



TOWN OF AURORA

Deck Construction Guide

PLANNING AND BUILDING SERVICES

Building Division

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October, 2016



DECK CONSTRUCTION GUIDE

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General Requirements

Designers Qualification and Registration Requirements:

Homeowners submitting designs for their own residence are exempt from qualification and registration requirement, however, individuals and agencies providing design services to the public have to meet the qualification and registration requirements set out by the Ministry of Municipal Affairs and Housing. You can confirm the qualification and registration status of your designer by referring to the ministry's on-line qualification and registration system (QUARTs) at www.obc.mah.gov.on.ca to

Zoning Requirements

In order to obtain your building permit, your proposed deck construction must comply with all provisions of The Town of Aurora Zoning By-law. Please note that decks less than 2 feet above finished grade do not require a permit. However, they must comply with the zoning requirements. For more information about zoning requirements please see the **Zoning Guide for decks, balconies & open-sided roofed porches** or contact The Town of Aurora Building Services Division at (905) 727-3123 extension 4388.

Application Requirements

- Completed Buildings permit Application Form
- Two copies of the most recent copy of site plan for the property showing dimensions of all existing buildings and structures, and their setbacks. The proposed deck is to be plotted on the site plan and setback dimensions to all property lines are required to be shown thereon. (See attached Sample Site Plan on page 7)
- Two copies of construction drawings including framing plan, elevation, section and details. **The attached template drawing and details can be used instead of construction drawings providing all required dimensions and information are shown on “Deck Framing Plan” (page 8).**
- Registered Maintenance Easement documentation* (where applicable)
- Permit fee \$275.00 (flat fee).
- Payable at time of application by cheque, cash, debit or credit card)

* Refer to “Zoning Guide for Decks, Balconies & Open-sided Roofed Porches”.

Required Mandatory Inspections

It is the owner's / contractor's responsibility to provide notice of readiness for inspections at prescribed stages of construction. There are two mandatory inspections for residential deck projects: prior to backfilling foundations (piers) and after completion of project. To arrange for inspections, please call the Building Inspection Line at (905) 726-4778 or email at building.inspection@aurora.ca.

Call before you dig

Please note that it is the owner's / contractor's responsibility to call the utility companies to locate any underground utility lines within the construction zone to avoid damaging them during the construction.

For more information about permit holders' responsibilities please refer to "Builders Information Sheet" that comes with your building permit which is also available on our website at www.aurora.ca.

How to Use This Guide

Use the following steps

1. Start by filling the following information on the blank area shown on "Deck Framing Plan" (Page 8):
 - Overall length and width of deck
 - pier spacing
 - joist span
 - maximum height of the deck above grade

Note 1: In order to use Table 2 (page 10) provided in this guide choose pier spacing of 3m or less.

Note 2: Maximum height refers to the height of the post from the top of the concrete pier to surface of the deck.

2. On Table 1 (page 9) use the maximum height of the deck to determine the size of the wood posts.
3. On Table 1 use the post size, maximum height and roof snow load of 1.5 kPa for projects within Aurora area (bolded column) to determine the maximum *supported deck area* from the Table 1.

Note: the maximum *supported deck area* shown on Table 1 refers to the maximum deck area allowed to be supported on a post where no bracing is provided.

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4. Calculate the *actual supported deck area* on a post in your plan as per **Fig 1** on page 9. (Supported Deck Area: area enclosed by half of the spans on each sides of the post including cantilevered area.)

Note: Use the middle post with largest pier spacing and joist span for the calculation on this step.

5. Compare the actual supported deck area that you calculated on step 4 with the maximum supported deck area that you determined from Table1 on step 3. Where the actual supported deck area exceeds the maximum supported deck area listed on Table1, bracing must be provided as per attached bracing detail on page19.
6. On Table 2 (Page 10) use joist span to determine the joist size.
7. On Table 2 use pier spacing, joist span and soil bearing capacity of 1500 PSF (75 kPa) in order to determine the size of the piers and beams.

Note: Soil bearing capacity to be considered as 1500 PSF (75 kPa) unless shown otherwise on soil report.

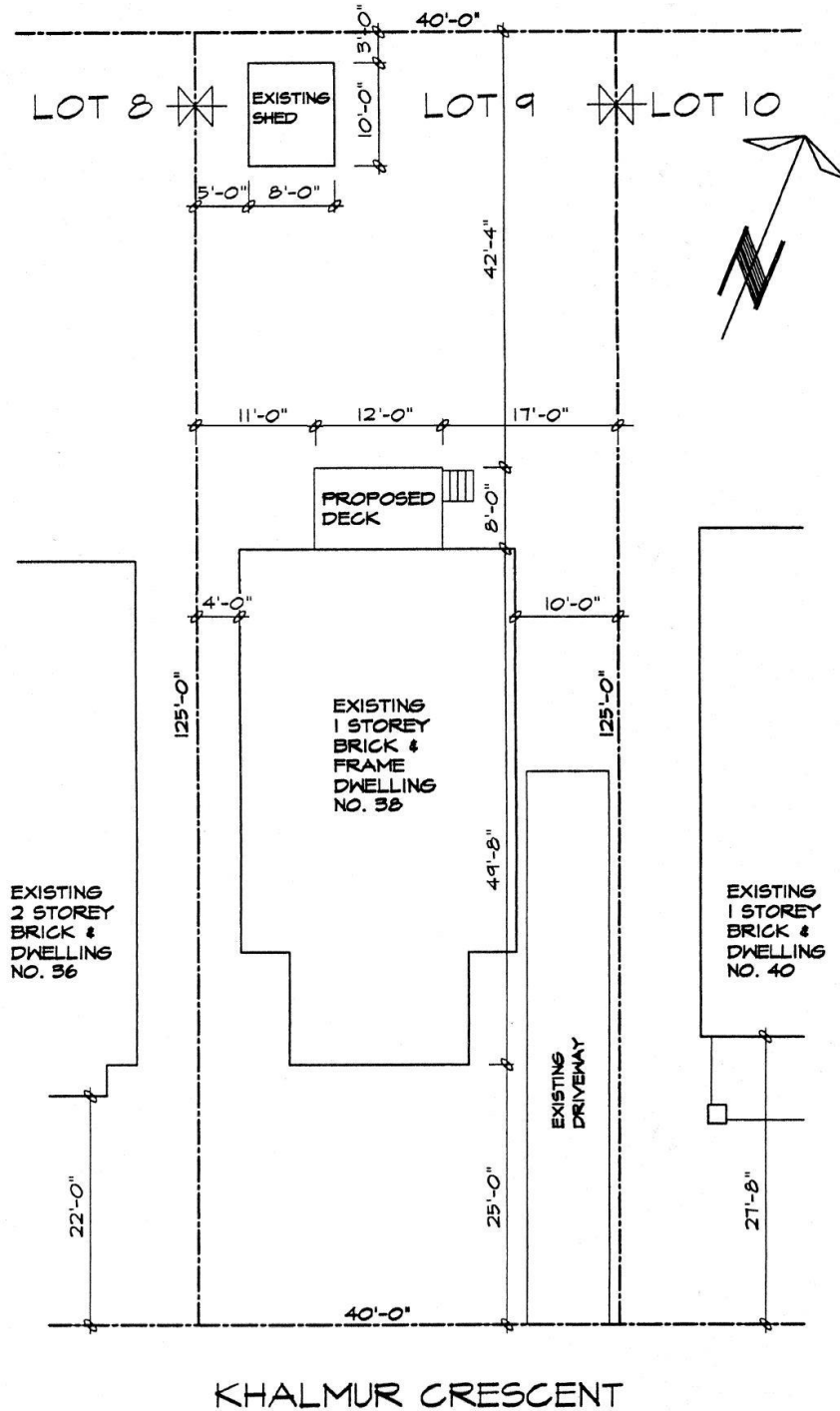
8. Fill out all the above information on the “Deck Framing Plan” (page 8) and submit two copies of this page and all attached applicable details with the rest of the documents required for your permit application.

