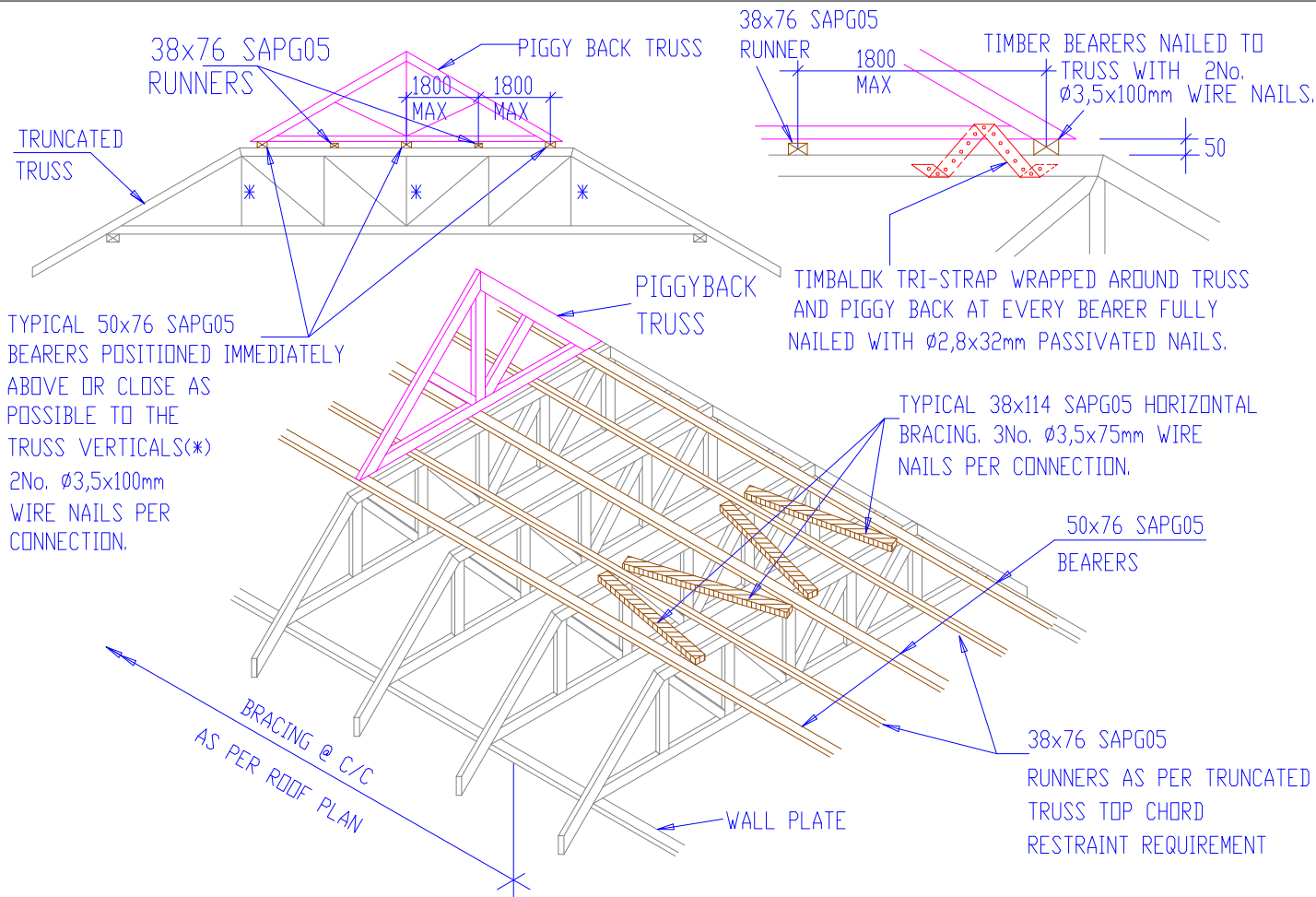


ATTIC HEEL DETAIL & BRACING

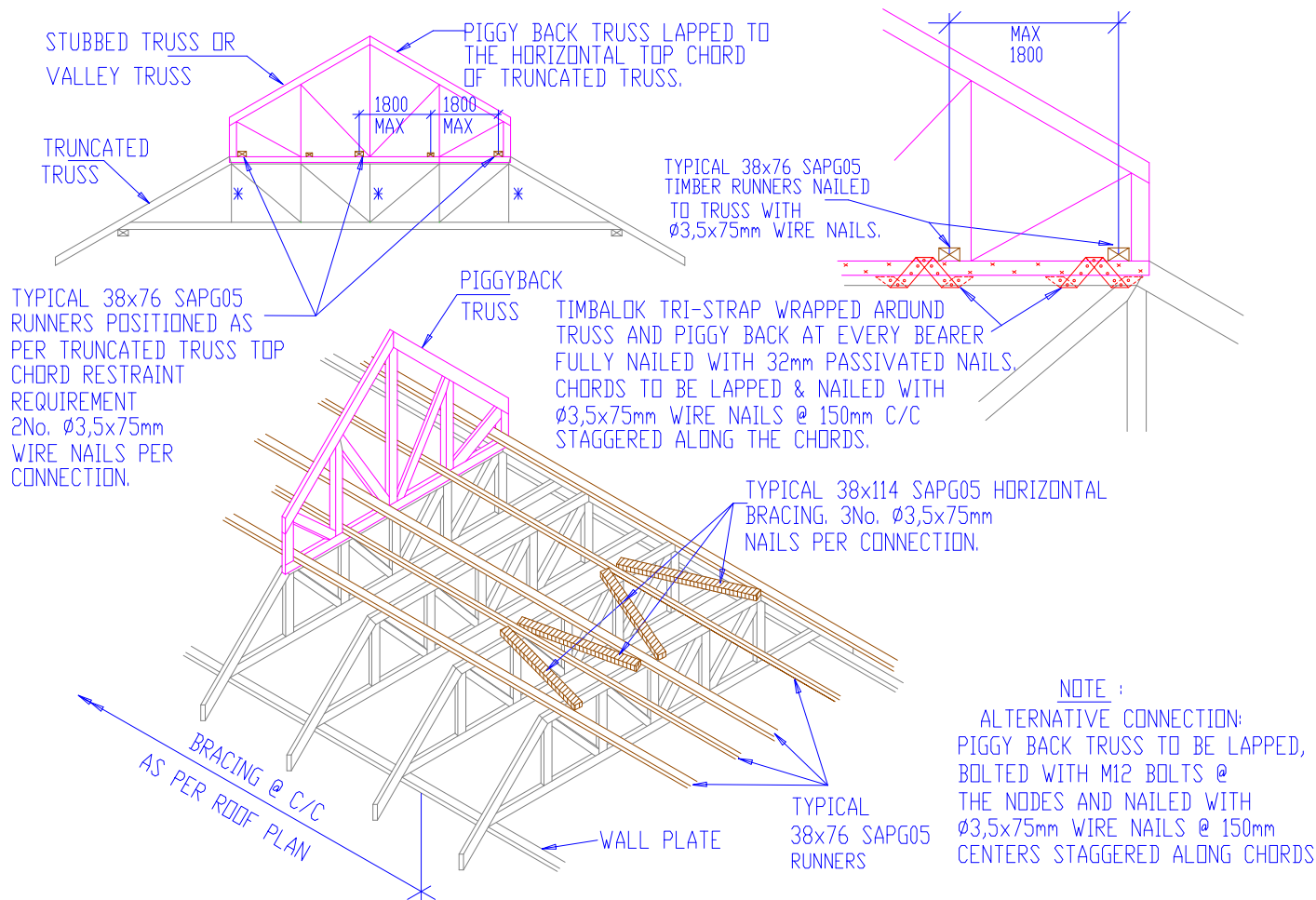
ITS STANDARD DETAIL
REF: SB-ATTIC

PAGE: 75

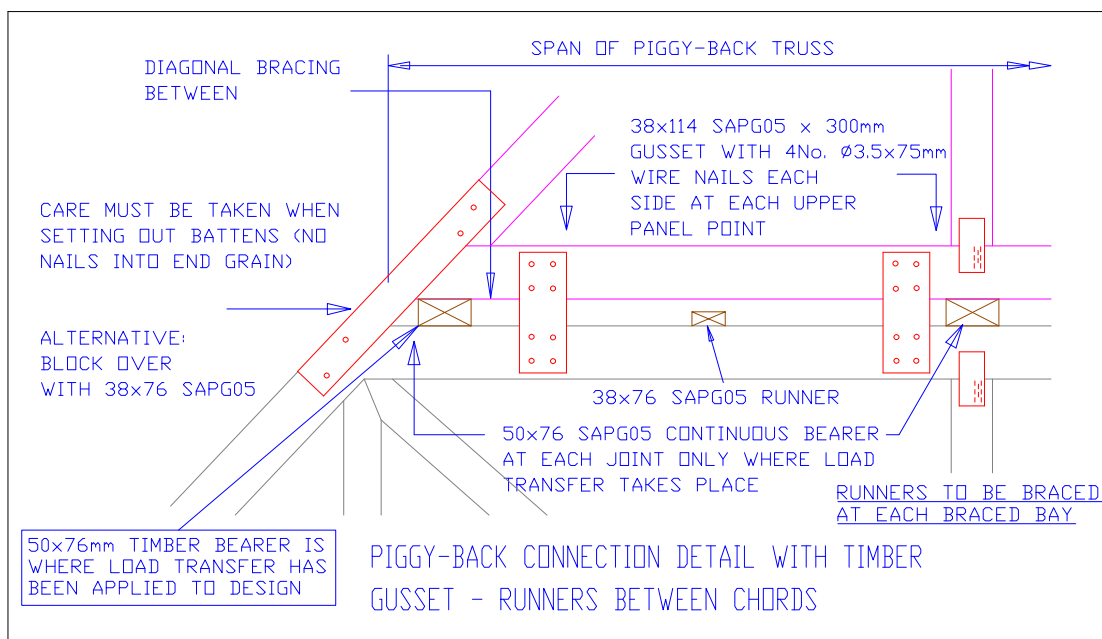
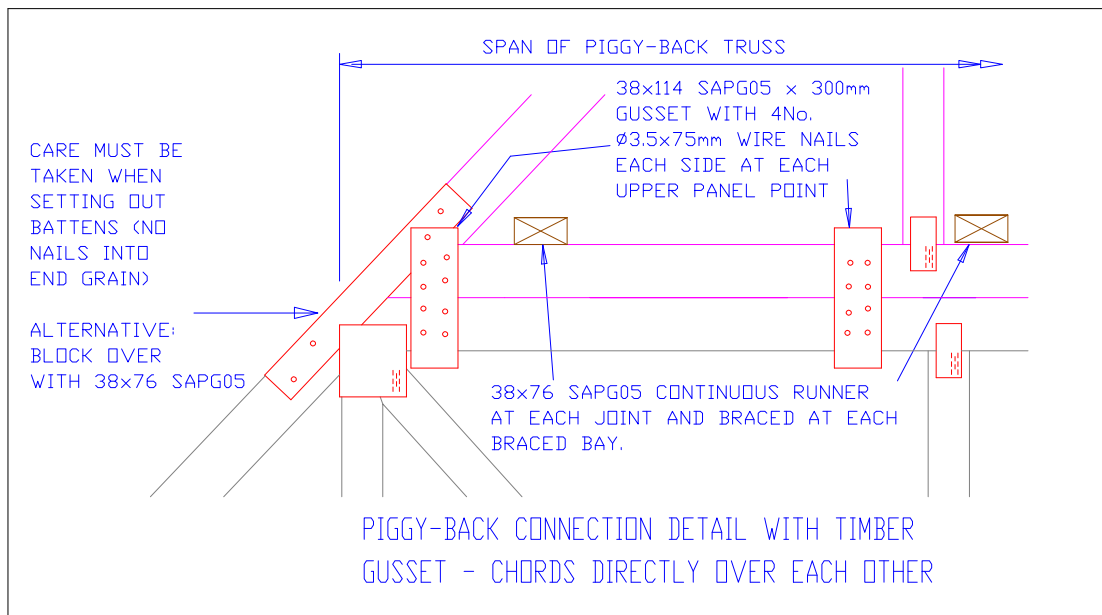
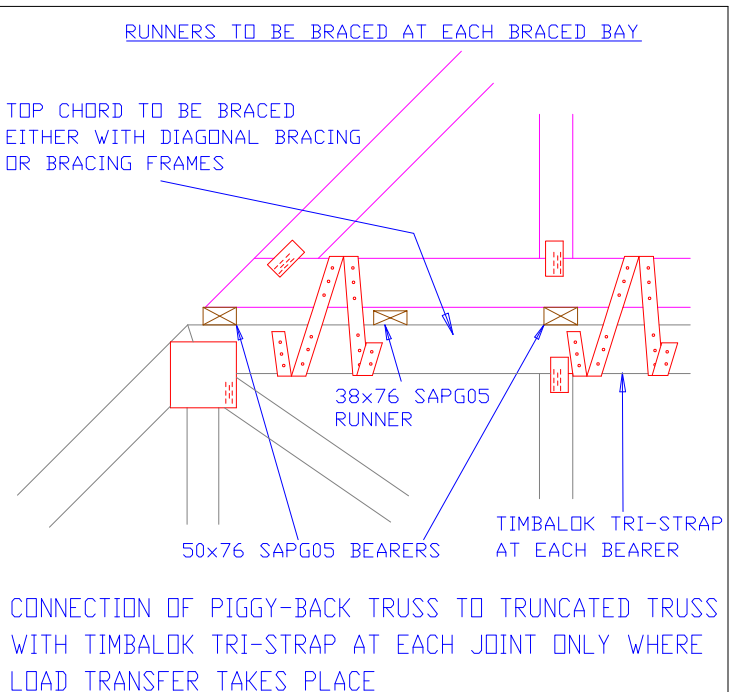
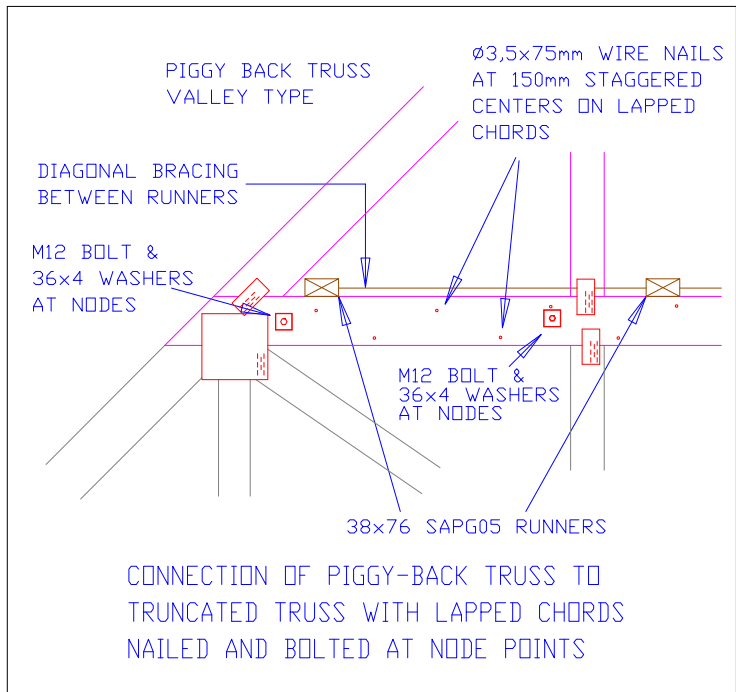
REV: A
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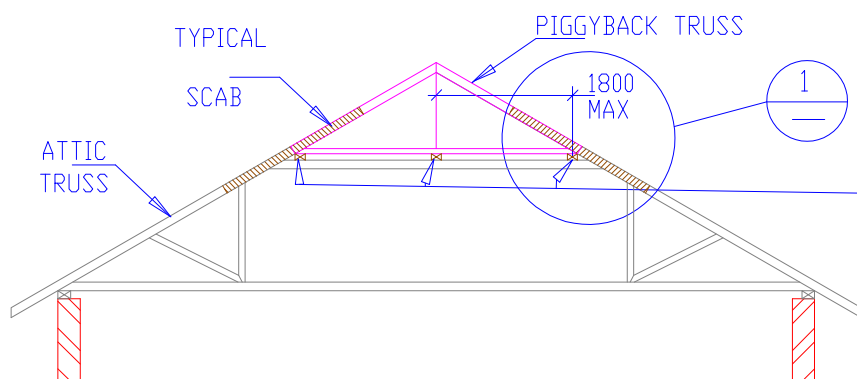