Note 1: Please provide your own deck framing plan if your deck layout is different from what shown as “Deck Framing Plan” on page 5 (Use the same concept and provide the same information). Also you need to provide your own details if you are using any alternate details other than those provided in this guide.

Note 2: All exterior guards serving a residential occupancy must be design to prevent climbing as per instructions on page16.

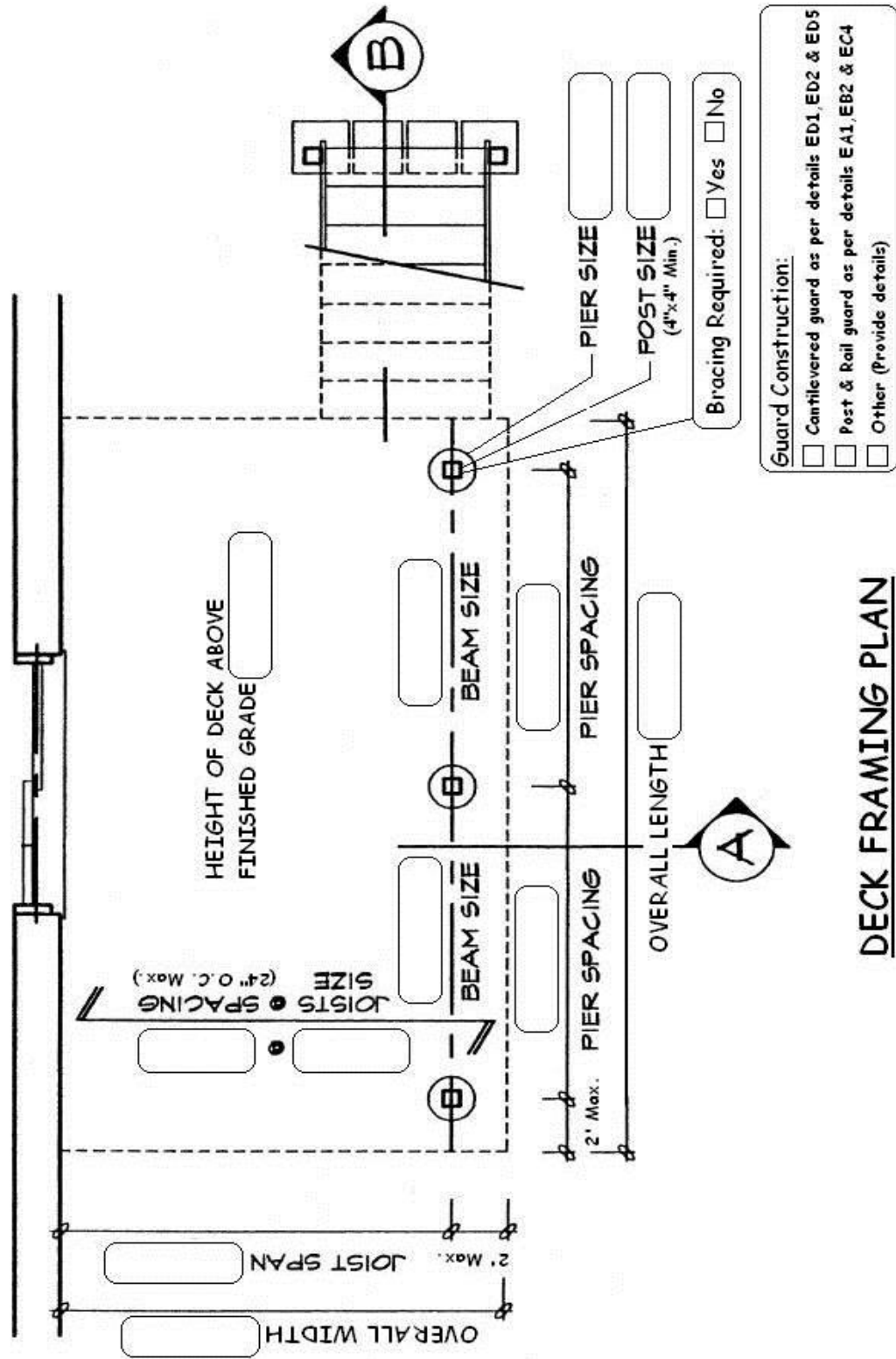
DECK CONSTRUCTION GUIDE

Sample Site Plan



SITE PLAN
SCALE 1" = 15'-0"

DECK CONSTRUCTION GUIDE



DECK CONSTRUCTION GUIDE

Figure 1
How to calculate the actual supported deck area for a post.