PIGGY BACK DETAILS WITH TOP CHORD BEARER SUPPORT

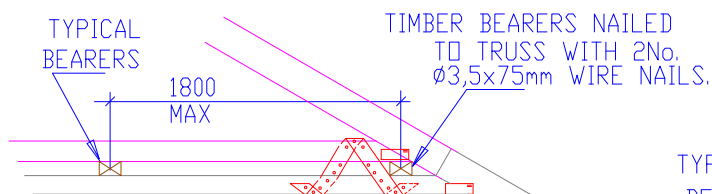


PIGGY BACK DETAILS WITH LAPPED CHORD CONNECTION





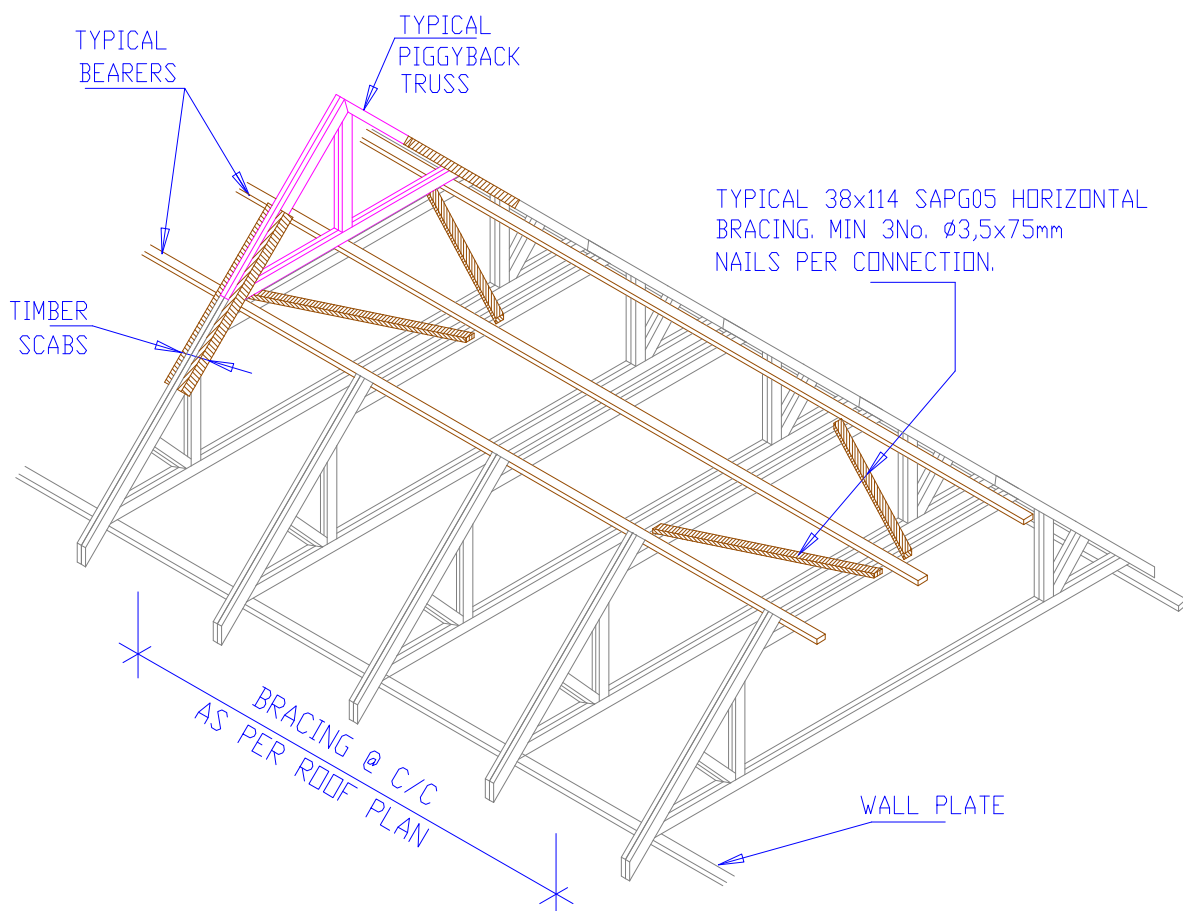
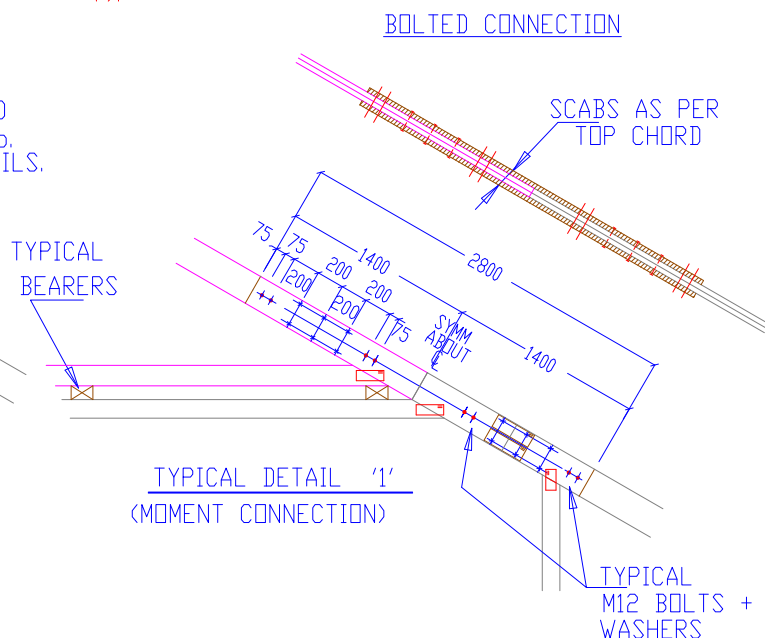
TYPICAL BEARERS POSITIONED IMMEDIATELY ABOVE OR CLOSE AS POSSIBLE TO THE TRUSS VERTICALS
2No. $\phi 3,5 \times 75$ mm WIRE NAILS PER CONNECTION.



TIMBALOK TRI-STRAP WRAPPED AROUND TRUSS AND PIGGYBACK AT EVERY BEARER FULLY NAILED WITH 32mm PASSIVATED NAILS.

NOTE:

- NAIL AND BOLT TWO SCABS (ONE EACH FACE) TO TWO OR THREE PLY ATTIC TRUSS.
- SCABS TO MATCH TOP CHORD.
- BOLTS TO BE M12.
- WASHERS TO BE 36x4mm
- NAILS TO BE $\phi 3,5 \times 100$ mm WIRE NAILS.
- NAILING TO BE ALONG BOTH FACES.

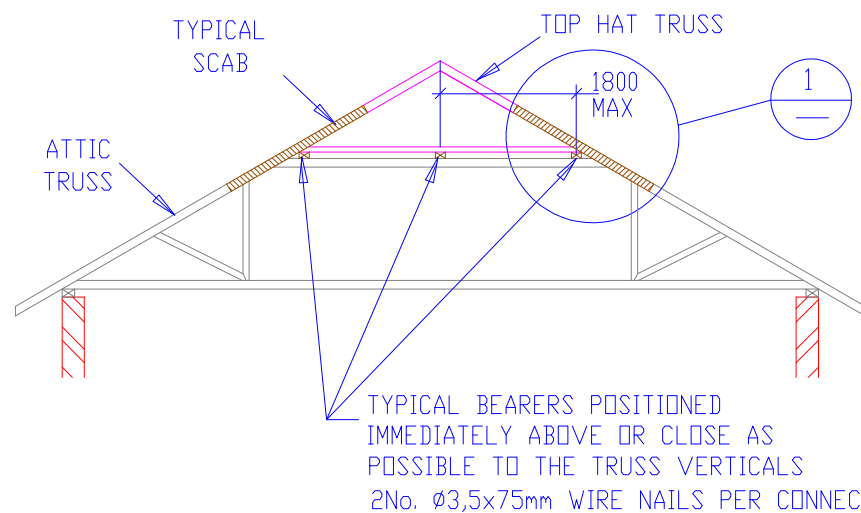


ATTIC PIGGYBACK BOLTED CONNECTION (2 & 3 PLY TRUSSES)

ITS STANDARD DETAIL
REF: APIG-B

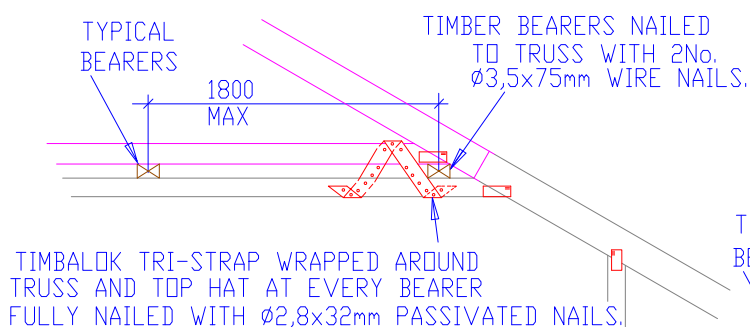
PAGE: 78

REV: A
FEB 2011

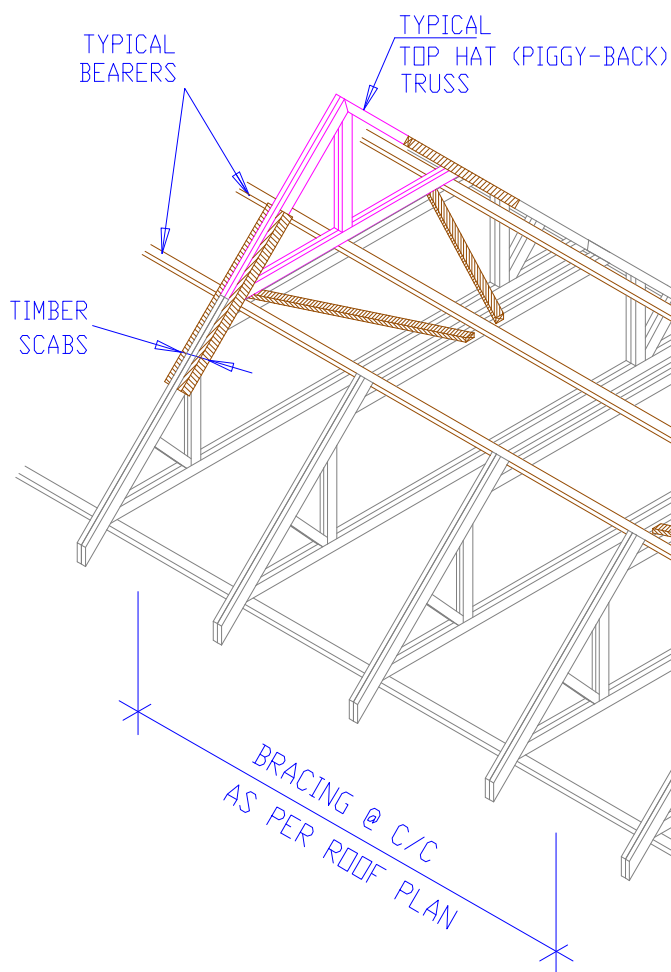
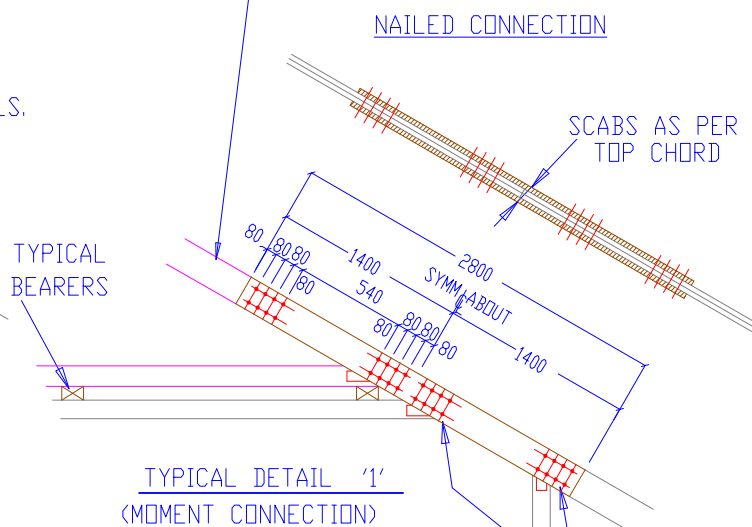


NOTE:

- NAIL 2No. SCABS (ONE EACH FACE) TO TWO OR THREE PLY ATTIC TRUSS.
- SCAB TO MATCH TOP CHORD.
- NAILS TO BE Ø3,5x100mm WIRE NAILS.
- NAILING TO BE ALONG BOTH FACES.



TIMBALOK TRI-STRAP WRAPPED AROUND TRUSS AND TOP HAT AT EVERY BEARER FULLY NAILED WITH Ø2,8x32mm PASSIVATED NAILS.



TYPICAL 38x114 SAPG05 HORIZONTAL BRACING. MIN 3No. Ø3,5x100mm NAILS PER CONNECTION.