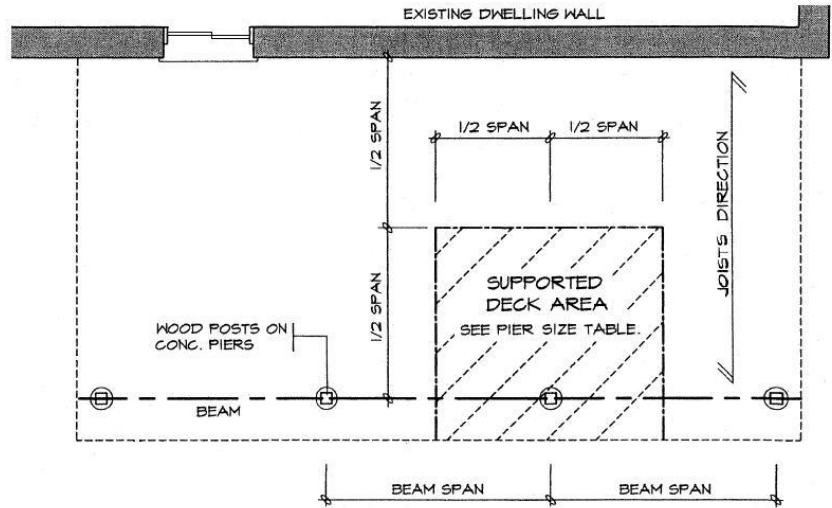


Table 1
(Use Roof Snow Load 1.5 kPa for Aurora Area)

POSTS SUPPORTING DECKS

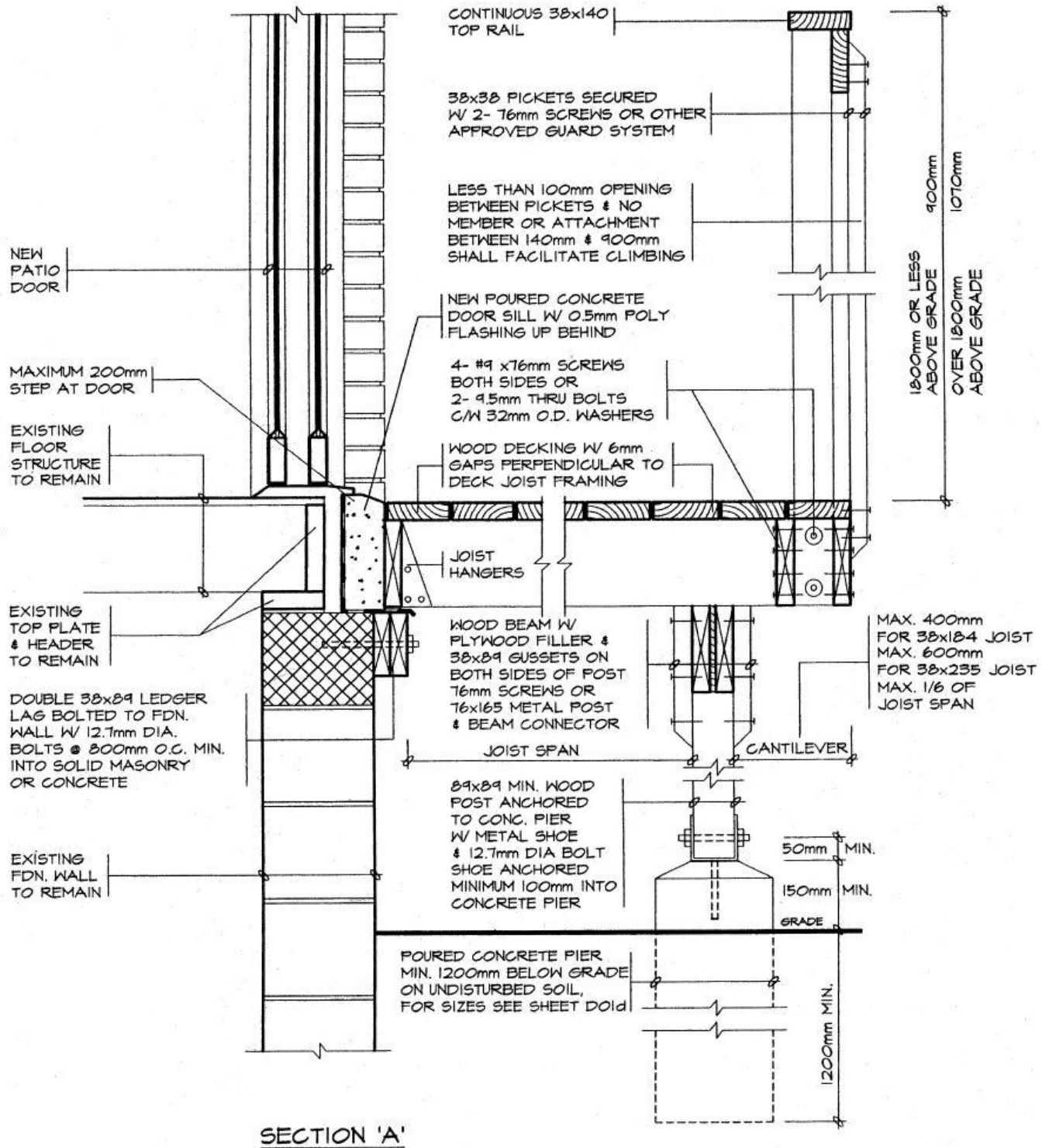
POST SIZE (mm)	MAXIMUM HEIGHT (M) SEE NOTE 7	SUPPORTED DECK AREA (M ²)				
		ROOF SNOW LOAD (kPa)				
		1.0	1.5	2.0	2.5	3.0
89x89 [4"x4"]	1.0 (3'-3")	10.86	10.86 (117 ft ²)	10.43	8.71	7.48
	1.5 (4'-11")	5.93	5.93 (64 ft ²)	5.69	4.76	4.09
	2.0 (6'-7")	3.15	3.15 (34 ft ²)	3.02	2.53	2.17
140x140 [6"x6"]	2.0 (6'-7")	13.67	13.67 (147 ft ²)	13.13	10.98	9.43
	2.5 (8'-2")	9.32	9.32 (100 ft ²)	8.96	7.48	6.43
	3.0 (10'-0")	6.35	6.35 (68 ft ²)	6.10	5.10	4.38
	3.5 (11'-6")	4.41	4.41 (47 ft ²)	4.23	3.54	3.04