TYPICAL Ø3,5x100mm WIRE NAILS

BRACING @ C/C
AS PER ROOF PLAN

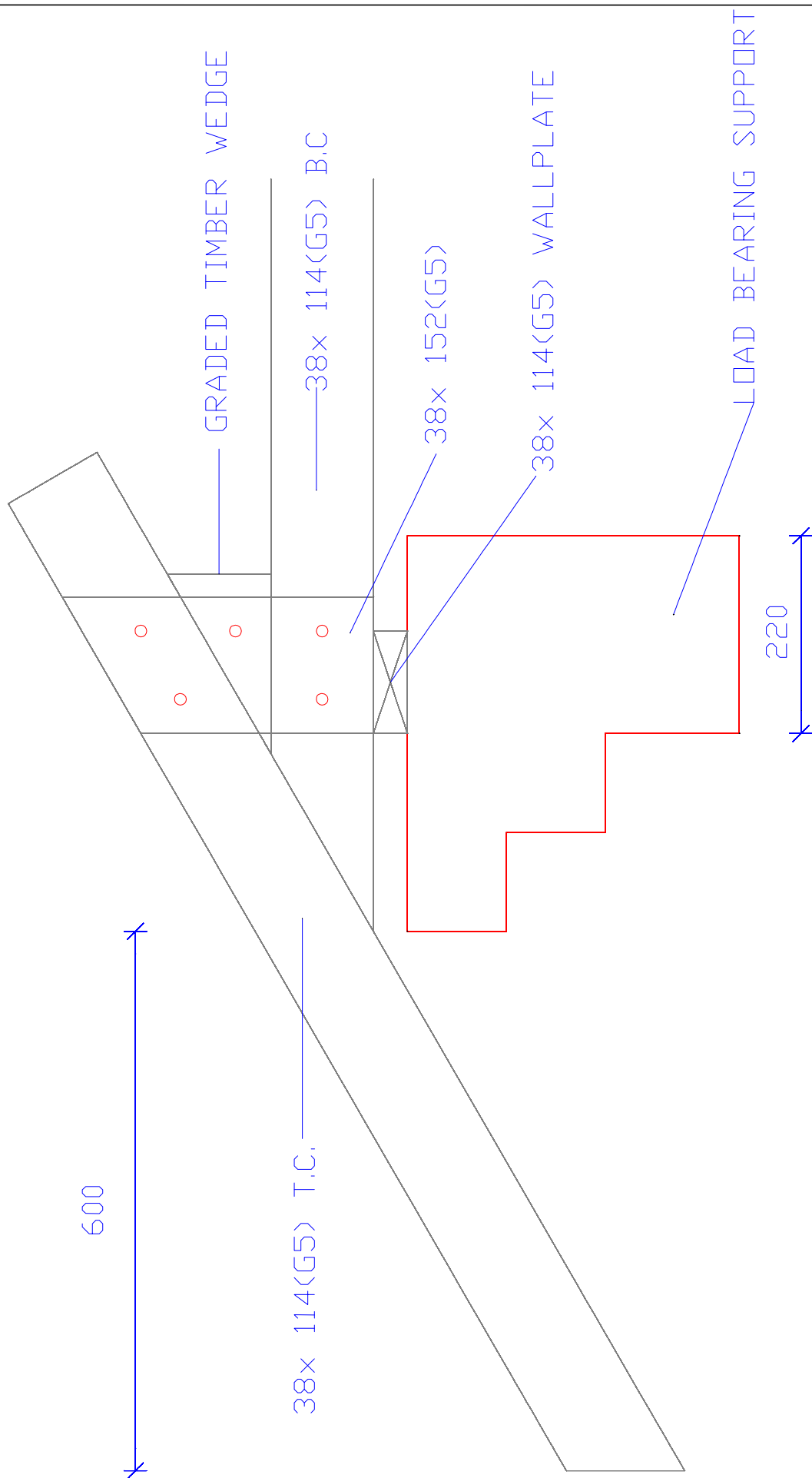
WALL PLATE

ATTIC PIGGYBACK NAILED CONNECTION (2 & 3 PLY TRUSSES)

ITS STANDARD DETAIL
REF: APIG-N

PAGE: 79

REV: A
FEB 2011

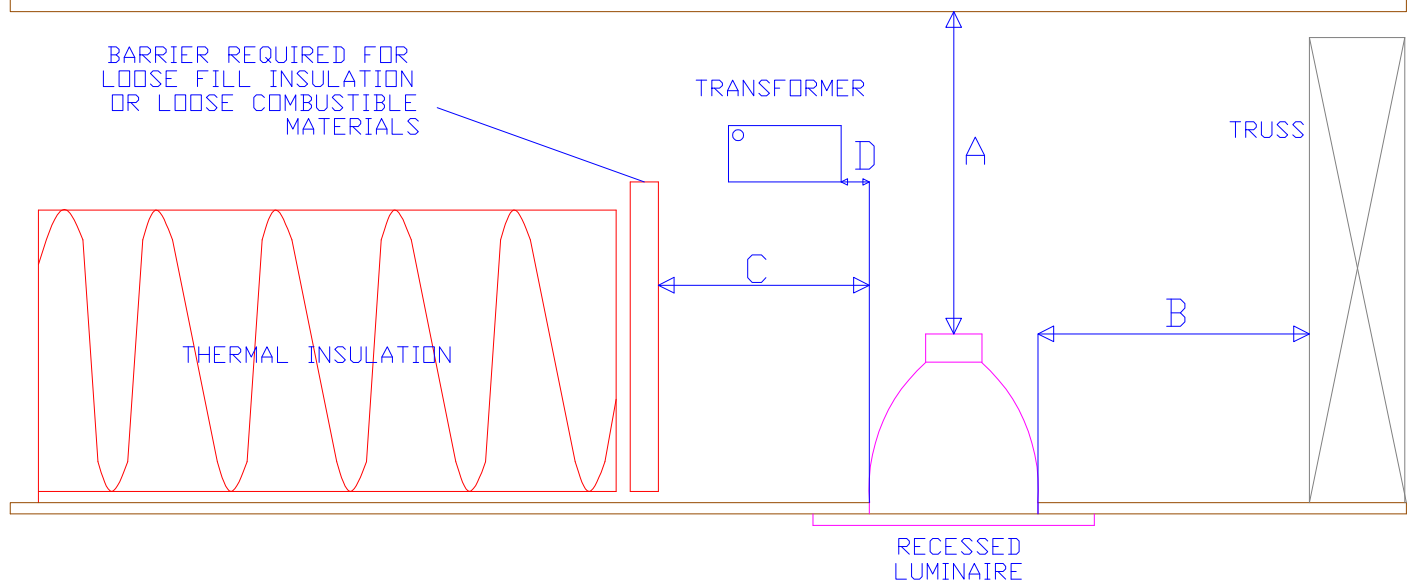


TYPICAL CORBELLING DETAIL

ITS STANDARD DETAIL
REF: TYPICAL CORBELLING DETAIL PG.80

REV: A

COMBUSTIBLE BUILDING ELEMENT ABOVE FITTING

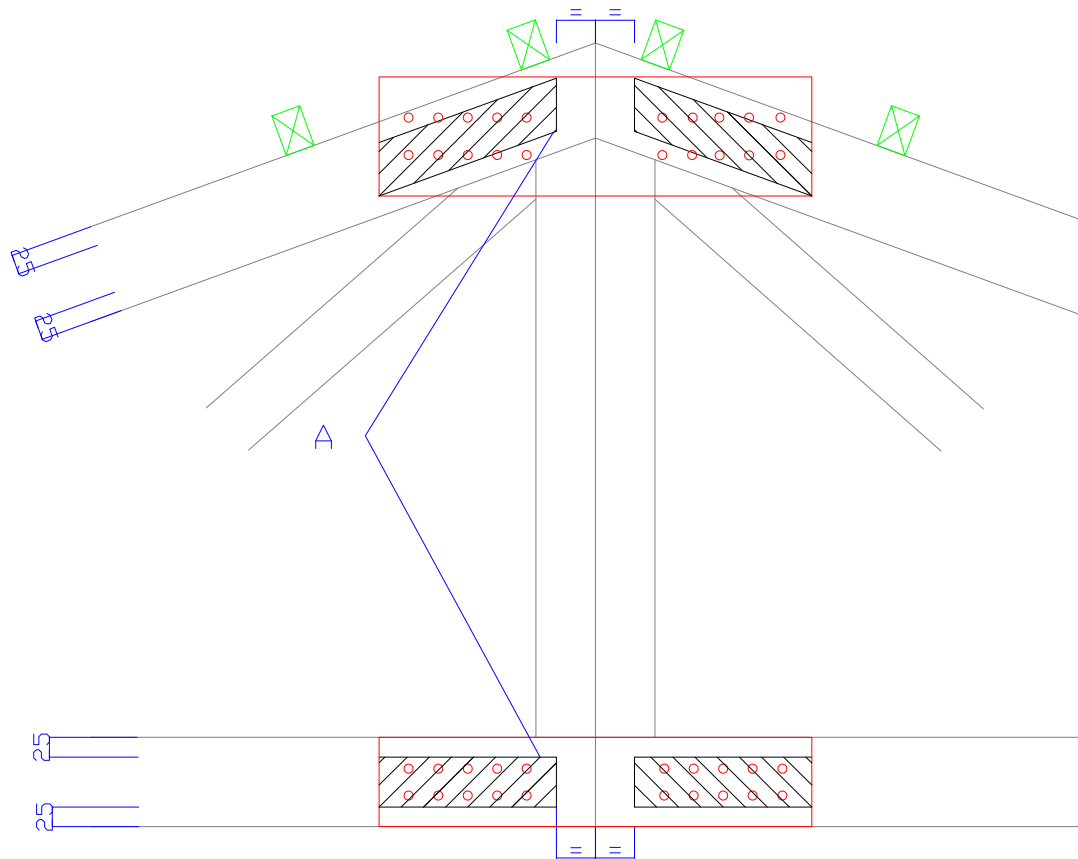


DEFAULT MINIMUM CLEARANCES FOR RECESSED LUMINAIRES

DIMENSION	INCANDESCENT LAMP	HALOGEN LAMP
A - CLEARANCE ABOVE LUMINAIRE	50mm	200MM
B - SIDE CLEARANCE TO STRUCURAL MEMBER	100mm	200MM
C - CLEARANCE TO THERMAL INSULATION	50mm	200MM
D - CLEARANCE TO SUPPLY TRANSFORMER	50mm	

NB: ACKNOWLEDGEMENT OF DETAIL

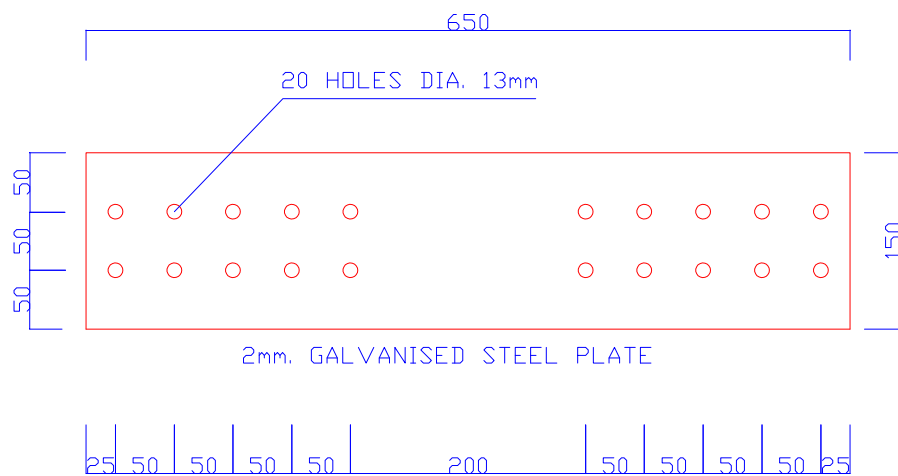
THE ARCHITECT & SPECIFICATOR MAGAZINE - JULY/ AUGUST 2011
THE OFFICIAL MAGAZINE OF THE AAAMSA GROUP



A- AREA WITHIN WHICH M12 BOLTS
MUST BE PLACED (SHADED)

NUMBER OF BOLTS TO BE DETERMINED BY DESIGN.

SPLICE FISH PLATE MUST OCCUR ON BOTH SIDES
AND IN BETWEEN PLIES OF MULTIPLE PLY TRUSSES



SPLICE FISH PLATE CONNECTION DETAILS

ADDITIONAL MEMBER
300mm PAST NODE
OR TO END OF TRUSS
USE SAME SIZE AND
GRADE AS BROKEN
TRUSS MEMBER

DAMAGED
ZONE

NODE TO NODE

BOLT
ARRANGEMENT
AS BELOW

NAIL WITH 75mm WIRE NAILS
AT 150mm STAGGERED CENTRES

ADDITIONAL MEMBER
300mm PAST NODE
OR TO END OF TRUSS
USE SAME SIZE AND
GRADE AS BROKEN
TRUSS MEMBER

NAIL WITH 75mm WIRE NAILS
AT 150mm STAGGERED CENTRES

BOLT
ARRANGEMENT
AS BELOW

DAMAGED
ZONE

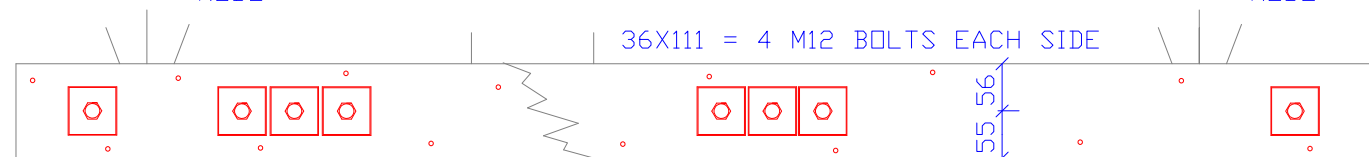
MAX. TENSION
FORCE = 12.4kN

300 NODE TO NODE 300

MAX. TENSION
FORCE = 12.4kN

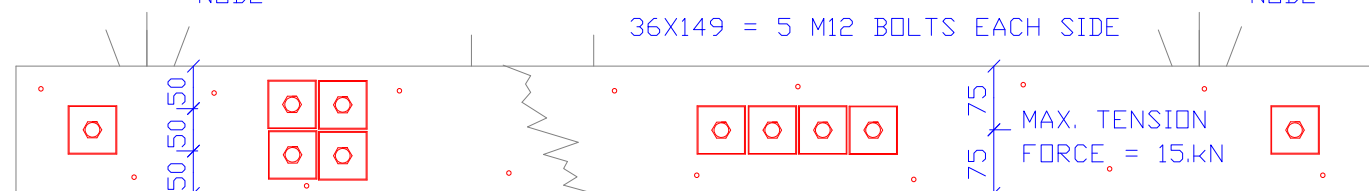
NODE

NODE



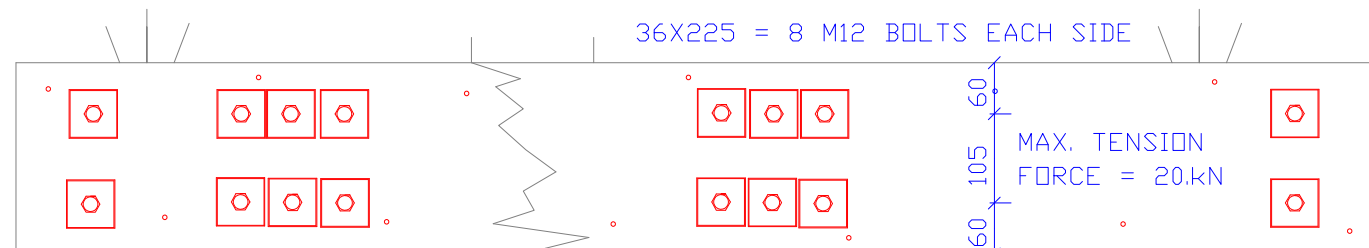
90 NTS 60 60 150 min. DAMAGE ZONE 150 min. 60 60 NTS 90
NODE NODE

36X111 = 4 M12 BOLTS EACH SIDE



90 NTS 60 150 min. DAMAGE ZONE 150 min. 60 60 60 NTS 90
NODE NODE

36X149 = 5 M12 BOLTS EACH SIDE

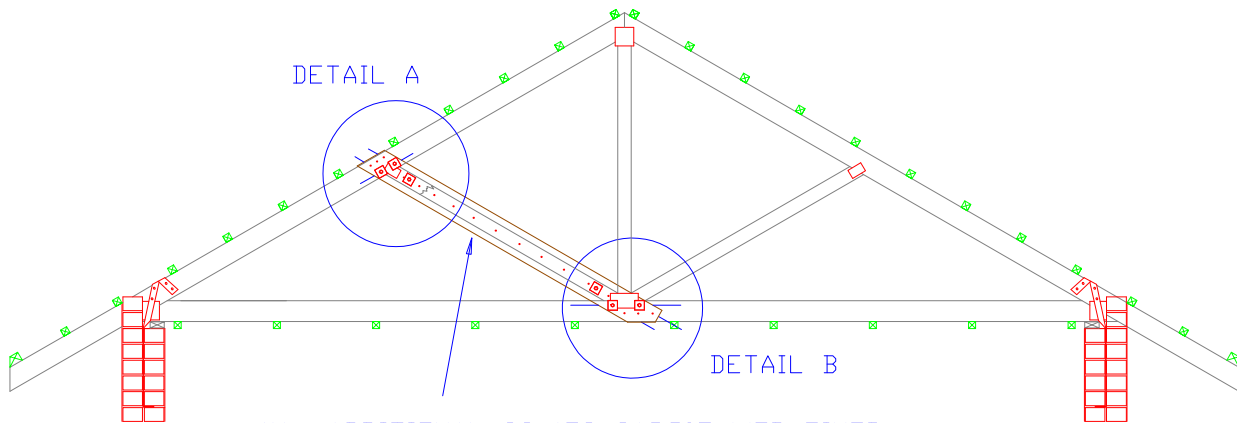


90 NTS 60 60 150 min. DAMAGE ZONE 150 min. 60 60 NTS 90

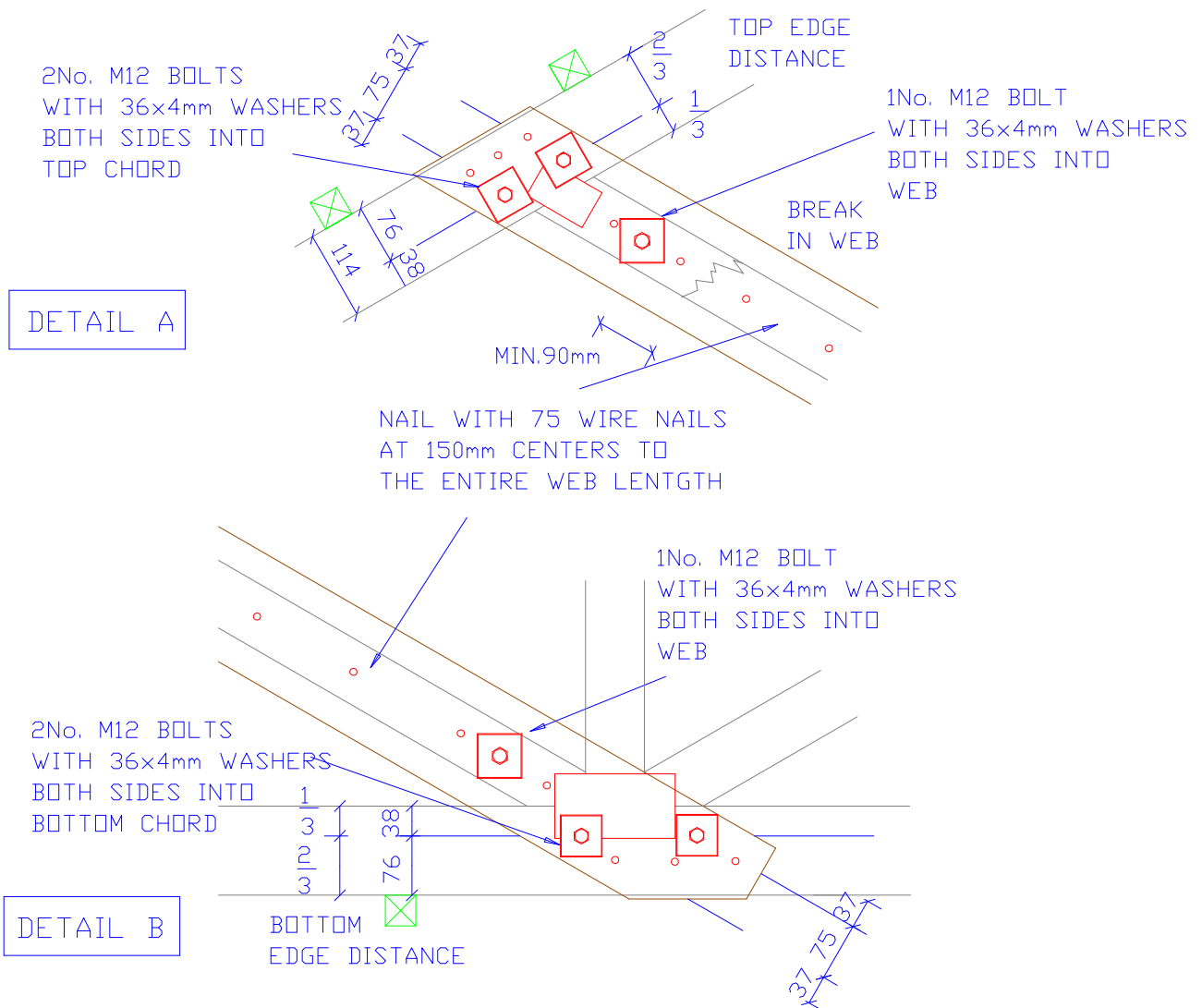
36X225 = 8 M12 BOLTS EACH SIDE

MAX. TENSION
FORCE = 20.kN

NB: ONLY FOR SINGLE PLY TRUSSES, ONE BREAK PER TRUSS
USE ONLY M12 BOLTS AND MIN. 36X4mm WASHERS



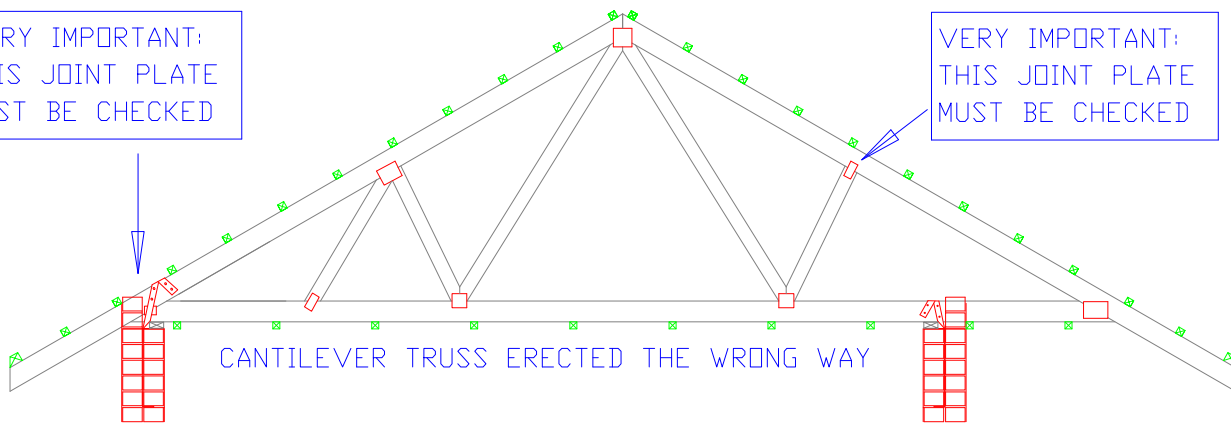
1No. ADDITIONAL 38x152 SAPG05 WEB FIXED OVER BROKEN WEB, BOLTED AT THE ENDS INTO THE TOP AND BOTTOM CHORDS WITH 2No. M12 BOLTS, 1No. M12 BOLT INTO THE WEB AT EACH END AND NAILED LONG THE LENGTH OF THE WEB



NB: ONLY ONE REPAIR PER TRUSS; ONLY FOR SINGLE PLY TRUSSES; ONLY FOR 38X76 OR 38X114 SIZE WEBS

VERY IMPORTANT:
THIS JOINT PLATE
MUST BE CHECKED

VERY IMPORTANT:
THIS JOINT PLATE
MUST BE CHECKED



PRE-PUNCHED STRAP LOOP
10 CLOUT NAILS INTO EACH
MEMBER, BOTH SIDES

38X114 (GRADE 5) GUSSET NAILED
WITH FOUR 75mm NAILS PER
MEMBER CONNECTED

M12 BOLT WITH
36X4mm WASHERS
EACH SIDE

38X114 (GRADE 5) ADDITIONAL
WEB CUT TO TIGHT FIT
BETWEEN CHORDS
(NO GAPS)

38X114 (GRADE 5) MAX 1.5m
38X152 (GRADE 5) MAX 2.1m
WEB CUT TO A TIGHT FIT
BETWEEN CHORDS

CUT ADD. WEBS TO
BUTT AGAINST EACH OTHER

MAXIMUM
1/4 TRUSS SPAN
UP TO 2000mm

PRE-PUNCHED STRAP LOOP
10 CLOUT NAILS INTO EACH
MEMBER, BOTH SIDES

M12 BOLT WITH
36X4mm WASHERS
EACH SIDE

LONG CANTILEVER DETAIL

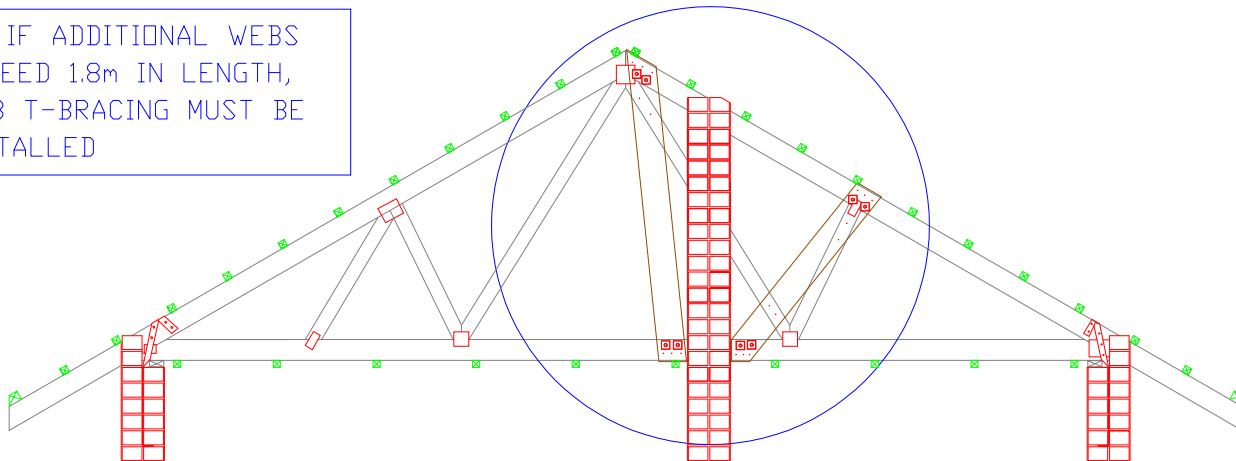
38X152 (GRADE 5) ADDITIONAL
WEB CUT TO TIGHT FIT
BETWEEN CHORDS
(NO GAPS)

38X114 (GRADE 5) GUSSET
NAILED WITH FOUR NAILS
PER MEMBER CONNECTED

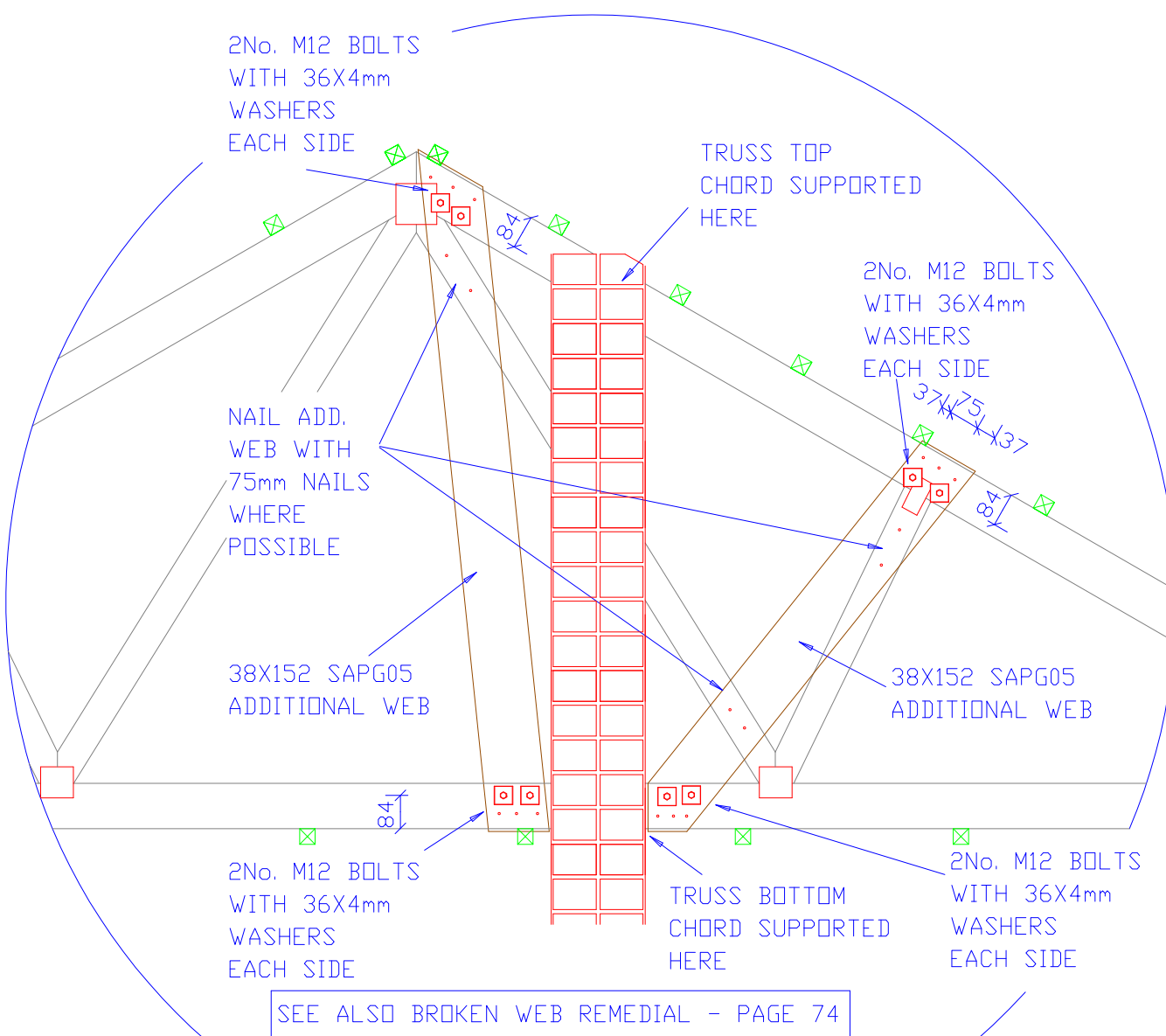
M12 BOLT WITH
36X4mm WASHERS
EACH SIDE

SHORT CANTILEVER DETAIL

NB: IF ADDITIONAL WEBS EXCEED 1.8m IN LENGTH,
WEB T-BRACING MUST BE
INSTALLED

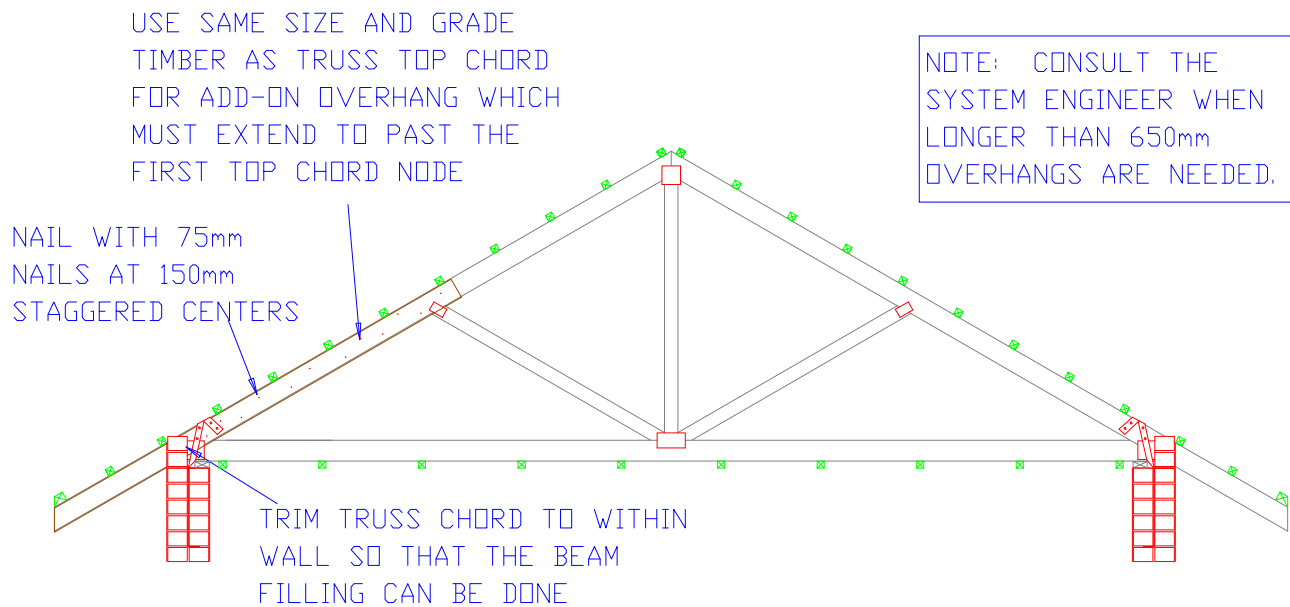


BOTH TOP AND BOTTOM CHORDS COMPLETELY
BUILT IN BY A LOAD BEARING INTERNAL WALL.
NO TRUSS NODE ADJACENT TO EITHER TOP OR
BOTTOM CHORD SUPPORT POINT AT INTERNAL WALL.