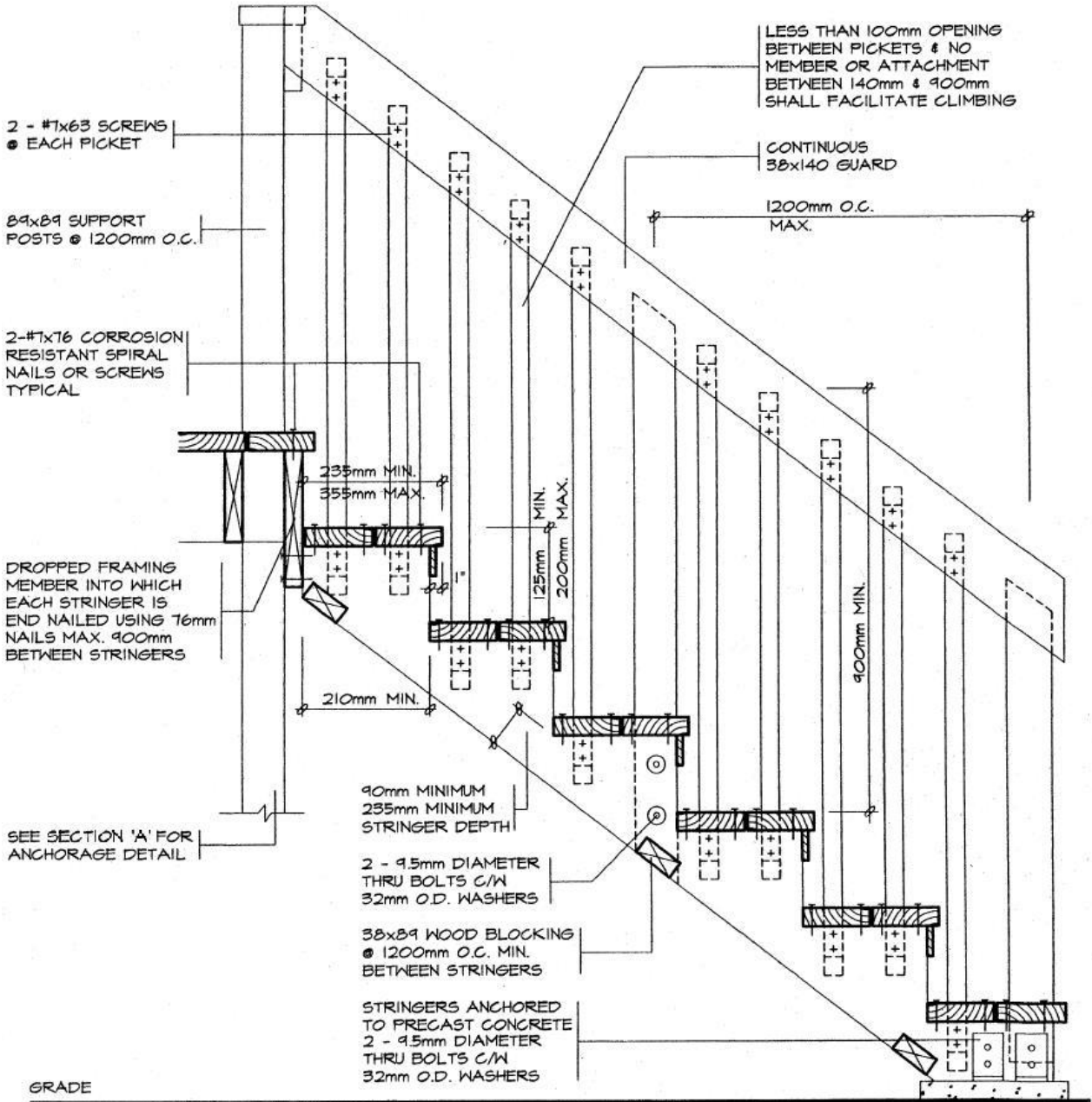
DECK CONSTRUCTION GUIDE

Table 2

(Soil Bearing Capacity to be Considered 1500 PsF (75 kPa) Unless Shown Otherwise on Soil Report)

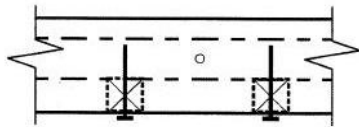
		PIER SIZE				BEAM SIZE				JOIST SIZE	
		JOIST SPAN	PIER SPACING				PIER SPACING				
			4'	6'	8'	10'	4'	6'	8'		10'
SOIL BEARING CAPACITY	1500 PSF	6'	8"φ	10"φ	12"φ	14"φ	2/2"X6"	2/2"X6"	2/2"X8"	2/2"X10"	2"X6"
		8'	10"φ	12"φ	14"φ	16"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X6"
		10'	12"φ	14"φ	16"φ	18"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X8"
		12'	12"φ	14"φ	16"φ	18"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X10"
	2500 PSF	6'	8"φ	8"φ	10"φ	10"φ	2/2"X6"	2/2"X6"	2/2"X8"	2/2"X10"	2"X6"
		8'	8"φ	10"φ	10"φ	12"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X6"
		10'	8"φ	10"φ	12"φ	14"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X8"
		12'	10"φ	12"φ	14"φ	14"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X10"
	4000 PSF	6'	8"φ	8"φ	8"φ	8"φ	2/2"X6"	2/2"X6"	2/2"X8"	2/2"X10"	2"X6"
		8'	8"φ	8"φ	8"φ	10"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X6"
		10'	8"φ	8"φ	10"φ	12"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X8"
		12'	8"φ	10"φ	12"φ	12"φ	2/2"X6"	2/2"X8"	2/2"X10"	2/2"X12"	2"X10"



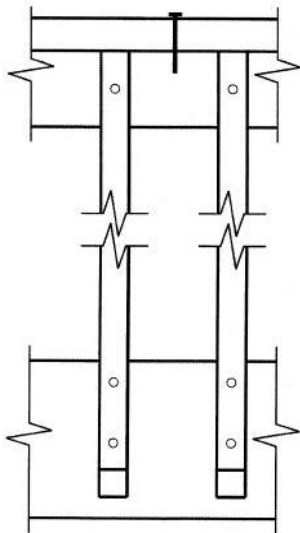


SECTION 'B'

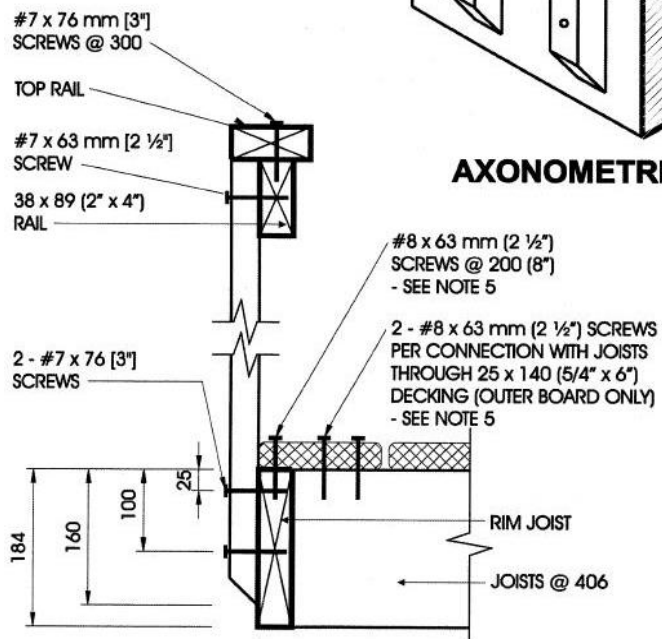
Guard Details



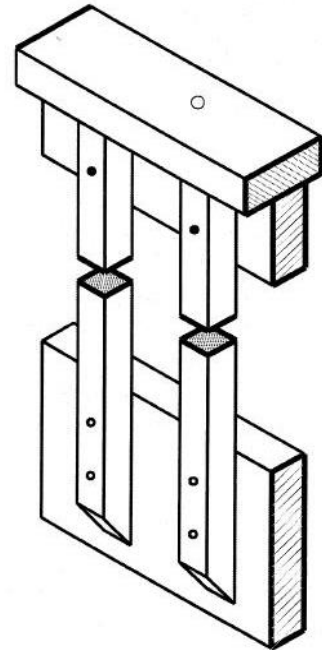
PLAN



FRONT ELEVATION



SIDE ELEVATION



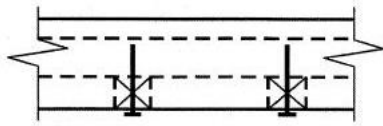
AXONOMETRIC

Detail ED-1

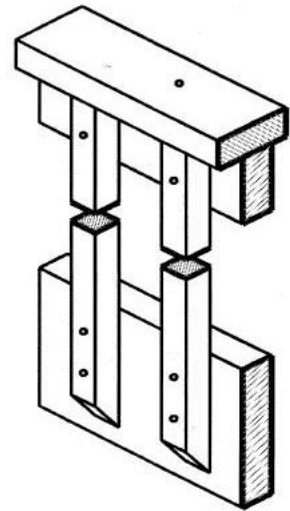
Exterior Connection: Cantilevered Picket Screwed to Rim Joist

Notes:

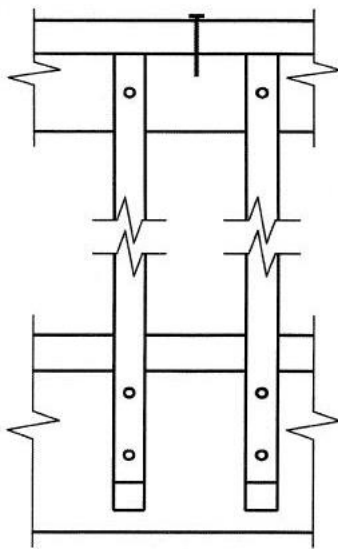
1. Provide a suitable post, return, or solid support at each end of the guard.
2. Wood for cantilevered pickets shall be Douglas Fir-Larch, Spruce-Pine-Fir, or Hem-Fir Species.
3. Fasten rim joist to each floor joist with 3 - 82 mm (3 1/4") nails.
4. Dimensions shown are in mm unless otherwise specified.
5. The outer deck board shall not be less than 140 mm (6" nominal) wide. Where 38 mm (2" nominal) thick boards are used, the length of the wood screws shall be not less than 76 mm (3").