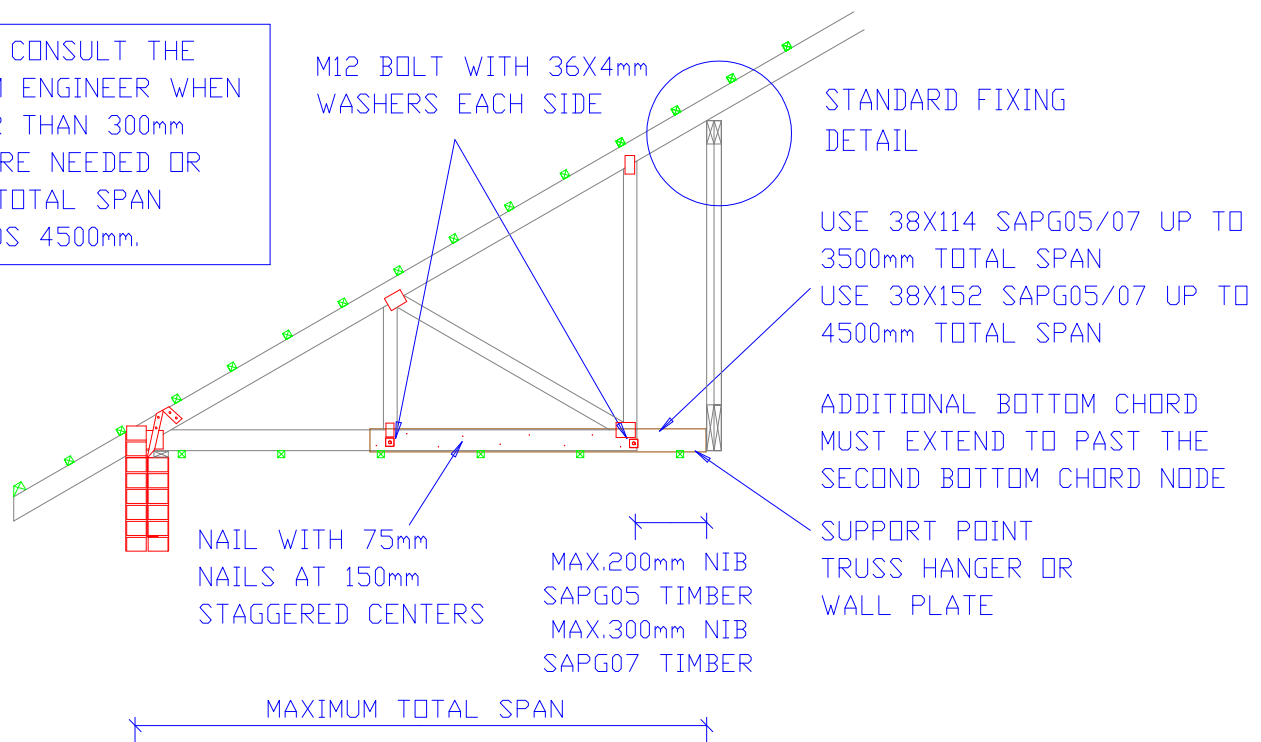
i.e. INTERNAL SUPPORT POINT WITHOUT A TRUSS NODE

REMEDIAL TO FIX COMPLETELY BRICKED IN TRUSSES



REMEDIAL TO FIX TRUSSES WHERE OVERHANGS ARE TOO SHORT
MAXIMUM 650mm OVERHANG (i.e. 2No. CONCRETE TILES)

NOTE: CONSULT THE
SYSTEM ENGINEER WHEN
LONGER THAN 300mm
NIBS ARE NEEDED OR
WHEN TOTAL SPAN
EXCEEDS 4500mm.



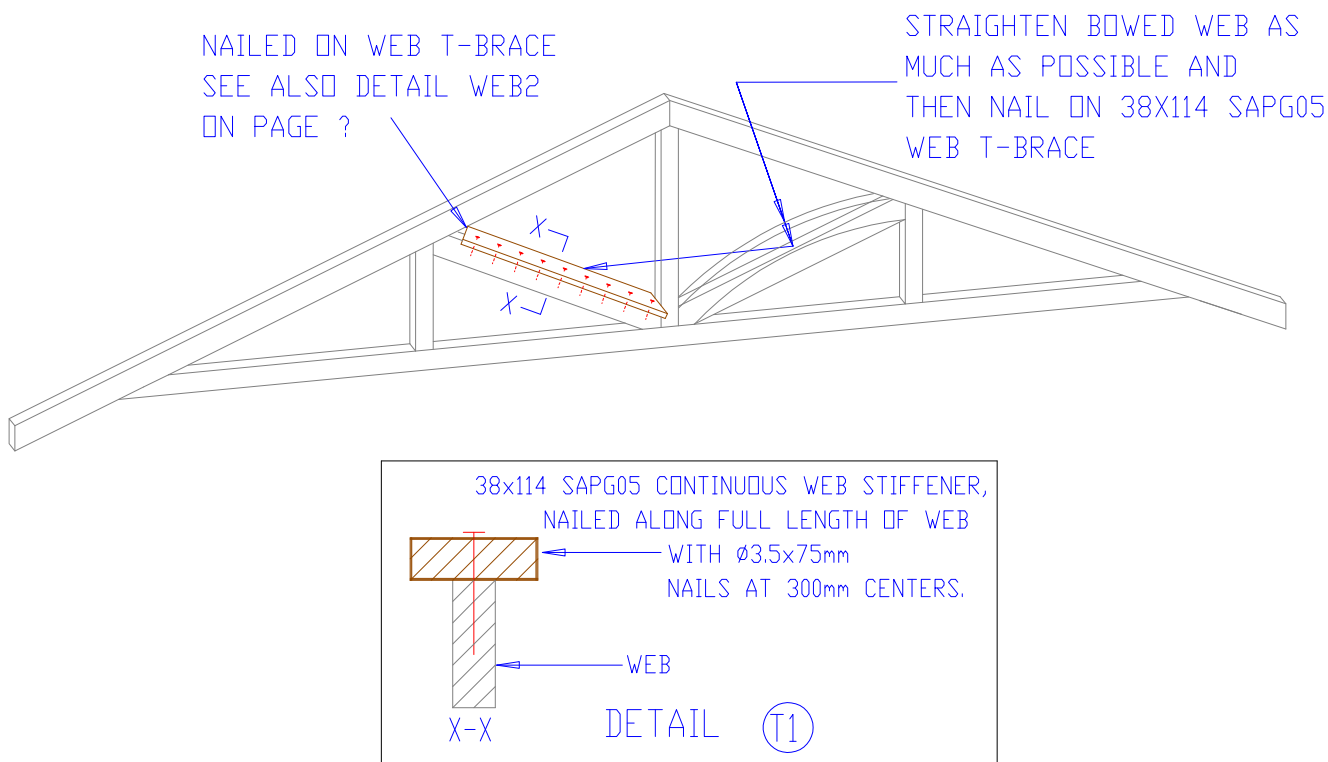
MAXIMUM EXTENSION 300mm FOR SHEETED AND
TILED ROOFS UP TO 60kg/sq.m

REMEDIAL TO FIX MONO-PITCH OR JACK
TRUSSES WHICH ARE TOO SHORT

ITS STANDARD DETAIL
REF: ITC-REM5

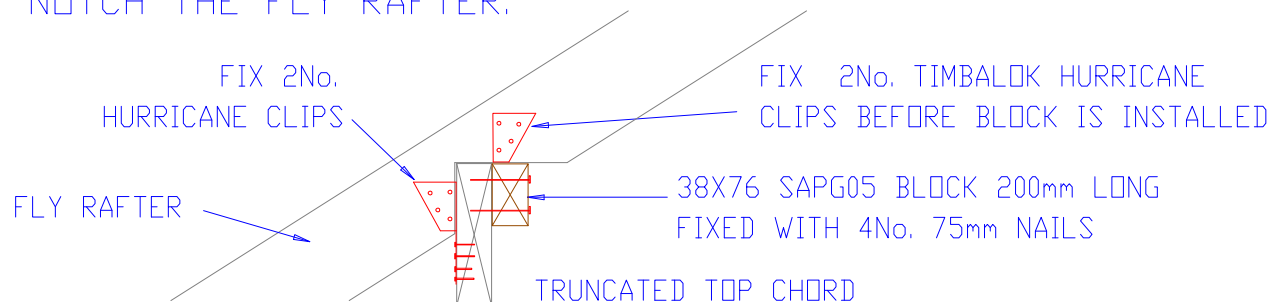
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REMEDIAL TO FIX A WEB WITH EXCESSIVE BOWING
(i.e. THE WEB IS BOWED BEFORE ANY LOAD IS APPLIED)

IMPORTANT: ALWAYS NOTCH THE LESSER MEMBER
HIPS: DO NOT NOTCH THE TRUNCATED GIRDER/TRUSS,
NOTCH THE FLY RAFTER.



BATTENS/PURLINS: DO NOT NOTCH THE TRUSS TOP CHORD,
NOTCH THE BATTEN/PURLIN.



REMEDIAL TO NOTCH TIMBER TO ACHIEVE
REQUIRED LEVELS

FOR ROOFCON

1) TOP CHORD HEAVY LOADING - ROOF COVERINGS

* Load excludes top chord but includes batten

ROOF COVERING MATERIALS	PITCH(°)		WEIGHT Kg/m2	* LOAD Kn/m2	TILES /m2	SIZE L X B	BATTEN C/C	TRUSS C/C	BATTEN SIZE
COVERLAND	Min	Max							
Double Roman	17.5		47	0.49			320	760	38x38
Renown	17.5		47	0.49	10.42	420 x 350	320		
Taunus	17.5		47	0.49			320		
Castillian	17.5		54	0.56			320		
Cupola	17.5		51	0.53			320		
Elite	17.5		55	0.57	10.60		320		
Perspective			52	0.54					
MARLEY								1000	38x50 ON EDGE
Monarch	17.5		52	0.54	10.38	420 x 332	320		
Mendip	17.5		47	0.49	10.38	420 x 332	320		
Double Roman	17.5		48	0.50	10.38	420 x 332	320		
Ludlow	17.5		48	0.50	10.63	420 x 332	320		
Modern	26.0		56	0.58	10.80	420 x 332	320		
D/Roman Plus Homestead			44 46.7	0.46 0.48	10.42 10.38	 420 x 332			
CLAY TILES * Counter batten required - Refer to manufacturers detail									
Broseley	30	60	122	1.27		230 x 260	100	550	38x38
*Cordova	17.5	25	78	0.82		200 x 400	300	700	38x38
*Cordova	17.5	25	95	0.95			203	700	38x38
*Giulietta	17.5	25	66	0.72		200 x 400	300	700	38x38
ASBESTOS SLATE	Min	Max							
Rectangular Slates	17.5		21	0.28	10	610x406	250	800 950	38x38 38x50
Beaver Shingles	17.5		22	0.30	11	599x396	160	800 950	38x38 38x50
Textrata	17.5		24	0.33	10	610x406	250	800 950	38x38 38x50

*IF SELF WEIGHT IS TICKED THEN TOP CHORD LOAD IS CALCULATED
ALL BATTENS & PURLINS TO BE SAPG05 TIMBER

2) TOP CHORD HEAVY LOADING - ROOF COVERINGS

* Load excludes top chord but includes batten

ROOF COVERING MATERIALS	PITCH(°)		WEIGHT Kg/m ²	* LOAD Kn/m ²	TILES /m ²	SIZE L X B	BATTEN C/C	TRUSS C/C	BATTEN SIZE
NATURAL SLATE	Min	Max							
Peterlo	15		45	0.49	26	280 X 205	190	760	38 X 38
Mazista Conventional	30		78	0.84	13	280 X 406	115	700	38 X 38
TOP TILES on 0,8mm IBR									
Briti Nordic	5	15	59	0.64		170 X 240	} 1150	1100	50 x 76 On Edge
" Arabia	5	15	82	0,87		170 X 240		1000	
Spanish Cord	5		79	0,84				1000	
Watcrete C	5		46	0,50				1100	
FOAMCEMENT	1	--	55	0,55	--	115 mm THK	1150	1100	50 x 76
Monarch Sp3	5	15	71	0.79			1150	1100	50 x 76

3) TOP CHORD LIGHT LOADING - ROOF COVERINGS

* Load excludes top chord but includes purlin

ROOF COVERING MATERIALS			PITCH(°)		WEIGHT Kg/m2	* LOAD Kn/m2	PURLIN C/C	MAX TRUSS C/C	PURLIN SIZE
CORRUGATED IRON SHEETING, IBR			MIN	MAX					
Brownbuilt Multiclad	0.58mm	5		8.2	0.10	1150	1500	50x76 SAPG05 On Edge	
" "	0.8mm	5		11.0	0.13		1500		
" "	1.0mm	5		14.0	0.16		1500		
Robertsons Nu-rib	0.6mm	5		8.0	0.10		1500		
" "	0.8mm	5		10.0	0.12		1500		
" "	1.0mm	5		12.0	0.14		1500		
Galvanised Metal Sheet	0.6mm	5		10.0	0.12		1500		
" " "	0.8mm	5		12.0	0.14		1500		
Stainless Steel	0.6mm	5		8.0	0.10		1500		
Full Hardened galvanised Steel	0.5mm	5		8.0	0.10		1500		
ALUMINIUM SHEETING									
Safintra Industrial 7	0.7mm	5		2.3	0.041	1150	1500	50x76	
Brownbuilt	0.8mm	5		2.6	0.042			SAPG05	
"	0.9mm	5		2.9	0.045			On Edge	
CORRUGATED FIBRE CEMENT SHEETING									
Victorian Profile		5		14.8	0.19	450	1400	50x76	
Big Six		10		12.3	0.14	1150	1350	SAPG05 On Edge	
							BATTEN C/C	MAX TRUSS C/C	BATTEN SIZE
METAL TILES									
* Truss c/c 900 at gable ends									
*Evertile		15		12	0.15	367	1200	Not Req'd.	
Harveytile		15		6.6	0.10	370	1060	38x38 SAPG05	