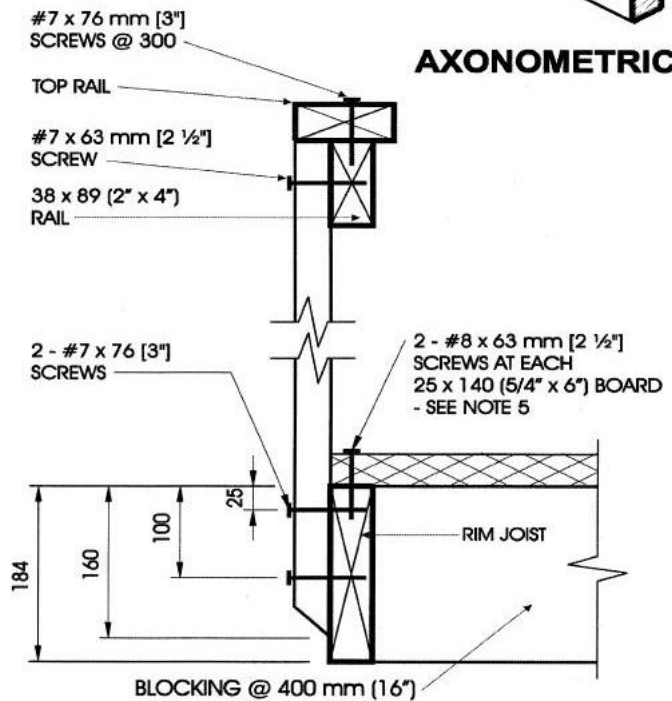
PLAN



AXONOMETRIC



FRONT ELEVATION



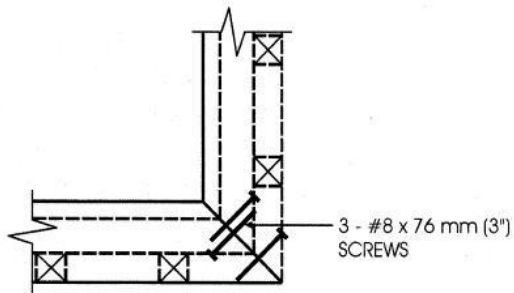
SIDE ELEVATION

Detail ED-2

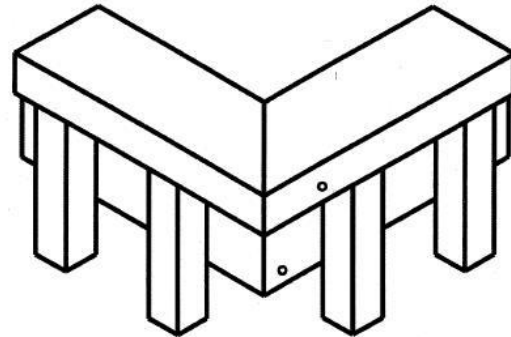
**Exterior Connection: Cantilevered Picket Screwed to Rim Joist,
Guard Parallel to Floor Joists**

Notes:

1. Provide a suitable post, return, or solid support at each end of the guard.
2. Wood for cantilevered pickets shall be Douglas Fir-Larch, Spruce-Pine-Fir, or Hem-Fir Species.
3. Fasten rim joist to blocking with 3 - 82 mm (3 1/4") nails.
4. Dimensions shown are in mm unless otherwise specified.
5. Where 38 mm (2" nominal) thick boards are used, the length of the wood screws shall be not less than 76 mm (3").

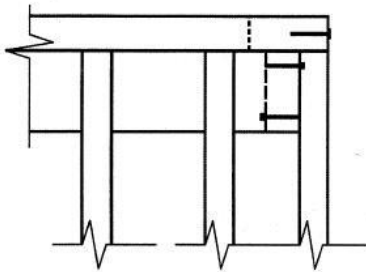


PLAN TOP RAIL

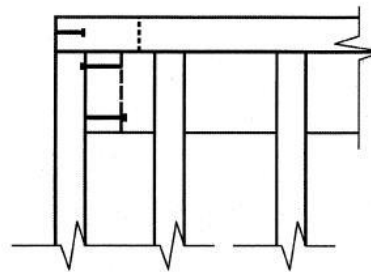


AXONOMETRIC

ONE FASTENER IN HORIZONTALLY ORIENTATED PORTION OF TOP RAIL
AND TWO IN VERTICALLY ORIENTATED PORTION.



FRONT TOP RAIL



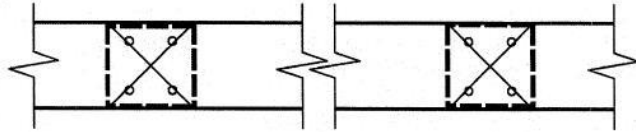
SIDE TOP RAIL

Detail ED-5
Exterior Connection: Corner Joint

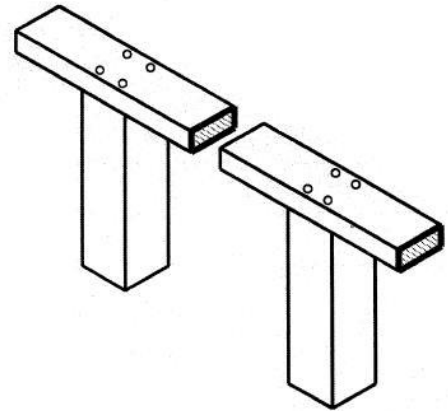
Notes:

1. Screws fastening pickets are omitted for clarity.
2. Provide a minimum of 10 pickets beyond the return if end restraint of the guard is provided by this return detail only.

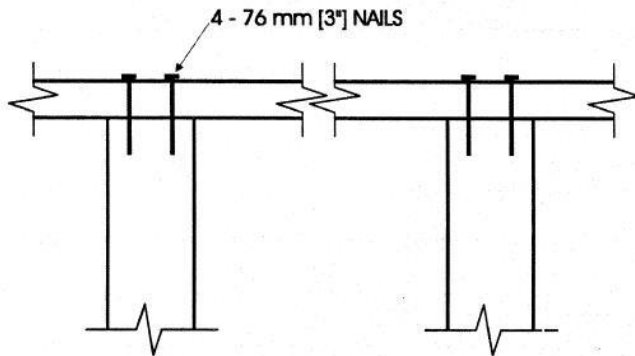
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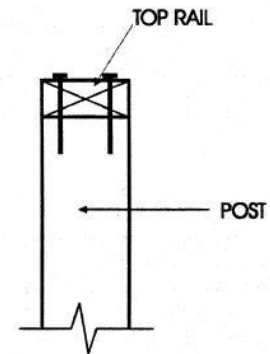
PLAN