4) BOTTOM CHORD LOADING - CEILING COVERINGS			
* Load including branderling			
DESCRIPTION	THICKNESS IN mm	WEIGHT IN Kg/m ²	TOTAL DEAD LOAD IN * Kn/m ²
GYPSUM PLASTERBOARD	6.4	10	0.12
GYPSUM PLASTERBOARD WITH PLASTER SKIM COAT	9	17	0.19
GYPSUM PLASTERBOARD	9.5	14	0.16
GYPSUM PLASTERBOARD	12.7	16	0.18
NUTEC CLADIT CEILING BOARD	4	11	0.13
NUTEC CLADIT CEILING BOARD	6	14	0.16
NUTEC FLAT SHEETS UNPRESSED (MEDIUM DENSITY)	4	12	0.14
NUTEC FLAT SHEETS UNPRESSED	6	16	0.18
NUTEC FLAT SHEETS UNPRESSED	9	22	0.24
NUTEC FLAT SHEETS UNPRESSED	12	27	0.29
NUTEC FLAT SHEETS PRESSED (HIGH DENSITY)	5	16	0.18
NUTEC FLAT SHEETS PRESSED	10	26	0.28
GLASOL ASBESTOS BOARD	3.2	12	0.14
PROLITH WOOD WOOL	25	17	0.19
PROLITH WOOD WOOL	50	27	0.29
PROTEX WOOD WOOL	25	11	0.13
MINERAL FIBRE TILES	---	12	0.14
S.A.PINE T & G BOARDING	12	11	0.13
S.A.PINE T & G BOARDING	22	20	0.22

5) TOP CHORD HEAVY LOADING - ROOF COVERINGS

* Load including batten

ROOF COVERING MATERIALS	PITCH(°)		WEIGHT Kg/m ²	* LOAD Kn/m ²	TILES /m ²	SIZE L X B	BATTEN C/C	TRUSS C/C	BATTEN SIZE
THATCH	Min	Max							
100 mm THK	5	75	35	0.39	---	-----	190	760	38 X 38

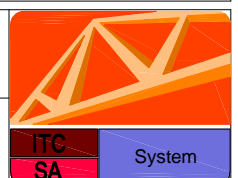
ITS STANDARD LOADING TABLE



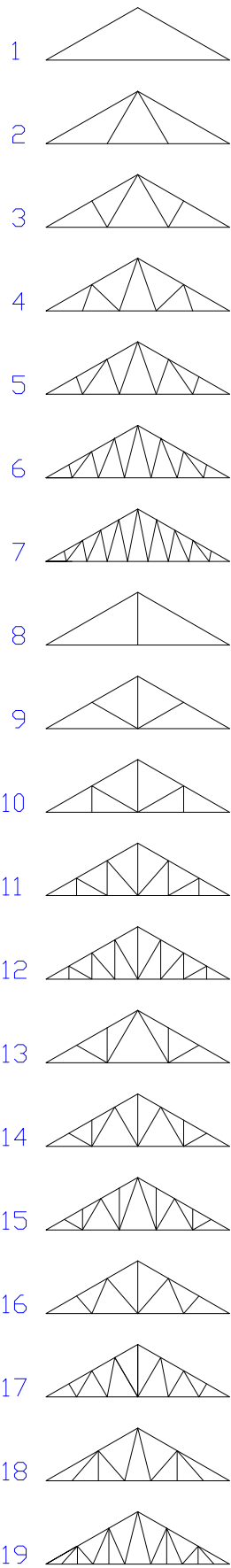
ITS STANDARD DETAIL
REF: LT5

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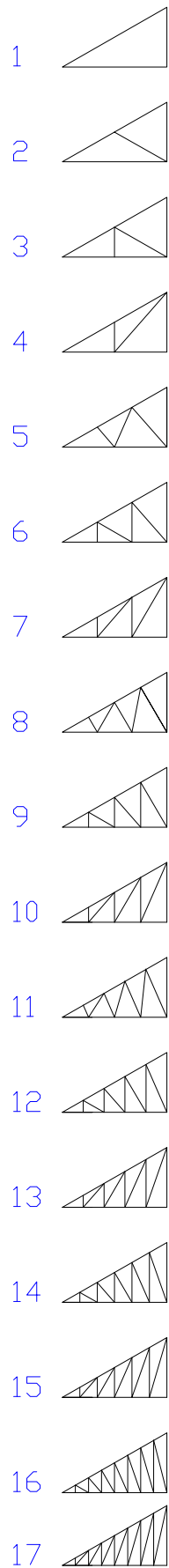
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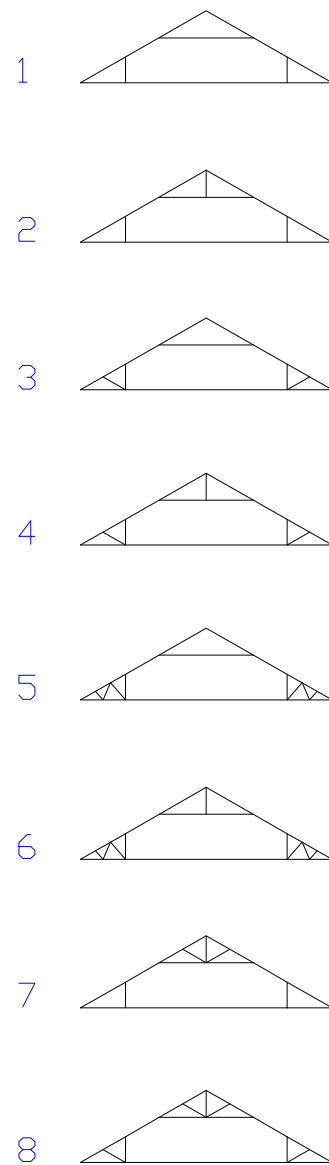
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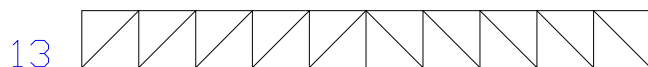
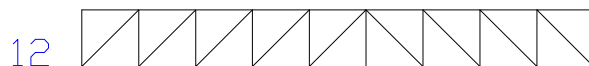
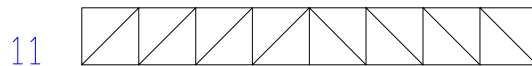
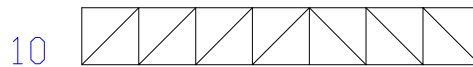
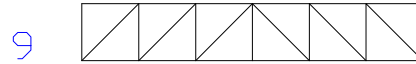
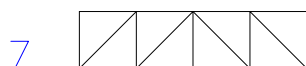
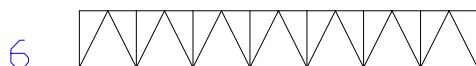
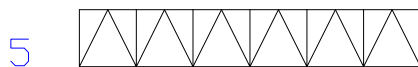
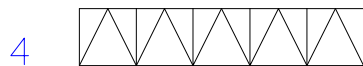
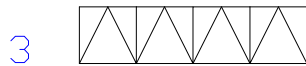
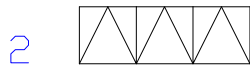
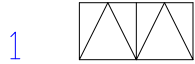
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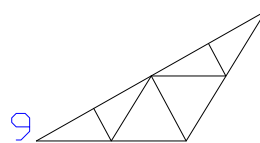
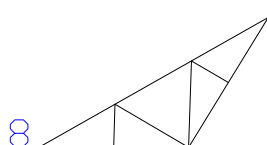
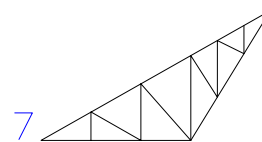
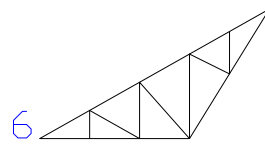
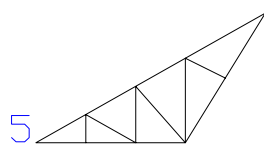
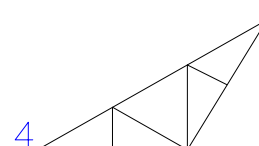
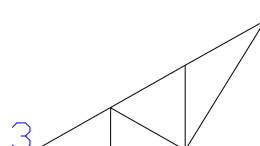
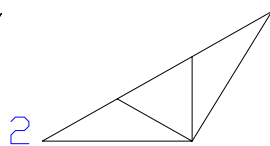
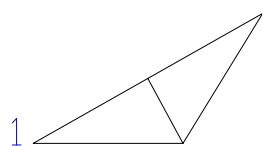
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FLAT TRUSSES

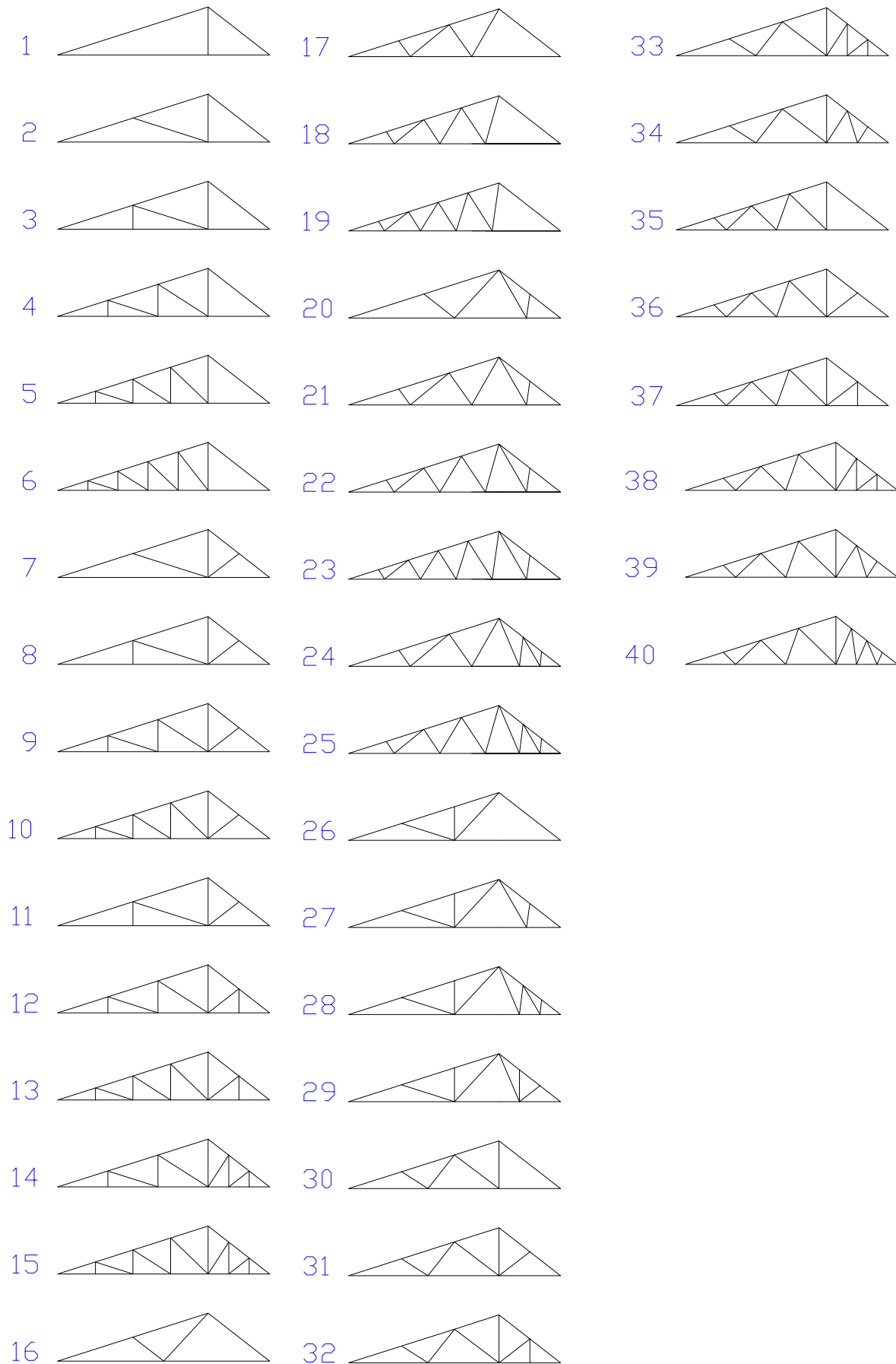


INVERTED TRUSSES

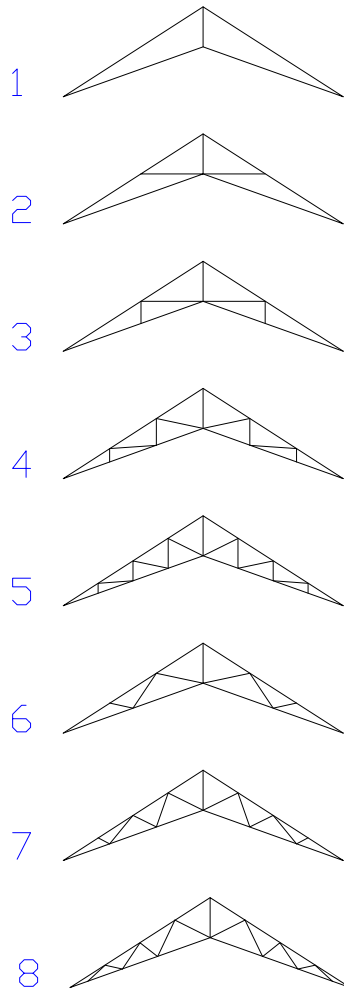


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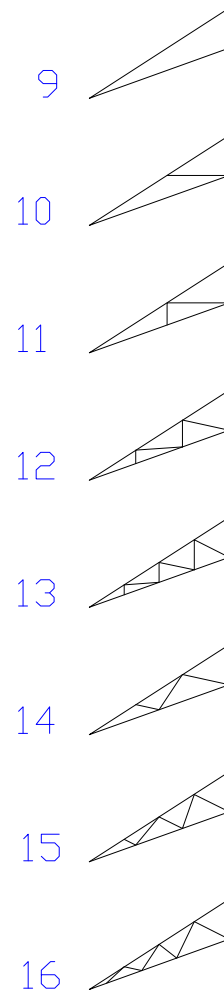
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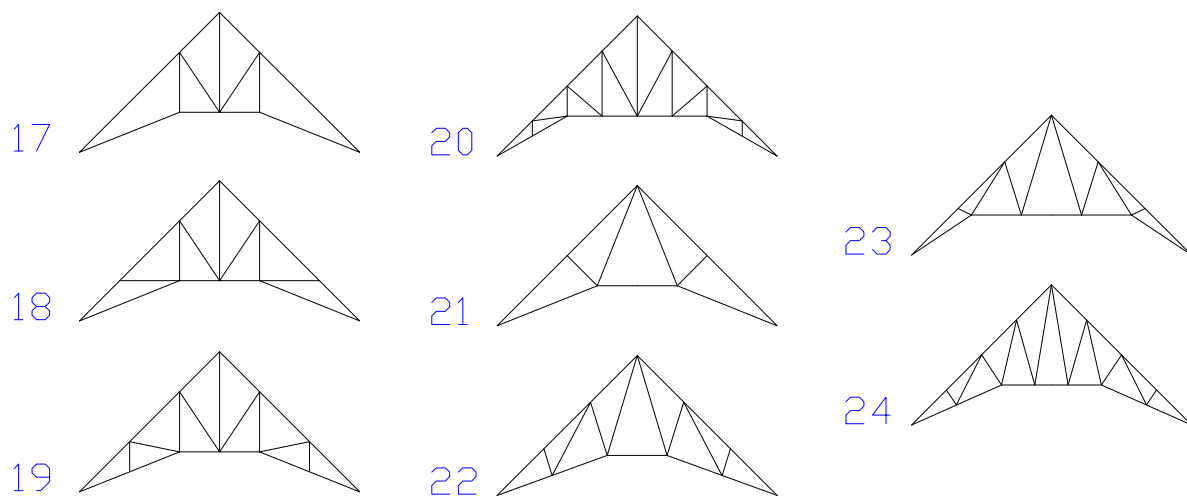
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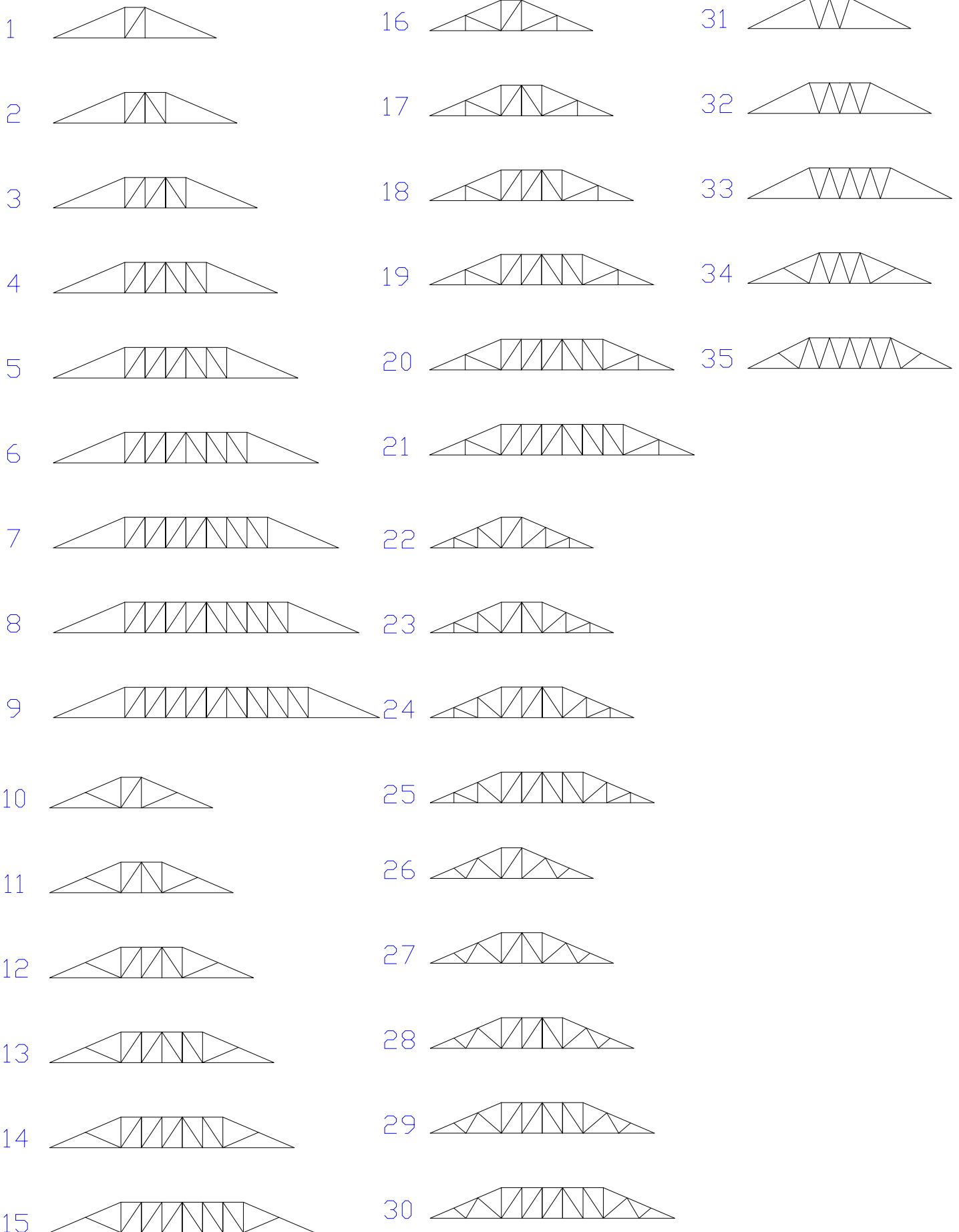
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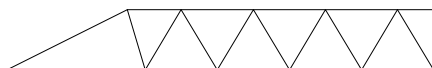
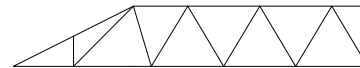
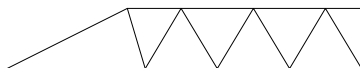
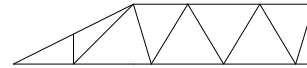
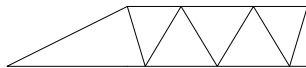
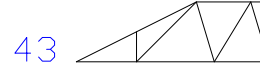
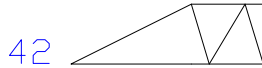
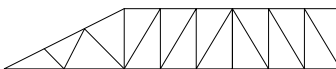
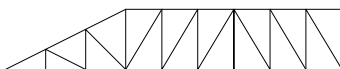
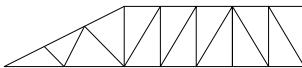
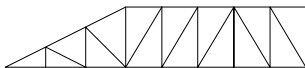
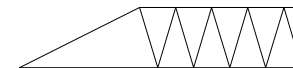
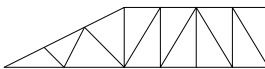
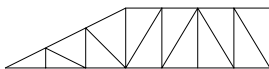
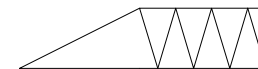
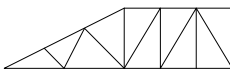
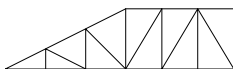
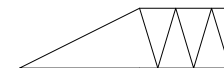
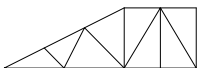
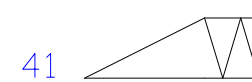
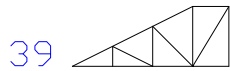
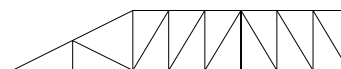
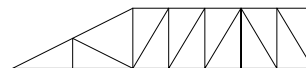
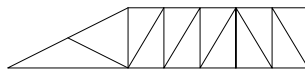
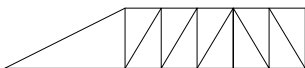
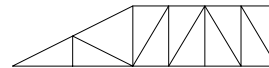
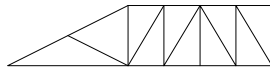
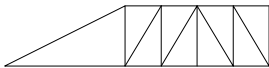
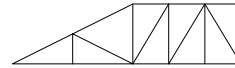
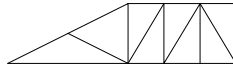
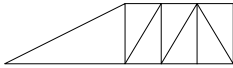
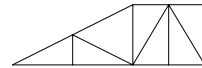
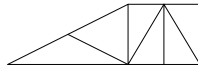
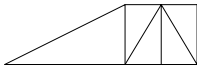
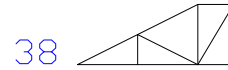
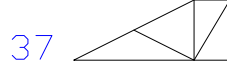
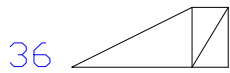
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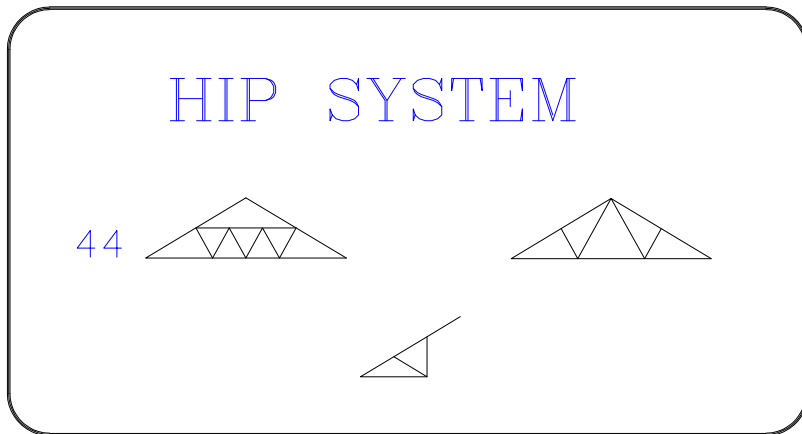
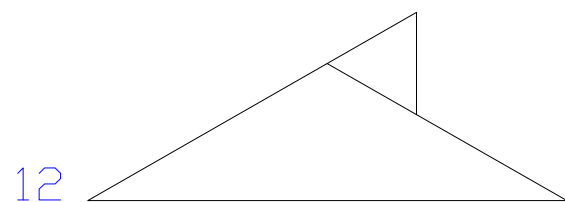
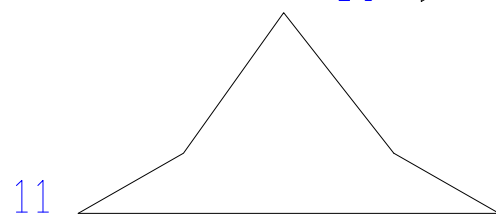
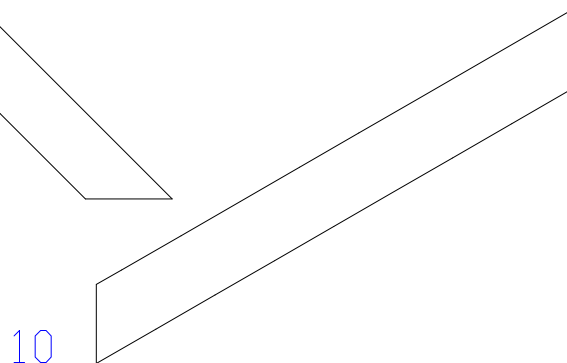
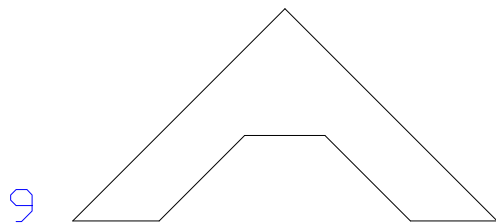
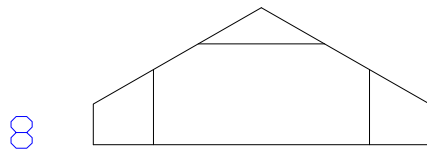
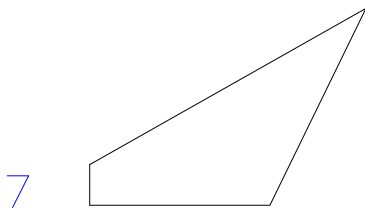
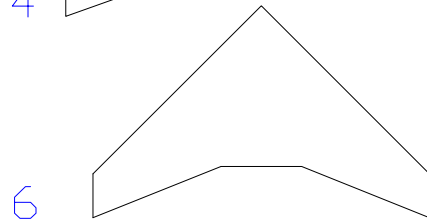
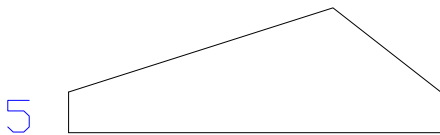
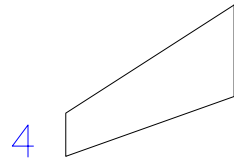
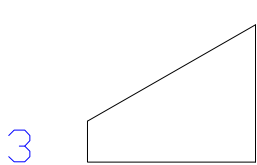
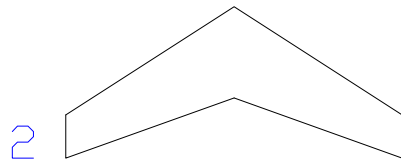
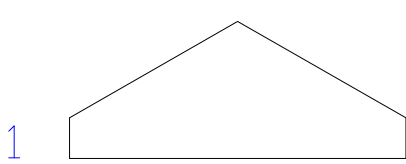
HIP



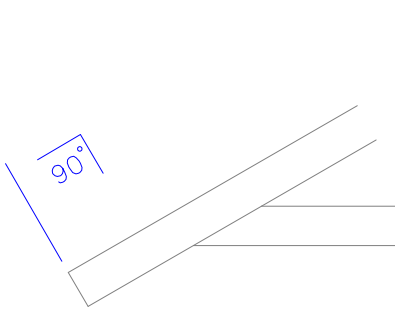
HIP CORNER



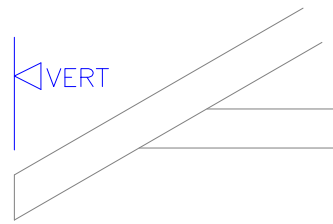
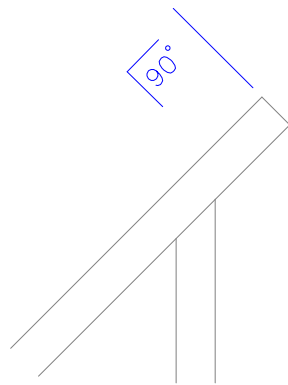
NON STANDARD TRUSS FAMILIES



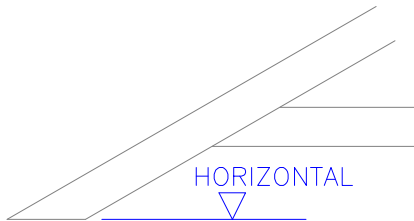
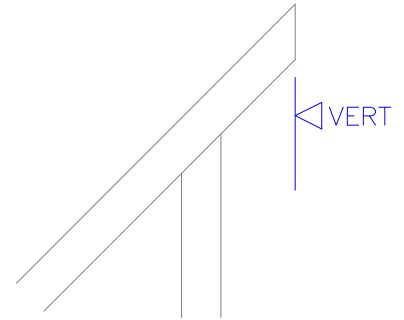
CUT, HEEL & OVERHANG TYPES



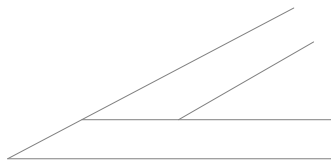
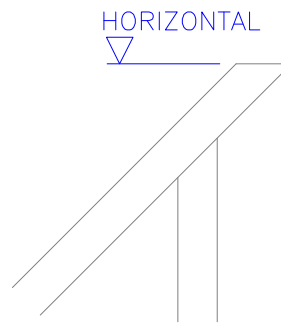
SQUARE CUT



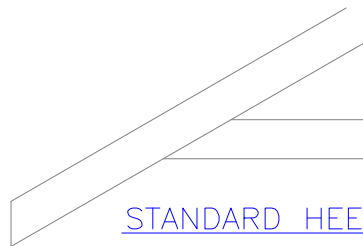
PLUMB CUT



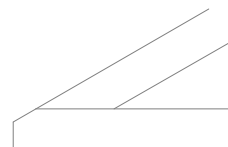
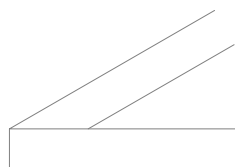
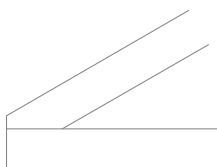
HORIZONTAL CUT