AXONOMETRIC



FRONT ELEVATION



SIDE ELEVATION

Detail EA-1

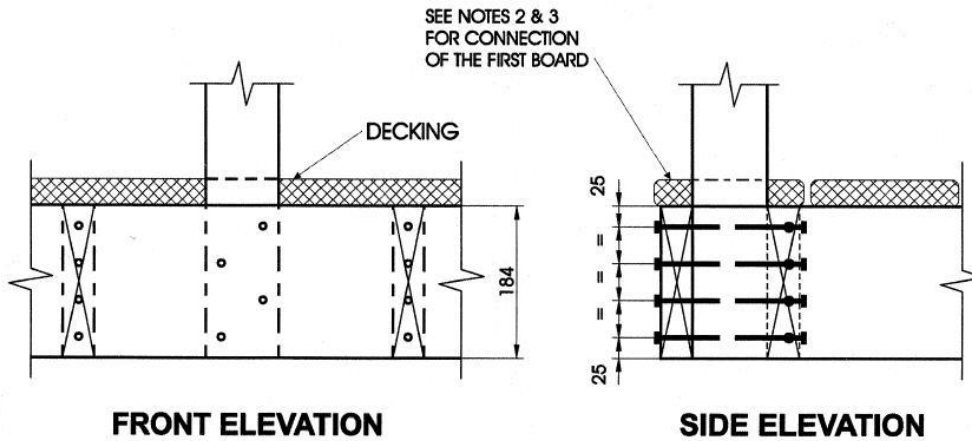
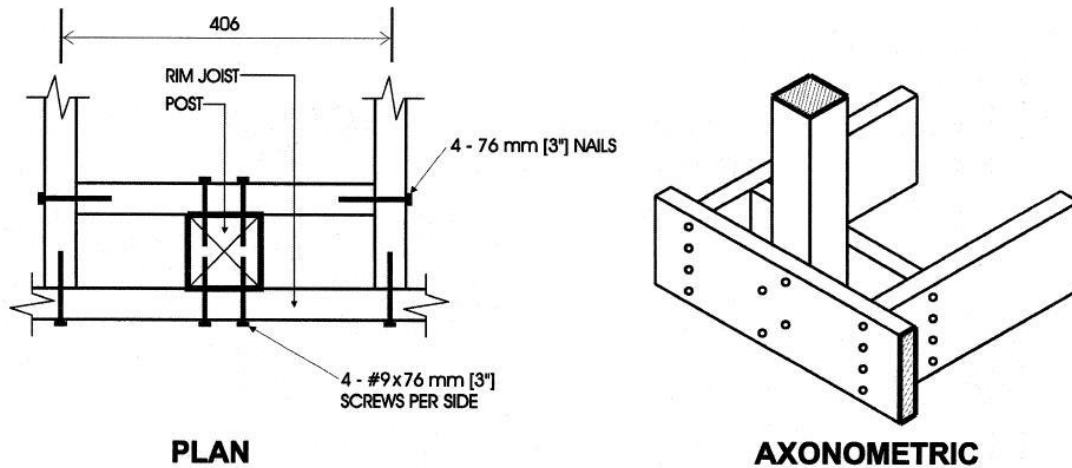
Exterior Connection: Top Rail Nailed to Post

Notes:

1. The top rail must be continuous. Use Detail EA-5 at the end spans, where continuity ends.

MAXIMUM SPAN OF RAIL BETWEEN POSTS	
Species	Maximum Span, m (ft-in)
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir	1.52 (5'-0")
Northern Species	1.52 (5'-0")
Column 1	2

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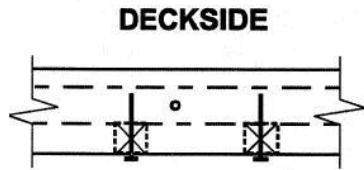
Detail EB-2

Exterior Connection: Post Screwed to Rim Joist

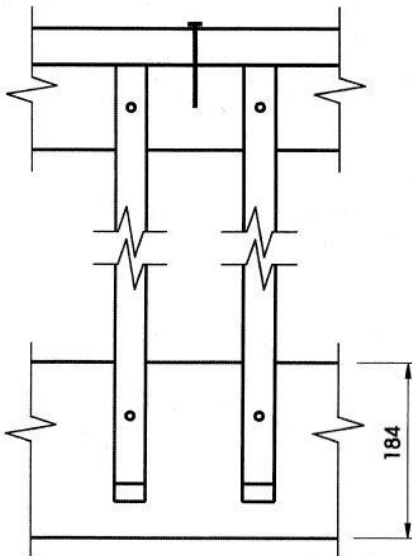
Notes:

1. Decking is omitted from the plan view and the axonometric view for clarity.
2. Fasten 25 mm x 140 mm (5/4" x 6" nominal) outer deck board to rim joist with 63 mm (2 1/2") nails at 300 mm (12").
3. Fasten 25 mm x 140 mm (5/4" x 6" nominal) outer deck board to floor joist with 1 - 63 mm (2 1/2") nail at each joist.
4. The post may be positioned anywhere between the joists.
5. #9 screws may be replaced by #8 screws if the maximum spacing between posts is not more than 1.20 m (3'-11").
6. Dimensions shown are in mm unless otherwise specified.

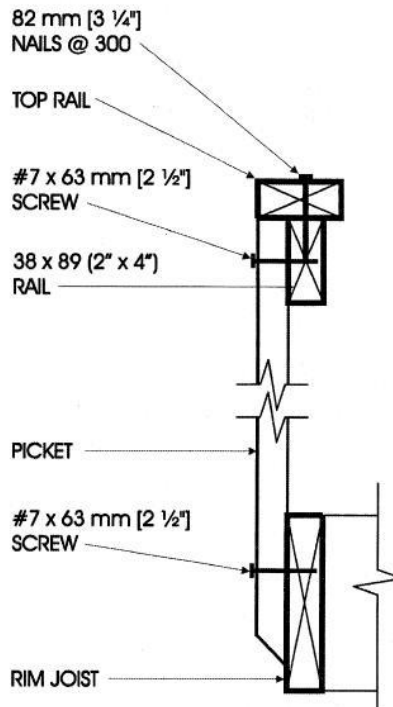
MAXIMUM SPACING BETWEEN POSTS	
Species	Maximum Spacing, m (ft-in)
Douglas Fir-Larch, Hem-Fir, Spruce-Pine-Fir	1.56 (5'-1")
Northern Species	1.20 (3'-11")
Column 1	2