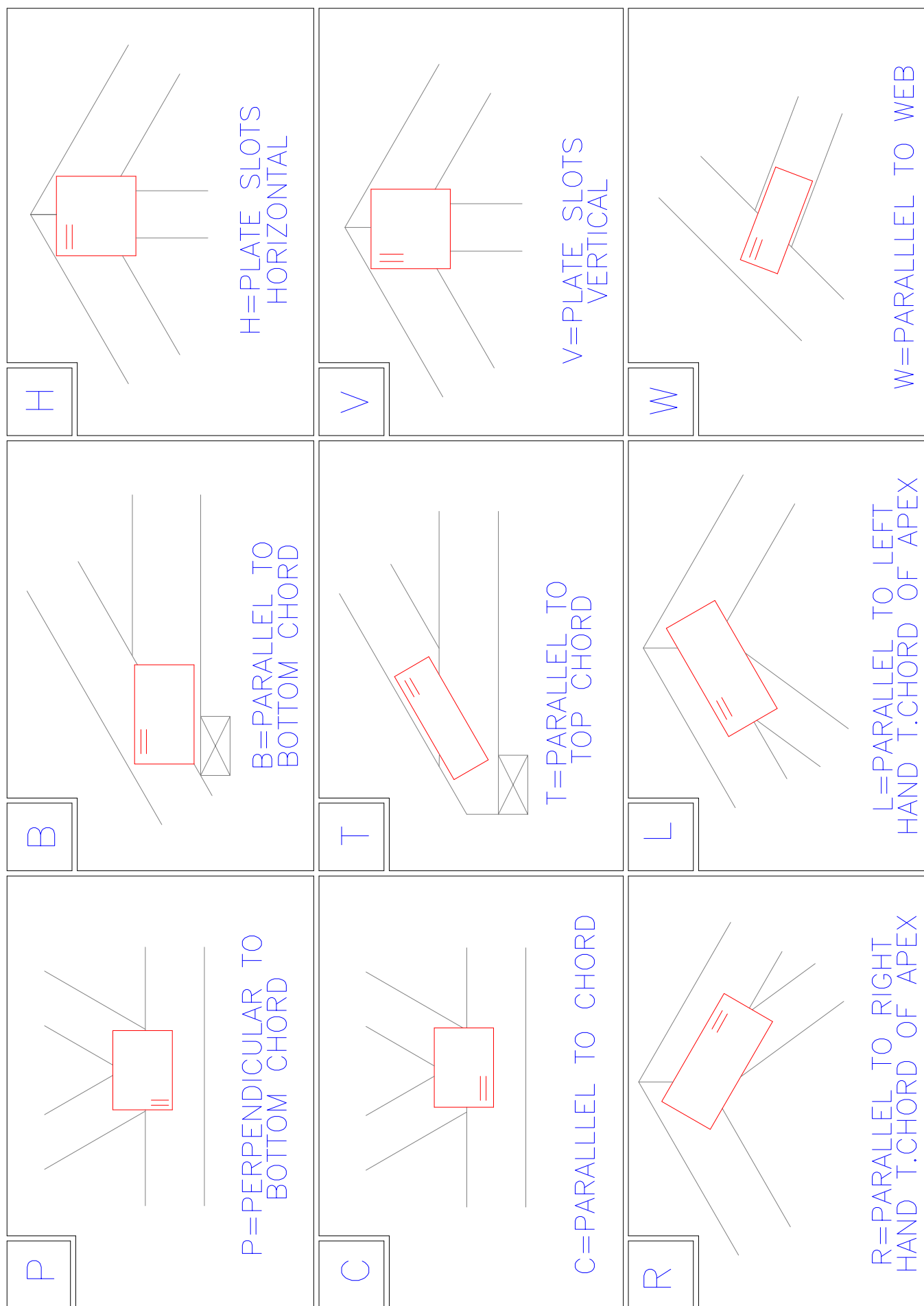
MANSARD HEEL



STANDARD HEEL



FRENCH HEEL



WALLPLATE DESIGN

Wallplate Size & Grade	Max Reaction For Single Member Truss	Max Reaction For Double Member Truss	Max Reaction For Triple Member Truss	Max Reaction For Four Member Truss
38 x 50	3.78 kn	-----	-----	-----
38 x 76 M4	4.2 kn	8.4 kn	12.6 kn	16.8 kn
38 x 76 V4/M5	5.52 kn	11.04 kn	16.56 kn	22.08 kn
38 x 76 V6/M6	7.1 kn	14.19 kn	21.29 kn	28.38 kn
38 x 114 M4	6.39 kn	12.79 kn	19.18 kn	25.57 kn
38 x 114 V4/M5	8.39 kn	16.78 kn	25.17 kn	35.57 kn
38 x 114 V6/M6	10.79 kn	21.58 kn	32.37 kn	43.16 kn

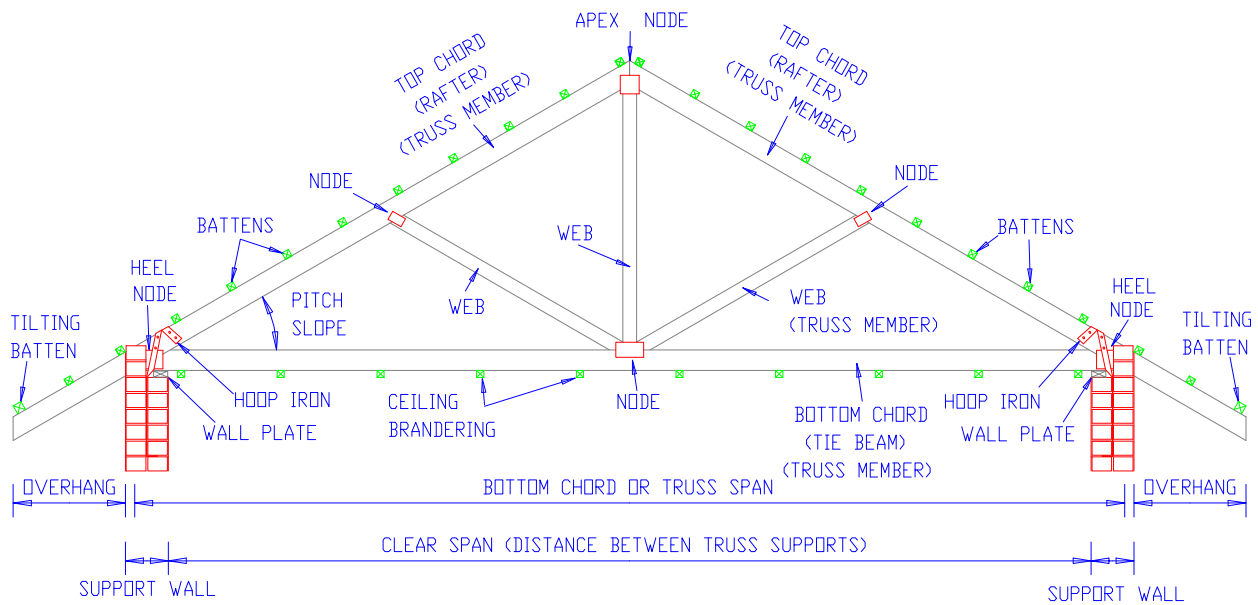
WALL PLATE DETAILS

GLOSSARY OF TERMS AND DEFINITIONS

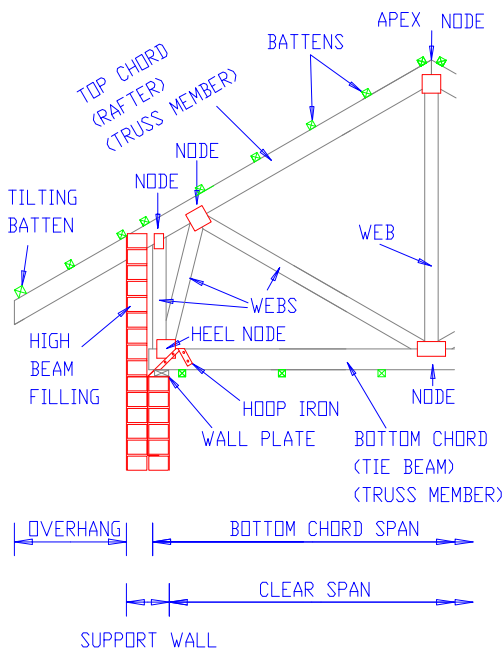
Apex:	The top of the truss where the two top chords meet.
Batten:	Small section timber members (usually 38x38 or 38x50) nailed across the top chords at a spacing of less than 540mm to carry concrete tiles, slates, metal tiles etc.
Binder:	See Runner.
Block Splice:	Nailed timber block used to join butting bracing members and purlins.
Bottom Chord:	Also tie-beam. That part of the truss that forms the bottom edge, and joins the two heel joints, supports the ceiling, and flat usually. Sloped in scissor trusses. Abbreviated B.C.
Braced Bay:	That section of roof where the diagonal bracing members are fixed.
Bracket:	See Cleat.
Bracing:	Timber members (or of other material e.g. light gauge mild steel) fixed to several adjacent trusses usually at a 45 degree angle to make the roof stable, and to prevent buckling of compression members.
Branding:	Similar to battens but fixed to the bottom chord, to support the ceiling.
Cantilever:	When the truss support on the bottom chord is some distance inside the heel joint.
Clear Span:	The distance between the supporting walls (or inside face of the supports). See also span.
Cleat:	Mild steel heavy-duty bracket fixed with bolts and used to support large heavy trusses / girder on a girder.
Crank:	When the support wall direction change is less than 90 degrees. The roof forms a bastard hip on one side, and a valley on the other in double-pitched roofs.
Clout Nails:	Wire nails 32mm long, 2mm in diameter, with a large head used to fix hangers, hurricane clips and pre-punched strapping. (i.e. light gauge metal to wood)
Double Pitch:	Trusses where the top chords slope up to the apex at the same angles (pitches) from both ends of the truss.
Dual Pitch:	Trusses where the top chords slope up to the apex at two different angle (pitch) from each end of the truss.
Dutch Hip:	A hip end where the end slope does not reach the apex but the top part of the hip forms a small gable. Also called a louvre hip.
Fly Rafter:	The top chord overhang at the high end of the mono pitch jack truss which extends over the truncated hip girder and trusses. (May also be a separate loose rafter)
Gable:	When the building end is vertical, the same shape as the truss, usually constructed of brickwork.
Gablet:	Small gable on the roof slope, usually formed by a valley set.
Girder Truss:	A truss (single or multiple ply) used to support other trusses.
Hanger:	A U-shaped bracket made of light gauge galvanized mild steel used to support trusses on a girder, usually fixed with 32mm clout nails or similar. When specified, may also be fixed with bolts and 36x4mm washers.

Heel:	The truss end joint where the top and bottom chords connect, or where the end web joins the bottom chord in stub and mono-pitch trusses.
Heel Shelf:	A means of fixing the diagonal top chord bracing at the wall plate using timber, bolts, washers, nailed hurricane clips and thrust block.
Hip:	When the building ends in a sloped roof (as compared to a gable).
Hoop Iron:	Galvanized metal strips built into brickwork used to hold down trusses.
Hurricane Clip:	A light gauge galvanized mild steel angle bracket used to fix two timber members at 90 degrees to each other.
Jack Rafter:	The smallest end part of a hip corner construction using only single pieces of timber (loose rafter).
Jack Truss:	The mono pitch trusses of the hip, which are supported at the high end by the hip girders.
Member:	A part, or component, which together with other members make up the structure. (i.e. truss members are the top chords, bottom chords and webs which form the truss)
Mono Pitch:	A truss where there is only one rafter slope. (half of a double pitch truss)
Multiple Plies:	Two to four trusses nailed and bolted together to form one unit. Usually as girders.
Nails:	see Clout nails and Wire nails.
Nib:	Extensions of the bottom chord past the truss end, usually to support in brickwork or on a truss hanger.
Node:	Also node point or joint. The places on the truss where two or more truss members are connected to each other (but not chord splices)
Overhang:	That part of the truss top chord that extends past the truss heel. Measured horizontally from the truss heel on the truss, but from the outside wall face on the building.
Pitch:	Also slope, the angle between the top chord and the horizontal line from the support point. Can also be the slope of the bottom chord in a scissors truss.
Plumb:	Trusses to be in a straight vertical line, i.e. 90 degrees to the floor (horizontal) level and parallel to the gable wall.
Plumb Cut:	Top chord overhangs cut off vertical, i.e. up / down, to allow the fixing of fascia boards and/or square gutters at the roof truss ends.
Polynesian:	Trusses with a pitch change in each top chord from a lower pitch to steeper pitch going from heel to apex.
Purlin:	Timber sections (usually 50x76) fixed across the top chords at a spacing of up to 1150mm to carry metal and fibre cement sheeting.
Rafter:	See Top Chord.
Runner:	Bracing members that are run continuously through the entire roof or set of the same trusses, to connect the same point of each truss. Runners must be diagonally braced to have any effect on the stability of the roof structure.

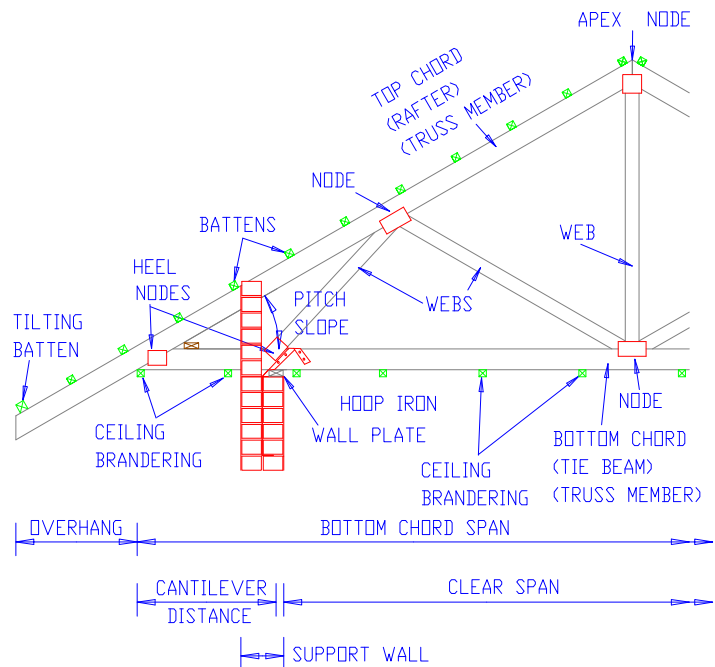
Spacing:	The distance between the centres of two of the same elements, i.e. trusses.
Span:	Truss span is the distance along the bottom chord between the truss ends (heels). See also Clear Span.
Splice:	The joining of two members in a straight line so that these members act as one component, e.g. truss top and bottom chords, and runners. Truss webs may not be spliced.
Stub End:	Also stub heel. Where the top and bottom chords are some distance apart and connected by the first truss web.
Support:	The point where the truss is carried by the building below. The wall (or beam) should be built to carry the truss, and there should always be a node at the support point of the truss.
Tie Beam:	See Bottom Chord.
Top Chord:	Also rafter. That part of the truss, which forms the top edge, usually at a slope and has the battens or purlins fixed to it to carry the roof covering. Abbreviated: T.C.
Truncated:	A hip truss or girder, which has a part flat top chord, at a height so that the fly rafters of the jack trusses can just pass over the top. Also the lower truss of the "piggy-back" or "top-hat" truss system, i.e. when large high trusses are split horizontally into two halves for manufacturing, handling and transport purposes.
Truss:	A number of timber members joined together in a triangular pattern to form a sturdy frame to carry the roof covering and any other loads that it is designed for.
Labels:	All trusses should be labeled on the roof layout plan and on the truss itself. Common labels are A1, TR1, GX1, TG1, HG1, HM1, etc.
Under-gable:	Formed by two adjacent double pitched trusses of different spans, where both heels are on the same wall on one side only.
Valley:	A set of special trusses with decreasing spans which are supported on the length of their bottom chord by the top chords of the trusses underneath and fixed at 90 degrees to these trusses.
Valley Truss:	A truss, which is supported by other trusses underneath.
Wall Plate:	A timber member laid flat over the supporting wall to level bearing surface and spread the load.
Webs:	The truss members that connect the top and bottom chords, usually in a triangular pattern.
Wedges:	Triangular timber blocks used in pairs to level the trusses.
Wire Nails:	75mm or 100mm long, 3 to 4mm diameter wire nails with a head, used to connect two timber members together.
Wire Ties:	Two strands of wire built into the brickwork used to hold down the trusses.



TYPICAL DOUBLE PITCH TRUSS



TYPICAL STUB HEEL



TYPICAL CANTILEVER SUPPORT

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