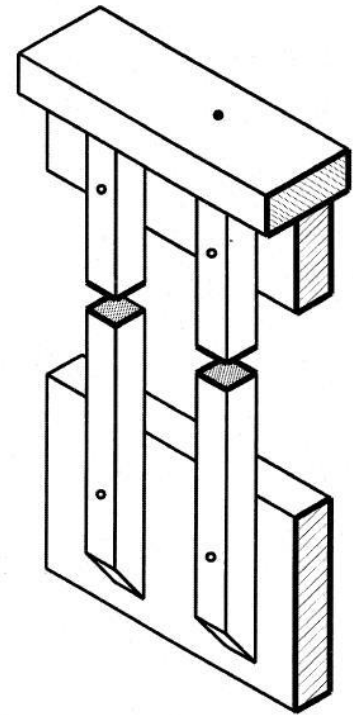
PLAN



FRONT ELEVATION



SIDE ELEVATION



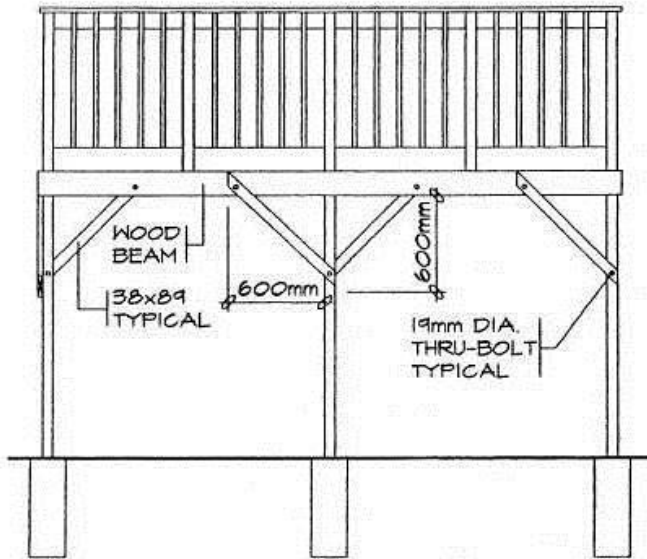
AXONOMETRIC

Detail EC-4

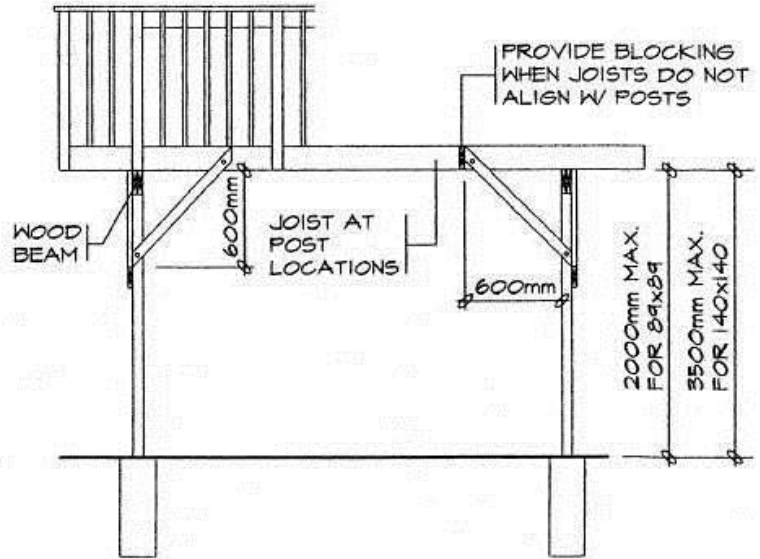
Exterior Connection: Infill Picket Screwed to Top Rail and Rim Joist

Note:

1. Dimensions shown are in mm unless otherwise specified.



BRACING PARALLEL TO BEAM



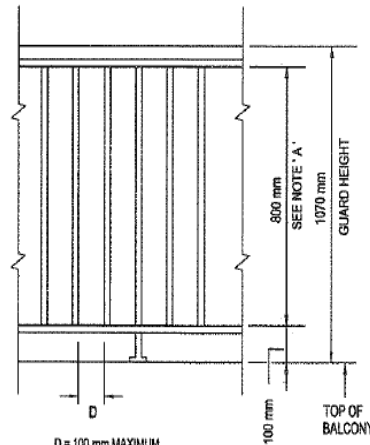
BRACING PERPENDICULAR TO BEAM

FREE STANDING DECKS GREATER THAN 600mm ABOVE GRADE SHALL RESIST LATERAL LOADING & MOVEMENT. ALL POSTS MUST BE BRACED WHERE THE SUPPORTED AREA EXCEEDS THOSE LISTED IN THE TABLE 1

9.8.8.5. DESIGN TO PREVENT CLIMBING

Exterior guards serving residential occupancies shall be designed in accordance with this Article to prevent climbing by unattended children.

Horizontal, diagonal or decorative grille work, upturned curbs exposing ledges and similar constructions are not permitted within an area located between 100 mm and 900 mm above the floor or walking surface.



D = 100 mm MAXIMUM

D = 200 mm MAXIMUM FOR INDUSTRIAL OCCUPANCIES

NOTE 'A': NO MEMBER ATTACHMENT OR OPENING SHALL FACILITATE CLIMBING WITHIN THE 800 mm SHOWN IN THE SKETCH

GENERAL NOTES

1. SITE PLAN OR SURVEY IS REQUIRED SHOWING ALL LOT LINES & DIMENSIONS SIZE & LOCATION OF ALL EXISTING BUILDINGS, LOCATION & SIZE OF DECK
2. LUMBER NO. 2 SPF OR BETTER, WOOD POSTS MIN. 89x89 (SOLID). USE CORROSION RESISTANT SPIRAL NAILS OR SCREWS.
3. DECK IS NOT PERMITTED TO BE SUPPORTED ON BRICK VENEER
4. CONCRETE PIERS SHALL BEAR ON UNDISTURBED SOIL. THE BEARING CAPACITY OF THE SOIL SHALL BE DETERMINED PRIOR TO CONSTRUCTION
5. PROVIDE A HANDRAIL 900mm HIGH ON STAIRS IF MORE THAN THREE RISERS.
6. FOR SUPPORTED AREAS WHICH EXCEED THOSE LISTED IN THESE TABLES THE POSTS SHALL BE BRACED AS SHOWN ABOVE.
7. MAXIMUM HEIGHT REFERS TO THE HEIGHT OF THE POST FROM THE TOP OF THE PIER TO THE DECK SURFACE